Corrigendum - 3 dated 09/05/2025 to CPC Tender No. BHEL/CPC/SGL/EPC-AHP/25/082

Corrigendum - 3 dated 09/05/2025 to CPC Tender No. BHEL/CPC/SGL/EPC-AHP/25/082 for the work of "EPC package for Ash Handling Plant at Singrauli STPP Stage-III (2X800 MW".

A) Modification in Technical Conditions of Contract (TCC): Some clauses of existing TCC are revised and some clauses are added in the existing TCC as mentioned below;

<table>
<tr><th colspan="2">EXISTING CLAUSE</th><th colspan="2">REVISED CLAUSE</th></tr>
<tr><td>Clause No.</td><td></td><td>Clause No.</td><td></td></tr>
<tr><td>Chapter - IV: Time Schedule, Clause 4.2</td><td>Schedule of important Activities:
<table>
<tr><th>SL No</th><th>Description</th><th>Tentative Completion Schedule</th></tr>
<tr><td>1</td><td>Basic Engineering</td><td>Within 1.5 Months</td></tr>
<tr><td>2</td><td>Detailed Engineering</td><td>Within 12 Months</td></tr>
<tr><td>3</td><td>Dispatch and Completion of the Supplies</td><td>Within 22 Months</td></tr>
<tr><td>4</td><td>Erection and Commissioning Completion</td><td>Within 29 Months</td></tr>
<tr><td>5</td><td>Completion of Facilities</td><td>Within 30 Months</td></tr>
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<tr><td>2</td><td>Detailed Engineering</td><td>Within 12 Months (M1)</td></tr>
<tr><td>3</td><td>Dispatch and Completion of the Supplies</td><td>Within 22 Months</td></tr>
<tr><td>4</td><td>Readiness of Bottom Ash Hopper for Boiler Light Up for Unit #1</td><td>Within 25 Months (M2)</td></tr>
<tr><td>5</td><td>Erection and Commissioning Completion</td><td>Within 29 Months</td></tr>
<tr><td>6</td><td>Completion of Facilities</td><td>Within 30 Months</td></tr>
</table></td></tr>
<tr><td>Chapter - IV: Time Schedule, Clause 4.2 (A)</td><td>New Clause added</td><td>Chapter - IV: Time Schedule, Clause 4.2 (A)</td><td>Intermediate Milestones:
Two Major Intermediate Milestones are identified as M1 and M2.
<table>
<tr><th>Milestone</th><th>Tentative Completion Schedule</th></tr>
<tr><td>Detailed Engineering</td><td>Within 12 Months (M1)</td></tr>
<tr><td>Readiness of Bottom Ash Hopper for Boiler Light Up for Unit #1</td><td>Within 25 Months (M2)</td></tr>
</table></td></tr>
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<table>
<tr><th colspan="2">EXISTING CLAUSE</th><th colspan="2">REVISED CLAUSE</th></tr>
<tr><td>Chapter - IV: Time Schedule, Clause 4.2 (B)</td><td>New Clause added</td><td>Chapter - IV: Time Schedule, Clause 4.2 (B)</td><td>
Provision of Penalty in case of slippage of Intermediate Milestones:
In case of slippage of Two Major Intermediate Milestones, mentioned as M1 & M2 above, delay Analysis shall be carried out on achievement of each of these two Intermediate Milestones in reference to F-14.
<table>
<tr><td>(i)</td><td>In case delay in achieving M1 Milestone is solely attributable to the contractor, 0.5% per week of executable contract value*, limited to maximum 2% of executable contract value, will be withheld.</td></tr>
<tr><td>(ii)</td><td>In case delay in achieving M2 Milestone is solely attributable to the contractor, 0.5% per week of executable contract value*, limited to maximum 3% of executable contract value, will be withheld.</td></tr>
<tr><td>(iii)</td><td>Amount already withheld, if any against slippage of M1 milestone, shall be released only if there is no delay attributable to contractor in achievement of M2 Milestone.</td></tr>
<tr><td>(iv)</td><td>Amount required to be withheld on account of slippage of identified intermediate milestone(s) shall be withheld out of respective milestone payment (corresponding RA Bill) and balance amount (if any) shall be withheld @10% of RA Bill amount from subsequent RA bills.</td></tr>
</table>
</td></tr>
</table>

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EXISTING CLAUSE		REVISED CLAUSE		
			(v)	Final deduction towards LD (if applicable), on account of delay attributable to contractor shall be based on final delay analysis on completion/ closure of contract. Withheld amount, if any due to slippage of identified intermediate milestone(s) shall be adjusted against LD or released as the case may be.
			(vi)	In case of termination of contract due to any reason attributable to contractor before completion of work, the amount already withheld against slippage of intermediate milestones shall not be released and be converted into recovery.
			(vii)	Contractor shall make all possible efforts to expedite the activities, in case of delay of any intermediate milestone, to maintain over all project completion schedule.
			(viii)	*Executable Contract Value - Value of work for which inputs/ fronts were made available to contractor and were scheduled for execution till the date of achievement of that milestone.
Chapter-XVI: Enclosures, Clause 16.1	Annexure-3: Electrical & C&I Scope Matrix	**Chapter-XVI: Enclosures, Clause 16.1**	**Annexure-3 (Rev-01):** Electrical & C&I Scope Matrix (attached along with this corrigendum)	
	Annexure-3B_ESLD Tentative		Annexure Deleted	
	Annexure-3C_Singrauli Feeder Availability AHP Rev-00		Annexure Deleted	
	Annexure-3E_HT SWR		Annexure Deleted	
	Annexure-3F_HT MOTOR		Annexure Deleted	

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EXISTING CLAUSE		REVISED CLAUSE	
	Annexure-3G- DCS PANELS		Annexure Deleted
	Annexure-3I_TYPICAL ABOVE GROUND EARTHING DETAILS		Annexure Deleted
	Annexure-3J_TYPICAL BELOW GROUND EARTHING DETAILS		Annexure Deleted
	Annexure-3K_TYPICAL LIGHTNING PROTECTION DETAILS		Annexure Deleted
	Annexure-4_Plot Plan		**Annexure-4 (Rev-01):** Plot Plan with demarcation. (attached along with this corrigendum)
	New Clause added		**Annexure–7: NTPC Clarifications** (attached along with this corrigendum)
	Annexure-20: Provenness Criteria Declaration Format		**Annexure-20 (Rev-01):** Provenness Criteria Declaration Format (attached along with this corrigendum)
	New Clause added		**Annexure-22:** DCS protocols (attached along with this corrigendum)
	New Clause added		**Annexure-23:** Plant Road Layout (attached along with this corrigendum)
	New Clause added		**Annexure-24:** Dismantling Scope & GPR Report (attached along with this corrigendum)
Chapter - III: Scope of Work, Clause 3.28	Size of the slurry pipe (MSERW) from Combined ash slurry pump house to ash dyke shall be considered 500 NB for design of combined Ash Slurry Disposal Pumps.	**Chapter - III: Scope of Work, Clause 3.28**	Size of the slurry pipe (MSERW) from Combined ash slurry pump house to ash dyke shall be considered 450NB for design of combined ash slurry Disposal Pumps. Bidder to consider 700 NB pipes for Recovery water line from ash dykes instead of 800 NB Pipe mentioned in NTPC specification/amendment.

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EXISTING CLAUSE		REVISED CLAUSE	
Chapter - XII: Exclusions, Clause 12.2	Supply of all HT motors (except for compressors, if applicable) are excluded from bidder's scope as HT motors will be free issue to bidder by BHEL, however its E&C alignment with drive system (as applicable) shall be in bidder' scope.	**Chapter - XII: Exclusions, Clause 12.2**	Clause Deleted. Supply and E&C of the HT Motors for the package is in the scope of Bidder.
Chapter - VI: Sub-Qualification Requirements, Clause 6.2	**AHP CIVIL and STRUCTURAL WORKS**: For civil & steel structural works of Ash Handling Plant, Bidder or its agency should have executed Ash Handling Plant of 500 MW or higher capacity Coal based/Lignite based power plant.	**Chapter - VI: Sub-Qualification Requirements, Clause 6.2**	**AHP CIVIL and STRUCTURAL WORKS**: For civil & steel structural works of Ash Handling Plant, Bidder or its agency should have executed Ash Handling Plant/Coal Handling Plant in a Coal based/Lignite based power plant. **OR** Bidder should have executed One civil works comprising of at least one RCC Silo of at least 24 mts height **OR** Shell of one RCC Chimney up to 16 mts height **OR** Shell of one NDCT up to at least 16 mts height **OR** "any other RCC structure up to 32 mts height using Slip-Form/Jump-Form Technique" in a running/completed contract **and** Structural works of one Ash Handling Plant/ Coal Handling plant in a Coal based/lignite bases power plant.

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B) Some of the Bidders had asked queries in the published tender specification. The clarifications issued by BHEL are as below;

Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
1	SECTION-VI, PART-B SUB SECTION-A-01 PAGE 76 OF 92 Cl. No. 4.01.02	**Broad Design Criteria** The capacity of ash handling systems, as a percentage of maximum ash generated corresponding to firing of worst coal at BMCR	Ash Generation corresponding to worst coal at BMCR is not available in the document. Kindly provide the same. Also provide the system wise conveying capacities.	Refer Annexure-9 for details
2	Annexure- 2	**Scope Matrix (AHP)** Complete AHP, Auxiliary System, Sewerage system, Road & drain, ETP etc.	We understand that the scope define in this matrix is related to Ash Handling system only not for the entire plant. We request to provide the flow diagram for all this package	All the flow diagrams are available in Part E of NTPC specification and corresponding clarification and amendments.
3	Annexure- 2	**Scope Matrix (AHP)** Complete AHP, Auxiliary System, Sewarage system, Road & drain, ETP etc.	The specification available for these packages is for entire plant. kindly provide the summarized specification only applicable for Ash handling system.	Scope matrix is clear.
4	Annexure- 2	**Scope Matrix (AHP)** Complete AHP, Auxiliary System, Sewarage system, Road & drain, ETP etc.	We understand that main plant road & drains are excluded from our scope, only the road & drain that connect the AHP building with the main road & drain is in the scope of AHP bidder. Kindly confirm.	Main roads developed from BHEL are attached for reference. Bidder to develop necessary approach roads for facilities including culvert for main road drain crossing, and necessary dismantling and finishing of main road drain to merge the approach road drains. Main Roads and approach roads at fly ash silo area complex and its facilities shall be developed by bidder.

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
5	Drg. No.9587-001(R)-POM-A-027, R1	SINGLE LINE FLOW DIAGRAM FOR FLY ASH HANDLING SYSTEM (VACUUM SYSTEM)	We understand from the elsewhere of the specification that air washer, collector tank, wetting head system is to be provided for making fly ash slurry. However, the drawing does not reflect the same. Kindly provide the revise flow diagram.	Details are already available in NTPC specs and flow diagram.
6	Drg. No. PE-DG-512-100-M001 R1A	General Layout of the plant	Kindly provide the Auto CAD version of the referred drawing. The same is require to measure the exact distance between the facilities.	Autocad version will be provided to the successful bidder during detailed engg. However, the approx. distance can be measured from layout.
7	Drg. No. 9587-001(R)-POM-A-029 R2	The drawing showing pressure conveying system having compressor (6W+3S) below Coarse and fine fly ash silos.	We understand from the elsewhere of the specification that no of compressor here is 10 (7w +3s), Kindly confirm. Also, please provide the capacities (each working ash conveying line) of the referred system	Bidder to follow specification.
8	SECTION-VI PART-A, SUB-SECTION-IIA-04, Sl. No. 1.01.07 (iv) Page (10 of 17)	Pitless type Weigh Bridge for rail loading below dry fly ash silos (minimum seven numbers)	Kindly indicate the capacity of weigh Bridge.	Details is already available in NTPC specification.
9	SECTION-VI PART-A, SUB-SECTION-IIA-16, Sl. No. 2.06.00 Page (2 of 7)	The waste water from the system shall be collected and neutralized using lime and shall be pumped to the mixing tanks of HCSD System	We understand that no HCSD system is envisaged for this Ash Handling Package.	There is no HCSD system for the subject package. The waste water to be transported to ash slurry sump.

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
10	SECTION-VI PART-B, SUB-SECTION-D-1-4, Sl. No. 4.02.00 Page (1 of 4)	4 Nos. of Construction Stores with 1050 Sq.m. floor area of each store shall be constructed. These will be pre-engineered Buildings with hall for storage of materials.	We understand that this will be constructed by main BoP Package vendor and not by the Ash Handling bidder. Kindly confirm.	Bidder to follow specification and scope matrix.
11	SECTION-VI PART-B, SUB-SECTION-D-1-5, Sl. No. 5.05.00 Page (23 of 127)	The civil works for Ash handling system shall comprise of bottom ash and fly ash handling systems, which includes Ash slurry pump house and their related sumps/tanks, Ash water pump house, Bottom Ash (BA) slurry transportation pump pit and their related sumps/tanks Slurry trench (In case of SCC system), Transport/ instrument Air Compressor house, Conveying air compressor house	We request to provide the GA drawings of the buildings showing tentative dimensions, so that we can estimate the quantity properly. And also identify the location of each equipment building wise.	Engineering of AHP system is in the scope of bidder. Bidder to decide the building size
12	SECTION-VI PART-B, SUB-SECTION-III, Sl. No. 1.03.00 Page (1 of 3)	**Ash handling system** a) Terminal Point for Ash slurry disposal piping (combined ash slurry) and AWRS piping shall be 5 m inside plant boundary	We understand that this will be given by the Main customer. If any other exclusion is considered by BHEL, kindly specify.	Slurry piping till plant boundary is in the scope of bidder.
13	SECTION-VI PART-A, SUB-SECTION-IIA-16, Sl. No. 1.02.01.02 (h) Page (14 of 17)	Decanted water shall be pumped from owners' pumping system located at ash dyke. There shall be two no. working AWRS Pump of 1100 m3/hr flow rate	We have not received any schematic flow diagram for AWRS system. Kindly provide the same showing all the equipment. Also, please inform whether any clarifloculetor is required or not.	The scope of recovery water system starts only from terminal point (within plant boundary) indicated in the specs.

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
14	SECTION-VI PART-A, SUB-SECTION-IIA-16, Sl. No. (E) Page (6 of 17)	**Dewatering Bin system:** One (1) number conventional enclosure type passenger cum goods elevator having capacity of 16 persons shall be provided in De-watering bin area.	Kindly provide the exact no of elevator used in Ash Handling system.	Bidder to follow NTPC Specification.
15	SECTION-VI PART-A, SUB-SECTION-A-12 Sl. No. 3.00.00 Page (4 of 12)	Four (04) numbers (3 working+ 1 standby) oil free, rotary screw/ centrifugal type air compressors for instrument air duty for the complete plant each	Please confirm the plant IA compressor will be used for Ash Handling. Please provide area wise consumption for IA compressor other than Ash Handling system.	The Quantity of Instrument air provided for AHP system is already mentioned in the specification. Refer Cl. 3.7.1 of Technical conditions of contract for details
16	SECTION-VI PART-B, SUB-SECTION-A-25, Sl. Page (1 of 12)	For a shade free roof, the bidder has to install the solar PV rooftop system	We understand that the same is excluded from our scope of work.	Bidder to follow NTPC Specification.
17	TECHNICAL CONDITIONS OF CONTRACT (TCC) Chapter - VI: Sub-Qualification Requirements Clause no 6.2	**Existing: -** AHP CIVIL and STRUCTURAL WORKS: For civil & steel structural works of Ash Handling Plant, Bidder or its agency should have executed Ash Handling Plant of 500 MW or higher capacity Coal based/Lignite based power plant.	"We request to modify this clause as under AHP CIVIL and STRUCTURAL WORKS: For civil & steel structural works of Ash Handling Plant, Bidder or its agency should have executed Ash Handling Plant /Coal Handling Plant in a Coal based/Lignite based power plant or steel plant or any process plant."	Refer Section A) as mentioned above.
18	TECHNICAL AMENDMENT NO. 1 TO TECHNICAL SPECIFICATION (SECTION VI) (Sl. No. MH-10)	Elevation of top of ash dyke: RL 300.2m Ultimate Khariya Dyke height (ii) Maximum pumping distance – 17km (including garlanding for S1/S2)	Kindly confirm the scope of supply of pipe & pedestal/rack outside the plant boundary. We understand that the same is excluded from our scope.	The scope demarcation is already provided in the specification.

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
19	Civil Scope TECHNICAL SPECIFICATION SECTION-VI, PART-B	Scope of Civil & Structural work	Kindly list out the buildings & structure required in this package. Also, please indicate the nature of construction for each of them. i.e Silo is RCC construction, Ash water pump house is steel construction etc.	Refer annexure-4 (Rev-01) and technical specification for scope of work. The type of buildings are already provided in NTPC specification
20	Annexure- LETTER OF SUPPORT_4.19.3	1. We, the Collaborator & Technology Provider/Licenser, and the Contractor *and *his Sub-Vendor, do hereby declare and undertake that we shall be **jointly and severally** responsible to the Employer	For this particular project, involvement of the collaborator is limited to mostly design & engineering oriented job. They do not agree with "Jointly and severally " Clause, as appeared in your letter of support. Therefore, request you to kindly amend the same.	Bidder to follow NIT Specification.
21	Drg. No. 9587-001(R)-POM-A-027 R 1	Single line diagram for Fly Ash Handling system (Vacuum System)	The drawing showing 12 no ash conveying pipe from 2 unit will be connected to each of the main fly ash silo. However, 5 No ash conveying pipe from Fine & Coarse ash hopper is also connected to the main fly ash silo. Thus, total no of fly ash pipe above silo will be consider accordingly. Kindly confirm.	12 Nos. pipes from 2 Units and 6 Nos. pipes from classifier system to Main silos to be considered.
22	Operation sequence	The spec calls for BA and CA to be operated twice in a shift of 8 hours. BA for 85 minutes and CA for 45 minutes per unit.	85+85+45+45=260 minutes. As there are only 240 minutes in 4 hours, the timing will over shoot into other shift. Please check and clarify the timings to be considered for removal of BA and CA removal.	The specification is clear. As per NTPC specification, the timings are not-to-exceed values

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
23	Sludge makeup by BHEL clause 3.27 chapter-III: Scope of work.	140 + 27 = 167 Cu.M/Hr on continuous basis and 40+125=165 Cu.M/Hr on intermittent basis.	Please confirm that this sludge will be fed to Combined Ash Slurry Sump only by BHEL and the Combined Ash Slurry Pump is to be sized accordingly. Please also confirm that the timing of intermittent sludge pumping by BHEL will be set as per AHP system requirement.	Refer NTPC Technical Clarification No.1, Page 27 of 31. The timing of intermittent sludge pumping will be adjusted to match AHP operation
24			Moreover, please let us know where the sludge will be routed when combined ash slurry pumps are not in operation.	
25	SLD 9587-001(R)-POM-A-025 Rev. 1 & Ammndment-1, clause MH-27	Jet pump discharge from BA Hopper is shown to BA Slurry Sump	Please check and confirm, that the Jet pump discharge can be pumped directly to the Combined Ash Slurry Sump also by providing necessary cyld. Optd. Valves (12 nos. per unit). This is required as the BA slurry PH and Combined Ash Slurry PH are located adjacent to each other and the BA Slurry Pump which is common for pumping BA slurry to Combined Ash Slurry Sump and Hydrobin will not be able to work considering the distance and the specified minimum slurry line velocity.	Bidder to follow specification. It shall be reviewed during detail engineering
26			Moreover, in IIA-16 clause C-2 (1) calls for 2 pumps in each series, please check the requirement as we need only 1 pump in each series.	

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
27	SLD 9587-001(R)-POM-A-025 Rev. 1	Coarse Ash Slurry Pump Discharge	Please confirm that the CA slurry will be pumped only to the Combined Ash Slurry PH as shown in Flow Diagram 025.	The slurry line from Coarse Ash Tank is to be discharged to BA Slurry pump house
28	Plot Plan	Settling and surge tank	Please confirm that 2 sets of Settling and surge tanks shown in the Plot Plan are independent tanks for BA overflow and Hydrobin, i.e., one set for Hydrobin and one set for BA overflow and balance drains.	Specification is clear.
29	SLD 9587-001(R)-POM-A-028 Rev. 1	Intermediate silo unloading	Six (6) feeder Ejectors are shown below the Intermediate silos. Please confirm that out of 6, 3 will be working and 3 standby to cater to 1 unit ash generation to dispose 8 hours ash generation in 6 hours.	Specification is clear. 2 Nos. IM Silos are working and 1 No. IM Silo is Standby
30	Plot Plan	Compressor House	The plot plan shows 2 compressor houses numbered 27 and 38. However, the list of building/equipment shows 38 as BA slurry PH. Please check and confirm.	No.38 assigned to Compressor house shall be ignored. It shall be read as 27A
31	Plot Plan	Building sizes	Please confirm the minimum sizes of various buildings to be considered.	Bidder to decide the building size
32	Buildings		Please confirm the type of buildings to be designed. As the civil scope does mention the type but the same is not elaborated in the specification.	The type of building is already specified in NTPC specification

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
33	Plot plan & Ammendment-1, clause MH-12	Ash Disposal Piping to dyke	The plot plan shows two routing of pipe. 1 towards the cooling tower and the other towards green belt 4. The flow diagram only shows combined ash slurry discharge as 1 number from each pump. Please confirm how many pipes are to be routed in each direction. If 4 pipes are to be routed in both directions, then what will be the valve configuration and type as MH-12 calls for only 4 valves at pumping stream discharge?	Refer Flow diagram for details
34	Slurry discharge and recovery pipe sizes	The spec calls for 500 NB disposal pipe and 600 NB recovery pipe	Please check and confirm the pipe sizes to be considered.	450NB for Combined slurry disposal pipe and 700NB for recovery water pipe shall be considered
35	Plot Plan	Slurry and recovery pipe routing upto terminal point	The specification shows pipe rack to be considered. The pipe rack is crossing channel at 2 places. Hence please confirm the width of the channel to enable us estimate the bridge requirement if any.	Details shall be provided during detail engineering
36	Equipment sizing criteria for combined ash & amendment – 1, Clause MH-10	Max. pumping distance – 17 KM.	We have noted that the Max. pumping distance upto S1/S2 dykes is to be considered as 17 KM. However, the amendment has removed the static rise to be considered for S1/S2 dykes which as per spec was mentioned as 26M. Hence please furnish the static rise to be considered or the top of Dyke RL with respect to Plant RL mentioned as 275.5 M in the plot plan. Please also confirm the route length for Khadiya dyke to enable us configure the slurry pump head.	Pump design conditions are already provided in Amendment No.1, MH-10

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
37	Pipe racks	BHEL pipes to be routed on AHP pipe racks	Please provide us the spacing, size and loading of the pipes and cable racks of other packages to be considered on AHP pipe racks to enable us consider the same in our pipe rack for disposal to S1/S2 & Khadiya dykes.	Refer Annexure-4 (Rev-01)
38			Similarly, please identify and furnish details for the other pipe racks also in bidder scope.	
39	Plot Plan	Terminal point for disposal pipes and recovery water pipes	Please provide us the co-ordinates of the terminal points to check the pipe length required to be supplied and erected.	The approximate co-ordinates are 731.750E/732.600N and 2054.320E/1065.00N.
40	BHEL Dwg No. IS-4-DC-774-300-M107 rev. 1	Bottom Ash Hopper	Please confirm that keeping the foundations and volume unchanged, bidder can change the BA hopper design to meet their discharge equipment requirement.	Noted.
41	SLD 9587-001(R)-POM-A-027 Rev. 1	Number of pipes feeding ash to main silos	Please check. The number of lines feeding ash to main silos should be 18 Nos. and not 12 numbers as shown in the SLD. Please confirm.	Confirmed
42	SLD 9587-001(R)-POM-A-025 Rev. 1	Slurry Sump Makeup	Please confirm if water make-up to the Slurry Sump can be taken directly from BHEL's make-up line to the Ash Water Sump.	No. Bidder to follow specification

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
43	Annexure-13 (15 as mentioned inside the file) – Guaranteed Power Consumption for AHP package S.No. A11 & A6	Power for TAC under Vac. System SLD 9587-001(R)-POM-A-029	Please confirm that TAC for pumping ash from classifier area to main silo under Vacuum System is not to be considered under Guaranteed power as the same is not mentioned in Annexure-13. Moreover, please also check the duty factor furnished with respect to NTPC specifications.	TAC for pumping ash from Classifier area is to be considered for both type of systems. Refer "Remarks" column. The duty factor of "1" is correct.
44			Please also check the number of slurry pumps in A6 which shall be 20 and not 12.	Specification is clear. 12 Nos. is the minimum requirement. Refer "Remarks" column
45	Mandatory Spares	Sub-section VI, chaptor-03: Ash Handling Plant	Please confirm that the Mandatory spares specified under this chapter-03 sheet nos. 1 to 12 only are to be considered in bidder's scope. In case any other spares are required, we request you to kindly provide a consolidated list.	Specification is clear. Relevant spares from other chapters also to be considered in bidder's scope
46	Sub-section-IIA-16, Page 4 of 17, clause no. C-2 (i)	2 stage pumping	2 stage pumping is specified for each stream, whereas in SLD – 25 only 1 pump is indicated. Please clarify the discrepancy.	Specification is clear. The Nos. shall be as per specification and system requirement
47	Sub-section-IIA-16, Page 4 of 17, clause no. C-2 (ii &iii)	Discharge piping	Please confirm that the entire discharge piping will be Basalt lined MS pipe	Refer NTPC Prebid queries Clarification Round 2, page 1 of 2
48	Sub-section-IIA-16, Page 4 of 17, clause no. C-2 (vi)	Dyke end valves	Please delete this clause as the dyke area piping is not included in the scope of supply.	Only supply of this item is in bidder's scope

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
49	Sub-section-IIA-16, Page 7 of 17, clause no. B (i)	Expansion Joints	Please note that the expansion joints are not applicable for the vacuum system as the valves are not supported from the ground. Whereas in the pressure system the vessels are supported from the ground and hence expansion bellows are provided to take care of the hopper movement.	Bidder to follow specification and flow diagram
50	General		In case pf pressure-pressure system, there will be 2 stage conveying, i.e. 100% ESP ash will be conveyed to Classifier silos and from classifier silos to Main Silos. Hence the duty factor for CAC and TAC will be 1, however in case of vacuum-cum-pressure system only 40% ash is being conveyed to Classifier and balance directly to Main Silo.	Query is not clear. Bidder to follow specification
51	SLD 9587-001(R)-POM-A-029 Rev. 2 Vacuum Conveying System		Please confirm that only 1 no. coarse fly ash hopper along with 3W + 2 S TAC are to be provided to cater to the requirement of Fine and coarse Ash transportation to the main silo for set of 2 units.	Flow diagram is clear
52	SLD 9587-001(R)-POM-A-029 Rev. 2 Pressure Conveying System		Please confirm that 2 no. coarse fly ash hopper along with 7W + 4 S TAC are to be provided to cater to the requirement of Fine and coarse Ash transportation to the main silo for set of 2 units.	Flow diagram is clear
53	General	Instrument Air	Please confirm that supply of IA compressors and Air receivers at various locations are in	IA compressors is not in bidder's scope. Refer Cl.3.7.1 of Technical conditions of contract for details

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
			BHEL scope and Not applicable for the bidders.	
54	Sub-section-IIA-16 sheet 11 of 17 clause no. 1.01.07 (xvii)	Two (2) ….. to ash slurry sump .. or to dyke ….	Please check the specified requirement as it is not feasible to pump the ash directly to dyke or the slurry sump which is approx. 1KM away. Please advise a suitable location where the said slurry can be disposed.	Bidder to follow specification. Refer NTPC Technical Clarification No.1, Page 26 of 31 for more clarity
55	General		Due to discrepancy in the specification on the number of streams to be provided for Combined Ash Slurry Disposal system, we request you to kindly confirm that the Number of streams to be provided and the number of pumps in each stream. Please also confirm if provision is to be provided for an additional future pump. Please also specify the type and number of valves to be considered at suction and discharge of the pumping stream.	Refer NTPC Technical Amendment No.1, MH-12
56	Sub-section-A-01: Equipment sizing criteria, pg. no. 80 of 92, cl. (L)	Specification calls for 30 minutes capacity	Please confirm that the ISH capacity shall be 30 minutes as specified and not 100 T.	Specification is clear. ISH and Intermediate Silo are different
57	General		Please provide the terminal points for water required for Vacuum Pump sealing along with pressure.	Bidder to refer Cl. 13.1.3 for terminal points

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
58	Annexure-3 - Electrical, Control & Instrumentation Scope Matrix, Rev 0 dated 08.04.2025 S.No. 1.a.	Only 2 Nos of 11KV uncabled Feeder shall be provided by BHEL to bidder for Common AHP application at two locations as mentioned below:	As per Electrical SLD for Auxiliary Power Distribution, dwg. No. PE-DG-512-565-E001, REV 0., we presume that these feeders are 11/3.45KV AHP Transformers.	These feeders are for incoming power supply of Bidders 11kV Switchboard. Annexure-3B_ESLD Tentative has been withdrawn.
59		Maximum MVA Available (including BHEL 4 nos of 11kV Transformer feeder): 24.0 MVA (which includes loading of 5.6 MVA of 4 nos of 11KV Transformer feeder of BHEL PEM use).	As per the referred clause, presuming MVA available for AHP will be 12.8MVA (24-2 x 5.6 = 12.8MVA), please confirm, if understanding is correct.	Bidder understanding is not correct. As per Specification it is very clear that Maximum MVA Available for AHP = 24.0 MVA (including BHEL 4 nos of 11kV Transformer feeder) – 5.6MVA (of 4 nos of 11KV Transformer feeder of BHEL PEM use) = 18.4 MVA.
60	Annexure-3 - Electrical, Control & Instrumentation Scope Matrix, Rev 0 dated 08.04.2025 S.No. 1.b.	Only 4 No's of 11KV uncabled Feeder shall be provided by BHEL to bidder for Unitized AHP 11/0.415kV Transformer application at two locations as mentioned below:	As per Electrical SLD for Auxiliary Power Distribution, dwg. No. PE-DG-512-565-E001, sh 3 of 3, REV 0. we presume that these feeders are 11/0.433KV AHP Transformers. for 415V U#8 & U#9 AHP PMCCs. These feeders will be from 11KV Switchgear: 8UA/8UB/9UA/9UB Please confirm.	Noted these feeders are for 11/0.433kV Transformer application. Annexure-3B_ESLD Tentative has been withdrawn. Please refer "Annexure-3 AHP Electrical Singrauli scope matrix" for Location of 11kV Switchgear.
61		Maximum MVA Available: 1.7MVA for each unitized AHP Board	Noted.	Point Closed
62	Annexure-3 - Electrical, Control & Instrumentation Scope Matrix, Rev 0 dated 08.04.2025 S.No. 1.c.	Only 2 No's of 11KV Feeder shall be provided by BHEL to bidder for Silo area AHP 11/0.415kV Transformer application at two locations as mentioned below:	We are presuming these feeders are for Silo Area, and will be available in 11KV Switchgear 8SA & 8SB, please confirm.	Noted these feeders are for 11/0.433kV Silo area Transformer application. Annexure-3B_ESLD Tentative has been withdrawn.

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
				Please refer "Annexure-3 AHP Electrical Singrauli scope matrix" for Location of 11kV Switchgear.
63		Maximum MVA Available: 2.15MVA for Silo Area	Noted.	Point Closed
64	Annexure-3 - Electrical, Control & Instrumentation Scope Matrix, Rev 0 dated 08.04.2025 S.No. 1.d.	Bidder shall provide min. 2 Nos. uncabled feeders each of 250A, 100A, 63A, 32A, 16A rating (1 No in in I/C-1 and 1 No in I/C-2) in all 415V PMCC boards supplied by Bidder for BHEL use. These loads also shall be considered by bidder for transformer sizing.	Please indicate the KVA to be considered for these feeders, while sizing the Transformer.	Total BHEL load of 100 KVA to be considered for transformer sizing.
65	Annexure-3 - Electrical, Control & Instrumentation Scope Matrix, Rev 0 dated 08.04.2025	Supply of DCS, UPS, 24V DC system in bidders scope and bidder to procure the DCS and VMS from EDN	Please Confirm whether BHEL-EDN manufacturing VMS, as mentioned in the clause that to be supplied from BHEL-EDN	Bidder to refer Clause no 3.54 and 3.55 of TCC.
66		Supply of DCS, UPS, 24V DC system in bidders scope and bidder to procure the DCS and VMS from EDN since NTPC tender condition calls for the same make DCS, VMS etc. as that of SG, BTG	As DCS for all the BOP packages will be from BHEL-EDN, unit rates for various components can be fixed by BHEL-EDN and shared along with the replies to various clarifications, so that he Bidder can calculate the Cost for DCS.	Tender Conditions Prevail
67			Also, please share the contact details for DCS in BHEL-EDN, so that we can discuss/ co-ordinate.	Tender Conditions Prevail

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
68			Please confirm 11/3.45KV Transformer along with SPBD for AHP will be in BHEL scope.	Bidder Understanding is not correct. 11/3.45KV Transformer along with SPBD for AHP is in the scope of Bidder. Please refer "Annexure-3 AHP Electrical Singrauli scope matrix" for details.
69	ESLD for Auxiliary Poert Distribution, dwg. No. PE-DG-512-565-E001, sh 3 of 3		As per referred ESLD 2 Nos. 11KV Feeders mentioned from 11KV Switchgear ie OBF (Bus-A) and OBF (Bus -B) for 11/0.433KV Transformers for 415V AHP PMCC01, but not mentioned in the Scope Matrix, please clarify	Annexure-3B_ESLD Tentative has been withdrawn. Please refer "Annexure-3 AHP Electrical Singrauli scope matrix" for details.
70			As per referred ESLD 2 Nos. 11KV Feeders mentioned from 11KV Switchgear ie OBF (Bus-A) and OBF (Bus -B) for 11/0.433KV Transformers for 415V AHP PMCC02, but not mentioned in the Scope Matrix, please Clarify.	Annexure-3B_ESLD Tentative has been withdrawn. Please refer "Annexure-3 AHP Electrical Singrauli scope matrix" for details.
71	Annexure-3C- Feeder Availability List		As per note -1 & 2 : 11KV & 3.3KV board for AHP feeders will be supplied by BHEL with required no. of feeders	Annexure-3C_Singrauli Feeder Availability AHP Rev-00 has been withdrawn. 11KV board for AHP feeders including BHEL use feeders & 3.3KV board for AHP feeders are in Bidders scope.

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
72			In 11KV HT Board to be considered in AHP MCC, 4 nos. Incoming for 11/415V transformer for AHP for Bidder use mentioned, please clarify the use of these feeders.	Annexure-3C_Singrauli Feeder Availability AHP Rev-00 has been withdrawn Please refer "Annexure-3 AHP Electrical Singrauli scope matrix" for details.
73	SECTION – VI, PART-A BID DOC. NO. CS-1150-001(R)-2, cl. F3.00.00	Contractor shall provide fixed cameras (High Definition-HD) for monitoring ash accumulation above furnace S-panel area and in bottom ash hoppers.	Please suggest the model no. & Make, if in Bidder's scope. Normally the cameras are in BHEL scope as in earlier projects.	Bidder to follow NTPC specifications.
74	Tools & Tackles		There are no special tools and tackles required for AHP package. Please confirm, hence confirm requirement if any.	Special tools and tackles if required for the system, same to be supplied by bidder
75	BHEL Doc. Furnishing Ash Distribution Data in various fields of ESP		Please confirm that the Ash generation rates furnished in BHEL document are to be considered for system design. Under Case-II on page 5/9, the ash removal capacity of line from 4^{th} to 10^{th} Fields works out to be 42 TPH. Please confirm. Moreover, under the above case, the coarse ash will get carried over to 4^{th} field, hence lines from the 4^{th} field also should be fed to the classifier silo as instead of directly to the fine ash silo. Please check the requirement and confirm.	Specification is clear. Only Fine ash shall be taken to fine ash hopper.
76	NIT-PQR A.1	a) Wet Bottom Ash handling system comprising either a jet pump system in conjunction with water impounded Bottom Ash Hopper or a submerged	Bidder having reference installations meeting PQR condition against both type of systems – Jet pump as well as Submerged Scraper shall be allowed to submit the PQR credentials for	Bidder to follow specifications and provide the details along with the tender

Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
		Scraper Chain Conveyor system designed for the following conveying capacities for pulverized coal fired boilers: • Jet Pump System :50 tonnes/hour (dry ash basis) or more per jet pump. • Submerged Scraper :20 tonnes/hour (dry ash basis) Scrapper Chain Conveyor System or more per Conveyor. The reference Bottom Ash Handling systems should be of the same type i.e. jet pump system or submerged scraper chain conveyor system as is being offered by the Bidder	both type of systems. Bidder understands that the type of system shall be selected at the discretion of the bidder during detailed engineering, based on his fulfilling the PQR criteria, in line with the BHEL's bid to NTPC, without having any impact to BHEL on account of commercial/guaranteed power consumption. Please clarify our understanding is correct.	
77	Appendix-2_PVC, Sl. No. (vii), Page 3 of 19	"For the indices, subscript 'o' refers to indices as on 30 days prior to date set for Submission of Bids",	Appendix-2, Sl. No. (vii), Page 3 of 19, It is mentioned "For the indices, subscript 'o' refers to indices as on 30 days prior to date set for Submission of Bids", whereas at Page 12 of 19, the duration period is not mentioned in the Table "Value of Base Date Indices (Bid Submission Date)". Please confirm.	Value of Base Date Indices shall be Bid Submission Date.
78	TCC. Ch-III, Cl. No.: 3.29	Approach road, Chipping and Levelling/ Grading near erection location is in Bidder scope.	1. Please provide the scope of approach road duly marked on layout. Please provide the plant road layout drg. 2. We understand that the owner will provide the leveled area to bidders. Only micro leveling as required shall be in the bidder's scope.	1. Main roads developed from BHEL are attached for reference: Bidder to develop necessary approach roads for facilities including culvert for main road drain crossing, and necessary dismantling and finishing of main road drain to merger the approach

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
				road drains. Main Roads and approach roads at fly ash silo area complex and its facilities shall be developed by bidder. 2. Levelled area shall be provided to bidders, only micro leveling / grading up to +/- 500 mm shall be in the scope of bidder.
79	TCC. Ch-III, Cl. No.: 3.27	The Following sludges shall be discharged to ash slurry sump -----	Please clarify sludges shall be discharged to BASPH sump or CASPH sump.	The sludges are to be discharged to BASPH or CASPH as per the operation methodology to be decided during detailed engg.
80	TCC. Ch-III, Cl. No.: 3.7.3	Miscellaneous Equipment: Bidder to note that some of the pipes and cable trays of BHEL shall be routed in the pipe rack to be provided by the bidder. The tentative details is provided in Annexure-4.	BHEL scope pipe and cable tray not marked in drawing. Please provide the same.	Refer Annexure-4 (Rev-01)
81	Details of facilities to be dismantled - Annexure-P(R0)	Scope of Dismantling:By NTPC/ EPC Vendor	Please clarify the scope of AHP bidder. As per query no 3 above only micro leveling as required shall be in the bidder's scope.	For Dismantling: Dismantling and safe disposal of existing structures in AHP work area as per requirement shall be in the scope of EPC bidder. The scope of dismantling as per NTPC Tender and GPR Survey report for dismantling works is attached herewith for bidder's reference. For Levelling & Grading: BHEL shall provide levelled area to bidder, however micro levelling and grading

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
				for roads, pavements, area development etc. up to FGL as per drawing requirements shall be in the scope of bidder.
82	Tech. Specs., Section-VI, Part-B, Sub-Section-D-1-5, Civil Works, Cl. No.: 5.05.01, Page No.: 23 of 127	The civil works for Ash handling----------For the ballast-less rail track under silo area complex a 4.0m wide area (2.0 m either side of centre line of railway track) shall be left unpaved along the rail track in complete silo area complex same shall be constructed by railway siding agency----------	From Plot Plan, it appears that there are three railway lines passing though FA Silo area. One railway line passes beneath FA Silo and others pass adjacent to FA Silo but on the paving area. Please clarify whether the area adjacent to FA Silo to be left unpaved considering the nearby railway lines.	The area adjacent to FA silo to be paved and extent of paving depends on the AHP facilities and truck movement. This shall be finalized during detail Engineering.
83	General		We understand that paving at BAH area is in BHEL scope. Please clarify.	All foundations for AHP systems in side the boiler area are to be executed by AHP EPC bidder. However only Paving in BAH area is in BHEL scope.
84	Plot Plan	Pipe Corridor to FA Silo area	Nala and Railway lines are showing in FA Pipe Rack corridor. Please provide 1. Detail drawing of Nala showing its width 2. Detail drawing of Railway line The above details are required for considering pipe rack footing in this area.	Bidder to access the required details by conducting detailed survey.

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
85	Plot Plan	Slurry Pipeline from CASPH to Khadiya showing on pedestal below pipe rack.	Please provide detailed drawings of the pipe rack (by others) so that we can plan pedestals below the pipe rack.	Drawing of pipe rack are not available at this stage, Detail will be provided during detail engineering
86	Plot Plan	Slurry Pipeline from CASPH to Khadiya dyke	Slurry Pipeline from CASPH to Khadiya dyke is showing on pedestal after Grid 1400E. Please clarify culverts or pipe rack to be considered for road crossing after Grid 1400E.	Required crossings in the form of culverts, pipe racks to be considered by bidder.
87	Plot Plan	Slurry Pipeline from CASPH to S1/S2 and Khadiya dyke	Please provide the bidder scope terminal point for Slurry Pipeline from CASPH to S1/S2 and Khadiya dyke.	The approximate co-ordinates are 731.750E/732.600N and 2054.320E/1065.00N.
88	Plot Plan	Bottom Ash Slurry Pipeline from BAH to BASPH	We understand that slurry pipe from BAH up to M-N row shall be on pedestal. From M-N row up to BASPH on duct supporting structure. Duct supporting structure shall be supplied by others. Please clarify whether our understanding is correct. If yes, please provide a clear corridor for AHP Pipe and cable tray on duct supporting structure at M-N row. Also specify the supply scope for secondary steel supports for AHP Pipe and cable tray. If not, please provide Bottom Ash Slurry Pipeline corridor from BAH to BASPH.	Slurry pedestal on boiler area shall be on ground pedestal/pipe rack . The pipe supporting structure/platform for AHP system in the front and rear side ESP is in the scope of the bidder. The bidder can take the support from the BHEL ID structure columns only, for framing the pipe supports. If BHEL columns are not available, bidder has to consider separate columns.

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
89	Plot Plan	Fly Ash Pipeline from ESP to Classifier or IM Silo	We understand that Fly Ash pipe from ESP to Classifier or IM Silo at T-U row shall be supported on duct supporting structure. Duct supporting structure shall be supplied by others. Please provide a clear corridor for AHP Pipe and cable tray on duct supporting structure at T-U row. Also specify the supply scope for secondary steel support for AHP Pipe and cable tray.	Slurry pedestal on boiler area shall be on ground pedestal. The pipe supporting structure/platform for AHP system in the front and rear side ESP is in the scope of the bidder. The bidder can take the support from the BHEL ID structure columns only, for framing the pipe supports. If BHEL columns are not available, bidder has to consider separate columns.
90	Flow Diagram (9587-001(R)-POM-A-025), R1	Slurry line from Coarse ash Tank is marked as 'to Ash Slurry Sump'	Please clarify whether the slurry line from Coarse Ash Tank is to be discharged to BASPH or CASPH.	The slurry line from Coarse Ash Tank is to be discharged to BASPH.
91	Flow Diagram (9587-001(R)-POM-A-028), R1	IM Silo	We understand the 3 nos IM silos are common for both units and the capacity of the IM silos are 100MT each. Please confirm.	Bidder to follow NTPC specs which is clear.
92	Flow Diagram (9587-001(R)-POM-A-029), R2	Fine ash as well as Coarse ash Hoppers below classifier	Please clarify whether these silos are in RCC or MS construction.	IM silos are of steel construction, with concrete roof and necessary roof treatment to make it leak proof.
93	Flow Diagram (9587-001(R)-POM-A-027), R1	FA slurry system	Please clarify whether FA slurry should be transported via trench or thru pipes upto CASPH. If thru trench please provide the foundation details of ESP columns.	Both the options are allowed. However, the details will be provided during detailed engg.

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
94	Tech. Amendment-01, S. No.: MH-10	(i) Elevation of top of ash dyke: RL 300.2m Ultimate Khariya Dyke height (ii) Maximum pumping distance – 17km (including garlanding for S1/S2)	Please specify the slurry route length & static lift for slurry pump head selection for Khariya as well as S/S2 dyke.	Design conditions are already provided in Tech. Amendment No.01, MH-10
95	ANNEXURE-3-ELECTRICAL, CONTROL AND INSTRUMENTATION SCOPE MATRIXRemarks -1	Bidder shall provide min. 2 Nos. uncabled feeders each of 250A, 100A, 63A, 32A, 16A rating (1 No in in I/C-1 and 1 No in I/C-2) in all 415V PMCC boards supplied by Bidder for BHEL use. These loads also shall be considered by bidder for transformer sizing.	Please provide the BHEL Connected Load so that transformer Sizing shall be done accordingly.	Total BHEL load of 100 KVA to be considered for transformer sizing.
96	ANNEXURE-3-ELECTRICAL, CONTROL AND INSTRUMENTATION SCOPE MATRIX Sr. No. 1. b)	b)Only 4 No's of 11KV uncabled Feeder shall be provided by BHEL to bidder for Unitized AHP 11/0.415kV Transformer application at two locations as mentioned below:Location-1: Two feeders at MV Switchgear room at EL.4.0M from A-row to C-row between grid-2 to Grid-4.Location-2: Two feeders at MV Switchgear room at EL.4.0M from A-row to C-row between grid-15 to Grid-17.Maximum MVA Available: 1.7MVA for each unitized AHP Board	As Each unitized MCC is having very less connected load around 250 KVA (in each Unit) excluding BHEL connected Load. So, It is proposed that these loads should be merged in AHP MCC-1 or MCC-2 To reduce the 11/0.415 KV LT Transformers, HT cables and Outgoing feeders in 11KV Switchboard. These Load distributions shall be done during detailed engineering.	Bidder to follow tender specifications
97	ANNEXURE-3-ELECTRICAL, CONTROL AND INSTRUMENTATION SCOPE MATRIX	Location of 11KV Board	We understand that 11KV board will be accommodated in the CHP MCC-3 cum AHP MCC-2 room. Please confirm.	Bidder to follow the layout of CHP MCC-3 Cum AHP MCC-2 building as per Annexure-3H.

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Sl. No.	Section/Clause No	Specification	Bidder's Query	BHEL Clarification
98	ANNEXURE-3-ELECTRICAL, CONTROL AND INSTRUMENTATION SCOPE MATRIX Remarks - One Common MCC building (CHP MCC-3 cum AHP MCC-2)	3. 220V DC battery, charger with DCDB considered in this building by BHEL. However, cable & cabling between BHEL DCDB & bidder equipments is in the scope of bidder. Bidder load limited to this building only considered in this DC system.	Fly Ash silo area MCC is having very low load. So, it is proposed that 2 nos outgoing feeder shall be provided by in DCDB placed in CHP MCC-3 cum AHP MCC-2 Building. Further from DCDB to silo area MCC cable to be laid by Bidder. Please confirm.	Not acceptable. Bidder to consider separate DC system for Silo area as per NTPC specification.
99	ANNEXURE-3-ELECTRICAL, CONTROL AND INSTRUMENTATION SCOPE MATRIX Sr. No. 4	For estimation, the Bidder may take 10 % of the total capacity of the Solar Plant Defined for the Singrauli Project as a whole. Further before placement of the order, Bidder to ensure that the	Solar system above CHP MCC-3 Cum AHP MCC-2 Building shall be taken care by BHEL. Bidder will consider Solar system in Bidder constructed Buildings only. Please confirm.	Bidder Understanding is correct.

Note:

1) **All other terms and conditions against this NIT shall remain unchanged.**
2) **This corrigendum is to be submitted duly signed and stamped along with the Techno-commercial bid (Part- I).**

for BHARAT HEAVY ELECTRICALS LTD
Sr. Manager/ SCT

ANNEXURE-3-ELECTRICAL, CONTROL AND INSTRUMENTATION SCOPE MATRIX FOR 2X800 MW NTPC SINGRAULI AHP

Rev: 01
Dated: 08-05-2025

BROAD SCOPE: The scope for complete Ash handling system shall include complete design, engineering, manufacture/supply, shop fabrication, assembly, testing & inspection at manufacturer's works, maintenance tools & tackles, spares for erection, start-up and commissioning as required, fill of lubricants & consumables, packing, despatch, transportation, delivery to site, unloading, handling & storage at site, construction of Stores at site (Open & Closed), round the clock security at open storage yard , closed storage shed & erected material till completion of work, construction, erection, its supervision, testing ,inspection, commissioning and handing over to Owner and Guarantee testing, including all associated Mechanical, all auxiliary systems, Civil & Structural Steel Works, Architectural Works, Electrical, Control & Instrumentation Works as specified in tender specification, amendments & agreements till placement of order & as necessary for completeness in all respects and for efficient & trouble free operation for 2X800 MW NTPC SINGRAULI

SL. NO.	SCOPE DETAILS	INPUT DETAILS	ENGINEERING / DESIGN	SUPPLY	RECEIPT, UNLOADING, STORAGE, ERECTION, TESTING, COMMISSIONING	REMARKS
1	Complete Electrical and C&I System for Ash Handling System. Note: a)Only 2 No of 11KV uncabled Feeder shall be provided by BHEL to bidder for Common AHP application at two locations as mentioned below: Location-1: One feeder at MV Switchgear room at EL.4.0M from A-row to C-row between grid-2 to Grid-4. Location-2: Second feeder at MV Switchgear room at EL.4.0M from A-row to C-row between grid-15 to Grid-17. Maximum MVA Available (including BHEL 4 nos of 11kV Transformer feeder): 24.0 MVA (which includes loading of 5.6 MVA of 4 nos of 11KV Transformer feeder of BHEL PEM use). b)Only 4 No's of 11KV uncabled Feeder shall be provided by BHEL to bidder for Unitized AHP 11/0.415kV Transformer application at two locations as mentioned below: Location-1: Two feeders at MV Switchgear room at EL.4.0M from A-row to C-row between grid-2 to Grid-4. Location-2: Two feeders at MV Switchgear room at EL.4.0M from A-row to C-row between grid-15 to Grid-17. Maximum MVA Available: 1.7MVA for each unitized AHP Board c) Only 2 No's of 11KV Feeder shall be provided by BHEL to bidder for Silo area AHP 11/0.415kV Transformer application at two locations as mentioned below: Location-1: One feeder at MV Switchgear room at EL.4.0M from A-row to C-row between grid-2 to Grid-4. Location-2: Second feeder at MV Switchgear room at EL.4.0M from A-row to C-row between grid-15 to Grid-17. Maximum MVA Available: 2.15MVA for Silo Area	AHP EPC Bidder	AHP EPC Bidder	AHP EPC Bidder	AHP EPC Bidder	Bidder shall provide min. 2 Nos. uncabled feeders each of 250A, 100A, 63A, 32A, 16A rating (1 No in in I/C-1 and 1 No in I/C-2) in all 415V PMCC boards supplied by Bidder for BHEL use. These loads also shall be considered by bidder for transformer sizing. Bidder shall provide 3 Nos. uncabled Transformer feeders in AHP 11kV board for 2500kVA Transformer for BHEL PEM use. These loads also shall be considered by bidder for 11kV Board sizing. Actual MVA Load 4300 KVA for these 3no. feeders to be considered.**Cable tray/Supports/earthing within the bidders switchgear building is in the scope of bidder.** Bidder shall provide 1 Nos. uncabled Transformer feeders in AHP 11kV board for 1600kVA Transformer for BHEL PEM use. These loads also shall be considered by bidder for 11kV Board sizing. Actual MVA Load 1260 KVA for this 1 no feeder.**Cable tray/Supports/earthing within the bidders switchgear building is in the scope of bidder** Bidder shall provide the Illumination, Earthing, Lightning protection for all areas where Civil & structural is in bidder scope. The interconnection between Bidders earthing and Existing/Main earth grid is in Bidder scope. Wherever integration of bidder supplied items with BHEL supplied system is involved, necessary integration shall be done by the bidder. **Bidder to co-ordinate with BHEL-PEM for the Civil inputs required in Centralised Offsite Control Room for AHP system equipment's.** Obtaining Statutory clearance is in Bidders scope.
						Plot Plan: Quantity & location of AHP MCC buildings marked in plot plan is tentative only . Bidder to decide the Quantity and locations of MCC buildings without disturbing other facilities of BHEL . Cable trestle/rack/pedestals required as below in is bidders scope. 1. For all bidders facilities . 2. For BHEL facilities located in bidder buildings **Please refer plot plan Annexure 4 for further details and scope demarcation.** Connection between oil retention pit(Bidders scope of Transformer) to common oil retention pit located in main plant area is in bidders scope. Bidder shall maintain WORK PERMIT ISSUE / CANCELLATION Slips for all types of Electrical Isolation & Service resuming. Bidder shall maintain , Safety Log book for Clearance with signatures of all concerned engineers from Site operations, Mechanical, Electrical and C&I department of Bidder & BHEL for all types of drive /system Operations from DCS . Standard SAFE ELECTRICAL OPERATION procedures to be followed strictly by bidder.
						One Common MCC building (CHP MCC-3 cum AHP MCC) for CHP and AHP system is considered near TP-21 and location is marked in the plot plan. Equipment layout of this building is in BHELs scope . Tentative Equipment layout enclosed for reference **(Annexure-3H Tentative Equipment layout Common MCC building (CHP MCC-3 cum AHP MCC)** and space allotted for AHP bidder facilities inside this building is categorically mentioned . Bidder to note that no additional space in this common MCC building shall be provided for bidder. Interconnecting Cable rack between BHEL common MCC and Bidders cable rack for AHP shall be in bidders scope. The following which are required for the common Building (CHP MCC-3 cum AHP MCC) are excluded from bidders scope; 1. AC and Ventilation . However heat load of Bidders equipments to be furnished by bidder along with offer. 2. Illumination for this building. 4 No's of 32A O/G feeder considered in BHEL MLDB for bidder use for any Illumination work by bidder near by this building. However Bidder shall provide 2 No's of 32A O/G feeders in Bidder MLDB in SILO area for BHEL use . 3. 220V DC battery, charger with DCDB considered in this building by BHEL. However, cable & cabling between BHEL DCDB & bidder equipments is in the scope of bidder. Bidder load limited to this building only considered in this DC system. 4. Building periphery earthing , Floor grid of this common building. However Earthing of Bidders supplied equipment in this common building to near BHEL grid is in Bidders scope. 5. Cable trays & support in this common building .Bidder to provide BOQ of cable trays & supports for Bidders requirement along with offer. Cable laying is bidders scope for bidder supplied equipments. Base frame , channels, angles, conduits/pipes , transformer related rails , channels/flats required for transformer withdrawal , fencing , soak pits or any other supporting arrangement required for Bidders equipment in the common MCC building is in the scope of bidder.
						Security of all equipment's till handing over to end customer is in scope of bidder. Suppliers Finalization: Bidder to follow Customer referred sub vendor list of Elec/ C&I items which is part of NIT. In case of requirement of any new make, bidder shall submit Vendor list with credential. Approval of vendors is subject to Customer/BHEL approval. Bidder is fully responsible in preparation and getting certification for the Erection, Testing & Commissioning protocols from the end customer. The protocols shall be made for every equipment / system where E&C is in Bidder scope.
2	Interface with upstream breaker at 11KV System	BHEL-PEM	AHP EPC Bidder	AHP EPC Bidder	AHP EPC Bidder	
3	PA System	BHEL	BHEL	BHEL	BHEL	In Scope of BHEL
4	Roof Top Solar System	BHEL-SBD/RUDRAPUR	AHP EPC Bidder	AHP EPC Bidder	AHP EPC Bidder	For estimation, the Bidder may take 10 % of the total capacity of the Solar Plant Defined for the Singrauli Project as a whole. Further before placement of the order, Bidder to ensure that the items thus procured shall be of the same make as installed in the main Plant area supplied by BHEL.
5	DCS, VMS, UPS, 24V DC System	BHEL-EDN/ AHP EPC Bidder	AHP EPC Bidder	AHP EPC Bidder	AHP EPC Bidder	Supply of DCS, UPS, 24V DC system in bidders scope and bidder to procure the DCS and VMS from EDN since NTPC tender condition calls for the same make DCS, VMS etc as that of SG, BTG package
6	CCVM System	BHEL	BHEL	BHEL	BHEL	In Scope of BHEL
7	Fire Fighting and FDA System	BHEL	BHEL	BHEL	BHEL	Power supply feeders (as per Anexxure-3D) and Power Cable & Cabling for these power supplies are in the scope of bidder .
8	HT Motors (except for compressors and any VFD/HCSD/Classifier application)	AHP-EPC Bidder	BHEL	BHEL	AHP EPC Bidder	Supply of all HT motors (except for Compressors and any VFD/HCSD/Classifier application, if applicable) are excluded from bidder's scope. However, Erection, Testing, Commissioing and alignment with drives is in the scope of bidder. Supply of consumable & lubrication (like grease) for BHEL supplied motors is in the scope of bidder. Temperature transmitter along with JB and Cabling(including supply of cables) is in bidder's scope for all HT motors supplied by BHEL. Before shifting from store yard to site, bidder shall conduct testing of motor. In case of any fault during Operation, and if BHEL suggests for repair in factory premises, bidder shall decouple/ remove the motor and shift to BHEL store yard. After repair, bidder shall again unload, test and erect the motor. Regular IR checks to be done in the storage also.
9	ESP Hopper Level	BHEL-RANIPET	BHEL-RANIPET	BHEL-RANIPET	BHEL-RANIPET	ESP hopper High & Low level switches and Level Scanner (First to Third Field) and wiring up to Junction Box/ ESP MCC are excluded from bidder scope. However, Cable & Cabling from Junction Box/ ESP MCC to AHP DCS is in the scope of bidder. IO's for the above shall be considered in bidder supplied AHP DCS.
10	APH/ECO/DUCT/SCR Hopper Level	BHEL-TRICHY	BHEL-TRICHY	BHEL-TRICHY	BHEL-TRICHY	Level switches for Economizer / APH hoppers/Duct Hopper are excluded from bidder scope. However, Cable & Cabling from Level Switches/ Junction Boxis in the scope of bidder. IO's for the above shall be considered in bidder supplied AHP DCS.
11	C&I along with DCS for AWRS System and further interfacing with AHP DCS system	BHEL-EDN/ AHP EPC Bidder	AHP-EPC Bidder	AHP-EPC Bidder	AHP-EPC Bidder	Bidder to refer customer NIT specification for scope clarity.

Name of BHEL UNIT for coordination with bidder of various system applicable to AHP

Sl No	System	BHEL-Unit
1	Plot Plan with Switchgear location, cable routing, earthing, illumination etc for AHP	BHEL-ISG /**BHEL PEM**
2	Electrical and C&I system other than below listed	BHEL-ISG
3	Design and integration of 3.3KV and 11KV system along with upstream breaker interface	BHEL-PEM
4	DCS, VMS, UPS, 24V DC System	BHEL-EDN
5	CCVM System	BHEL-EDN
6	PA System	BHEL-EDN
7	Fire Fighting and FDA system	BHEL-PE&SD
8	Roof Top Solar System	BHEL-SBD/Rudrapur
9	HT Motors except for compressors and any VFD/HCSD/Classifier application	BHEL-Bhopal

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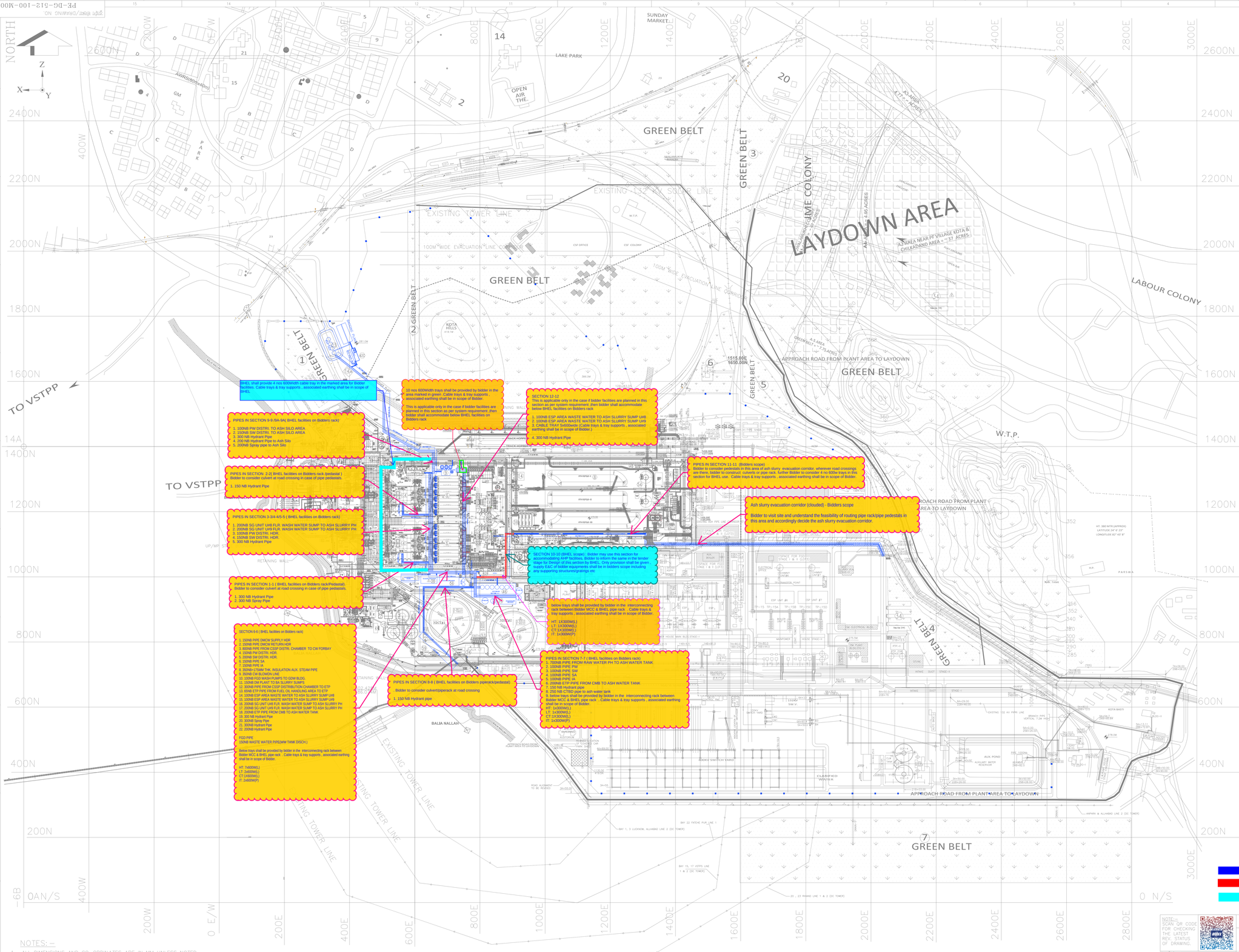

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
1.	Section - II (ITB)	10.4 (d) (ii)	18 of 46	Bidders are advised to price their bids in such a manner that the Civil Works Price Component of the bid price (including Site Fabricated Structural works price) should not be less than 20% and should not be more than 30% of the cumulative total of FOB Price of Main Equipment indicated in Schedule No.1 and Ex-works Price of Main Equipment indicated in Schedule No.2.	Keeping such restriction in pricing will impact the bidders' cashflows and the bidders will be forced to change the price breakup with respect to actual expenses. Further, cost of Civil Works mainly depends on various factors including soil parameters, material and labour rates, etc. and not on the price of main equipment only. We, therefore, request Employer to kindly delete this restrictive provision and allow bidders to specify the breakup based on their experience/estimate.	Provisions of Bidding Documents shall prevail
2.	Section-II (ITB)	27.3	34 of 46	Employer reserves the right to vary the quantity of any of the Spares and/or delete any item of Spares altogether at the time of Award of Contract. Further, NTPC may place the award for any mandatory spares with NOA and/or within Five years from the date of NOA as per mutually agreed despatch schedule and as per the price	We request Employer to finalize the quantity of spares during bidding stage. Further, we request Employer to kindly award the Mandatory Spares at the time of NOA along with the Main Equipment.	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				quoted by the bidder in their bid in accordance with the relevant clauses.	If, any mandatory spares are not awarded at the time of NOA along with the Main Equipment, in such case, the dispatch schedule and price for such mandatory spares shall be discussed and agreed between both the parties as no escalation formulae can give a fair & correct estimation of prices for such a long duration.	
3.	Section-V (SCC)	5.2 *[GCC Clause-7.3.1.9]*	3 of 11	**Replace Existing GCC Clause with the following:** …… Ex-works order price of future spares shall be computed in accordance with the price adjustment provisions covered under the main Contract and there will be no ceiling on the amount of variation in the prices. The above option for procuring future recommended spares by the Employer shall remain valid for the period of 5 years from the date of Commissioning of the equipment.		
4.	Section-IV (GCC)	40.1	69 of 85	The Time(s) for Completion specified in the SCC shall be extended if the Contractor is delayed or impeded in the performance of any of its obligations under the Contract by reason of any of the following:: (a) …….. (b) …….. (c) ……..	In addition of time extension, we request Employer to introduce provision for suitable overstay compensation in addition to the Contract Price in case there is any delay or default or breach of the Contract due to reasons not attributable to the Contractor.	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				(d) …….. (e) any default or breach of the Contract by the Employer, specifically including failure to supply the items listed in Appendix 6 (Scope of Works and Supply by the Employer) to the Contract Agreement, or any activity, act or omission of any other contractors employed by the Employer or failure to give possession of site under GCC Clause 10.2. (f) …….. by such period as shall be fair and reasonable in all the circumstances and as shall fairly reflect the delay or impediment sustained by the Contractor.		
5.	Section-IV (GCC)	16.5	34 of 85	The provisions of this GCC Clause 16 shall survive termination, for whatever reason, of the Contract.	We request Employer to modify the clause as follows as all the provisions of Contract should have some end date: The provisions of this GCC Clause 16 shall survive **till one (1) year after** termination, for whatever reason, of the Contract.	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
6.	Section-IV (GCC)	27.8	55 of 85	If the Facilities or any part thereof cannot be used by reason of such defect and/or making good of such defect, the Defect Liability Period of the Facilities or such part, as the case may be, shall be extended by a period equal to the period during which the Facilities or such part cannot be used by the Employer because of any of the aforesaid reasons. Upon correction of the defects in the Facilities or any part thereof by repair/replacement, such repair/replacement shall have the Defect Liability Period extended by a period of twelve (12) month from the time such replacement/repair of the Facilities or any part thereof.	We request Employer to modify the clause as follows: If the Facilities or any part thereof cannot be used by reason of such defect and/or making good of such defect, the Defect Liability Period of the Facilities or such part, as the case may be, shall be extended by a period equal to the period during which the Facilities or such part cannot be used by the Employer because of any of the aforesaid reasons. ~~**Upon correction of the defects in the Facilities or any part thereof by repair/ replacement, such repair/ replacement shall have the Defect Liability Period extended by a period of twelve (12) month from the time such replacement/repair of the Facilities or any part thereof.**~~	Provisions of Bidding Documents shall prevail
7.	Section-IV (GCC)	27.8	55 of 85	…. Upon correction of the defects in the Facilities or any part thereof by repair/ replacement, such repair/replacement	Liabilities of Contractor should be finite and shall have sunset clause.	Provisions of Bidding

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				shall have the Defect Liability Period extended by a period of twelve (12) month from the time such replacement/repair of the Facilities or any part thereof..	We, therefore, request Employer to modify the referred provision as follows: …. Upon correction of the defects in the Facilities or any part thereof by repair/ replacement, such repair/replacement shall have the Defect Liability Period extended by a period of twelve (12) month from the time such replacement/repair of the Facilities or any part thereof **& in no event the Defect Liability period of repaired/ replacement part shall exceed twenty-four (24) months from the date of the commencement of the original Defect Liability Period.**	Documents shall prevail
8.	Section-IV (GCC)	27.8.1	55 of 85	At the end of the Defects Liability Period, the contractor liability ceases except for latent defects. The contractor's liability for latent defects warranty shall be limited to a period of five (5) years from the end of Defect Liability Period.	We request Employer to modify the clause as follows: At the end of the Defects Liability Period, the contractor liability ceases except for latent defects. The contractor's liability for latent defects	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					warranty shall be limited to a period of five (5) years from ~~**the end of Defect Liability Period**~~ **Completion of Facilities**.	
9.	Section-IV (GCC)	31.2	58 of 85	Ownership of the Plant and Equipment (including spare parts) quoted in Schedule-2 shall be transferred to the Employer when the Plant and Equipment (including spares) are loaded on to the mode of transport to be used to convey the Plant and Equipment (including spares) from the works to the site and upon endorsement of the despatch documents in favour of the Employer.	We request Employer to review and delete the underlined sentence in the referred clause since the practice of endorsement of the despatch documents is no more required under GST regime.	Provisions of Bidding Documents shall prevail
10.	Section-VII Book 3 of 3 (Part-1) (Form of Contract Agreement)	Appendix-1 (Terms and Procedures of Payment)	2 to 25 of 36	….. However, if for reasons attributable to the Employer, the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of 01 (one) month from the date of Completion of Trial Operation, then 50% of the amount due on "Completion of Trial / Initial Operation alongwith PG Test" shall	We request Employer to modify the clause as follows: However, if for reasons attributable to the Employer, the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of 01 (one) month from the date of Completion of Trial Operation, then	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				be released to the contractor without submission of any BG. Further, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of one year from the date of Completion of Trial Operation, then pending 50% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.	50% of the amount due on "Completion of Trial / Initial Operation alongwith PG Test" shall be released to the contractor without submission of any BG. Further, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of ~~one year~~ **three (3) months** from the date of Completion of Trial Operation, then pending 50% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.	
11.	Section-VII Book 3 of 3 (Part-1) (Form of Contract Agreement)	Appendix-1 (Terms and Procedures of Payment)	2 to 25 of 36	However, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof to be conducted after Trial/Initial operations cannot be successfully completed within the period of one year from the due date of completion of such PG test(s), then	We request Employer to modify the clause as follows: However, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof to be conducted after Trial/Initial operations	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				aforesaid 1% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.	cannot be successfully completed within the period of ~~one year~~ **three (3) months** from the due date of completion of such PG test(s), then aforesaid 1% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.	
12.	Section-VII, Book 3 of 3 (Part-1) (Form of Contract Agreement)	Appendix-2 (Price Adjustment) (xi)	12 of 16	The following components of the contract price shall not be subject to price adjustment and shall remain firm during the execution of the contract :…… (2) Inland Transportation charges (including Inland Transit Insurance, port clearance, port handling & port charges) for plant & equipment and Spare Parts.	In view of fluctuating oil prices and present market volatility, we request Employer to kindly allow Price Adjustment for the items referred at Sl. No. 2 (i.e. **Inland Transportation Charges**) under referred provision.	Provisions of Bidding Documents shall prevail
13.	Section-IV (GCC)	6.4.1.1.2.	11 of 85	…. There shall be no Conciliation where disputed amount (Claim/ Counter claim, whichever is higher excl. interest) is only up to Rs 5 lakhs.	We request Employer to permit settlement of disputes through Conciliation irrespective of value of disputed amount.	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					Accordingly, the referred provision may please be deleted.	
14.	Section-IV (GCC)	6.4.1.2.1.	12 of 85	Where Invitation for Conciliation has been furnished under GCC sub clause 6.4.1.1, the parties shall attempt to settle such dispute through Expert Settlement Council (ESC) which shall be constituted by CMD/Chairman of Employer.	To make the dispute resolution process fair and equitable for both the parties, we request Employer to modify the clause as follows: Where Invitation for Conciliation has been furnished under GCC sub clause 6.4.1.1, the parties shall attempt to settle such dispute through Expert Settlement Council (ESC) which shall be constituted **mutually** by **Contractor's Representative and** CMD/Chairman of Employer.	Provisions of Bidding Documents shall prevail
15.	Section-IV (GCC)	6.4.1.2.2.	12 of 85	ESC will be formed from experts comprising three members from the panel of Conciliators maintained by EMPLOYER. However, there will be single member ESC for disputes involving disputed amount (Claim/ Counter claim, whichever is higher excl. interest) is up to Rs. 1 crore.	To make the dispute resolution process fair and equitable for both the parties, we request Employer to modify the clause as follows: ESC will be formed from experts comprising three members from the panel of Conciliators maintained by	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				CMD/ Chairman of Employer shall have the authority to reconstitute the ESC to fill any vacancy.	EMPLOYER **and as proposed by the Contractor**. However, there will be single member ESC for disputes involving disputed amount (Claim/ Counter claim, whichever is higher excl. interest) is up to Rs. 1 crore. CMD/ Chairman of Employer **and Contractor's Representative together** shall have the authority to reconstitute the ESC to fill any vacancy.	
16.	Section-IV (GCC)	6.4.1.3.5	13 of 85	ESC will conclude its proceedings in maximum 10 meetings, and give its recommendations within 90 days from the date of reference to ESC. ESC will give its recommendations to both the parties recommending possible terms of settlement.CMD/ Chairman of Employer may extend the time/number of meetings, in exceptional cases, if ESC requests for	We request Employer to modify the clause as follows: ESC will conclude its proceedings in maximum 10 meetings, and give its recommendations within 90 days from the date of reference to ESC. ESC will give its recommendations to both the parties recommending possible terms	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				the same with sufficient reasons and as agreed by the parties.	of settlement.CMD/ Chairman of Employer **in mutual consultation with Contractor** may extend the time/number of meetings, in exceptional cases, if ESC requests for the same with sufficient reasons and as agreed by the parties.	
17.	Section-IV (GCC)	6.4.1.4	14 of 85	Aforesaid fees is subject to revision by Employer from time to time and subject to government guidelines on austerity measures, if any. All the expenditure incurred in the ESC proceedings shall be shared by the parties in equal proportions.	We request Employer to modify the clause as follows: Aforesaid fees is subject to revision by Employer **in mutual consultation with Contractor** from time to time and subject to government guidelines on austerity measures, if any. All the expenditure incurred in the ESC proceedings shall be shared by the parties in equal proportions.	Provisions of Bidding Documents shall prevail
18.	Section-IV (GCC)	6.5.1	17 of 85	The mechanism of settling the disputes through arbitration shall be applicable only in cases where the disputed amount (i.e. Claim/ Counter claim, whichever is	Looking at the overall scale of the project, the restriction with respect to disputed amount is not justifiable.	Provisions of Bidding

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				higher, excluding interest) does not exceed Rs. 25 crores. …… …… In case the disputed amount (Claim/ Counter claim, whichever is higher, excl. interest) exceeds Rs. 25 Crores, the parties shall be within their rights to take recourse to remedies as may be available to them under the applicable laws other than Arbitration after prior intimation to the other party. There shall be no arbitration where the disputed amount (Claim/ counter claim, whichever is higher) is only up to Rs. 5 lakhs.	The parties will be forced to seek settlement in courts of law, which is a lengthier and time-consuming settlement process compared to arbitration, resulting in overall delay of project. We, therefore, request Employer to delete the referred provision of limiting the value of disputed amount between INR 5 lakhs to INR 25 Crores to be considered under arbitration.	Documents shall prevail
19.	Section-IV (GCC)	6.5.1	18 of 85	The parties to the contract shall invoke arbitration within Six months from the date of completion of the Facilities under the contract or the termination of the contract as the case may be and the parties shall not invoke arbitration later on after expiry of the said period of six months.	There should not be any pre - requisites/ restrictions regarding point of time at which arbitration procedure can be invoked. Seeking lawful recourse under Arbitration at any time during course of Contract is a fundamental right of the Contractor.	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					We, therefore, request Employer to modify the said provisions so as to allow invocation of arbitration during the course of execution of project as & when required, rather than within 6 months from the date of Completion of Facilities (COF) and or from termination.	
20.	Section-IV (GCC)	6.5.3	18 of 85	Any dispute raised by a party to arbitration shall be adjudicated by a Sole Arbitrator appointed by mutual consent from among the List of empanelled Arbitrators maintained by EMPLOYER, in the following manner: ……	In line with standard industry practice followed for such large scale EPC projects, we request Employer to allow arbitration through an arbitral tribunal consisting of three arbitrators wherein either party has right to appoint respective arbitrator and presiding arbitrator is appointed by such two arbitrators. It will provide equal opportunities to both the parties for appointment of arbitrator(s) and make the provision equitable.	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
21.	Section-IV (GCC)	7.3.1.3	22 of 85	The Contractor will provide the Employer with the manufacturing drawings, catalogues, assembly drawings and any other document required by the Employer so as to enable the Employer to identify the recommended spares. Such details will be furnished to the Employer as soon as they are prepared but in any case not later than six months prior to commencement of manufacture of the corresponding main equipment.	We request Employer to modify the clause as follows: The Contractor will provide the Employer with the **non-proprietary** manufacturing drawings, catalogues, assembly drawings and any other document required by the Employer so as to enable the Employer to identify the recommended spares. Such details will be furnished to the Employer as soon as they are prepared but in any case not later than six months prior to commencement of manufacture of the corresponding main equipment.	Provisions of Bidding Documents shall prevail
22.	Section-IV (GCC)	7.3.1.8	22 of 85	The Contractor shall guarantee the long term availability of spares to the Employer for the full life of the equipment covered under the Contract. The Contractor shall guarantee that before going out of production of spare parts of the equipment covered under the Contract, he shall give	No vendor can inform 2 years in advance regarding any of their spare parts going out of production. Hence it is not feasible for Contractor to inform Employer 2 years in advance for any particular spares going out of production. Moreover, manufacturing	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				the Employer atleast 2 years advance notice so that the latter may order his bulk requirement of spares, if it so desires. The same provision will also be applicable to Sub-contractors. Further, in case of discontinuance of manufacture of any spares by the Contractor and/or his Sub contractor, Contractor will provide the Employer, two years in advance, with full manufacturing drawings, material specification and technical information including information on alternative equivalent makes required by the Employer for the purpose of manufacture/procurement of such items.	drawings are not generally shared by any OEM to Contractor as a part of Contract document. Hence request Employer to modify the clause as follows: The Contractor shall guarantee the long term availability of spares to the Employer ~~**for the full life of the equipment**~~ covered under the Contract**, till availability of such spares with OEM**. The Contractor shall guarantee that before going out of production of spare parts of the equipment covered under the Contract, he shall give the Employer ~~**atleast 2 years advance notice**~~ **as soon as Contractor becomes aware of the same** so that the latter may order his bulk requirement of spares, if it so desires. The same provision will also be applicable to Sub-contractors. Further, in case of discontinuance of	

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					manufacture of any spares by the Contractor and/or his Sub contractor, Contractor will provide the Employer, ~~**two years in advance, with full manufacturing drawings,**~~ material specification and technical information including information on alternative equivalent makes **if shared by OEM to Contractor** required by the Employer for the purpose of manufacture/procurement of such items.	
23.	Section-IV (GCC)	7.3.1.9	22 of 85	The prices of all future requirements of item of spares beyond 3 years operational requirement will be derived from the corresponding Ex-works price at which the order for such spares have been placed by Employer as a part of mandatory spares or recommended spares, or from the rates of mandatory spares or recommended spares as quoted by/negotiated with the Contractor. Ex-works order price of future spares shall	It is difficult to assess the future price of spares required beyond 3 years of operation. We request Employer to directly negotiate with vendors to get optimal price.	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				be computed in accordance with the price adjustment provisions covered under the main Contract and there will be no ceiling on the amount of variation in the prices. The above option for procuring future recommended spares by the Employer shall remain valid for the period of 5 years from the date of Commissioning of the equipment.		
24.	Section-IV (GCC)	7.3.1.11	23 of 85	In case the Contractor fails to supply the mandatory, recommended spares or long term spares in the terms stipulated above, the Employer shall be entitled to purchase the same from the alternate sources at the risk and the cost of the Contractor and recover from the Contractor, the excess amount paid by the Employer over the rates worked on the above basis. In the event of such risk purchase by the Employer, the purchases will be as per the Works and Procurement Policy of the Employer prevalent at the time of such purchases and the Employer at his option	We request Employer to delete this clause.	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				may include a representative from the Contractor in finalising the purchases.		
25.	Section-IV (GCC)	10.2	26 of 85	…..The Employer reserves the right to hand over the Site in parts progressively to the Contractor. The Contractor will be required to take possession of the Site without any undue delay and do work on the released fronts in parts without any reservation whatsoever.	In order to optimize the resources (including manpower and plant & machinery) and their mobilization, and to enable un-hindered execution and timely completion of the project of brownfield nature, it becomes important that all the work fronts are available to the Contractor on the Effective Date of the Contract. Partial and progressive handover of Site will make it extremely difficult for the Contractor to work expeditiously on work fronts as planned. This may lead to time and cost overruns. We, therefore, request Employer to provide full possession of complete encumbrance-free site along with access to site (including	Area shall be provided in parts progressively to the Bidder as per Project requirement and Bidder's mobilization plan.

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					encroachment-free laydown area) to Contractor on the Effective Date. Accordingly, we request Employer to delete the referred provision.	
26.	Section-IV (GCC)	13.2.2	28 of 85	The security shall be in the form of an unconditional bank guarantee as per the proforma provided in Section VII (Forms and Procedures)- Form of Advance Payment Security. The Advance payment Security shall be reduced pro-rata every three (3) months after First Running Account Bill/Stage Payment under the Contract based on the value of the respective equipment/facilities received and applicable GST. The cumulative amount of reduction at any point of time shall not exceed ninety (90%) of the advance and the amount of GST paid on the advance amount corresponding to cumulative value of the respective equipment/Facilities supplied and received as per certificate issued by the	The basic purpose of obtaining Advance Bank Guarantee (ABG) from the Contractor is to have security in lieu of advance payment being released. Therefore, such ABG should get fully reduced on adjustment of advance amount. In view of the above, we request Employer to allow 100% reduction of ABG on full adjustment of advance.	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				Project Manager. The balance shall be released upon release of respective milestone linked payments as identified in Appendix-1 of form of Contract Agreement. In case milestone payment is not envisaged in the package, the balance shall be released after Completion of those Facilities on certification by the Project Manager.		
27.	Section-IV (GCC)	20.3.2	40 of 85	Within twenty one (21) days after receipt by the Project Manager of any document requiring the Project Manager's approval….	Approval time should be reduced to 07 days which is reasonably sufficient time for reviewing the document. This will also facilitate faster execution of project. We, therefore, request Employer to modify the clause as below: Within ~~**twenty one (21)**~~ **seven (07)** days after receipt by the Project Manager of any document requiring the Project Manager's approval…. **If, comments on documents/**	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					drawings are not received within 15 days then same shall be treated as deemed approved.	
28.	Section-IV (GCC)	25.3.1	52 of 85	Subject to GCC Sub Clause 25.4 (Partial Acceptance) below, Operational Acceptance shall occur in respect of the Facilities or any part thereof when any minor items mentioned in GCC Sub Clause 24.7 hereof relevant to the Facilities or that part thereof have been completed and (a) the Guarantee Test has been successfully completed and the Functional Guarantees are met; or (b) the Contractor has paid the liquidated damages specified in GCC Sub Clause 28.3 hereof; and	Liquidated Damages (LDs) are generally ascertained through dispute resolution mechanism (i.e. conciliation, arbitration, litigation etc.) involving challenge and counter challenge from the concerned parties. Hence, settlement of LDs take time. We, therefore, request Employer to delete the following provision from the referred clause: *"(b) the Contractor has paid the liquidated damages specified in GCC Sub Clause 28.3 hereof; and"*	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
29.	Section-IV (GCC)	27.2	53 of 85	The Defect Liability Period shall be eighteen (18) months from the date of Completion of the Facilities (or any part thereof) or twelve (12) months from the date of Operational Acceptance of the Facilities (or any part thereof), whichever first occurs, unless specified otherwise in the SCC.	Once Initial/trial Operation is achieved, Employer will start using the facilities commercially and earn revenue. Therefore, Defect Liability Period (DLP) should start from Initial/trial Operation itself. Also, many sub-vendors do not give extended warranty. In case they offer such extended warranty, it will come with an additional cost to the EPC Contractor leading to increase in bid prices. We request Employer to commence the Defect Liability Period of 18 months from the date of completion of Initial/trial Operation instead of Completion of the Facilities.	Provisions of Bidding Documents shall prevail
30.	Section-IV (GCC)	50.2	79 of 85	No claim for interest or damage will be entertained or be payable by the Employer in respect of any amount or balance which may be lying with the Employer or may become due upon settlement/adjudication of any dispute,	The referred clause restricts the Contractor to rightfully claim the interest cost or any damage that the Contractor may incur while undergoing the proceedings of arbitration or court or otherwise.	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				difference or misunderstanding between the parties by way of arbitration or court proceedings or otherwise or in respect of any delay or omission on the part of the Employer in making intermediate or final payment or in respect of any amount/damage which may be claimed through arbitration or court proceedings or in any other respect whatsoever.	In this regard, it may please be noted that it is a general and established practice that parties to the dispute have right to claim compensation towards losses and/or damage(s) within the legal framework. The decision for allowing payment towards any interest cost or damage arising out of any dispute or differences between Employer and Contractor should lie with the arbitral or the judicial authority. The unilateral restriction on the Contractor as stipulated in this clause is removing the fairness and equitableness of the contract. We therefore request Employer to relook and delete this clause.	
31.	Section-IV (GCC)	52.1	82 of 85	Materials of any kind obtained from excavation on the Site shall remain the property of the Employer and shall be	(i) We request Employer to confirm whether any surplus excavated material/ rock/ sand/earth within	Please refer commercial

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				disposed of as the Project Manager may direct.	plant boundary may be utilized by the Contractor for the purpose of construction activities/ backfilling, free of cost (with prior consent of Employer). Also clarify regarding the responsibility towards any royalty payable on the use of material as mentioned above. (ii) We understand that in case, it is necessary to dispose the excessive excavated material and/or dump the excavated soil/earth in Employer owned area outside the plant premises, then Employer shall become the custodian of such excavated material/ soil and all clearance(s)/ permissions shall be arranged by Employer and all the applicable charges including royalty, transportation etc. shall be borne by Employer. Kindly confirm.	Amdt-1 in this regard

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
32.	Section-V (SCC)	9.0 (iii)	6 of 11	**iii) Maximum deduction for Liquidated Damages:** The total amount of Liquidated Damages for delay under the contracts will be subject to a maximum of 7.5 % of the total contract price (Total of First, Second & Third contract).	The delay LD Cap of 7.5% is very high compared to industry standards. We request Employer to levy LD Cap unit-wise and reduce the same to 5%. Accordingly, we request Employer to modify the referred clause as follows: The total amount of Liquidated Damages for delay under the contracts will be subject to a maximum of ~~**7.5 %**~~ **5%** of the ~~**total**~~ **Unit** contract price ~~**(Total of First, Second & Third contract)**~~. **Further, for the purpose of computation of LD, the Unit Contract price shall be 50% of the Total Contract Price.**	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
33.	Section-VII Book 3 of 3 (Part-1)	Bank Guarantee Formats	-	Form No. 2: Bid Security Form Form No. 6: Performance Security Forms Form No. 7 (i): Bank Guarantee Form for Advance Payment (Supply-FOB/Ex-works) Form No. 7 (ii): Bank Guarantee Form for Advance Payment (Installation Services / Civil / Structural Works)	We request Employer to suitably incorporate a provision pertaining to "Governing Law" in the referred formats of various Bank Guarantees.	Provisions of Bidding Documents shall prevail
34.	Section-IV (GCC)	10.2	25 of 85	The Employer shall be responsible for acquiring and providing legal and physical possession of the Site and access thereto, and for providing possession of and access to all other areas reasonably required for the proper execution of the Contract, including all requisite rights of way, as specified in Appendix 6 (Scope of Works and Supply by the Employer) to the Contract Agreement. The Employer shall give full possession of and accord all rights of access thereto on or before the date(s) specified in Appendix 6.	1. We understand that the supply payment linked with "receipt of equipment/material" as stipulated under Sl. Nos. A1 (III) and B1 (III) of Appendix- 1 (Terms and Procedures of Payment) to "Form of Contract Agreement" shall be released to the Contractor after receipt and physical verification of equipment/material at laydown area of ~75 acres identified by Employer. Kindly confirm.	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					2. In case Contractor opts and identifies a laydown area outside plant boundary due to shortage of sufficient area in Employer identified land for this purpose, then we understand that the supply payment linked with "receipt of equipment/material" as stipulated under Sl. Nos. A1 (III) and B1 (III) of Appendix- 1 (Terms and Procedures of Payment) to "Form of Contract Agreement" shall be released to the Contractor after receipt and physical verification of equipment/material at laydown area identified by the Contractor outside the plant boundary. Kindly confirm.	
35.	Section-III (BDS)	-	-	**New Clause** Employer's Inputs	Execution of project is the joint responsibility of both the Contractor and the Employer. Accordingly, NTPC used to specify timelines of providing major Employer's inputs like land, fuel	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					oil, coal, operational staff etc. in earlier tenders. Similar provision regarding Employer's inputs is missing in this tender. We request Employer to kindly introduce the same.	
36.	Section-VII, Book 3 of 3 (Part-1) (Form of Contract Agreement)	Appendix-1 (Terms and Procedures of Payment) A1 (I) (b) & B1 (I) (b)	2 & 7 of 36	Submission of copy of work order placed by Contractor and duly accepted by Sub-Contractor(s) for Main plant civil agency (Boiler foundation and Main power House foundation work) Submission of copy of work order/ purchase order placed by Contractor and duly accepted by Sub-Contractor(s) for NDCT accepted by Sub- Contractor(s) for stacker reclaimer	Employer may please note that referred work (i.e. Civil works for Boiler foundation & Main Power House foundation work, IDCT & stacker reclaimer) are executed by ourselves (i.e. Bidder) through our in house capabilities and we may not subcontract these work on lumpsum basis. Therefore, we understand that the Interim Advance Payment linked with ordering of such items shall be released on submission of undertaking(s) on commencement of such works by the Contractor. Kindly confirm.	Bidder's understanding is correct.

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
37.	Section-VII, Book 3 of 3 (Part-1) (Form of Contract Agreement)	Appendix-1 (Terms and Procedures of Payment) A1 (III)	3 of 36	**Twenty Percent (20%)** of Total FOB Supply Price Component of the Contract Price for each identified equipment on receipt of equipment at site on pro rata basis and physical verification and certification by the Project Manager for the equipment received and stored at site and on furnishing the confirmation from the contractor that all the payments due w.r.t. the Bought out Items are paid to their Sub vendor(s) as per the agreed payment terms between Contractor and their sub-vendor.	The underlined provision of the referred clause (i.e. and on furnishing the confirmation from the contractor that all the payments due w.r.t. the Bought out Items are paid to their Sub vendor(s) as per the agreed payment terms between Contractor and their sub-vendor) is not feasible and therefore we request Employer to kindly delete the same. However, Employer may ask the Contractor to submit an executive report stating the details of payment made to sub-contractor/sub-vendors for this project for his reference and monitoring.	Provisions of Bidding Documents shall prevail
38.	Section-VII, Book 3 of 3 (Part-1) (Form of Contract Agreement)	Appendix-1 (Terms and Procedures of Payment) A1 (III)	3 of 36	**Note:** In case of non-payment/ delayed payment to sub-vendors for bought out items, NTPC reserves the right to pay to sub-vendors for bought out items directly, on account of the Contractor.	We request Employer to kindly delete the referred clause as this would lead to unnecessary litigation and confusion during the project execution. However, Employer may ask the Contractor for the explanation for such	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					non-payment/delayed payment to sub-vendors for bought out items. We request Employer to kindly issue amendment/corrigendum in this regard.	
39.	Section-VII, Book 3 of 3 (Part-1) (Form of Contract Agreement)	Appendix-1 (Terms and Procedures of Payment) A1 (I) (b) & B1 (I) (b)	2 & 8 of 36	Note- ii: However, if contractor fails to complete the despatches for Unit 1 along with the common facilities and Unit 2 till the date of unit wise completion of supplies as per agreed schedule, then the advance paid for such delayed supplies shall become interest bearing. The applicable interest shall be calculated at the rate specified in the bidding documents on the advance amount (i.e. 15% of FOB/Ex-works (Main Equipment) supply component) of the balance despatches beyond such agreed schedule date of unit wise completion of supplies, for the period of delay between its actual despatch and the agreed schedule date of	Since, the tender already has the provision for levy of Liquidated Damages for delay in achieving successful Completion of the Facilities, imposition of such interest will lead to further penalization of the Contractor for the same event. We, therefore, request NTPC to kindly review and delete the referred clause.	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				unit wise completion of supplies correspondingly and the same shall be deducted from the due payments to the contractor.		
40.	Section-VII Book 3 of 3 (Part-1) (Form of Contract Agreement)	Appendix-2 (Price Adjustment) (viii), (ix) & (x)	5,8 & 11 of 16	In case of installation/Structural Works/Civil Works activities which are delayed beyond the schedule date for reasons attributable to the contractor, the price adjustment provision shall not be applicable for the period of time between the schedule date of completion and actual date of completion of the respective installation/Structural/Civil Work activity. For this purpose, the schedule date for completion of a particular installation/Structural/Civil Work activity shall be as identified in line with provisions of Time Schedule, Appendix-4 to the Contract Agreement.	Approval of Extension of Time (pursuant to GCC Clause-40.1) usually takes longer time after due diligence by the Employer; sometimes it goes up to end of the Project Schedule with provisional approval. We understand, Contractor shall be eligible to claim Price Adjustment for the work executed during extended period even with provisional time extension approval.	Provisions of Bidding Documents shall prevail
41.	Section-IV (GCC)	-	-	**NEW CLAUSE**	We request Employer to introduce a new clause as follows: In case the unit is ready for Initial/Trial Operation and the Employer is unable to permit the Contractor to proceed for	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					the period of three (3) months from such readiness owing to statutory, environmental, lack of start-up steam, fuel, utilities or any other reason beyond Contractor's control, the unit shall be deemed to have achieved the Initial/trial Operation. In such event, all liabilities of Contractor in respect of Contract shall be deemed to have been discharged. Defect Liability Period for the unit shall commence on such date of deemed Initial/Trial Operation. All Bank Guarantees and linked payments due on Initial/Trial Operation and PG Test shall be released.	
42.	Section-II (ITB)	10.3.1	16 of 46	**Schedule No. 3** Local Transportation including Port handling, Port clearance, Port charges, Custom reconciliation, Inland transit insurance and other local costs incidental to delivery of Plant & Equipment and Mandatory Spares	Local Transportation including Inland transit insurance and other local costs incidental to delivery of Plant & Equipment are under Schedule-3 of the bid documents.	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					However, as per section 15(2)(c) of CGST Act, 2017, freight and insurance and other costs incidental to delivery are required to be added in the value of goods. In line with the stated legal position, we request Employer to transfer the said elements of cost from Price Schedule No. 3 to Price Schedule No. 1 & 2 pertaining to offshore and onshore supply.	
43.	Section-III (BDS)	9.0 *[ITB Clause-34.1]*	5 of 9	Time for Completion of Facilities from the date of Notification of Award shall be 48 & 52 months for Unit 1 & Unit 2 respectively.	We understand, the EPC Contractor shall be responsible to achieve Completion of Facilities by 48 & 52 months for Unit-1 & Unit-2 respectively. However, the EPC Contractor has the choice to alter the intermediate milestones as indicated alongside as per its execution methodology/ strategy.	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					Kindly confirm.	
44.	Section-VII Book 3 of 3 (Part-1) (Form of Contract Agreement)	Appendix-1 (Terms and Procedures of Payment) E, F & G	12 to 23 of 36	**<u>Terms of Payment for Installation services, Civil works & Site Fabricated Structural works:</u>** **Five Percent (5%)** of the total …… component of the Contract Price …… will be paid to the Contractor as interest bearing initial advance payment on: (i) ……. (ii) ……. (iii) Submission of an unconditional Bank Guarantee for an amount equivalent to one hundred ten percent (110%) of the advance amount plus GST as applicable on the advance payment ……. . . . **Further, Five Percent (5%)** of the total ……. component of the Contract Price …… will be paid to the Contractor as interest bearing initial advance payment on:	In order to ease the financial burden of working capital on the Contractor, we request Employer to provide **<u>interest free</u>** advance for services (i.e. Installation services, Civil works and Structural works) as well against advance bank guarantee of equivalent amount. Accordingly, we request Employer to modify the referred provisions as follows: **Five Percent (5%)** of the total …… component of the Contract Price …… will be paid to the Contractor as interest ~~bearing~~ **<u>free</u>** initial advance payment on: (i) ……. (ii) …….	Provisions of Bidding Documents shall prevail Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				(i) ……. (ii) Submission of an unconditional Bank Guarantee for an amount equivalent to one hundred ten percent (110%) of the advance amount plus GST as applicable on the advance payment ……..	(iii) Submission of an unconditional Bank Guarantee for an amount equivalent to one hundred ~~ten~~ percent (~~110%~~ **100%**) of the advance amount plus GST as applicable on the advance payment ……. . . . **Further, Five Percent (5%)** of the total ……. component of the Contract Price …… will be paid to the Contractor as interest ~~bearing~~ **free** initial advance payment on: (i) ……. (ii) Submission of an unconditional Bank Guarantee for an amount equivalent to one hundred ~~ten~~ percent (~~110%~~ **100%**) of the advance amount plus GST as applicable on the advance payment ……..	
45.	Section-VII Book 3 of 3 (Part-1)	Appendix-1	4 to 25 of 36	**One Percent (1%)** of *FOB Supply/Ex-works Supply/Installation Services/Civil Works/Structural Works* Price Component	We request Employer to release the last installment of retention payment of 1% on successful completion of PG	Provisions of Bidding

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
	(Form of Contract Agreement)	(Terms and Procedures of Payment) A1, B1, E, F & G		of the contract price on successful completion of applicable Performance Guarantee Tests to be conducted after Trial/Initial operations as specified in Technical Specifications for Unit-I and issue of Operational Acceptance Certificate for Unit-I.	Test (to be conducted after Trial/Initial operations) instead of issuance of Operational Acceptance Certificate of respective units.	Documents shall prevail
				One Percent (1%) of *FOB Supply/Ex-works Supply/Installation Services/Civil Works/Structural Works* Price Component of the contract price on successful completion of applicable Performance Guarantee Tests to be conducted after Trial/Initial operations as specified in Technical Specifications for Unit-II and issue of Operational Acceptance Certificate for Unit-II.		
46.	Section-VII Book 3 of 3 (Part-1)	Form No. 2: Bid Security Form	-	**Form No. 2: Bid Security Form** We, the ……. *[Name & address of the Bank]* …… having our Head Office at …….. (#) …….. gurantee and undertake to pay immediately on demand	We request Employer to modify the referred provision of Bid Security format as follows: We, the ……. *[Name & address of the Bank]* …… having our Head Office at	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				by ……. *[Name of the Employer]* ……. (hereafter called the 'Employer') …….. the amount of ……..(*)……. without any reservation, protest, demand, demur and recourse.	…….. (#) …….. **(hereinafter referred to as "the Bank")** gu**a**rantee and undertake to pay immediately ~~on~~ **upon receipt of written** demand by ……. *[Name of the Employer]* ……. (hereafter called the 'Employer') …….. the amount of ……..(*)……. without any reservation, protest, demand~~,~~ **or** demur ~~and recourse~~.	
47.	Section-VII Book 3 of 3 (Part-1)	Form No. 2: Bid Security Form	-	New Provision	We request Employer to introduce a "Notwithstanding Clause" in the Bid Security Format as follows: *Notwithstanding anything contained hereinabove:* *1) The Bank's liability under this bank guarantee shall not exceed Rs. ……. (Rupees …… only);* *2) This bank guarantee shall be valid only up to …….[date]….. ;* 3) *The Bank is liable to pay the guaranteed amount or any part*	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					thereof under this bank guarantee only and only if a written claim or demand, served by Employer in accordance with the terms of this bank guarantee, is received by the Bank on or before 5 P.M on or before …. [date]…. at …..[Name of Bank and Branch address]…….. Thereafter, your right to claim under this bank guarantee shall be forfeited once and forever and the Bank shall be relieved from all its liabilities hereunder irrespective of whether the original bank guarantee has been returned to the Bank or not.	
48.	VII, Appendix-1 to Contract Agreement (PAYMENT PROCEDURES)	3.1	32 of 36	The Contractor shall, by the 15th April of every year, furnish the BBU value of supplies sourced from Micro and Small Enterprises (MSEs) along with the total BBU value of supplies dispatched by it during the preceding financial year as per	Being a domestic bidder, Employer is requested to kindly delete this requirement. Alternatively, the details of supplies outsourced from MSEs may be	Provisions of Bidding Documents shall prevail.

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				the format enclosed as Annexure to this APPENDIX-1	provided to Employer at the end of the Contract.	
49.	VII, Appendix-1 to Contract Agreement (PAYMENT PROCEDURES)	3.1	32 of 36	Being EPC package, the Contractor shall necessarily be required to provide the single designated account for billing and payment. The BBU shall also be furnished accordingly. System wise/ Unit wise interaction/submission will not be entertained for BBU, Billing and Payment.	Supplies to the projects shall be made from bidder's manufacturing facilities across india. In order to avoid Taxation issues and smooth Financial and material reconciliation, we request NTPC to delete this requirement	Provisions of Bidding Documents shall prevail.
50.	VII, Appendix-1 to Contract Agreement (PAYMENT PROCEDURES)	4.1 & 6.0	33, 36 of 36	Contractor shall be required to raise its consolidated invoices/bills only once a month except for LC payments.	Billing shall be done pro-rata basis as per the supplies made/services rendered. Such provision shall delay the realization of the paymant in time which will have cascading effect on the smoth execution of the project. We request NTPC to delete this requirement.	Provisions of Bidding Documents shall prevail.
51.	VII, Appendix-1 to Contract Agreement (PAYMENT	B1 III Note	8 of 36	In case of non-payment/ delayed payment to sub-vendors for bought out items, NTPC reserves the right to pay to sub-vendors for bought out items directly, on account of the Contractor.		Provisions of Bidding Documents shall prevail.

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	PROCEDURES)					
52.	II-ITB	10.6	Page 20 of 46	"Custom Duty Benefits for Power Projects"	NTPC to inform Custom duty benefits available to the bidder/contractor for the project	Singrauli-III is a non Mega Project. Bidder to ascertain any custom duty benefits. Provisions of Bidding Documents shall prevail.
53.	VII (Appendix-1 to Contract agreement)	Note-ii	7 ,8of 36	However, if contractor fails to complete the despatches for Unit 1 along with the common facilities and Unit 2 till the date of unit wise completion of supplies as per agreed schedule, then the advance paid for such delayed supplies shall become interest bearing. The applicable interest shall be calculated at the rate specified in the bidding documents on the advance amount.....	Initial Advance and Interim Advance payments should not be interest bearing as delay in completion of supplies can be attributable to various reasons and Employer's inputs. Delay in completion shall be known after delay analysis and Final time extension only after actual completion of the project. Request NTPC to consider.	Provisions of Bidding Documents shall prevail.

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54.	II / ITB	34	36 of 44	……..the successful Bidder shall furnish performance securities for ten (10%) of Contract Price…….	Bidder request NTPC to suitably incorporate the provisions of performance security for 3% of contract price in line with the circular no. F9/4/2020-PPD from Dept. of Expenditure, Ministry of Finance dated 12/11/2020	Provisions of Bidding Documents shall prevail.
55.	IV / GCC	13.3	28 of 85	The Contractor shall, within twenty-eight (28) days of the Notification of Award, provide a security for the due performance of the Contract for ten percent (10%) of the Contract Price…….		
56.	IV / GCC	7.3.1.2	22 of 85	All the Mandatory Spares covered under the Contract shall be produced along with the main equipment as a continuous operation and the delivery of the spares will be effected along with the main equipment in a phased manner and the delivery would be completed by the respective dates for the various categories of equipment as per the agreed network. In case of Recommended Spares the above will be applicable provided the order for the Recommended Spares have been placed with the Contractor prior to commencement of manufacture of the main equipment.	In case the order for Mandatory spares is placed along-with the main equipment, the same shall be generally produced along-with the main equipment wherever possible. Spares shall be delivered with Main Equipment only upon NTPC's confirmation for immediate taking over at that point of time. NTPC to confirm.	Provisions of Bidding Documents shall prevail.

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
57.	IV / GCC	Page 72, 74 & 76 of 85	42.1.2. (d) (ii), 42.2.3 (d) & 42.3.3 (d)	To the extent legally possible, assign to the Employer all right, title and benefit of the Contractor to the Works and to the Plant and Equipment as at the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors	These clauses may please be deleted.	Provisions of Bidding Documents shall prevail.
58.	IV / GCC	42.2.3 (e)	Page 74 of 85	deliver to the Employer all drawings, specifications and other documents prepared by the Contractor or its Subcontractors as at the date of termination in connection with the Facilities.	Please add the word “non-proprietary” between “all” and “drawings”.	Provisions of Bidding Documents shall prevail.
59.	IV / GCC	42.3.3(d) (iii)	Page 76 of 85	deliver to the Employer all drawings, specifications and other documents prepared by the Contractor or its Subcontractors as of the date of termination in connection with the Facilities.	Please add the word “non-proprietary” between “all” and “drawings”.	Provisions of Bidding Documents shall prevail.
60.	III / BDS	9.1	5 of 9	As site levelling, Infrastructures like construction power, construction offices, Construction store, steel yard etc (as specified in the scope) and	Bidder request NTPC not to insists such tie-ups during bidding stage. The same shall be taken care by the bidder in the best interest of the project. Pre-	Provisions of Bidding Documents shall prevail.

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				SG/TG/Chimney civil works etc are included in the scope of EPC contract. This is assumed that the prospective bidders will be required to tie up with sub agency/sources during bidding stage, so that the award for such work is finalized/placed in the 1st month on award of EPC contract.	bid tie up with sub-agencies can be possible if NTPC indicates firm date of order placement and there is sufficient time of at least months between NIT to bid submission date.	
61.	IV-GCC	44	Page 77 of 85	Contractor Performance Feedback and Evaluation System	In EPC package, majority of system/ package are supplied by NTPC approved venders. These venders are selected based on the stringent qualification requirement specified in tender specification. Majority of issues concerning progress of engineering/supplies and execution is dependent on these approved vender/agencies. It would not be appropriate to evaluate the performance of main contractor on the basis of performance of abovesaid approved venders/agencies as majority of supplies and execution in	Provisions of Bidding Documents shall prevail.

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					EPC package would be assigned to them.	
62.	IV / GCC			General	In case BOCW Act is applicable, Bidder shall pay the cess to the concerned authorities through their Sub-contractor and following the statutory compliance in the act. NTPC shall not retain/recover amount against BOCW Act from the bidder and proof of payment in the form of challan shall be submitted to NTPC for compliance against BOCW Act. NTPC to confirm.	Provisions of Bidding Documents shall prevail.
63.	V / SCC	9 (iii)	6 of 11	The total amount of Liquidated Damages for delay under the contracts will be subject to a maximum of 7.5 % of the total contract price (Total of First, Second & Third contract).	Bidder request NTPC to keep the maximum deductions for Liquidated damages for delay of project to 5% of total contract price (Total of First, Second & Third contract), in line with other NTPC packages.	Provisions of Bidding Documents shall prevail.
64.	II / ITB	27.3	Page 34 of 46	The Employer reserves the right to vary the quantity of any of the Spares and/or delete any item of Spares altogether at the time of Award of Contract.	The Employer may vary the quantity of spares to be ordered provided the ordered quantity results in a “whole number” or a “complete set”. Order for	Provisions of Bidding Documents shall prevail.

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					spares with quantity expressed as a fraction will not be accepted. Further, variation in quantities, wherever quoted in percentage or LOT will not be accepted. However, complete deletion of any item shall be acceptable. Where the requirement is in percentage no reduction or change is acceptable. NTPC to confirm.	
65.	II (ITB)	1.2	1 of 46	…….. The bidder shall, in case of award of contract, facilitate completion of such formalities as may be required by the respective Export Credit Agency to enable NTPC to avail Buyers Credit for funding eligible goods and services covered in the package…….	During the course of arranging Buyers credit through Export Credit Agencies, certain declaration is to be provided by Bidder or its Sub-vendors in favour of Export Credit Agencies, the Employer shall indemnify, defend and hold harmless the Bidder and its Sub-vendors from and against any and all claims, losses, liabilities, costs, fees, expenses or damages, resulting from or in connection with the declaration given to Export Credit Agencies during the project execution. We will discuss the matter, if desired by NTPC.	Provisions of Bidding Documents shall prevail.

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
66.	ITB VII Book 1 of 3		Page 11 of 46 Bid Form	Attachment 4A : Special Tools and Tackles The bidder shall provide the details regarding Special Maintenance Tools and Tackles. The cost of these Tools and Tackles shall be included in the Stage-II (Price) Bid	Special Tools and Tackles: The list of Special Tools and Tackles has been furnished at Attachment 4A. It is clarified that the supply of Special Tools and Tackles shall be limited to the list as furnished at Attachment 4A.	The list of maintenance tools and tackles is not furnished by the owner in the referred attachment. Bidder has to furnish the list of special maintenance tools & tackles for various system/equipment as per the Scope of Work of the subject package. Bidder has to further confirm that

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
						any additional special maintenance tools and tackles, required for the equipment under this package shall be furnished by them at no extra cost to the Employer
67.	ITB VII Book 1 of 3		Page 11 of 46 Bid Form	Attachment 9: Erection Tools and Plant and Safety Equipment & Safety Personal Protective Equipment	Schedule of Erection/Civil/Safety Tools & Plant - The deployment of T&Ps shall be done to attain completion of facilities period as specified in the bidding documents. The proposed quantity and type of T&Ps and safety equipment & safety personal protective equipments shall be discussed and finalised during post	Based on the proposed erection strategy of the Bidder, the details of T&Ps and their deployment schedule shall be finalized

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					bid discussions. The Erection strategy shall be discussed during Contract Execution Stage.	during L2 schedule finalization with NTPC. However, EPC contractor will have to ensure the deployment of T&Ps as per actual requirement at site to meet the project milestones and implementation schedule.
68.	SECTION – IV	19	38 of 85	Subcontracting:- Appendix 5 (List of Approved Subcontractors) to the Contract Agreement specifies major items of supply or services and a list of approved Subcontractors against each item, including vendors. Insofar as no Subcontractors are listed against any such item, the Contractor shall prepare a list of Subcontractors for such item for inclusion	Bidder being PSU has standard practice to finalize the subcontractor through open/global tender. and the finalised subcontractors are well qualified satisfying the PQR criteria of NTPC specifications. Bidder shall select sub-contractor's	Provisions of Bidding Documents shall prevail.

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				in such list. The Contractor may from time to time propose any addition to or deletion from any such list. The Contractor shall submit any such list or any modification thereto to the Employer for its approval in sufficient time so as not to impede the progress of work on the Facilities. Such approval by the Employer for any of the Subcontractors shall not relieve the Contractor from any of its obligations, duties or responsibilities under the Contract.	through Open Tender and names of Technically qualified subcontractors shall be forwarded to owner for their approval. Any subsequent details will be provided only after technical approval. In view of this, we understand that bidder is not required to furnish the list of subcontractors to NTPC for their approval. Kindly Confirm.	
69.	GCC cl. 34 Section VII Book 3 of 3 (Part-1) Appendix 3	34 of GCC 3 of Appendix-3	2 of 3	To the extent specified in Appendix 3 (Insurance Requirements) to the Form of Contract Agreement, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract,..... Any loss or damage to the plant and	Bidder shall take insurance coverage till completion of 72 Hours Full Load operation during commissioning of system OR Commercial Operation (COD) by Customer whichever is earlier.	Provisions of Bidding Documents shall prevail.

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				equipment during handling, transportation, storage, installation, commissioning, and all activities to be performed till the "Completion of Facilities" shall be to the account of the contractor		
70.	Section IV (GCC)	24	49 of 85	Completion of facilities	Please confirm that if the commissioning cannot be carried out due to reasons attributable to the Employer, the facilities will be considered as deemed completed and suitable time and cost compensation will by provided to bidder.	Provisions of Bidding Documents shall prevail.
71.	VII, Appendix-1 to Contract Agreement	I(b)	Page 3 of 36	Note: In case of non-payment/ delayed payment to sub-vendors for bought out items, NTPC reserves the right to pay to sub-vendors for bought out items directly, on account of the Contractor.	Employer to give the Contractor fifteen (15) days notice prior to making such payments and Contractor's explanation for such non-payment/delayed payment to subvendors for bought out items incl financial reoconciliation of outstsanding payments /payment terms should be taken into due consideration before proceeding ahead. .	Provisions of Bidding Documents shall prevail.

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					Alternatively, we request NTPC to kindly delete the referred clause as this would lead to unnecessary litigation and confusion during the project execution.	
72.	SECTION-IV (GCC)	19.4	Page 39 of 85	The Contractor shall not be allowed to sub-contract works to any subcontractor/ sub-vendor from a country which shares a land border with India unless such contractor is registered with the competent Authority. The Competent Authority for the purpose of registration shall be as mentioned in Annexure-IV to SCC. However, the said requirement of registration will not apply to subcontractors from those countries (even if sharing a land border with India) to which the Government of India has extended lines of credit or in which the Government of India is engaged in development projects. The Contractor may apprise itself of the updated lists of such countries	Bidder understand that In case vendors who are already approved/have executed various items in NTPC/equivalent project/s are not in the indicative vendor list, bidder may consider same subject to meeting government regulation at the time of ordering	Provisions of Bidding Documents shall prevail.

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				available in the website of the Ministry of External Affairs.		
73.	GCC Clause 12/ Appendix-I to Contract Agreement form, Section-VII Book 3 of 3				The tender specification for EPC Package for Singrauli STPP, Stage-III (2x800 MW) envisages opening of A single designated ESCROW account. As per Clause 12 of Section -IV of specification, "All payments related to Erection I Civil I Site Fabricated Structural works by the Employer due under the contract to the Contractor shall be released into above-mentioned ESCROW account set up as per the Tri-Partite Escrow Agreement between Employer, Contractor and Escrow Bank. The payment shall be disbursed in accordance with the mechanism set out in the Contract and Escrow Agreement. In this regard, we would like to submit the following challenges being faced in	Provisions of Bidding Documents shall prevail.

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					the recent projects having requirement of Escrow account: 1. Most of the MSME vendors accept payment through TREDS (RXIL) and hence payment is being automatically debited from bidder's separate account other than Escrow account 2. Steel is being procured by bidder's centralized department through LC and payment is being auto debited from bidder's separate account other than Escrow account 3. Long time for setting up a project specific Escrow account coupled with the complexities for initial release of payment in the Services Contract lead to release of payments due to the sub-agencies in the initial stages of execution from bidder's separate account 4. Insistence of the parties involved in the tri-partite agreement for	

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					various documentary proof lead to delays in release of funds and hinder project progress. There have been many instances wherein release of funds was delayed due to demand of various documents not required as escrow agreement. This leads the funds remaining idle in the Escrow account for bidder and hence, adversely impacting cash flows. NTPC would appreciate that majority of other expenditure like salary/vehicle/canteen /statutory payments (IT & GST, TDS, GST liability etc.) & miscellaneous payments are being made through bidder's separate account other than Escrow account. In view of the above, NTPC is requested to kindly delete the provision of single designated ESCROW account and issue necessary amendment to this effect.	

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					Alternatively, NTPC may issue an amendment specifying opening of a project specific bank account wherein all payment released for the project by NTPC would be credited. This amount will be transferred to BHEL's separate account on self-certification basis and the account statement to be shared with NTPC periodically. This would enable NTPC track fund utilization for the project without impacting the cash flow on the project.	
74.	Section-VII-Appendix-1 to the Form of Contract Agreement	Clause (I) (b) of Appendix-1			As per Clause (I) (b) of Appendix-1 to the Form of Contract Agreement regarding terms and procedures of payment, Seven and a Half percent (7.5%) of Total Ex-Works Supply Price Component of Contract Price shall be paid progressively as Interim Advance Payment on submission of copy of PO/WO of Turbine casting and forgings, Main plant civil agency (Boiler foundation and Main power	Provisions of Bidding Documents shall prevail.

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					House foundation work), NDCT and stacker reclaimer. As per Note (ii), "if contractor fails to complete the despatches for Unit 1 along with the common facilities and Unit 2 till the date of unit wise. completion of supplies as per agreed schedule, then the advance paid for such delayed supplies shall become interest bearing. The applicable interest shall be calculated at the rate specified in the bidding documents on the advance amount (i.e. 15% of FOB/Ex-works (Main Equipment) supply component) of the balance despatches beyond such agreed schedule date of unit wise completion of supplies, for the period of delay between its actual (Jespatch and the agreed schedule date of unit wise completion of supplies correspondingly and the same shall be	

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					deducted from the due payments to the contractor." The above condition is not in line with the prevalent industry practise and past NTPC tenders. As you may be aware, thermal power projects of such magnitude are subject to various uncertainties during execution. Further, during execution of the Contract various approval from NTPC for drawings, vendors, quality plans, dispatch clearance and various engineering interfaces requires seamless coordination, which increases the timelines of the project. It may be noted that any retentions on account of above would lead to restrained cash flow on the project towards the fag end of the project which will adversely impact the completion of the project. In view of the above, NTPC is requested to kindly delete the above	

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					clause Note (ii) and issue necessary amendment to this effect.	
75.	SCC				As per Clause 9.0, iii), The total amount of Liquidated Damages for delay under the contracts will be subject to a maximum of 7.5 % of the total contract price (Total of First, Second & Third contract). You may kindly appreciate and acknowledge that the project execution is dependent on various vagaries which are at times beyond the control of any contractor. These factors inter-alia include availability of fronts, issues related to law & order, availability of basic raw material at project site, sub-contractor's performance and their financials especially post covid, compliance to various procurement guidelines like GTE etc. Inspite of various initiatives, the execution of complex project such as the thermal power projects gets	Provisions of Bidding Documents shall prevail.

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					prolonged and extend beyond scheduled time frame. Realizing these factors, NTPC has been considered these unavoidable issues favourably, while deciding the final time extension. However, there have been cases of retention of amount towards delay LD during period beyond scheduled completion, which adversely affected the cash flow and hence constrained the smooth execution of the projects. In all earlier NTPC tenders prior to Talcher EPC tender, the ceiling for maximum delay LD was stipulated as 5% of contract price, which has been revised to 7.5% of contract price, incl. for Singrauli project. Kindly note that this additional risk as well as burden imposes a significant financial strain on the contractors like BHEL, which would only potentially hamper the project completion schedule.	

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					It would not be out-of-place to mention that majority of NTPC's thermal fleet has been supplied & installed by BHEL, wherein the contract stipulates only a ceiling of delay LD as 5% of contract price. Needless to mention, these plants have contributed significantly towards value creation for NTPC, including strengthening its financials over decades. Considering that post-covid, only Indian EPC companies, viz. BHEL (a CPSE) and another Indian major EPC player, have been participating in the thermal EPC tenders floated by NTPC & others, the risk of project non-completion due to EPC contractors potentially does not exist. In view of the foregoing circumstances, NTPC may kindly realize that increased LD ceiling would place an unwarranted burden on	

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					contractors like BHEL without accruing any advantage for developer. Accordingly, we request NTPC to kindly amend tender specification with respect to delay LD as following: 1. Ceiling for delay LD to be five percent (5%) of the Contract Price of the Unit which is delayed 2. Rate of delay LD@ 0.1% of Contract price of the Unit which is delayed, for each completed week of delay or part thereof subject to a maximum of five percent (5%) of the Contract Price of the Unit which is delayed. 3. The aforesaid proposed rate of delay LD per week of delay to be same throughout the period of delay. 4. LD quantum to be linked to currency of the Contract price (in lieu of USD as presently specified). Further, it is requested that suitable clause to be incorporated in the	

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					specification to ensure that any LD retention to be done only from the final payment (COF etc.) as there is ample security in form of final billing and performance BG available with NTPC. We would also like to draw your kind attention that realizing the above, various utilities like NLCIL, SCCL and Adani Power have already stipulated maximum delay LD of 5% of contract price in their recent tenders. This will help in maintaining sufficient cash flow as well as optimizing the project cost.	

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1.	Section - II (ITB)	10.4 (d) (ii)	18 of 46	Bidders are advised to price their bids in such a manner that the Civil Works Price Component of the bid price (including Site Fabricated Structural works price) should not be less than 20% and should not be more than 30% of the cumulative total of FOB Price of Main Equipment indicated in Schedule No.1 and Ex-works Price of Main Equipment indicated in Schedule No.2.	Keeping such restriction in pricing will impact the bidders' cashflows and the bidders will be forced to change the price breakup with respect to actual expenses. Further, cost of Civil Works mainly depends on various factors including soil parameters, material and labour rates, etc. and not on the price of main equipment only. We, therefore, request Employer to kindly delete this restrictive provision and allow bidders to specify the breakup based on their experience/estimate.	Refer Commercial Amdt-03 to Bidding documents
2.	Section-VII, Book 3 of 3 (Part-1) (Form of Contract Agreement)	Appendix-1 (Terms and Procedures of Payment) E (II)	14 of 36	Note: The release of first progressive payment for installation services shall be on completion of pre-installation activities i.e. readiness of Priority 1 Roads and first phase development of Storage and laydown area (i.e. 50000 sqmtr. Hard crusting with roads and drains for storage of steel, foundation materials, readiness of 2 storage sheds, readiness of store	Employer may please note that the referred site infrastructural works are in contractor's scope and the same shall be initiated as per site requirement and Employer's direction. Therefore, we request Employer not to link such pre-installation activities for issuance of progressive payment towards Installation service as the	Provisions of Bidding Documents shall prevail

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				office with material management group at site) and subject to submission of documentary evidence by the Contractor towards having taken the insurance policy(ies.) in terms of relevant provisions of GCC Clause 34 (Insurance) and acceptance of same by the Project Manager.	same will hamper the site progress and Contractor's cash flow. Kindly confirm.	
3.	Section-VII, Book 3 of 3 (Part-1) (Form of Contract Agreement)	Appendix-1 (Terms and Procedures of Payment) F (II)	18 of 36	Note: The release of first progressive payment for civil works shall be on completion of pre-Civil works activities i.e. establishment of Safety Control Room & Site office of NTPC and establishment of workers habitat (as per spec) for 500 workers and subject to submission of documentary evidence by the Contractor towards having taken the insurance policy(ies) in terms of relevant provisions of GCC Clause 34 (Insurance) and acceptance of same by the Project Manager.	Employer may please note that the referred infrastructural works are in contractor's scope and the same shall be initiated as per site requirement and Employer's direction. Therefore, we request Employer not to link such pre-Civil works activities for issuance of progressive payment towards Civil works as the same will hamper the site progress and Contractor's cashflow. Kindly confirm.	Provisions of Bidding Documents shall prevail
4.		34.1		As per the Clause 34.1 of ITB Section-III, Time for Completion of Facilities from the	As you would be aware, execution of thermal power plant project of such magnitude and uniqueness within the	Refer Commercial Amdt-03 to

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
	ITB			date of Notification of Award shall be 48 & 52 months for Unit 1 & Unit 2 respectively.	timeframe specified, on an EPC basis for a single Contractor would be difficult considering the experiences of supercritical EPC projects executed in last decades by various utilities including NTPC. The same has been echoed in various project review meetings at MOP, CEA etc including in presence of Hon'ble Minister of Power. NTPC has been facilitating expeditious project execution through various steps including the recent changes incorporated in Singrauli tender, viz better terms of payment, availability of Geotechnical Investigation Report, dispensing-off civil sub-contractor approval process etc. Similar initiatives have simultaneously been taken by BHEL such as site empowerment, usage of digitalization (IPMS) etc. Notwithstanding above steps and considering practical aspects, the	Bidding documents

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					execution of thermal projects is still beyond 54 months. In particular, for Singrauli project, following aspects may kindly be noted: 1. Layout constraint: Being a brownfield expansion project, there is constraint in the plant layout which requires considerable time and effort for layout optimization and project execution. The unique design conditions including fuel, site conditions and the intricate designing and engineering process of the power plant requires a tailoring ofthe solution for each project which requires considerable time 2. Dismantling work: As per tender specification, there is a substantial scope of dismantling work, including the dismantling of below-ground foundations. The uncertainties linked to this could potentially extend the project timelines.	

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					3. Shrinking BOP Vendor Base: Due to low business opportunity post Covid in the Thermal power sector vendor base for the BOP packages has significantly reduced, which may lead to additional time for execution of such packages 4. Long Lead time for Vendor, Quality Plans Approval: The extensive lead time required for procuring materials, incl. compliance with various govt. guidelines, specifically GTE guidelines etc., selecting suitable vendors, and the detailed approval process of NTPC add substantial time to the project schedule. 5. NTPC's Interface for Engineering: Collaborating with NTPC on engineering interfaces requires seamless coordination, which is essential yet time intensive. 6. There are potentially various vagaries associated with availability of	

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					construction material viz. sand, aggregates etc. near site as well as skilled labour. Availability of skilled labour has been a constraint considering various concurrent infrastructure projects being undertaken in the country. Further, you are kindly aware that GoI is also planning to commence setting up of approximately 30GW of thermal power projects within the next 3-4 years. With this, the aforesaid aspects in project execution become even more acute. We would like to clarify that BHEL is fully capable to address the manufacturing and supply of all the BTG equipment (which is primarily within its own control) for the complete proposed thermal power projects pipeline. It would not be out of place to mention that realizing the above, various utilities have already incorporated	

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					necessary changes in project schedule and have extended it to more practicable time-frame. In its Talabira tender, NLCIL has stipulated a project schedule of 54 months for Unit 1 with phase gap of 6months between units. Further, HPGCL, in its Yamunanagar tender has stipulated a schedule of 57 months for its 1 x800 MW project. In view of the foregoing and to ensure proper project planning, NTPC is requested to kindly revise the project completion schedule for Singrauli to at least 54 months, with a phase gap of 6 months for the second Unit.	
5.	Section-VII-Appendix-1 of form of				As per Appendix-1, "the release of first progressive payment for installation services shall be on completion of pre-installation activities i.e. readiness of Priority Roads and first phase development of Storage and laydown area (i.e. 50000 sqmtr. Hard crusting with roads and drains for storage of	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
	Contract Agreement				steel, foundation materials, readiness of 2 storage sheds, readiness of store office with material management group at site) and the release of first progressive payment for civil works shall be on completion of pre-Civil works activities i.e. establishment of Safety Control Room & Site office of NTPC and establishment of workers habitat (as per spec) for 500 workers". The above conditions are not in line with the prevalent industry practise and past NTPC tenders prior to Talcher EPC tender. We would like to apprise NTPC that there will be many Civil Works e.g. Demolition, Area grading & levelling, Geotechnical investigation, excavation for main plant equipment foundation etc., which will be started & invoiced for payment much before the completion of pre-Civil work activities as listed in the above referred clause. Substantial	

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					payment is also incurred by the Erection/Civil sub-contractors for mobilization of T &P and Manpower. We appreciate that the completion of above activities are essential for the project. However, the absence of interest free advance for Services portion coupled with restrained cash flow on account of the above conditions may adversely impact the timelines of execution at the very beginning the project. NTPC would be aware that recent pandemic has also adversely impacted the available sub-contractors in the industry and SHEL would be forced to pass on such stringent condition to the sub-contractor, which would limit the participation by sub-contractors. In view of above, NTPC is requested to kindly delete the conditions as mentioned above for release of first	

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
					progressive payment for Installation services and Civil works in the overall interest of the project.	
6.	General			Access to & Possession of site	Employer shall ensure the site is approachable from state & national highways for material movement. If there is any obstruction or local issues pertaining to movement of goods the Employer shall be responsible for resolving same, the Contractor shall be entitled to suspend the work till such site issues are resolved	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
1.	Section-I, Invitation for bids (IFB)	Approved QR for EPC Package for Singrauli STPP Stage-III (2 X 800 MW), Clause No. I. I.I (B)		The Bidder should have designed, engineered, manufactured/ got manufactured, erected/ supervised erection, commissioned/ supervised commissioning of (i) at least one (1) number supercritical steam turbine of tandem compound, condensing, reheat type of 500 MW or higher capacity with main steam pressure, of 225 Kg/sq.cm (gauge) or higher and main steam/ reheat temperature of 565 Deg C/ 565 Deg C or higher and (ii) at least one (I) number of generator of two pole, Thermal class 155 (F) winding insulation, hydrogen/ water cooled stator and hydrogen/ water cooled rotor of 500 MW or above capacity. These steam turbine and generator should have been in successful operation for a period of not less than one (1) year prior to the date of techno-commercial bid opening	The Bidder should have designed, engineered, manufactured/ got manufactured, erected/ supervised erection, commissioned/ supervised commissioning of (i) at least one (1) number supercritical steam turbine of tandem compound, condensing, reheat type of 500 MW or higher capacity with main steam pressure, of 225 Kg/sq.cm (gauge) or higher and main steam/ reheat temperature of 537 Deg C/565 Deg C or higher and (ii) at least one (1) number of generator of two pole, Thermal class 155 (F) winding insulation, hydrogen/ water cooled stator and hydrogen/ water cooled rotor of 500 MW or above capacity. These steam turbine and generator should have been in successful operation for a period of not less than one (1) year prior to the date of techno- commercial bid opening	Provisions of Bidding Documents shall prevail

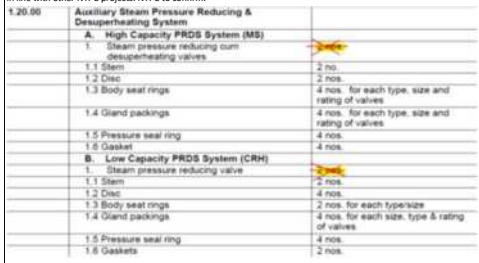
S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
2.	Section-I, Invitation for bids (IFB)	Approved QR for EPC Package for Singrauli STPP Stage-III (2 X 800 MW), Clause No. 1.7.0		Route 7: Company having experience of 500 MW Supercritical units on EPC basis	Route 7: Company having experience of 500 MW Supercritical/Subcritical units on EPC basis	Provisions of Bidding Documents shall prevail
3.	Section-I, Invitation for bids (IFB)	Approved QR for EPC Package for Singrauli STPP Stage-III (2 X 800 MW), Clause No. 1.7. I(a)		The Bidder should have executed on Engineering, Procurement and Construction (EPC) basis, minimum one (1) no. 500 MW or above pulverized Coal fired Supercritical unit comprising of at least steam generator and steam turbine generator sets along with their associated auxiliary equipments, electrostatic precipitators/bag filters, Switchyard, Coal Handling Plant, Ash Handling plant, Cooling Towers, Condenser Cooling water system, including associated civil works for the above equipments and systems, which is in successful operation for a period of not less than one (1) year	The Bidder should have executed on Engineering, Procurement and Construction (EPC) basis, minimum one (1) no. 500 MW or above pulverized Coal fired Supercritical/ Subcritical unit comprising of at least steam generator and steam turbine generator sets along with their associated auxiliary equipments, electrostatic precipitators/bag filters, switchyard, Coal Handling Plant, Ash Handling plant, Cooling Towers, Condenser Cooling water system, including associated civil works for the above equipments and systems,	Provisions of Bidding Documents shall prevail

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Pre-bid Query & Clarification	Employer's Reply
				prior to the date of techno-commercial bid opening.	which is in successful operation for a period of not less than one (1) year prior to the date of techno-commercial bid opening.	

EPC PACKAGE FOR SINGRAULI SUPER THERMAL POWER PROJECT, STAGE - III (2x800 MW)
Commercial Clarifications No. 04 to Bidding Document No.: CS-1150-001(R)-2

S/N.	Section / Part / Chapter / Volume	Clause No.	Page no.	Bid Specification Stipulation	Statement of Query	Employer's Reply
1.	Section-IV (GCC) ***[Commercial Clarification No. 01 issued on 21st Nov'2023]***	10.2	26 of 85	…..The Employer reserves the right to hand over the Site in parts progressively to the Contractor. The Contractor will be required to take possession of the Site without any undue delay and do work on the released fronts in parts without any reservation whatsoever. ***NTPC's Response in Clarification No. 01:*** *Area shall be provided in parts progressively to the Bidder as per Project requirement and Bidder's mobilization plan.*	'Employer's response with respect to laydown handover as per "Bidder's mobilization plan" is not acceptable and it possesses high risk of project delay without any recourse to the Bidder. In view of the above, Bidder would like to inform that substantial area of laydown indicated in revised GLP is encroached and therefore cannot be utilized. Also, the balance area is full of trees which will require extensive tree cutting by Employer. Please appreciate that the area needs to be developed in totality including levelling and grading, construction of roads and drains etc. We, therefore, request Employer to specify firm month from NOA, when the complete laydown area indicated by Employer in revised GLP (~95 acres) including the encroached area will be available to Bidder.	Refer Technical Amendment No. 5

EPC Package for Singrauli STPP Stage III (2x800 MW)
Pre-Bid Clarification

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
1	VI/B	B-06	13 OF 19	7.00.00	Each motor/heater feeder shall consist of MPCB/MCCB (with S/C release only), Power contactor & intelligent motor controller (IMC) to ensure Type-2 Co-ordination……	Drive pertaining to soot blower are fractional KW drive, so pls. allow Non-IMC feeders for these loads as huge no. of IMC are required to feed these loads. Many heater feeders are theomostatically controlled & in that case only supply feeder is provided from LT switchgear without having any contactor so in that case IMC is not applicable. Also in the case of heater being controlled from PLC/DDCMIS , contactor is required in LT switchgear heater feeder but still no OLR is applicable so kindly allow Non-IMC feeders for heater feeder having contacor.	1.Bidder proposal for non IMC feeders in soot blower MCC is acceptable. 2.Bidder proposal for non IMC module for supply feeder for heater is acceptable. 3. Bidder proposal is not acceptable. Specification cl. No. 7.00.00 Sub Section B-06 Section-VI Part-B to be followed.
2	SECTION – VI, PART-F	SUB-SECTION-VI	17 OF 39	1.20.00	**MANDATORY SPARES –** 	We understand that the quantity specified against heading 1.20.00(A)(1) & 1.20.00(B)(1) is a typographical error and mandatory spares are required only for the parts listed under s.no. 1.20.00(A)(1)(1.1 to 1.6) & 1.20.00(B)(1)(1.1 to 1.6) of the main APRDS valves in line with other NTPC projects. NTPC to confirm. 	Bidder's understanding is not correct. Specification requirement is clear in this regard. Bidder to comply the technical specification requirement.
3	SECTION-VI, PART-B	SUB-SECTION-D-1-5, CIVIL WORKS SALIENT FEATURES AND DESIGN CONCEPT	28 of 127	5.07.00	Complete sewerage system including Sewage Treatment Plant for facilities within the plant is in bidder's scope. Bidder shall provide 'De-centralized Sewage Treatment' units. The capacity of the Decentralized Sewage Treatment' units should be as per the design requirements, subject to minimum combined capacity of 75 Cum/day. Design of Sewage treatment plant shall be as per CPHEEO manual. Primary, Secondary and Tertiary treatment to be provided. Treated sewage water shall be used for horticulture purpose as per quality requirement of CPHEEO manual. Cement concrete pipes of class NP-3 as per IS 458 shall be used below ground level for sewage disposal in all areas other than main plant area. However, for pressure pipes and in main plant areas, and under roads spun Cast Iron pipes conforming to IS 1536 of required class shall be used. RCC manholes with CI cover shall be provided at every 30m along the length, at connection points, and at every change of alignment, gradient or diameter of a sewer pipeline. This shall be as per IS 4111. Sewage pump stations shall be provided as per IS 4111. Bidder shall have to provide complete arrangement for sewage disposal up to the sewage treatment plant including pumping facilities.	1. Alternatively, kindly confirm if, bidder may provide a Centralized Sewage Treatment Plant' for facilities within the plant with minimum combined capacity of 75 cum/ day and MBBR technology shall be used for centralized sewerage treatment plant. This is in line with recent PATRATU project amendment. Kindly confirm acceptance. 2. Please note that CI pipes are available in higher sizes i.e. 80 NB and above. Being very small capacity STP requirement, the sewage shall be pumped/ fed through gravity as per site requirement & the pipe sizes are expected to be less than 80 NB. In view of above, the pipe material of HDPE/ PVC may pl. be allowed. This is as accepted/ approved by M/s NTPC in PANKI & PATRATU project. 3. Treated Sewage Water (after tertiary treatment) shall be used for horticulture purpose in nearby ar-ea of respective STPs only. However, if this is not to be utilized for horticulture purpose, the treated sewage water (after meeting the environmental norms w.r.t. Sewage Discharge) shall be led to storm water drain. Please accept/ confirm. 4. There is no mention of EQMS in the specs. We un-derstand that the EQMS is not to be provided. 5. Please confirm the type of control system to be envisaged for Sewage Collection Sumps and Decentralized STPs.	"1.Bidder's proposal is not acceptable. Bidder to follow technical specification. 2. Bidder's proposal is not acceptable. However, if diameter of pipe required during detailed engineering is less than 80 NB, HDPE/ PVCpipe may be considered for lower diameters on case to case basis. 3. Collection/ storage of effluent treated sewage after tertiary teatment is not in bidder's scope. 4. Bidder's understanding is correct. 5. Manual electrically operated control system is envisaged."
4	SECTION-VI, PART-B	SUB-SECTION A - 11 CONDENSATE POLISHING UNIT	05 of 16	4.05.0 , Sr. No. 13	Operating pressure for service vessels shall be normal operating pressure of condensate extraction pump. Service vessel design pressure shall be equal to shut off pressure of condensate extraction pump plus 5% margin.	Please note that the operating pressure for service vessels shall be normal operating pressure of condensate extraction pump which is much below the shut off head of condensate extraction pump and hence Service vessel design pressure shall be equal to shut off pressure of condensate extraction pump. Customer is requested to kindly accept the same.	Bidder's request reviewed and not accepted. Bidder to comply Technical Specification requirements.
5	SECTION-VI, PART-A	SUB-SECTION IIA-20 CONDENSATE POLISHING UNIT	1 of 2	2.04.00 b)	One (1) set of regeneration facilities consisting of Resin separation vessel, Cation,Anion regeneration vessel(s), Resin make-up hopper, Mixed resin storage vessels (1 nos) etc.	Customer to please note that there is ambiguity regarding regeneration vessels requirement mentioned in different clauses of the specification and tender P&ID: Bidder understands that one (1) set of Resin Separation & Cation Regeneration Vessel, Anion Resin Regeneration Vessel & Mixed Resin storage vessel (2 Nos.) to be considered. The regeneration vessels are supplier specific and hence the vessel name shall be as per supplier recommendation. Kindly confirm bidder's understanding.	Bidder's understanding is not correct.P & ID is indicative w.r.t nos of vessels, Bidder to supply One (1) number MRSV inline with Clause 2.04.00(b) of Sub- Section IIA-20, Part-A Section-VI .
	SECTION-VI, PART-B	SUB-SECTION A - 11 CONDENSATE POLISHING UNIT	5 of 16	4.06.00 a)	One (1) common facility for regeneration of the ion exchange resins from the condensate polishers of all the turbo-generator units shall be provided utilizing three (3) tank concepts and consisting of: 1) Resin Separation & Cation Regeneration Vessel (1 sets). 2) Anion Resin Regeneration Vessel (1 sets). 3) Mixed Resin storage vessel (1 sets).		
	SECTION – VI, PART-E	LIST OF TENDER DRAWINGS	P&I Diagram for Condensate Polishing Plant (1150-001-POM-A-013 sheet 2 of 2)		As per P&ID it is indicated One (1) set of regeneration facilities consisting of Resin separation vessel and Cation regeneration vessel ,Anion regeneration vessel, Mixed resin storage vessels-I (1 no) & Mixed resin storage vessels-II (1no) .		

EPC Package for Singrauli STPP Stage III (2x800 MW)
Pre-Bid Clarification

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
6	VI/A	I	7 of 9	4.08.00	All the plant layouts shall be made in computerized 3D modelling system as detailed in Part C of the Technical Specification.	It is clarified that for Steam generator & auxiliaries, • 3D Plant review model of boiler reflecting "as de-signed" conditions will be delivered at the end of the project • 3D model will be utilized to develop plant layouts and for interference checking internally, however, finalized drawings will be completed using Auto CAD • Major equipment & sub system of the boiler will be covered in the plant modeling. • 3-D modeling will be started after completion of engineering only & not connected to any contract schedule. • Review model only will be submitted Further, P&IDs will be created as per BHEL's standard practice.	Biidder proposal is reviewed and not accepted . Bidder to comply with tender specifications .
7	VI/C	GTR	15 of 119	8.03.04, a(i)	All the plant layouts shall be made in computerized 3D modelling system. The Employer reserves the right to review the 3D model at different stages during the progress of engineering. The layout drawings submitted for Employer's review shall be fully dimensioned and extracted from 3D model after interference check.		

SINGRAULI SUPER THERMAL POWER PROJECT
STAGE - III (2X800MW)

PREBID QUERIES & CLARIFICATION

Sr. No.	Clarification/ Amendment Reference	Section / Part / Chapter / Volume	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification/Amendment	Query on Owner's Clarifications & Amendments	Owner's Response
725	Technical Amendment-01, Sr. No. MH-6 Page 2 of 17	VI/A	IIA-15	4/9	1.25.00	Total Seven (7) Nos. In-line Magnetic Separators on Conveyors. One no. on each conveyor feeding to crusher house, One no. on each conveyor feeding to Main plant, One no. on each yard conveyors head end, and one no. on conveyor taking feed from Stage-II stockyard. Three (3) Nos. of sus-pended magnets on Conveyors complete with reject chutes, reject trolleys, supporting arrangement, and all mechanical, electrical, civil, structural works and accessories.	-	Total Six (6) Nos. In-line Magnetic Separators on Conveyors. One no. on each conveyor feeding to crusher house, One no. on each conveyor feeding to Main plant, One no. on each yard conveyors head end, and **one no. on conveyor taking feed from Stage-II stock- yard.** Two (2) Nos. of suspended magnets on Conveyors complete with reject chutes, reject trolleys, supporting arrangement, and all mechanical, electrical, civil, structural works and accessories.	Bidder understands that **"one no. on conveyor taking feed from Stage-II stock-yard"** is not applicable. Owner is requested to check and amend it accordingly.	Bidder to consider total Six (6) nos. of ILMS in line with coal flow diagram, Rev-1. Two (2) nos in crusher house, Two (2) nos in TP-21, one (1) each in TP-28 & TP-29. Bidder to further refer note no 2 in the coal flow diagram, Rev-1
726	Technical Amendment-01, Sr. No. MH-10 Page 2 of 17 Technical Clarification-01, Sr. No. 57, PDF Page 112 of 191	SECTION-VI, PART-B SECTION-VI, PART-B SECTION – VI, PART-E SECTION – VI, PART-A	SUB SECTION-A-01 SUB SECTION-A-01 1150-999-POC-F-001 SUB-SECTION-III	59 of 75 78 of 92 -- 3 OF 3	4.01.02 4.01.02(F) -- 4.01.00	(F) Ash slurry disposal system (ii) Maximum pumping distance – 13 Km or as per actual distance for the farthest disposal point in ash dyke whichever is higher. (i) Elevation of top of Ash dyke:- 26 m Terminal point of Ash slurry piping & AWRS is not indicated in tender GLP c) Ash slurry piping & AWRS from 5 m inside plant boundary to Ash dyke shall be excluded from the Bidders' scope.	To ensure that all Bidders are at par, Owner is requested to kindly provide single value for maximum pumping distance including garlanding (in km) to be considered for ash slurry disposal pump head selection. Owner is request to kindly remove "or as per actual distance for the farthest disposal point in ash dyke whichever is higher" since the ash dyke location is not known. Bidder understands that 26m is the static height to be considered for combined ash slurry disposal pump head selection. Please confirm Bidder's understanding. Terminal point of Ash slurry piping & AWRS is not indicated in tender GLP. Owner is requested to kindly provide the tentative location/co-ordinate for the same in GLP.	As per Amendment Sl. No MH-10: (i) Elevation of top of ash dyke : RL 300.2m Ultimate Khariya Dyke height (ii) Maximum pumping distance – 17km (including garlanding for S1/S2) As per Amendment Sl. No MH-10: (i) Elevation of top of ash dyke : RL 300.2m Ultimate Khariya Dyke height (ii) Maximum pumping distance – 17km (including garlanding for S1/S2) **Owner's reply to Sr. No 57:** Bidder to provide BA slurry pipes and AWRS pipe upto 5m from the plant boundary. Bidder to refer terminal point chapter.	Owner has mentioned additional disposal point i.e Khariya Dyke which is not located in GLP. Owner is requested to mark/provide the tentative location/co-ordinate for the same in GLP as Bidder's scope is upto 5m from the plant boundary inline with clarification to point no. 57. The above is required for estimation and to keep all Bidder's at par.	Bidder to refer revised GLP, Rev-C for the terminal point of the ash pipe corridor from combined ash slurry pump house to khariya dyke.
727	Technical Amendment-01, Sr. No. MH-10 Page 2 of 17 Technical Clarification-01, Sr. No. 57, PDF Page 112 of 191 GLP as per Amendment no 1	SECTION-VI, PART-B TECHNICAL SPECIFICATIONS SECTION-VI, PART-B GENERAL LAYOUT PLAN DRG. No. (1150-999-POC-F-0001 Rev. No. B SECTION – VI, PART-A	SUB SECTION-A-01 SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA '- SUB-SECTION-III	78 of 92 78 OF 92 '- 3 OF 3	4.01.02(F) '(F) '- 4.01.00	(i) Elevation of top of Ash dyke:- 26 m (i) Elevation of top of ash dyke : 26m (for both S1 & S2 dyke) Combine Ash Slurry pipe corridor toward Khadiya Ash Dyke. c) Ash slurry piping & AWRS from 5 m inside plant boundary to Ash dyke shall be excluded from the Bidders' scope.	Bidder understands that 26m is the static height to be considered for combined ash slurry disposal pump head selection. Please confirm Bidder's understanding. 'Owner is requested to furnish the Reduced Level of Top of Ash Dyke (with respect to Reduced Level of Main Plant FGL) to design ash slurry disposal pumps. '- Terminal point of Ash slurry piping & AWRS is not indicated in tender GLP. Owner is requested to kindly provide the tentative location/co-ordinate for the same in GLP.	Bidder to refer Sl. No MH-10 amendment no 1 to technical specification. : : RL 300.2m Ultimate Khariya Dyke height (ii) Maximum pumping distance – 17km (including garlanding for S1/S2) 'Bidder to refer Sl. No MH-10 amendment no 1 to technical specification. :: RL 300.2m Ultimate Khariya Dyke height (ii) Maximum pumping distance – 17km (including garlanding for S1/S2) New Ash pipeline to Khadiya Ash dyke Owner's reply to Sr. No 57: Bidder to provide BA slurry pipes and AWRS pipe upto 5m from the plant boundary. Bidder to refer terminal point chapter. 	Owner has mentioned additional disposal point i.e. Khariya Dyke in response to clarification and Amendment MH-10. The same is also indicated in the Tender Plot plan near combined Ash slurry pump house. However terminal point location for the Ash slurry pipes to Khariya Dyke is not located in GLP. Owner is requested to mark/provide the tentative location/co-ordinate for the same in GLP as Bidder's scope is upto 5m from the plant boundary inline with L&T clarification to point no. 57. The above is required for estimation and to keep all Bidder's at par.	Bidder to refer revised GLP, Rev-C for the terminal point of the ash pipe corridor from combined ash slurry pump house to khariya dyke.
728	Technical Clarification-01, Sr. No. 61, PDF Page 113 of 191	SECTION-V I, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	 23 OF 76 '23 OF 76	5. 8. 9. 13. 6.	e) Ash Handling Plant List of drives with corresponding weightage factors thereof for which power consumption is to be guaranteed is as follows: (i) Fly ash conveying air compressors with air drying plant (ADP): 1 Transport air compressor with air drying plant (ADP): 1 Transport air compressor with air drying plant (ADP) for classification system: 0.40 Combined ash slurry disposal pumps: 0.5	Discrepancy observed in drive list for AHP package under station auxiliary power consumption. In view of lean and dry disposal of fly ash, Bidder understands that following referred drives shall be applicable: 8. (i) Fly ash conveying air compressors with air drying plant (ADP): 1 13. Transport air compressor with air drying plant (ADP) for classification system: 0.40 6. Combined ash slurry disposal pumps: 0.5 and 9.0 Transport air compressor with air drying plant (ADP): 1 will not be applicable. Please confirm Bidder's understanding.	**Owner's reply to Sr. No 61:** Bidder to refer Sl. No MH-40 amendment no 1 to technical specification.	Amendment MH-40 is not relevant to this query, Owner is requested to furnish the amendment for the same.	Bidder to refer sl no MH-1 of the amedment 3 to technical specfication.
729	Technical Amendment-01, Sr. No. MH-27 Page 8 of 17 Technical Clarification-01, Sr. No. 36, PDF Page 109 of 191	SECTION-VI, PART-A SECTION-VI, PART-B SECTION-VI, PART-E	SUB-SECTION-IIA-16 SUB-SECTION: A-21 SINGLE LINE FLOW DIAGRAM OF BOTTOM ASH HANDLING SYSTEM (JET PUMP SYSTEM) ASH DISPOSAL & ASH WATER SYSTEM DRG. No. (9587-001(R)-POM-A-025) Rev. No. A	4 of 17 30 of 41 -	1.01.05 (C-2) 4.00.00 -	(ii)T**hree (3) lengths** of bottom ash slurry **MS pipelines** from the bottom ash slurry disposal pump house to the combined ash slurry pump house with a branch to dewatering bins .... pneumatically actuated valves. **Type: 20 thk. Cast basalt lined MS (MS shell of 6.00 mm thick) piping for BA slurry transportation from boiler area up to slurry sump of BA slurry pump house and slurry disposal pipes with ash slurry pump house.** From ash slurry disposal pump discharge upto disposal point upto Dewatering Bins, & in culverts/trenches at rail/road crossings. Note No. 7 : THE ASH SLURRY PIPING FROM DISCHARGE OF JET PUMP UPTO BA SLURRY TRANSPORTATION PUMP HOUSE SHALL BE BASLAT LINED. ASH SLURRY TRANSPORTATION PIPING WITHIN BA PUMP HOUSE AND UPTO DEWATERING BIN SHALL BE BASLAT LINED.	There is contradiction in stated clause regarding pipe material for BA slurry piping from BA slurry sump to combined ash slurry pump house/dewatering bin. Hence, Bidder has considered total MS type BA slurry pipelines from BA slurry pumps house to dewatering bin/combine ash slurry pump house as per part-A, cl. no. 1.01.05 (C-2). Please confirm and issue an amendment suitably.	As per Amendment Sl. No MH-27: Three (3) lengths of bottom ash slurry pipelines from the bottom ash slurry disposal pump house to the combined ash slurry pump house	Owner to note that MOC of ash slurry piping from ash slurry sump to combined slurry sump/dewatering bin is not clear. Bidder understands that MS ERW pipeline needs to be considered from ash slurry sump to combined slurry sump/dewatering bin as cast basalt lined pipe are not required in this area. Kindly confirm Bidder's understanding.	Bidder to consider cast basalt piping from slurry transportation pump house to dewatering bin and upto combined slurry pump house in line with cl no 4.00.00, A-21, Part-B of technical specification.
730	Technical Amendment-01, Sr. No. MH-14 Page 4 of 17	VI/A	A-16	8/17	1.01.06 (B) (vii & ix)	New Clause added	-	Twelve (12) nos. (6 working + 6 Standby) collector tanks each complete with wetting heads, air-washers, seal boxes supporting structure, platforms etc. for each unit. Fly ash slurry trench or Cast Basalt pipes with supporting structures shall be provided below wetting unit/collector tanks to transfer fly ash slurry to combined ash slurry sump for further disposal to ash dyke. Cast Iron liner for lining the slurry trench upto ash slurry sump, if Slurry trench shall be provided.	Owner to note that cast basalt piping below wetting unit/collector tanks to transfer fly ash slurry to combined ash slurry sump is not required. Owner is requested to review and amend it to MS piping along with alloy steel bends as per standard practice followed in executed projects.	Bidder's proposal is not acceptable.
731	Technical Amendment-01, Sr. No. MH-11 Page 3 of 17	VI/A	A-16	10/17	1.01.07 (i)	Three (3) nos. (two working + one standby) fly ash storage structural steel intermediate silos of 100 MT effective storage capacity each……	-	Three (3) nos. (two working + one standby) fly ash storage structural steel intermediate silos of 300 MT effective storage capacity each……	Bidder understands that MOC of fly ash intermediate silos shall be RCC/ Structural steel inline with coarse ash and fine ash hoppers. Please confirm Bidder's understanding.	Bidder's understanding is correct.
732	Technical Amendment-01, Sr. No. MH-19 Page 5 of 17	VI/A	IIA-16	5/17	1.01.05 (D),(ii)	One (1) number hopper isolation valve assembly below each economizer/eco duct hopper as specified complete with hopper connecting flanges, gaskets, nuts, bolts etc	-	One (1) number manual hopper isolation valve assembly & One (1) number motorized hopper isolation valve assembly below each economizer/eco duct hopper as specified complete with hopper connecting flanges, gaskets, nuts, bolts etc	As per OEM, motorized hopper isolation valve below each economizer/eco duct hopper will not perform due to high temperature. Hence, the same is not required. Kindly review the same and amend it accordingly.	Bidder's proposal is not acceptable.

SINGRAULI SUPER THERMAL POWER PROJECT
STAGE - III (2X800MW)

PREBID QUERIES & CLARIFICATION

Sr. No.	Clarification/ Amendment Reference	Section / Part / Chapter / Volume	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification/Amendment	Query on Owner's Clarifications & Amendments	Owner's Response
733	Technical Amendment-01, Sr. No. MH-2 Page 7 of 17	VI/B	A-21	22/41	2.15.00	New clause added	-	Following are MOC for the parts of DAES valves:- Sl Item description Technical Specification requirements 1. Buffer hopper RSV Gate & seat /Air lock tank inlet & outlet valve seat& disc MOC: ASTM-A532-82 CLASS-III TYPE-A, Hardness- 600BHN(Min) stress relieved. Lap finish 2. Pressure equalizing valve seat MOC: AISI:8620, Hardness - 500- 550 BHN (Min),stress relieved. Lap finish 3. Pressure equalizing valve disc MOC: ASTM-A532 CLASS-III TYPE-A, Heat Treated: To achieve 600BHN(Min.) & stress relieved. Lap finish 4. MHV (material handling valve) slide /ESP outlet valve slide MOC: SS 410; HARDNESS:325BHN(Min). Lap finish **5. MHV (material handling valve) seat /ESP outlet valve seat MOC: As per IS:4771-1985, Type-1A; Hardness:500BHN(Min), Ni/Cr=30/500. Lap finish** 6. Branch Segregating valve slide gate MOC: SS-410, Hardness- 325BHN(Min.) Surface finish at both the faces= 16 micron **7. Branch Segregating valve seat Ni/Cr 30/500 AS PER IS 4771- 1985 TYPE 1A (500BHN MIN.) Lap finish** In case of any conflict with other clauses, 2.15.00 shall supersede over other clauses	As per OEM, drilling is not possible in valve seat of hardness 500 BHN in referred highlighted points, hence, Bidder requests Owner to reduce it to 300 BHN as per standard practice followed by OEMs.	Bidder to refer sl no MH-2 of the amedment 3 to technical specfication.
734	Technical Clarification-01, Sr. No. 42, PDF Page 110 of 191	SECTION-VI, PART-A SECTION-VI, PART-B SECTION-VI, PART-E	SUB-SECTION-IIA-16 SUB-SECTION: A-21 SINGLE LINE FLOW DIAGRAM FOR FLY ASH HANDLING SYSTEM (PRESSURE SYSTEM) DRG. No. (9587-001(A)-POM-A-028) Rev. No. A	10 of 17 10 of 17 22 of 41 -	1.01.07 1.01.07 2.13.00 -	**(iv) Pitless type Weigh Bridge for rail loading below dry fly ash silos (minimum seven numbers)** complete with all electrical, controls, civil and structural works for weighment of rail Wagons during filling. (xiii) The pitching of ash silo and overall arrangement of hydro-mix conditioner units, telescopic chutes, air slides etc shall facilitate simultaneous loading of **seven wagons (BOXN/BCFC/BCCW/BTAP) from four number of RCC Silos**. ..... shall be provided. Weigh bridges **Platform size 24m x 3m (approx.)** Weigh bridge should take care of locomotive (weighing upto 150T) moving over weigh bridge at a speed of 8 Kmph. (For weigh bridges on the rail lines) Note no. 18: .....One (1) No. Weigh Bridge for rail unloading below each main fly ash silo complete with all electrical, controls civil and structural work for weighment from silos.....	There is contradiction regarding the quantity of Weigh Bridge below dry fly ash silos in stated clause (i.e. 4 vs 7). Bidder shall consider total 4 rail weigh bridges i.e. 3 nos. below Fly ash storage silo and 1 no. below fine ash storage silos. Also, platform length of 24m will not be possible with simultaneous loading of 4/7 wagons. The platform size shall be to suit weighment of various Ash Tankers/Rail wagons. Please confirm and issue an amendment suitably.	Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.	Owner's clarification to Bidder's query related to the width of weigh bridge platform length is not received, Owner is requested to review and revert.	Bidder to note that the platform size for the weighbridge shall be finalised during detailed engg to suit weighment of various Ash Tankers/Rail wagons.
735	Technical Amendment-01, Sr. No. MH-13 Page 3 of 17	VI/A	IIA-16	9/17	1.01.06 (E)	(j) Ten (10) numbers (6 working + 4 standby) screw type transport air compressors suitably sized and..... (k) Ten (10) numbers (6 working + 4 standby) refrigerant type air dryer .... (i) Ten (10) numbers (6 working + 4 standby) air receivers along	-	(j) Ten (10) numbers (7 working + 4 standby) screw type transport air compressors suitably sized and..... (k) Ten (10) numbers (7 working + 4 standby) refrigerant type air dryer .... (i) Ten (10) numbers (7 working + 4 standby) air receivers a	There is typo error. Bidder understands the following: (j) **Eleven (11)** numbers (7 working + 4 standby) screw type transport air compressors suitably sized and..... (k) **Eleven (11)** numbers (7 working + 4 standby) refrigerant type air dryer .... (i) **Eleven (11)** numbers (7 working + 4 standby) air receivers Please confirm Bidder's understanding.	Bidder's understanding is correct.
736	Technical Amendment-01, Sr. No. MH-2 Page 7 of 17	VI/B	A-21	22/41	2.15.00	New clause added	-	Following are MOC for the parts of DAES valves:- Sl Item description Technical Specification requirements 1, Buffer hopper RSV Gate & seat /Air lock tank inlet & outlet valve seat& disc MOC: ASTM-A532-82 CLASS-III TYPE-A, Hardness- 600BHN(Min) stress relieved. Lap finish 2. Pressure equalizing valve seat MOC: AISI:8620, Hardness - 500- 550 BHN (Min),stress relieved. Lap finish 3. Pressure equalizing valve disc MOC: ASTM-A532 CLASS-III TYPE-A, Heat Treated: To achieve 600BHN(Min.) & stress relieved. Lap finish 4. MHV (material handling valve) slide /ESP outlet valve slide MOC: SS 410; HARDNESS:325BHN(Min). Lap finish 5. MHV (material handling valve) seat /ESP outlet valve seat MOC: As per IS:4771-1985, Type-1A; Hardness:500BHN(Min), Ni/Cr=30/500. Lap finish 6. Branch Segregating valve slide gate MOC: SS-410, Hardness- 325BHN(Min.) Surface finish at both the faces= 16 micron 7. Branch Segregating valve seat Ni/Cr 30/500 AS PER IS 4771- 1985 TYPE 1A (500BHN MIN.) Lap finish In case of any conflict with other clauses, 2.15.00 shall supersede over other clauses	Owner to note that MOC for Fly Ash Feed Valve/ MHV mentioned at two place differently in Technical Specification and Amendment No. 1. Please clarify which one to follow. It is to be noted that the MOC as mentioned in Tech. Specification is being followed in NTPC projects.	Bidder to refer sl no MH-2 of the amedment 3
	-	VI/B	A-21	19 of 41	2.04.00 (a, b)		-	-		
737	-	Part-A	Sub Section-IB Project Information	8 of 22	Annexure-IIIA	Raw water analysis M-alkalinity:- 150 ppm as CaCO3 Calcium:- 110 ppm as CaCO3 Magnesium:- 30 ppm as CaCO3 Total Hardness:- 150 ppm as CaCO3..... ..... Total Anion:- 200 ppm Total Cation:- 200 ppm.	Total hardness is sum of Calcium ion and magnesium ion; which should be 140 ppm but as per the given data it is reflected as 150 ppm. The Value of ions given in water analysis is not matching with Total Anion and Total Cation. M-alkalinity value is given 150 ppm as CaCO3 which is very high, considering Raw water is used from hot water discharge channel of stage-II which has one (1) COC. So, Owner is requested to revisit the raw water analysis and give correct analysis.	--	--	Bidder to refer amendment WS -16 in this regard

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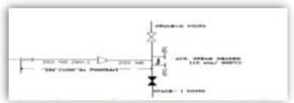
738	Technical Clarification 01, Sr.No. 233, PDF Page 133 of 191 Technical Amendment-01, Sr. No. SG.26, Page no 9 of 14	Technical Specification Section - VI, Part B Technical Specification Section - VI, Part E Tender Drawings Technical Specification Section - VI, Part A	Sub-Section-A-02 Steam Generator & Auxiliaries including ESP Dwg. No.: XXXX-999-POM-A-006 (Auxiliary Steam System P&ID) Sub-Section - III Terminal Points & Exclusions	50 of 67 - 1 of 3	16.01.01 - 1.01.01	**The operating parameters of the aux. steam header(s) shall be optimized by the bidder maintaining a minimum 50 degC superheat and minimum temperature of 310°C.....**Further, the Bidder shall provide an interconnection arrangement at station header with High Temperature Aux. Steam station header of existing stage-I (2x800 MW) units (Approx. length of interconnecting line is about 2250 meters). Auxiliary steam when sourced through this interconnection shall be available at a maximum rate of 60 T/hr with parameters 16 ata/ 310°C at Stage-I TP. Bidder shall consider the same for start-up procedures during initial commissioning.  **Note 10:** The operating pressure & temperature of Aux. Steam unit station header shall be optimized by the bidder maintaining a minimum 50°C superheat and minimum temperature of 310°C. TP for Auxiliary Steam interconnection for Auxiliary Steam Station Header with existing Stage-II with motorized isolation valve and NRV as indicated in the tender drg.	In absence of clarity between Cl. No. 16.01.01 and Auxiliary Steam System P&ID (Dwg. No.: XXXX-999-POM-A-006), Owner is requested to connect the Stage-I & Stage-II header as shown in the Auxiliary Steam System P&ID (Dwg. No.: XXXX-999-POM-A-006) and provide a single Terminal Point location (i.e. co-ordinate) with elevation at the existing aux. steam header for the further extension of the station aux. steam header to the Stage-III header as these inputs are not available in Cl. No. 1.01.01, Sec-VI, Part-A. Bidder understands that connection of Stage-I & Stage-II aux. steam header is not in the Bidder's scope of work. Owner is requested to confirm and amend the clause 16.01.01 accordingly. Further, in the tender drawing of Auxiliary Steam System, it is mentioned in Note-10, the minimum temperature to be maintained in the station aux. steam header as 310°C. Therefore, considering the temperature requirements of Turbine & Boiler OEM, Owner is requested to provide the steam parameters at the TP as **16 ata / 320°C**. In addition to above, allocation of auxiliary steam as 60 T/Hr is very less for 800 MW unit. Owner is requested to enhance the requirement by another 30 T/Hr so that uninterrupted aux steam supply will be available for different consumers of Boiler and Turbine during trouble-free operation of various start-up cases.	**Owner's Technical Amendment No. 1, SG-26:** To meet the continuous and start-up auxiliary steam requirements…. continuously required for any use. Further, the Bidder shall provide an interconnection arrangement at station header with Aux. steam header of existing stage-II (2x500 MW) units (Approx. length of interconnecting line is about 1500 meters). Auxiliary steam when sourced through this interconnection shall be available at a maximum rate of 40 T/hr with parameters 12 ata/ 300°C at Stage-II TP. Bidder shall consider the same for start-up procedures during initial commissioning. Auxiliary steam pressure reducing… section-VI.	Noted for the clarity of the interconnection point at the existing stage-II unit (2 x 500 MW). However, the parameters available at the existing unit terminal point as "40 T/hr with parameters 12 ata/ 300°C at Stage-II TP" is not acceptable. Most of the consumers at the Boiler & Turbine end requires a minimum pressure of 11-12 kg/cm2 & temperature of 300°C at their terminal point. Therefore, it is not practically possible to take the auxiliary steam from the existing header at 12 ata / 300°C and supply the same to Boiler & Turbine consumers at the same pressure / temperature. Therefore, NTPC is requested to provide the existing unit Terminal Point parameters i.e. Pressure & Temperature as minimum 16 ata & 320°C considering the pressure & temperature drop in the pipeline and also as per Note-10 of Tender Auxiliary Steam System P&ID (Dwg. No.: XXXX-999-POM-A-006) where operating temperature of Aux. Steam unit station header shall be maintained at minimum temperature of 310°C. Further, NTPC to note that the auxiliary steam quantity as 40 T/hr is very less and doesn't suffice the requirement of Boiler and Turbine OEM during various start-up cases. Therefore, NTPC is requested to amend the quantity of auxiliary steam from existing unit to minimum 90 T/hr.	40T/hr is the maximum rate of steam flow which can be sourced through the interconnection from Stage-II. In case of any additional requirement of auxuliary steam, bidder shall make its own arrangement for the same..
739	Technical Clarification 01, Sr.No. 708, PDF Page 180 of 191	SECTION – VI, PART-A	SUB-SECTION-I INTENT OF SPECIFICATION	5 OF 9	4.02.00	The Employer shall issue the following quantities of Fuel oil and Coal per unit for firing up to successful completion of "Initial Operation" (as defined in General Technical Requirements, Part-C, Section-VI of Technical Specification) for each unit free of charge. **Unit Size** | **800 MW** | **660 MW** Fuel Oil | 11200 kL | 9240 kL Coal | 2.7 Lakh MT | 2.3 Lakh MT Fuel oil and coal required for the successful completion of the "Initial Operation", more than the above-specified quantity limits, would be issued by the Employer. However, the Employer shall charge the Contractor the cost of these as per the prevailing landed rates at the site at that time.	Fuel oil and Coal quantities being provided by NTPC for Singrauli project is too low. In the recent Lara 2x800 MW (Ph-2) project NTPC is providing 15,300 kL Fuel oil & 3.43 Lakh MT of Coal free of cost to the successful bidder for each unit. Since there is an variation in the coal properties between Lara & Singrauli projects, request NTPC to provide the following corrected values of coal & Fuel oil quantities free of cost to the successful bidder for Singrauli project. Fuel oil : **15,300 kL** per unit (Same as NTPC Lara values) Coal : **3.25 Lakh MT** per unit (Corrected values from NTPC Lara) Request NTPC to issue suitable amendment in this regard.	The quantities indicated are adequate based on employer's assessment. Bidder to comply with the specification requirements.	Coal consumption values provided by NTPC are too low for 800 MW unit. In the earlier NTPC Talcher 660 MW project NTPC is providing 3.199 Lakh MT (per unit) of coal free of cost to successful bidder where as in NTPC Lara 800 MW project NTPC is providing 3.43 Lakh MT (per unit) of coal free of cost to the successful bidder. If we migrate the coal consumption values from Talcher 660 MW to Singrauli 800 MW unit, tentative coal consumption value works out to be **3.52 Lakh MT (i.e 3.199 x 800/660 x 3400/3750)** where as based on NTPC Lara 800 MW project quoted values coal consumption value works out to be **3.25 Lakh MT (i.e 3.43 x 3550/3750)** for Singrauli project. Hence we once again request NTPC to relook into the coal consumption values provided & increase the limit atleast by upto **3.25 Lakh MT** inline with bidder recommendation.	Bidder's proposal is not acceptable. Bidder to note that the philosophy adopted for specifying the coal consumption upto initial operation in the current tender is different from that adopted in the earlier tenders which have been referred by the bidder. Hence the comparison drawn by the bidder between the two is incorrect. Bidder has not inferred the coal consumption values of earlier tenders correctly, as these were based on evaluation criteria. It is reiterated that quantities indicated are adequate based on employer's assessment. Bidder to comply with the specification requirements.
740	Technical Clarification 01, Sr.No. 250, PDF Page 135 of 191	Technical Specification Section - VI, Part B	Sub-Section A-07 STEAM TURBINE AND AUXILIARIES SYSTEM	15 of 25	6.05.07	Design of drive turbines generally in accordance with API 612 and 614 and testing in accordance with ASME PTC-6.	American Petroleum Institute (API) is usually applicable for oil & gas industries & same is not applicable for Power projects. Hence API will not be considered for this project for any equipment design. Please confirm acceptance. Accordingly Bidder proposes to design BFP drive turbine as per IEC 45 / as per the OEM standard proven practice. Please confirm acceptance. Further, Bidder would like to inform that a separate PG test as per PTC-6 is not envisaged exclusively for BFP drive turbine as the same is part of overall PG test done for the STG. Owner is requested to confirm the acceptance.	Bidder's proposal for Drive Turbine design code as IEC 45 is not acceptable. Bidder to comply with the specification requirements.	American Petroleum Institute (API) is usually applicable for oil & gas industries & same is not applicable for Power projects. Hence API will not be considered for Drive turbine design. Drive turbine will be designed inline with OEM standard proven practice. Please confirm acceptance.	Bidders proposal is not acceptable. Bidder to comply with the technical specification requirements.
741	Technical Amendment-01, Sr. No. SG.24, PDF Page 9 of 14	VI/B	A-02	40 of 67	13.01.05 (a)	Minimum 8 mm thick steel plates for gas ducts upstream of ESP and minimum 6 mm thick steel plates for gas ducts downstream of ESP	-	Amendment01 - SG24 Minimum 8 mm thick steel plates for gas ducts upstream of ESP and minimum ~~**6 mm**~~ **7 mm** thick steel plates for gas ducts downstream of ESP	Please note that 7mm is not a standard size plate thickness and not readily available with mills, hence request NTPC to kindly keep the gas ducts downstream of ESP thickness as 6mm as earlier.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply with the specification requirement.

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FGD- Limestone & Gypsum Handling system										
742	Technical Amendment-01, Sr. No. MH-28, Page no. 8 of 17 Technical Amendment-01, Sr. No. MH-29, Page no. 8 of 17	VI/B VI/E	A-14 Tender drawings	1/4	1.01.01	Limestone shall be conveyed to usage point through single stream conveyors & Bucket Elevators of capacity 100% for conveying. Limestone Flow Diagram xxxx-031, Rev-00	-	Limestone shall be conveyed to usage point through double stream conveyors & Bucket Elevators of capacity 100% for conveying. Limestone Flow Diagram xxxx-031, Rev-01	Said Clauses are contradictory. In flow diagram (Rev-01), single stream has been shown However, as per amendment MH-28, double stream is to be provided.. Bidder understand that bidder has to follow Limestone Flow Diagram xxxx-031, Rev-01. Please confirm.	Bidder to consider double stream conveyors & Bucket Elevators of capacity 100% for conveying in line with Sl No MH-28 of amendment to technical specification.Refer attached revised Limestone flow diagram 9587-001-POM-A-031 (sht-1) Rev.2
743	Technical Clarification 01, Sr.No. 645, PDF Page 170 of 191	TECHNICAL SPECIFICATIONS SECTION – VI, PART-A - PART-E2	SUB-SECTION-IIA-14 LIMESTONE AND GYPSUM HANDLING PLANT Drg no : 9587-001(R)-POM-A-031 (SH-1)	1 of 4, 53 of 130	1.01.03	One (1) number Limestone crusher house (CH) complete with all civil, structural, architectural and electrical works etc. accommodating suitable nos. crushers and associated Vibrating screening feeders, passenger cum goods elevator, conveyors, chute work along with actuator operated flap gates, monorails & hoists, hoist maintenance platform, external and internal staircases, hand rails and other equipment such as sampling unit, dust extraction system etc. as specified elsewhere. As per flow diagram, at crusher house rod gate and rack & pinion gate is provided	Due to contradiction of said clauses, bidder is considering 1 no of flap gate arrangement at crusher house (after discharge chute of LC-1 above vibrating screen) for smooth and quick changeover of the stream path from one stream to another instead of Rod gate & R&P gate arrangement shown in the flow diagram.	Bidder to refer Sl. No MH-29 amendment no 1 to technical specification.	Bidder would like to clarify that as per Sl. No MH-29 amendment no 1, Both Flap gate as well as RPG & ROD has to be provided below LC-1. Which is not required from functional / operational point of view. Bidder propose to provide either of flap gate arrangement or ROD & RPG date arrangement instead of both arrangement due to space constraint. Bidder requests Owner to accept our proposal.	Bidder's proposal is not acceptable. Bidder to provide both flap gate and RPG & rod gate in line with Limestone Flow Diagram xxxx-031, Rev-01

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744	Sr. No. 56 (File: TechnicalClarification01.pdf PDF Page No.101 of 191)	VI/B	B-11	8 of 18	12	Power supply shall be fed from 415 / 240 V normal AC supply, emergency AC supply and 220V DC supply through suitable number of conveniently located lighting distribution boards (LDB) and lighting panels (LP). AC lighting supply shall be isolated from main supply by 2x100% isolation transformers of max. rating of 50 KVA for 10/15 nos. outgoing feeder with changeover switch facility. The isolation transformer shall be fed from two different bus sections of MCC and fault level restricted to 3 KA at Lighting Panels.	Power supply shall be fed from 415 / 240 V normal AC supply, emergency AC supply and 220V DC supply through suitable number of conveniently located lighting distribution boards (LDB) and lighting panels (LP). AC lighting supply shall be isolated from main supply by 1x100% isolation transformers in Main Plant area and 2x100% isolation transformers in Off-site (Balance of Plant) area of max. rating of 100 or 50 KVA for 12 to 8 nos. outgoing feeder with changeover switch facility for 2x100% one. The fault level restricted to 9 KA at Lighting Panels.	i) Bidder proposal of 1X100% isolation Transformers in main plant area is not acceptable . Specification requirement to be followed. ii)The rating of 100 or 50KVA with Bus coupler to be envisaged.	As per NTPC, SECTION – VI, PART-B, 3.06.00 i), page-8 Of 16 of SUB-SECTION B-0, "For Main Plant (TG & SG areas) and Service Building, each Lighting DB shall have 1X100% transformer. For all other offsite areas, each Lighting DB shall have 2X100% transformers". Bidder understand that above requirement will be followed. Please confirm.	Clarification to be read as: 1) Bidder proposal of 1X100% isolation Transformers in main plant area is acceptable however 2x100% isolation transformers shall be provided in Off site area. 2) The rating of isolation transformer shall be 100KVA or 50KVA as per load requirement. Bus coupler shall be provided wherever 2x100% arrangement is provided. 3) Bidders to provide 10/15 number of outgoung feeders in lighting DB as per requirements of technical specifications. 4) Bidders proposal of 9KA fault level is not acceptable. Fault level shall be restricted to 3KA as per specification requirements.
745	Sr. No. 95 (File: TechnicalClarification01.pdf PDF Page No.117 of 191)	TECHNICAL SPECIFICATION SECTION-VI, PART-B BID DOC NO. CS-9587-001-2	SUB-SECTION-D-1-5 CIVIL WORKS SALIENT FEATURES AND DESIGN CONCEPT	PAGE 99 OF 127	5.27.00	Workshop Building	In absence of any detail of workshop equipment in mechanical section, Bidder understands that workshop building and workshop equipment are not applicable for Singrauli-III. Please confirm Bidder's understanding.	Workshop building is included in scope of the package. Workshop equipments are excluded from bidders scope of supply.	NTPC is requested to clarify the scope of electrical work for work shop building (e.g. DB, cable, cable raceway, HVAC load, work shop load, lighting earthing etc).	Bidders understanding is not correct. Only Workshop Equipments are excluded from scope of supply of bidder. Entire electrical network, HVAC, Firefighting, Lighting, Cable, Cabling, Earthing Lightning protection for the Workshop building is in bidders scope.
746	Sr. no. 1 (File: TechnicalClarification01.pdf PDF Page No.32 of 191)	SECTION-VI, Part-A	IIB	9 of 19	1.16.01 (i)	The scope of work comprises of Design, supply, erection, testing and commissioning of 400kV SF6 Gas Insulated Switchyard including AIS portion and Bay strengthening of Tie Line1 & 2 at VSTPP-IV switchyard as shown in single line diagram associated with Singrauli STPP stage-III (2X800MW) as shown in Single Line diagram(1150-999-POE-J-001). The existing VSTPP-IV 400kV Switchyard is provided with one and half breaker scheme. The switchyard shall employ switching scheme as indicated in single line diagram.	Following queries are related to VSTPP-IV only. 1. Kindly provide Structure layout, Earthmat layout, Structure loading layout, outdoor Equipment details like drawings for assessment of suitability. 2. As per Drawing no. 1150-999-POE-J-001 Bidder understand that Existing 400 kV Circuit Breaker at VSTPP-IV AIS meets the tender requirement and same can be reused. Kindly confirm. 3. Bidder understands only DIA A and DIA B to be made suitable for 3000A. Existing Bus-1 and Bus-2 are already Suitable to meet Tender requirement and need not to be dismantled. Kindly confirm. 4. Shunt equipment/items which do not carry rated current can be reused. Kindly confirm. 5. Series equipment/items which do carry rated current need only to be replaced by new equipment meeting Tender specification. Kindly confirm. 6. Bidder Understand if any equipment/tower foundation which is not required to be dismantled, the same can be reused. Kindly confirm. 7. Kindly confirm that any work related Control and Protection, SAS system,PLCC at VSTPP-IV is not in scope of Bidder. 8. Bidder understand that since there is no addition of new bays at VSTPP-IV, hence LT Power and control cable are not required to supplied and installed. Kindly confirm same. 9. Existing main earthmat shall be used as it is. Only new equipments which are to be installed shall be earthed with main existing earthmat. Kindly confirm.	1.The existing switchyard drawings will be provided during detailed engg stage on award of contract. 2. Bidder understanding is not correct . The existing CB, isolator ,CT at VSTPP-IV AIS is of rating 2000A. Bidder to provide the equipments as per the tender requirement . 3. Bidder understanding is correct . 4.Confirmed. except for CVT 5.Confirmed. 6. confirmed. However any modification / augmentation required to match with new rating equipment is also in the scope of Bidder. 7.Modification / augmentation in existing control and protection, SAS system at VSTPP-IV to meet the system requirement is also in the scope of bidder. 8.Bidder understanding is not correct. The LT power & control cables required for augmentation of Bay equipments is in the scope of Bidder. 9.Confirmed.	As per Technical Amendment-01, Owner has excluded LILO of VSTPP-IV and VSTPP-V 400kV D/C Transmission line with Singrauli-III Plant. Hence, Bidder understands that the work related to Modification and Bay strengthening of Tie Line1 & 2 at VSTPP-IV switchyard is also excluded from Bidder's scope. Owner may please confirm.	Bidders Understanding is correct. Revised scope of work for switchayard is already included along with Technical Amendment-01

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747	Technical Clarification-01, Sr. No. 309, Page 139 of 191	SECTION-VI, PART-A SECTION-VI, PART-B	SUB SECTION-II A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP SUB-SECTION-IIIC-08	3 of 28 3 of 5	2.06.00 (2) 5.00.00	Double isolation (one motorised and one manual) valve at the suction and Motorised isolation, Electrohydraulic operated control valve and a non return valve on the discharge of the pump. Alternatively, Electrohydraulic operated control valve and a motor operated stop cum check valve is also acceptable. All control valves shall be furnished with pneumatic actuators except for pressure and temperature control valve for auxiliary PRDS application (electro-hydraulic / pneumatically operated) and separator drain control valve (electro-hydraulic type).The Bidder shall be responsible for proper selection and sizing of valve actuators in accordance with the pressure drop and maximum shut off pressure and leakage class requirements.	Bidder clarify that type of actuator for control valve will be based on actuator thrust requirement as per process conditions.	Bidder's understanding is not correct. Sizing of actuator for control valve shall be based on actuator thrust requirement as per process condition. Bidder to note that the type of actuator shall be as per specification requirement.	Bidder wish to clarify that type of actuator will be considered as per sizing requirement of actuator with reference to given process conditions.	Bidder's understanding is not correct. Sizing of actuator for control valve shall be based on actuator thrust requirement as per process condition. Bidder to note that the type of actuator shall be as per specification requirement.
748	Technical Clarification-01, Sr. No. 318, Page 139 of 191	SECTION – VI, PART-B	SUB-SECTION-IIIC-02 DDCMIS	4 of 17	16.00.00	**Wiring Scheme for inputs to Control System** 4. If based on the same set of sensors, any protection action is required in OLCS (e.g., protection stop of drive) in another controller(s), then CLCS Controller shall provide three digital outputs for each such controller from three separate output modules (at defined LVM-Limit Value Monitor blocks inside Controller). The three such digital outputs of CLCS controller shall be acquired in each of the OLCS controllers in three separate digital input modules.	The Philosophy of Triple redundant Signal Exchange is only considered for Protection Signals from DCS to BPS. Signal Exchange within DCS FGs are through dedicated redundant Communication Network, inline with already executed NTPC projects.	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.	Bidder wish to clarify that controller communication network between controllers is redundant and proven system as per already executed NTPC projects. Hence Bidder kindly request NTPC to accept bidder proposal as below **The Philosophy of Triple redundant Signal Exchange is only considered for Protection Signals from DCS to BPS. Signal Exchange within DCS FGs are through dedicated redundant Communication Network**	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.
749	Technical Clarification-01, Sr. No. 325, Page 140 of 191	SECTION – VI, PART-B	SUB-SECTION-IIIC-04 MEASURING INSTRUMENTS (PRIMARY & SECONDARY)	8 OF 35	3.08.00	**Multi Input Temperature transmitter (Temperature Multiplexer)** For only information related temperature inputs fieldbus based Multi input temperature transmitters can be provided. **Transmitters shall be capable of withstanding ambient temperature upto 85 deg C**. Maximum number of inputs per such temperature transmitter shall be eight. One (1) no. input shall be kept as spare wired upto TBs of field mounted panel in each multi input TT. These shall be installed in field mounted panels with minimum IP 55 protection class. Exact applications shall be as defined in PART-A of specifications.	Multi Input TTs are capable of withstanding ambient temperature upto 50 deg C and not upto 85 deg C. Further these will be mounted away from High Temperature zones. Please accept.	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.	Bidder is proposing as per market availability as per experience in Khurja project. NTPC shall suggest suitable vendor to meet this requirement as the same is required for estimation.	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.
750	Technical Clarification-01, Sr. No. 331, Page 140 of 191	SECTION – VI, PART-B	SUB SECTION-A-02	8 OF 67	3.07.00	Provide stainless steel expansion markers/indicator on all the four furnace walls to monitor thermal expansion. Predicted thermal expansion at different levels to be indicated. In addition to local indicators, measurement system (4-20mA Output) for remote indication shall also be provided on all the four furnace walls.	Bidder has no experience of providing thermal expansion measurement system with 4 - 20mA. Hence not considered in the scope of Bidder. If still required, employer is requested to furnish detail specification of the Instrument required for the application along with Suppliers having reference of supplied such systems which are in successful operation.	Bidder to provide thermal expansion measurement inline with Specification requirement. Same shall be discussed during detailed engg.	Bidder is not getting suitable vendor based on experience at Khurja project . Hence NTPC shall suggest proven supplier for this system as the same is required for estimation.	Bidder to provide thermal expansion measurement inline with Specification requirement. However same shall be discussed and finalised during detailed engineering for a suitable solution.

SINGRAULI SUPER THERMAL POWER PROJECT
STAGE - III (2X800MW)

PREBID QUERIES & CLARIFICATION

Sr. No.	Clarification/ Amendment Reference	Section / Part / Chapter / Volume	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification/Amendment	Query on Owner's Clarifications & Amendments	Owner's Response
751	Technical Amendment 01, PDF Page 198 of 226	VI	Part E		Technical Amendment No. 1, D1-45	TOPOGRAPHIC SURVEY 1150-001-POC-F-002	-	TOPOGRAPHIC SURVEY 1150-001-POC-F-002 Rev B	a)The referred topographic survey drawing have not been updated in the revised General Layout Plan (AutoCAD copy). Owner is therefore requested to furnish the CAD copy of the revised Topographic survey. b) Also Bidder understands that the correctness of topographic survey lies with Owner. Bidder will not conduct topographic survey during detail engineering. Please confirm.	a) Bidder to refer amendment D1-45. b) Bidder to refer cl no. 4.03.01 of Part B section VI, sub section D-1-4.
752	Technical Amendment 01, PDF Page 203 of 226	VI	Part E		Technical Amendment No. 1, D1-45	1150-999-POC-A-020 WORKER'S RESTROOM	-	1150-999-POC-A-020 Sheds for Construction workers and O&M Workers	Bidder understands that: a) Functionally Worker's rest room and Sheds for O&M/Workers are one and the same and therefore Bidder will consider only Sheds for O&M/Workers which are specified as per clause 1.00.00 Part A, Sr no. 22. Rest Rooms are therefore not applicable. Owner to please confirm Bidder's understanding. b) Also, the six number of Sheds for O&M/Workers are temporary structures and shall be dismantled after completion of construction work/COD of all the units. Please confirm.	Bidder's to refer ammendment no. D1-18
753	Technical Amendment 01, Sr. No. D1-54, Page 37 of 55	D1-54 / VI / B	D-1-9	05 of36	9.04.10	-	-	White glazed tile Above the Over deck insulation, White glazed tile (min. 5mm thick) for roofing over under bed of cement mortar/ concrete, topped with spreading the white cement slurry at an average rate of 2.5 kg/sq m (unless noted otherwise), jointing and joint filling with white cement slurry, laid to plumb and water level in desired pattern, casted in panels, wherever required, shall be provided on the roof of Service Building	As Under deck insulation will be provided under roof considering service building as AC, over deck insulation is not required. Bidder suggests to avoid it as the purpose is solved with under deck insulation. Owner to confirm	Bidder's proposal is not acceptable.
754	Technical Amendment 01, Sr. No. D1-55, Page 37 of 55	D1-55 / VI / B	D-1-9	05 of36	9.06.02	-	-	Over-Deck Insulation Roof insulation with 40 mm thick impervious sprayed, closed cell free Rigid Polyurethane foam over deck insulation conforming to IS: 12432 Part-III (density of foam being 40-50 Kg/Cum), over a coat of Polyurethane primer applied @ 6-8 sqm per litre, laid over 400 G Polythene sheet over PUF spray and provided with a wearing course of 40 mm cement screed 1:2:4 (1 cement: 2 coarse sand: 4 stone aggregate 20 mm nominal size) in chequered rough finish, in panels of 2.5m X2.5m and embedded with 24G wire netting and sealing the joints with polymerized mastic, shall be provided on the roof of Service Building above the waterproofing	As Under deck insulation will be provided under roof considering service building as AC, over deck insulation is not required. Bidder suggests to avoid it as the purpose is solved with under deck insulation. Owner to confirm	Bidder's proposal is not acceptable.
755	Technical Amendment 01, Sr. No. D1-57, Page 40 of 55	D1-57 / VI / B	D-1-9	11 of 127	9.13.11	-	-	.... **Light weight aerated concrete panels over that 50 mm thick mineral wool insulation with Single Skin Metal Panel cladding shall be provided in exterior of UPS Battery room area and Control Equipment Room area.** All internal side of Aerated concrete panel and columns in air-conditioned areas other than CCR in MPH shall be encased with Aluminium Composite panel cladding from inside	As , Aerated concrete panels are already insulated, additional insulation on wall between aerated panel and metal panel is not required. Owner to confirm	Bidder's proposal is not acceptable.

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S No	**BID SPECIFICATION**				**SPECIFICATION REQUIREMENT**	**Pre-Bid Queries/ Clarifications**	**NTPC Reply**
	Section	**Sub-Section**	**Page No.**	**Clause No.**			
1	VI-A	SUB SECTION-IV	6 of 76	1.01.02 (iv)	For deficiency in Average Condenser Pressure in mm Hg(abs) measured at 300mm above top row of condenser tube at 840 MW, 0% makeup, design CW temperature and design CW flow - Not more than 65 mmHg (abs)	Customer has envisaged excessive margins for the design of condenser cooling water system. TG cycle is guaranteed for condenser back pressure of 77 mmHg (abs) at 33 DegC. However, the condenser cooling water system is specified to be designed with design back pressure for condenser is 65 mmHg at 33 DegC, approx. 18% margin over the TG cycle guarantee back pressure of 77 mmHg. To understand the excessive margin, when condenser is designed with back pressure of 65 mmHg at 33 degC, 77 mmHg back pressure will be achieved when CW inlet temperature at condenser inlet is 36.3 deg C. therefore there is margin of 3.3 deg C which is excessive. It leads to increase in sizes of all components of CW system such as condenser, CW Pumps and especially NDCT and also increase in Aux power consumption of CW pumps by approx. 30% (i.e approx. 2 MW). Another way to understand the excessive margin is that if three (3) CW pumps are running to meet the CW flow required at 65 mmHg at 33 degC, then to meet the CW flow requirement at 77 mmHg at 33 degC, only two CW pumps will be required to operate i.e. the auxiliary power consumption of one CW pump is additional, if condenser is designed at 65 mmHg at 33 degC and operated at 77 mmHg at 33 degC..	Bidder proposal is not acceptable. Bidder to comply specification requirement.
	VI-B	SUB SECTION-A-01	34of 92	2.02.03 (vi)	(vi) Guarantee Condenser pressure - To be optimised by bidder but not exceeding 65 mmHg (abs).	It is suggested to limit the margin to a rational value of approx. 10% i.e. the condenser design back pressure may be selected as 70 mmHg instead of 65 mmHg. Further, please note for 65 mmHg back pressure with CW temp of 33 deg C the temperature rise available is approx. 9.35 deg C. In NDCT draft is produced when ambient air is heated by falling hot water resulting in density difference between outside cold air (higher density) and inside hot air (lower density). Therefore the NDCT performance will always be better with higher hot water temperature. With 70 mmHg backpressure the temperature rise will be between 10 to 11 deg C and this will ensure better draft in NDCT and accordingly its better performance.	
2	VI-B	SUB SECTION-A-01	44 of 92	3.01.00 (e)	Total Head of the CW pump at rated flow: Sum of static lift from minimum water level in CW pump house sump up to the Top elevation of hot water distribution header at Cooling Tower + 110% of friction drop in the entire CW system + pressure drop across Condenser with 2 mWC margin (minimum).	The additional 2 MWC margin in addition to 10% margin on friction drop for CW pumps head selection leads to excessive increase in Auxiliary power consumption. This 2 MWC additional margin corresponds to approx. 20% margin on entire friction drop. i.e, total margin on friction drop is increased to 30%. This will lead to unnecessary increase in the operating cost of the plant. Hence the 2 MWC margin is not required and may be removed.	Bidder's proposal reviewed and not accepted.Bidder to comply technical specification requirement.
3	VI-B	G-04	100 of 229	-	PG Test Procedure for TG & SG Plate Heat Exchanger (PHE)	Two PG Test procedures are enclosed in the speciication. Please clarify which is to be referred.	Bidders query is noted. Both the PG test procedures are identical and have been repeated inadvertently
	VI-B	G-04	162 of 229	-	PG Test Procedure for TG & SG Plate Heat Exchanger (PHE)		
4	VI-B	SUB SECTION-A-01	45 of 92	3.02.00 (g)	Design Cold water temperature at cooling tower outlet - 32.5 deg C	Customer has envisaged excessive margins for the design of cooling tower as below: 1. Please note that condenser is designed for 33 deg C. However the cooling tower is designed for cold water temperature of 32.5 deg C, which is approx. 10% margin in cooling tower approach i.e. 5 deg instead of 5.5 deg. 2. Customer has envisaged 0.5 degree margin in range of cooling tower, which amount to approx. 5% margin on heat load. The above margins excessively increase in cooling tower size and cost. Further the approach for cooling tower is 32.5-27.5 = 5 degreeC, is a difficult approach for such a large flow cooling tower and will be prone to frequent underperformance. The cooling tower approach for NDCT should be at least 6 degC. The specification requirement of designing the Condenser for 65 mmHg back pressure for arriving at cooling tower design flow has resulted in increase of Cooling tower flow by atleast 20% over the functional requirement. These conditions have resulted in requirement of large area for cooling towers	Bidders query has been reviewed. No changes are envisaged in the requirements of technical specifications based on the present bidders query
	VI-B	SUB SECTION-A-01	45 of 92	3.02.00 (E)	Design Range - Temp. rise across condenser + 0.5 deg C		
	VI-B	SUB SECTION- A-01	45 of 92	3.02.00 SN. g, i	Design Cold water temperature at cooling tower outlet = 32.5 degC Design ambient wet bulb temperature (WBT) = 27.5 degree C		

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S No	**BID SPECIFICATION**				**SPECIFICATION REQUIREMENT**	**Pre-Bid Queries/ Clarifications**	**NTPC Reply**
	Section	**Sub-Section**	**Page No.**	**Clause No.**			
	VI-A	SUB SECTION-IV	6 of 76	1.01.02 (iv)	For deficiency in Average Condenser Pressure in mm Hg(abs) measured at 300mm above top row of condenser tube at 840 MW, 0% makeup, design CW temperature and design CW flow - Not more than 65 mmHg (abs)	cooling towers. Hence it is requested to please revise the design cold water temperature at cooling tower outlet with design condenser cold water temperature i.e 33 degC.	
5	VI-B	SUB SECTION-A-07	23 of 25	Annexure-I, Sl. No. 4	4. Worst condenser pressure mmHg(abs) 89	Customer has envisaged excessive margins for the design of condenser cooling water system. Condenser is designed for back pressure of 65 mmHg at 33 degC. Accordingly the maximum cooling water temperature for worst condenser pressure of 89 mm Hg (abs) shall be 39 deg C instead of 36 degC. Hence same may be corrected.	Bidder proposal is not acceptable. Bidder to note 65 mmHg has been specified for condenser pressure guarantee. Bidder to refer condenser pressure of 77 mmHg (specified for Heat rate Guarantee test condition) for arriving Worst CW inlet temperature. Bidder to comply specification requirement
	VI-B	SUB SECTION- A-01	36 of 92	2.02.03, 9.0, f	f. Maximum temperature of condenser cooling water		
6	VI-A	SUB SECTION-VI, Chapter-1	30 of 39	4.00.00 B	B Plate Type Heat Exchangers i Gaskets = 1 Lot comprising 30% of total requirement of each type & size ii Fasteners = 1 Lot comprising 10% each type iii Plates = 1 Lot comprising 20% of each type	The mandatory spares for SG PHE is already covered at Specification Section-VI/A/SS-VI/Chapter-8/Cl. No. 1.00.00/sl.no. 14 b). Therefore, we understand that these spares are not applicable for SG-PHE. Please confirm. In case these are to be considered for SG-PHE then Bidder understand that the said spares are required w.r.t 1 no. PHE only.	Bidder to consider mandatory spares covered under Chapter-8 for indicated equipments.
7	VI-A	SUB SECTION-VI, Chapter-8	8 of 29	1.00.00 14b	b) Plate Type Heat Exchangers Quantity (i) Plate Gaskets = 150 nos each for TG ECW & SG ECW (ii) Fasteners = 01 Set for each TG ECW & SG ECW (iii) Plates = [150 nos (main plates) + 2 nos of end plates for each TG ECW & SG ECW	As these mandatory spares are part of TG Mandatory spares list and Mandatory spares for SG-ECW PHE are already given at VI/A/SS-VI/Chapter-1/Cl. No. 4.00.00 B, therefore these spares are not applicable for SG-ECW PHE. Please confirm.	Bidder to consider mandatory spares covered under Chapter-8 for indicated equipments.
8	VI-B	SUB SECTION- A-01	46 of 92	3.03.00 SN. 3c	Plate Heat Exchangers (TG and SG separate) Secondary water outlet temperature = Not more than the design hot water temperature at condenser outlet	Please note the design CW inlet temperature to PHE on secondary side is 3 degC more than Design Condenser CW inlet temperature (CW design inlet temp. for Condenser is 33degC & ACW design inlet temp. is 36 degC). Therefore, the Cooling water outlet temperature for PHE should also be not more than (3 deg + hot water temperature at Condenser outlet). Customer to confirm.	Bidders proposal reviewed and not accepted. Bidder to comply technical specification requirement.

	EPC Package for Singrauli STPP Stage III (2x800 MW) Pre-Bid Clarification						
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	Section	**Sub-Section**	**Page No.**	**Clause No.**			
9	VI-B	SUB SECTION- A-01	48 of 92	3.05.00 k	k) Air pre-heater wash water pumps Air pre-heater wash water pumps shall draw water from service water tank.	As per referred clause of specification APH Wash Water Pumps shall draw water from Service water tank. however as per Plant water scheme, APH Wash Water Pumps are taking suction from Clarified water tank. We understand that APH wash pumps are taking suction from Clarified water tank. Please confirm.	Bidder's understanding is correct. APH wash pump will take suction from clarified water tank.
	VI-E	SUB SECTION- A-01			PLANT WATER SCHEME 1150-999-POM-A-037, REV-A		
10	VI-B	SUB SECTION- A-15	34 of 46	2.05.00	Service Water System Clarified water from the clarified water tank shall be used as service water. Service water pumps shall take suction from this tank and supply water to the service water pipe network. Service water distribution shall be used for effective cleaning /washing of each area and shall also fill the service water (PVC tank of 100 liter capacity) tank provided on roof top of each building to supply water to toilets.	As per the referred clause of specification service water pumps are taking suction from Clarified water tank, however as per Plant water scheme service water pumps are taking suction from service water tank. Please clarify. In case service water tank is applicable, please provide the details like capacity, location, type etc.	Bidder to note that Service water pumps will take suction from service water tank. For details of service water tank, bidder to refer data sheet in respective chapter of part-B
	VI-B	SUB SECTION- A-01	48 of 92	3.05.00 h	h) Service Water System Clarified water from the clarified water tank shall be used as service water. Service water pumps shall take suction from this tank and supply water to the service water pipe network.		
	VI-E				PLANT WATER SCHEME 1150-999-POM-A-037, REV-A		
11	VI-B	SUB SECTION- A-15	29 of 46	1.01.00	Equipment Cooling Water system and Auxiliary cooling system shall be installed on a unit basis. The system shall also have the provision to operate common station auxiliaries such as compressor plant, compressor of mill reject system and ash handling compressors and FGD auxiliaries even with one unit/ all units are out of operation for which suitable arrangement shall be incorporated in the design and layout of piping system. ----------.	Please note that DMCW system is to be operated even when unit is not operating, hence only 50% flow of common station auxiliaries shall be considered for DMCW system of each unit. Customer to confirm bidder's understanding.	Bidder's proposal reviewed and not accepted. Bidder to comply technical specification requirement.
12	VI-B	SUB SECTION- A-01	44 of 92	3.01.00 SN. j	Internal Diameter of CW pipes in CW pump discharge up to inlet to cooling tower (excluding non-encased portion of piping connected to condenser)	Please note the Pump discharge nozzle size are much smaller than pipe sizes arrived with design velocity of 2 m/s. For better layout in CW Pump house customer is requested to accept velocity of 2.5 m/s at pump discharge also. Please note the Pump discharge pipe length in CW Pump house is only 5 m to 10 m. Customer to confirm.	Bidder's proposal reviewed and not accepted. Bidder to comply technical specification requirement.
13	VI-E	P&I Diagram of Equipment cooling water system	-	-	Cooling water tapping for Vaccuum Pump heat exchanger is taken from ACW Pump discharge.	Please note the pressure drop across vaccuum Pump heat exchager is less than pressure drop across series Condenser hence Cooling water tapping can be taken from condenser inlet and outlet pipe itself and not from ACW Pump discharge as boosting of pressure is not required. Customer is requested to accept.	Bidder's proposal reviewed and not accepted. Bidder to comply technical specification requirement.
14	VI-E	P&I Diagram of Equipment cooling water system	-	-	Non return valve are shown at secondary cooling water (ACW), primary DMCW for Turbine generator (TG DMCW) and primary DMCW for steam generator (SG DMCW).	Please note that motorised isolation valves are provided at ACW and DMCW Pump discharge and same are also interlocked with Pump start/ stop, therefore NRVs at ACW and DMCW Pump discharge are not required. Customer is requested to accept.	Bidder's proposal reviewed and not accepted. Bidder to comply technical specification requirement.

	EPC Package for Singrauli STPP Stage III (2x800 MW) Pre-Bid Clarification						
S No	**BID SPECIFICATION**				**SPECIFICATION REQUIREMENT**	**Pre-Bid Queries/ Clarifications**	**NTPC Reply**
	Section	**Sub-Section**	**Page No.**	**Clause No.**			
15	VI-A	SUB SECTION-VI, Chapter-01	30 of 39	4.00.00	EQUIPMENT COOLING SYSTEM, CHEMICAL DOZING, PLATE TYPE EXCHANGER A) DMCW Pumps	As the mandatory spares for DMCW Pumps and motors are repeated in appreaing in chapter-01 and chapter-08. kinldy clarify which clause to be applicable for DMCW & ACW pumps. Whereever the qty. is specified in "set" / "sets" it is understood to be considered for one pump only. Please confirm.	Bidder to consider mandatory spares covered under Chapter-8 for indicated equipments.
	VI-A	SUB SECTION-VI, Chapter-08	7 of 29	14.00.00	ECW System- DMCW & ACW Pumps		
16	VI-A	SUB SECTION-VI, Chapter-08	7 of 29	14.00.00 (c)	DMCW & ACW Pumps motor with motor bearing1 no motor including its bearing and 1 additional set bearings of each type & size	As the mandatory spares for DMCW & ACW Pumps motors are repeated in appreaing in chaptre-02 and chapter-08. kinldy clarify which clause to be applicable for this DMCW & ACW pumps motor.	Bidder to consider mandatory spares covered under Chapter-8 for indicated equipments.
	VI-A	SUB-SECTION-VI CHAPTER-02	3 of 32	16.00.00 (b)	ACW Pumps and DMCW Pumps motor with motor bearing--1 no motor of each type and 1 Set brg of each type		
17	VI-A	SUB SECTION-VI, Chapter-1	31 of 39	4.00.00 B	B Plate Type Heat Exchangers i Gaskets = 1 Lot comprising 30% of total requirement of each type & size ii Fasteners = 1 Lot comprising 10% each type iii Plates = 1 Lot comprising 20% of each type	The mandatory spares for SG PHE is already covered at Specification Section-VI/A/SS-VI/Chapter-8/Cl. No. 1.00.00/sl.no. 14 b). Therefore, we understand that these spares are not applicable for SG-PHE. Please confirm. In case these are to be considered for SG-PHE then Bidder understand that the said spares are required w.r.t 1 no. PHE only.	Bidder to consider mandatory spares covered under Chapter-8 for indicated equipments.
18	VI-A	SUB SECTION-VI, Chapter-8	8 of 29	1.00.00 14b	b) Plate Type Heat Exchangers Quantity (i) Plate Gaskets = 150 nos each for TG ECW & SG ECW (ii) Fasteners = 01 Set for each TG ECW & SG ECW (iii) Plates = [150 nos (main plates) + 2 nos of end plates for each TG ECW & SG ECW	As these mandatory spares are part of TG Mandatory spares list and Mandatory spares for SG-ECW PHE are already given at VI/A/SS-VI/Chapter-1/Cl. No. 4.00.00 B, therefore these spares are not applicable for SG-ECW PHE.	Bidder to consider mandatory spares covered under Chapter-8 for indicated equipments.
19	VI-B	A-15	10 of 46	3.04.00	The hot water distribution system, of the tower shall be designed to ensure equal distribution of heat load and flow all over the fill area.	The water distribution across the fill plan area shall be as per NDCT vendor design based on the thermal calculations.	Bidder's proposal reviewed, bidder to comply the technical specifications requirement
	VI-B	A-15	13 of 46	10.00.00 (1)	The water should be distributed across the plan area of the fill so that no point varies more than + 5% of the average water flow.		
20	VI-B	A-15	12 of 46	9.00.00 (4)	The type of fill to be supplied for this package shall be of proven design. The performance of the fill should have been established for the specified/higher duty conditions.	Performance of the offered fills shall be established by one of the following ways: Type test certificate of fill same as offered fill shall be shared with NTPC OR Offered fills shall be tested by an independent reputed laboratory approved by NTPC to validate thermal characteristic and pressure drop correlation of the offered fill.	Bidder's query is not clear & bidder to note that the fill to be supplied for this package shall be of proven design
21	VI-B	A-15	11 of 46	3.10.00	Contractor shall submit, performance test reports of similar towers installed by them. Such reports shall include the details of packing arrangement and must have been duly approved by the purchaser. Contractor may note, the calculations specified above must be submitted. The contractor shall show, explain, and prove the validity of the basis, procedures and methods used in these calculations.	We understand that "similar towers" in the clause means NDCT with non-clogging type fills like modular splash/trickle grid/turbo splash or splash type fills like V-bar splash/splash grid. Please confirm.	Bidder's understanding is correct
22	VI-A	I-A	8 of 40	4.3	Natural Draught cooling tower: Bidder/its sub-vendor should have designed, constructed and commissioned…….	In the provenness criteria of NDCT, we understand that "bidder" means EPC contractor of Power Plant. Please clarify.	Bidder means the EPC vendor for the EPC package 'SINGRAULI SUPER THERMAL POWER PROJECT STAGE-III (2 X 800 MW)'.
23	VI/A	IA	08 OF 10	10.02.00	EOT CRANE FOR BOILER FEED PUMP If BFPs are provided in BC bay or are not accessible to TG hall EOT crane as per layout requirement, one (1) no of Electrically operated (Double Girder) travelling cranes for each unit with associated auxiliaries, along with electrical equipment, control & instrumentation as required and specified shall be provided in the BC bay for erection and maintenance of Boiler feed pump and their auxiliaries. The main hook capacity of each crane shall be 10% over and above the heaviest component/equipment to be handled (including lifting beam, if applicable, and slings etc.) or 25 Tonne whichever is higher. Further the EOT crane shall have necessary facilities such as lifting beam with swivelling arrangement (if applicable) and slings for erection as well as maintenance of the equipment.	As per bidders practice & successfully done in projects under execution , erection of BFP/Drive Turbine shall be done by external crane. BFP EOT shall be provided in the BC bay for maintenance of Boiler feed pump and their auxiliaries with capacity as specified in the tender specification. Kindly confirm. Lifting beam and swiveling arrangement for BFP crane is not required hence not being considered. Kindly confirm.	Bidder understnading is not correct. BFP EOT crane may also be needed for erection/ handling of BFP/drive turbine in future.Bidder to comply specification requirement. "If applicable" is already mentioned regarding lifting beam and swivelling arrangement in the reffered clause.

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S No	**BID SPECIFICATION**				**SPECIFICATION REQUIREMENT**	**Pre-Bid Queries/ Clarifications**	**NTPC Reply**
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24	VI/A	IA	01 OF 02	2.01.00	Suitable EOT Crane/HOT crane/monorail beams with hoists/chain pulley blocks of adequate capacity, to meet the erection and maintenance requirements are to be provided by the vendors for the various equipment/areas. Some of the areas/equipment not covered by TG hall EOT crane are indicated below. For balance areas/equipment, not listed herein, the requirements of Technical Specification shall be followed. (a) Feed water heaters & deaerator. (b) Various pumps & Heat Exchangers. (c) Fans, motors, gear boxes etc., of Main Condenser, vacuum pumps, control fluid room etc. (d) Auxiliary cooling water pumps and DM cooling water pumps of ECW systems and Plate heat exchangers. (e) Central lube oil system room. (f) Any other equipment. The above requirement is indicative only; the requirement given in the respective chapter is to be adhered to.	a) As per bidders practice, Heaters are handled by TG Hall EOT in AB Bay & then dragged to their locations. Hence, separate EOT/Hoist is not required . In addition, one time erection of De-aerator is done by mobile crane from CD Bay. Hence, separate EOT Crane /Hoist is not required. f) There is no other major equipment. Hence, no other EOT/Hoist is being envisaged. Kindly confirm.	EOT crane is not envisaged for Feed water heaters & deaerator. However, applicable Hoists/Chain pully block for general maintenance purpose shall be provided. Bidder to please also refer Section VI Part-B Sub section A-24 Clause no 2.01.00 of page 6 of 7.
25	VI/B	A-13	04 OF 08	2.01.00	Note (1) : For piping systems with operating temp>=500 deg. C first layer of insulation shall be at least 75mm of ceramic fiber insulation followed by subsequent layer of LBM..	As per market availability single layer of 75 mm thickness of Ceramic Fiber is not available. Hence Two Layers of ceramic fiber with combined thickness 75mm will be provided. Kindly confirm.	Bidders understanding is correct. Bidder to comply the specification requirements.
26	VI/E	--	01 OF 07	--	List of Tender Drawings	Bidder understands that there are no TG Building lay-out drawings in the tender specifications and bidder is free to decide TG Building size, floor levels and pitching. Kindly confirm	Bidders understanding is correct. however the same is subject to owners approval based on maintainance and operation requirements and shall be decided during detailed engineering
27	VI/A	III- TERMINAL POINTS & EXCLUSIONS)	1 of 3	1.01.00 (a)	TP for Auxiliary Steam interconnection for Auxiliary Steam Station Header with existing Stage-I with motorized isolation valve as indicated in the tender drg.	Terminal point detail for auxiliary steam interconnec-tion with existing stage is not indicated in the tender document (plot plan). Kindly furnish the same.	TP for Auxiliary Steam interconnection for Auxiliary Steam Station Header with existing Stage-II with motorized isolation valve and NRV as indicated in the tender drg. Stage-II unita are already indicated in the GLP.
28	VI/B	G-03 LAYOUT PHILOSOPHY	5 of 15	1.03.00 Equipment layout	Minimum Three (3) nos. of maintenance bays (one number at the start of first unit and two nos. between both units) shall be provided in TG building. Width of maintenance bay shall be 10.5M (minimum). Further additional bays may be provided as per system/layout requirements.	Minimum Three (3) nos. of maintenance bays shall be provided in TG building. Location of maintenance bay shall be decided based on bidder's layout arrangement. Kindly Confirm.	Bidders understanding is correct. however the same is subject to owners approval based on maintainance and operation requirements and shall be decided during detailed engineering
29	VI/E	-	10 of 130	1150-001-POC-F-002	TENDER DRAWINGS: TOPOGRAPHIC SURVEY	During the site visit, it was observed that the spot levels shown in the topographical survey drawing of the proposed NDCT area (lying outside of existing plant boundary) are in considerable variance from the existing ground levels (observed at the said location). Please clarify.	Bidder to refer amendment no. D1-45
30	VI/A	IID-Annexures (Details of Facilities to be dismantled)	1 of 29	3,4,5	Sl.no. 3,4,5,6,11,13	During site visit, it was observed that CSSP near BHEL Gate, LWTP-10 Near BHEL Gate, Plant STP (in Ranibari), Sewage PH Stage-I (Behind H2 Plant),FO Tank Stage-II etc. are catering to their respective functions. Bidder understands that during dismantling, makeshift arrangements shall be done by NTPC to cater to the respective functions of existing plant. Please calify.	1) For CSSP near BHEL Gate, LWTP-10 Near BHEL Gate, Plant STP (in Ranibari), Sewage PH Stage-I (Behind H2 Plant) Alternate Arrangement are being done by Owner. 2) For FO tanks, 2 Number remaing FO tanks [which are not being dismantling] shall cater to the requirements of existing plant.

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31	VI/B (MDL)	G-07	3 of 92	120 (1150-110-110-PVM-C-006A)	Drawings and datasheet of shell side/tube side relief valves of drain cooler and LP Heaters (2, 3, 4 & 5).	LPH-1 & 2 shall be in the neck of condenser. Requirement of drawing & datasheet for shell side/tube side relief valves for LP Heater-2 is also not applicable. Therefore, it is requested to clarify and confirm the requirement of referred documents/drawings for LPH-2.	Bidders proposal is noted however MDL incoporated in specification shall be the base document. Modification can be made with approval of owner
32	VI Part-B	A-02 STEAM GENERA-TOR & AUXIL-IARIES INCLUD-ING ESP	64 of 67	8.07.00	Acoustic 3D Level Scanner Based Level Monitoring System for each ESP Hopper in the First Three Fields shall be provided complying with requirements indicated in Sub-Section-IIIC-03	The acoustic 3D level scanner / NOGS level scanners is yet to be commissioned and proven for ESP hopper applications. The cost is higher than the cost of conventional Ash level indicators, and the vendor availability is limited. Hence, owner/ NTPC may kindly consider conventional ash level indicators instead of 3D acoustic level scanner/ NOGS based level monitoring for ESP hopper applications. Owner may kindly review and confirm	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.
33	VI Part-B	B-0 GENERAL ELECTRICAL SPECIFICATION	7 of 16	3.06.00 (d)	MCCB shall be provided for all supply feeders of current rating above 16 Amp and including 400A.	For ESP LT Switchgear, MCCB shall be provided up to 630 A, and breaker modules shall be provided for current above 630 A. This is in line with the standard design practise of ESP switchgear for projects. Owner may kindly review and confirm.	Bidder proposal is not acceptable. Specification cl. no.3.06.00 (d) Sub - Section B-0 Section-VI, part-B to be followed.
34	VI Part-B	B-02 MOTORS	1 of 4	3.01.00 (b)	Continuous duty LT motors upto 50 KW Output rating (at 50 deg.C ambient temperature), shall be super Premium Efficiency class-IE4, 50-200 KW shall be of Premium Efficiency class –IE3, conforming to IS 12615, or IEC:60034-30.	The ESP geared rapping motor is fractional horse power drive and is operated intermittently for ESP application. Since the ESP rapping motor operation is intermittent , IE4 motors are not provided. Instead IE2 rated motors are provided. This is in-line with other NTPC projects also. Owner may kindly review and confirm.	Bidder proposal is not acceptable. Specification cl. no.3.01.00 (b) Sub - Section B-02 Section-VI, part-B to be followed.
35	VI Part-B	B-08 HT ,LT POWER CABLES	5 of 7	4.00.05 (a)	Cables shall be supplied in steel drums of heavy construction.	Bidder proposes wooden drum also in addition to steel drums for the power cables. Owner may kindly review and confirm.	Bidder proposal is not acceptable. Specification cl. no.4.00.05 (a) Sub - Section B-08 Section-VI, part-B to be followed
36	VI Part-B	IIIC-04 MEASURING INSTRUMENTS (PRIMARY & SECONDARY)	5 of 35	3.02.00 (1)	Type of RTD: Four wire, Pt-100	Bidder proposes that 3-wire RTD may also be given for temperature measurement of the various equipment (FANS/ Motors etc) as per the bidder's proven design. This is in-line with design provided for various projects. Owner may kindly review and confirm for 3-wire RTD / 4-wire RTD (as per bidder design) for FANs application..	Bidder's proposal is not acceptable. Bidder shall comply to specification requirements.
37	VI Part-A	SUB-SECTION-IIC CONTROL & INSTRUMENTATION SYSTEM	5 of 18	1.06.02 (M)	For High torque (> 1000 Nm) electric actuators: Contractor may propose non-intrusive fieldbus electrical actuators without SIL2 certification.	The SIL-2 compliant models include imported actuators and are about 5 times costlier. Considering the initial cost, maintenance as well as spares costs and the import requirements, bidder request NTPC to kindly remove the SIL-2 requirement for the electrical actuators. Owner may review and confirm that, SIL-2 certification is not applicable for the electrical actuators	Bidder's proposal is not acceptable. Bidder shall comply to specification requirements.
38	VI Part-B	SUB SECTION IIIC-17 ELECTRICAL ACTUATORS	2 OF 4	4.11.00	All actuators shall be certified for SIL 2 or better.		Bidder's proposal is not acceptable. Bidder shall comply to specification requirements.
39	VI Part-E / Tender SLD	Part-E/ Book-I of II / 9500-999-POE-J-002 REV-A SLD- MAIN PLANT		SLD Notes point (F) .	(F) . Standard LT transformer rating to be used are as follows 2500/2000/1600/1000/630/500/315 KVA.	Bidder understands that use of both LT ONAN and LT DRY type transformers upto 2.5 MVA are allowed as per tender .The same is in-line with the other NTPC EPC projects also. Owner may kindly review and confirm.	Bidder understanding is not correct. Technical specification requirement & tender SLD to be followed.

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40	VI Part-B	SUB SECTION B-06 LT SWITCHGEARS & LT BUSDUCTS	13 of 19	7.00.00	Each motor/heater feeder shall consist of MPCB/MCCB (with S/C release only), Power contactor & intelligent motor controller (IMC) to ensure Type-2 Co-ordination. If the ESP controller and rapping motor are provided in the ESP switchgear, same shall be with IMC having MPCB/MCCB. If separate controller is provided and only supply feeder is envisaged from ESP Switchgear, the requirement of IMC may be excluded.	a) ESP rapping motors are fractional horse power motors. We are offering separate ESP controller which controls the ESP rapping motor . The controllers ensures the best sequence of rapping of various fields and provides better coordination of rapping motors for achieving the desired emission parameters. No control is envisaged from the ESP switchgear. Only supply feeder with OLR and power contactor is provided from ESP switchgear. b) The ESP heaters (hopper/ insulator) are thermostat controlled for maintaining the desired temperature. No control is envisaged from the ESP switchgear. Only supply feeder with contactor is provided from ESP switchgear. Further, IMC not applicable for heater feeders. c)The ESP motor and heater controls are proven design being offered in all the NTPC contracts. Since no control of rapping and heaters are envisaged from ESP switchgear (only supply feeder with OLR & contactor are provided in ESP switchgear) , bidder proposes ESP switchgear without IMC. Owner may kindly review this requirement based on the implementation of ESP motor and heater controls in the various NTPC projects. Owner may Kindly review and confirm.	Bidder proposal is accepted in line with the provisions of clause 7.00.00 of Sub section B-06 Part B Section VI
41	VI Part-B	SUB SECTION IIIC-17 ELECTRICAL ACTUATORS	1 of 4	3.00.00	These actuators shall be Non-Intrusive type electric actuators. The interface of these actuators with DDCMIS shall be of two types viz. with Hardwired interface and with Fieldbus interface	Bidder proposes that all the actuators for the gates and dampers can be hardwired interface instead of fieldbus interface for the following reasons: a) Providing Uniformity of communication interface for all the actuators b) Some vendors don't have the Profibus based actuators for the complete range Owner may kindly review and confirm for hardwired actuators for gates and dampers instead of fieldbus based actuators.	Bidder's proposal is not acceptable. Bidder shall comply to specification requirements.
42	VI Part-B	SUB-SECTION-IIIC-04 MEASURING INSTRUMENTS (PRIMARY & SECONDARY)	2 of 35	2.01.00	Microprocessor based 2 wire loop powered electronic transmitter with 4-20 mA DC HART/ Fieldbus (Foundation Fieldbus /Profibus PA complying to IEC 61158.) output signal shall be provided.	Bidder understands that bidder can provide either HART based / fieldbus based transmitters , as per the tender specification. Hence bidder proposes HART based transmitters for all applications instead of fieldbus based transmitters. This shall provide uniformity. Owner may kindly review and confirm	Bidder's proposal is not acceptable. Bidder shall comply to specification requirements.
43	VI Part-E / Tender SLD	Part-E/ Book-I of II / 9500-999-POE-J-002 REV-A Single Line diagram- MAIN PLANT		SLD Notes point (F) .	(F) . Standard LT transformer rating to be used are as follows 2500/2000/1600/1000/630/500/315 KVA.	Bidder understands that use of both LT ONAN and LT DRY type transformers upto 2.5 MVA are allowed as per tender .The same is in-line with the other NTPC EPC projects also. Owner may kindly review and confirm	Bidder understanding is not correct. Technical specification requirement & tender SLD to be followed.
44	NA				General Electrical query-2	The number of layers of cables in the cable trays is not mentioned. Bidder understands that the maximum cable layer is 2 layers for power cables and 3 layers for control and instrumentation cables. This is based on standard practise being followed for all other NTPC projects also. Owner may kindly review and confirm	Bidder proposal is not acceptable. Multicore Power cable shall be laid in touching formation in single layer. Control and Instrumentation cables can be laid in 3 layers subject to max cable tray filling upto 80% of tray depth only
45	NA				General mandatory spares query	In case mandatory spares are repeated at more than one location, bidder proposes to consider only at one location (the one location where maximun quantity is specified shall be considered). Owner may kindly review and confirm the same. In case mandatory spares are to be considered in all the locations wherever it is specified, same may be clearly indicated to the bidders.	Bidders query is not specefic in nature. Mandatory spares are to be considered in all the locations where it is specified.

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46	VI/A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	17 of 76	1.01.05.02	The corrections for the flue gas flow and ESP inlet flue gas temperature in excess of the values for these parameters under guarantee point conditions, shall be allowed only in case and to the extent such variations are caused solely due to changes in specified coal properties and ambient conditions. Further, the corrections for the flue gas flow and temperature lower than the guarantee point values shall be applied based on actually measured test values. Subject to the above, the corrections for the variation in flue gas flow, inlet dust burden and ESP inlet flue gas temp. shall be based on the above computed test values and the procedure indicated in the next para.	The tender indicates that estimating and applying corrections to parameters for their variation to the extent of change in specified coal properties and ambient conditions (during PG test), while assessing ESP performance. It may kindly be noted that ESP is designed for a specified set of parameters and is operated at actual condition. Hence, corrections will be applied for variation on actual test parameters (viz. gas flow, temperature & inlet dust) from guarantee point parameters while assessing ESP performances. This is applicable even for ESPs included in SG package as the change in parameters are not due to ESP. If the measured values are higher and corrected values are lower, corrections for design values will be taken for calculation of ESP efficiency. NTPC to note that corrections are allowed for actual measured values for all direct ESP contracts including recent projects like Mouda, Solapur, etc.	Bidder's query is not clear. However, bidder to note that the scope of EPC Package includes all equipment/systems upstream and downstream of ESP is included in the subject tender. Hence, the factors except for the coal properties and the ambient conditions within the scope/control of the bidder. Accordingly, the referred clause in the technical specifications allows for corrections solely due to changes in specified coal properties and ambient conditions.. Specification requirement is clear in this regard and the bidder to comply with the technical specifications.
47	VI/A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	18 of 76	1.01.05.03	Ca.Cb.Cc etc. are Correction factors for flue gas at temperature, moisture content in flue gas, ESP inlet dust loading, sulphur and sodium contents of coal ash based on correction curves furnished by the Bidder and approved by the Owner.	The corrections for variation in flue gas flow, gas temperature, inlet dust concentration, sulphur content will be considered and the same will be submitted during contract stage.	The specification requirement is clear in this regard. Bidder to comply with the technical specification requirement.
48	VI/A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	20 of 76	1.01.07.01	Method of computation of Aux. Power consumption for ESP: The measurement for guaranteed auxiliary power consumption shall be carried out during ESP collection efficiency test. The method for computing the power shall be as described below:- a) Power consumption of ESP will be measured pass wise and for one pass (Say ESPA) at a time with the help of energy meter in ESP MCC. b) Energy meter reading will be taken before starting the collection efficiency test and after completion of collection efficiency test. c) Before starting collection efficiency test, switch off all the TR sets, all hopper heaters, all insulator heaters/pent house fans (if applicable) and rapping systems serving to one pass.....	The method specified involve shutting down of total ESP fields just before start of emission test to measure external loads connected in ESP LTMSB. It is suggested that such switching off of the fields, heaters, rappers shall not be resorted to just before starting emission test. Hence, no external loads shall be connected to ESP LT Switchgear or (if not) this external load can be measured after completion of emission test i.e. ESP can be switched off after the emission test. Hence the power measurement test shall be taken up after completion of emission test.	Bidders proposal is not acceptable. Kindly follow Aux. power measurement procedure as per requirement of technical specification.
49	VI/A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	2 of 76	1.00.01 (g)	Instruments for PG test and instruments for process control of similar applications are envisaged to be of same make and model having same accuracy level. However, instruments for PG test are also acceptable as per standard and proven practice of the contractor/OEM and in such case, instruments for process control shall be as per requirements specified in Part-B of technical specifications. Instruments to be used for PG test shall be additionally supplied over and above the instruments shown in tender P&IDs. **PG test equipment being supplied, installed and commissioned for each unit, shall be retained by employer after completion of PG test.** Control system loop tuning required to limit the variation of parameters during performance guarantee testing shall be completed prior to PG Test / initial operation. **All PG test process parameters shall be made available in DDCMIS.**	During PG Test of ESP, outlet emission is measured by isokinetic sampling for particulate matter measurement as per EPA standard. The standard requires only portable instruments which does not warrant any erection or commissioning. It is also not possible to record the isokinetic sampling kit parameters in DDCMIS. For ready reference of Particulate emission, Opacity monitors are provided at ESP outlet. Other operating parameters of ESP will be recorded in IOS with interface to DDCMIS.	Bidder understanding is correct. Further bidder to comply to specification

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50	VI/A	SUB-SECTION-VI CHAPTER -01 SG & AUXILIARIES	32 of 39	5.01.00	11) Rappers	Tumbling hammers will be envisaged as per bidder's proven design & hence electric rappers are not applicable. Customer is requested to suitably amend the specification title with "as applicable for the specific design"	Bidder to refer amendment no SG.47 in this regard.
51	VI/B	B-02	1 of 4	5.00.00	Air cooled motors (AC &DC): 70 deg. C by resistance method for both thermal class 130(B) & 155(F) insulation.	Air cooled motors (AC &DC): 70 deg. C by resistance method for both thermal class 130(B) & 155(F) insulation. However it is understood that for DC motors as the class of insulation is class H, hence temperature rise shall be limited to 95 Deg C	Bidders proposal for temperature rise limit of 95 Deg C in motors having Class H insulation. is acceptable for DC motors ONLY.

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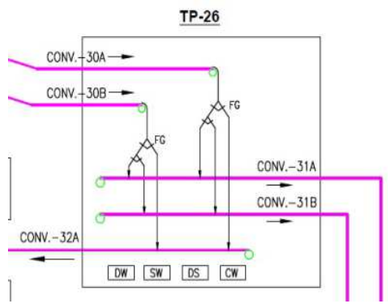
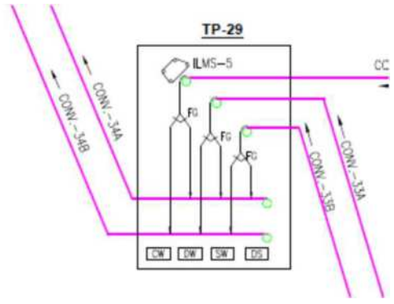
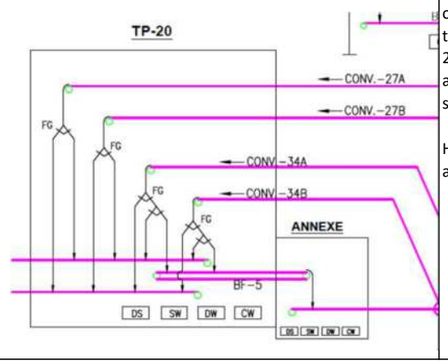
1		TECHNICAL AMENDMENT NO. 1 TO TECHNICAL SPECIFICATION (SECTION VI) Technical clari-fication -01	Page 1 of 17 Page 13 of 31	MH-3 VI/A IIA-15 Pg. 5/9 1.39.00 New Clause added sl no 90	Bidder may optimize the CHP layout meeting all functional and technical requirement. However, reversible/movable belt feeder and reversible yard conveyor is not acceptable. Bidder to note that reversible belt feeder is not acceptable.	Provision given to bidders for CHP layout optimization is noted. However, Reversible belt feeders (RBFs) will be required in crusher house, without which coal flow scheme in crusher house cannot be prepared in this layout. It may be noted that RBFs were given in earlier NTPC projects like 3 x 660 MW North Karanpura. So, kindly give acceptance for use of reversible belt feeders in Singrauli crusher house also and accept the other pre-bid queries raised by us in sl. no. 90 of Technical clarification -01. In addition, we wish to propose reversible conveyor on the reclaiming side, as we are working on a CHP layout to meet NIT spec requirement of feeding to existing stage-I conveyors from stage-III CHP using this reversible con-veyor on reclaiming side, so kindly give your acceptance for reversible con-veyor on the reclaiming side.			NTPC has examined the proposal and found to be feasible without reversible belt feeder and reversible yard conveyor. Bidder to further note that reversible belt feeder and reversible yard conveyor shall not be allowed in line with sl no MH-3 of the amendment 1 to tehnical specification
2		TECHNICAL AMENDMENT NO. 1 TO TECHNICAL SPECIFICATION Technical clari-fication -01	 Page 21 of 31	Coal + Bio-mass flow diagram 9587-001 (R)-POM-A-002 Rev.1 sl no 114	(Sheet pertaining to Front / rear mill arrangement to be referred) Conv.30A/B, TP-26 and Conv.31A/B 	In earlier revision of flow diagram, a single conveyor was running on stack-ing side from crusher house to TP-27 with fixed tripper in TP-26, and this arrangement itself was very difficult to meet, considering the space con-straint in this layout. However, in this amendment, flow scheme is further complicated with split-ting the single stacking side conveyor into two separate conveyors, i.e. conv. 30A/B and conv. 31A/B with three-way feeding arrangement in TP-26. It is not possible to meet this requirement, as this arrangement demands lifting of conveyor 30A/B drive floor in TP-26, which is not feasible with the avail-able distance between Crusher house and TP-26. In earlier NTPC projects also, single conveyor with fixed tripper arrange-ment is provided on stacking side and it is not clear why NTPC is asking for split of conveyors & three-way feeding in Singrauli. Hence, NTPC is requested to review this new arrangement and			NTPC has examined the conveyor profile & found to be feasible. However, conveyor with fixed tripper arrangement is also acceptable in view of optimization of CHP layout
3		TECHNICAL AMENDMENT NO. 1 TO TECHNICAL SPECIFICATION		Coal + Biomass flow diagram 9587-001 (R)-POM-A-002 Rev.1	(Sheet pertaining to Front / rear mill arrangement to be referred) Conv.33A/B, TP-29 and Conv.34A/B 	In earlier revision of flow diagram, a single conveyor was running on re-claiming side from TP-28 to TP-20. However, in this amendment, flow scheme is complicated with splitting the single reclaiming side conveyor into two separate conveyors, i.e. conv. 33A/B and conv. 34A/B with flap gates in TP-29. It is not possible to meet this requirement, as this arrange-ment demands lifting of conveyor 33A/B drive floor in TP-29, which is not feasible with the available distance between TP-28 and TP-29. There is no functional benefit also and in earlier NTPC projects, a single conveyor is running on reclaiming side and it is not clear why NTPC is asking for split of conveyors in Singrauli. Hence, NTPC is requested to review this new arrangement and amend the flow diagram.			NTPC has examined the conveyor profile & found to be feasible. However, conveyor with fixed tripper arrangement is also acceptable in view of optimization of CHP layout.
4		TECHNICAL AMENDMENT NO. 1 TO TECHNICAL SPECIFICATION		Coal + Biomass flow diagram 9587-001 (R)-POM-A-002 Rev.1	(Sheet pertaining to Front / rear mill arrangement to be referred) 	1. It is not possible to provide three way feeding arrangement at dis-charge of Conv.34A/B in TP-20, as this arrangement demands lifting of conveyor 34A/B drive floor in TP-20, which is not feasible with the available distance between TP-29 and TP-20. 2. Using belt feeder BF-5 and annexe to TP-20, provision of conv.38 above conv.27A/B in GLP has reduced the space available for lime-stone handling system and LHP is becoming unfeasible. Hence, NTPC is requested to review this new arrangement and amend the flow diagram.			1 & 2. NTPC has examined the arragement and found to be feasible. Bidder to comply to the technical specification.

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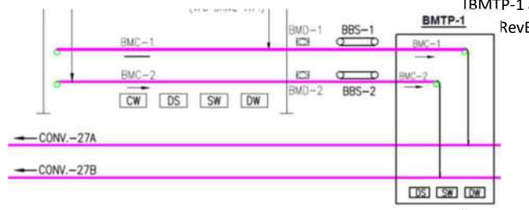
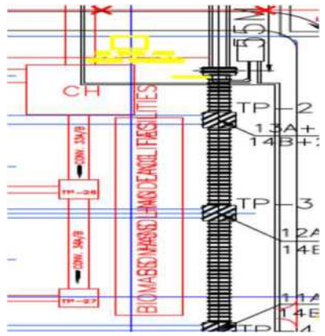
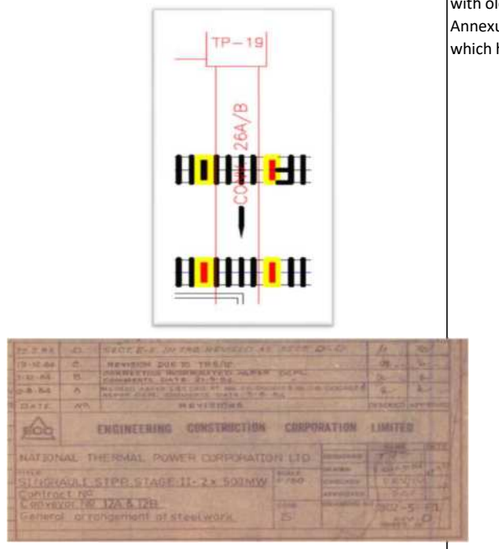
	Section	**Sub-Section**	**Page No.**	**Clause No.**					
5		TECHNICAL AMENDMENT NO. 1 TO TECHNICAL SPECIFICATION		Coal + Biomass flow diagram 9587-001 (R)-POM-A-002 Rev.1		BMTP-1 and BMC-1&2 are not appearing in GLP 1150-999-POC-F-RevB. Kindly mark these facilities.			Bidder to note that biomass handling facility indicated in GLP is indicative only. Bidder to refer NTPC reply to BHEL(ISG) Lot-4 sl no 3 query " Bidder may relocate the biomass facility within stockpile area. Biomass feed to coal conveyor in direct/reclaim path shall be acceptable". Accordingly, the location of BMTP-1 & BMC-1 & 2 shall be finalized during detailed engg.
6		TECHNICAL AMENDMENT NO. 1 TO TECHNICAL SPECIFICATION		GLP 1150-999-POC-F-001 RevB		Biomass handling facilities are shown between old plant conveyors and new plant stacking side conveyors. 1. All the biomass facilities like ramp, truck tippler, surface feeder, bucket elevator and Silo building cannot be fit into the limited space shown, as area marked for biomass in GLP is insufficient 2. It is not possible to convey biomass to BMTP-1 shown on CHP con-veyor 27A/B, with this location for Biomass handling facilities. 3. Also this system needs regular movement of trucks for bringing bi-omass into the plant, which is not possible with this location So NTPC is requested to review and amend.			Bidder to note that biomass handling facility indicated in GLP is indicative only. Bidder to refer NTPC reply to BHEL(ISG) Lot-4 sl no 3 query " Bidder may relocate the biomass facility within stockpile area. Biomass feed to coal conveyor in direct/reclaim path shall be acceptable". Accordingly, the location and feed from biomass conveyor onto either direct path or onto reclaim path shall be finalized during detailed engg.
7		Technical clarification -01	Page 15 of 31	sl no 95	2. Bidder to consider biomass density as 800kg/m3 in line with technical specification.	Kindly clarify if biomass density has to be considered by bidder as 800 kg/m3 for volumetric purposes and power calculations.			Bidder to consider biomass density as 600kg/m3 for volumetric & power calculation in line with cl. No 4.02.06 (f), 83/92, A-01 ,Part-B of tech spec.
8		Technical clarification -01	Page 17 of 31	sl no 104	Bidder to refer Sl. No MH-8 amendment no 1 to technical specification.	Reply given in not answering the queries raised, as this TP is still very close to existing silo utility building. So NTPC to kindly review the raised queries in detail and provide clarifications.			Bidder to note that location of TP-19 is indicative only. Bidder may relocate/shift the TP-19 to avoid any fouling with existing facility. Further, Bidder to refer sl no MH-3 of the amendment 1 to tehnical specification
9		Technical clarification -01 Technical clari-fication -01	Page 28 of 30 Page 28 of 30	sl no 198 sl no 199	Bidder proposal shall be reviewed during detailed engineering. Underground/semi underground/over ground shall be finalised based on the available space in layout Bidder's proposal may be accepted (in case of layout constraint) during detail engg. Bidder to refer sl no MH-3 & MH-8 of the amendment 1 to technical spec.	As this can alter BOQs (especially civil & structural) and may lead to com-mercial implications at later stages, we request NTPC to give clarity in pre-bid stage itself; as such ambiguities will lead to bigger issues after award of order			Bidder to note that overground/undergorund/semi underground facililties shall be finalized during detailed engg. Bidder to provide Two (2) nos (1W+!S) of sump pumps in case of underground facilities.
10					Annexure-I-Existing-Facilities-drawings-part-1	Drawing of trestles of existing conveyor 2A/B is not furnished, same is required for locating the existing trestles (co-ordinates) and also for elevations.			GA of conveyor 2A/2B trestle dwg attached.

EPC Package for Singrauli STPP Stage III (2x800 MW)									
S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications			NTPC REPLY
	Section	Sub-Section	Page No.	Clause No.					
11		Annexure-I-Existing-Facilities-drawings-part-1 and GLP			Existing conveyor 12A/B trestles in GLP 	Trestle locations of conveyor 12A/B marked in GLP are not matching with old drawing of conveyor 12A/B (802-5-F/1 Rev D) furnished in Annexure-I-Existing-Facilities-drawings-part-1, NTPC to confirm which has to be considered as final.			Bidder to note that trestle locations indicated in GLP is indicative only. However, bidder to follow the trestle locations indicated in the GA of Convyor 12A/12B.
12		Annexure-I-Existing-Facilities-drawings-part-1	Pdf page 1 of 7		Existing silo utility building drawing	Silo utility building drg. of stage-I is furnished by NTPC, however fouling with CHP TP-19 is occurring at silo utility building of stage-II, so NTPC to kindly furnish the drg. of silo utility building of stage-II (i.e. silo center co-ordinates 14B+15.9 and 14B+35.9 as marked in GLP)			Stage-II Silo Utility building drawings are attached.
13		TECHNICAL AMENDMENT NO. 1 TO TECHNICAL SPECIFICATION (SECTION VI)	Page 2 of 17	MH-6 VI/A IIA-15 Pg. 4/9 1.25.00	Total Six (6) Nos. In-line Magnetic Separators on Conveyors. One no. on each conveyor feeding to crusher house, One no. on each conveyor feeding to Main plant, One no. on each yard conveyors head end, and one no. on conveyor taking feed from Stage-II stockyard……	We understand “One no. on conveyor taking feed from Stage-II stockyard” stands deleted and by mistake, it is still reflecting in the clause after amendment. Kindly confirm that our understanding is correct.			Bidder to conisder total Six (6) nos. of ILMS in line with coal flow diagrdam, Rev1. Two (2) nos in crusher house, Two (2) nos in TP-21, one (1) each in TP-28 & TP-29. Bidder to further refer note no 2 in the coal flow diagram.
14		TECHNICAL AMENDMENT NO. 1 TO TECHNICAL SPECIFICATION (SECTION VI)	Page 8 of 17	MH-28 VI/A A-14 Pg. 1/4 1.01.01	Limestone shall be conveyed to usage point through double stream conveyors & Bucket Elevators of capacity 100% for con-veying.	However, the referred statement is contradicting with Limestone flow dia-gram 9587-001-POM-A-031 (sht-1) Rev.1 issued in this amendment, as sin-gle stream conveyor and bucket elevator is appearing in flow diagram. Kindly clarify whether bidder should consider single stream or double stream			Bidder to consider double stream conveyors & Bucket Elevators of capacity 100% for conveying in line with Sl No MH-28 of amendment to technical specification.Refer attached revised Limestone flow diagram 9587-001-POM-A-031 (sht-1) Rev.2
15		TECHNICAL AMENDMENT NO. 1 TO TECHNICAL SPECIFICATION		Limestone flow diagram 9587-001-POM-A-031 (sht-1) Rev.1	Surface feeder/ BRU qty. is mentioned as 2 nos. in table.	However, in the flow scheme, only 1 no. surface feeder/ BRU is shown. Kindly clarify.			Bidder to consider two (2) nos of surface feeders. Refer attached revised Limestone flow diagram 9587-001-POM-A-031 (sht-1) Rev.2
16		Technical clarification -02		Sl. no.27	Bidder to refer amendment -WS-04 in this regard.	We have proposed 150 m3/hr. as the capacity of each Coal Decanted Water Pump at the CSSP of stage-III, which is not covered in amendment WS-04, kindly review and confirm.			Bidder to refer amendment -WS-04, the capacity of each Coal Decanted Water Pump is mentioned as 200 m3/hr. Bidder to comply the same.
17	VI/A	II-B	3 of 19	1.05.02	The LV switchgears is of Intelligent type for Motor controller.	Soot blowers are fractional HP motors powered from Soot blower MCC (SBMCC). Hence, bidder proposes to envisage conventional type Soot Blower MCC without Intelligent motor controller and associated specification requirements. M/s NTPC may please confirm.	Bidder proposal is accepteable	M/s NTPC is requested to issue amendment for this clause to take care of our estimation.	Bidders proposal for supplying conventional type MCC fr soot blower has laready been accepted. Amendment to technical specification is being issued in response to the current query.
	VI/B	B-0	7 of 15	3.06.00	f) For protection of motors below 30kW, MPCB (only Short-circuit release) and Intelligent motor controller (IMC) with current sensing module shall be provided.				
	VI/A	B-0	10 of 16	3.07.00	The Design Philosophy shall be as follows: (c) All LT Contactor controlled motor/heater feeders shall be controlled from DDCMIS through Intelligent Motor Controller (IMC) on profibus DP communication.				

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications			NTPC REPLY
	Section	Sub-Section	Page No.	Clause No.					
18	VI/A TECHNICAL AMENDMENT NO. 1 TO TECHNICAL SPECIFICATIO N (SECTION VI)	II-A-01	9 of 28	2.13.01			Forced Draft Fans Each fan bearing shall be provided with three (03) numbers duplex RTDs connected to three (03) numbers dual input transmitters with display for bearing metal temperature measurement, control & monitoring.	NTPC to refer tender clause 4.00.00 of VI-A/II-C, "In case of multiple measurements of temperature for any application, resulting in trip / protection, where logic implementation tolerates failure of one TE (e.g. 2v3, 2v4 etc.), for only one of the TE, dual TT is to be provided". Inline with this clause, 1 no of dual input TT and 2 nos of Single input TT wil be envisaged for Fan bearing RTDs. M/s NTPC to confirm.	Bidder's proposal w.r.t to Temperature transmitter is acceptable.
		II-A-01	10 of 28	2.13.02			Induced Draft Fans Each fan bearing shall be provided with three (03) numbers duplex RTDs connected to three (03) numbers dual input transmitters with display for bearing metal temperature measurement, control & monitoring.		
		II-A-01	13 of 28	2.15.04			Primary Air Fans Each fan bearing shall be provided with three (03) numbers duplex RTDs connected to three (03) numbers dual input transmitters with display for bearing metal temperature measurement, control & monitoring.		
19	Sec. VI, PART-B	A-07	8 of 25	2.01.00(i) (New Clause)	Water box, tube plates and support plates material carbon steel as per ASTMA-285 Gr.C or ASTM A-516 GR 70 and suitable for intended duty. Water side of tube plates coated with epoxy resin of 0.25 mm minimum thickness.	Bidder shall provide IS 2062 Gr. BR as MOC for Water box, tube plates and support plates which is equivalent to ASTM A-285 Gr.C and suitable for intended purpose. Bidder has been using material in all the 800MW/ 660MW/ 500MW sets supplied to various utilities which are in operation for last 25-30 years and it is suitable for intended purpose.			Material equivalent to ASTM A-285 Gr.C is also acceptable

EPC Package for Singrauli STPP Stage-III (2x800 MW)

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
1	VI A	IV	32 OF 76	1.03.03 (vii)	(vii) Waste Water: The Contractor guarantees that the maximum purge flow rate to waste water treatment system from FGD system for 2x800 MW units shall be less than 20m3/s averaged over a 24 hour period for the range of specified coal(s).	As CW blow down water is specified to be utilised as FGD process water, 20 m3/hr is too less for both 2x800MW units. Bidder recommends atleast 15 m3/hr waste water purge flow per unit (total 30 m3/hr), otherwise accumulation of high TDS/chloride content in the recirculated slurry will impact FGD performance. NTPC is requested to review the clarification and provide necessary amendments.	Bidder has incorrectly quoted the specification requirement. The guaranteed value requirement for waste water is 20m3/hr and not 20 m3/s. Bidder's proposal is not acceptable. Bidder to comply technical specification requirement.
2	VI A	IV	22 OF 76	1.01.07.02	Station Auxiliary Power Consumption: FGD System: i. Limestone Gravimetric feeder, Wet ball mill and their integral Auxiliaries ii. Vacuum Belt Filter, Vacuum Pump and its integral auxiliaries	Please note that Limestone grinding system and Gypsum dewatering system are meant for batch operation, Bidder calculates duty factors based on loads at guarantee point conditions and, accordingly guaranteed auxiliary power will be furnished.	The formulation of duty factors for limestone grinding system and gypsum dewatering system shall be finalised during detail engineering and shall consider correction of the Auxiliary Power Consumption values measured during the Performance Guarantee Test to the guaranteed conditions.
3	VI B	A-05	4 of 29	3.01.00 (5)	Maximum flue gas velocity through the Absorber (m/sec: Not more than **4 m/s** at Design PointConditions (not applicable for bubblingtype absorber)	Gas Velocity inside the Absorber are design specific parameter and as per DCFS FGD standard design practice, maximum flue gas velocity through the Absorber is maintained at **4.5m/s**. Bidder request NTPC to review and kindly accept inline with bubbling type absorber.	Vendor proposal is not acceptable. Vendor approval is project and package specific. Bidder to follow NTPC technical specification requirement.
4	VI B	A-01	27 OF 92	1.05.21.01	7. **SO2 Removal Efficiency-** **Guarantee Point**: To be worked out by the Bidder to achieve SO2 emission in the chimney to less than **60 mg/nm3** (6% O2 dry basis). **Design Point**: To be worked out by the Bidder to achieve SO2 emission in the chimney to less than **80 mg/Nm3** (6% O2 dry basis)	Bidder proposed the followed Outlet SO2 limits 1.Guarantee Point : 80mg/Nm3 (6%O2 dry basis) 2.Design Point : 90 mg/Nm3(6% O2 dry basis) This SO_2 emission limits are below the Emission norms and it will ensure optimized FGD design. Bidder request NTPC to review and kindly accept the proposal.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
5	VI A	IIA-04	4 OF 7	4.01.12	All Slurry re-circulating slurry pumps & Oxidation blowers shall be installed in a **shed** provided with roof sheeting to be provided by the Contractor as per specifications specified elsewhere	The referred clauses are contradictory. Bidder understands & considers that Slurry re-circulating slurry pumps & Oxidation blowers shall be installed in a shed only as Section-VI, Part-A Sub-section-IIA-04 page 4of 7 clause 4.01.12 and inline with all ongoing NTPC FGD contracts. Bidder request NTPC to review and confirm.	Bidder understanding is correct. Bidder to refer amendment Sl no D1-33.
6	VI B	D-1-5	26 of 127	5.06.01	The civil works for FGD system shall comprise of civil, structural and architectural works below and above ground level of FGD control room building, **slurry re-circulating pumps & oxidation blowers building**…		
7	VI E				Scheme of FGD milling system: Limestone slurry pumps	As per Section-VI, Part-A Sub-section-IIA-04 page 2 of 7, Clasue no.3.01.04, 2X100% limestone slurry.....(total 4 nos.of pumps for 2X800MW) is indicated. However, in this scheme one extra pump is indicated.Bidder understands that specification write-up prevails over the schemes. accordingly total 4 nos.of pumps for 2X800MW will be considered. Bidder request NTPC to review and confirm.	Bidder to refer revised P&ID issued as an Amendment at SG.42

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
8	VI E				Scheme of FGD-Absorber system/ Scheme of FGD milling system/ Scheme of Gypsum Dewatering system: 1. Gypsum bleed pump 2. Limestone slurry pump 3. Mill circuit pumps 4. Filtrate water pump 5. Secondary H.C feed pump 6. Waste water pump 7. Process water pump 8. ME wash water pump 9. Cake wash water pumps 10. Belt filterwash water pumps	PT/PI are indicated at each pump discharge lines in the referred schemes. Since these pumps are all 2x100% configuration and pump discharge lines are connected to one common header, PT and PI will be provided on common discharge pipe only but not on individual discharge pipes. Bidder request NTPC to review and confirm.	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.
9	VI E				Scheme of FGD-Absorber system: Note 6- All instruments in slurry lines shall be provided isolation valves and diaphragm.	Bidder does not recommend valves in the impulse lines of slurry pipes in order to keep the stub length as minimum as possible and to prevent slurry settlement/blockage issues. Bidder request NTPC to review and confirm.	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.
10	VI E				Scheme of FGD-Absorber system & Scheme of Gypsum Dewatering system	At the common dischage line of Filtrate water pumps, Valve station and instruments are repeatedly indicated in both the schemes of absorber system and Gypsum dewatering system. Bidder understand that one set of instruments and a valve station are only to be provided. Bidder request NTPC to review and confirm.	Bidder to refer revised P&ID issued as an Amendment at SG.43
11	VI E				Scheme of FGD-Absorber system	Control valves are not required in Gypsum bleed pumps discharge and recirculation lines as there is no control signal for them. Bidder provides on/off type valves only. Bidder request NTPC to review and confirm.	Bidder to refer to the amendment no SG.14 and SG.41 to the technical specifications regarding the Gypsum bleed pumps recirculation valves. Bidder's proposal with regard to discharge valves of Gypsum bleed pumps is not acceptable. Bidder to comply with the technical specification requirement.
12	VI F	SUB-SECTION-VI CHAPTER -01	23 OF 39	1.22.10	Mandatory Spares: Slurry Valves: 2 Nos. each type and size	Since the size & cost of the Recirculation slurry pump suction and discharge valves are very high (around 1400mm), 2 sets of Valve internals and soft parts only will be provided as mandatory spares instead of complete valves. Bidder request NTPC to review and confirm.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
13	VI B	SUB-SECTION-A-05 (FGD)	15 OF 29	6.06.01	For tank volume calculation, solid concentration (by weight) in the slurry shall be considered not more than 20% or actual required whichever is lower.	As per Bidder's technology, 30% wt slurry is stored in the Limestone slurry storage tank. Hence tank volume will be calcuated based on 30% wt concentration. Bidder request NTPC to review and confirm.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
14	VI B	SUB-SECTION-A-05 (FGD)	11 OF 29	5.06.11	The complete absorber vessel (absorber oxidation tank, absorber tower & absorber outlet duct upto absorber outlet flange) shall be made of clad sheet of C276 / Alloy 59 (minimum 2 mm thickness) by explosion bonding or hot rolling, having minimum 7 mm thick carbon steel as base material.	Glass flake lining is adequate to take care of corrosion & abrasion inside the Absorber, which is used globally & proven in many FGD plants. In case of maintenance, it is easy to carry out the repair works for glass flake lining. This will reduce the capital expenditure and also reduce imports. Bidder requests NTPC to review and accept 3mm thick vinyl ester based glass flake lining for absorber.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
15	VI B	SUB-SECTION-A-05 (FGD)	5 OF 29	3.02.04	The duct from Absorber outlet to bypass duct & duct after by pass damper/gate to chimney inlet shall be made of cladded sheet of minimum 2 mm thickness of either Titanium (Grade 2 as per ASME SB265) or C-276 over 7 mm thick (minimum) mild steel base metal.	Glass flake lining is adequate to take care of corrosion & abrasion inside the Absorber outlet duct, which is used globally & proven in many FGD plants. In case of maintenance, it is easy to carry out the repair works for glass flake lining. This will reduce the capital expenditure considerably and also reduce imports. Bidder requests NTPC to review and accept 2mm thick vinyl ester based glass flake lining for absorber outlet duct.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.

EPC Package for Singrauli STPP Stage-III (2x800 MW)

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
16	VI A	IIA-04	2 of 7	3.01.00	The contractors scope shall include a common limestone grinding system for the two units with an interconnection from existing Stage-II & III system	The bidder understands that the common limestone grinding system applicable for Stage III (2x800 MW) is required to be interconnected with the existing Stage I and II limestone grinding systems. The bidder requested NTPC to provide the necessary drawings of the existing Stage I and II limestone grinding systems, with connection details and terminal points. The bidder also requested NTPC to clarify whether the limestone grinding system applicable for Stage III (2X800 MW) will be used to supply limestone slurry to the existing Stage I and II systems and vice versa.	Bidder to refer amendment no SG.11 in this regard.
17	Section-VI, Part A	Sub-Section- IIA-04 FGD System	Page 3 & 4 of 7	4.01.04	Motorized isolation gates at Absorber gas inlet, Absorber gas outlet along with 2x100 seal air fans for each gate and 2x100 heaters for absorber outlet gate & **bypass gate**. A bi-plane bypass damper along with 2x100 seal air & 2x100 heaters shall also be provided in the bypass duct.	Bidder understands that in the FGD Bypass Duct, only Quick Opening Bi-plane Damper is required, and Guillotine Gate is not applicable in the FGD Bypass Duct. This is in-line with tender P&ID. Please confirm bidder's understanding. Also, it shall be noted that as per the technical speci-fication- Section-VI, Part B, Sub-Section- A-05 (FGD), Clause no: 3.03.01 & 3.03.02 (Page 5 of 29), in the FGD Bypass duct, Bypass Damper is only applicable & Bypass Gate is not applicable. **In recent projects like NTPC Talcher Stage-III (2x660 MW), NTPC Lara Stage-II (2x800 MW) & SCCL (1x800 MW), FGD Bypass Gate was not appli-cable.**	Bidder to refer amendment no SG.13 in this regard.
18	Section-VI, Part A	Sub-Section- II A-01 (SG & Auxiliaries including ESP)	Page 27 of 28	5.00.00	5.00.00. Provision for CO2 to Methanol in Singrauli STPP Stage-III 2 x 800 MW Project …. Provisions shall be given in both the units. The tap-off duct portion shall be provided with necessary isolation gates in each tap-off. These Gates are to be made of Carbon steel with C276 cladding of sheet of minimum thickness 1.6 mm along with 2x100 % Seal Air fans. Also, seals to be made of Alloy C-276 or better material. Blanking plates shall also be provided in each tap-off duct after isola-tion gates.	We understand that only Inlet tap-off duct with Gate (for CO2 to Methanol system) is required, and Outlet tap-off duct (with Gate) is not required as in recent projects like NTPC Talcher Stage-III (2x660 MW), NTPC Lara Stage-II (2x800 MW), SCCL (1x800 MW) project. Please confirm.	Bidder to refer amendment no SG.8 in this regard.
19	Section-VI, Part F	Sub-Section- VI (Mandatory Spares) Chapter-01 SG & Auxiliaries	Page 19 of 39	1.22.02	1.22.02. Gates in Flue Gas System of Air Flue gas path of Boiler including FGD. 1. Seals: 1 set of each type and size (Set means compete replacement for one gate) 2. Actuator: 1 no. of each type	Clause no: 1.22.02 is coming under clause no: 1.22.00 FGD system in the Mandatory Spares List. However, in clause 1.22.02, it is mentioned as "Gates in Flue Gas System of Air Flue gas path of Boiler including FGD". Please inform whether under clause 1.22.02 (which is coming under clause 1.22.00 FGD System), Seals and actuators for only FGD Gates are required to be considered (OR) whether Seals and actuators for complete flue gas system (i.e. from Flue Gas APH Inlet Gate till ID Fan Outlet Gate + FGD) require to be considered? Please clarify.	This clause is applicable for Gates in Flue Gas System of Air & Flue gas path of Boiler including FGD. Bidder to refer amendment no SG.20 in this regard.
20	Section-VI, Part F	Sub-Section- VI (Mandatory Spares) Chapter-01 SG & Auxiliaries	Page 19 of 39	1.22.02	1.22.02. Gates in Flue Gas System of Air Flue gas path of Boiler including FGD 2. Actuator: 1 no. of each type	Already, **Electrical Actuators** (complete + its components) are considered under Clause No: **2.08.00 Electrical Actuators** (coming under 2.00.00 Control and Instrumentation section of Mandatory Spares List). Therefore, bidder would like to inform that mandatory spares items for Electrical Actuators will be considered under any 1 of these clauses only (repetition of same spares under different clauses will be avoided, and project cost can be reduced). Please confirm.	For Electrical actuators, mandatory spares are to be provided as per Clause No: 2.08.00 Electrical Actuators.

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
21	Part-E (Tender Drawings), Section-VI	Scheme of FGD-Absorber System (Drg. No: 1150-001-POM-A-022 Rev. No. A)	-	-	For FGD Inlet Guillotine Gate's Seal Air System, Temperature Transmitter (TT), Flow Switch (FS), Temperature Switch (TS), and Pressure Transmitter (PT) are shown in the Scheme of FGD- Absorber System drawing.	Please note that FGD Inlet Guillotine Gate does not require any Seal Air Heaters (as per technical speci-fication). Temperature Transmitter (TT), Tempera-ture Switch (TS) and Flow Switch (FS) are applicable only when Seal Air Heater is applicable (as in the case of FGD Outlet Guillotine Gate & FGD Bypass Damper). However, for FGD Inlet Guillotine Gate, seal air heater is not applicable and hence, Temper-ature Transmitter (TT), Temperature Switch (TS) and Flow Switch (FS) are not applicable. Only Pressure Transmitter (PT) is applicable for FGD Inlet Guillotine Gate (similar to ID Fan Outlet Guillotine Gates). Please confirm our understanding. **This same point was already agreed for NTPC Talcher Stage-III (2x660 MW), NTPC Lara Stage-II (2x800 MW) & previous tender for NTPC Singrauli Stage-III (2x800 MW) project also.**	Bidder to refer amendment no SG.41 in this regard.
22	Part-E (Tender Drawings), Section-VI	Scheme of Air & Flue Gas Path with Instrumentation (With Tri-sector AH) Drg. No: 1150-001-POM-A-018b, Sheet 1 of 2, Rev. A)	-	-	Scheme of Air & Flue Gas Path with Instrumentation P&ID shows SCR reactor along with SCR Inlet Gate, SCR Outlet Gate, Economizer Bypass Gate & Economizer Bypass Control Damper.	Please note that as per Clause No: 2.16.05A in Section VI, Part A, Sub Section-II A-01, Page 16 of 28, "Provision for Future Installation of SCR System" is mentioned. However, the tender P&ID (Scheme of Air & Flue Gas Path with Instrumentation) indicates SCR reactor along with SCR Inlet Gate, SCR Outlet Gate, Economizer Bypass Gate & Economizer Bypass Control Damper. The Scheme of Air & Flue Gas Path with Instrumentation P&ID is contradicting with Clause No: 2.16.05A (Provision for Future Installation of SCR System) with respect to the scope of the above referred SCR & Economizer Bypass Gates & Dampers (required for SCR system). Bidder understands that SCR Inlet Gate, SCR Outlet Gate, Economizer Bypass Gate & Economizer Bypass Control Damper are not required at present, and these will be part of future SCR only as per Clause No: 2.16.05A in Section VI, Part A, Sub Section-II A-01, Page 16 of 28, "Provision for Future Installation of SCR System". Please clarify and confirm bidder's understanding.	Bidder to refer revised P&IDs issued as an Amendment at SG.39 and SG.40
23	Section-VI, Part B	Sub-Section- A-02 (SG & Auxiliaries including ESP)	Page 57 of 67	22.01.02	Leak tightness testing of dampers for each type and size of damper at shop to demonstrate the guaranteed gas tightness efficiency (on flow).	Leak tightness testing will be conducted for 1 number of each type and size of Gate & Biplane Damper, irrespective of Sub-vendor/ Sub-supplier.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
24	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 5 OF 39	1.05.00 Fans A. ID Fans Sl no: 9.2	ID Fans: Hydraulic servomotor Seal ring kit(complete)	In latest design Axial Reaction Fans offered by Bidder for FD, ID & PA Fan application in all the super-critical 660 MW, 800 MW TPP's of NTPC, loose spare items (like seal kit etc.) are not applicable for Hydraulic adjusting device (HAD) because the same cannot be replaced or serviced at project site as it requires special skill set/ equipment for dis-assembly, re-assembly, static / dynamic testing of HAD. Spare HAD shall be used in case of any repair/ replacement and HAD servicing shall be done only at bidder's vendor works after replacing damaged parts. For this requirement, Two no's HAD spare for each application are already applicable for FD, ID & PA Fans. NTPC is requested to note the same and delete this spare loose item requirement. These spares are not applicable in all the super-critical 660 MW, 800 MW projects of NTPC including Patratu 3x800 MW TPP.	Bidder to provide the equivalent item in case of non applicability in provided system/equipment. Further, Bidder to refer clause 13.00.00 of sub section VI, Part A, Section VI of Technical Specifications. The specifications requirements are clear and bidder to comply the same.
25	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 6 OF 39	1.05.00 Fans B. FD Fans Sl no: 8.0	FD Fans: Hydraulic servomotor Seal ring kit(complete)		
26	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 7 OF 39	1.05.00 Fans C. PA Fans Sl no: 8.0	PA Fans :Hydraulic servomotor Seal ring kit(complete)		

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27	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 5 OF 39	1.05.00 Fans A. ID Fans Sl no:10.0	ID fan impeller liner	Impeller liners and Casing liners are not applicable for Axial Reaction ID Fans as per bidder's design practise followed in all the super-critical 660 MW, 800 MW TPP's executed by bidder's for NTPC. These spares are applicable for Radial ID Fans offered in Sub-critical 500 MW Projects. Accordingly, no item is offered against this clause in the previous super-critical 660MW, 800 MW TPP projects of NTPC executed by bidder's. NTPC may please modify the requirement including the clause with "if applicable" similar to amendment issued for SCCL 1x800 MW tender or else delete this requirement. This amendment is critical for smooth execution of contract as functionally equivalent spare item cannot be offered against this requirement.	Bidder to refer Amendment no SG.18 and SG.19 in this regard.
28	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 5 OF 39	1.05.00 Fans A. ID Fans Sl no: 11.0	ID fan casing liner		
29	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 9 OF 39	1.09.00 Seal Air Fans sl no: 1.0	Seal Air Fan: Fan assembly (excluding fan body)	We clarify that shaft with impeller assembly excluding bearings shall be offered.	Specification requirement is clear in this regard. Complete fan assembly (excluding fan body) to be provided as spares. Bidder to comply with technical specification requirement.
30	SECTION – VI, PART-B	SUB-SECTION E60 Indicative Vendor list	PAGE 1 OF 25	LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL (FORMAT NO. QS-01-QAI-P-1B/F1-R0). SL NO. 2: FD, PA & ID FANS:	STATIC, ROTATING COMPONENTS AND BLADES - NTPC APPROVED VENDORS	Bidder propose modification of this clause as "STATIC, ROTATING COMPONENTS AND BLADES - NTPC APPROVED VENDORS. APPROVED VENDORS FOR FGD BOOSTER FAN APPLICATION IN NTPC FGD PROJECTS WERE ALSO APPROVED FOR FD, ID & PA FAN APPLICATION." NTPC is requested to make this proposed modification to speed up the vendor approval process and avoid duplication of vendor approvals already obtained for Axial Booster Fans in ongoing NTPC FGD Projects. This will also facilitate in timely project execution.	Bidder to follow NTPC technical specification requirement. Any Vendor approval is project and package specific.
31	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 5 OF 39	1.05.00 Fans A.ID Fans S.No 6.4	ID Fans: Lube Oil / Hydraulic Oil system: Filters	Against this clause, filter element is offered for all previous NTPC projects. However, we have submitted the same as remarks against this clause in the bid submission in all those projects as the same is allowed. Since, we are not allowed to write any remarks against mandatory spares for this tender in the bid submission, NTPC may revise the requirement as Filter element or else modify the description as filter assembly to offer complete filter element with casing assembly. Ambiguity may please addressed through suitable amendment as there is no room for discussion on mandatory spares left out to bidder because of tender conditions.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
32	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 6 OF 39	1.05.00 Fans A.FD Fans S.No 4.4	FD Fans: Lube Oil / Hydraulic Oil system: Filters		
33	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 7 OF 39	1.05.00 Fans A.PA Fans S.No 6.4	PA Fans: Lube Oil / Hydraulic Oil system: Filters		
34	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 5 OF 39	1.05.00 Fans A. ID Fans Sl no:12.0	ID Fans: Lube Oil cooler	Against this clause, cooler tube bundle is offered for all previous NTPC projects. However, we have submitted the same as remarks against this clause in the bid submission in all those projects as the same is allowed. Since, we are not supposed to write any remarks against mandatory spares for this tender in the bid submission, NTPC may revise the requirement as Lube oil cooler tube bundle or else modify the descrip-tion as Lube oil cooler assembly to offer complete as-sembly. Ambiguity may please addressed through suitable amendment as there is no room for discussion on mandatory spares left out to bidder because of ten-der conditions.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
35	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 6 OF 39	1.05.00 Fans B. FD Fans Sl no:11.0	FD Fans: Lube Oil cooler		
36	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 7 OF 39	1.05.00 Fans C. PA Fans Sl no:11.0	PA Fans: Lube Oil cooler		

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37	VI/B	SUB SEC-TION-A-02 STEAM GEN-ERA-TOR & AUXIL-IARIES IN-CLUD-ING ESP	60 of 67	2.01.01 (a)	The model study shall also include a gas distribution study in the inlet and outlet duct as well as, the cross over duct to find out the effect of isolation of one stream of the ESP,	As per ICAC code, the gas distribution study will be conducted at ESP inlet duct only and not at ESP outlet ducts.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
38	VI/B	SUB SEC-TION-A-02 STEAM GEN-ERA-TOR & AUXIL-IARIES IN-CLUD-ING ESP	60 of 67	2.01.01 (b)	The model study shall include all connect-ing duct work from air preheater gasoutlets to the induced draft fans inlets, induced draft fan outlet to FGD inlet, FGDoutlet to chimney flue inlet and also from the induced draft fan outlet to chim-neyflue inlet (in FGD bypass condition) in-cluding the inlet duct transition piece	The ESP Physical Flow Model will include the design of all connecting duct work from the air preheater gas outlets upto the induced draft fans inlets only. Physical modeling from Induced draft fan outlet, Ducts to/from FGD & chimney flue Inlet (FGD bypass duct) including the inlet duct transition piece is ex-cluded from ESP Physical Flow Model study as we are not measuring air velocities in the Physical Flow Model beyond ESP Casing, as per ICAC standard. Flow correction devices if any, beyond ID fan is not required since this will not have any impact on ESP Flow Model study.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
39	VI/B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	62 of 67	8.01.00	Dust hoppers shall be of conical type. ESP hoppers other than that of conical type shall not be acceptable.	Pyramidal hoppers which have similar ash flowability characteristics to conical hoppers, may also be accepted owing to simplicity of construction.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
40	VI/B	SUB SEC-TION-A-02 STEAM GEN-ERA-TOR & AUXIL-IARIES IN-CLUD-ING ESP	63 of 67	8.01.00	Hopper valley angle to the horizontal shall not be less than sixty five (65) degrees.	Hopper valley angle of 60° may be accepted as being followed for other projects of similar capacity.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
41	VI/B	SUB SEC-TION-A-02 STEAM GEN-ERA-TOR & AUXIL-IARIES IN-CLUD-ING ESP	66 of 67	14.00.00	A comprehensive flowability study of fly ash from ESP hoppers shall be conducted by the contractor to ensure smooth flow of ash under various operating conditions of the plant including Steam Generator, ESP and Fly Ash Removal System. The hoppers are required to promote mass flow without arching and rat holing problems. The main aim of the flowability study is to ensure consistent flow from each hopper to the ash removal system and following requirements shall be met by the contractor in this connection: i) The study could be conducted on scaled down model of ESP hopper prepared by the bidder and at different relevant temperatures.....	Bidder clarifies as below for conductance of the test.: Evaluation of mass flow design parameters under gravity condition i.e valley angle for a given top opening of hopper with specified material of construction and outlet opening dimension by conducting shear test on three ash samples, as provided by NTPC. The test will be conducted at: a) Ambient temperature at test condition b) Maximum 60 deg. C. Bidder may engage an external laboratory to conduct the above test. The report on the above study will be furnished to NTPC by Bidder for information purpose. There shall be no effect on the project work schedule and no hold on the detailed engineering of ESP. No physical modeling is envisaged.	Specification requirement is clear in this regard. Bidder to comply the specifications requirements. Procedure for ash flowability study of ESP hoppers shall be discussed and finalised during detail engineering.
42	VI Part-A	II-B ELECTRICAL SYSTEM / EQUIPMENTS	3 of 19	1.05.02	All Switchgears, Motor Control Centres (MCCs) & AC/DC distribution boards, etc. shall have at least twenty per cent (20%) or minimum two (whichever is higher) fully equipped MCCB/MPCB	Bidder proposes 10% or minimum two feeder spares for the LT Switchboards instead of 20% or minimum two (whichever is higher). Owner may kindly review and comment.	Bidder proposal is not acceptable. Specification cl. no.1.05.02 Sub -Section IIB Section-VI, part-A to be followed.

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43	VI Part-B	A-02 STEAM GENERA-TOR & AUXIL-IARIES INCLUD-ING ESP	63 of 67	8.03.00	The dust hoppers shall be electrically heated up to a minimum of lower one third (1/3) of the dust hopper height but not less than 1.5 metre in height by thermostatically controlled curved panel heating elements matching with curved surfaces of conical hopper to prevent ash bridge formation by maintaining the ash temperature above 140 deg C	The panel type heater's curved metallic enclosures are bent to the desired radius/shape at factory and supplied. However, during erection at site, any slight variation in the installation location may result in improper contact of panel heaters with the hopper curved surface, which may affect the desired performance. The vendors for curved panel type heaters are only one or two. In view of the above, bidder request owner/ NTPC to consider blanket type and other heater types that are suited to conical hopper surface heating requirements.	Bidder to comply with the specifications requirements. Further, bidder to apply requisite quaity control measures both at factory and site at various stages of fabrication and erection so as to ensure the desired envisaged performance.
44	VI Part-B	A-02 STEAM GENERA-TOR & AUXIL-IARIES INCLUD-ING ESP	64 of 67	8.07.00	Acoustic 3D Level Scanner Based Level Monitoring System for each ESP Hopper in the First Three Fields shall be provided complying with requirements indicated in Sub-Section-IIIC-03	The acoustic 3D level scanner / NOGS level scanners is yet to be commissioned and proven for ESP hopper applications. The cost is higher than the cost of conventional Ash level indicators, and the vendor availability is limited. Hence, owner/ NTPC may kindly consider conventional ash level indicators instead of 3D acoustic level scanner/ NOGS based level monitoring for ESP hopper applications. Owner may kindly review and confirm	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.
45	VI Part-B	B-0 GENERAL ELECTRICAL SPECIFICATION	7 of 16	3.06.00 (d)	MCCB shall be provided for all supply feeders of current rating above 16 Amp and including 400A.	For ESP LT Switchgear, MCCB shall be provided up to 630 A, and breaker modules shall be provided for current above 630 A. This is in line with the standard design practise of ESP switchgear for projects. Owner may kindly review and confirm.	Bidder proposal is not acceptable. Specification cl. no.3.06.00 (d) Sub -Section B-0 Section-VI, part-B to be followed.
46	VI Part-B	B-02 MOTORS	1 of 4	3.01.00 (b)	Continuous duty LT motors upto 50 KW Output rating (at 50 deg.C ambient temperature), shall be super Premium Efficiency class-IE4, 50-200 KW shall be of Premium Efficiency class –IE3, conforming to IS 12615, or IEC:60034-30.	The ESP geared rapping motor is fractional horse power drive and is operated intermittently for ESP application. Since the ESP rapping motor operation is intermittent , IE4 motors are not provided. Instead IE2 rated motors are provided. This is in-line with other NTPC projects also. Owner may kindly review and confirm.	Bidder proposal is not acceptable. Specification cl. no.3.01.00 (b) Sub -Section B-02 Section-VI, part-B to be followed.
47	VI Part-B	B-08 HT ,LT POWER CABLES	5 of 7	4.00.05 (a)	Cables shall be supplied in steel drums of heavy construction.	Bidder proposes wooden drum also in addition to steel drums for the power cables. Owner may kindly review and confirm.	Bidder proposal is not acceptable. Specification cl. no.4.00.05 (a) Sub -Section B-08 Section-VI, part-B to be followed.
48	VI Part-B	IIIC-04 MEASURING INSTRUMENTS (PRIMARY & SECONDARY)	5 of 35	3.02.00 (1)	Type of RTD: Four wire, Pt-100	Bidder proposes that 3-wire RTD may also be given for temperature measurement of the various equipment (FANS/ Motors etc) as per the bidder's proven design. This is in-line with design provided for various projects. Owner may kindly review and confirm for 3-wire RTD / 4-wire RTD (as per bidder design) for FANs application..	Bidder's proposal is not acceptable. Bidder shall comply to specification requirements.
49	VI Part-A	SUB-SECTION-IIC CONTROL & INSTRUMENTATION SYSTEM	5 of 18	1.06.02 (M)	For High torque (> 1000 Nm) electric actuators: Contractor may propose non-intrusive fieldbus electrical actuators without SIL2 certification.	The SIL-2 compliant models include imported actuators and are about 5 times costlier. Considering the initial cost, maintenance as well as spares costs and the import requirements, bidder request NTPC to kindly remove the SIL-2 requirement for the electrical actuators. Owner may review and confirm that, SIL-2 certification is not applicable for the electrical actuators	Bidder's proposal is not acceptable. Bidder shall comply to specification requirements.
	VI Part-B	SUB SECTION IIIC-17 ELECTRICAL ACTUATORS	2 OF 4	4.11.00	All actuators shall be certified for SIL 2 or better.		Bidder's proposal is not acceptable. Bidder shall comply to specification requirements.
50	VI Part-E / Tender SLD	Part-E/ Book-I of II / 9500-999-POE-J-002 REV-A SLD- MAIN PLANT		SLD Notes point (F) .	(F) . Standard LT transformer rating to be used are as follows 2500/2000/1600/1000/630/500/315 KVA.	Bidder understands that use of both LT ONAN and LT DRY type transformers upto 2.5 MVA are allowed as per tender .The same is in-line with the other NTPC EPC projects also. Owner may kindly review and confirm.	Bidder understanding is not correct. Technical specification requirement & tender SLD to be followed.

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51	VI Part-B	SUB SECTION B-06 LT SWITCHGEARS & LT BUSDUCTS	13 of 19	7.00.00	Each motor/heater feeder shall consist of MPCB/MCCB (with S/C release only), Power contactor & intelligent motor controller (IMC) to ensure Type-2 Co-ordination. If the ESP controller and rapping motor are provided in the ESP switchgear, same shall be with IMC having MPCB/MCCB. If separate controller is provided and only supply feeder is envisaged from ESP Switchgear, the requirement of IMC may be excluded.	a) ESP rapping motors are fractional horse power motors. We are offering separate ESP controller which controls the ESP rapping motor . The controllers ensures the best sequence of rapping of various fields and provides better coordination of rapping motors for achieving the desired emission parameters. No control is envisaged from the ESP switchgear. Only supply feeder with OLR and power contactor is provided from ESP switchgear. b) The ESP heaters (hopper/ insulator) are thermostat controlled for maintaining the desired temperature. No control is envisaged from the ESP switchgear. Only supply feeder with contactor is provided from ESP switchgear. Further, IMC not applicable for heater feeders. c)The ESP motor and heater controls are proven design being offered in all the NTPC contracts. Since no control of rapping and heaters are envisaged from ESP switchgear (only supply feeder with OLR & contactor are provided in ESP switchgear) , bidder proposes ESP switchgear without IMC. Owner may kindly review this requirement based on the implementation of ESP motor and heater controls in the various NTPC projects. Owner may Kindly review and confirm.	Bidder proposal is accepted in line with the provisions of clause 7.00.00 of Sub section B-06 Part B Section VI
52	VI Part-B	SUB SECTION IIIC-17 ELECTRICAL ACTUATORS	1 of 4	3.00.00	These actuators shall be Non-Intrusive type electric actuators. The interface of these actuators with DDCMIS shall be of two types viz. with Hardwired interface and with Fieldbus interface	Bidder proposes that all the actuators for the gates and dampers can be hardwired interface instead of fieldbus interface for the following reasons: a) Providing Uniformity of communication interface for all the actuators b) Some vendors don't have the Profibus based actuators for the complete range Owner may kindly review and confirm for hardwired actuators for gates and dampers instead of fieldbus based actuators.	Bidder's proposal is not acceptable. Bidder shall comply to specification requirements.
53	VI Part-B	SUB-SECTION-IIIC-04 MEASURING INSTRUMENTS (PRIMARY & SECONDARY)	2 of 35	2.01.00	Microprocessor based 2 wire loop powered electronic transmitter with 4-20 mA DC HART/ Fieldbus (Foundation Fieldbus /Profibus PA complying to IEC 61158.) output signal shall be provided.	Bidder understands that bidder can provide either HART based / fieldbus based transmitters , as per the tender specification. Hence bidder proposes HART based transmitters for all applications instead of fieldbus based transmitters. This shall provide uniformity. Owner may kindly review and confirm	Bidder's proposal is not acceptable. Bidder to refer Amendment No-C-05 for conventional instruments and shall comply to specification requirements.
54	VI Part-E / Tender SLD	Part-E/ Book-I of II / 9500-999-POE-J-002 REV-A Single Line diagram- MAIN PLANT		SLD Notes point (F) .	(F) . Standard LT transformer rating to be used are as follows 2500/2000/1600/1000/630/500/315 KVA.	Bidder understands that use of both LT ONAN and LT DRY type transformers upto 2.5 MVA are allowed as per tender .The same is in-line with the other NTPC EPC projects also. Owner may kindly review and confirm	Bidder understanding is not correct. Technical specification requirement & tender SLD to be followed.
55	NA				General Electrical query-2	The number of layers of cables in the cable trays is not mentioned. Bidder understands that the maximum cable layer is 2 layers for power cables and 3 layers for control and instrumentation cables. This is based on standard practise being followed for all other NTPC projects also. Owner may kindly review and confirm	Bidder proposal is not acceptable. Multicore Power cable shall be laid in touching formation in single layer. Control and Instrumentation cables can be laid in 3 layers subject to max cable tray filling upto 80% of tray depth only.
56	NA				General mandatory spares query	In case mandatory spares are repeated at more than one location, bidder proposes to consider only at one location (the one location where maximun quantity is specified shall be considered). Owner may kindly review and confirm the same. In case mandatory spares are to be considered in all the locations wherever it is specified, same may be clearly indicated to the bidders.	Bidders query is not specefic in nature. Mandatory spares are to be considered in all the locations where it is specified.

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57	VI/B	A-25	1 of 12	1	Tentative Roof top Solar Plant Capacity will be 1000kWp.	Kindly provide following inputs - 1. Please indicate the maximum capacity of cumulative solar systems be allowed for installation. The limit is required for proper estimation. 2. Please confirm that amount allotted for setting up solar installation would be fixed irrespective of installed capacity. This implies that if the installable capacity is less than maximum allowed installation capacity, then there would be no price adjustment in any manner. 3. Please confirm that indicated capacity is DC capacity.	1. Tentative capacity of roof top solar system is 1000kWp. Actaul capacity shall be as decided during detailed engineering 2. Bidders understanding is not correct 3. Confirmed
58	VI/B	A-25	2 of 12	1.6	Bidder to provide Operation and Maintenance (O&M) of the plants for a period of one year from the date of trial run of all the rooftop locations. During trial run (minimum one day), bidder to demonstrate trouble free operation of all the rooftop/shade locations. During O&M period, the bidder shall be responsible for supply of all spare parts as required from time to time for scheduled and preventive maintenance, major overhauling of the plant, replacement of all equipments in the plant including defective PV Modules, Inverters, Transformers etc and maintaining log sheets for operation detail, deployment of staff for continuous operations and qualified engineer for supervision of O&M work, complaint logging & its attending. All PV modules shall be cleaned regularly and water washed at least once in a week.	Please confirm that 1. we can depute our sub-contractor's staff for O&M ac-tivities. Deputing bidder's staff is not obligatory. 2. only 1no qualified & experienced supervisor is sufficient to be permanently deputed during O&M period (for total solar systems). 3. Electrician for periodic checking & labour for periodic cleaning of PV modules are allowed to be arranged locally on as and when basis.	1. Bidders Proposal is accepatble. Eventhough the subcontractors staff deputed at site, but still the resposnibility lies with Bidder only. 2. Bidders understanding is correct. 3. Bidders understanding is correct.
59	VI/B	A-25	2 of 12	1.8	Bidder to dispose of the packing material, surplus items, unused materials, waste etc. generated during EPC at location(s) identified by NTPC.	Kindly confirm that area for disposal is within NTPC's premises & no separate approvals/permits need to be secured by the bidder.	Bidders Understanding is correct
60	VI/B	A-25	4 of 12	5.1	The cables used in the system should be ISI marked PVC or XLPE insulated FRNC armored Copper/aluminum conductor. Cables of various sizes as per load requirement for connecting all the modules / arrays to Junction Boxes and from Junction Boxes to DC distribution box and from DC distribution box to inverter. Cables shall be armoured type if laid in switchyard area or directly buried	Solar cables on DC side are unarmoured Copper conductor. Further, in rooftop solar systems, DC cables are not laid underground. Therefore, please allow unarmoured copper conductor DC cable up to inverter, irrespective of area/building.	Bidders proposal is not acceptable. Bidder Shall comply to the technical sepcifications
61	VI/B	A-25	4 of 12	5.3	Suitable industrial Grade B rigid conduits shall be provided for cables connecting Solar PV array with Inverter.	Please allow HDPE pipes as conduit for DC cabling, wherever required.	Bidders proposal is not acceptable. Bidder Shall comply to the technical sepcifications
62	VI/B	A-25	5 of 12	6.6	Built-in meter at PCU/String Inverter and data logger to monitor plant performance through external computer shall be provided. Customized solar monitoring solutions available with Inverter manufacturer shall be preferred.	1. It is understood that only data loggers for solar plant monitoring is required. Please confirm. 2. Please confirm that LAN cable for internet con-nection will be provided on each rooftop. 3. Please confirm that portal/internet/SIM charges shall be borne by NTPC. 4. Please confirm that supply of separate computer is out of bidder’s scope.	1. Confirmed 2. Connection upto nearest available owners Lan network shall be in bidders scope 3. Charges till end of AMC period are in Bidders scope 4. Confirmed
63	VI/B	A-25	6 of 12	7	If the output of the inverter matches to the switchgear voltage and suitable for directly connection to grid without galvanic isolation, the requirement of transformer may be ommited except Main Power House building, Switchyard building and Ash Slurry Pump house.	Please allow omission of requirement of transformer in Main Power House building, Switchyard building and Ash Slurry Pump house also, if the individual rooftop capacity is less than 500kWp.	Bidders proposal is not acceptable. Bidder Shall comply to the technical sepcifications
64	VI/B	A-25	9 of 12	11	An appropriate Solar PV Module cleaning & water washing system complete GI pipes, valves, hose pipes, wipers, mops etc. shall be provided for regular cleaning and water washing of the rooftop Solar PV modules.	Please allow HDPE/CPVC pipes in place of GI pipes.	Bidders proposal is not acceptable. Bidder Shall comply to the technical sepcifications

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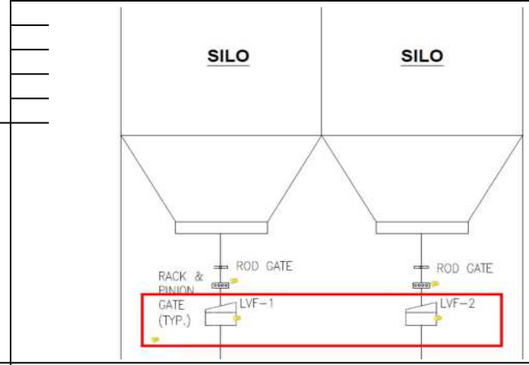
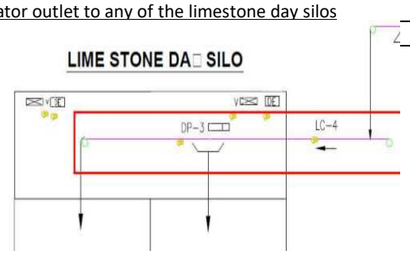
65	VI/B		75 of 133	12	LT Switchgear -Floor mounted Draw out type indoor switchgear Panel (MCC , ACDB / DCDB etc.) – Cat I	1. For solar applications, DCDB/ACDB are wall mounted nearby the respective inverter. Please allow wall mounted DCDB/ACDBs. 2. Please allow to consider the items in Cat III cate-gory. 3. Please allow other reputed make DCDB/ACDBs for such a small quantity.	Bidders proposal is not acceptable. 1. Bidder Shall comply to the technical sepcifications 2. Being EPC project, bidder to follow Indicative vendor list categorization as given for EPC specification: CAT-I both for Floor mounted/Wall mounted. 3. Being a controlled item,new vendor may be proposed during detailed engineering as per NTPC QA Coordination procedure and GTR available with bid specification.
66	VI/B		79 of 133	24	SPV Modules	Please allow suppliers from MNRE approved latest ALMM list, available at the time of procurement.	Bidder proposal isn't acceptable. Being a controlled item,new vendor may be proposed during detailed engineering as per NTPC QA Coordination procedure and GTR available with bid specification.
67	VI/B		80 of 133	25	Power Conditioning Unit (PCU) – Cat I	1. Please allow to consider the item in Cat II. 2. Enlisted suppliers are mainly supplying Central in-verters. Kindly review the list wrt string inverters to include other renowned brands like Power-one, Delta, Kaco, Polycab, SMA, etc.	Bidder proposal isn't acceptable. Being a controlled item,new vendor may be proposed during detailed engineering as per NTPC QA Coordination procedure and GTR available with bid specification.
68	VI/B		80 of 133	25.1	String Monitoring Box (SMB)	Kindly incorporate other renowned suppliers like – 1. RSS India 2. Innova 3. KERNEL Sistemi Srl 4. SRR Energy 5. other reputed make.	Bidder proposal isn't acceptable. Being a controlled item,new vendor may be proposed during detailed engineering as per NTPC QA Coordination procedure and GTR available with bid specification.
69	VI/B		82 of 133	32	Galvanized steel structure	Hot dipped galvanized MS structure is used in solar system. Please allow to procure such a small quantity galvanized structure from any reputed make through GeM, keeping the item in Cat-II only.	Bidder proposal isn't acceptable. Being a controlled item,new vendor may be proposed during detailed engineering as per NTPC QA Coordination procedure and GTR available with bid specification.
70					General	Please confirm that netmetering/gross metering is NOT applicable.	Bidders understanding is not correct
71					General	Please confirm that solar power termination of individual solar system will be done on respective LT panel of each building.	Bidders Understanding is correct
72					General	Please confirm that no HT work is involved in solar scope.	Bidders Understanding is correct
73					General	Please confirm that no separate Lightning Protection is required for solar system, if the respective building is already protected.	Bidders Understanding is correct
74	SECTION-VI, PART-A	SUB SECTION-IIA-14 – LHP & GHP	PAGE 1 OF 4	1.01.01	Limestone will be received to power plant through road by trucks. Limestone received through Road shall be unloaded by Two (2) numbers Truck Tipplers each of minimum 40T capacity (Gross weight 60 T minimum) to discharge Limestone on to Box Feeders/Surface Feeders/Truck Unloading Hopper, complete with all mechanical, electrical and C&I, Civil & structural works for unloading Limestone by truck tipplers.	i. Pl. confirm whether incoming limestone trucks are top hinge or bottom hinge opening type as this has major implication on truck tippler and ramp height. ii. Customer to confirm the Truck Model, Type & No of Wheeler Truck to be considered for truck tippler.	1.Bidder to consider both top hinge & bottom hinge opening type trucks available in the market. 2.Bidder to consider all the trucks used for the transportation of bulk material shall with max 16 nos. of wheels.

EPC Package for Singrauli STPP Stage-III (2x800 MW)

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
75	SECTION-VI, PART-A	SUB SECTION-IIA-14 – LHP & GHP	PAGE 2 OF 4	1.01.08	Suitable number of Vibrating feeders along with suitable crushed limestone feed regulating mechanism below silos shall be provided taking feed from silo and discharging onto onward conveyors/ Bucket elevators. Alternatively, Activator feeder (Un-coaler) may be provided. Each storage silo shall be equipped with suitable Air blasting/Vibrating Bin type arrangement to ensure proper flowability of Crushed Limestone.	Instead of Vibrating feeder or Uncoaler, alternatively bidder also proposes another option of providing Silo extractor at silo bottom, for discharging feed from silo onto onward conveyor/ Bucket elevator. Please. confirm.	Bidder's alternate proposal of providing mechanical extractor for limestone application is not acceptable.
	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 53 OF 130	LIMESTONE FLOW DIAGRAM			
76	SECTION-VI, PART-A	SUB SECTION-IIA-14 – LHP & GHP	PAGE 2 OF 4	1.01.09	Suitable number of diverter plows and its actuating mechanism shall be mounted on each conveyor to feed limestone into limestone day silos. Alternatively, suitable nos. fixed Trippers on each conveyor to feed limestone into limestone day silos. Or any other alternate to ensure feeding of limestone from any of the bucket elevator outlet to any of the limestone day silos	Customer to kindly confirm if feeding of limestone to day silos can be done with reversible belt feeder arrangement.	Bidder's proposal is acceptable. Bidder may offer reversible belt feeder as an alternative option for limestone application in place of conveyor with diverter plough
	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 53 OF 130	LIMESTONE FLOW DIAGRAM			
77	SECTION-VI, PART-A	SUB SECTION-IIA-14 – LHP & GHP	PAGE 2 OF 4	1.01.11	Minimum two (2) Nos. sump pumps in each Junction Tower (if applicable) complete with motors, local control panel, level switches, individual discharge piping with fittings and valves to ash disposal slurry sump.	1.Sump pumps shall be provided only in Underground junction towers. Please confirm. 2.Bidder proposes to connect discharge of the sump pumps (if applicable) to nearest drain. Please confirm.	1.Bidder's understanding is correct. Bidder to provide sump pump in underground junction towers only. 2. Bidder'proposal to connect the discharge of the sump pump to the nearest drain is acceptable.
78	SECTION-VI, PART-A	SUB SECTION-IIA-14 LHP & GHP	PAGE 3 OF 4	3.01.00	**3.00.00 COMMON SCOPE FOR LHP & GHP** 3.01.00 Minimum one (1) no. Weighing Bridge of capacity 100 MT for Road trucks / Tipplers shall be provided in Gypsum Loading area.	1.Bidder understands that 1 no weighbridge has to be provided in Limestone unloading area and 1 no weighbridge in Gypsum loading area. Customer to kindly confirm if bidder's understanding is correct. 2. Customer to kindly specify the type of Weighbridge, as to whether it is Pit/Pitless type.	1. Bidder's understanding is correct. 2. Bidder to provide pitless type weighbridge for LHP & GHP.
79	SECTION-VI, PART-A	SUB SECTION-IIA-14 LHP & GHP	PAGE 3 OF 4	1.01.23	Minimum one (1) no. Weighing Bridge of capacity 100 MT for Road trucks / Tipplers shall be provided each in Limestone unloading area.		
80	SECTION-VI, PART-A	SUB SECTION-IIA-14 LHP & GHP	PAGE 3 OF 4	1.01.27	Complete un-used set of all special tools and tackles, which are necessary or convenient for erection, commissioning and overhauling of any equipment, covered under the scope.	Customer to note that there are no special tools & tackles for LHP & GHP. So we are not considering any tools & tackles in LHP&GHP. Pl. confirm	Bidder's understanding is correct. Bidder to note that no special tools and tackles to be provided in LHP & GHP.

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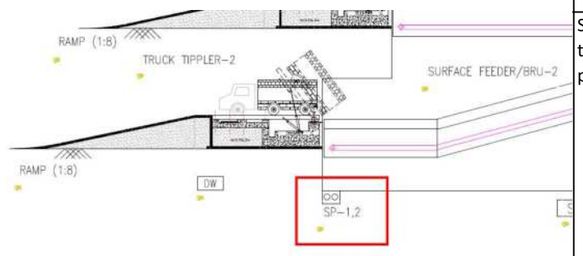
	Section	Sub-Section	Page No.	Clause No.			
81	SECTION-VI, PART-A	SUB SECTION-IIA-14 LHP & GHP	PAGE 4 OF 6	2.02.00	One number of covered storage shed for gypsum. The storage shed shall be sufficient to store gypsum equivalent to gypsum generation of minimum 7 days at Design point (Generation of all units to be considered).	Customer to kindly furnish the following details in regard to Gypsum storage shed 1. Maximum stockpile height to be considered 2. Angle of repose for Gypsum	Bidder may consider gypsum stockpile height (max) upto 10m and 35deg angle of repose for Gypsum
82	SECTION-VI, PART-A	SUB SECTION-IIA-14 LHP & GHP	PAGE 4 OF 6	2.03.00	Minimum four (4) Nos. sump pumps in gypsum storage shed complete with motors, local control panel, level switches, individual discharge piping with fittings and valves up to ash disposal slurry sump.	Bidder proposes to connect discharge of the sump pumps to nearest drain. Please confirm.	Bidder'proposal to connect the discharge of the sump pump to the nearest drain is acceptable
83	SECTION-VI, PART-A	SUB SECTION-IIA-14 LHP & GHP	PAGE 4 OF 6	2.05.00	Service water, cooling water and potable water system for complete gypsum handling plant. Water Pump houses & water tanks for service water, cooling water and potable water system. Common pump house for coal handling system, biomass handling system, and gypsum handling plant is also acceptable.	1. Bidder is considering one common pump house for Coal handling, biomass handling, gypsum handling **as well as Limestone handling**. Customer to kindly confirm. 2. Bidder understands that RCC storage tank at the common pump house will be of 0.5 hour (Half an hour) storage capacity. Please confirm.	1. Bidder's understanding is correct. Bidder may consider one common pump house for Coal handling, biomass handling, gypsum handling as well as Limestone handling 2. Bidder's understanding is correct. Bidder may consider 0.5 hour of storage for RCC storage tank at common pump house.
84	SECTION-VI, PART-A	SUB SECTION-IIA-14 LHP & GHP	PAGE 5 OF 6	3.03.00	One (1) number of belt vulcanizing machine, suitable for all belt widths in gypsum handling plant, complete with all mechanical, electrical, accessories and consumables for one year of consumption. Further belt jointing facilities as specified shall be provided. Alternately, the bidder may give a common belt vulcanizing machine for CHP, BHP, and GHP.	Bidder proposes to consider One (1) No. common belt-vulcanizing machine for CHP, BMHP, GHP as well as LHP. Customer to kindly confirm.	Bidder's proposal is acceptable.
85	SECTION-VI, PART-A	SUB SECTION-IIA-15 CHP & BHP	PAGE 4 OF 9	1.30.00	One (1) No. belt vulcanizing machine for each Belt type (Steel Chord/Nylon etc) of adequate size complete with all mechanical, electrical, accessories and consumables for one year consumption. Further, belt jointing facilities as specified shall be provided.	We wish to clarify that same belt vulcanizing machine can be used for both NN and steel cord belts. Therefore, we are considering only 1 no. common belt-vulcanizing machine in total (which will be selected based on highest belt width of CHP, BMHP, GHP and LHP) and which will be suitable for all types and ratings of conveyor belts in CHP, BMHP, GHP and LHP. Kindly confirm.	Bidder's proposal is acceptable.
86	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 53 OF 130	LIMESTONE FLOW DIAGRAM		Sump pumps in Surface feeder region will be provided only in case Limestone transfer facility is underground. Otherwise the sump pumps shall not be provided. Please confirm.	Bidder's proposal is acceptable.
87	SECTION-VI, PART-A	SUB SECTION-IIA-14 LHP & GHP	PAGE 2 OF 4	1.01.14	Two (02) numbers conventional enclosure type passenger cum goods elevator having capacity of 16 persons (1088 kg) complying to IS:14665 (latest edition) with drives, all electrical, mechanical, civil, structural & associated foundation works, accessories and	1.We understand Rope and sheave type elevators to be considered. Please clarify.	1. Bidder's understanding is correct. 2. Bidder to provide rope and sheave type elevator of capacity not less than 1068kgs in biomass silos.
					electrical to serve various floors of Limestone crusher house and Limestone Storage Silos. Staircase access for machine room shall also be provided by the bidder.	2.Also customer to kindly furnish the details like capacity, type etc. of elevator to be provided in the Biomass storage silo.	
	SECTION-VI, PART-A	SUB SECTION-IIA-15 CHP & BHP	PAGE 3 OF 9	1.18.00	Two (2) Nos. passenger cum goods elevators with drives, all electrical, mechanical, civil, structural & associated foundation works, accessories and electrical to serve various floors of the crusher house (CH) and on conveyor feeding to Main plant.		
	SECTION-VI, PART-A	SUB SECTION-IIA-15 CHP & BHP	PAGE 7 OF 9	1.18.00	One (1) number of Passenger cum goods elevator with drives, all electrical, mechanical, civil, structural & associated foundation works, accessories and electrical to serve various floors of Biomass storage Silo/bin complex.		

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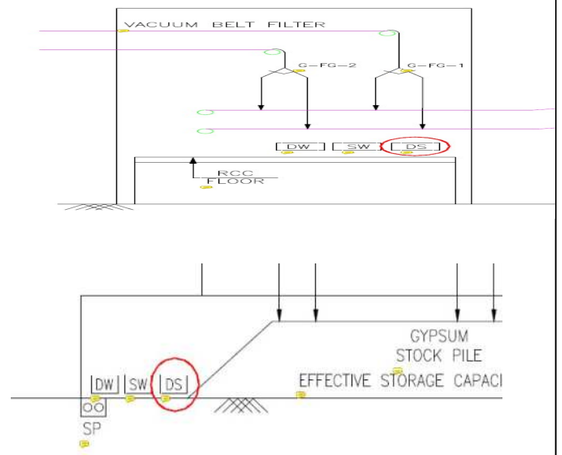
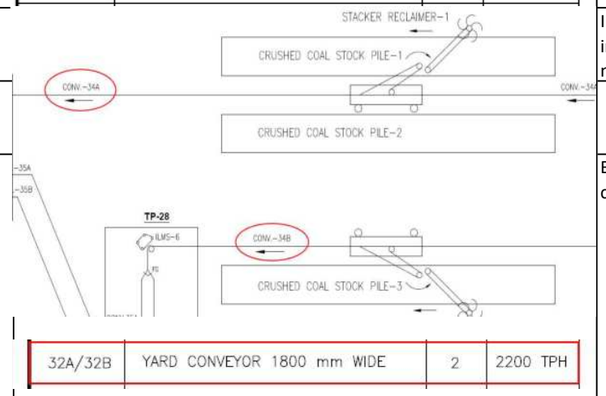
	Section	Sub-Section	Page No.	Clause No.			
88	-	-	-	General Query	Payloader/Front-end loader/Bull dozer	Bidder understands Pay loaders/Front-End loaders/Bulldozers required in Coal/Limestone/Biomass/Gypsum handling plants are not in bidder's scope of supply. Customer to kindly confirm.	Bidder's understanding is correct.
89	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	PAGE 91 OF 92	4.04.15	Dust extraction system Type: Dry type dust extraction system Location: Truck un-loading points, Junction Towers (limestone/ **gypsum discharge & receipt points**), limestone crusher house (including belt feeder & vibrating screening feeder) and lime stone/**gypsum storage Shed**/Silo.	i)Dust extraction is mentioned in Cl 4.04.15 and Dust suppression is indicated in Gypsum flow diagram for Gypsum storage shed. However, bidder is considering only Plain water dust suppression system for Gypsum storage shed. ii) Addition of water at Gypsum discharge points in Gypsum dewatering building is not recommended since Gypsum is hygroscopic in nature. Hence bidder is not considering any Dust suppression system or Dust extraction system at Gypsum discharge & receipt points. Please confirm.	Bidder to refer MH-17 amendment no 1 to technical specification.
	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 54 OF 130	GYPSUM FLOW DIAGRAM			
90	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 56 OF 130	COAL AND BIOMASS DIAGRAM 9587-001(R)-POM-A-002 RevA	In coal crusher house BF-1 TO 4 | BELT FEEDER | 4 | 1210 TPH	With the existing space and layout constraints, it is not feasible to provide 4 nos. belt feeders in coal crusher house. Alternately, bidder is proposing 2 nos. reversible belt feeders (RBF-1 and RBF-2) instead of 4 nos. belt feeders. RBF-1 will take feed from CR-1&2 and RBF-2 will take feed from CR-3&4. RBF-1& 2 shall discharge material to direct path on one side and stacking path on other side. Capacity of RBF-1 & 2 shall be 2200 TPH (rated) and 2420 TPH (design) with belt width of 2200mm, speed of 1.65m/sec considering material density as 0.8T/m3, fill factor of 0.9 and slope factor of 1 (as it is horizontal). RBF kind of arrangement is already provided in earlier NTPC projects also. So kindly confirm if proposed RBF arrangement is acceptable for Singrauli Stage-III.	Bidder to note that reversible belt feeder is not acceptable.

EPC Package for Singrauli STPP Stage-III (2x800 MW)

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
91	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	PAGE 83 OF 92	4.02.06	4.02.06 COAL HANDLING EQUIPMENT a) Design capacities & margins Sl no | Equipment | Duty requirement | Design capacity as %age of duty requirement 1 | Crushers | 2x55% | 110% 2. | Vibrating feeders | 2x55% | 110% 3. | Paddle feeders | 2 x 75% | 110% 4 | Belt feeder for crusher house | 2x55% | 110% 5 | Stacker-reclaimer | 2 X100% | 110% for stacking & 125% for reclaiming	Capacity of equipment indicated is contradicting between specification & flow diagram. We have understood that rated/Design capacity of each equipment as follows Crusher - 1100/1210 TPH Vibrating feeder - 1100/1210 TPH Paddle Feeder – 1500/1650 TPH Belt feeder for crusher – RBF proposed with 2200/ 2420 TPH Stacker-Reclaimer - 2200/2420 TPH(stacking) - 2200/2750 TPH(Reclaiming)	Bidder to refer MH-8 amendment no 1 to technical specification.
	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 56 OF 130	COAL AND BIOMASS DIAGRAM	CH | CRUSHER | 4 | 1210 TPH VF 1–4 | VIBRATING FEEDER | 4 | 1210 TPH PF 1–4 | PADDLE FEEDER | 4 | 1650 TPH BF–1 TO 4 | BELT FEEDER | 4 | 1210 TPH SR | STACKER RECLAIMER | 2 | 2200 TPH	Please confirm.	
92	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 56 OF 130	COAL AND BIOMASS DIAGRAM 9587-001(R)-POM-A-002 RevA	 32A/32B | YARD CONVEYOR 1800 mm WIDE | 2 | 2200 TPH	In the coal flow diagram of side mill arrangement, coal yard conveyor number is indicated as Conv-34A/B, but in the BOM table of same flow diagram, it is mentioned as 32A/32B. Bidder is considering yard conveyor numbering as 34A/B, kindly give a line of confirmation.	Bidder to refer MH-8 amendment no 1 to technical specification.
93	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 56 OF 130	COAL AND BIOMASS DIAGRAM 9587-001(R)-POM-A-002 RevA	B 38 | CONVEYOR 1000 mm WIDE | 1 | 1200 TPH 37 | CONVEYOR 1000 mm WIDE | 1 | 1200 TPH 36 | CONVEYOR 1800 mm WIDE | 1 | 800 TPH 29A/29B | CONVEYOR 1800 mm WIDE | 2 | 2200 TPH 28A/28B | CONVEYOR 1800 mm WIDE | 2 | 2200 TPH 27A/27B | CONVEYOR 1800 mm WIDE | 2 | 2200 TPH 26A/26B | CONVEYOR 1800 mm WIDE | 2 | 2200 TPH 25A/25B | CONVEYOR 1800 mm WIDE | 2 | 2200 TPH	In the coal flow diagram of front/ rear mill arrangement, conveyors 33A/B, 34A/B and 35 A/B are appearing in scheme, but not in the BOM table. We understand that bidder has to consider these conveyors 33A/B, 34A/B and 35 A/B with same belt width and capacity as preceding coal conveyors, kindly confirm.	Bidder to refer MH-8 amendment no 1 to technical specification.
94	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	PAGE 82 OF 92	4.02.01	Coal Handling Plant : ----------Belt speed of trough conveyors shall not be more than 3.4 m/s.	In recent NTPC project (2x660MW Talcher EPC), maximum belt speed of 3.8 m/sec was mentioned in NIT spec for coal conveyors, so we request NTPC to allow 3.8m/sec belt speed in this Singrauli EPC also for coal conveyors.	Bidder's proposal to provide 3.8m/s belt speed is not acceptable.

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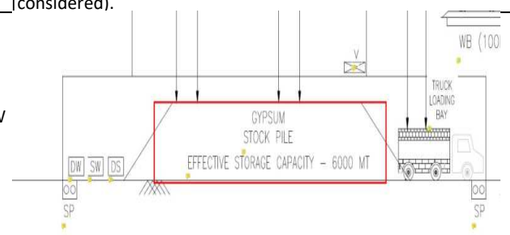
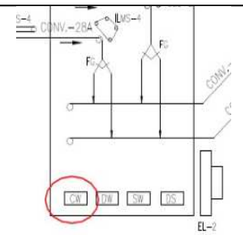
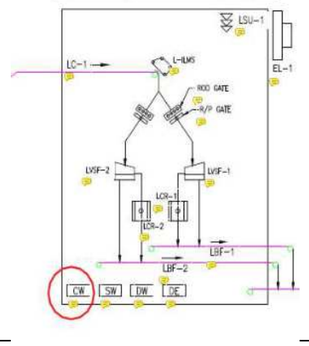
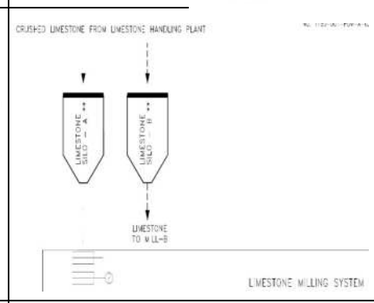
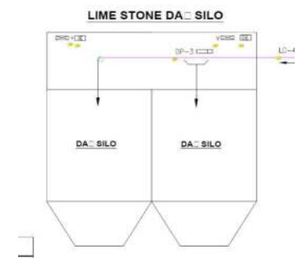
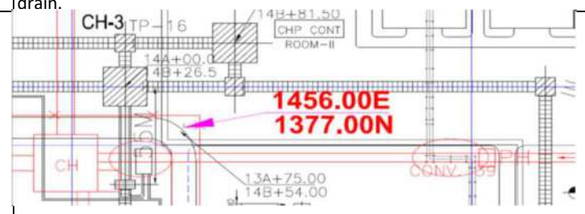
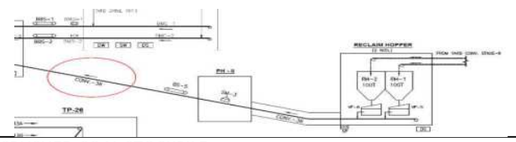
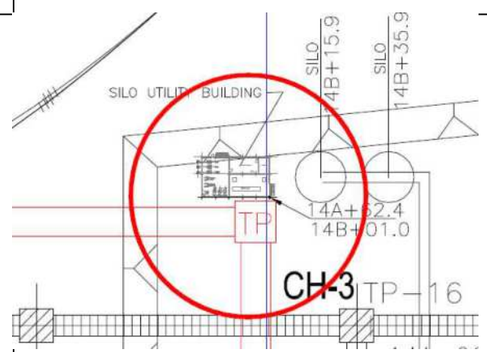
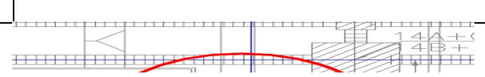
	Section	Sub-Section	Page No.	Clause No.			
95	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	PAGE 83 OF 92	4.02.06.f	For the purpose of volumetric computation, bulk density of coal shall be taken as 800 kg/m3 and for biomass 600 kg/m3 and blending ratio of Biomass with Coal is 20 % (by weight). Therefore, for calculation of belt conveyor capacity for their drives and drive motors KW requirement and sizing (volume calculations) of chute, hoppers etc., the above bulk density shall be considered.	1. Blending of 20% of biomass by weight appears to be incorrect, as coal conveyor capacity is mentioned as 2200 TH and biomass conveyor capacity is mentioned as 240 TPH in flow diagram 9587-001(R)-POM-A-002 RevA. Kindly clarify. 2. Biomass system is shown in NIT drg. to be fed on ERH conv.36 for feeding onto direct path of coal conveyors (27A/B to 29A/B). So for designing these conveyors 27A/B to 29A/B, should bidder consider material density as 800 kg/m3 (100% coal), or should bidder consider blended material density (i.e. 750 kg/m3 with 80:20 ratio by weight or 780 kg/m3 with 90:10 ratio by weight), customer to clarify.	1. Bidder's understanding is not correct. Bidder to consider coal conveyor capcity as 2200TPH and biomass conveyor capacity as 240TPH in line with technical specification. 2.iBidder to consider biomass density as 800kg/m3 in line with technical specification.
96	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	PAGE 82 OF 92	4.02.01	Coal Handling Plant : Rated capacity of each stream of Coal handling Plant shall be 2200 TPH and minimum belt width shall be 1800 mm.--------	Considering blended material density as 750kg/m3, fill factor of 0.9, slope factor of 0.91, belt speed of 3.8m/sec, belt width of 1600mm will be sufficient to meet design capacity of 2420 MTPH for conveyors, instead of 1800mm. So, kindly clarify if bidder can consider 1600mm belt width for coal conveyors 25A/B to	Bidder to consider 1800mm belt width in line with technical specification.
97	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 56 OF 130	COAL AND BIOMASS DIAGRAM 9587-001(R)-POM-A-002 RevA	36 | CONVEYOR 1800 mm WIDE | 1 | 800 TPH	CHP ERH conveyor 36 capacity is mentioned as 800 TPH. Design capacity of 880 TPH can be met with 1000mm belt width instead of 1800mm 1. considering coal density as 800kg/m3, fill factor of 0.9, slope factor of 0.91, belt speed of 3.4m/sec 2. considering blended material density as 750kg/m3, fill factor of 0.9, slope factor of 0.91, belt speed of 3.8m/sec Therefore, bidder proposes 1000mm belt width for conveyor 36, kindly confirm.	Bidder to refer MH-8 amendment no 1 to technical specification.
98	SECTION-VI, PART-A	SUB SECTION-IIA-14 LHP & GHP	PAGE 4 OF 6	2.02.00	One number of covered storage shed for gypsum. The storage shed shall be sufficient to store gypsum equivalent to gypsum generation of **minimum 7 days** at Design point (Generation of all units to be considered).	Customer to kindly clarify the contradiction regarding the Gypsum storage capacity as mentioned in beside 2.02.00 clause and storage capacity of 6000MT indicated in the Gypsum flow diagram.	Bidder to consider gypsum storage capcity of minimum 7 days at design point (generation of all unitd to be considered) in line with technical specification.
	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 54 OF 130	GYPSUM FLOW DIAGRAM			
			PAGE 54			Cooling water shall be provided in CHP/LHP only if water-cooled scoop couplings are provided and it is not applicable in case of air-cooled scoop couplings. Please confirm.	Bidder's proposal is acceptable.

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
99	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	& 56 OF 130	LIMESTONE FLOW DIAGRAM & COAL AND BIOMASS DIAGRAM	 LIME STONE CRUSHER HOUSE 		
100	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 45 OF 130	Scheme of FGD Milling system Drg No : 1150 - 001- POM-A- 023 REV-A		Bidder understands that DAY SILOS (image attached) shown in Limestone flow diagram and Limestone Silo-A and Limestone-B (image attached) shown in Scheme of FGD Milling system are same and not different. Customer to kindly clarify and confirm if bidder's understanding is correct.	Bidder's understanding is correct. Bidder to note that both day silos and Limestone silo-A & B are same.
	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 53 OF 130	LIMESTONE FLOW DIAGRAM			

EPC Package for Singrauli STPP Stage-III (2x800 MW)

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
101	SECTION-VI, PART-B	SUB SECTION-A-20 Coal & Biomass and Gypsum handling plant	PAGE 19 OF 113	4.11.10	Potable water connections are to be provided in all transfer points, crusher house, all tripper floors, and all control rooms/MCC rooms and toilets etc. Water shall be drawn from the water storage tank by electric motor driven pumps and discharged via a pipe work system to the overhead drinking water storage PVC tanks of 250 litres capacities. The drinking water storage tanks shall have provision for maintenance & drain.	We understand 250 L of water tank only to be considered for TPs/ Building in CHP/LHP/GHP/BHP region for drinking water. Accordingly pump for the Potable water shall be sized considering 1 Hr. (One Hour) of Operation for filling of these 250L tanks.	Bidder's understanding is correct.
102	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 14 OF 130	ROAD LAYOUT DRAWING	 	1. In flow diagram, ERH conveyor numbering is mentioned as conveyor 36 whereas in plot plan it is shown as conv.39, bidder is considering the numbering as conveyor 36, kindly confirm. 2. Existing cable/pipe racks are fouling with the proposed conveyor 36 in the layout. If these cable/pipe racks are to be dismantled, kindly clarify as to whether this dismantling, relocation and re-erection of cable/pipe racks along with equipment is in NTPC's scope or Bidder's scope? If it is in bidder's scope, plant shutdown has to be provided by NTPC, as per bidder's requirement. 3. In addition, this conveyor has interface with existing conveyor and some other unnamed facility on the right side of newly proposed coal crusher house (as circled in red), so NTPC to kindly furnish the drgs. of existing conveyors and unnamed facility as marked for interface & feasibility check. Pl. clarify and confirm.	Bidder to refer Sl. No MH-8 amendment no 1 to technical specification.
103	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	GENERAL LAYOUT PLAN	CRUSHED COAL STOCKPILE	Due to layout constraints and feasibility, length of each of the three proposed Crushed coal stockpiles shall be limited to 235m, with which 17 days storage requirement cannot be met. So customer to kindly accept the same.	Bidder to refer Sl. No MH-5 amendment no 1 to technical specification.
	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	PAGE 85 OF 92	4.02.12	Bidder to maximize the coal stockyard storage capacity by utilizing the available space. However, stockyard capacity in any case shall not be not less than 17 days considering 800T/m3 bulk density of the coal.		
104	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	GENERAL LAYOUT PLAN	 	1. As per general layout plan, the existing Silo utility building is fouling with TP-19. TP-19 location cannot be changed due to layout constraints and feasibility. 2. Existing Silo utility building has to be dismantled and relocated to avoid this fouling. Kindly clarify whether this dismantling and relocation is in NTPC scope or Bidder's scope. 3. In case dismantling and relocation of existing silo utility building is in bidder's scope, please confirm whether the cost of dismantling, relocation and re-erection of the facilities in this existing building should be considered by bidder.	Bidder to refer Sl. No MH-8 amendment no 1 to technical specification.
						Road is fouling with the Coal crusher house in NIT drg., kindly confirm that successful bidder shall have the provision to make required changes in the road	Bidder to refer Sl. No MH-3 & 8 amendment no 1 to technical specification.

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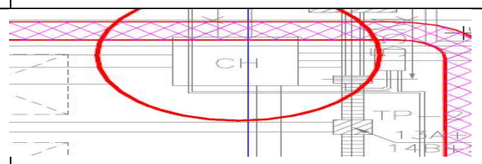
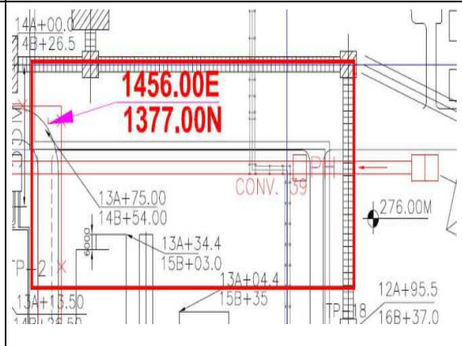
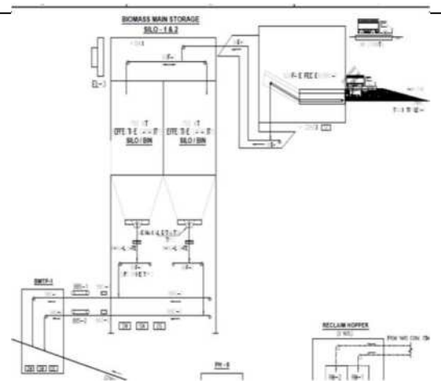
	Section	Sub-Section	Page No.	Clause No.			
105	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	LAYOUT OF ROAD		layout during detail engg., meeting the system requirement.	
106	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	GENERAL LAYOUT PLAN	GENERAL LAYOUT PLAN	Kindly confirm if bidder has the provision to modify / optimize the scheme/ layout of CHP, LHP, GHP and BMHP meeting all the functional requirements specified in NIT.	Bidder to refer Sl. No MH-3 & 8 amendment no 1 to technical specification.
107	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	GENERAL LAYOUT PLAN		Biomass handling facilities are shown in the flow diagram, however it is not appearing anywhere in the overall plot plan. Kindly clarify where biomass related facilities are to be located. BMTP-1 is shown on conveyor 36 in flow diagram with incoming conveyors BMC-1/2; however, in layout conveyor 36 is surrounded by existing facilities on all sides, so it is not clear how biomass system will be feasible in this layout. NTPC to earmark clear space for biomass handling system in overall layout and furnish a feasible option of flow scheme (as one BMTP and one conveyor shown in NIT drg. appears to be insufficient), so that all the bidders can be on par.	Bidder to refer Sl. No MH-8 amendment no 1 to technical specification.
	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 56 OF 130	COAL AND BIOMASS DIAGRAM 9587-001(R)-POM-A-002 RevA			
	SECTION-VI, PART-A	SUB SECTION-IIA-15 CHP & BHP	PAGE 3 OF 9	1.14.00	Provision for discharge of each yard conveyor to the reclaim path (Both streams) of Stage-III and direct path (Both streams) of Stage-I by providing suitable modifications of existing system/ arrangement	NIT flow diagram and plot plan are not clear about how material is fed on to conveyors 37& 38 and how these conveyors will further feed to existing stage –I conveyors (refer red circled portions) . Customer to clarify.	Bidder to refer Sl. No MH-8 amendment no 1 to technical specification.
				COAL AND BIOMASS DIAGRAM		Provision for discharge of each yard conveyor to the direct path (Both streams) of existing Stage-I is not feasible, due to layout constraints and limited space availability in this layout.	

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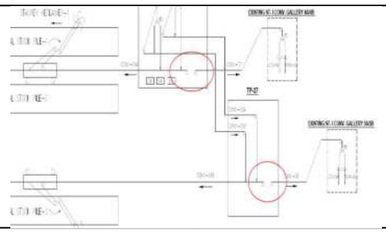
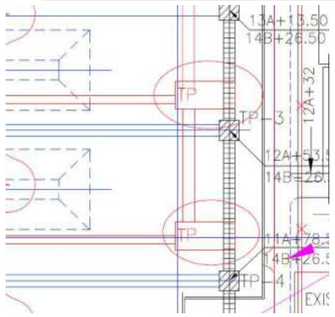
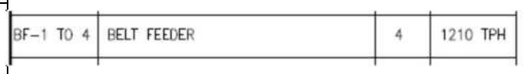
108	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 56 OF 130	9587-001(R)-POM-A-002 RevA			
	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	GENERAL LAYOUT PLAN		Customer to kindly review and remove interconnection between Stage-III to Stage-I (i.e. conv.37 and 38) and remove all works mentioned in referred clause 1.38.00 from the scope of this EPC tender.	
	SECTION-VI, PART-A	SUB-SECTION-IIA-15 COAL & BIOMASS HANDLING PLANT	PAGE 5 OF 9	1.38.00	Two (2) nos. conveyors (Conv 37 & Conv 38) shall feed the coal onto the stage-I conveyors 4A/4B and 5A/5B. The entire modification work including the conveyor 4A/4B & 5A/5B gallery modification, dismantling of any exiting facility is in the scope of the bidder. The dismantling activities shall be carried out in such a manner that the Stage-I operations shall be least affected.		
109	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 56 OF 130	COAL AND BIOMASS DIAGRAM 9587-001(R)-POM-A-002 RevA	In coal crusher house 	With the existing space and layout constraints, it is not feasible to provide 4 nos. belt feeders in coal crusher house. Alternately, bidder is proposing 2 nos. reversible belt feeders (RBF-1 and RBF-2) instead of 4 nos. belt feeders. RBF-1 will take feed from CR-1&2 and RBF-2 will take feed from CR-3&4. RBF-1& 2 shall discharge material to direct path on one side and stacking path on other side. Capacity of RBF-1 & 2 shall be 2200 TPH (rated) and 2420 TPH (design) with belt width of 2200mm, speed of 1.65m/sec considering material density as 0.8T/m3, fill factor of 0.9 and slope factor of 1 (as it is horizontal). RBF kind of arrangement is already provided in earlier NTPC projects also. So kindly confirm if proposed RBF arrangement is acceptable for Singrauli Stage-III.	Bidder's proposal of providing reversible belt feeder in crusher house is anot acceptable. Bidder to further refer Sl. No MH-8 amendment no 1 to technical specification.
	SECTION-VI, PART-A	SUB SECTION-IIA-15 CHP & BHP	PAGE 4 OF 9	1.24.00	Eight (8) nos. sump pumps (sludge duty) in track hopper, two (2) Nos. sump pumps in each TP"s completely or partially underground (if applicable), complete with motors, local control panel, level switches, individual discharge piping fittings and valves to	As per Cl 1.24.00 Sump pumps shall be provided only in TPs which are completely or partially underground (if applicable). So sump pumps will not be applicable for over ground facilities, Please. confirm.	Bidder's understanding is correct. Sump pump for overground facilities is not applicable.

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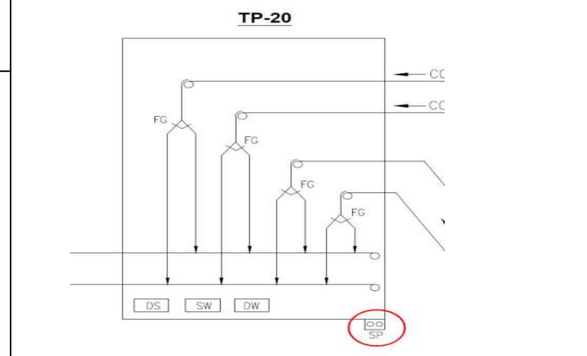
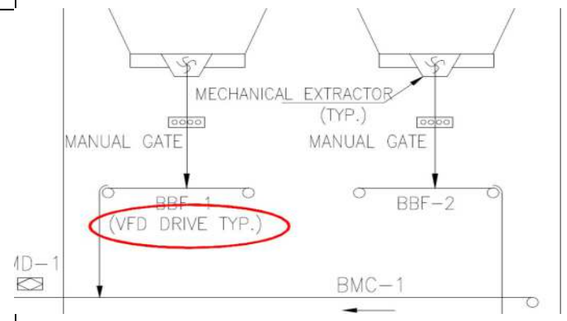
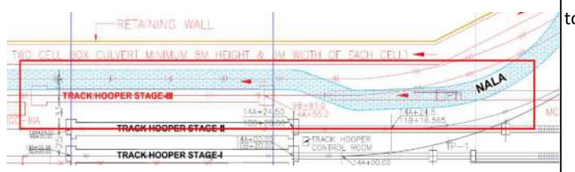
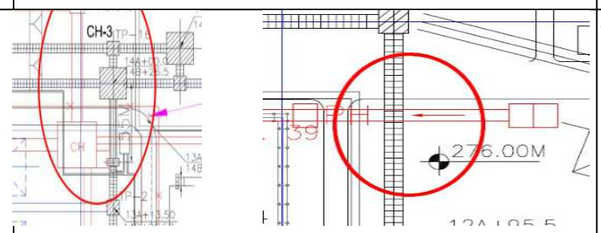
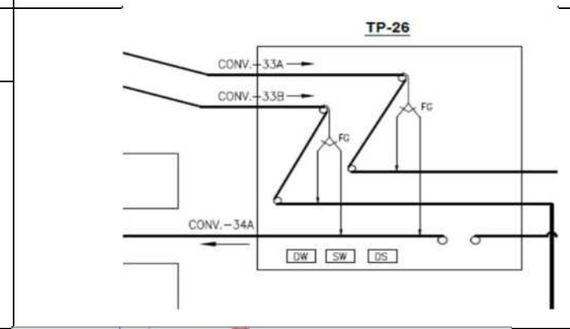
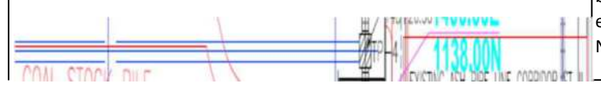
110	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 56 OF 130	COAL AND BIOMASS DIAGRAM 9587-001(R)-POM-A-002 RevA	nearest plant drain including pipes etc. upto disposal point. 		
111	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 53 OF 130	LIMESTONE FLOW DIAGRAM		Customer to kindly note that VFD drive shall be provided in Mechanical extractor itself, and hence separate VFD for Biomass belt feeders (BBF-1&2) need not be provided. Please confirm.	Bidder's proposal is acceptable.
112	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	GENERAL LAYOUT PLAN		Customer to kindly note that the proposed track hopper of Stage-III, conveyor 25A/B (underground tunnel & some gallery portion also) and pent house are fouling with the Nala in the plot plan. Kindly confirm if nala diversion/ modification works will be carried out by NTPC and clear fronts will be provided to bidder for work execution.	Bidder proposal is not acceptable. Nala diversion is in biddere's scope. Bidder to refer Civil Scope chapter IID of part A, Cl. No. 5 (g)
						Customer to kindly note that the proposed conveyors of Stage-III are crossing the conveyors of Stage-I & II, GA drawings of these conveyors at crossing may please be provided to check the conveyor profile and space feasibility for stage –III	Bidder to refer Sl. No MH-1 amendment no 1 to technical specification.

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
113	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	GENERAL LAYOUT PLAN		conveyors.	
114	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 56 OF 130	COAL AND BIOMASS DIAGRAM 9587-001(R)-POM-A-002 RevA		As the space available between coal crusher house and TP-26 is very less, provision of fixed trippers in TP-26 is not feasible as conveyor 33A/B profile is not being achieved in this layout. Therefore, instead of fixed trippers, we propose 2 nos. plough diverters (one each on conv. 33A and conv. 33B) in TP-26 of 2200TPH rated capacity, kindly review and confirm if our proposal of plough diverters is acceptable.	Bidder to refer Sl. No MH-8 amendment no 1 to technical specification.
	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	GENERAL LAYOUT PLAN		Coal stockpile is shown on existing ash pipe corridor ST-I. Also existing ash pipe corridor ST-II is passing through coal stockyard and lime handling area. It is not clear whether these ash corridors are over ground or underground.	Bidder to note that diversion of existing ash pipe corridor of Stage-I is excluded from bidder's scope.
115						Kindly clarify if dismantling, relocation and re-erection of these ash corridors will be carried out by NTPC and clear fronts will be given to successful bidder during execution. If it is in bidder's scope, then plant shutdown has to be provided by NTPC, as per bidder's requirement.	

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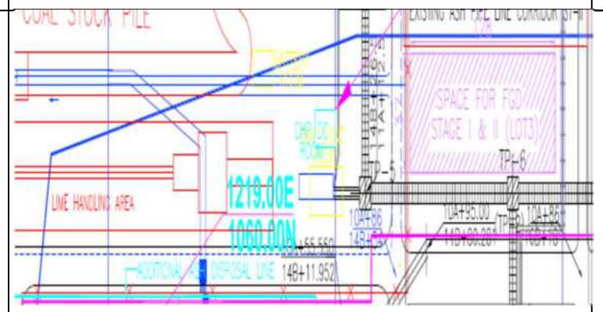
	Section	Sub-Section	Page No.	Clause No.			
	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	GENERAL LAYOUT PLAN			
116	SECTION-VI, PART-B	SUB-SECTION-A-20 Coal & Biomass and Gypsum Plant	PAGE 56 OF 113	2.3.0	DATA SHEET: VIBRATING FEEDER/VIBRATING SCREEN FEEDER 2.3.0 Pan Size (a) Screen area - As required	We understand this equipment is a vibrating feeder, not vibrating screening feeder. Please confirm.	Bidder to refer Sl. No MH-30 amendment no 1 to technical specifications
117	SECTION-VI, PART-B	SUB-SECTION-A-20 Coal & Biomass and Gypsum Plant	PAGE 50 OF 113	2.1.5	Output Rating a) For belt conveyor systems @ Service factor X {1.2 times the actual power requirement at drive pulley shaft at design capacity}	1. We assume that output Rating and Rating both refers to mechanical rating of the gear box only and we have to select gear box with maximum of these two ratings. Please confirm. 2. Further thermal rating of the gear box shall be equal to actual power requirement at drive pulley shaft at design capacity for all Belt conveyors and Belt feeders, with the de-rating factor. Please confirm.	Bidders understanding is correct
	SECTION-VI, PART-B	SUB-SECTION-A-20 Coal & Biomass and Gypsum Plant	PAGE 51 OF 113	2.1.7	Rating : Not less than motor name plate rating		
118	SECTION-VI, PART-B	SUB-SECTION-A-20 Coal & Biomass and Gypsum Plant	PAGE 20 OF 113	4.11.12	The system shall operate on the principle ..... shall be provided at all dust extraction points.	Kindly elaborate the requirement of automatic sludge disposal arrangement, the same is not clear to us. In absence of any clarification, we shall be considering Grab bucket with electric hoist arrangement over one of the width side of the sludge settling tank for DE system. The Grab shall collect the settled sludge from the tank and then load it on the dumpers of end user, and further disposal shall be done by end user.	Bidder's proposal to provide grab bucket with electric hoist arrangement is acceptable
119	SECTION-VI, PART-B	SUB-SECTION-A-20 Coal & Biomass and Gypsum Plant	PAGE 96 OF 113	4.20.00	A centralized main CHP control room for DDCMIS shall be provided to control and monitor the operations of the internal coal handling system and shall be linked to the control system of external coal handling plant. Remote IO rooms adjacent to MCC's shall also be provided, which shall be finalized during detailed engineering.	Bidder understands that there is only one coal handling system and interlinking of control system of internal coal handling system and external coal handling plant is not applicable. Pl. confirm.	Bidder's understanding is correct.
120	SECTION – VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	PAGE 34 OF 76	1.03.07.02.1, iv)&vi)	Bidder shall also demonstrate the guaranteed tippling rate of Truck Tipplers.	We request customer to furnish guaranteed tippling rate of Truck Tipplers for both biomass and limestone handling system.	Biddetr to demonstrate guaranteed tippling rate (Cycle Time) as finalised during detailed engg.
121	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	-	ROAD LAYOUT DRAWING	General Query	We understand that existing roads can be diverted to fit the proposed conveying system without compromising the requirement of existing road traffic.	Bidder's query is not clear. Bidder to be specific for which area existing road diversion is proposed.
122	VI/PART-A	IIA-16	4 of 17	1.01.05 (C-2) (ii)	Three (3) lengths of bottom ash slurry MS pipelines from the bottom ash slurry dispos-al pump house to the combined ash slurry pump house with a branch to dewatering bins complete with basalt lined bends, special-ties, fittings, fixtures, pipe couplings, gas-kets, nuts, bolts, clamps, embedments, structural steel supports for piping system and other accessories. Provision shall be provided to discharge ash slurry from all the three pipelines to any of the dewatering bin, with solenoid operated pneumatically actuat-ed valves.	As per the specification clause, pipes laying shall be from bottom ash slurry pump house with a branch to dewatering bins. As per the flow diagram, jet pump conveys slurry to B.A Slurry Transportation pump house and from there it will go to dewatering bins only. Owner to clarify "from BA Slurry Transportation pump house there will be parallel branch for combined ash slurry pump house also."	Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.

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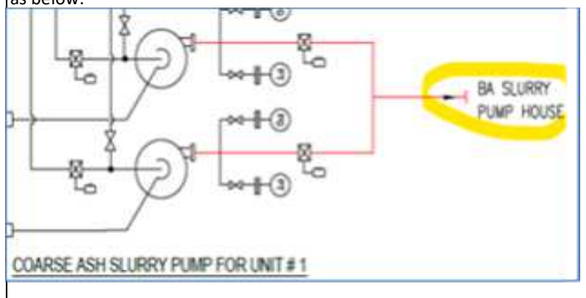
	VI/PART-E			Flow diagram: 9587-001(R)-POM-A-025 Rev.A			
123	VI/PART-A	IIA-16	4 of 17	1.01.05 (C-1), (vi)	Cast iron liners for lining the slurry trench and alloy cast iron liner for lining the sump.	Owner to confirm if cast iron liners can be provided in the sump also.	Bidder to provide cast iron liners in the sump
124	VI/PART-A	IIA-16	4 of 17	1.01.05 (C-2), (viii)	Alloy Cast iron liners (as specified) for lining the ash slurry sumps.	Bidder understands that ACI liners will be provided in the complete common trough and only in the slurry impingement area of the slurry sumps	Bidder to provide ACI liners in complete common trough and alloy cast iron liner in complete sump.
125	VI/PART-A VI/PART-E	IIA-16	5 of 17	1.01.05(D)(v) Flow diagram: 9587-001(R)-POM-A-025 Rev.A	Cylindrical operated valve Manual KGV is shown below the APH and Duct hoppers	Owner to clarify the requirement	Manual KGF is provided for the isolation of APH & duct hopper.
126	VI/PART-A VI/PART-E	IIA-16	5 of 17	1.01.05(D)(vii) Flow diagram: 9587-001(R)-POM-A-025 Rev.A	In case of intermittent type bottom ash han-dling system, two (02) nos. of MS Intermedi-ate Ash slurry tanks for each unit along with two (02) nos. horizontal coarse ash slurry transportation pumps (1W + 1S) for each tank, complete with drive arrangement, base plates, foundations bolts, inserts, embed-ments and accessories, for each unit com-plete with supports, all slurry and water con-nections, etc. for receiving air preheater ash slurry and duct hopper ash slurry and further disposal to Slurry Disposal Sump. Flow Diagram says, Coarse ash to be dis-posed to BA Slurry Pump House as below: 	Flow diagram showing, 01 No. Coarse ash Tank for one unit. Please Clarify. We are considering 02 Nos. Coarse ash Tank for one unit, two (02) nos. horizontal coarse ash slurry transportation pumps (1W + 1S) for each tank and 01 No. Coarse Ash Disposal Line per tank to BA Slurry disposal Pump House.	Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.
127	VI/PART-A	IIA-16	6 of 17	1.01.05,(E (i))	7 Nos dewatering storage bins (3 Nos for each unit & 1 nos common standby) each of sufficient capacity…	Kindly clarify the specific capacity of each dewatering bin. Bidder understand that storage capacity of each bin shall be of 8 hrs ash generation of Bottom ash and coarse ash of single unit.	Bidder's understanding is correct
128	VI/PART-A VI/PART-E	IIA-16	6 of 17	1.01.05,(E(ii)) Flow diagram: 9587-001(R)-POM-A-025 Rev-A	Vibrating feeders (2 nos per dewatering bin, 1W+1S) to feed the bottom ash to trucks complete with drives, dust hood, all mechanical, electrical accessories and supporting structures etc.	In flow diagram 3rd opening is, mentioned as future connection, Bidder understand that for 3rd opening, only space provision shall be provided for opening in the bin	Bidder's understanding is correct
129	VI/PART-A	IIA-16	8 of 17	1.01.06 (C), (iv)	Pipe support structures for all Ash conveying lines to be provided. Pipe lifting and shifting arrangement in pipe rack must be provided.	Owner to elaborate the requirement of “Pipe lifting and shifting arrangement in pipe rack”	Bidder to note that during maintenance & pipe replacement, pipe may be required to be lifted & shifted from the pipe rack. Accordingly, Bidder to provide pipe lifting & shifting arrangement.

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	Section	Sub-Section	Page No.	Clause No.			
130	VI/PART-A	IIA-16	08 of 17	1.01.06 (E),(c)	Ash Classification & Bagging System:	Reviewing above, bidder understand that during fly Ash Classification, fly Ash lines (with 40% of ESP Ash conveying capacity) will be diverted to classification and remaining Fly Ash lines will convey the fly ash up to coarse ash hopper. Accordingly, 2nd Stage Fly Ash transportation capacity from Coarse Ash Hopper to main Fly Ash Silos to be selected/ considered.	Bidder's proposal is acceptable in case of option of vacuum system (First Stage) is selected. Bidder to ensure transportation of 100% fly ash upto main fly ash storage silos having rail loading facility.In case of pressure system (first Stage), coarse ash hopper is working as an intermediate silos, so system design shall be adeqaute for transporation of 100% fly ash upto main fly ash storage silos having rail loading facility.
			& 09 of 17	& 1.01.06(E),(q)	Refer Clause No. – 1.01.06(E) (c): It is envis-aged that “In case of Fine Ash & Coarse Ash are coming through same pipeline to the Classifiers, Classification of 40% of ESP Ash (40% of Ash Conveying Capacity) in Ash Classification is to be provided. The remain-ing unclassified ash shall be taken directly to the Coarse Fly Ash Hopper. Refer Clause No. – 1.01.06 (E),(q): The Ash transportation capacities from the coarse ash hopper to the silos must be designed con-sidering zero classification also.	Owner to confirm.	
131	VI/PART-A	IIA-16	9 of 17	1.01.06 (E) (f)	Ten (10) nos. Pump tanks/Air lock tank for each coarse ash hopper and four (4) nos. of pump tanks/air locks tank for fine ash hopper for transportation of coarse fly ash and fine fly ash, to silos provided for dry fly ash storage silos meant for Road and Rail loading. Provisions shall be provided to convey & store coarse ash and Fine Ash to all Fly ash Silo.	Bidder understands that coarse ash shall be conveyed to either of 3 main Coarse ash storage Silos (3x2000MT). Fine ash shall be conveyed only to the Fine ash Silo (2000MT) in line with the flow diagrams.	Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.
	VI/PART-E			Flow diagram for FA handling system: 9587-001(R)-POM-A-027 Rev-A (vacuum) 9587-001(R)-POM-A-028 Rev-A (pressure)	Scheme for transporting fly ash to Silos.	For other pipes, only space provision shall be shown on the top of all Silos.	
132	VI/PART-A	IIA-16	9 of 17	1.01.06 (E),(n)	Ash Classification & Bagging System: The bagging plant shall be sized for 50 % of the fine ash (Classified fine ash). The bagging plant shall have provision for mechanized bagging of this fine ash. Fine ash shall be bagged in 50 kg cement bags. The quantity of fine ash shall be 35 kg in cement bag of 50 kg. Suitable numbers of such bagging streams shall be provided. No standby stream shall be required.	NTPC to specify the bagging plant capacity in terms of No. of bags per hour.	Bidder to provide bagging plant having capacity of min 400 bags per hr per machine
133	VI/PART-A	IIA-16	9 of 17	1.01.06 (E),(o)	Mechanized transportation (without manual intervention) of fly ash bags from bagging machine up to the storage shed and from bagging machine to load into Truck directly.	The type of mechanized transportation (fork lift/conveyors etc…) required by NTPC is not clear. NTPC to furnish more details.	Bidder to provide mechanised transportation of the bags till storage shed.
134	VI/PART-A	IIA-16	9 of 17	1.01.06, E-(j)	Ten (10) numbers (6 working + 4 stand by) screw type transport air compressors suitably sized and designed to cater to the ash transportation, along with silencer, filter, after cooler along with all other accessories and supporting structures, platforms etc. as specified and as Required.	Bidder propose to provide 4 W + 2 S conveying air compressor for Fine ash Silo & Unit 1 coarse ash silo which has common compressor arrangement., since for fine fly ash silo 1 no. line is working and for Coarse ash silo 3 nos of lines are working. Also, this will be in line with Unit 2 coarse ash silo working compressors which 3 working for 3 nos working lines. Kindly confirm the same for proper balancing of compressors.	Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.

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135	VI/PART-A VI/PART-E	IIA-16	10 of 17	1.01.07 (iii) Flow diagram for fly ash handling sys-tem: 9587-001(R)-POM-A-027 (vacuum) 9587-001(R)-POM-A-028 (pressure)	Mass flow meter/Solid flow meter (Five numbers below each silo) complete with all electrical, controls etc.. to be provided for measurement of ash quantity (total or part as required) during filling of ash to the road tanker /Rail Wagons. As per the flow diagram, there are only 3 mass flow meter (3 outlets) below each Silo.	Owner to clarify.	Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.
136	VI/PART-A	IIA-16	10 of 17	1.01.07 (iv)	Pit less type Weigh Bridge for rail loading below dry fly ash silos (minimum seven numbers) complete with all electrical, controls, civil and structural works for weighment of rail Wagons during filling.	Owner to clarify the location of weigh bridge for rail loading and confirm the number of weigh bridges. We propose to consider pit type weigh bridge for rails for maintaining the top of rail elevation. Pit less type shall be provided for trucks. Please confirm.	Bidder to refer cl no 1.01.07 (iv) , IIA-16 , Part-A wherein it is mentioned that minimum seven (7) nos of pitless type wieghbridges to be provided for FA storage silos.
137	VI/PART-A	IIA-16	10 of 17	1.01.07,(i) Flow Diagram for BA: 9587-001(R)-POM-A-025, Rev 'A'	Three (3) nos. (two working + one standby) fly ash storage structural steel intermediate silos of 100 MT effective storage capacity each, for switching to ash slurry (for subsequent disposal) and complete with an aeration system, dust separators, manual hoist over silo top for handling and all other accessories as required and as specified. The silos shall be complete with all fittings, accessories and supporting steel structures, access staircases, platforms, as required for safe and reliable operation and maintenance. Four (04) numbers (two working + two standby) Feeder ejector below each intermediate Silo with expansion joints, vertical pipe connections, cylinder operated valve, slurry discharge piping up to combined ash slurry sump, and necessary fixing clamps, and structural steel as required.	1. As per flow diagram, there is no 100 MT Inter-mediate silo shown. Kindly provide the flow diagram for the same. Regarding tonnage of the silo, please check with respect to the di-ameter. 2. Conveying rate for each FA slurry line sizing is not given, but we assume conveying rate will be equal to fly ash generation rate. Please confirm 3. We understand 03 nos FAHP water pump (2W+1SB) will cater to FA slurry lines of IM si-lo. 4. We understand that there shall be 04 Nos. Fly Ash Slurry discharge line up to Combined Ash Slurry Sump per IM Silo. So, 12 Nos. Fly Ash Slurry discharge line from all 03 nos. IM Silos shall be considered. Please clarify. Please confirm.	Bidder to refer Sl. No MH-11 amendment no 1 to technical specification.
138	VI/PART-A VI/PART-E	IIA-16	11 of 17	1.01.07 (viii) Flow diagram for FA han-dling system: 9587-001(R)-POM-A-027 (vacuum) 9587-001(R)-POM-A-028 (pressure)	Four (4) nos. Slide plate type isolation valves below each fly ash storage silos. Five (5) outlets with isolation valve is shown below each Silo	Owner to clarify the number of outlets below each silo	Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.
139	VI/PART-A	IIA-16	11 of 17	1.01.07 (xii) Flow diagram for FA han-dling system:	Five (5) numbers of Dry fly ash unloaders from each dry fly ash storage silo along with rotary feeders, telescopic chutes and other accessories as specified and as required.	Owner to clarify the discrepancy.	Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.

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	VI/PART-E			9587-001(R)-POM-A-027 (vacuum) 9587-001(R)-POM-A-028 (pressure)	Two (2) number dry FA unloaders are shown below each Silo.		
140	VI/PART-A	IIA-16	11 of 17	1.01.07 (xvii)	Two (2) nos. (one working + one standby) vertical sump drainage pumps along with drive motor and accessories for fly ash storage silo area to pump the accumulated ash water to the ash slurry sump of bottom ash slurry disposal pump house or to dyke including piping along with necessary valves, fittings, supports, etc. as specified and as required.	Owner to clarify the specified slurry pump house is for combined slurry pump house. Pumping to Ash dyke is not possible. Owner to review the requirement.	Bidder may pump accumulated ash water to combined ash slurry disposal PH
141	VI/PART-A	IIA-16	12 of 17	1.01.08,(i)	Three (03) streams of horizontal combined ash slurry disposal pumps complete with drive motors, variable speed hydraulic coupling for first stage pumps and fixed belt drive arrangement for subsequent stages, base plate, foundation bolts, inserts, embedment and accessories as specified and as required, out of which two streams will be working, one stream will be normal standby and other stream will act as maintenance standby. Provisions shall be there for locating another additional Pump in series within the Pump House, for future use	Please clarify, No. of streams of combined ash slurry disposal pumps as 03 or 04 Nos. (2W+1SB+1Maintenance).	Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.
142	VI/PART-A VI/PART-E	IIA-16	13 of 17	1.01.08 (1.02.00, c) Flow diagram for FA handling system: 9587-001(R)-POM-A-025 Rev-A	HP and LP Seal water pumps (one working + one standby each) for meeting the seal water requirement of Combined slurry disposal pumps and drain water pump of Combined slurry pump house, etc. These pumps shall be located in the Combined ash slurry disposal pump house.	In flow diagram neither any specific location and nor any LP/HP seal water pump shown.	Bidder to note that HP & LP seal water shall be loacted in the combined ash slurry Pump House.
143	VI/PART-A	IIA-16	14 of 17	1.02.01.02,(h)	Decanted water shall be pumped from owners' pumping system located at ash dyke. There shall be two no. working AWRS Pump of 1100 m3/hr flow rate (owners' pumping system). Hence, maximum recovery water received inside plant shall be 2200 m3/hr, accordingly pipeline of diameter 800 NB, within plant boundary up to terminal point shall be in Bidder's scope. Decanted water from ash pond shall be reused in Ash handling System.	We understand supply of pumps, valves, piping (outside plant boundary) and instruments related to AWRS system will be by end user, only pipe supply within plant boundary up to Ash Water Tank will be by bidder. Please clarify.	Bidder's understanding is correct.
144	VI/PART-B	A-01	76 of 92	4.01.02.(A)	Duct Hopper Ash 5%	Duct hopper ash %, if applicable, shall be based on the Boiler's OEM design. Please confirm.	Bidders proposal is acceptable
145	VI/PART-B	A-01	77 of 92	4.01.02.(C)	Ash densities of Bottom ash and only Fly ash is given.	We understand that bulk density Fly Ash is also applicable for coarse ash like Eco. Ash, Duct Ash and APH Ash. Please clarify.	Bidder to consider 0.65T/m3 of bulk density for Eco, Eco Hopper & APH ash.
146	VI/PART-B	A-01	77 of 92	4.01.02.(B) (b) (ii)	Dewatering Bins shall be of proven design/supplier for similar applications	NTPC is requested to delete this clause.	Bidder to refer Sl. No MH-26 amendment no 1 to technical specification.
147	VI/PART-B	A-01	78 of 92	4.01.02 (F) a) (i)	(i) Elevation of top of ash dyke : 26m (for both S1&S2 Dyke).	Owner to confirm the Static lift to be considered for the Slurry pump.	Bidder to refer Sl. No MH-10 amendment no 1 to technical specification.
148	VI/PART-B	A-01	78 of 92	4.01.02 (F) a) (ii)	Maximum pumping distance – 13 Km or as per actual distance for the farthest disposal point in ash dyke whichever is higher.	As per specification, garlanding and piping beyond the boundary is in owner's scope. So, owner to confirm the minimum pumping distance to be considered.	Bidder to refer Sl. No MH-10 amendment no 1 to technical specification.
149	VI/PART-B	A-21	15 of 41	1.13.00 (i)	Vibrating feeder requirement: For uniform feeding of dewatered bottom ash on to conveyors/crushers.	1. As per the flow diagram, discharge to open trucks is envisaged and not to conveyors or crushers. Owner to clarify. 2. Owner to specify the capacity of Vibrating feeder	Bidder's understanding is correct.

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150	VI/PART-B	A-21	21 of 41	2.10.00	Air to cloth ratio taken for bag selection shall be maximum 0.8 m/min.	Bidder understand that air to cloth ratio of 0.8m/min is applicable for bag filter at buffer hopper tower. For vent filters on the top of intermediate silo, main silo and classifier silo etc. air to cloth ratio shall be consider 1.5m/min considering the technical requirement and space availability on top of silos. Please confirm.	Bidders proposal is acceptable
151	VI/PART-B	A-21	22 of 41	2.13.00	Weigh bridge should take care of locomotive (weighing up to 150T) moving over weigh bridge at a speed of 8 Kmph. (For weighbridges on the rail lines)	Owner to clarify the capacity of weigh bridges for rail line.	Bidder to provide 100T weightbridge capacity in line with cl no 2.13.00 , IIA-21 , Part-B of technical specification
152	VI/PART-B	A-21	25 of 41	3.02.00,II, 1.0	Type of pipe: a) ERW pipe as per IS:1239, heavy grade with galvanising as per IS:4736 for pipes up to & including 150 NB. For pipes of sizes above 150 NB it shall be as per Cl. I (1.0,b) & Cl. No. I (3 b) above.	Bidder understands that galvanising is only for instrument air pipes and not for conveying/transportation air pipes. Owner to confirm	Bidder's understanding is correct.
143	VI/PART-B	A-21	25 of 41	3.02.00, II, 3.0	Thickness of pipe: For pipe size up to & including 150 NB, pipe thickness shall be of heavy grade as per IS:1239 and for pipes of higher sizes, the thickness shall be as per Clause No.I (3.0) b & c mentioned above for water pipes.	As per the specification, the pipe thickness (7.1mm, 8.8mm) requirement for air/water pipes are more than that in other NTPC projects. Owner to review and confirm.	Bidders proposal is acceptable
144	VI/PART-B	A-21	28 of 41	3.06.00	FAD of each set of working compressors at ambient condition: 1200 m3/hr (min.). Bidder to justify the same during detailed Engg.	Instrument air requirement for AHP shall be decided by the bidder. Bidder understand that the same shall be tapped off from Plant instrument air compressor. Hence minimum 1200m3/hr shall be deleted.	Bidder's understanding is correct. Bidder may cater the instrument air comprssor requirement in ash handling system from main plant IAC.Accordingly, min 1200m3/hr IAC capacity need not to be considered.
145	VI/PART-B	A-21	29 of 41	3.07.00	Capacity & Head: 80 m3/hr @required head for BA/Combined slurry pump house, ESP area/Vacuum pump drain to Ash slurry sump as applicable.	The vacuum pump drain is envisaged to discharge to the Ash slurry sump. Since, the operation time and sequence of the BA slurry system and Vacuum system are different, slurry balance might be difficult. Owner to review the scheme and confirm.	Bidder's proposal is not acceptable. Bidder to connect the vaccum pump drain in ash slurry sump
146	VI/PART-B	A-21	29 of 41	3.08.00	40-100 TPH during open Truck/Bulker loading through Condition ash unloader. 40-300 TPH for Truck/Bulker/Rail Wagon Loading through Dry Ash unloader	Please clarify the contradiction in capacity as 40-100 TPH and 40-300 TPH are mentioned for truck/bulkers	Bidder to note that ash unloader capacity is 40-100TPH is for Truck/bulker loading and 40-300TPH is for rail wagon loading
147	VI/PART-B	A-21	29 of 41	3.09.00	Intermediate Ash Slurry tank	Owner to clarify the requirement of this tank and the location of this tank.	Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.
148	VI/PART-B	A-21	33 of 41	5.01.00 (4)	BA slurry transportation pumps quantity	Please clarify the Nos of BA slurry transportation pumps to be considered as this table is left blank.	Bidder to consider Three (3) no of BA slurry transportation pumps for both units. Bidder to further refer to Sl no MH-15 of amendment no1 to technical specification.
149	VI/PART-B VI/PART-E	A-21	33 of 41	5.01.00 (4) 9587-001(R)-POM-A-028 (pressure))	Wash water pumps 1W+1SB Flow diagram 2x100% wash water pumps	Please clarify whether it is 1W+1S wash water pump.	Bidders understanding is correct
150	VI/PART-B	A-21	32 of 41 & 33 of 41	5.01.00	Bottom/Combined ash slurry disposal pumps, BA slurry transportation pumps (if applicable), B.A. over flow water transfer pumps, Sludge pumps, coarse ash slurry transportation pumps: - Sl. No. 3) Parameters of flow: To be decided by Bidder. Ash slurry disposal pumps shall be sized for the maximum level of ash dyke/Mine void area. 10% margin shall be considered over and above the total straight pipe length and bends loss.	1) Bidder understands that no margin to be considered on the pump capacity (flow rate) for these pumps. NTPC to confirm. 2) Bidder understands that fluid coupling is not required for sludge pumps and coarse ash slurry transportation pumps. NTPC to confirm.	1.Bidder's understanding is correct. However, bidder to consider all the water/slurry input/FGD waste water input/any other input from the plant into the combined ash slurry pump house for finalising the pump capacity. 2.Confirmed

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					Sl. No. 6) Variable speed Hydraulic coupling with speed reduction by means of speed reduction gear box in first stage. Speed vari-ation +10%/ -45% with respect to rated de-sign point in case of ash slurry disposal pumps and + 20% in case of B.A. slurry transporta-tion pumps and B.A. over flow water transfer pumps.		
151	VI/PART-B	A-21	34 of 41	5.01.00,(9)	Ash slurry pump efficiency To be selected by bidder. However, for the purpose of evaluation no credit shall be given for pump efficiency in excess of 70% while handling ash slurry for ash slurry disposal pumps, bottom ash slurry transportation pump and BA overflow pump.	1) Owner to confirm the purpose of evaluation and the stage at which this evaluation will be done. Please clarify.	Purpose of evaluation is to maximise pump efficiency and the same shall be finalised during detail engg. However, for the purpose of evaluation no credit shall be given for pump efficiency in excess of 70% while handling ash slurry for ash slurry disposal pumps, bottom ash slurry transportation pump and BA overflow pump.
152	VI/PART-B	A-21	36 of 41	7.12.00,B) i)	The Combined Ash slurry pump house shall be shed type.	Bidder understands that the Slurry pump house of each Unit is shed type with three sides open.	Bidder's understanding is correct.
153	VI/PART-B	A-21	36 of 41	7.12.00,F) i)	Bidder shall provide grating to cover the complete sump for all sumps including sumps in the Ash water pump house and silo area.	Bidder understands that complete grating is not applicable for Settling tank, Surge tank, Dewatering bin and Sludge tank. Please Clarify.	Bidder's understanding is correct.
154	VI/PART-E			Flow diagram for FA handling system: 9587-001(R)-POM-A-027 Rev-A	Suitable dust suppression facilities shall be provided in silo area	Please elaborate the dust suppression requirement in silo area whether only service water tap point shall be provided in silo area or any other requirement to be considered.	Bidder to design the ash loading system from silos in such a way that there shall be no fugitive dust nuisance in silo area. However, bidder provide suitable plain water dust suppression system in silo area.
155	VI/PART-E			Flow diagram for FA han-dling system: 9587-001(R)-POM-A-025 Rev-A	Refer Flow Diagram: 02 (1W+1s) Seal Water Pump required Com-mon for all units. Refer Note 9 : 02 (1W+1S) Seal Water Pump required per unit.	Please clarify, the Seal Water Pump required common for both units or per unit. Bidder suggested to provide 1Working and 1SB common for both the unit and the same shall be locat-ed near Bottom Ash Hoppers.	Bidder to refer Sl. No MH-15 amendment no 1 to technical specification
156	VI/PART-E			SLFD: 9587-001(R)-POM-A-028, Rev 'A'	Refer note No. 8 of Flow Diagram: 'Each TAC and CAC shall be provided with independent Air-Drying Plant (Refringent type, if applicable) ….	Please clarify, whether Air Drying Plant for TAC and CAC required or not.	Bidder to provide air drying plant for TAC & CAC
157	General				Instrument Air Compressor	Bidder understand that instrument air requirement for AHP shall be catered from Main plant Instrument Air compressor and there is no dedicated compressors for AHP.	Bidder's understanding is correct.
158	SECTION VI, PART-B	SUBSECTION-B-10 STATION LIGHTING	7 of 20	4.00.00 10 (h)	LP-3 Type Lighting panel	LP-3 Type Lighting Panel not considered for CHP, AHP, LHP & GHP areas. Requested customer to confirm.	Bidder proposal is not acceptable. Referred cl. by bidder is not correct. Specification cl. no.4.00.00 (10) (h) Sub -Section B-11 Section-VI, part-B to be followed.
159	SECTION VI, PART-B	SUBSECTION-B-10 STATION LIGHTING	8 of 20	4.00.00	20 A, SP24 V AC(Industrial) Socket	20 A, SP24 V AC(Industrial) Type Socket not considered for CHP, AHP, LHP & GHP areas. Requested customer to confirm.	Bidder proposal is not acceptable. Referred cl. by bidder is not correct. Specification cl. no.4.00.00 Sub - Section B-11 Section-VI, part-B to be followed.
160	APPENDIX-I TO PART-A INSTRUMENT AND CONTROL DEVICE LIST	ANNEXURE-III TO CONTRACT QUANTITIES FOR DDCMIS	7 of 8	7.00.00	Coal & Lime handling form CHP Control Room.	Gypsum handling also from CHP Control Room. Customer to confirm.	Gypsum handling is from FGD DCS. Bidder to refer caluse no 2.08.00, Annexure C to IIC Contract quantity, Part-A of technical specification.

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161	SECTION –VI, PART-B	SUBSECTION-B-06 LT SWITCH-GEARS & LT BUSDUCTS	13 of 18	7.00.00	Intelligent Motor Controller (IMC) 1. Each motor/heater feeder shall consist of MPCB/MCCB (with S/C release only), Power contactor & intelligent motor controller (IMC) to ensure Type-2 Co-ordination. If the ESP controller and rapping motor are provided in the ESP switchgear, same shall be with IMC having MPCB/MCCB. If separate controller is provided and only supply feeder is envisaged from ESP Switchgear, the requirement of IMC may be excluded.	1. IMC is not considered for Local Control panels like Scoop coupling panel, All the local panels for Electro mechanical application like Sump Pump, MD, SM, Coal/Lime sampling unit, DE/DSS LCP, Travelling tripper etc. Kindly confirm. 2. PMCC/MCC located in switchgear room will be provided with IMC(Intelligent Motor controller)	1. Bidder understanding is correct. 2. Bidder understanding is correct.
162	SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Gypsum Plant	43 of 113		One number trip indicator panel per conveyor, which shall display the exact number of safety switches (pull chord or belt sway switches) operated in a loop of conveyor considering 10 % spare switches. It shall also monitor the condition of field cable connecting the switches in series and generate signal, if field cable is found broken or short. The trip indicator panel shall display the operated switch number. The same indication shall also be available in DDCMIS OWS/ SR PLC. Panel shall have Modbus/TCP IP/OPC redundant interfacing with concerned DDCMIS/PLC for monitoring and diagnostic purpose only. Trip Indicator panel shall be separate for PCS and BSS respectively. Complete software shall also be provided by bidder. Redundant power supply shall be provided with each trip indicator. LCD display shall be provided with each trip indicator for details like fault location, fault indication etc. Trip Indicator shall be provided with dual digital outputs, which shall be hardwired in control system. Each event/Trip shall be recorded in the trip indicator and DDCMIS.	In general practice for all NTPC/Non NTPC projects one common BWP is considered in switchgear room with multiple modules for various conveyors. One trip indicator panel shall be provided in respective MCC. Each panel shall comprising of one common module for each conveyor(Each module to display BSS and PCS indication)	Bidder to refer Amendment No-1 in this regard.
163	SECTION-VI, PART B	SUB-SECTION B-10 CABLING, EARTHING AND LIGHTNING PROTECTION	4 of 21	03.02.05	FOR COAL HANDLING PLANT/FGD PLANT/ ESP AREA THE FOLLOWING SHALL ALSO BE APPLICABLE: a) All overhead cable routes shall be along the route of the conveyor gallery on separate supporting structures and cables shall be laid in vertical trays. The bottom of the steel shall be such that the existing facilities, movement of trucks/human beings etc. does not get affected. The cable trestle shall have a minimum 600mm clear walk way and shall have maintenance platforms as required. The bottom of the steel sup-porting structure shall be generally at 3.0M above the grade level except for rail/road crossings where it shall be at 8.0M above grade level. Tap offs from the overhead cable trestle can be through shallow trenches with pri-or approval of the Employer. Directly buried cable, if essential, shall not have concentration of more than 4 cables on one route. b) Cable trenches shall be provided only in Switch-gear/MCC rooms. c) Cables shall not be routed through the conveyor gal-leries except for the equipment located in the convey-or galleries for a particular conveyor i.e. protection switches, receptacles etc.	a) Horizontal tray arrangements is considered in cable rack/pipe rack for AHP area. Please confirm. b) Cable trenches are considered in switchgear room for CHP/AHP/LHP/GHP area. Please confirm c) Cable will be routed through conveyor gallery specifically for Bunker TP to Bunker floor and inside the tunnel area where overhead cable rack connec-tivity is not possible. Kindly accept.	Bidder proposal is not acceptable. Specification cl. no.3.02.05 Sub -Section B-10 Section-VI, part-B to be followed.

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					d) Cables for PCS and BSS shall be routed along the conveyors through GI conduits.		
164	SECTION-VI, PART B	SUBSECTION-B-11 STATION LIGHTING	11 of 18	4.12.00	Occupancy based Passive Infra-red sensors The sensors shall be recess mounted, programmable type suitable for lighting load of 6A with variable off delay settings. The detection area shall be minimum 5 meters for standard room height of 3mt. All the cali-brated settings shall be stored in non-volatile memory of PIR sensor which shall be unaffected by power sup-ply fluctuations. Necessary 16A contactor shall be sup-plied along with each sensor & shall be located inside the switch box	Occupancy based sensors not considered for CHP, AHP, LHP & GHP areas. Requested customer to confirm.	Bidder proposal is not acceptable. Specification cl. no.4.12.00 Sub -Section B-11 Section-VI, part-B to be followed.
165	SECTION-VI, PART B	SUB-SECTION B-0 GENERAL ELECTRICAL SPECIFCIATION	7 of 15	3.06.00.f	f) For protection of motors below 30kW, MPCB (only Short-circuit release) and Intelligent motor control-ler(IMC) with current sensing module shall be provided and for motors from 30kW and below 90kW, MCCB and Intelligent motor controller(IMC) with current & volt-age sensing module shall be provided. Motor feeders be-low 90kW (up to 160kW for CHP conveyor motors) shall be contactor controlled. Contactors shall be of 250% of motor FLC for fan and compressor application and 200% of motor FLC for other application. The motor feeders for 90kW & above shall be Air Circuit Breaker controlled. All moving and fixed contacts of each draw-out modules must be of rating more than 150% of MCCB/MPCB mounted inside the module. Each phase of vertical bus bars shall be separated by phase barrier.	Motors for DE or DSS system of CHP area with mo-tor rating up to 160KW are considered with contac-tor controlled similar to CHP conveyor motor. Kindly confirm	Bidder proposal is not acceptable. Specification cl. no.3.06.00 (f) Sub -Section B-0 Section-VI, part-B to be followed.
166	SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Gypsum Plant	41 of 113	2.7.1 Pull Chord switches 2.7.2 Belt sway switches 2.7.3 ZSS	Flame proof/Explosion proof for NEC Class2, Division1 area	NEC Class 2, Division 1 area is not applicable for CHP area. PCS, BSS, ZSS: IP-65, Non-Flammable, addressable, indicating type shall be provided. All other contrac-tual requirement shall be followed. Kindly confirm	Specification requirement is clear. Bidder shall comply to technical specification.
167	SECTION-VI, PART B	SUB-SECTION-IIIC-17 ELECTRICAL ACTUATORS	1 of 4	3.00.00	Electrical actuators for valves / dampers / gates (other than covered in 2.00.00) -These actuators shall be Non-Intrusive type electric actuators. The interface of these actuators with DDCMIS shall be of two types viz. with Hardwired in-terface and with Fieldbus interface. The common re-quirements of both these type of actuators are speci-fied at clause 4.00.00, specific requirements of Non-Intrusive hardwired actuators are specified at clause 5.00.00 and specific requirements of Non-Intrusive fieldbus actuators are specified at clause 6.00.00. The applications where these two types of actuators are to be provided is specified in Part-A of Technical Specifi-cations.	Proposed to provide Electrical Actuators as per Standard practice for skid mounted /operated through only PLC/ local control panel systems like scoop coupling, tripper, paddle feeder, LSU, CSU where it is not possible to have non-intrusive type filed bus based actuators. Kindly accept.	Bidder to refer clause no 3.12.00, SUB-SECTION-IIA-15BIOMASS HANDLING PLANT, and Clause No 1.02.01, SUB SECTION-IIA-14 LIMESTONE AND GYPSUM HANDLING PLANT of Part-A of technical specification.
168	SECTION-VI, PART A	SUB-SECTION-I-A PROVENNESS	30 of 40	5.6.0	Provenness criteria for LT SWITCHGEAR	Kindly exempt the provenness criteria applicability for sub vendor for the supply of LT switchgear for machines like Stacker reclaimer since major OEMs are not participating in the tender due to limited number of panels.	Bidder to comply specification requirement.
169	SECTION-VI, PART A	SUB-SECTION-IID CIVIL WORKS	4 of 13	1.00.00	SCOPE OF CIVIL, STRUCTURAL & ARCHITECTURAL WORKS OF EPC PACKAGE	1) Foundation drawings for the existing structures, Stacker reclaimer, Crusher house, Junction towers, and other major structures may please be provided for assessing the depth of foundations. 2) Please provide us with the depth and width of NALA near Kota Hill and proposed Track hopper area.	Available drawings are being provided. Howver,biddder to refer Cl. 8.03.04 (k) of General Technical Requirement, Part-C, section VI
170	SECTION-VI,	SUB-SECTION-D-1-5	83 of 127	5.23.06	Stacker Reclaimer Foundation	Annexure-H provided in specifications is not legible. Please provide a clear	Legible ANNEXURE-H is provided.

EPC Package for Singrauli STPP Stage-III (2x800 MW)

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
	PART B				ANNEXURE-H	Annexure-H page.	Bidder to refer amendment D1-34
171	SECTION-VI, PART E	PLOT PLAN			Crossing of Ash Pipe Racks above the NALA	Any separate Road bridge/vehicular traffic crossing above Nala, along the route of Pipe racks is not in the scope of the Bidder. Please confirm.	Bidders understanding is correct. However,Walkway along with Ash Pipe Rack is to be provided by Bidder as per Technical Specification.

EPC Package for Singrauli STPP Stage III (2x800 MW)
Pre-Bid Clarification

S No.	BID SPECIFICATION					Bid Specification Stipulation	Pre-Bid Queries/ Clarifications	Reply
	Section	Part	Sub-Section	Page No.	Clause No.			
1	SECTION-VI,	A	IIB	9 OF 19	1.16.01 (i)	The scope of work comprises of Design, supply, erection, testing and commissioning of 400kV SF6 Gas Insulated Switchyard including AIS portion and Bay strengthening of Tie Line1 & 2 at VSTPP-IV switchyard as shown in single line diagram associated with Singrauli STPP stage-III (2X800MW) as shown in Single Line diagram(1150-999-POE-J-001). The existing VSTPP-IV 400kV Switchyard is provided with one and half breaker scheme. The switchyard shall employ switching scheme as indicated in single line diagram.	**Following queries are related to VSTPP-IV only.** 1. Kindly provide Structure layout, Earthmat layout, Structure loading layout, outdoor Equipment details like drawings for assessment of suitabilty. 2. As per Draiwng no. 1150-999-POE-J-001 Bidder understand that Exisitng 400 kV Circuit Breaker at VSTPP-IV AIS meets the tender requirement and same can be reused. Kindly confirm. 3. Bidder understands only DIA A and DIA B to be made suitable for 3000A. Exisiting Bus-1 and Bus-2 are already Suitable to meet Tender requirement and need not to be dismantaled. Kindly confirm. 4. Shunt equipment/items which do not carry rated current can be reused. Kindly confirm. 5. Series equipment/items which do carry rated current need only to be replaced by new equipment meeting Tender specification. Kindly confirm. 6. Bidder Understand if any equipment/tower foundation which is not required to be dismantaled, the same can be reused. Kindly confirm. 7. Kindly confirm that any work related Control and Protection, SAS system,PLCC at VSTPP-IV is not in scope of Bidder. 8. Bidder understand that since there is no addition of new bays at VSTPP-IV, hence LT Power and control cable are not required to supplied and installed. Kindly confirm same. 9. Existing main earthmat shall be used as it is. Only new equipments which are to be installed shall be earthed with main existing earthmat. Kindly confirm.	1.The existing switchyard drawings will be provided during detailed engg stage on award of contract. 2. Bidder understanding is not correct . The exsitng CB, isolator ,CT at VSTPP-IV AIS is of rating 2000A. Bidder to provide the equipments as per the tender requirement . 3. Bidder understanding is correct . 4.Confirmed. except for CVT 5.Confirmed. 6. confirmed. However any modification / augmentation required to match with new rating eaquipment is also in the scope of Bidder. 7.Modification / augmentation in exisitng control and protection, SAS system at VSTPP-IV to meet the system requirement is also in the scope of bidder. 8.Bidder understanding is not correct. The LT power & control cables required for augmentation of Bay equipments is in the scope of Bidder. 9.Confirmed.
2	VI	A	IIB	9	1.16.01 (iv)	Scope of work shall also include GIS building and Switchyard control room building along with air-conditioning of control room building, ventilation system for GIS hall/MCC/Switchgear/Panel/Battery rooms etc. and associated civil & structural works at Singrauli STPP Stage-III (2X800MW).	Bidder understand there is no requirement of extension/augmentation of buliding facility at VSTPP-IV Switchayrd. Only outdoor swichyard related Civil work is invloved as per requirement of 2 DIAs upgradation only. Kindly confirm.	Bidder understanding is correct.

EPC Package for Singrauli STPP Stage III (2x800 MW)
Pre-Bid Clarification

S No.	BID SPECIFICATION					Bid Specification Stipulation	Pre-Bid Queries/ Clarifications	Reply
	Section	Part	Sub-Section	Page No.	Clause No.			
3	VI	A	IIB	9	1.16.01 (ii)	Further the scope also includes LILO of existing 400kV VSTPP-V to VSTPP-IV D/C Twin Moose Transmission Line at Singrauli STPP stage-III switchyard . Any modification required in existing system as required for achieving the scheme shown in the tender SLD shall be in the Bidder's scope. Existing transmission line towers between VSTPP-V & IV are suitable for twin moose conductor, however new interconnection between Singrauli STPP stage-III switchyard & VSTPP-IV switchyard shall have rating for quad moose / HTLS equivalent to quad moose conductor. In case existing towers cannot be used due to any limitations, the erection of new towers and line for establishing the LILO arrangement shall also be in the scope of contractor	Bidder request to remove the works outside of plant boundary i.e. 400 kV Transmissoin Line works from the scope of the tender.	Bidder proposal is not acceptable. Specification requirement to be followed.
4	VI	A	IIB	2	1.00.00(4)	Dismantling, removal, and disposal of identified facilities/ structures/ substructures/ foundations of dismantled quarters/buildings/structures, reinforcement, pavement/paving, pipes and any underground structure/materials, debris etc. all complete.	Bidder understand the Tender scope does not include shifting of any of the facillity which falls under area Stage-III. Kindly confirm.	Bidders understanding is NOT correct. Bidder to refer Technical secifications Section -VI, Part-A, Sub section IID Cl no 1.00.00 (4) regarding scope of demolision and dismantling
5	VI,	B	B-17	6	1.11.01	FOR AIS (400kV) : Max.fault level(1sec) 63kA	As per drawing No.1150-999-POE-J-001 existing Switchyard fault current rating seems to be 50kA for 1 Sec, however as per specification clause its 63kA for 1 sec, Kindly confirm the fault current rating at VSTPP-IV switchyard and fault current rating of new equipements which are to be supplied for AIS yard.	The exisitng switchyard of VSTPP-IV equipment fault current rating is 50kA for 1sec. The Bidder to provide the new equipments of fault current rating 50kA / 63kA.
6	VI,	B	B-17	2	1.01.08A	The GIS building shall be adequately designed so as have a passage of 2.0 m on either side and adequate overhead clearance for the movement of equipments without any obstruction, from the top of the GIS equipment to EOT Crane. The GIS Control Room Building shall have with provision of Switchgear room, Battery room, charger room, office, cable vault, SAS room, Lab room, CRP Panel room, conference room, Pantry, toilet etc. The GIS & control room building is to be designed keeping future provision for extension if any as shown in the Single line diagram. The GIS building shall have adequate provision (at least 4.0m) for maintenance bay shall be provided one side of GIS building considering thefuture provision for GIS extension.	Kindly proivde tantative layout of Control Room Building and GIS hall to acertain placement of buildings as per the requirement.	As it is EPC package , bidder to design the layout of control room building and GIS hall etc to meet the specification requirement.

EPC Package for Singrauli STPP Stage III (2x800 MW)
Pre-Bid Clarification

S No.	BID SPECIFICATION					Bid Specification Stipulation	Pre-Bid Queries/ Clarifications	Reply
	Section	Part	Sub-Section	Page No.	Clause No.			
1	Singrauli STPP Stage III (2x800 MW)		SUB-SECTION-B – 00 / General Electrical Requirements / 1.11.00	2/15	1.11.00	Locked rotor MVA of ID Fan & MDBFP Motors to be restricted to 75MVA	With Combined ID Fan (Boiler Draft + SCR + FGD) the ratings are as high as 14.5 MW as in case of NTPC Patratu .The same can be much more than 14.5MW depending upon siging calculation during detailed engineering. For MDBFP , the ratings are generally 15 to 17.5 MW in case of NTPC projects of 800 MW . Hence in view of such high capacities of Motors restriction of Starting MVA to 75 MVA is not practical . It varies and even go upto 125 MVA. Hence the same should depend upon the ratings of Motor and should be at least upto 125 MVA.	Bidder to Refer Ammendment No.-01 to technical specifications
2				15/15	10	Starting voltage requirement	Minimum starting voltage for double cage induction motor (Mill application) shall be 85%RV.	Bidder understanding is not clear. Cl. referred by bidder is not correct. Specification cl. no.10.00.00 Sub -Section B-0 Section-VI, Part-B to be followed.
3			SUB-SECTION-B – 02 Motors	1/4	3.01(B)	Motors upto 200 KW Efficiency IE3	For such low capacity motors we shall offer motors with efficiency class IE2	Bidder proposal is not acceptable. Specification cl. no.3.01.00 (b) Sub -Section B-02 Section-VI, Part-B to be followed.
4				2/4	7.06.00	HT motor bearing housings shall have flat surfaces, in both X and Y directions, suitable for mounting 80mmX80mm vibration pads.	Due to size limitation of small rating HT motors in TEFC enclosure, vibration pad shall be less than 80mmX80mm. For small HT motors offered in TEFC enclosure (Cooling - IC411) due to space constraints Vibration pad size shall be a) Horizontal Motor 40 x 40 x 40 b) Vertical Motor 16 x 30 x 30 The same is followed for all NTPC projects till date.	Bidder proposal may be acceptable. However, bidder to ensure sufficient space available on vibration pad for mounting of vibration probes and same shall be decided during detailed engg.
5				2/4	7.06.00	Noise level for all the motors shall be limited to 85 dB(A)	Noise level for 2 pole motor will be 85+ 3 dB (A)	Bidder proposal is not acceptable. Specification cl. no.7.06.00 Sub -Section B-02 Section-VI, Part-B to be followed.
6				3 /4	7.07.00	Each bearing of HT motor shall be provided with 3 numbers duplex RTDs	Generally 3 RTDs per bearing side is provided for all crtical motors (i.e CEP,MILL FD/ID/PA fan motors etc.). But for small rating (<500KW) non critical TEFC (IC411) motors it is not required. So can we provide 2 BTDs per bearing side for these small rating TEFC (IC411) motors?	Bidder proposal is not acceptable. Specification cl. no.7.07.00 Sub -Section B-02 Section-VI, Part-B to be followed.

EPC Package for Singrauli STPP Stage III (2x800 MW) Pre-Bid Clarification								
S No.	BID SPECIFICATION					Bid Specification Stipulation	Pre-Bid Queries/ Clarifications	Reply
	Section	Part	Sub-Section	Page No.	Clause No.			
7				3/4	7.09	SIC connectors IEEE 386	For 11KV HT Motors, We shall be offering Phase segregated Terminal Box capable of through Fault level of 50 KA for 0.25 secs . The same is proven & already installed in many motors of NTPC & State electricity boards power projects . This shall eliminate Imported SIC Connectors and shall boost Local Manufacturing & Make in India under Atma Nirbhar Bharat initiative of Govt. of India. Detailed write up and reference list can be submitted for your consideration and approval.	Bidder proposal is not acceptable. Specification cl. no.7.09.00 Sub -Section B-02 Section-VI, Part-B to be followed.

EPC Package for Singrauli STPP Stage III (2x800 MW)
Pre-Bid Clarification

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
1	SECTION-VI, PART-A	SUB-SEC-TION-I-A	9 OF 40	4.5	Air Conditioning System The Bidder/ its sub-vendor should have de-signed, supplied, erected and commissioned at least one (1) number of Air conditioning system having a total installed capacity of 300TR or more including stand-by chiller unit (if any), which should have included at least one chilling unit with a minimum ca-pacity of 60TR. The system should have been in successful operation for at least one (1) year. In addition, the chiller unit(s) proposed to be supplied for this package shall be sourced from the manufacturer(s) who have manufactured and supplied at least one (1) number of similar type of chiller unit having a capacity of not less than 150 TR, which should have been in suc-cessful operation for at least one (1) year.	Since all bidders are supplying chiller as per ap-proved make, incorporating additional criteria for Sub QR of chiller delays the finalization of chiller as sepa-rate approval is to be taken for Sub QR during detail engineering. For saving the time for readiness of AC in Control room by finalizing the chiller timely, it is proposed to modify the PQR requirement as men-tioned below: **Air Conditioning System** The Bidder/ its sub-vendor should have designed, supplied, erected and commissioned at least one (1) number of Air conditioning system having a total in-stalled capacity of 300TR or more including stand-by chiller unit (if any), which should have included at least one chilling unit with a minimum capacity of 60TR. The system should have been in successful operation for at least one (1) year. Please confirm	Vendor approval and Provenness compliance are two different things. Bidder to comply with specification requirement.
2	SECTION-VI, PART-A	SUB-SECTION-I-A	9 OF 40	4.6	Ventilation System The Bidder/its sub-vendor should have de-signed, supplied, erected, and commis-sioned at least one (1) number ventilation system including similar air washer unit having individual fan capacity of 80,000 Cum./Hr. or more. The system should have been in successful operation for at least one (1) year.	It is observed that there are many experienced and reputed bidders having performance certificate with different type of Air washer with capacity in line with PQR. Hence, it is proposed to modify the PQR requirement as mentioned below: **Ventilation System** The Bidder/its sub-vendor should have designed, supplied, erected, and commissioned at least one (1) number ventilation system including air washer unit having individual fan capacity of 80,000 Cum./Hr. or more. The system should have been in successful operation for at least one (1) year.	Provenness is required for similar type of air washer units envisaged for the project. Bidder to comply with specification requirement.
4	SECTION-VI, PART-A	SUB-SEC-TION-I-A	25 OF 40	4.26.1	(e) Agitators: Type of equipment - Vertical/ Horizontal. Application - Wet Limestone based FGD application in Coal fired power plant.	For agitators other than absorber agitators, the provenness sought is for the application in "Wet Limestone based FGD application in Coal fired power plant". Though, manufacturers of Agitators in other applications are also allowed to participate through collaboration or valid licensing agreement with manufacturer who meets the PQR in FGD application, but only one indigenous manufacturer is having such collaboration and meet the requirement. Please allow manufacturers of agitators having experience of similar rating of agitators in Non-FGD applications without collaboration or valid licensing agreement with manufacturers who meet the PQR in FGD application. Further, we would like to inform that the agitators, manufactured by these indigenous manufacturers, used in the other process industries like petrochemical, paper & pulp etc. are for more critical application using slurry of higher specific gravity.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
5	SECTION-VI, PART-A	SUB-SEC-TION-I-A	27 OF 40	4.26.5	In case the Bidder or the proposed sub-vendor is not manufacturer of proven Agitators as per clause 4.26.1 (e) above but is a manufacturer of Agitators for similar process/duty application in petrochemical or metals and mining industry, the Bidder or the proposed sub-vendor can also manufacture Agitators, provided it has collaboration or valid licensing agreement for design, engineering, manufacturing, supply of such Agitators in India with such manufacturer who meet the requirements stipulated at clause 4.26.1 (e) above for the Agitators.		
6	SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	25 OF 40	4.26.1 (f):	**Vacuum Belt filters** Application: Wet Limestone based FGD application in Coal fired power plant or in any other process application. Equipment rating = **35 T/hr (minimum).**	The Provenness may be modified as below: Application = Wet Limestone based FGD application in Coal fired power plant or in any other process application Equipment rating = **17 T/hr (minimum).** **2. In addition to above, request Customer to consider the following clause for any Bidder/Sub-vendor quoting in partnership with Technology Provider/ Qualified OEM not resulting into JV/Subsidiary:** In case, the Bidder or the proposed sub-vendor is not a manufacturer of proven Vacuum Belt Filters as per clause 4.26.1 (f) above, the Bidder or the proposed sub-vendor shall also be considered qualified for manufacturing and supply of the Vacuum Belt Filters, provided that it has valid partnership agreement for design, engineering, manufacturing, supply of such Vacuum Belt Filters with such manufacturer who meets the requirements stipulated at clause 4.26.1 (f). In addition, the Bidder shall be required to furnish a letter of support from Technology provider along with the agreed scope matrix for successful performance of the equipment valid up to the end of defect liability period of the contract as per the format enclosed in the bidding documents, at the time of placement of order on the approved sub-vendor. Kindly accept.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.

EPC Package for Singrauli STPP Stage III (2x800 MW)
Pre-Bid Clarification

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
7	SECTION-VI, PART-I-A	PROVENNESS	10 OF 40	4.8	**Water Pre-treatment Plant** The Bidder/its sub-vendor should have designed, supplied, erected/supervised erection and commissioned/supervised commissioning at least one (1) number water/waste water treatment plant having capacity of not less than 1000 Cu.m/hr, comprising of clarifiers/tube settlers/thickeners or a combination thereof including civil works. The plant should have been in successful operation for at least one (1) year.	Since the civil work of PTP package is generally done by main bidder being main contractor (EPC bidder), so it is requested to remove requirement of Civil works Experience from PT plant PQR. Also Package suppliers may not be intersted to keep civil works in their scope considering the fluctuation in construction cost and time aspects. Further the duration of satisfactory operation also needs to be aligned with actual date of PTP package bid evaluation. **We Request Owner to revise PQR of water/waste water treatment Plant as below,** "The Bidder/its sub-vendor should have designed, supplied, erected and commissioned at least one (1) number water/waste water treatment plant having capacity of not less than 1000 Cu.m/hr, comprising of clarifiers/tube settlers/thickeners or a combination thereof. The plant should have been in successful operation for at least one (1) year prior to the date of submission of vendor proposal for approval but not later than ordering date of package as per agreed L2 schedule for the project."	Bidder's proposal reviewed, and not accepted. Bidder to comply technical speciification requirements.
8	VI/A	I-A	28 OF 40	5.4.0	Bidder/ Sub Vendor should have manufactured and supplied at least one (1) number of static automatic voltage regulator type Battery Chargers of highest offered rating or above, in at least one (1) industrial installation, which should have been in successful operation for at least one (1) year.	For Main plant 220V DC Chargers: Due to limited suppliers for charger, Performance for high ratings of chargers are not available with charger suppliers as faced in past projects. Hence, Proven-ness criteria for charger may be considered as below for 220V/ 110V DC Chargers: “Bidder/ Sub Vendor should have manufactured and supplied at least one (1) number of SCR based automatic volt-age regulator type Battery Chargers of rating 300A or above, in at least one (1) industrial installa-tions, which should have been in successful operation for at least one (1) years.”	Bidder proposal is not acceptable. Specification cl. no.5.4.0 Sub -Section I-A Section-VI, Part-A to be followed.
9	VI/A	I-A	32-33 OF 40	5.12.1 5.12.2 5.12.3	The Bidder/Sub-Vendor should have manufactured & supplied at least one number (one installation) of 16 MVA, 11KV or higher rating oil filled transformers which should have been in successful operation for a period of at least two (2) years. And Bidder/Sub-Vendor should have his own facilities for conducting all routine and type tests as per IS: 2026 (except short circuit test). And 16 MVA, 11 KV or higher rated oil filled transformer manufactured by Bidder/Sub-Vendor should have been successfully short circuit tested.	Due to limited vendor base for transformers and further restrictive provenness (as impulse test is Type test, so inhouse facility is not required also if highest offer rating is not 16MVA then performance and short circuit of 16 MVA or higher rating is not required) cri-teria specified in tender, bidder proposes to update the provenness criteria as below. Kindly confirm. 5.12.1. The Bidder/Sub-Vendor should have manu-factured & supplied at least one number (One Instal-lation) of highest offered rating oil filled transformers which should have been in successful operation for a period of at least two (2) years. And 5.12.2 Bidder/Sub-Vendor should have his own fa-cilities for conducting all routine and type tests as per IS: 2026 (except short circuit test and lightning im-pulse test). And 5.12.3. Any offered rating or higher rating oil filled transformer manufactured by Bidder/Sub-Vendor should have been successfully short circuit tested.	Bidder proposal is not acceptable. Specification cl. no.5.12.0 Sub -Section I-A Section-VI, Part-A to be followed.

EPC Package for Singrauli STPP Stage III (2x800 MW)
Pre-Bid Clarification

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
1	VI	VI / 2	18 of 32	C.19.f	Stator winding bars and connectors (complete set of winding bars and connectors)	Bidder will offer 1 No of each type of winding bars along with connectors under 1 set. NTPC to accept.	Bidder proposal is not acceptable. Specification cl. no.C-19 (f) Sub -Section VI Chapter-02 Section-VI, Part-A to be followed.
2	VI	VI / 2	19 of 32	C.19.2.g	Temperature and Pressure switches	Not Applicable as per OEM Standard. NTPC to record.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
3	VI	VI / 2	25 of 32	5.00.00	Process connection piping (for impulse pip-ing/tubing, sampling piping/tubing and airSupply piping as applicable) (iii) Fittings - 100 Nos. of each type	100 nos. Of each type is much more than recommended mandatory spares. Bidder will offer 10 nos. fitting of each type as mandatory spares. NTPC to accept.	Bidder to comply the specification requirement.
4	VI	VI / 2	2 of 32	A.6	Aux oil pump/startup oil complete assembly for Main Turbine along with complete coupling (Mounted on oil tank)	Tank mounted Main oil pump is provided . So there will be MOP in place of AOP in our offer. NTPC to accept.	Bidder to refer amendment TG-6 in this regard
5	VI	VI / 6	2 of 3	15.a	Steam trap & Y strainers up to 25 NB. Qty - 10 nos. of each type, material, size & class per unit.	For turbine integral piping, installed Qty. of steam traps per unit is 2 nos only. Hence, as per our standard practice bidder can be offered only 2 nos of Steam Traps . NTPC to confirm.	Bidder to comply the specification requirement.
6	VI	VI / Mandatory Spares	3 of 3	13.00.00	Bidder shall not indicate “Not Applicable” against any of the spare (except for those items for which “if applicable” is specified). In case of not applicability, functionally equivalent spare to be mentioned with price in the relevant price schedules. Bidder shall not mention any remark other than price value in relevant price schedule	Bidder shall indicate “Not Applicable” against any of the spare if the same will Not Applicable as per OEM Standard & vendor design. NTPC to accept.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.

EPC Pkg of Singrauli STPP, Stage-III (2X800 MW)							
SL. NO	**ENQUIRY SPECIFICATION**				**SPECIFICATION REQUIREMENT**	**COMMENTS / CLARIFICATIONS**	**Reply**
	SEC/ PART	**SUBSEC.**	**PAGE NO.**	**CLAUSE NO.**			
1	VI/B (Mechanical)	G-01	4 of 4	1.06.00	Further, Contractor will share the detailed design documents for establishing the changes done in the design for ensuring continuous operation at 40 % TMCR Load.	Such Design document are proprietory in nature and cannot be shared. NTPC is requested to delete the clause.	40% Technical minimum load operation to be ensured inline with latest CEA Gazette. Bidder may please note that this is mandatory requirement and is to be ensured by owner. Bidder to comply with the specification requirements.
2	VI/B (Mechanical)	G-07	3 of 8	2.05.00	Data Sheet: Steam Turbine.	Technical data of Steam Turbine required for operation, maintenance and information purpose shall only be furnished in O&M Manual. Data / information which are proprietary in nature, shall not be furnished.	The data/information sought are not proprietary in nature and these information are provided in past also. Bidder to comply specification requirements.
3	VI/B (Mechanical)	A-07	1 of 25	1.04.00 (d)	Critical speed of composite rotor and blade assembly shall not be within - 10% and +15% of rated speed.	Critical speed of composite rotor and blade assembly shall not be within ± 10% of rated speed. This is as per OEM's in house design guidelines	Bidder's proposal is not acceptable. Bidder to comply technical specification requirement.
4	VI/A	IIA-06	2 of 10	2.02.04	Steam turbine control fluid and its purification system along with its conditioning system shall be complete with control fluid tank, control fluid pumps with drive motors, **strainers**, accumulator, control fluid coolers, waste fluid tank, purification equipment including fluid circulation pumps with drive motors, associated piping,valves, fittings and specialties, hangers and supports,Instrumentation and control hardware to make the system complete in all respects for the 800 MW units	Kindly modify the spec as ,"Steam turbine control fluid and its purification system along with its conditioning system shall be complete with control fluid tank, ..., ***strainers / filters*** , ..."	Bidder to refer amendment TG-4 in this regard
5	VI/B (Mechanical)	G-01	2 of 4	1.01.00 (n) & 1.03.00	Plant Life 25 years with Number of Starts : Hot : 6700, Warm : 1000, Cold : 150. The plant shall be capable of daily 2 load cycling from 100% to 50% & 1 load cycling bellow 50% TMCR which implies 13400 & 6700 cycles in design life.	The requirements of 7850 number of starts along with daily 3 load cycling and daily starts & stops are not practical. 7850 starts in 25 yrs means 314 starts in a year i.e. One startup in every 1.16 days. NTPC to reconsider the practicability and clarify the design requirement.	Specification requirements are clear in this regard and based on Flexible and two shift operation of plant. Bidder to comply with the specification requirements.
6	VI/B (Mechanical)	G-07	1 of 2	1.00.00	Tentative Master Drawing List	Master Drawing List will be agreed and finalised after order.	Bidders proposal is noted however MDL incoporated in specification shall be the base document. Modification can be made with approval of owner
7	VI/B (Mechanical)	A-02	3 of 67	1.05.00	*Type of Starts:* Hot start (after 8 hours of unit shut down) Warm start (after 36 hours of unit shut down) Cold start (after 72 hours of unit shut down)	For Start up curve preparation, we will consider the following condition as per standrad practice. Hot start (after 8 hours of unit shut down) Warm start (after 48 hours of unit shut down) Cold start (after around 200 hours of unit shut down)	Bidder's proposal is not acceptable. Bidder to comply with the specification requirements.

EPC Pkg of Singrauli STPP, Stage-III (2X800 MW)							
SL. NO	ENQUIRY SPECIFICATION				SPECIFICATION REQUIREMENT	COMMENTS / CLARIFICATIONS	Reply
	SEC/ PART	SUBSEC.	PAGE NO.	CLAUSE NO.			
8	VI/B (Mechanical)	A-07	3 of 25	1.11.00	TG Protection: Advisory trips by Operator shall be avoided. … Apart from mandatory turbine protection, these protections shall include, but not be limited to following: a. TG Bearing temperature b. TG Shaft/bearing vibration c. Differential Expansion d. Low Main steam temperature e. Any other safety requirement as required	Only alarm on Differential Expansion & Low Main Steam Temp is available. Auto Protection is not envisaged as per OEM standrad practice. Differential expansion - As per OEM philosophy, Thermal expansion is considered during all static and transient operations in the design stage. Furthermore differential expansion is limited by monitoring various temperature measurements (turbine stress evaluator). Hence, Automatic tripping is not envisaged. This is in line with OEM standard practice and followed in all supercritical bidder projects. Main steam low- As per OEM philosophy, The main steam and hot reheat steam temperature is typically subject to change during startup / shutdown and in steady-state operation. During startup the temperature is regulated via X-criterias and stress margins. In steady state operation the temperature should remain steady unless major transient (for example load rejection, issues in boiler). In either case the temperature is not expected to violate the limit value. Limit violation is regulated within limits as per IEC-45 which includes control behavior and the thermal inertia of the steam generator and the operating conditions which normally occur in power plants and taken care in SG/BoP systems. Hence main steam low protection is not envisaged in TG functional group. This is in line with OEM standard practice and followed in all supercritical bidder projects.	Bidder's proposal is not acceptable. Bidder to comply with the specification requirements.
9	VI/B (Mechanical)	A-07	7 of 25	1.19.00	Furnish turbine clearance diagram indicating values for radial & axial clearances and leakage rate from glands.	Submission of leakage rate is not envisaged.	Bidder to comply with the specification requirements.
10	VI/B (Mechanical)	A-07	7 of 25	1.20.00	Type Test of Metallic expansion Joints of Steam Turbine	Type Test of Metallic expansion Joints are not envisaged.	BHEL query with respect to reference clause is not correct, Bidder to comply with the specification
11	VI/A	I	5 of 9	3.00.00	The tender drawings are enclosed along with the specification as Part-E, Section-VI and shall supplement the requirements specified in these technical specifications. The scope and terminal points of the equipment to be furnished under this EPC package shall be as identified in these drawings read in conjunction with text of the specification.	We understand that tender drawings for Steam Turbine & auxiliaries are only indicative and for information only. These are not binding.	Bidder understanding is not correct. Bidder to comply with the specification requirements.
12	VI/A	IV	1 of 76	1.00.01 (f)	The Contractor shall make the plant ready for the performance guarantee tests before start of Initial Operation. All CAT-1 Performance Guarantee tests shall be conducted along with initial operation.	All the efforts will be made to make unit ready for performance guarantee test before start of Initial Operation, however CAT-1 performance guarantee test shall be conducted after stabilization of Unit as per satisfaction of both parties.	Cat-I guarantee test shall be conducted along with initial operation. Bidder to also refer clause 1.00.01 f) of Sub sec-tion-IV, Section-VI of technical specification. Bidder to comply specification requirements.
13	VI/A	IV	2 of 76	1.00.01 (i-1)	For Cat-I Performance / Acceptance tests to be conducted along with the initial operation: After the conductance……. The contractor shall submit the detailed test evaluation report of Performance test results to Employer promptly but not later than 7 days from the date of conductance of Performance test.	All the efforts will be made to make unit ready for performance guarantee test before start of Initial Operation, however CAT-1 performance guarantee test shall be conducted after stabilization of Unit as per satisfaction of both parties. Separate report shall be furnished to Customer as per agreement during MOM of TG-PG test.	Bidder proposal is not acceptable. Bidder to comply specification requirement.
14	VI/A	IV	11 of 76	1.01.03.01 (2)	In case any of the above correction curves are not submitted along with price bid , no negative corrections shall be allowed on turbine Heat rate on this account .Positive corrections if required to be applied, the amount shall be decided by Employer. Further, no positive corrections shall be allowed on turbine output on this account. Negative corrections if required to be applied, the amount shall be decided by Employer.	Correction Curves shall be generated after approval of Heat Balance Diagrams and shall be submitted for Approval and inclusion in TG-PG test procedure.	Bidder's proposal is not acceptable. Bidder to comply with technical specification requirement.
15	VI/A	IV	10 of 76	1.01.03.01 (2)	Variation in power factor, frequency, generator hydrogen pressure and voltage	Generator is not allowed to operate with variation in Hydrogen pressure & any variations in pressure shall be taken care during operation from safety aspects. Hence, no correction curve is envisaged for the same. It may be noted that same practice is also followed in all supercritical projects like Barh, Gadarwara, Mauda, North Kanpura, Khurja, Talcher etc. Hence Hydrogen Pressure Correction Curve is not applicable.	Bidder understanding is correct.

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17	VI/A	IV	53 of 76	2.03.00	The Contractor shall prepare test reports in which the methods followed, instrument readings, graphs, observations, final results obtained online, etc., shall be recorded. Soft copies of each test report shall be submitted to Employer for Approval.	TG-PG test report shall be generated as per standard format and will be submitted to Customer within shortest possible as per agreement during MOM of TG-PG test.	Bidder to refer the clause 1.00.01/(i), sub-section IV, PART-A, SECTION - VI for PG Test report submission schedule. Bidder to comply specification requirements.
18	VI/B (Mechanical)	G-04	9 of 229	3.3	The turbine generator performance test is carried out according to ASME PTC 6-2004 or latest revision and technical specification. Uncertainty on the test results is not applicable on account of measuring instruments inaccuracy & Fluctuation of parameters during the conductance of test. Ageing correction is not applicable for TG Cycle Heat Rate & Output test. Test will be conducted during trial operations. No shutdown will be allowed on account of PG Test preparations.	Aging is a physical phenomenon and once steam enters into the cycle the aging of the components starts. Hence the aging period will be considered from the date of first synchronization to the conductance of PG test.	PG test shall be conducted along with initial operation. Hence, ageing correction is not applicable. Bidder to comply specification requirements.
20	VI/B (Mechanical)	G-04	15 of 229	4.7	Duration of test run shall be two hours. One hour as minimum is necessary before the test run to confirm whether the plant is at satisfactory condition for the test.	Duration of test shall be two hours, out of which most stable 1 hour period shall be selected for calculation and reporting.	Test duration is based on Standard PG Test procedure. Bidder to comply the technical specification requirement.
21	VI/B (Mechanical)	G-07	6 of 8	51	Gland leakage coefficients	Such data requested in data sheets is proprietary in nature, hence cannot be furnished.	Bidder to comply technical specification requirement.
22	VI/B (Mechanical)	A-07	7 of 25	1.18.01 Note	Any additional heat balances deemed necessary by the Employer shall be furnished. All the heat balances shall show turbine output, mechanical and electrical losses in turbine and generator and input to shaft driven auxiliaries, if any.	Mechanical losses, Generation Efficiency should be given in Guaranteed HBD's as per standard practice.	Bidder to comply technical specification requirement.
23	VI/ E	TENDER DRAWING PART-E (MECHANICAL)	–	P&ID NO. XXXX-999-POM-A-004, XXXX-999-POM-A-005, XXXX-999-POM-A-007	MS, HRH & CRH P&ID HP & LP BYPASS SYSTEM P&ID EXTRACTION SYSTEM P&ID FOR HEATERS	It is observed that multiple instruments are indicated at various locations which are not required. bidder proposes that instrument shall be offered as per OEM practice for TG integral & LP Bypass system with philosophy of 3 instruments for protection, 2 instuments for control & interlock and one instruments for alarm / monitoring/ indication. The Instruments Valves & fittings etc. under hook-up diagrams shall be as per bidder statdarrd practice.	Bidder's proposal is not acceptable. Bidder shall comply to the specification requirements.
24	VI/B (C&I)	IIIC-03	1 OF 2	1.00.00 (i)	Differential expansion (of HPT, IPT & LPT), overall expansion (of HPT & IPT), bearing vibration, computed absolute shaft vibration (from relative shaft vibration and bearing vibration)	1.) Inherent design of OEM (push rod mechanism) does not pose requirement of relative expansion measurements in IPT turbine in all load regimes. The expansion in IP turbine in subsequently shifted to LP turbine by push rod mechanism concept. Hence, differential expansion at only HPT front and LPT rear end are provided. 2.) At low speeds, shaft vibration is an indication of eccentricity. Separate eccentricity probe is therefore not provided. 3.) At each bearing pedestal of the turbo set the following vibration measurements are taken a) Relative shaft vibration in X&Y direction b) Two absolute bearing pedestal vibration in either X or Y direction This is in line with OEM standard practice and followed in all supercritical bidder projects.	Specification requirement is clear. Bidder shall comply to techical specification.
25	VI/B (C&I)	IIIC-01	1 OF 6	04.00.00	STANDARDISATION AND UNIFORMITY OF HARDWARE	It may not be feasible to supply primary and secondary instruments of the same make as various units of bidder are involved. Some of the package supplied by bidder- Haridwar are bought out from vendor in assembled condition. This is as per bidder's Standard and proven practice.	Specification requirement is clear. Bidder shall comply to techical specification.
26	VI/B (C&I)	IIIC-07	6 OF 6	6.00.00	FIELD MOUNTED LOCAL JUNCTION BOXES (As per standard and proven practice of vendor)	Aluminium casted and fabricated Junction boxes shall be provided for Turbine area.This is as per bidder's standard and proven practice.	Bidder's proposal is not acceptable. Bidder shall comply to the specification requirements.

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27	VI/B (Book 2 of 5 Elec)	II-B-02	1 OF 4	3.01.00	AC MOTORS	All LT motors continuous duty type conforming to IS 12615, or IEC:60034-30, premium efficiency class- IE3 shall be provided. This is as per bidder's standard and proven practice.	Bidder proposal is not acceptable. Specification cl. no.3.01.00 (b) Sub -Section B-02 Section-VI, Part-B to be followed.
28	VI/B (C&I)	IIIC-04	2 OF 35	2.01.00	SPECIFICATION FOR ELECTRONIC TRANSMITTER FOR PRESSURE, DIFF PRESS AND DP BASED FLOW / LEVEL MEASUREMENTS	All field electronic transmitter shall be HART protocol complied for STG and auxiliaries area. This is in line with OEM standard practice and followed in all supercritical bidder projects.	Bidder to refer Amendment No-C-05 in this regard.
29	VI/B (book 2 of 5 Elec.)	B-01	7 of 25	6.00.00 (15.E)	At least six (6) numbers of dual axis optical sensor type vibration pickups at each end of overhang portion of the winding shall be provided, symmetrically located around the periphery with connection to Turbine Supervisory system for vibration monitoring and trend recording. Suitable connection between the pickups and Turbine Supervisory system for vibration monitoring shall be provided. Also a standalone system for the vibration monitoring system is also acceptable.	As Generator winding bars are tightly fitted/bounded with each other and further suitable support has been provided to each bars. Hence, very less vibration seen in tangent direction and vibration always seen in radial direction only. Hence, as per OEM standard practice and to meet tender specification requirements, Bidder propose to provide 12 No. single axis (instead of dual axis) optical sensors each side (TE EE side) for measuring radial vibration only.	Bidder proposal is not acceptable. Specification cl. no.6.00.00 (15) (E) Sub -Section B-01 Section-VI, Part-B to be followed.
30	VI/B (Mechanical)	A-07	7 of 25	2.00.00 (d)	Minimum material grade/standard has been specified for the condensing plant. However, bidder may opt for better material.	Minimum material grade for shell, water boxes & other parts of condensing plant is not given. Therefore, it is to clarify whether IS 2062 Gr-BR E250 qualify for the minimum material grade/standard for condensing plant (condenser). bidder has been using material as per IS 2062 in all the 800MW/ 660MW/ 500MW sets supplied to various utilities which are in operation for last 25-30 years and it is suitable for intended purpose.	Bidder to refer amendment TG-7 in this regard

EPC Package for Singrauli STPP Stage III (2x800 MW)
Pre-Bid Clarification

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	REPLY
	Section	Sub-Section	Page No.	Clause No.			
1	VI (PartA)	I-A PROVENNESS	3 OF 40	3.1 (p)	Provenness of HP Bypass system: Capacity of each valve not less than 750 Ton/hr at 270 Kg/Cm2(abs) & 600 deg.C Main Steam pressure and temperature at Turbine inlet.	This caluse is inferred as " 'Capacity of each valve not less than 750 Ton/hr at super critical steam parameters. (i.e. pressure & temperature)." Customer to Confirm.	Specification requirement is clear in this regard. Bidder to comply with the specification requirements.
2	VI (PartA)	VI (Chapter-02)	6 OF 32	B. 29	Control fluid pump assembly including motor and complete coupling	Customer to confirm, whether the requirement is applicable for HP bypass system	Control fluid pump assembly including motor and complete coupling mentioned here is for Main Turbine governing oil supply system.Bidder to comply with the specification requirements.
3	VI (PartA)	VI (Chapter-02)	12 OF 32	C. 1 (xxvii.)	Seal kit for Electrohydraulic actuators for HP and LP bypass system- 2 Sets of each	1 Set is inferred as the seal kit required for each type of actuator in HP bypass system.	The requirement against this clause is both for HP&LP Bypass system. Bidder has to provide seal kit for all electrohydraulic actuatotrs (Steam as well as spray valves) as per the quantity specified. Bidder to comply with the specification requirements.
4	VI (PartA)	VI (Chapter-02)	12 OF 32	C. 1 (xxviii.)	Interface Seal kit for HP/LP bypass servo/proportional valve and blocking unit- 2 Sets	1 Set is inferred as interface seals required for each type of actuator in HP bypass system.	The requirement against this clause is both for HP&LP Bypass system. Bidder to comply with the specification requirements.
5	VI (PartA)	VI (Chapter-02)	24 OF 32	4.00.00 (3)	a. Electro-Hydraulic Converter/Servo unit/ proportional valve for HPBP b. Blocking unit for HPBP (as applicable) c. Position feedback transmitter for HPBP d. Positioner for HPBP	1 Set is inferred as the components required for HP bypass valve, customer to confirm.	1 set means components required for complete set of valves in HP Bypass system including stop valves, control valves and spray control valves.
6	VI (PartA)	VI (Chapter-02)	24 OF 32	4.00.00 (4)	Hoses for HP and LP Bypass System- 2 complete sets	It is infered as 2 complete sets of hoses each for HP and LP Bypass system. Customer to confirm.	Specification requirement is clear in this regard. Bidder to comply with the specification requirements.
7	VI (PART-B)	A-07	4 OF 25	1.16.00 (c)	Provide separate oil system with 100% redundant pumps, motors, accumulators and control cubicles etc. for both HP and LP bypass systems.	Control of the oil system will be implemented in the DCS, no separate control cubicle is envisaged.	Bidder to refer amendment TG-8 in this regard
8	VI (PART-B)	A-07	4,5 OF 25	1.16.00 (c)	Accumulators shall be sized to take sufficient number of stroking operations of all actuators under a condition of loss of oil supply from the pumps.	Accumulators shall be sized for 2 stroking operations (1 full open & 1 full close) of all actuators. Customer to confirm	Specifications requirements are clear and bidder to comply the same. Further, specific details shall be discussed during detail engineering in line with the specifications requirements.
9	VI (PART-B)	A-07	5 OF 25	1.16.00 (h)	All the piping, fittings, valves, oil tanks, strainers including body and element associated with oil system of HP & LP bypass system shall be of stainless steel.	All pipings, fittings, oil tanks and ball valves will be of Stainless Steel MOC. The remaining items like Hydraulic valves, strainers including body and element and other components shall be as per supplier's established practice.	Specification requirement is clear in this regard. Bidder to comply with the specification requirements.
10	VI (PART-B)	A-08	9 OF 20	1.08.00 (D)	Body & Bonnet for Spring loaded bypass Valve: A234 Gr.WCC/A105/A182 F36 or better	A216 is for steel castings and A234 is for wrought carbon steel and alloy steel fittings of seamless and welded construction. Body of the Spring Loaded Bypass Valve shall be of A216 Gr.WCC in place of A234 Gr. WCC.	Bidders understanding is correct. Body of the Spring Loaded Bypass Valve shall be of A216 Gr.WCC in place of A234 Gr. WCC.
11	VI (PART-B)	LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB SUPPLIER APPROVAL (E-60)	7 OF 11	41	HP Bypass Valves (Sub QR item)	This shall be changed to HP bypass system	Bidder understanding is not correct. As per QA practise, both the terms are being used and carry the equivalent meaning.

EPC Package for Singrauli STPP Stage III (2x800 MW)
Pre-Bid Clarification

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	REPLY
	Section	Sub-Section	Page No.	Clause No.			
12	VI (PartA)	II- A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	22 OF 28	24.01 (b) (2) (V	Four (4) nos. of pneumatic emergency retract drives with matching crank tools for each type of soot blower shall be provided along with required length of connecting pipe, fitting etc. Service air points for actuation of pneumatic drive shall be provided at convenient locations	This infered "Emergency retraction tools (emergency hand crank) for each type soot blowers"	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
13	VI (PartA)	II- A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	22 OF 28	24.01 (b) (2) (V	Four (4) nos. of pneumatic emergency retract drives with matching crank tools for each type of soot blower shall be provided along with required length of connecting pipe, fitting etc. Service air points for actuation of pneumatic drive shall be provided at convenient locations	This infered "Emergency retraction tools (emergency hand crank) for each type soot blowers"	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.

EPC Pkg of Singrauli STPP, Stage-III (2X800 MW)							
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	SEC/ PART	SUBSEC.	PAGE NO.	CLAUSE NO.			
1	VI/A	IB	12 of 22	Annexure IV-2	DOMESTIC COAL CHARACTERISTICS: Ash(%) in Range of Coal Supplies-5%- BEST As per Proximate analysis:29% As per Ultimate analysis:31%	Please clarify the percentage of ash in 5% range of coal supplies.	BHEL to refer amendment at SG.2 in this regard
2	VI/A	II A-01	21 of 28	2.24.01 (2) (V)	One intrascope suitable for inspection of all steam generator pressure parts……	Bidder propose to offer alternative design of video scope, which is advanced and refined version of intra scope. Customer is requested to accept both intra scope & video scope for this application	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
3	VI/A	II A-01	24 of 28	2.30.00	Specific features catering to boiler reliability… 4. Ceramic removal pads insulation to be provided in area requiring frequent insulation removal like Burner panel area and soot blower area.	1. Burner Panel / Wind box will be insulated with Ceramic Fiber Blanket in place of Ceramic Pad type insulation as the application area needs flexible type of insulation material. 2. Soot Blower area is covered with a seal box, which is filled with Castable Refractory of Gr. A and over the seal box Ceramic Blanket insulation will be installed.	The details shall be discussed based on type of burner/system offered, during detail engineering stage, to have O&M flexibility. Bidder to supply in line with specified requirements.
	VI/B	A-13	7 of 8	2.03.00 (9, b)	Burner panel and Soot Blower area. - Ceramic Pad type insulation		
4	VI/A	II A-01	24 of 28	2.30.00	7. Boiler to be provided with vacuum cleaning system network to ensure proper hygiene. In this context portable system to capture the ash around the boiler peripheral surface shall be provided along with net worked transmission of captured ash to a common location. Following specific elevations of Boiler requiring installation of vacuum cleaning arrangement in Boiler Front, Rear, LHS and RHS are also to be covered other than required areas: 1) Penthouse Floor 2) Gooseneck area floor covering both first pass and backpass. 3) Boiler Scaffolding door floor covering both first pass and backpass 4) Top wall blower tier floor covering both first pass and backpass 5) Top burner top floor covering both first pass and backpass 6) Burner bottom floor covering both first pass and backpass 7) S Panel (approx.8.5 to 9M)	Customer requested to provide more details / reference of this system. Bidder understanding is to provide portable vacuum cleaners (7 Nos.) with de-dusting bin at each location.	Bidder to comply with the installation of vacuum cleaning arrangements as per the specifications requirement.
5	VI/A	II A-01	25 of 28	2.30.00	8. Safety valves and critical valves to be provided with temperature & sound monitoring (may be **IOT based**) to detect early passing and ensure reliability. Temperature point shall be provided on these valves/lines. For control and monitoring purposes the temperature values shall be taken between 50-75 Deg. C and sound value normally less than 75 db as trigger. The necessary provision shall be accordingly provided with alarm signal in the control room. Further, following may be noted w.r.t. above scope for temperature measurement on critical valves for passing a. All valves including drain and vents in critical piping such as M.S.Stop valves and its integral bypass valves, Boiler Startup vent, M.S.Pipe drains and vents, CRH & HRH pipe drain & vents b. All master drains of SH and RH spray station. c. Drains & Vents of circulation system d. Sonic leak detection system installation in Safety valves & ERV: 1) Installation of Sonic leak detection system installation in all SLSV and ERVs of critical piping's such as M.S. Safety Valves & ERV/ EBV, CRH SV, HRH SV & ERV/ EBV.	Safety valves with sound monitoring (IOT based) is not available. Hence safety valves shall be without sound monitoring. Safety valves & ERV with sonic leak detection is not available. Hence safety valves and ERV shall be without Sonic leak detection sys-tem	This shall be discussed during detail engineering in line with specification requirement.
6	VI/A	IV	2 of 76	1.00.01, (g)	Instruments for PG test and instruments for process control of similar applications are envisaged to be of same make and model having same accuracy level. …… Instruments to be used for PG test shall be additionally supplied over and above the instruments shown in tender P&IDs. PG test equipment being supplied, installed and commissioned for each unit, shall be retained by employer after completion of PG test. Control system loop tuning required to limit the variation of parameters during performance guarantee testing shall be completed prior to PG Test / initial operation. All PG test process parameters shall be made available in DDCMIS	Most of the boiler parameters will be recorded through plant instruments only. Flue gas & Air side temperature measurements will be done as per grid based method (In line with Code requirement) and due to corrosive environment, keeping more number of TCs & O2 tapping Probes continuously in the field may leads to failure/chocking of these instruments. Hence, as per specification, additional instruments like TCs and probes required for PG Test will be supplied along with main supply. However, installation of these instruments can be done at site just before the PG test. Calibrated Flue gas analyser will be brought to site for measuring flue gas composition @ ECO outlet / APH Outlet offline.	Specification requirement is clear. Bidder shall comply to technical specification.

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	SEC/ PART	SUBS EC.	PAGE NO.	CLAUSE NO.			
7	VI/B	A-02	6 of 67	3.02.01	The stability of the thermo-hydraulic design of the evaporator shall be demonstrated by the contractor by conducting stability analysis (both static and dynamic) of the finalized evaporator design. As a part of the static stability, interalia, the outlet temperature profile for each tube at the intermediate header inlet (if applicable) and vertical wall outlet header be calculated. The variance of tube outlet temperature shall be validated by carrying out site demonstration for the first boiler during commissioning by affixing metal temperature thermocouples at each evaporator outlet tube (at intermediate header inlet, if applicable, and vertical wall outlet). These thermocouples shall be over and above the requirements for metal temperature thermocouples specified elsewhere. In case the temperature variance in the evaporator tubing temperature during such demonstration is found to exceed the design considerations necessary modifications to the evaporator flow circuits shall be done by the contractor to control the tube temperatures. The mechanical design of the evaporator shall be carried out considering its primary stresses due to internal pressure as well as secondary stresses due to loads like weight membrane panel, buckstays, ash, and other elements loaded on evaporator, differential stresses restrained thermal expansion be-tween evaporator tubes and the evaporator support elements etc. The calculations in support of the same shall be submitted by the contractor.	Stability analysis (both static and dynamic) and other calculations of the evaporator design are proprietary in nature and the same will not be submitted.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
8	VI/B	A-01	6 of 92	1.05.02, (d)	The working fluid temperature to be considered for design of pressure part tubes starting from water wallbottom ring header upto and including the water wall outlet headers shall be arrived by adding an additional margin of minimum 40°C to the maximum predicted/expected fluid temperature in these pressure parts. The working fluid temperature to be considered for design of pressure parts starting from downstream of water wall outlet headers upto first stage of superheater attemperation shall be arrived by adding an additional margin of minimum 15 deg C to the maximum predicted/expected fluid temperature in these pressure parts. The margins as per IBR and other codes shall be taken over and above the working fluid temperatures so arrived. For the other pressure parts where no design margin is specified in the IBR and the above specified 40 °C or 15°C margin is not applicable, the working fluid temperature to be considered for design of pressure parts shall be arrived at by adding following margin to the maximum predicted/expected fluid temperature in these pressure parts: i) 5 °C for inlet headers and its connecting tubes, pipes downstream and upstream of attemperators and other pipes in pressure parts. ii) 15°C for outlet headers and their connecting tubes except at final super heater and final reheater outlet. iii) For final super heater and final reheater outlet a margin of 5°C shall be taken.	Pressure parts design temperature will be based on worst case of all operating conditions and over and above adding additional margin will increase the thickness of the pressure part components. For cyclic loading design thickness of components is important and should be as minimum as possible and hence margins will be as specified in the IBR. Customer is requested to remove requirement of additional margins specified in the specification.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
9	VI/B	A-01	7 of 92	1.05.02, (e)	(v) Upto & above 610 degree Celsius Austenitic stainless steel, SA- 213 UNS S30432 Shot Peened, or approved equivalent.	TP347H Shot peened also shall be included in the list.	The specifications are the minimum requirement. Bidder to comply specification requirement. Further, if the bidder feels to utilize any improved version towards overall reliability and hence the improved boiler performance then the same should be substantiated with proven references & data.
10	VI/B	A-01	8 of 92	1.05.04, (5)	Means of Temperature Control (b) REHEATERS* Tilting of burners/gas biasing/gas recirculation (gas to be tapped off after ID fans), spray water attemperation (utilising water tapped off from interstage of BFP)	Excess Air will also be used for RH Temperature control as per Bidders practice.	Agreed. However, the bidder to carfeully select the excess air requirement and within allowable limits as governed by the upstream and doownstream equipment sizing (like FD & ID fan) so as also not to increase the pressure drops, velocities & power consumption of the equipment/fans handling air & flue gas.
11	VI/B	A-01	9 of 92	1.05.05	(vi) Maximum depth of tube banks/sections in the direction of gas flow: 2 Meters or maximum soot blowing radius,whichever is lower.	Economiser bank depth may be allowed upto 2.5mtrs to include economizer future area addition with present for optimum design.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
12	VI/B	A-01	20 of 92	1.05.14.01, a,3	The flue gas flow & ash accumulation patterns at such part/low loads shall be studied based on the CFD/Physical model test (PMT) of ducts & ESP as part of this contract. The same along with contractor's experience of similar cases (boiler/coal& ash type etc.) shall be used for selecting the final gas velocities by the contractor.	Duct sizes are decided based on duct sizing criteria specified in the specification. Duct layout/ routing is based on space available. Equal distribution of gas flow is ensured by maintaining symmetrical arrangement. Physical model test (PMT) of ducts & ESP results as part of this contract is more accurate than CFD analysis. Hence CFD analysis for flue gas ducting is not envisaged.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
	VI/B	A-02	39 of 67	13.01.01	CFD Modeling		
13	VI/B	A-02	40 of 67	13.01.02	(c)For flue gas ducts downstream of ESP, additional fly ash loading on the surface or for one tenth of duct full of ash or for maximum possible accumulation of ash in the ductwork, under all normal, upset or abnormal operating conditions, whichever is higher.	Bidder will consider 1 ft of ash in the duct after ESP, since ash concetration in flue gas after ESP is minimal.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
14	VI/B	A-02	8 of 67	3.07.00	Provide stainless steel expansion markers/indicator on all the four furnace walls to monitor thermal expansion. Predicted thermal expansion at different levels to be indicated. In addition to local indicators, measurement system (4-20mA Output) for remote indication shall also be provided on all the four furnace walls.	Product meeting this specific requirement is not available with contacted vendors & online sources. No such system can be offered.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.

EPC Pkg of Singrauli STPP, Stage-III (2X800 MW)							
SL. NO	ENQUIRY SPECIFICATION				SPECIFICATION REQUIREMENT	COMMENTS / CLARIFICATIONS	REPLY
	SEC/ PART	SUBS EC.	PAGE NO.	CLAUSE NO.			
15	VI/B	A-02	12 of 67	6.04.00	The pump shall be suitable for cyclic operation as specified in part-A-01 of part-B of the technical specifications. The specific features adopted in this regard shall be brought out by the contractor like casing shape & design including its curvature/corner radius, stress concentration areas, no. of pieces/joints for a pump casing, materials adopted, performance monitoring etc. with proper justification. A CFD and FEM analysis to conform to specified cyclic requirements shall be carried out and furnished by the contractor alongwith the pump data sheet. Online monitoring requirements on the pump casing/heat barrier shall be recommended by the OEM like an array of thermocouples to give adequate indication of temperatures. The pump OEM shall share the test/inspection/feedback data of high load cycling power plant cases where the offered pump design has been successfully run.	Boiler recirculation pump is in operation during wet mode/less than minimum once through load only. Cyclic loading requirements are specified for the loads above minimum once through load, where pump will not be in operation. Hence these additional requirements are not required and not considered.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
16	VI/B	A-02	14 of 67	7.01.01, 10	Space Provision Keep provision of space for atleast 20% ad-dition of additional economizer and 10% for the reheater surfaces in future. The surface provisioning shall be flue gas upstream sec-tion of the economizer. Structure/hanger de-sign shall be suitable for loads due to these additional surfaces (filled with water) also.	Bidder understands, provision of space requirement mentioned is for the heating surfaces provided in second/back pass (horizontal banks). Customer to confirm.	The space requirements are mentioned for the type of heat transfer surfaces as specified. Bidder to comply with the specifications requirements.
17	VI/B	A-02	15 of 67	7.02.02	For continuous monitoring of temperature variation across the length of the headers six (06) thermocouples shall be provided on each Superheater header and reheater header except the final superheater header. The number of thermocouples for each final superheater header shall be 30. This re-quirement is over and above the require-ments specified in clause no. 7.02.01 above.	Thermocouples will be provided on inlet and outlet headers of Pendant / Horizontal superheater / reheater sections only. Headers of steam cooled Roof / Enclosures are not considered for this requirement. Further in case of split header (i.e. when a header is split to take care of expansion issues), it is considered as a single header for the purpose of thermocouples.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement. Split headers to be considered as separate headers for the purpose of thermocouples.
18	VI/B	A-02	41 of 67	13.01.06. (iii)	Pipe struts, trusses, bracing: ASTM A 53 or equivalent seamless steel pipe. Material conforming to equivalent Indian standard shall also be acceptable.	ERW pipe also may be accepted, since it is confirming to the functional requirement.	Bidder's proposal is not acceptable. Bidder to comply with the specification requirement.
19	VI/B	A-02	40 of 67	13.01.05 (a)	Minimum 8 mm thick steel plates for gas ducts upstream of ESP and minimum 6mm thick steel plates for gas ducts downstream of ESP.	• The duct to absorber inlet tapping is at downstream of ESP ducting. Hence, 6 mm thickness will be provided as per Section VI/Part B, Sub section A-02, page 40 of 67, clause 13.01.05. (a).	Bidder to refer amendment no SG.24 in this regard.
	VI/B	A-05	5 of 29	3.02.04	The duct to Absorber inlet shall be made of Carbon steel of minimum 7mm thickness. The duct from Absorber outlet to bypass duct & duct after by pass damper/gate to chimney inlet shall be made of cladded sheet of minimum 2 mm thickness of either Titanium (Grade 2 as per ASME SB265) or C-276 over 7 mm thick (minimum) mild steel base metal. Cladding shall be done to achieve the required quality as per ASTM B 898-11.		
20	VI/B	A-02	42 of 67	13.01.09 (b)	(2) …Such internal stiffeners for the flue gas duct between boiler and ESP shall be provided with erosion protection shields.	Internal stiffenetrs are provided with sufficient thickness to take care of the flue gas erosion. Separate erosion protection shields are not required.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
21	VI/B	A-02	49 of 67	15.18.00	The furnace should be provided with wall blowers so selected such that cleaning coverage per wall blower should not be more than 2m in radius and there should be no left out portion. One wall blower elevation below the lowest burner elevation shall be provided along with wall blowers located immediately above top elevation coal burners upto the horizontal plane at the furnace nose tip at entry to the radiant superheater…	Bidder does not recommend wall blowers upto the horizontal plane at the furnace nose tip. Wall blowers will be provided in furnace zone below intermediate header (spiral to vertical wall). Bidder Supplied wall blowers/LRSBs have a cleaning radius of 3m and working satisfactorily in all of bidder supplied boilers. Hence coverage of wall blower/LRSBs shall be with 3m cleaning radius.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
	VI/B	A-02	50 of 67	15.21.00	While deciding coverage of LRSBs the maximum coverage of LRSB shall not be con-sidered more than 2m of blowing radius		
22	VI/B	D-1-5	3 of 127	5.02.01	(i)Bidder shall integrate the Mill & Bunker Building with boiler supporting structure.	Boiler will be integrated with Mill building through interconnection platforms at required levels.	Bidder's proposal is acceptable.
23	VI/A	II D	9 of 13	1.00.01	All steel structures shall be fabricated in factory, transported and erected at site. All factory-fabricated structures shall have bolted field connections.	For SG bidder agrees to provide the type of bolts mentioned in this clause for field connections Field Structural Connections shall be as follows, 1) Main Columns : Fully Bolted Connections 2) Column to Beam : Connecting Cleat is welded with Column and bolted with Beams 3) Column to Vertical bracings : Gusset is Welded with Column and Bolted with Bracings. 4) Ceiling Structures : Connecting Cleat is bolted with girder and welded with beams 5) Horizontal truss and mid landings : Fully Welded Connections 6) Platforms : Fully Welded Connections 7) ID system structure : Fully Welded Connections	Bidder's proposal is not acceptable. Bidder to comply with the specification requirement.
	VI/B	D-1-8	10 of 20	8.07.00	All steel structures shall be fabricated in factory, transported and erected at site. All factory fabricated structures shall have bolted field connections.		
24	VI/B	A-01	13 of 92	1.05.08.03	Minimum Guaranteed Life of Coal Pulverizer Wear Parts ITEM MINIMUM LIFE IN EQUIVALENT HOURS (1) Seals 20000 (2) Grinding elements 8000 [See note (a) below] (Rolls/Balls and Rings/Race) (3) Mill discharge valves 15000 (4) Classifier cone and 25000 other items lined with Ceramic material (as applicable) (5) Classifier vane 25000 (as applicable)	For the offered mill: a) Seals are not applicable for offered mills. d) Classifier Cone not applicable for offered mills. e) Classifier vanes not applicable for offered mills.	The specified life details are for the wear parts as defined elsewhere in the specifications (refer Sub-section-VI, part-A also). Accordingly, the same shall be applicable. Further, the details shall be discussed during detail engineering based on the type of pulverizer offered and their corrseponding specific wear parts in line with the specifications requirements.

EPC Pkg of Singrauli STPP, Stage-III (2X800 MW)							
SL. NO	ENQUIRY SPECIFICATION				SPECIFICATION REQUIREMENT	COMMENTS / CLARIFICATIONS	REPLY
	SEC/ PART	SUBS EC.	PAGE NO.	CLAUSE NO.			
25	VI/B	A-02	25 OF 67	10.05.13 ii & iii	(ii) Grinding Rings/Race - Material with hardness 550 BHN (min.) at surface (with adequate chilled depth). (iii) Grinding balls/rolls - Material with hardness 350 BHN (min.)	Grinding rings/ Race is termed as bull Ring segments as per our offered design. Material of construction – Rolls' Inserts & Bull Ring Segments shall be of Sintered carbide. The inserts shall be bound with soft grey iron metal for the Rolls. The hardness difference shall be less than 100 BHN, but would not affect the performance of the same.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
26	VI/B	A-02	26 OF 67	10.05.17	Provide suitable arrangement for readily determining the oil level in the gear box(es) and all other lubricated parts.	lubrication for gearbox is circulating type lubrication system. Level is monitored in lube oil tank.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
27	VI/F	VI	8 OF 39	1.06.00 (13)	Hydraulic loading cylinder- 2 nos.	Not Applicable for offered mill (Functional Equvalent is Spring, which is already covered under 1.06.00(11)).	Bidder to provide the equivalent item in case of non applicability in provided system/equipment. Further, Bidder to refer clause 13.00.00 of sub section VI, Part A, Section VI of Technical Specifications. The specifications requirements are clear and bidder to comply the same.
28	VI/F	VI	8 OF 39	1.06.00 (15.4)	Mill Bottom- 1no.	Mill Bottom is applicable for mills with worm-Type gearbox. Mill is offered with planetary gear box. Functional equivalent is not applicable for offered mill.	Bidder to provide the equivalent item in case of non applicability in provided system/equipment. Further, Bidder to refer clause 13.00.00 of sub section VI, Part A, Section VI of Technical Specifications. The specifications requirements are clear and bidder to comply the same.
29	VI/F	VI	8 OF 39	1.06.00 (25)	Mill lower skirt-2 sets	Not applicable for offered mills. Functional equivalent is not applicable for offered mill.	Bidder to provide the equivalent item in case of non applicability in provided system/equipment. Further, Bidder to refer clause 13.00.00 of sub section VI,
30	VI/F	VI	8 OF 39	1.06.00 (27)	Classifier blades-1 set	Classifier blades are not applicable for offered mill (Dynamic Classifier is offered). Functional equivalent is not applicable for offered mill.	Bidder to provide the equivalent item in case of non applicability in provided system/equipment. Further, Bidder to refer clause 13.00.00 of sub section VI, Part A, Section VI of Technical Specifications. The specifications requirements are clear and bidder to comply the same.
31	VI/B	E-60	14 of 25	Sl No. 40	ELECTROMATIC RELIEF VALVE (ERV): BHEL is not appearing in the approved vendor list for Electromatic relief valve	BHEL is to be included as approved vendor supplying Electromatic relief valve.	To be discussed during detail engineering with relevant supporting documents

EPC Pkg of Singrauli STPP, Stage-III (2X800 MW)
Pre-Bid Clarifications

S. No.	Sec/Part	Sub- Sec	Page No.	Clause No.	Specification Requirement	Bidder's Query	REPLY
1	VI/A	II-A-03	1 of 1		Further, the related special monitoring & analytical instruments on account of bio-mass co-firing towards satisfactorily performance of the boiler & auxiliaries are also included.	Monitoring & analytical instruments for Biomass co-firing as appropriate for our design are considered in bidder's scope of supply. Ms. NTPC is requested to indicate any special monitoring & analytical instrument for bio-mass co-firing in tender specification.	Bidder to consider all required Monitoring & analytical instruments as per system/process requirements as specified in the specification.
2	VI/A	II-B	3 of 19	1.05.02	The LV switchgears is of Intelligent type for Motor controller.	Soot blowers are fractional HP motors powered from Soot blower MCC (SBMCC). Hence, bidder proposes to envisage conventional type Soot Blower MCC without Intelligent motor controller and associated specification requirements. M/s NTPC may please confirm.	Bidder proposal is accepteable.
	VI/B	B-0	7 of 15	3.06.00	f) For protection of motors below 30kW, MPCB (only Short-circuit release) and Intelligent motor controller (IMC) with current sensing module shall be provided.		
	VI/A	B-0	10 of 16	3.07.00	The Design Philosophy shall be as follows: (c) All LT Contactor controlled motor/heater feeders shall be controlled from DDCMIS through Intelligent Motor Controller (IMC) on profibus DP communication.		
3	VI/B	IIIC-07	5 of 6	1.01.00	Note: Heat resistant instrumentation cable shall have same specification as of G/F type instrumentation cable as specified above, except that insulation and outer sheath material shall be Teflon and cable shall be suitable for continuous operation at 205 Deg. C	Tender specification calls for outer sheath thickness of 1.8mm for Teflon insulated cables which is not inline with the JSS51038 standard, applicable for Teflon insulated heat resistant instrumentation cables(G/F type). M/s NTPC is requested to review and issue amendment on the outer sheath thickness requirement for Teflon insulated cables.	Bidder to refer Amendment No-C-17 in this regard
5	VI/B	II-A-02	8 of 67	3.07.00	In addition to local indicators, measurement system (4-20mA Output) for remote indication shall also be provided on all the four furnace walls.	M/s NTPC is requested to provide type of measurement and detailed specification for furnace thermal expansion measurment system.	Bidder shall comply to specification requirement and detail shall be discussed & finalised during detail engg.
6	VI/A	II-A-01	24 of 28	2.30.00	Flue Gas Ducts to be provided with strain gauge/ ash level meter at sharp bend locations of duct and common duct area after airpreheater.	M/s NTPC is requested to provide type of measurement and detailed specification for flue gas duct ash level meter.	Bidder shall comply to specification requirement and detail shall be discussed & finalised during detail engg.
7	VI/B	II-A-02	6 of 67	3.02.01	The variance of tube outlet temperature shall be validated by carrying out site demonstration for the first boiler during commissioning by affixing metal temperature thermocouples at each evaporator outlet tube (at intermediate header inlet, if applicable, and vertical wall outlet). These thermocouples shall be over and above the requirements for metal temperature thermocouples specified elsewhere.	M/s NTPC is requested to provide detailed specification for metal temperature thermocouples to be provided for this purpose.	Bidder shall comply to specification requirement and detail shall be discussed & finalised during detail engg.

EPC Pkg of Singrauli STPP, Stage-III (2X800 MW)
Pre-Bid Clarifications

S. No.	Sec/Part	Sub- Sec	Page No.	Clause No.	Specification Requirement	Bidder's Query	REPLY
1	SECTION-VI, PART-A	SUB SECTION-II A-01	8 of 28	2.11.01	.....all auxiliary steam piping to SCAPH, mill fire fighting etc. and drain piping from SCAPH tank(s) to atmospheric flash tank	There is a mismatch among three clauses. Bidder propose to take the condensate/drain from SCAPH directly to atmospheric flash tank .	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
2	SECTION-VI PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	23 of 92	1.05.18.01	The atmospheric flash tank shall be sized to receive following .....All drains from Steam Generator such as drains from water wall headers, attemperators headers, SCAPH drains, soot blowers drains, superheater, reheater etc.		
3	SECTION – VI, PART-B	SUB SECTION-A-02STEAM GENERATOR & AUXILIARIES INCLUDING ESP	21 of 67	9.02.02	Condensate from SCAPH, through SCAPH tank, shall lead to atmospheric flash tank in the boiler area		
4	SECTION – VI, PART-B	SUB SECTION-A-08 Power Cycle Piping	1 of 20	1.02.00	Bends used in Piping of BFP-T Exhaust to Condenser should be of Alloy Steel of A 691 Grade 2 – ¼ Cr class 21 / 22 or A – 691 grade 1- ¼ Cr Class 21 / 22	Material of Bends used in Piping of BFP-T Exhaust to Condenser shall be same as that of parent pipe.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
5	SECTION – VI, PART-B	SUB SECTION-A-08 Power Cycle Piping	7 of 20	1.07.00 Note 6	Bends in BFP-T Exhaust Piping to condenser shall be of alloy steel of A691-2¼Cr.CL- 21/22 or A691-1¼Cr. CL-21/22.		Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
6	SECTION – VI, PART-B	SUB SECTION-A-08 Power Cycle Piping	4 of 20	1.07.00	SPECIFICATION FOR PIPES & FITTINGS: Construction of Alloy steel fittings -Seamless	Construction of alloy steel TEE's may also be al-lowed from seamless forged components in line with spherical wye piece.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
7	SECTION – VI, PART-B	SUB SECTION-A-08 Power Cycle Piping	12 of 20	1.12.00 (2)	Bend thinning allowance shall be provided for all bends as per the recommendations of ASME B 31.1. However, bidder/contractor shall ensure that the minimum wall thickness at any point in the finished bend shall not be less than the calculated minimum straight pipe wall thickness.	Bend thickness for the various portion of the bends (Extrados, Intrados and straight) shall be as per ASME Cl 102.4.5 and latest IBR regulation.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
8	SECTION – VI, PART-B	SUB SECTION-A-08 Power Cycle Piping	14 of 20	2.07.00(1)	Each rod of a double rod hanger support shall be designed for the full hydro test load coming on the double rod hanger assembly	Each rod of a double rod hanger support shall be de-signed for operating load coming on the double rod hanger assembly.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.

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S. No.	Sec/Part	Sub- Sec	Page No.	Clause No.	Specification Requirement	Bidder's Query	REPLY
9	SECTION – VI, PART-B	A-9 Low Pressure Piping	4 OF 20	2.03.05	IS-2062 Gr.-E-250B/ASTM A-36/ASTM A-53 type 'E' Gr. B/IS-3589 Gr. 410 /IS-1239 Heavy.	IS -2062 GR-E-250 A may also be allowed	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.

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Pre-Bid Clarifications

S. No.	Sec/Part	Sub- Sec	Page No.	Clause No.	Specification Requirement	Bidder's Query	REPLY
1	Sec-VI/ Part-B	Sub-Sec-E-01	1	1.01.00 Pressure parts	All Plates above 40mm & all bar stock / forgings above 40mm dia shall be ultrasonically tested. For pressure parts, plates of thickness equal to or above 25mm shall be ultrasonically tested. Each part shall be subjected to a 100% normal Ultrasonic at the mill to meet minimum requirements of EN 10160:1999 / Equivalent ASTM standards	UT for bar stock & forgings >50mm will be carried out; For plates UT will be done for thickness >40mm only.	Bidder proposal is not acceptable. Specification requirement of Ultrasonic Testing is clearly specified for this application. Bidder to comply technical specification requirement.
2	Sec-VI/ Part-B	Sub-Sec-E-01	1	1.01.01 (a) Drum/Separator /Storage Tank	Each plate will be subjected to a 100% normalized and shear ultrasonic at the mill to meet the minimum requirements of EN 10160:1999. Elevated temperature tensile tests will also be carried out on plate material for each heat.	It is clarified that the Separator is made of seamless pipes and not plate formed pipes. It is understood that the requirement is applicable for PFP	Bidder understanding is not correct because the specification requirements are also applicable for Seamless pipes (as per applicable standard). This may be discussed during detailed engineering.
3	Sec-VI/ Part-B	Sub-Sec-E-01	1	1.01.01 (b) Drum/ Separator /Storage Tank	After cutting to size and removal of cuts, the plates will be subjected to magnetic particle test along the edges of the plate and areas adjacent to the cut outs.	It is clarified that the Separator is made of seamless pipes and not plate formed pipes. It is understood that the requirement is applicable for PFP	Bidder understanding is not correct. MPI to be carried out after the weld edge preperation. Bidder to comply technical specification requirement.
4	Sec-VI/ Part-B	Sub-Sec-E-01	1	1.01.01 (c) Drum/ Separator /Storage Tank	All forged connections shall be examined 100% UT before machining	Raw material will be procured with UT for bar stock & forgings >40mm	Bidder proposal is not acceptable. Specification requirement of Ultrasonic Testing for this applications is clearly specified. Bidder to comply technical specification requirement.
5	Sec-VI/ Part-B	Sub-Sec-E-01	1	1.01.01 (d) Drum/ Separator /Storage Tank	Fully machined connecting pieces of internal diameter 100mm and above, will be subjected to Magnetic Particle examination/ Liquid Penetrant Examination	Since all pipes of internal diameter 100mm and above, are UT tested ,MPI after machining is not envisaged.	Bidder proposal is not acceptable. Magnetic Particle examination/ Liquid Penetrant Examination are supplementary to Ultrasonic testing not substitutory.Bidder to follow the technical specification requirements.
6	Sec-VI/ Part-B	Sub-Sec-E-01	1	1.01.01 (e) Drum/ Separator /Storage Tank	Mechanical tests shall be carried out on specimens prepared from the production controlled Test plates for Longitudinal welds	It is clarified that the Separator is made of seamless pipes and not plate formed pipes. It is understood that the requirement is applicable for PFP	Bidder understanding is correct. Mechanical testing shall be carried out as applicable.
7	Sec-VI/ Part-B	Sub-Sec-E-01	1	1.01.01 (f) Drum/ Separator /Storage Tank	Mechanical tests will be conducted on the specimens from manhole cut outs of dished ends.	No tensile test is envisaged on manhole cut outs since forming is done using well established procedures.	Bidder proposal is not acceptable. Mechanical tests will be conducted as clearly specified. Bidder to comply technical specification requirement.
8	Sec-VI/ Part-B	Sub-Sec-E-01	1	1.01.01 (h) Drum/ Separator /Storage Tank	All butt welds will be subjected to 100% Ultrasonic testing / Radiography / PAUT+TOFD and Magnetic particle examination after stress relief.	For Gr 91/92- RT/UT and MPI will be done after Stress relief(SR). For other than Gr 91/92- Only RT will be done before SR. MPI on butt joints is not envisaged.	Bidder proposal is not acceptable. The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.

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Pre-Bid Clarifications

S. No.	Sec/Part	Sub- Sec	Page No.	Clause No.	Specification Requirement	Bidder's Query	REPLY
9	Sec-VI/ Part-B	Sub-Sec-E-01	1	1.01.01 (i) Drum/ Separator /Storage Tank	All full penetration welds will be subjected to Ultrasonic examination after stress relief.	Only full penetration nozzle welds will be subjected to UT. Also UT will be done after SR for Gr91/92 materials and before SR for materials other than Gr91/92.	Bidder proposal is not acceptable. The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
10	Sec-VI/ Part-B	Sub-Sec-E-01	1	1.01.01 (j) Drum/ Separator /Storage Tank	After stress relieving (SR) all welds, internal and external shall be examined by MPI methods depending on size and accessibility and all butt welds shall be subjected to 100% radiography.	RT is done before PWHT for Butt welds of materials other than Gr91/92. After PWHT, RT/UT & MPI done on all Butt welds of Gr91/92. MPI is done on all other welds.	Bidder proposal is not acceptable. The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
11	Sec-VI/ Part-B	Sub-Sec-E-01	1	1.01.01 (k) Drum/ Separator /Storage Tank	All connecting tubes & pipes shall be subjected to UT prior to fabrication as per BS 3602 or equivalent with longitudinal calibration notch of depth 5% of wall thickness (0.3 mm min. and 1.5 mm max.)	Tubes & Pipes of Thickness </= 3.6mm will be tested with ECT (Eddy current test)	In case of connecting Tubes & Pipes for Drum/ Seperator/ Seperator tanks will be >/= 3.6mm. Bidder to comply technical specification requirement. This may be discussed during detailed engineering.
12	Sec-VI/ Part-B	Sub-Sec-E-01	2	1.01.02 (b) Headers	All butt welds shall be subjected to RT/ PAUT+ TOFD examination. Also MPI after SR.	All butt welds shall be subjected to RT/ PAUT+ TOFD examination. Also MPI after SR. RT will be done on butt welds before SR for other than P91 /P92. RT+MPI will be done only on high alloy steels like P91 after SR. No MPI for other materials	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
13	Sec-VI/ Part-B	Sub-Sec-E-01	2	1.01.02 (c) Headers	All full penetration nozzle and attachment welds will be subjected to UT prior to stress relieving.	Prior to PWHT, UT is done on full penetration welds of carbon and low alloy steels. However, UT will be done on Gr 91/92 full penetration welds after PWHT. On all attachment welds only MPI will be done	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
14	Sec-VI/ Part-B	Sub-Sec-E-01	2	1.01.02 (g) Headers	All weld joints in alloy steel headers of P91, X20 & X22 and other material of P15E group and above shall be checked for hardness. 3% hardness check on welds shall be carried out on other alloy steel headers	Hardness check will be done only for P91 butt joints.	Hardness testing requirement is clearly specified. Bidder to comply technical specification requirement.
15	Sec-VI/ Part-B	Sub-Sec-E-01	2	1.01.03 (a) Tubes & Tube elements	Raw material of pipes/ tubes for water wall, super heater, re-heater, Economizer, riser, supply and connecting tubes including nozzle/stubs, connections for drum, headers, Pipe work etc. shall be subjected to 100% UT prior to fabrication as per EN10246:7 1996 or equivalent with longitudinal calibration notch of depth 5% of wall thickness (0.3 mm min. and 1.5mm max.) shall be adhered to	Tubes & Pipes of Thickness < 3.6mm will be tested with ECT (Eddy current test)	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement. This may be discussed during detailed engineering.

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Pre-Bid Clarifications

S. No.	Sec/Part	Sub- Sec	Page No.	Clause No.	Specification Requirement	Bidder's Query	REPLY
16	Sec-VI/ Part-B	Sub-Sec-E-01	2	1.01.03 (b) Tubes & Tube elements	All bent tubes/stubs shall be checked for ovality and thinning by ultrasonic method on first off and random checks on subsequent pieces. Critical bends, where PWHT is required after bending, shall be subjected to LPI/MPI. For FOT area reduction shall be calculated	First of trial (FOT) will be done for new sizes of tube bends as per established procedure. LPI/MPI will not be carried out on tube bends as the quantum is very high and their quality is established through FOTs..	Bidder proposal is not acceptable. Looking into criticality of component, Bidder to comply technical specification requirement.
17	Sec-VI/ Part-B	Sub-Sec-E-01	2	1.01.03 (c) Tubes & Tube elements	All tubes/stubs/panels/coils shall be checked for clearance by steel ball test and for cleanliness by sponge passage.	Flash butt-welded, Straight Tube butt-welded Tubes and Fusion welded panels will be checked by Steel ball test. Fin welded panels are inspected only with sponge. These are not applicable for stubs.	Bidder proposal is not acceptable. Looking into criticality of component, Steel ball test is to check the presence of any foreign material. Bidder to comply technical specification requirement.
18	Sec-VI/ Part-B	Sub-Sec-E-01	2	1.01.03 (d) Tubes & Tube elements	Finished butt welds shall be subjected to RT or UT. Wherever the code/standard/process specifies random sampling, the same shall be minimum 20%.	All Finished butt welds are subjected to RT/FT or UT prior to SR where SR is applicable, except Butt welds made of Flash Butts. Flash butt Welds are not amenable for NDE and hence tested by Destructive test on first of shift sample and visual examination.	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
19	Sec-VI/ Part-B	Sub-Sec-E-01	3	1.01.03 (e) Tubes & Tube elements	Minimum 10 % of the fillet joints shall be subjected to MPI/ LPI. However Fillet welds of material grades P 15E and above or any other new material grade subject to the acceptance by OWNER shall be subjected to 100 % MPI/ LPI.	10% MPI/LPI is done on attachment welds other than fin welded panel welds.	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
20	Sec-VI/ Part-B	Sub-Sec-E-01	3	1.01.03 (f) Tubes & Tube elements	Tubes and fabricated panels/ coils will be subjected to hydraulic pressure test including water wall panels, burner panels, re-heaters, super-heaters & economizers	Hydro test is done at Shop on 100% of the coils, spiral wall panels, SOFA Panels, Burner panels. For other panels: 100% for tube thickness ≤ 5.5mm; 20% for thickness > 5.5 mm and < 7 mm; NIL if thickness ≥ 7 mm. However, all items are covered under site hydro	Bidder proposal is not acceptable. Hydrotest is carried out to validate the design & strength of the component. Bidder to comply technical specification requirement.
21	Sec-VI/ Part-B	Sub-Sec-E-01	3	1.01.03 (g) Tubes & Tube elements	10% hardness survey on butt welds of P15E material group and above. 10% Hardness checks shall also be carried out on welds of T23 material grade. 3% Hardness checks shall also be carried out on welds of T22 material grade used in water wall panels	Hardness check will be done only for 10% of T23 & T91 butt joints.	Hardness testing requirement is clearly specified. Bidder to comply technical specification requirement.
22	Sec-VI/ Part-B	Sub-Sec-E-01	3	1.01.03 (h) Tubes & Tube elements	In case of RT of tube welds with DWDI (elliptical view) number of exposure shall be as per relevant code / plant standard and will not be less than two exposures for each weld wherever there is no limitation in carrying out two RT shots	Since more than 75% of the total butt joints in a boiler are scanned with 360 degrees' exposure and remaining joints are RT/UT tested amounting to 100%, which is much more than the requirement (20% min.) as specified in technical specification, bidder proposes to carry out RT of butt joints with single exposure. Also there were no adverse site feedback reported on account of shop joint failures.	Bidder proposal is not acceptable. It is a codal requirement.Bidder to comply technical specification requirement.
23	Sec-VI/ Part-B	Sub-Sec-E-01	3	1.01.04 (b) Boiler Piping	All pipe lengths shall be subjected to 100 % ultrasonic examination as per BS 3602 or equivalent with longitudinal calibration notch of depth 5% of wall thickness (0.3mm min. and 1.5mm max.) shall be adhered to.	Tubes & Pipes of Thickness < 3.6mm will be tested with ECT (Eddy current test)	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement. This may be discussed during detailed engineering.

EPC Pkg of Singrauli STPP, Stage-III (2X800 MW)
Pre-Bid Clarifications

S. No.	Sec/Part	Sub- Sec	Page No.	Clause No.	Specification Requirement	Bidder's Query	REPLY
24	Sec-VI/ Part-B	Sub-Sec-E-01	3	1.01.04 (c) Boiler Piping	All bent pipes shall be checked for ovality and thinning by UT on first off lot & on random samples for subsequent pieces. Outer surface of bends shall be subjected to MPI/LPI.	MPI will be done on outer surface of bends only if there are any abnormalities.	Bidder proposal is not acceptable. The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
25	Sec-VI/ Part-B	Sub-Sec-E-01	3	1.01.04 (d) Boiler Piping	The edge preparation for shop and Site welds in stainless steel/ alloy steel shall be subjected to dye penetrant check. Non-destructive examination of welds shall be carried out after post weld heat treatment, if any.	The edge preparation for shop and Site welds will be dye penetrant checked for P91 only.	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement. This may be discussed during detailed engineering.
26	Sec-VI/ Part-B	Sub-Sec-E-01	3	1.01.04 (e) Boiler Piping	All butt welds in alloy steel piping of P91, X20 & X22 shall be checked for RT/UT and MPI after SR. UT shall be of Digital Recordable Type	Butt welds in alloy steel piping of P91, X20 & X22 checked for RT/UT and MPI after SR. UT of digital recordable type not available.	Bidder proposal is not acceptable. UT of Digital Recordable Type is available. Bidder to comply technical specification requirement
27	Sec-VI/ Part-B	Sub-Sec-E-01	3	1.01.04 (f) Boiler Piping	All weld joints in alloy steel piping of P 91, X20 and X22 & other material of P15E group and above shall be checked for Hardness. For PWHT Induction Heating shall be deployed. However PWHT can be done in furnace also. 3% hardness check shall be carried out on welds of other alloy steel piping	Hardness test is envisaged on Gr91/92 butt weld only.	Hardness testing requirement is clearly specified. Bidder to comply technical specification requirement.
28	Sec-VI/ Part-B	Sub-Sec-E-01	03 & 04	1.01.04 (h) Boiler Piping	Non-destructive examination of welds shall be carried out in accordance with the relevant de-sign/manufacturing codes. However, as a minimum, the following requirements shall be met. Further statutory requirement, wherever applicable shall also be complied with. (1) Temperature > 400 Deg, C and/or pressure ex-ceeding 71 bar. (i) 100% RT/UT on butt welds and full penetration branch welds. (ii) 100% MPE. (2) Temperature > 175 Deg, C up to 400 Deg. C and/or pressure exceeding 17 bar and up to 71 bar. (i) 100% RT/UT on butt welds and full penetration branch welds for pipe dia more than 100 NB. (ii) 10% RT/UT on butt welds and full penetration branch for pipe dia up to 100NB. (iii) 100% MPE. (3) For all other pipes not covered above, shall be subjected 100% MPE/ DPT in case of under ground pipes and 10% MPE/DPT in case of piping above the ground. Further, 10% of butt welds of underground piping shall be subjected to RT. (i) Wherever SR/PWHT is envisaged for alloy steel, above NDTs shall be after SR/PWHT.	In line with IBR and other international standards, the bidder practice of NDE for piping is as follows; All NDE is before SR: For Boiler Piping ID ≤ 102mm: 5% RT 102 < ID ≤ 178 mm: 10% RT ID > 178mm : 100% RT For External Piping (RT) Cl I: 10 % for ID≤ 102 & 100% for ID > 102 Cl II: 10 % RT for all dia. For alloy steels (other than Gr 91/92), RT/UT for butt welds will be done before SR/PWHT and MPI for other welds after SR/PWHT. For Gr 91/92, RT/UT for butt welds and MPI for other welds will be done after SR/PWHT.	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.

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S. No.	Sec/Part	Sub- Sec	Page No.	Clause No.	Specification Requirement	Bidder's Query	REPLY
29	Sec-VI/ Part-B	Sub-Sec-E-01	4	1.01.05 (b) Fittings	Fittings shall be subjected to suitable NDT as per ap-plicable standards. However following minimum NDE requirement shall also be applicable/met. (i) For fittings X20, P-91 and material group P15E & above -100% MPI & -10% hardness check & -For fittings of 200 NB & above 100% UT/RT (ii) 100% UT/RT for fittings of 200 NB & above for boil-er feed discharge, re-circulation and spray piping of boiler feed system. (iii) 100% UT/RT for fittings of all other piping of size OD508mm & above.	Raw material pipes for fittings are UT tested. For Carbon and Low alloy steel fittings, UT & MPI at parting lines will be done only for Dia > 508 mm.	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
30	Sec-VI/ Part-B	Sub-Sec-E-01	04 & 05	1.01.06 (a) Valves	(a) Pressure retaining parts of valves shall be subject-ed to (min.) NDT as per Table 1. Valve Size NB in mm ANSI Class up to 300 ANSI Class above 300 up to 600 ANSI Class above 600 below 900 ANSI Class 900 & above & below 4500 Less than 50 Visual Visual Visual MPI 50 & above but below100 Visual Visual MPI MPI & RT (on 10%of valves on 100% area) 100 & above but less than 300 Visual MPI MPI & RT (on 10% of valves on change of section& weld ends) MPI & RT (on 100% area) 300 and above MPI MPI MPI & RT (on change of sec-tions & weld ends) MPI, RT on 100% area)	(a) NDT is as follows: 1. For Class 600 and above all sizes of Casting (body, bonnet) are 100% RT tested. 2. Vendors are developed to produce RT quality cast-ing for valves less than Class 600. Hence, MPI is not done. 3. In case of forged valves, UT is done for bar diameter above 40mm used for forging and MPI done for fin-ished forgings for all classes.	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
31	Sec-VI/ Part-B	Sub-Sec-E-01	5	1.01.07 Non Pressure Bearing Attachments	Load bearing welds shall be subjected to examination by ultrasonic testing (UT) and magnetic particle in-spection (MPI) techniques after stress relief (SR). No load bearing welds shall be subjected to MPI after stress relief. The toes of the welds adjoining the drum shall be ground smooth prior to stress relieving before carrying out this examination.	Load bearing attachment welds to be ultrasonic tested (UT) before stress relief (SR) and magnetic particle tested (MPI) after stress relief (SR).	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement. This may be discussed during detailed engineering.
32	Sec-VI/ Part-B	Sub-Sec-E-01	6	1.01.09 (a) Soot Blowers	Butt weld between nozzle and lance tube shall be subjected to 20% radiography tests.	Since it is a low-pressure line, MPI/LPI will be done on butt welds.	The requirements of NDT is clearly specified for this application. Bidder to comply technical specification requirement.
33	Sec-VI/ Part-B	Sub-Sec-E-01	6	1.01.10 (b) Steam Generator Startup Drain Re-Circulation pump	All forging and castings shall be subjected to 100% UT/RT and MPI/DP check.	All forging and castings (except impeller) shall be subjected to 100% UT/RT. Impeller will be DP tested.	The requirements of NDT is clearly specified for this application. Bidder to comply technical specification requirement.

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S. No.	Sec/Part	Sub- Sec	Page No.	Clause No.	Specification Requirement	Bidder's Query	REPLY
35	Sec-VI/ Part-B	Sub-Sec-E-01	7	1.01.10 (h) Steam Generator Startup Drain Re-Circulation pump	For heat exchanger for these pumps, butt welds on pressure parts shall be tested with RT/UT and all other welds shall be tested with MPI/LPI.	Butt welds of heat exchanger are non-critical and will be tested with MPI/LPI only.	The requirements of NDT is clearly specified for this application. Bidder to comply technical specification requirement.
36	Sec-VI/ Part-B	Sub-Sec-E-01	7	1.01.12 (a) Hydraulic Test	The Drum and all components which are to be subjected to fluid pressure shall be tested to minimum of 150% of the design pressure. In determining the value of the maximum attainable pressure for any component the contractor shall take in to account all relevant factors (e.g. safety valve blow off pressure, fluid surges, etc.) which may cause an elevation in the pressure	All pressure parts & valves shall be hydro tested at shop as per mutually agreed quality plans. However, all pressure parts and valves will be hydro tested at site after erection and assembly.	Bidder proposal is not acceptable. Hydrotest requirement is clearly specified. Bidder to comply technical specification requirement.
37	Sec-VI/ Part-B	Sub-Sec-E-01	9	1.02.05 (a) Coal Feeders	Any welds in the casing/ pulley fabrication will be checked with MPI.	100% air leak test will be done in place of MPI to ensure weld soundness for Casing.	Bidder proposal is not acceptable. MPI is for checking surface & sub-surface discontinuties. Air leak test is not a substitute for MPI. Hence Bidder to comply
39	Sec-VI/ Part-B	Sub-Sec-E-01	9	1.02.05 (d) Coal Feeders	Leak tightness test shall be done on individual feeder casing. Functional test for load cell shall be carried out.	These are type tests. If already done for the same design/size, it will not be repeated. Reports will be offered for review.	Bidder proposal is not acceptable. Leak test & Functional test are routinue Tests. Bidder to comply technical specification
40	Sec-VI/ Part-B	Sub-Sec-E-01	9	1.02.05 (e) Coal Feeders	Test for weighing accuracy, calibration and repeatability will be carried out at various speeds by a coal flow on one feeder.		No query is asked by Bidder.
41	Sec-VI/ Part-B	Sub-Sec-E-01	9	1.02.06 (c) Fuel Oil Pumps	All pumps including spare cartridges shall be subjected to performance test at the manufacturer's works under as near site conditions as possible and strip down examination after the test.	All pumps will be performance tested with test motors & oil available at the shop. However, performance curves will be extrapolated as per VDMA 24284 to show compliance to the required parameters.	Bidder proposal is not acceptable. Performance test of the pumps are very critical. Bidder to comply technical specification requirement.
42	Sec-VI/ Part-B	Sub-Sec-E-01	10	1.02.07 (3.01) EOT Crar	The plates of thickness 25mm and above shall be ultrasonically tested.	UT will be done for Plates of thickness > 40 mm.	Bidder proposal is not acceptable. Specification requirement of Ultrasonic Testing is clearly specified for this application. Bidder to comply technical specification requirement.
43	Sec-VI/ Part-B	Sub-Sec-E-01	11	1.02.11 (a) Steel Structure of Boiler, Mill Bunker build-ing including Coal bunkers, Coal transfer points. Coal conveyor gal-leries and support-ing trestles, Ducts, Hoppers, etc	Only material, which has been identified against mill, sheet or test certificates shall be used for construction. All plates above 40mm thickness shall be 100% UT tested	Materials of t>40mm will be identified with TC and for others traceability will be from specification and grade only.	Bidder proposal is not acceptable. Specification requirement of Mill Test certificates & Ultrasonic Testing is clearly specified for this application. Bidder to comply technical specification requirement.

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S. No.	Sec/Part	Sub- Sec	Page No.	Clause No.	Specification Requirement	Bidder's Query	REPLY
44	Sec-VI/ Part-B	Sub-Sec-E-01	11	1.02.11 (d) Steel Structure of Boiler, Mill Bunker build-ing including Coal bunkers, Coal transfer points. Coal conveyor gal-leries and support-ing trestles, Ducts, Hoppers, etc	(Edge for field weld shall be examined by MPI for plate thickness > 32mm. Edge for field weld for ceiling girders shall be examined by UT for 100mm from the edge).	UT will be done for Rolled sections/plates of thickness > 40 mm as per ASTM A435 or ASTM A578 (Acceptance Level A or B)	Bidder proposal is not acceptable. Specification requirement of Ultrasonic Testing is clearly specified for this application. Bidder to comply technical specification requirement.
45	Sec-VI/ Part-B	Sub-Sec-E-01	11	1.02.13 (a)	All raw materials used shall have co-related mill test certificate meeting mandatory checks of material specification.	Materials are procured with TCs meeting mandatory checks of material spec and issued to manufacture with correlation to Material specification. (Certified materials) used.	Bidder proposal is not acceptable. All the raw materials used shall have co-related mill test certificate. Bidder to comply technical specification requirement.
46	Sec-VI/ Part-B	Sub-Sec-E-01	12	1.02.13 (c) Hangers & Supports	Butt Welds shall be tested for UT and fillet welds shall be tested for MPI.	Butt Welds of size >32mm will be tested for UT. Fillet welds will be tested with MPI.	Bidder proposal is not acceptable. The requirements of NDT is clearly specified for this application. Bidder to comply technical specification requirement.
47	Sec-VI/ Part-B	Sub-Sec-E-01	12	1.02.13 (d) Hangers & Supports	Turn buckle/ pipe clamps/ Hangers of thickness > 25mm shall be checked by MPI/DPT on bent portion.	For Turn buckle & Pipe clamps – MPI 10% will be carried out on machined areas of dia ≥ 25mm.	Bidder proposal is not acceptable. The requirements of NDT is clearly specified for this application. Bidder to comply technical specification requirement.
48	Sec-VI/ Part-B	Sub-Sec-E-01	12	1.02.15 (a) Metallic expansion Joint for piping	Hydraulic pressure test shall be carried out on each pipe and expansion bellow.	Hydraulic pressure test is conducted at Site.	Bidder proposal is not acceptable. Hydrotest is very critical. Bidder to comply technical specification requirement.
49	Sec-VI/ Part-B	Sub-Sec-E-01	12	1.02.15 (c) Metallic expansion Joint for piping	All welds shall be subjected to 100% magnetic particle/dye penetrant check and butt welds shall be subjected to 100% radiographic testing.	All butt welds will be subjected to 10% magnetic particle/dye penetrant tested.	Bidder proposal is not acceptable. The requirements of NDT is clearly specified for this application. Bidder to comply technical specification requirement.
50	Sec-VI/ Part-B	Sub-Sec-E-01	12	1.02.15 (e) Metallic expansion Joint for piping	The bellows shall be subjected to movement test to establish suitability to perform satisfactorily in site conditions. During this test spring rate shall also be measured.	This test is not envisaged.	Bidder proposal is not acceptable. Movement test for the Bellows is critical. Bidder to comply technical specification requirement.

EPC Pkg of Singrauli STPP, Stage-III (2X800 MW) Pre-Bid Clarifications							
S. No.	**Sec/Part**	**Sub- Sec**	**Page No.**	**Clause No.**	**Specification Requirement**	**Bidder's Query**	**REPLY**
52	Sec-VI/ Part-B	Sub-Sec-E-01	13	1.02.16 (c) Quick Erect Scaffolding	Load Testing of Platform and Scaffolding structure (Vertical)	Load Testing of Platform and Scaffolding structure is type test. If already done for the similar design/size/capacity of 800 MW supercritical boilers by same vendor then reports will be submitted.	Bidder proposal is not acceptable. Load Testing of Platform and Scaffolding is a routinue test. Bidder to comply technical specification requirement

EPC Package for Singrauli STPP Stage III (2x800 MW)
Pre-Bid Clarification

S. No.	Sec/Part	Sub- Sec	Page No.	Clause No.	Specification Requirement	Bidder's Query	REPLY
1	SECTION – VI, PART-A	SUB-SECTION-IIC	5 OF 18	2.02.00	For CHP DDCMIS, necessary signal exchange with Employer's existing stage-I/II CHP DDCMIS system shall also be in Contractor's scope. For this signal exchange, the number of I/Os shall be considered as DI: 32 DO: 16 AI:8 AO:8. The exact scheme shall be finalized during detail engineering. Employer's stage-I/II CHP DCS/RIO panel shall be the terminal point.	Kindly provide the distance between existing Stage-I/ II CHP DDCMIS/RIO panel from the upcoming CHP DDCMIS.	In this regard, Bidder to refer GLP.
2	SECTION – VI, PART-A	SUB-SECTION-IIC	8 OF 18	2.04.5	Wireless Link: For the following system identified below,	Customer is requested to provide approximate distance between the locations between which wireless connectivity is to be considered.	In this regard, Bidder to refer GLP. Further details required if any shall be provided during detail engg.
3	SECTION – VI, PART-A SECTION – VI, PART-B	SUB-SECTION-IIC SUB-SECTIO IIIC-02C	10 OF 18 4 OF 5	2.06.00 1.01.16	Contractor to provide 5 nos. Fine pitch LED display (1 for Admin building gate, 1 for Main plant gate & 3 for locations to be finalized during detail engineering) for outdoor application and 5 nos. Indoor LED television (locations to be finalized during detail engineering). A fine pitch LED wall with minimum full HD resolution with pixel pitch of 4 mm or lower is to be provided.	Customer is requested to provide the size of Fine pitch LED display for outdoor application.	Size of Fine pitch LED display can be derived from the resolution and selected pixel pitch.
4	SECTION – VI, PART-A	SUB-SECTION-IIC	10 OF 18	2.05.01	The master clock shall synchronize DDCMIS of all the units and stand-alone common system and other DDCMIS subsystems at suitable intervals to maintain uniform time throughout the power station.	request NTPC to exclude time synchronization for employers distant plant DDCMIS from bidder scope.	Bidder's proposal is not acceptable. Specification requirement is clear. Bidder shall comply to technical specification.
5	SECTION – VI, PART-A	SUB-SECTION-IIC	16 OF 18	12.00.00	Common IP based network for IP based PA system and IP based CCTV system involving common components viz. network switches, network media and power supplies may be acceptable subject to employer's approval during detail engineering	Bidder proposes that CCTV and PA system shall be in different indipendent network as there are limited common vendors for both the system. NTPC to Confirm.	Bidder's proposal is not acceptable. Specification requirement is clear. Bidder shall comply to technical specification.
6	SECTION – VI, PART-A	SUB-SECTION-IIC	8 OF 18	2.04.04	This shall include all cables and accessories required for connecting Contractor's system up to the Employer's systems such as ERP etc.	Kindly provide the details (purpose, mode of connectivity and distances) regarding employer's system to be connected to the plant station LAN.	Same shall be furnished during detail engg.

EPC Package for Singrauli STPP Stage III (2x800 MW)
Pre-Bid Clarification

S. No.	Sec/Part	Sub- Sec	Page No.	Clause No.	Specification Requirement	Bidder's Query	REPLY
7	SECTION – VI, PART-B	SUB-SECTION-IIIC-04	32 OF 36	23.00.00	3D type Acoustic Frequency Wave Based Level Scanner System	we are unable to find more than one vendor for 3D type Coal Bunker Level Monitoring System (CBLMS). Bidder had open tendered for 3D type CBLMS twice, both the tenders resulted into single vendor for 3D type CBLMS. Bidder has supplied Strain-gauge type CBLMS for old and ongoing NTPC projects like, Unchahar, Gadarwara, Nabinagar, North Karanpura, and Darlipalli. In view of above, NTPC is requested to accept Strain Gauge type, Radar type or Ultrasonic type CBLMS in-lieu of 3D type CBLMS	Specification requirement is clear. Bidder shall comply to technical specification.

EPC Package for Singrauli STPP Stage III (2x800 MW)
Pre-Bid Clarification

S. No.	Sec/Part	Sub- Sec	Page No.	Clause No.	Specification Requirement	Bidder's Query	REPLY
1	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-IIA-06 TURBINE GENERATOR AND AUXILARIES	PAGE 6 OF 10		For Cat-I Performance / Acceptance tests to be conducted along with the initial operation: After the conductance of Performance test, the test results shall be calculated in Contractor's PG test program/ software. The correction curves shall be fed/inbuilt in the PG test program/software. Provision of manual entry of offline data which cannot be captured online (such as Relative humidity, atmospheric pressure, Coal analysis, Unburnt carbon in fly ash and bottom ash, Bottom ash / fly ash collection at various hoppers, Flue gas analysis (grid result) etc.) and necessary for calculation of PG Test result shall also be provided. The contractor shall submit the detailed test evaluation report of Performance test results to Employer promptly but not later than 7 days from the date of conductance of Performance test	SG PG Test report will be submitted within 7 days from receipt of Coal/Ash analysis report from testing lab. Trichy to comment on feasibility of inclusion of correction curves in PG Test software.	Bidder to expedite the process. Specification requirement is clear in this regard. Bidder to comply the same.
2	TECHNICAL SPECIFICATIONS SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	PAGE 33 OF 92		Designed to carry flooded weight (upto 1 meter above top row of condenser tubes) for hydraulic and hydrostatic testing of condenser without installation of temporary supports or bracing	Condenser weight bearing capacity should include the Weight for Water Fill Test during Air Ingress checking,upto Height of LP Turbine Blade Tip	Bidder to note the condenser mechanical sizing shall be as per stringent of two clauses 2.02.01/(vii) sub-section A-01 and 2.01.01(a) sub-section A-07. Bidder to comply specification requirement
3	TECHNICAL SPECIFICATIONS SECTION- VI, PART - B	SUB SECTION- G-04 STANDARD PG TEST PROCEDURE	Page 229 of 229		Following may be noted related to PG Test 1. PG test should be done at design coal GCV however for conductance of PG test coal GCV variance can be allowed from -10% to + 5% of design coal. Formula for applying correction shall be as per BSEN 12952-15 (2003	Variation of Coal GCV for PG test may be ensured with respect to guarantee parameters. Accordingly, a suitable correction curve/procedure is to be proposed.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply specification requirement.
4	TECHNICAL SPECIFICATIONS SECTION – VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	PAGE 2 OF 76		(g)Instruments to be used for PG test shall be additionally supplied over and above the instruments shown in tender P&IDs. PG test equipment being supplied, installed and commissioned for each unit, shall be retained by employer after completion of PG test.	Provisioning for the Supply of a Separate set of instruments for each Unit is not envisaged. NTPC to kindly delete this requirement	Bidder's understanding is not correct. Specification requirement is clear. Bidder shall comply to technical specification.
5	TECHNICAL SPECIFICATIONS SECTION – VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	PAGE 2 OF 76		(g) Control system loop tuning required to limit the variation of parameters during performance guarantee testing shall be completed prior to PG Test / initial operation.	Control system Loop tuning is not a pre-requisite to completion PG Test during initial operation. However, Tuning to achieve operational parameters will be ensured.	Bidder's understanding is not correct. Specification requirement is clear. Bidder shall comply to technical specification.

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1	1	VI/A	IID	9 OF 13	1.00.00	24 f. Safety Park	Kindly clarify the scope of Safety park building.	Safety park is in bidder's scope.Bidder to refer Section-VI, Part-A, Sub section-IID, Cl No 1.00.00, Sl no 24.f
2	2	VI/A	IID	8 OF 13	1.00.00	24 c. FQA Lab	Kindly clarify whether FQA Lab and FQA Building are same or different. In case the two are different buildings, kindly furnish the size/drawings, detailed specification, finishing schedule, etc. for FQA Lab.	FQA Lab and FQA Building are same buliding
3	3	VI/B	D-1-5	100 OF 127	5.31.00	FQA BUILDING		
4	4	VI/A	IID	4 OF 13	1.00.00	5 c. Packaged type Sewerage treatment plant (3 nos.) and sewage pumping station including sewage pump, sump & house and connection up to sewage treatment plants (either of owner or bidder); connection of sewage lines of all buildings under Bidder's scope to the nearest sewerage system.	Please furnish the details of existing sewerage network drawing with invert levels for interconnection of the proposed sewage lines to the existing nearest sewerage system.	Bidder to refer amendment Sl no D1-38
5	5	VI/A	IID	4 OF 13	1.00.00	5 k. Safety Control Room at onset of project works.	Bidder understands that the Safety Control Room at onset of project works will be a temporary structure. Kindly confirm.	Bidder's understanding is not correct. Safety control room building is permanent building.
6	6	VI/A	IID	21 OF 22	N	24/7 safety control room shall be functional from initial stage of the project construction. Temporary safety control room for the same is to be made functional within three (3) months of LOA. Permanent safety control room shall be made functional within six (6) month from LOA	For Permanent Safety Control Room kindly furnish the clear height of the building to be adopted.	Bidder to note that clear height of permanent safety control room building shall be 4.5m.
7	7	VI/B	D-1-5	100 OF 127	5.33.00	SAFETY CONTROL ROOM Safety control room shall be a single storyed RCC framed building of minimum area 60sqm to accommodate equipments and personals as mentioned in C&I chapter for 24X7 operation. Additionally, it shall have ladies and gents toilet, space for water cooler and Pantry.		
8	8	VI/B	D-1-4	1 OF 4	4.01.00	b) Face of the buildings and facilities are located in such a way so as to have an offset of minimum 15m with respect to center line of double lane road and 12 meter with respect to center line of single lane road.	Bidder requests to enforce this clause subject to the layout constraints. At few locations, this may be difficult to maintain. Please confirm.	Bidder to comply with specification requirement.Minor modification, if any, required due to layout constraint will be dealt with during detail engineering
9	9	VI/B	D-1-5	1 OF 127	5.01.00	d) … Architectural design of all power plant building shall be suitable for installation of solar photovoltaic panel on rooftop for renewable energy purpose.	Bidder understands that if live load in excess of solar panel loads have been considered on all Power Plant Building roofs, then solar panel load need not be applied separately. Please confirm.	Bidder proposal is not acceptable. The roof to be designed considering solar module mounted structure and its supporting foundation resting on the roof without any connection with the roof. Also, overturning effect of wind on solar module mounting structure and foundation to be considered for design.
10	10	VI/B	D-1-5	1 OF 127	5.01.00	i) All the buildings and site development including landscaping shall be designed to take care of rain water harvesting & ground water recharging. Development of rain water harvesting scheme for the project and obtaining approval of the scheme from Central Ground Water Board is in Bidder's Scope.	Bidder's scope of work pertaining to rain water harvesting & ground water recharging shall be applicable only for Stage-III buildings covered in the specification. Please confirm.	Bidder understanding is correct.
11	11	VI/B	D-1-5	2 OF 127	5.01.00	j) For Control Rooms, CER, UPS Charger Room area in MPH dry wall construction technology shall be incorporated…	Please furnish detailed specification for dry wall construction technology.	Bidder to refer Section-VI, Part-B, Sub Section D-1-9, Cl No 9.07.04 for dry wall construction technology. Also, bidder to refer amendment Sl no D1-39
12	12	VI/B	D-1-5	2 OF 127	5.01.00	j) For Control Rooms, CER, UPS Charger Room area in MPH dry wall construction technology shall be incorporated…	Bidder understands that the said provision is to be incorporated only for internal walls of the Control Rooms, CER, UPS Charger Room area in MPH which are A/C areas. Please confirm.	Bidder's understanding is not correct.Dry wall construction technology to be used in external walls only in Control room, CER and UPS Charger Area in MPH.

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13	13	VI/E	-	-	-	TENDER DRAWINGS: SITE LEVELING PLAN 1150-001-POC-A-003	Kindly specify the length and minimum cross-sectional dimensions to be adopted for RCC retaining wall along diversion nala pertaining to SECTION-A-A.	Retaining wall coordinate has been marked in tender drawing SITE LEVELING PLAN 1150-001-POC-A-003. Length of retaining wall shall be as per coordinate marked. The cross sectional domention shall be as per design requirement during detail engineering.
14	14	VI/E	-	-	-	TENDER DRAWINGS: SITE LEVELING PLAN 1150-001-POC-A-003	Kindly specify the length and minimum cross-sectional dimensions to be adopted for RCC retaining wall along nala pertaining to SECTION-X-X.	Retaining wall coordinate has been marked in tender drawing SITE LEVELING PLAN 1150-001-POC-A-003 pertains to section X-X. Length of retaining wall shall be as per coordinate marked. The cross sectional domention shall be as per design requirement.
15	15	VI/B	D-1-4	2 OF 4	4.02.00	Construction Stores: Please refer tender drawing no. 1150-999-POC-006 titled “Construction Store” (Pre- Engineered Building) - Plan, Elevation and Section”.	The said drawing has not been furnished with tender specification. Kindly clarify.	Bidder to refer amendment Sl no D1-35
16	16	VI/B	D-1-5	99 OF 127	5.26.00	O&M STORE BUILDING: Architectural Features …The minimum clear floor area of Heavy material storage hall shall be approximately 20% of the total area of the Permanent store with bay width of 15m Heavy material store shall have column free space for easy movement of materials…	Kindly clarify the minimum clear height to be considered for Heavy Material Storage Hall.	The minimum clear height to be considered for Heavy Material Storage Hall shall be 12.5 mtrs
17	17	VI/B	D-1-5	99 OF 127	5.26.00	O&M STORE BUILDING: Architectural Features …The minimum clear floor area of Light Material Storage Hall (with 3 tier storage) shall be approximately 33% of the total floor area of the Permanent Store. The height of the Light Material Storage Hall (with 3 tier rack system) from ground floor slab to bottom of roof truss shall be 10.0m…	Kindly clarify the bay width to be considered for Light Material Storage Hall.	The bay width to be considered for Light Material Storage Hall shall be 15 mtrs.
18	18	VI/B	D-1-5	99 OF 127	5.26.00	O&M STORE BUILDING: Architectural Features Total Floor area of the Permanent store building shall be 3000sqm. …The General Light Material Store shall be two storied building, completely covered with 250mm thick brickwork, doors, windows & rolling shutters. The plan of the building shall be rectangular in shape with minimum floor area of approximately 20% of the total floor area of the Permanent Store…	For General Light Material Storage Hall, minimum floor area of approximately 600 SQM is the total floor area of the two storied building. Please clarify.	For General Light Material Storage Hall, minimum floor area of approximately 600 SQM is for each floor totaling 1200sqm for 2 storied.
19	19	VI/B	D-1-5	101 OF 127	5.35.00	NON-BIODEGRADABLE WASTE STORAGE BUILDING: The Building for waste storage shall be as per Tender drawing	The said drawing has not been furnished with tender specification. Kindly clarify.	The building is not in bidder's scope. Bidder to refer amendment Sl no D-1-29
20	20	VI/A	IID	9 OF 13	1.00.00	26. Sheds for O&M/Workers, … responsibility of the bidder till COD of all the units.	"Kindly clarify the following: 1. Sheds for O&M/Workers is permanent structure or temporary structure. 2. In case of permanent structure, please furnish the size, detailed specification, finishing schedule etc.	1) Sheds for O&M/Workers are permanent structures. Bidder to also refer amendment sl no D-1-18 2) Bidder to refer Tender Drwg No :- 1150-999-POC-A-020 " WORKER'S REST ROOM: TYPICAL ARCHITECTURAL DETAILS"
21	21	VI/A	IID	9 OF 13	1.00.00	27. Facilities for rainwater harvesting in Plant area and other buildings in Bidder’s scope.	Please provide the detailed specification for the rain water harvesting in plant area and other buildings in bidder’s scope.	Bidder to refer Section-VI, Part-B, Sub Section D-1-5, Cl No 5.01.00 (i).Development of rainwater harvesting scheme for the project and obtaining approval of the scheme from Central Ground water board is in bidder’s scope
22	22	VI/B	D-1-5	1 OF 127	5.01.00	i) All the buildings and site development including landscaping shall be designed …	Referred clauses are contradictory, bidder understand that Landscaping is not in bidder's scope.	Bidder understanding is correct. Landscaping is not in bidder's scope.

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23	24	VI/A	III	3 OF 3	4.03.00	TERMINAL POINTS & EXCLUSIONS: c) Landscaping		
24	25	VI/B	D-1-1	1 OF 2	1.01.00	The scope shall also include setting up by the Bidder a complete testing laboratory in the field to carry out all relevant tests for structural steel, reinforcement steel & reinforced concrete (RCC) works.	Kindly clarify the following: 1. Testing laboratory is a permanent structure or a temporary structure. 2. In case of permanent structure, please furnish the detailed specification, drawings, finishing schedule etc.	1) Testing laboratory is to carry out field quality test by the bidder during construction stage. It is a temporary structure.
25	26	VI/B	D-1-9	31 OF 36	9.17.00	TABLE–A INTERIOR FINISHING SCHEDULE 9. First Aid Centre with Creche Facilities.	Bidder understands that the First Aid Centre with Creche Facilities is not in bidder's scope. In case if the same is in bidder's scope please furnish the size/drawings, detailed specification, type of building, etc.	Bidder to refer Section-VI, Part A, Sub section IID, Cl No 2.01.00 (d) and Cl 2.02.00 (9)
26	27	VI/B	D-1-9	31 OF 36	9.17.00	TABLE–A INTERIOR FINISHING SCHEDULE 8. Rest Room for O&M Workers	Kindly clarify the following for “Rest Room for O&M Workers”, “Sheds for O&M/Workers” and “Worker’s Restroom”: 1. These buildings are different or same buildings. 2. These buildings are temporary or permanent structures. 3. Size, number and location of each buildings (In case of permanent structures). 4. If these buildings are permanent then please furnish the detailed specification, finishing schedule, type of structures, etc.	1) Rest Room for O&M Workers”, “Sheds for O&M/Workers” and “Worker’s Restroom” are same buildings. 2) These buildings are permanent structure. 3) Bidder to refer Section-VI, Part A, Sub section IID, Cl No 1.00.00 Sl No 26 4)Bidder to refer Tender Drwg No :- 1150-999-POC-A-020 "WORKER'S REST ROOM: TYPICAL ARCHITECTURAL DETAILS"
27	28	VI/A	IID	9 OF 13	1.00.00	26. Sheds for O&M/Workers, … responsibility of the bidder till COD of all the units.		
28	29	VI/E	-	-	-	TENDER DRAWINGS: WORKER’S RESTROOM 1150-999-POC-A-020		
29	30	VI/B	D-1-8	9 OF 20	8.05.01	Fencing with gate shall be provided around fuel oil area, and other areas wherever necessary due to security, safety, and statutory requirements as per following specifications. However, for isolation between existing station/township and the project, …	For isolation between existing station and the project, please clarify whether the said fencing with gate shall be permanent or temporary in nature.	The referred fencing with gate shall be permanent
30	31	-	-	-	-	General	Kindly clarify/furnish the location(s) of the following facilities in General Layout Plan (GLP). 1. Rest Room for O&M Workers 2. Sheds for O&M/Workers 3. Worker’s Restroom 4. Worker’s Accommodation Buildings 5. Non-Biodegradable Waste Storage Building	Sl No 1,2,3 are the same facilities. For location bidder to refer Section-VI, Part A, Sub section IID, Cl No 1.00.00 Sl No 26. For Sl no 4 , location to be decided by the bidder in area arranged on its own. For Sl No 5, bidder to refer amendment Sl no D-1-29.
31	32	VI/B	D-1-8	1 OF 20	8.01.02.6	Anti-termite constructional measures and chemical treatment measures shall be given to all vulnerable areas susceptible to termite including column pits, wall trenches, foundations of buildings, filling below the floors, etc., as per IS 6313 and other relevant Indian Standards.	Please clarify/furnish the list of vulnerable structures/buildings where anti-termite treatment shall be given.	Anti-termite constructional measures and chemical treatment measures shall be given to all vulnerable areas susceptible to termite.
32	33	VI/A	IID	5 OF 13	1.00.00	5. Infrastructure Works: h. Construction store (to be used by contractor in construction stage and to be handed over to owner in good condition).	The referred clauses are contradictory. Bidder understands that out of the several covered and open temporary construction stores (as per bidder’s requirement) constructed by the bidder for the storage of material during construction phase, 4 (four) Nos. of Construction Stores (Pre- Engineered Building) with 1050 Sq.m. floor area of each store is to be retained after completion of work and shall be handed over to owner in good condition for use by the owner in O&M stage. Kindly clarify/confirm.	Bidder's proposal is not acceptable.
33	34	VI/A	IID	11 OF 13	2.02.00	CONSTRUCTION FACILITIES: 3. Construction of following temporary facilities of bidder b) Construction stores (covered) & open stores as per his requirement.		
34	35	VI/B	D-1-4	1 OF 4	4.02.00	Construction Stores: 4 Nos. of Construction Stores with 1050 Sq.m. floor area of each store shall be constructed. These will be pre-engineered Buildings with hall for storage of materials. These stores shall be used by the contractor for the storage of material in construction phase, and after completion of work shall be handed over to owner in good condition for use by the owner in O&M stage…		

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35	36	VI/B	D-1-5	1 OF 127	5.01.00	i) All the buildings and site development including landscaping shall be designed to take care of rain water harvesting & ground water recharging.	Due to limited space, only ground water recharging is envisaged for Stage III facilities without any provision of storage pond for rain water harvesting. Please confirm/clarify.	Bidder's proposal is not acceptable. Bidder to refer Section-VI, Part-B, Sub Section D-1-5, Cl No 5.01.00 (i). Development of rainwater harvesting scheme for the project and obtaining approval of the scheme from Central Ground water board is in bidder's scope
36	37	VI/B	D-1-9	24 OF 36	9.17.00	TABLE–A INTERIOR FINISHING SCHEDULE 2. Service Building/Administration Building	Bidder understands that Administration Building is not in bidder's scope. Kindly confirm/clarify. In case if Administration Building is in bidder's scope, kindly furnish the architectural plan and elevation drawings for the building, detailed specification, type of building, etc.	Bidder's understanding is correct.
37	38	VI/B	D-1-5	8 OF 127	5.02.07	ESP Control Building: i. Salient Features ESP Control Building can either be structural steel superstructure or RCC framed structure with RCC floors at ground floor level and upper levels…	The referred clauses are contradictory. The following are bidder's understanding. 1. In case steel framed ESP Control Building is considered; Internal columns and walls in Control Room shall be encased with Aluminium Composite Panel (ACP) cladding. However, Internal columns and walls in Control Room shall be plastered and painted in case of RCC framed ESP Control Building. 2. In case steel framed ESP Control Building is considered; External finish shall be of Aluminum Composite Panel Cladding except Transformer area where premium smooth Acrylic Paint shall be provided. However, in case RCC framed ESP Control Building is considered; External finish shall be of Premium Acrylic Smooth exterior paint with silicon additives over suitable primer of Water Proof Cement Paint over plastered surface. Kindly confirm/clarify.	Bidder's query is not clear.Bidder to comply with requirements of Technical Specification.
38	39	VI/B	D-1-9	35 OF 36	9.17.00	TABLE –B EXTERIOR FINISHES SCHEDULE 2. Building with concrete frame work, etc.: Premium Acrylic Smooth exterior paint with silicon additives over suitable primer of Water Proof Cement Paint over plastered surface.		
39	40	VI/B	D-1-5	8 OF 127	5.02.07	ESP Control Building: iii. Architectural Features …Internal columns in Control Room shall be encased with Aluminium Composite Panel cladding. …External finish shall be of Aluminum Composite Panel Cladding except Transformer area where premium smooth Acrylic Paint shall be provided.		
40	41	VI/B	D-1-9	27 OF 36	9.17.00	TABLE–A INTERIOR FINISHING SCHEDULE 3. ESP control building / Air compressor house / Safety Control Room: c) Control Room: Wall finish: Aluminium composite panel cladding on walls and columns in ESP Control Room Building		
41	42	VI/B	D-1-5	14 OF 127	5.02.10	Service Building: Architectural Features: This building shall be four storeyed (Ground + 4 stories above) and shall be provided with floor area of 3500sq.m (excluding stilt parking) with RCC framed structure…	Bidder's understanding is as follows. · Ground floor: EL 0.00M: Stilt parking. · First floor: EL 4.25M: Total floor area inclusive of atrium = 875 m2 · Second floor: EL 8.50M: Total floor area inclusive of atrium = 875 m2 · Third floor:EL 12.75M: Total floor area inclusive of atrium = 875 m2 ·Fourth floor: EL 17.00M: Total floor area inclusive of atrium = 875 m2 Please confirm/clarify.	Bidder's understanding is not correct.Floor area of individual floors to be decided during detail engineering.
42	43	VI/B	D-1-5	14 OF 127	5.02.10	Service Building: Architectural Features: This building shall be four storeyed (Ground + 4 stories above) and shall be provided with floor area of 3500sq.m (excluding stilt parking) with RCC framed structure…	Kindly furnish the architectural plan and elevation drawings for the Service Building.	Development of architectural plan and elevation drawings for the Service Building is in bidder's scope and shall be developed by the bidder during detailed engineering.

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43	44	VI/B	D-1-9	12 OF 36	9.10.09	All internal paints shall be of low VOC (Less than 50 g /L) content conforming to GRIHA rating for reduction of VOC content.	Kindly clarify for which building(s) the said internal paints are applicable.	Bidder to refer amendment Sl no D1-42
44	45	VI/B	D-1-9	15 OF 36	9.11.11	The glass must be minimum 14mm clear (MADE IN INDIA) 120 min fire rated... The glass shall be tested and certified for no formation of bubbles or yellowing after 5000 hours of exposure to UV radiation by TUV Rheinland as per EN 12543-4. The base glass and finished glass must made in India.	Bidder understands that this is a special type of glass based on customization. 14 mm thickness is rarely manufactured and used for application area mentioned in the specification. Also, it is processed by only one manufacturer. Bidder proposes to allow 11mm to 13mm thick glass as it is processed by 3 to 4 manufacturers in the market, to avoid monopoly.	14 mm thick is minimum thickness of the glass. Bidder may go for higher thickness.
45	46	VI/B	D-1-9	17 OF 36	9.12.06	The Partitions shall offer C4 level of wind resistance when tested as per EN12211 and shall provide class 4 level of air permeability as per EN 1026. The Partitions shall also be tested for class 5 of impact resistance when tested as per EN 13049. The Partitions shall also be tested for class 4 level of Mechanical strength when tested as per EN13115. The Partitions shall have water tightness level of 8A when tested as per EN 1027. Partitions shall be of Makes – Saint Gobain, Acodor, IGI, Matrix, Tata Pravesh.	Bidder understands that the mentioned makes are not providing complete fire rated system with test certificate and also some of them are not even the processor of fire rated glass except Saint Gobain. As it is a monopolistic item of SAINT GOBAIN, bidder requests to provide some more glass manufacturers names to avoid monopoly in the market with the proposed glass thickness of 11 to 13 mm in place of 14 mm only as 2 hours' fire rating can be achieved by 11mm thick glass also.	Bidder's proposal is not acceptable.
46	47	VI/B	D-1-9	24 OF 36	9.17.00	TABLE–A INTERIOR FINISHING SCHEDULE 1 (w) Battery Room - Acid and alkali resistant tile.	For Lead acid batteries, acid alkali resistant tiles shall be provided and for Ni-Cd & dry batteries vitrified tiles shall be provided. Please confirm/clarify.	Bidder's proposal is not acceptable.
47	48	-	-	-	-	General	14 mm thick fire rated glass is produced by SAINT GOBAIN only. To avoid monopoly in the market, Bidder proposes to allow 11mm to 13mm thick glass as it is processed by 3 to 4 manufacturers in the market, to avoid monopoly. Please confirm/clarify.	14 mm thick is minimum thickness of the glass. Bidder may go for higher thickness.
48	49	VI/A	IIA-04	6 OF 7	11.01.00	Contractor shall provide buildings for Limestone Grinding System, Compressors, Gypsum Dewatering System & FGD control room. Slurry re-circulating pumps & Oxidation blowers shall be located in a shed provided with roof sheeting…	The referred clauses are contradictory with reference to Slurry re-circulating pumps & Oxidation blowers. Kindly clarify whether the same shall be kept in steel framed building (sides covered) or steel framed shed (sides open).	Slurry re-circulating pumps & Oxidation blowers to be kept in steel framed shed (sides open)
49	50	VI/B	D-1-5	26 OF 127	5.06.02	Buildings for FGD System: FGD System may comprise of various buildings based on the functional requirement viz. MCC/Control room building, Gypsum dewatering building, re-circulating pumps & oxidation blowers building, Gypsum storage shed etc.		
50	51	VI/B	D-1-1	1 OF 2	1.01.00	Preliminary geotechnical investigation in the proposed area has been carried out by the Owner and the bore-log data is furnished in Annexure 'C'.	Both the clauses are contradictory. Please inform whether geotechnical data furnished is preliminary or detailed.	Bidder to refer amendment Sl no D1-21 for section-VI, part-B, Sub section D-1-1, Cl no 1.01.00
51	52	VI/B	CIVIL WORKS FOUNDATION SYSTEM	1 OF 10	7.01.00	Owner has carried out detailed geotechnical investigation at the project site. Bore logs data and Bearing capacity for design of foundations are given at Annexure - C		
52	53	VI/B	D-1-4	3 of 4	4.03.01	Contour map and spot levels of the area based on the preliminary survey carried out by Owner is enclosed for the purpose of guidance of Bidder. Refer tender drawing no. "1150-999-POC-F-002".	Contour map and spot level drawings are in pdf only. Please furnish the same in Auto Cad format.	AutoCad format contour map will be provided during detailed engineering.
53	54	VI/B	D-1-4	2 of 4	4.03.01	It is proposed that for the purposes of site levelling the entire plant and associated areas will be divided into various blocks as defined in the drawing no. 1150-001-POC-A-003 titled, "Site Levelling Plan". Each block shall be finished to the formation level as specified in drawing.	Please furnish the "Site Levelling Plan" in Auto Cad format.	AutoCad format Site Levelling Plan will be provided during detailed engineering.
54	55	VI/B	CIVIL WORKS FOUNDATION SYSTEM	2 OF 10	7.02.02	In case open foundations are adopted, following shall be adhered to…. b) In case of soil, minimum founding level shall be 1.0m below Finished ground level (FGL) or, 1.0m below Natural ground level (NGL) whichever is lower…	In case of soil, minimum founding level shall be 1.0m below existing ground level. Please confirm.	Bidder's understanding is not correct. Bidder to comply with requirement of Technical Specification.

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55	56	VI/B	CIVIL WORKS FOUNDATION SYSTEM	2 OF 10	7.02.02	In case open foundations are adopted, following shall be adhered to..... b) ... In case of rock, minimum founding level shall be 1.0m below Finished ground level (FGL) or, 0.6m embedment in rock whichever is lower.	In case rock is encountered between 0 to 1m below ground level, founding level shall be at the top of encountered rocky strata. For such cases, bearing capacity will be worked out based on the geotechnical investigation report.	Bidder's understanding is not correct. Bidder to comply with requirement of Technical Specification.
56	57	VI/B	CIVIL WORKS FOUNDATION SYSTEM	3 of 10	7.03.00	Pile shall be socketed into weathered rock. A socketing length of 6 times diameter of pile into rock shall be ensured. Pile shall not be short pile.	In case of pile foundation, socketing into the rocky strata shall be as per the approved geotechnical report during detailed engineering. Further, pile can be short or long depending upon the sub-stratification. Please confirm/clarify.	Bidder's understanding is not correct. Bidder to comply with requirement of Technical Specification.
57	58	VI/B	CIVIL WORKS FOUNDATION SYSTEM	6 of 10	7.04.03	Backfilling in Power House & Boiler Area Backfilling around foundations, trenches, sumps, pits, plinths, etc. shall be carried out with natural sand/ sand manufactured from other than natural sources as specified elsewhere in the technical specification in layers not exceeding 300 mm compacted thickness and each layer shall be compacted to minimum 80% of relative density. Backfilling in other area Backfilling around foundations, pipes, trenches, sumps, pits, plinths, etc. shall be carried out with approved material in layers not exceeding 300 mm compacted thickness (higher thickness of layers upto 500mm with heavy mechanical compacting equipment) and each layer shall be compacted to 90% of standard proctor density for cohesive soils and to 80% of relative density for non-cohesive soils.	Backfilling around foundations can be done with approved excavated material in place of sand. Now-a-days sand mining is prohibited in many states as per NGT guidelines. Wherever it is not prohibited, it is very costly. Excavated material can be used for backfilling in Main power house and Boiler area to reduce project cost. Please confirm.	Bidder's understanding is not correct. Bidder to comply with requirement of Technical Specification. However, alternate material for backfilling as referred in amendment sl no D1-43 may be used.
58	60	VI/B	CIVIL WORKS FOUNDATION SYSTEM	8 of 10	Annexure-C	SOIL DATA AND FOUNDATION SYSTEM	Allowable bearing pressure shall be as per approved geotechnical investigation report during detailed engineering. Please confirm.	Bidder's understanding is not correct. Bidder to comply with requirement of Technical Specification.
59	61	VI/B	CIVIL WORKS FOUNDATION SYSTEM	3 of 10	7.03.00	PILE FOUNDATIONS	Safe load carrying capacities of pile shall be as per approved geotechnical investigation report during detailed engineering. Please confirm.	Bidder's understanding is not correct. Bidder to comply with requirement of Technical Specification.
60	62	VI/B	CIVIL WORKS FOUNDATION SYSTEM	10 of 10	Annexure-C	The net allowable bearing pressure higher than above mentioned values shall not be permitted. At intermediate levels the bearing capacity shall be same as the net allowable bearing pressure corresponding to the immediate shallower level mentioned above.	At intermediate levels the bearing capacity can be interpolated to avoid the undue excavation inside the soil/rock and avoid delay in project execution time. Please confirm/clarify.	Bidder's understanding is not correct. Bidder to comply with requirement of Technical Specification.
61	63	VI/B	CIVIL WORKS FOUNDATION SYSTEM	10 of 10	Annexure-C	For the new facilities to be constructed after dismantling existing facilities; founding level of new facilities shall be taken at least 1.0m below the existing founding depth of the dismantled structures in case of soil and 0.6m below the existing founding depth of the dismantled structures in case of rock.	For the new facilities to be constructed after dismantling existing facilities; founding level of new facilities shall be as per geotechnical investigation report. Please confirm.	Bidder's understanding is not correct. Bidder to comply with requirement of Technical Specification.
62	64	VI/B	D-1-4	10 of 10	4.03.01	The specified formation level(s) shall be achieved either by excavation where the existing ground levels are higher than the specified formation level or by raising by controlled filling with borrowed earth where the existing ground levels are lower than the specified level.	Suitable excavated earth can be used for filling instead of borrowed soil. Please confirm/clarify.	Bidder's understanding is correct.
63	65	-	-	-	-	General	Please furnish the general layout plan (GLP) in AutoCAD format.	AutoCad format General Plan will be provided during detailed engineering.
64	66	VI/B	D-1-5	21 of 127	5.03.03	Dynamic interference effects due to additional chimney(s)/NDCTS's and other tall structures located upto distance of 20 times diameter at 2/3rd height of subject chimney in the area or in the future expansion stage of the project, as envisaged by the owner at the time testing, shall be determined along with the other topographical features of the local area through model test.	Bidder proposes that dynamic interference effects due to additional chimney(s) / NDCTs and other tall structures located up to distance of 20 times diameter at 2/3rd height of subject chimney in the area shall be determined along with the other topographical features of the local area through model test. Kindly confirm.	Bidder's proposal is not acceptable.Bidder to comply to Technical specification requirements.

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65	67	VI/B	D-1-5	22 of 127	5.03.09	The inside surface of chimney shell above roof, horizontal surface of shell at top, underside of concrete roof slab, etc shall be painted with epoxy phenolic coating system having total 220 microns DFT.	Bidder understands that no painting is required on inner surface of concrete chimney shell below roof. Kindly confirm.	The inside surface of chimney shell above roof, horizontal surface of shell at top, underside of concrete roof slab, etc shall be painted with epoxy phenolic coating system having total 220 microns DFT. Further, no painting is envisaged on inner surface of concrete chimney shell below top portion
66	68	VI/B	D-1-5	23 of 127	5.03.10	A rack and pinion elevator, with a load carrying capacity of 400 kg (min) (passenger cum goods), cabin floor size of 1100 mm x 1000 mm (min.) and an operating speed of 40 m/min. (approx.), shall be provided for travel from the grade level to the top of the chimney.	Bidder understands that a rack and pinion elevator shall be provided for travel from the grade level up to the platform just below the roof platform. Kindly confirm.	Bidder's understanding is correct. Elevator shall be provided for travel from the grade level up to the platform just below the RCC roof platform.
67	69	VI/B	A-01	28 of 92	1.05.22.01	Transition duct inside the chimney and chimney flue liner shall be painted with corrosion resistant paint for Borosilicate Lining and insulated for Titanium/C-276 cladding irrespective of surface temperature.	Bidder understands that only outer surface of chimney flue liner is to be painted with corrosion resistant paint for borosilicate lining. Inner surface of flue liner shall be provided with borosilicate lining so there shall be no exposed surface. Kindly confirm.	The specification clause is intended for complete exposed surface to be painted with corrosion resistant paint in case of borosilicate lining.
68	70	VI/B	A-01	28 of 92	1.05.22.01	For Borosilicate lining, top portion of the flue can shall be fitted with stop bar of 8 mm thick capping of Titanium / C-276 sheet to avoid any damage in between flue can and borosilicate lining.	For Borosilicate lining, bidder proposes to provide 8mm thick (minimum) mild steel flue with Borosilicate Glass Block Lining of minimum 38 mm thickness for the top flue liner above the roof slab. This is proposed to avoid creation of welding joint between two different materials. It is not feasible to weld MS liner with solid titanium due to non-availability of suitable electrode for welding. External surface of chimney flue liner projecting over the chimney roof shall be wrapped with 2 mm thick Titanium / C-276 sheet. Kindly confirm.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
69	71	VI/B	A-01	28 of 92	1.05.22.01	For Borosilicate lining, top portion of the flue can shall be fitted with stop bar of 8 mm thick capping of Titanium / C-276 sheet to avoid any damage in between flue can and borosilicate lining. The minimum length of the capping inside the chimney shall be atleast equal to 150mm diameter of flue liner.	For Borosilicate lining, bidder proposes to provide 2mm thick titanium sheet over the top portion of the flue can to avoid any damage in between flue can and borosilicate lining. Bidder proposes to provide the 100mm length of the capping from the top portion of the flue inside flue liner as a standard practice of bidder. Kindly confirm.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.

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70	1	SECTION VI, PART-C	-	16 OF 119	8.03.04(a)(iv)	The complete 3D data (editable model) which shall be utilized for all future detailed engineering related to maintenance, operation, R&M, efficiency improvement of the project etc. Complete 3D model along with as built GADs, layout, isometrics, reports extracted and 3D models for all disciplines, with any other document generated from 3D model and naming conventions with as-built updates along with complete reference databases, component catalogues for all the size range shall be handed over to owner. Apart from the 3D Model, all drawings like GADs, Isometrics etc. extracted from the model shall also be submitted by the Contractor in Electronic form. 3D model along with complete Project databases shall be submitted at each model review stage and as final as-built. The contractor shall also submit all the configuration files, customization files, templates and all referenced databases. Further, two Licenses of the used 3D Modelling Software (One for Engineering View and One for Site View) shall be provided along with compatible Hardware for possible review and study of the Model Files being submitted by the Bidder Time to time. All software provided shall necessarily include cost for perpetual license(s) for use on all the machines and an Annual maintenance contract (AMC) which shall include software upgrades as & when released by the software agency for a period of three years after warranty/guarantee period. Database backup shall be taken every month and handed over to NTPC.	Owing to proprietary nature of data (copyrights/patents etc.), bidder's will provide non-editable 3D model (review model) along with 3D review software licenses. Bidder will arrange online/offline 3D model review for Customer and accordingly the 3D Review software licenses will be supplied after completion of Engineering. As Subscription based licenses are prevalent in software industry, hence Customer is requested to allow Subscription based software licenses also.	Data to be submitted to NTPC during Detailed Engineering as per the provisions of Bidding Document are not proprietary in nature. Hence, Bidder's proposal of providing only the non-editable 3D (review) model is not acceptable. Bidder to further note that there are suppliers available in the market who are prepared to provide software with Perpetual license. As such, Bidder to comply with Technical specification requirements in entirety.
71	3	VI/A	IIB	3 OF 19	1.05.03	Communicable Numerical Relays (with IEC 61850) in all MV Switchgears & LV Switchgears. b) IEC 61850 Ethernet switches in Switchgear panels – Sufficient quantity of Ethernet switches as per requirement for all boards. At least 2 ports per switch shall be kept as spare ports. c) Cat5e Ethernet cable / FO cable for connection of Numerical Relays to Ethernet switches in all Switchgears. d) Optical Fibre Cable with fire-retardant outer sheath as required for the complete numerical relay network. e) Optical Fibre Cable termination equipment such as LIU, patch cord, etc. for the complete network.	1. Kindly clarify whether Data Concentrator is applicable or not. 2. Drawing 0000-205-POE-A-001 is not available in tender document.	1. Data concentrator is not applicable. 2. Bidder under standing is not correct. Drawing no. 0000-205-POE-A-001 is available in Specification Sub - Section B-05(B) Section-VI, Part-B.
72	4	VI/A	IIB	7 OF 19	1.14.00	Control Philosophy for plant Electrical System Control of Electrical System of Main Plant, EHV Breakers of Generator Bay and Balance of Plant (BOP) shall be provided from DCS with suitable ECD (Electrical Control Desk) and/or Soft HMI. The details of the same are specified in relevant sections of Control and Instrumentation.	No details are available for suitable ECD (Electrical Control Desk)in relevant sections of Control and Instrumentation. Kindly elaborate the requirement of ECD with what breakers are to be controlled etc in details.	Bidder to refer Clause no- 4.05.00, SUB-SECTION-IIIC-11 CONTROL DESK & PANELS, Part-B of technical specification. Further detail scheme of ECD shall be finalised during detailed engg.

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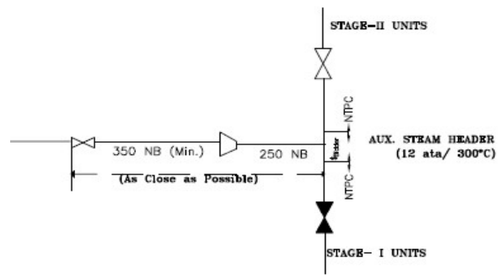
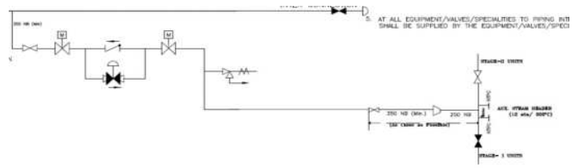
73	1	SECTION – VI, PART-B	A-02	50 OF 67	16.01.01	Auxiliary steam when sourced through this interconnection shall be available at a maximum rate of 60 T/hr with parameters 16 ata/ 310°C at Stage-I TP.	There is ambiguity in the parameters mentioned for the auxiliary steam sourced from the interconnection with the existing unit to the station header, as per specification clause no 16.01.01, which is specified as 16 ata/310°C, while the AUXILIARY STEAM SYSTEM PID (XXXX-999-POM-A-006) specifies it as 12 ata/300°C. Please clarify. We understand that Auxiliary steam piping from stage-III shall be interconnected with existing header of stage-I & II and Auxiliary steam from Existing header of stage-I & Stage-II will be available at 16 ata 310 deg. C at TP.	Refer SG amendment in this regard
		SECTION – VI	AUXILIARY STEAM SYSTEM PID (XXXX-999-POM-A-006) REFER ZONE B-3					
74	2	SECTION – VI	AUXILIARY STEAM SYSTEM PID (XXXX-999-POM-A-006) REFER ZONE B-3				NTPC is also requested to review the requirement of control valve in Auxiliary steam pipiing from Stage -III to exixting header of Stage-I & Stage-II in line with above clarification (Sr.no.1) regarding steam parameters from exixting header of stage-I & Stage-II.	Bidder to comply the specification requirement
75	3	SECTION – VI, PART-B	A-02	50 OF 67	16.01.01	Auxiliary steam when sourced through this interconnection shall be available at a maximum rate of 60 T/hr with parameters 16 ata/ 310°C at Stage-I TP.	NTPC is requested to revise the auxiliary steam available maximum rate to 70 T/hr because mentioned 60T/Hr in specification is in lower side as per past project experience.	Bidder to refer amendment in this regard. Only 40 TPH of aux steam is available from Stage-II.For any extra steam requirements bidder shall make its own arrangement. Further, Bidder shall comply all the specification requirement.Specification is clear in this regard.
76	1	VI PART-B	SUB-SECTION-IIIC-09 PROGRAMMABLE LOGIC CONTROLLER SYSTEM	1 OF 6	1.00.00	All electrical devices like switches/ transmitters/ controller/ analyzer/ solenoid valves which are located in the hydrogen generation plant shall be made intrinsically safe by providing suitable type of transformer isolated barrier/ Zener barrier of standard make in case it is a standard and proven practice of the bidder. Otherwise such instruments shall be provided with explosion proof enclosure suitable for hazardous areas described in National Electric Code (USA), Article 500, Class-I, Division-I or EN60079-14or shall comply with the essential requirements of ATEX directives. All fittings, cable glands etc. for the above requirement shall be strictly as per NEC recommendation article, 500 to 503	Please note that we have not found any technical details of hydrogen Generation plant in the tender specification. In view of same we understand that the same is not in bidder's scope. Please clarify.	Hydrogen Generation Plant is not applicable in EPC Package of Singrauli-III.

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		VI / PART-A	A-12	1 OF 12	1.00.00 b)	Centralized air-conditioning system for main plant TG building There shall be one (1) central chilled water type air-conditioning plant comprising of screw chilling units, chilled water pumps, condenser water pumps, AHUs, cooling tow-ers, etc. to cater to the A/C requirement of the areas identified for main plant areas like common control rooms, control equipment rooms, UPS/Battery charger rooms, **static excitation control rooms (if applicable), SWAS room, water analysis lab**, etc. of both units	Following type of AC is being proposed for static ex-citation control rooms (if applicable), SWAS room, water analysis lab, etc. for both units: 1) **static excitation control rooms (if applicable)** – Since static excitation panel room is located towards A row side of power house, customer is requested to accept dedicated Split AC/ Ductable split AC/ Air cooled Package AC based on actual cooling requirement for static excitation control rooms (if applicable) as routing chilled water pipe towards A row of power house from Control tower (Location of AC plant) crossing the C-D-E-F bay is not feasible. 2) **SWAS room, water analysis lab, etc**. – if area like SWAS room, water analysis lab, etc. located such that it is not feasible to route AC duct, Air conditioning of such areas may please accepted with dedicated FCU (fan coil unit) with at least one (1) no. unit as stand-by, capacity same as each working unit 3) **CEP VFD control room** - If CEP VFD room is located away from control room suct that it is not feasible to route chilled water pipe to location of CEP VFD control room, dedicated Air cooled condensing may please be accepted for the same Please confirm.	1) In view of high CFM requirements in Stattic excitation control room (if applicable), chilled water based AHU has been envisaged for the same. Bidder to comply with specification requirements. 2) AHU based system shall be provided for SWAS room, Water analysis lab, etc. as per technical specification. Chilled water shall not be routed inside the air conditioned area. 3) In view of high CFM requirements in CEP VFD room, chilled water based AHU has been envisaged for the same. Bidder to comply with specification requirements.
77	1	VI / PART-B	A-17	1 OF 31	3.01.00 a)	Redundancy of various A/C system equipments shall be as follows: a) For Main Plant Areas [control room, con-trol equipment room, UPS room, battery charger, **static excitation control rooms (if applicable), SWAS room & water analysis lab**] for both units: i) Vapor compression type water chilling units: 3X50% ii) Chilled water pumps: 3X50% iii) Condenser water pumps: 3X50% iv) Cooling Towers: 3X50% v) AHUs: At least one (1) no. unit, capacity same as each working unit shall be provided as common standby.		
78	2	VI / PART-B	A-01	68 OF 92	3.13.01, 7	In Air conditioning system the return air shall be through ducts and use of plenum space for return air shall be avoided. Further, FGD control room and ESP Control Room, ser-vice building, etc. where various floors are air-conditioned and no intermediate or inter-vening floor are left non-air-conditioned, the space above false ceiling shall be used as return air plenum.	Please note that roof of AC areas of these buildings viz. FGD control room and ESP Control Room, service building, etc. may be exposed to ambient conditions depending on layout conditions. Also, clear gap between false ceiling and roof is generally less, restricting the usage of return air duct. However, as roof of air-Conditioned Area of these buildings is provided with underdeck insulation to minimize the Air-Conditioned Load, space between the false ceiling and roof for above building / floor shall be used for return air. Please confirm.	Requirement of return air A/C duct is clearly indicated in the specification. Bidder to comply with specification requirements.
79	3	VI / PART-B	A-01	69 OF 92	3.13.01, 7	For other areas, where A/C load is of the order of 25-60 TR, Direct Expansion (D-X) type air cooled condensing units along with AHUs shall be provided depending on the availability of space/ layout etc. For areas, where A/C load is of the order of 5-25TR, ductable split/packaged A/C shall be provided. Smaller areas which are away from the D-X type condensing unit /central chilling units which may require air conditioning upto 5 TR rating shall be served with Hi-wall Split/Cassette air conditioner units as per requirement. Above 60TR of A/C load, chilled water type centralized A/C system shall be provided.	Multiple non ductable Split A.C./ cassette AC may please be allowed for buildings /Control rooms having total heat load up to 10 TR for easy Operation, maintenance, fast pace of erection and less interface issues. Please confirm.	To avoid large nos. of non-ductable split (Hi-wall/Cassette), selection/sizing criteria specified at referred clause has been envisaged. Bidder to comply with specification requirements.
80	4	VI / PART-B	A-01	70 OF 92	3.13.02, 3	All ventilation systems shall operate on 100% fresh air. Fan envisaged for MCC & Switchgear rooms shall be provided with pre-filters and fine filters and for other areas shall be provided with pre-filter only	We understand that filters are not applicable for exhaust fans. Please confirm.	Bidder's understanding is correct.

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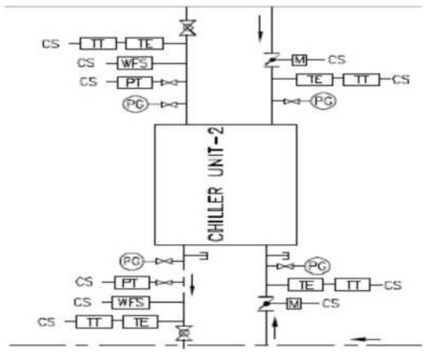
81	5	VI / PART-B	A-17	2 OF 31	4.02.00	**Chilling Unit** Type - Water-cooled type. (Chillers for main plant shall preferably be with multiple compressors)	Please note that most of chiller manufacturers are not manufacturing chillers with multiple compressors for capacity less than 200TR. Thus, in case the final actual capacity of single chiller works out to be less than 200TR during detail engineering, single compressor machine may please be accepted. Please confirm.	Bidder's understanding is correct.
82	6	VI / PART-B	E-17	1 OF 3	1.01.05	i) No load air run (free run) test of all types of compressor to check FAD (Free air deliv-ery), Noise, Vibration & Temp. rise of bearing & body.	We understand that for Air conditioning system, FAD (Free air delivery) is not applicable for Chiller. Please confirm.	Bidders understanding is correct.
83	7	VI / PART-E	LIST OF TEN-DER DRAWINGS	_	Tender drawing number 1150-001-POM-A-054, 1150-001-POM-A-055 & 1150-001-POM-A-056	Requirement of TE with TT at inlet and outlet line (both chilled water side and condenser water side) for chiller of Main Plant, ESP/FGD control room & Service building. 	Chiller manufacturer are also providing TE with TT as part of chiller for safety interlock and in such case separate TE with TT is not required and details of TE and TT shall be as per manufacturer standard of chiller. Please confirm.	Bidder proposal is not acceptable. Bidder shall comply to specification requirement.
84	8	VI / PART-B	B-0	12 OF 16	3.09.00	Emergency air conditioning and ventilation system requirements pertaining only to the Main Plant areas (like Control Room, Control equipment Room, SWAS Room, UPS Room) shall only be provided the DG backup	As per 3.13.01, 20, DG back up is required only for AC equipment's however as per clause 3.09.00, DG back up is required for both AC and Ventilation system. We have envisaged DG back up for AC equipment as per clause no. 3.13.01, 20. Please confirm.	Bidder's understanding is correct.
		VI / PART-B	A-01	69 OF 92	3.13.01, 20	During normal operation period, all the work-ing equipment shall run on A.C. power sup-ply. However, in case of complete black-out condition, DG sets being provided are re-quired to cater the load of some of the air-conditioning equipment so that Main Plant Control Rooms and CER remain air-conditioned. The equipment to run on DG set are: •1 No. Chilling machine •1 No. chilled water pump. •1 No. condenser water pump. •1 No. cooling tower fan. •2 nos. AHUs for CR & CER •1 No. fresh air fan.		
85	9	VI / PART-B	G-03	13 OF 15	1.03.00, 59	In case of front mill arrangement, all staircase wells in TG hall C-row side, shall be pressurized and also all doors/ shutters provided this side shall have a provision of air curtains to avoid ingress of coal/ash dust from boiler side.	Air curtain shall be provided as per clause in case of front mill arrangement. Separate staircase pressurization is not required as air curtain shall be provided on all door opening in staircase to-wards C row in case of front mill ar-rangement. Please confirm	Air curtain may malfunction or have breakdown. Hence, staircase pressurization has been envisaged .Bidder to comply to specification requirement .
		VI / PART-B	A-17	22 OF 31	7.07.00 (e)	Relative humidity and temperature measurement of **all control rooms**, CERs, Ser-vice Building and all major air-conditioned areas shall be available in DDCMIS. Relative humidity and temp. measurement for main plant control room and CERs to be available in **multiple numbers**.	As explained in clause no. 7.04.00 (b) & 7.04.00 c) and indicated in Tender drawing regarding the basic function and requirement of temperature & Humidity indicators, we understand the following: 1) Temperature & Humidity sensor/ indicators is not applicable in control	1. Bidder's understanding is not correct. Bidder shall comply

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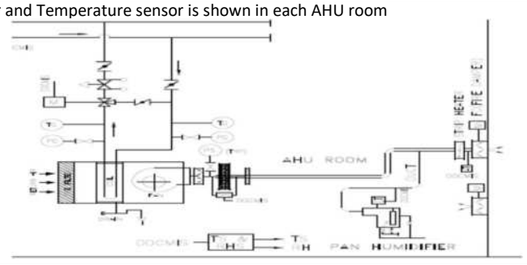
86	10	VI / PART-B	A-17	5 OF 31	4.05.01 (1)	Humidity control inside air-conditioned space served by non-ductable split air conditioners is not envisaged.	1) Temperature & Humidity sensor/ indicators is not applicable in control room served with **Split AC/Cassette AC/ Ductable split AC** 2) Since there is common AHU room applicable for Main plant control room and CERs, **1 number** Temperature & Humidity sensor shall be provided for above mentioned area to serve the purpose as explained in clause no. 7.04.00 b) & 7.04.00 c) and indicated in Tender drawing instead of **Multiple numbers** 3) as explained in clause no. 7.04.00 b) & 7.04.00 c) and indicated in Tender drawing, to fulfil the purpose, 1 number Temperature & Humidity sensor shall be provided for each AHU room. **Additional 15 nos**. each of temperature & Humidity indicators are not required and hence not envisaged. Please confirm	1. Bidder's understanding is not correct. Bidder shall comply to specification requirement. 2. Bidder's understanding is not correct. Bidder shall comply to specification requirement. 3. Bidder's understanding is not correct. These 15 nos. of Temperature cum humidity indicator are not for control and are not to be installed inside AHU room. For quantity of TS & RH in AHU room refer Part E of technical specification. Bidder to comply specification requirement
		VI / PART-B	A-17	22 OF 31	7.04.00 (b) & 7.04.00 (c)	b) Humidity sensor and gyserstat located in the return air duct shall actuate the PAN hu-midifier to obtain the desired degree of hu-midification. c) Humidity and temp. sensor shall be provided and interlocked in steps with winter heater / re-heater / strip heaters for monsoon and winter re-heating or heating as the case may be.		
		VI / PART-B	IIIC-04	28 OF 35	20.02.00	Qty. : 15 nos. each of temperature & Humidity indicators (combined indicators for Humidity and temperature is also applicable). One Set of output signal is to be connected to respective control system. Apart from displaying the temperature/humidity values on indicator		
		VI / PART-E	LIST OF TENDER DRAWINGS	_	Tender drawing number 1150-001-POM-A-054, 1150-001-POM-A-055 & 1150-001-POM-A-056	RH sensor and Temperature sensor is shown in each AHU room 		Bidder to provide RH sensor and Temperature sensor in each AHU room as indicated in tender drawing.
87	11	VI / PART-B	A-17	1 OF 31	3.01.00 b)	For ESP control rooms & FGD control rooms etc. of both Units: i) Vapor compression type water cooled screw chiller units: 2X100% ii) Chilled water pumps: 2X100%. iii) Condenser water pumps: 2X100%. iv) Cooling Towers: 2X100%. v) **AHUs: 2x100% AHUs for each ESP/FGD Building.**	In case required quantity of working AHU is more than one (1) number, redundancy requirement of AHU may please be revised in line with Main Plant Control room at clause no. 3.01.00, a) mentioned as under, to suit the layout: **v) AHUs: At least one (1) no. unit, capacity same as each working unit shall be provided as common standby.**	Requirement of total dehumidified air flow (CFM) for ESP/FGD control rooms is much less as compared to main plant TG Building. Accordingly, 2x100% AHUs have been envisaged for each ESP/FGD building. Bidder to comply with specification requirements.
88	12	VI / PART-B	A-17	1 OF 31	3.01.00 d)	Water System Control Room Building: i) Air cooled (D-X Type) condensing units: 2X100% **ii) AHUs: 2x100%**	In case required quantity of working AHU is more than one (1) number, redundancy requirement of AHU may please be revised in line with Main Plant Control room at clause no. 3.01.00, a) mentioned as under, to suit the layout: **ii) AHUs: At least one (1) no. unit, capacity same as each working unit shall be provided as common standby.**	Requirement of total dehumidified air flow (CFM) for water system control building is much less as compared to main plant TG Building. Accordingly, 2x100% AHUs have been envisaged for water system control building. Bidder to comply with specification requirements..
89	13	VI / PART-B	A-01	68 OF 92	3.13.01, 4)	The fresh air quantity for air-conditioned are as of ESP Control Room / FGD control room, Control Room / Control Equipment Room / UPS, Water System Control Room Building, GIS Control Room Building, etc. shall be 0.45 M3/minutes/person or 1.0 air change per hour whichever is greater. However, for areas like service building, canteen, etc. quantity of fresh air shall be minimum 1.5 air changes per hour.	For service building, fresh Air shall be as per ASHRAE 62.1 2010 to design the AC system in line with Green building. Please confirm.	Fresh air requirement specified in referred standard are minimum requirements. Bidder to comply with specification requirements.
90	14	VI / PART-B	A-01	68 OF 92	3.13.01, 5)	Lighting load shall be one (1) Watts/Sq. Feet or actual whichever is higher	For service building, lighting load shall be as per ECBC to design the AC system in line with Green building. Please confirm.	Bidder to comply with specification requirements.
		VI / PART-B	A-17	9 OF 31	6.01.00	Type - Horizontal Centrifugal, Axially split type casing pump End suction, top discharge horizontal centrifugal pump may be provided for modular air washer units & UAF unit	End suction top discharge pump may also be allowed for Air conditioning system as allowed for modular air washer units & UAF unit.	Bidder's understanding regarding applicability of "End suction & top discharge" pumps is not correct.

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91	15	VI / PART-B	A-17	26 OF 31	Annexure –I, clause no. 5 b)	**Pump Casing** Pump casing shall have axially split type construction as specified		End suction, top discharge pumps may be acceptable only in case of modular AWU & UAF units.
92	16	VI, PART-B	D-1-5	13 OF 127	5.02.09 iii)	Air Conditioned Office for 25 persons (Including 5 cabins for Senior persons) with Pantry, Toilet block(Ladies and gents toilet separately), conference room for 25 per-sons, shall be provided in MPH building in addition to other facilities specified. This area shall have access to natural light on three sides minimum. It shall have air lock lobby at entrance with auto sliding doors. Minimum area of office area shall be 350 sq.m. This area shall be positioned over the CR with good aesthetic view and noise reduction and dust isolation.	Please clarify the following for mentioned office area: 1.Since such type of separate office space is not mentioned under Main Plant layout philosophy of SUB SECTION- G-03, SECTION- VI, PART – B, kindly check and confirm the applicability of seprate office space 2.Since nothing is mentioned about type of Air Conditioning system for this office space, we understand that Air conditioning for this area shall be provided with Split AC/ Cassette AC/ Ductable Split AC, if applicable 3.Please confirm the GPC to be considered for AC of mentioned office space along with ducty factor, if applicable.	Refer amendment 1
93	17	VI / PART-B	A-01	68 OF 92	3.13.01, 14)	Underdeck insulation of 50 mm nominal thickness of glass wool (32 Kg/cu.m) or rock wool (48 Kg/cu.m) shall be provided if i) Non A/C area is located just above the A/C area. In this case, underdeck insulation shall be provided underneath of the ceiling of A/C area. ii) Non A/C area is located just below the A/C area. In this case, underdeck insulation shall be provided underneath of the ceiling of Non A/C area. iii) Underneath the ceiling of AHU room lo-cated below the non-A/C area or exposed to Atmosphere. Underneath the floor of AHU room located above the non-A/C area. iv) Underneath the ceiling of A/C areas ex-posed to sun.	There is contradiction between type and applicability of underdeck insulation. We are considering underdeck insulation as per clause number 9.13.10, page no. 18 OF 36, Sub section D-1-9 of Civil chapter. Please confirm.	Specification Requirements are clear. Bidder to comply with specification requirements.
		VI / PART-B	D-1-9	18 OF 36	9.13.10	Underdeck insulation shall be provided on the ceiling (underside of roof slab) and un-derside of floor slab of air-conditioned area depending upon the functional requirements. This underdeck insulation shall consist of 50mm thick mineral wool insulation with 0.05 mm thick aluminum foil & 0.6 mm x 25mm mesh wire netting and shall be fixed to the ceiling with 2 mm wire ties.		Bidder's understanding is not correct Bidder shall follow technical specification
94	1	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 23 OF 39	1.22.12 (2)	Mandatory Spares- Belt (if applicable): 1 Set	For spare belt, bidder shall supply wear belt or sealing belt. Bidder is not considering the mother/drainage belt in mandatory spares. Kindly confirm.	Bidder's proposal is not acceptable. Specification requirements are clear in this regard. Bidder to comply with the specification requirements.
95	2	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	38 OF 92	2.04.00	In addition, it shall also be possible to handle Generator Stator with tandem operation of two Turbine hall EOT cranes for which necessary arrangements shall be provided. In such case, the combined capacity of two EOT cranes shall not be less than 105% of weight of Generator Stator, including the weight of lifting beam with swiveling arrangement and slings.	Criteria for finalizing capacity of lifting beam for tandem operation of TG Hall EOT cranes has not been mentioned in tender specification. 5% margin over Generator Stator weight and slings weight has been envisaged for finalizing lifting beam capacity. Kindly confirm.	Lifting beam shall be sized by taking 5% margin over combine weight of Generator Stator, attached lugs and slings.Further, This shall be finalised during detail engineering.
96	3	SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	11 OF 40	4.15	The Bidder/ its sub-vendor should have designed, manufactured, erected and commissioned EOT cranes of capacity 100T or more with minimum crane span of 28 meters, which is in successful operation in at least one (1) station for a minimum period of one (1) year.	The Bidder/ its sub-vendor should have designed, manufactured, erected and commissioned EOT/ Gantry/ Semi-Gantry cranes of capacity 100T or more with minimum crane span of 24 meters, which is in successful operation in at least one (1) station (power plant/ refineries/ shipyard/ workshop or any other industry) for a minimum period of one (1) year. Please confirm.	Bidder proposal is not acceptable. Bidder to comply with the specification requirements.

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97	5	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	84 OF 92	4.02.09	Hoists: (i) More than 2.0 tonne or more than 10.0 m lift or hoists coming outside the buildings: Motor driven for both travel & lift (ii) Other hoists including the hoists for handling Take up pulley and take up weight: Manual for both travel & lift.	All the mentioned three clauses are contradictory w.r.t selection of electric or manual hoist. We shall follow clause 4.02.09 of sub-section A-02/Section VI part B for selection of electric or manual hoist. Kindly confirm.	Bidde to follow the cl. no 4.02.09,A-01 for hoists being provided in CHP.AHP.BHP.LHP,GHP etc,
98	6	SECTION-VI, PART-B	A-24SUB-SECTION-A-24 SERVICE ELEVATORS CRANE, HOIST & MONORAIL	6 of 7	2.05.00	For the hoists with more than 2.0 ton lifting capacity or more than 10.0 M lift, motor op-erated hoist block for both long travel and lift shall be provided. Other hoist blocks shall be of hand operated type for both travel and lift. However, all monorails com-ing out of the building shall be provided with electric hoist block, irrespective of load and lift.	All the mentioned three clauses are contradictory w.r.t selection of electric or manual hoist. We shall follow clause 4.02.09 of sub-section A-02/Section VI part B for selection of electric or manual hoist. Kindly confirm.	Clause 2.05.00 requirement is regarding hoist shall prevail for Turbine & Auxiliaries. Bidder to comply specification requirement.
99	7	SECTION-VI, PART-A	IIA-01	22 of 28	2.24.03	Access ladders with suitable platform shall also be provided for approach to all motorized hoists/trolleys mounted on their runway beams for the maintenance of hoists/trolleys.	Considering the layout & space constraints, it may not be feasible to provide all electric hoists with maintenance / repair platforms with handrails. Hence maintenance platform shall be provided depending upon feasibility. Kindly confirm.	Specifications clause is clear in this regard. Bidder to comply specification requirements.
100	8	SECTION-VI, PART-A	IIA-19	1 of 2	2.01.00	Suitable EOT Crane/HOT Crane/Monorail beams with hoists/Chain Pulley Blocks of adequate capacity, to meet the erection and maintenance requirements are to be provided by the vendor for the various equipment/areas. Some of the are-as/equipment not covered by TG hall EOT crane are indicated below. For balance are-as/equipment, not listed herein after, the requirements of Specification shall be followed. (a) Feed water heaters & deaerator. (b) Various pumps & Heat Exchangers. (c) Fans, motors, gear boxes etc., of Main Condenser, vacuum pumps, control fluid room etc. (d) Auxiliary cooling water pumps and DM cooling water pumps of ECW systems and Plate heat exchangers. (e) Central lube oil system room (f) Any other equipment. The above requirement is indicative only; the requirement given in the respective chapter is to be adhered to.	a. For erection, Feed water heaters shall be lifted to the destination floors with the help of TG Hall EOT and then dragged to their final location. For maintenance also, they can be dragged to EOT accessible area and can be handled by EOT thereafter. This is as per standard practice. As such, there is no requirement of separate hoist arrangement. For deaerator erection, separate mobile crane will be used to lift the different parts to the De aerator floor. Once erected, it need not to be taken out. If any maintenance is required, the same can be done in situ. b. Heat exchangers can be attended at position. Handling arrangement for the same is not required. However handling arrangement shall be provided for motors of the pumps wherever applicable. For balance equipments, lifting equipment shall be provided as applicable. Kindly confirm.	EOT crane is not envisaged for Feed water heaters & deaerator. However, applicable Hoists/Chain pully block for general maintenance purpose shall be provided.
101	**1**	SECTION – VI, PART-A	SUB-SECTION-III TERMINAL POINTS & EXCLUSIONS	1 of 3	1.06.00	a) Outlet of road tankers b) Suction header of existing unloading pumps. c) Unloading pump discharge header (for oil filling connection to new LDO storage tanks) d) Existing transfer header to day oil tanks e) Drain oil tank in existing fuel oil unloading pump house.	It is requested to kindly furnish the following details: 1.Drain oil tank-Terminal Points 2.Loaction of day oil tank. 3.Existing day oil tank spare nozzle. 4.GA of existing day oil tank, LDO tanks and location of new LDO tanks 5. Is there any isolation valve in between new unloading header to existing header are available or not. Kindly confirm.	Terminal point for the drain oil tank shall be upto spare nozzles. For all other points, Bidder to visit the site for more information.
102	1.	VI-Part-B	A-16	3 of 7	4.03.03	Compressor shall have 25% minimum turndown capability (at 45 deg. C & 75% RH). Compressor shall be provided with IGV at the suction flange.	Bidder understands that this clause is applicable for centrifugal type of compressor only.	Bidder's understanding is correct.
103	2.	VI-Part-B	A-09	10 of 20	2.12.02	For compressed air application, valve body material shall be cast carbon steel or forged carbon steel for sizes 65 mm NB & above and Gun metal for sizes 50 NB and below.	For compressed air application, please accept valve body material as carbon steel for 50 NB and below size valves as well.	Bidder may also refer Cl. no. 2.13.01(d) of the same sub-section for clarity.

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104	1	VI	PART- A / SUB SECTION-A-22 SEPARATION OF PLANT DRAINS FROM STORM WATER DRAINS	2 OF 3	1.01.00 (a)	The effluent from the TG Area pit(s) /sump(s) shall be pumped to Waste Service Water Sump (WSWS) located in WTP area. Portable type oil skimmer(s) & portable oil centrifuge shall be provided in the TG Area pit(s) /sump(s)and purified oil shall be used either in non-critical units for lubrication purpose or the same shall be disposed of.	As per referred clauses and treatment scheme given by NTPC, TG effluent shall be transfered to WSWS for treatment and already oil skimmers (2 nos.), Portable oil Centrifuge (1x100%) is already have been envisaged in WSWS to skim the oil in waste water before pumping into Lamella Clarifier. Therefore provision of Portable type oil skimmer(s) & portable oil centrifuge in the TG Area pit(s) /sump(s) is not required. Further, their is a space constraint in TG Hall, it is not feasible to install the Oil skimmer in TG ETP pits as oil skimmer operation requires bigger space in ETP pits situated in TG hall.	Bidder to refer amendment TG-12 in this regard
		VI	PART - B / SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	52 OF 92	3.06.00 C (3)	Waste service water treatment system a) One (1) number RCC waste service water sump (WSWS) in two (2) sections shall be provided for collection of waste service water. Service water effluents and other plant effluents from various areas of the plant shall be routed to this waste service water sump. Facility shall be provided to collect free oil from these sumps to MS Oil drum and oil skimmers (2 nos.), Portable oil Centrifuge (2x100%) of suitable capacity shall be provided for reuse of oil.		
105	2	VI	PART - E / TENDER DRAWINGS / PROPOSED SCHEME FOR PLANT EFFLUENT SEPARATION TG AREA	-	-	DRG NO. 1150-001-POM-A-015A For transfer of effluent from BFP and COT/DOT area, effluent transfer pumps are shown.	In drg no. 1150-001-POM-A-015A, for transfer of effluent from BFP and COT/DOT area, pumps are shown. It is suggested that that effluent may be routed to TG area effluent sump through gravity to make the collection simple and overall optimization of system. Hence, we request customer not to insist for the requirement of effluent transfer pumps for BFP and COT/ DOT area.	Bidder's proposal is not acceptable. Bidder to comply to the technical specification requirement.
106	3	VI	PART- A / SUB SECTION-A-22 SEPARATION OF PLANT DRAINS FROM STORM WATER DRAINS	2 OF 3	1.01.00	d) To meet that above requirement, RCC Area pit(s) / sump(s) and associated submersible pumps, piping, fitting, valves etc., as per requirements given below, to discharge the effluent/ wash water/ blow downs etc. from RCC pit/ sump to Liquid Effluent Treatment Plant (LETP)/ WSWS/CSSP/ Ash Slurry Sump or tank (as the case may be) are to be provided, supplied and installed by the bidder. f) Auto coupling arrangement type submersible pump of capacity 2X100% for each pit/ sump should be selected such that it shall generally evacuate the RCC pit/ sump within 20 minutes. The operation of the pumps shall be interlocked through level measurement devices to be installed in the RCC pit/sump so that the pumps shall start automatically and empty the RCC pit. Further, the discharge pressure of the pump should be enough to discharge the fluid handled to LETP (WSWS)/CSSP/Ash Slurry Sump or tank/CW channel as the case may be, as per clauses mentioned below.	Bidder proposed that the types of pumps (screw/centrifugal/submersible) to be installed in the ETP pits shall be decided during detailed engineeing depending on the type of fluid handled/ location of tranfer. Further, Bidder proposed that evacuation time shall be decided during detailed engineering based upon collection and treatment scheme finalisation. Hence Bidder requested to NTPC, not to restrict criteria for 20 minutes evacuation time.	Bidder to refer Amendment WS-12 in regards to the type of pumps. Bidder's proposal regarding criteria for 20 minutes evacuation time from RCCpit/sump is reviewed and not accepted. Bidder to comply technical specification requirements.
107	4	VI	PART - B / SUB SECTION-A-14 WATER TREATMENT PLANT	1 OF 36	1.01.00	4) b) Coal laden water in the plant shall be treated in settling ponds and decanted water recycled/reused in Coal handling plant suitably. Coal settling ponds and treatment plant shall be designed suitably to receive and treat excess storm water mixed with coal laden water and supernatant water recycled to CW channel, with provision for diverting the treated supernatant water to storm water drain & Waste service water to be treated in ETP. Lime, alum, and suitable synthetic flocculent dosing to be envisaged to increase the settling rate of suspended solids. The pH of treated supernatant water is expected to be acidic in nature (pH: 2.8-7.8) and required to be neutralized prior to discharge in CW channel, storm water drain & ETP with required lime dosing facilities. The clarifier sludge shall be dewatered using the Filter press for dried coal particles to be reused.	The supernatant from CHP Run-off Water Treatmnet system is envisaged to route to Storm Water Drain/WSWS/ CW channel. Bidder understanding is that the supernatant from CHP Run-off Water Treatmnet system shall have not bearing on the sizing, designing and capacity of WSWS in LETP. Please confirm.	Bidder's understanding is not correct. Bidder to refer equipment sizing criteria of CSSP/WSWS and comply to technical specification requirements.
108	5	VI	PART - E / TENDER DRAWINGS	P&ID & LAYOUT OF LIQUID EFFLUENT TREATMENT SYSTEM	-	DRG NO. 1150-999-POM-A-001 In P&ID & LAYOUT OF LIQUID EFFLUENT TREATMENT SYSTEM, several texts are not readable.	Kindly furnish readable copy of the P&ID & LAYOUT OF LIQUID EFFLUENT TREATMENT SYSTEM.	Bidder to refer Amendment WS-13 .

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109	6	VI	PART - B / SUB SECTION –VI CHAPTER-08 WATER SYSTEM	9-19 OF 29	2.00.00	Mandatory Spares for PT, DM, ClO2 Systems	C&I Mnadatory spares for LET system is not mentioned in the clauses SUB SECTION –VI / CHAPTER-08 WATER SYSTEM/ 2.00.00. Bidder understand that there is no C&I mandatory spares applicable for LET system. Kindly confirm.	Bidder to note that LET system has been defined under the heading PT, DM, ClO2 Systems. Accordingly C&I spares for LET system shall be governed by Mandatory Spares for PT, DM, ClO2 Systems
110	1	SECTION – VI, PART-B	SUB-SECTION A - 14 WATER TREATMENT PLANT	3 OF 36	2.02.00	10) Various equipment in the PT Plant will be sized for the following……..	Chemical dosing requirment for PE,PAC,FeCl3,Coagulant aid,Anti-scalant,Anti-Oxidant etc are not given . Please provide.	Bidder to decide the dosing requirement as per their system design meeting technical specification requirement.
111	2	SECTION – VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	49 OF 92	3.06.00 (6)	2 Chemical House: A common two (2) storey Chemical house of RCC construction shall be provided……..of PT–CW & Potable, PT–DM, PT-RO plant (As applicable)	Chemical storage shall be designed to meet 15 days requirement. Please confirm.	Bidder to refer the tender drawing (1150-999-POM-A-006) for dimensions of chemical house.
112	3	SECTION – VI, PART-E	LIST OF TENDER DRAWINGS	1 OF 7		P & ID of CSSP in Tender drawing	P&ID of coal slurry setlling pond including CHP run-off water treatmenrt system is not provided. Please provide.	Bidder to prepare the system P&ID meeeting technical specification requirement.
113	4	SECTION – VI, PART-B	SUB-SECTION A - 14 WATER TREATMENT PLANT & 'SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	7 OF 36 & 52 OF 92	3.11.00 & '3.06.00 (C)	Runoff water from coal slurry settling pond would be led to a sump……..as well as treated in clarifier (1x100%) for recycle/reuse in CW system. & 4.Coal handling plant run-off water treatment system. f) Two (2) Reactor Clarifiers with stilling chamber,……..rm water from settling ponds, along with piping, valves etc.	The Nos. Of clarfier indicated in given clauses are contradictory. Plesae confirm the quantity of clarfier to be considered.	Bidder's request reviewed, bidder to provide Two (2) Nos of Reactor clarifiers. Further, for clarifier capacity,bidder to refer amendment -WS- 03 in this regard.
114	5	SECTION – VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	48 OF 92	3.05.00	i) Potable Water System Potable water system shall meet the drinking water required for all the plant facilities/buildings included in Contractor's scope up to the specified terminal point. Number and Capacity of pumps shall be as follows: Capacity of potable water requirement will be 20 m3/hr (minimum) for plant	It is rquested to please specify following, -Capacity & Head Of Potable water Pumps (Colony). -Terminal Points.	Bidder to refer amendment -WS- 14 for capacity of potable water pumps (colony). Potable water pumps head shal be finalized during detail engineering inline with technical specification requirement. Potable water (Colony) pipeline terminal point in bidder's scope shall be till coordinate (18A, 2B) at FGL.
115	1	SECTION-VI, PART-B	SUB-SECTION-A-05 (FGD)	PAGE 19 OF 29	7.07.08	Contractor shall provide 2x100% Lime Neutralization tanks which shall be of minimum 8 hr capacity made of carbon steel with rubber lining along with 2x100% Lime storage silos. The tanks shall be provided with SS dissolving basket, Agitator of SS construction, drain, over flow and dosing connection, level transmitters, Agitators etc. The storage silos and hopper cones shall be fabricated of minimum 10 mm thick carbon steel with a SS lining of grade SS304 of minimum 4 mm thickness in the complete cones to ensure reliable discharge of material. The design of storage silos shall confirm to IS 9178 or any other proven international standards. The storage silo shall be capable of feeding the lime by motorized rotary feeding system to the Lime Neutralization tank.	Regarding the Lime Dosing System in the Waste Water Tank, Bidder proposes following arrangements in place of Lime Silos, Bucket Conveyors, Hoists with Basket and dosing system as detailed in tender specification: To dose the lime solution through dosing pumps in waste water tank, the lime solution shall be prepared in the dosing tank and directly dosed in the waste water tank. The lime sacks can be stored in the lime storage area. This will be operation friendly and technically the requirement of lime silos, bucket con-veyors and Hoists with Basket can be eliminated. This is similar to the practice generally adopted in the Pre-Treatment plant application.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.

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116	2	SECTION-VI, PART-B	SUB-SECTION-A-05 (FGD)	PAGE 20 OF 29	7.07.09	Contractor shall provide 2x 100% Lime Storage Silos for feeding lime to the Lime Neutralization tanks. The lime storage silo shall be of minimum 24 hr capacity equivalent to the requirements of FGD system of 2x800 MW at Design point and shall be complete with supporting steel structure, platforms, power operated outlet gates, level switches, air relief de-vices, etc. Hydrated lime shall be supplied by the employer in the form of bags. For sizing purpose, bulk density of hydrated lime shall be con-sidered as 480 kg/m3. For dust free operation each silo should be provided with a covering arrangement and a self-cleaning bag filter system of suitable capacity containing blower, automatic/on-load cleaning system, etc.	Kindly accept.	
117	3	SECTION-VI, PART-B	SUB-SECTION-A-05 (FGD)	PAGE 20 OF 29	7.07.10	Bucket conveyors shall be provided by the contractor to feed lime to each of the lime storage silos from ground level. The Bucket conveyors shall be sized to completely feed each lime silo within 2hrs. Adequate storage and feeding system required for feeding the lime to the Bucket conveyors is also in the Contractor's scope.		
118	4	SECTION-VI, PART-B	SUB-SECTION-A-05 (FGD)	PAGE 20 OF 29	7.07.11	A storage room for storing minimum one (1) month requirement of lime for all the units shall also be provided by the contractor.		
119	**1**	SECTION-VI, PART-B	SUB-SECTION-A-05(FGD)	PAGE 2 OF 29	1.03.08	In case of a power failure all items of equipment (e.g. minimum one agitator in absorber and limestone slurry tank, Process water pump & lube oil system of Booster Fan) which may cause irreversible damage to the FGD System shall be connected to the emergency power supply system to be provided by the Contractor. Bidder shall furnish a list of all such Auxiliaries in its bid proposal.	Agitators are not required to be connected to Emergency power supply as per proven practice being followed by collaborator. Equipment needing emergency power connection shall be decided based on process requirement and the recommendations of the collaborator & OEM for different equipment. Kindly confirm.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
120	2	SECTION-VI, PART-B	SUB-SECTION-A-05(FGD)	PAGE 20 OF 29	7.08.03	Agitation shall be provided to prevent settlement of slurry by sufficient no. of Top entry agitators or side entry agitators (as per the proven practice of bidder) with emergency flush start system	In the offered technology, the impeller of absorber agitators are mounted above the slurry settling zone, thus starts without flushing system even after a long shutdown as per collaborator proven design successfully operating worldwide. Hence, requirement of separate flushing system is not envisaged.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
121	3	SECTION-VI, PART-B	SUB-SECTION-A-05(FGD)	PAGE 23 OF 29	11.05.00	The material for the shaft (which is continuously in contact with slurry) and agitator blades of the Absorber Agitators shall be made with Alloy 926 or better material. For Agitators in other tanks, agitator blades shall be made with Alloy 926 or better material & shaft can be rubber lined. This does not release the Contractor of the responsibility for selecting the correct materials.	As per specification, MOC of Impeller must be Alloy 926, however the same material is not recognised by BIS in their standards. Since Alloy 926 is proprietary of Outokumpu, which is to be imported in India creates an Import issue (since the same is not recognised by BIS, thus getting an import clearance for the same creates an issue). Instead we're proposing IS 904LN instead, which is chemically and Mechanically equivalent to Alloy 926, the only difference lies in Identification (i.e naming) of material. Since IS 904LN is BIS recognised and has no import restriction and is equivalent to 926 we're proposing this as wetted parts MOC. Kindly consider the same .	The specification requirement allows bidder to offer better material than Alloy 926 based on its proven practice. Specification requirements are clear in this regard. Bidder to comply with the specification requirements.
122	1	SECTION – VI, PART-A	Annexure C to IIC, Contract quantity	9 OF 22	2.00.00 (4)	DDCMIS system for Mill reject system compressor	Mechanical conveying type mill reject system is required as per tender specification. Hence, MRS compressors not applicable. Please confirm.	Bidder's understanding is correct.
123	2	SECTION – VI, PART-B	PART-A, SUB SECTION- G-04, STANDARD PG TEST PROCEDURE	63 of 229	(.e)	MRS compressor duty factor 1.0	MRS compressor is not applicable for Mechanical conveying type mill reject system. Please confirm.	Bidder's understanding is correct.
124	3	SECTION – VI, PART-B	SUB-SECTION-A-22	2 of 3	2.03.00 (12)	Tensioning arrangement	Custome is requested to allow for screw/gravity type tensioning arrangement also.	Bidder's proposal is not acceptable

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125	1	Sec-VI, Part-A	Sec-IIA-06	6 of 10	6.01.00	One set of test kit for measuring oxygen content at deaerator outlet shall also be provided for the station.	Online oxygen measuring provision is being provided by Bidder. Hence, Offline test kit for measuring oxygen content at deaerator outlet is not required. Customer is requested to accept above.	Specification requirement is clear in this regard. Bidder to comply with the specification requirements.
126	2	Sec-VI,Part-B	Sub-Sec-A-01	37 OF 92	2.03.07	Maximum oxygen content shall be 0.005 cc/lit at deaerator outlet measured as per ASTM-D-5543-09 or Indigo carmine method at all operating condition.	All super critical units operated in oxygenated treatment mode and hence guarantee for maximum oxygen content in feed water system is not applicable for super critical sets.	Sometimes there may be requirement of AVT operation during unit running also. In case of oxygenated treatment mode oxygen content may be more but when unit will run in AVT mode this should be less than 0.005 cc/lit. So dearator should be capable for maintaining maximum oxygen content of 0.005 cc/lit at deaerator outlet.Bidder to comply specification requirement.
127	3	Sec-VI,Part-B	Sub-Sec-G-07	1 OF 2	1.00.00	Tentative Master Drawing list :	Only GA drawing of Heat Exchangers shall be submitted to customer at contract stage for review and approval. Submission of any type of calculation/Crossectional drawing (being proprietary in nature) is not envisaged.	Bidder's proposal is not acceptable. Bidder to comply with the specification requirements.
128	4	Sec-VI,Part-B	Sub-Sec-A-01	37 OF 92	2.03.07	Deaerator capacity below low-low level (BFP tripping point) shall have minimum value of 80m3 (Without dished end volume)	Deaerator Low-Low level shall be 500mm from the bottom of the tank as per BHEL standard practice.	Bidder's proposal is not acceptable. Bidder to comply with the specification requirements.
129	5	Sec-VI,Part-B	Sub-Sec-A-07	11 OF 25 & 12 OF 25	5.01.00 & 5.03.00	Low Pressure Heaters and Drain Cooler : Horizontal and U-tube type with integral drain cooler. HIGH PRESSURE HEATERS HP Heaters with de-superheating, condensing and Drain cooling section.	Heaters will be provided with Desuperheating, Condensing and Drain cooling zone as per design Code requirements (HEI).	Specification requirement is clear in this regard. Bidder to comply with the specification requirements.
130	6	Sec-VI,Part-B	Sub-Sec-A-07	11 OF 25 & 12 OF 25	5.01.00 & 5.03.00	Tube shall be expanded hydraulically in tube sheet.	Tube to tube sheet shall be roller expanded.	Bidder's proposal is not acceptable. Bidder to comply with the specification requirements.
131	7	Sec-VI,Part-B	Sub-Sec-A-07	11 OF 25	5.02.00 (e)	Hardened 400 series stainless steel impingement plates for flashed drain inlet from HP heaters, BFP recirculation, boiler startup drains etc.	As per bidder’s experience of super critical plants, Hardened 304 series stainless steel impingement plates are also suitable for this purpose. Customer is requested to amend the clause as ” Hardened 400 series or 304 series stainless steel impingement plates”	Hardened 400 series stainless steel is better material for specified requirements. Bidder proposal is not acceptable.Bidder to comply specification requirement.
132	8	Sec-VI,Part-B	Sub-Sec-A-07	11 OF 25	5.02.00 (f)	All water spray valves, splash plates, trays, vent condenser and other elements in contact with undeaerated water or non-condensable gases shall be of SS-304 or SS-410	Customer is requested to modify the clause as follows Elements in contact with undeaerated water or non-condensable gases shall be of SS304 material / SS304 lining material. This is in line with the Deaerators supplied for all 500 MW and above projects.	Bidder's proposal is not acceptable. Bidder to comply specification requirement.
133	9	Sec-VI, Part-A	Sub-Sec-II-A-06	3 of 10	2.02.08	Portable turbine preservation system consisting of adequate numbers of air driers including, fans, motors, filters, heater drying wheel, connecting pipings, valves, fittings etc. for preservation against corrosion of turbine during idle periods shall be provided. One number system per station shall be provided.	Turbine preservation systems are not considered for BFP drive turbine as per our standard scope of supply. We presume these are specified for main Steam turbine as per our understanding.	Bidder understanding is correct.

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134	10	Sec-VI, Part-A	Sub-Sec-II-A-06	6 of 10	7.03.00	Two (2) steam turbine drives for the turbine driven boiler feed pump per unit complete with ESV, control valves, non return valves for single admission drives, permanent & temporary steam strainers, preferably hydraulic turning gear,	As per BHEL pre-commissioning/initial operation activities of Steam Blowing, the strainer is removed from the line and blanking fixture is used to isolate the steam turbine from steam supply . After steam blowing, the removed strainer is placed in the line again. Hence, we do not need any additional strainer for initial operation. Blanking device will be supplied by BHEL.	Specification requirement is clear in this regard. Bidder to comply specification requirement.
135	11	Sec-VI, Part-A	Sub-Sec-VI-chapter-2	8 of 32	7	One set of Journal bearings and Thrust bearing (complete assembly) with carrier, Collar and pads	Complete thrust bearing assembly considered and hence separate pads not considered. Thrust collar for offered BFP drive turibne is integral to steam turbine rotor and hence collar is not applicable . Also carrier is not applicable for offered bearing assembly , hence not offered.	Bidder to refer amendment TG-9 in this regard.
136	12	Sec-VI, Part-A	Sub-Sec-VI-chapter-2	8 of 32	10	Electrohydraulic assembly for governing system of TDBFP's	Electrohydraulic assemblies in governing systems are generally employed in high pressure governing systems where the control oil pressure is at 160 bar and above. The governing system valve actuator assemblies used in the TDBFPs are low pressure (8 bar) hydraulic actuators which receive only hydraulic signals generated by the IH (current to hydraulic signal) converters mounted in the console. Hence, the EH assembly is not applicable for TDBFPs. Spare I/H convereter cosnidered which is functionally equivalent to electrohydraulic system.	Bidder to refer General note 3 in page-31 of 32 of Part-A/Sub-Section-VI, Chapter-02/Section- VI regarding not applicable item.
137	13	Sec-VI, Part-A	Sub-Sec-VI-chapter-2	16 of 32	15.1	One set of emergency over speed governor assembly	Electronic over speed protections, 2 out of 3 voting are used for emergency protection purpose in line with latest practice followed in all the power and industrial steam turbines and hence mechanical over speed protection system is not considered. Accordingly spares for emergency over speed governor assembly not considered.	Bidder to refer General note 3 in page-31 of 32 of Part-A/Sub-Section-VI, Chapter-02/Section- VI regarding not applicable item.
138	14	Sec-VI,Part-B	Sub-Sec-A-07	15 of 25	6.05.06 (c)	Particle size impurities test and moisture test as detailed out for Main Turbine, is to be carried out on one oil purification system of BFP drive turbine.	The capacity of oil purifier is 2400 LPH. For this capacity the approved vendors (Alfa Laval and GEA Westfalia) have type tested for particle size and the test was approved by NTPC for the recent project. Hence this test is not envisaged.	Bidder to refer clause no 12.00.00 Sub-section A-07 Part-B, Section-VI w.r.t. Type test requirement. Bidder to comply technical specification requirement.
139	15	Sec-VI,Part-B	Sub-Sec-E-12	3 of 4	1.00.00 (7)	Full load full speed/back to back locked rotor torque test for one gearbox.	Gear box already tested for full load full speed/back to back locked rotor torque test and was approved by various customers including NTPC for earlier executed projects. Hence this test is not envisaged.	Detailed test requirements shall be discussed & finalised during detail engg.Bidder to meet specification requirements.
140	16	Sec-VI, Part-A	Sub-Sec-VI-chapter-2	22 OF 32	1.00.00.3.a.(i)	Transmitters of all type, range and model no. (For the measurement of Pressure, differential pressure flow, level, temperature etc.)	Flow Transmitters are not applicable for BFPDT.	Bidder's proposal is not acceptable. Bidder shall provide mandatory spares complying to specification requirements for all items being supplied under STG chapter.
141	17	Sec-VI, Part-A	Sub-Sec-VI-chapter-2	22 OF 32	1.00.00.3.c	Pressure, Differential Pressure, Flow, Level and temperature switches	Switches are not applicable as transmitters are provided.	Bidder's proposal is not acceptable. Bidder shall provide mandatory spares complying to specification requirements for all items being supplied under STG chapter.
142	18	Sec-VI, Part-A	Sub-Sec-VI-chapter-2	22 OF 32	1.00.00.3.d	Pressure, Differential Pressure, Flow, level and temperature gauges	Flow Gauges are not applicable for BFPDT.	Bidder's proposal is not acceptable. Bidder shall provide mandatory spares complying to specification requirements for all items being supplied under STG chapter.

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143	19	Sec-VI, Part-A	Sub-Sec-VI-chapter-2	24 OF 32	4.00.00.B.2	Electronic Cards/PCB's/interface units etc. of all types used in TSS	PCB's are not applicable as cards/modules are provided	Bidder's understanding is correct.
144	20	Sec-VI, Part-A	Sub-Sec-VI-chapter-2	25 OF 32	4.00.00.C.2	Electronic Cards/PCB's/interface units etc. of all types	PCB's are not applicable as cards/modules are provided	Bidder's understanding is correct.
145	21	Sec-VI, Part-A	Sub-Sec-VI-chapter-2	25 OF 32	4.00.00.D	Load Transducers, frequency transducers & any other transducers (as applicable)	Not Applicable for BFPDT	Bidder's proposal is not acceptable. Bidder shall provide mandatory spares complying to specification requirements for all items being supplied under STG chapter.
146	22	Sec-VI, Part-A	Sub-Sec-VI-chapter-2	25 OF 32	4.00.00.E	Auto Synchroniser	Not Applicable for BFPDT	Bidder's proposal is not acceptable. Bidder shall provide mandatory spares complying to specification requirements for all items being supplied under STG chapter.
147	23	Sec-VI, Part-A	Sub-Sec-VI-chapter-2	25 OF 32	4.00.00.F.(ii)	Solenoid valves to be used in extraction NRVs (as applicable)	Solenoid valves in extraction NRVs -Not Applicable for BFPDT	Bidder's proposal is not acceptable. Bidder shall provide mandatory spares complying to specification requirements for all items being supplied under STG chapter.
148	24	Sec-VI, Part-A	Sub-Sec-VI-chapter-2	25 OF 32	5.00.00.(iv)	Purge meters	Not Applicable for BFPDT	Bidder's proposal is not acceptable. Bidder shall provide mandatory spares complying to specification requirements for all items being supplied under STG chapter.
149	25	Sec-VI, Part-A	Sub-Sec-VI-chapter-2	25 OF 32	6.00.00 (1 to 10)	Electrical Actuators	Not Applicable for BFPDT	Bidder's proposal is not acceptable. Bidder shall provide mandatory spares complying to specification requirements for all items being supplied under STG chapter.
150	26	Sec-VI, Part-A	Sub-Sec-VI-chapter-2	29 OF 32	3.00.00	CONTROL VALVES, ACTUATORS AND ACCESSORIES	We understand this clause is applicable for CONTROL VALVES, ACTUATORS AND ACCESSORIES for CPU only.	Bidder's understanding is correct.
151	27	Sec-VI, Part-A	Sub-Sec-VI-chapter-12	9 OF 10	8.00.00.(i)	Transmitters	Not Applicable for BFPDT as wireless transmitters are not provided. Only wired tx are provided.	Bidder's query is not clear. This clause is for Wireless system as specified in Clause no 2.04.5 , SUB-SECTION-IIC CONTROL & INSTRUMENTATION SYSTEM , Part-A of tech spec.
152	28	Sec-VI, Part-A	Sub-Sec-VI-chapter-12	9 OF 10	8.00.00.(ii)	Repeaters / Routers	Not Applicable for BFPDT	Bidder's query is not clear. This clause is for Wireless system as specified in Clause no 2.04.5 , SUB-SECTION-IIC CONTROL & INSTRUMENTATION SYSTEM , Part-A of tech spec.
153	29	Sec-VI, Part-A	Sub-Sec-VI-chapter-12	9 OF 10	8.00.00.(iii)	Gateway along with antenna / access point	Not Applicable for BFPDT	Bidder's query is not clear. This clause is for Wireless system as specified in Clause no 2.04.5 , SUB-SECTION-IIC CONTROL & INSTRUMENTATION SYSTEM , Part-A of tech spec.
154	30	Sec-VI,Part-B	Sub-Sec-E-12	2 of 4	1.00.00(a)	Performance Tests on each Boiler Feed Pump to determine the characteristic curve (Head, Capacity, Efficiency & Power) at Design Speed and to ensure compliance with design requirements specified in the specification. Measurement shall be carried out at 10%, 25%, 50%, 65%,80%, 100% & 125% of Design Flow with loop water at design temperature. Performance Test at other specified Conditions shall be carried out on all Boiler Feed Pumps at their respective Speeds at design temperature.	Performance test on BFP will be conducted at reduced speed and power and the results will be extrapolated to the specified conditions as per HIS, since it is not feasible to conduct full load, full speed tests at works. Performance test measurement shall be carried out at 25%, 50%, 65%, 80%, 100% & 125% of design flow.	Bidder understanding is not correct as Detailed test requirement is discussed & finalised during detail engg.Bidder to meet specification requirements.

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155	32	Sec-VI, Part-A	Sub-Sec-IIA-06	6 of 10	7.01.00	MDBFP- Base plate	Individual foundation frame shall be offered for MDBFP as recommended by our collaborator MHI, Japan. Similar arrangement was followed for all the supercritical projects executed for NTPC. Customer is requested to accept the above.	Specification requirement is clear in this regard. Bidder to comply specification requirement.
156	34	Sec-VI, Part-A	Sub-Sec-IA	26 of 40	4.26.4 (ii)	In case, the bidder or proposed sub vendor is not a manufacturer of proven Wet Limestone Grinding Mills as per clause 4.26.1 (c) above, but have designed, manufactured & supplied dry Grinding Ball Tube mills for at least 500 MW pulverized coal fired power plant, the Bidder or the proposed sub-vendor can also manufacture Wet limestone Grinding Mills provided it has a licensing agreement with a Wet limestone Grinding mills manufacturer who meet the requirements stipulated at clause 4.26.1 (c) above for the Wet limestone Grinding mills and provides extended warranty of three (3) years for the Wet Limestone Grinding Mills. In addition, the Bidder shall be required to furnish a letter of support from Collaborator(s) / Licensor / Technology provider for successful performance of the equipment valid up to the end of defect liability period of the contract as per the format enclosed in the bidding document, at the time of placement of order on the approved sub-vendor.	Customer is requested to modify the clause as "In case, the bidder or proposed sub vendor is not a manufacturer of proven Wet Limestone Grinding Mills as per clause 4.26.1 (c) above, but have designed, manufactured & supplied dry Grinding Ball Tube mills for at least 500 MW pulverized coal fired power plant, the Bidder or the proposed sub-vendor can also manufacture Wet limestone Grinding Mills and provides extended warranty of three (3) years for the Wet Limestone Grinding Mills."	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
157	35	Sec-VI, Part-A	Sub-Sec-IA	25 of 40	4.26.1 (a)	Application:Wet Limestone based FGD application or ash slurry application in Coal fired power plant	Customer is requested to modify the clause as Application:Wet Limestone based FGD application or ash slurry application in Coal fired power plant or equivalent slurry application in other process plants.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
158	36	Sec-VI, Part-A	Sub-Sec-VI, Chaper-1	20 of 39	……	VFD TRANSFORMER (If applicable)	Customer is requested to mention the sl. no. of this item and also requested to clarify whether this requirement is for Slurry Pump with VFD of for any other equipment with VFD?	Mandatory spare for VFD transformer (if applicable) as per Specification cl.no. 1.22.06 Sub -Section-VI,Chapter-01, Section-VI, Part-F shall be applicable for slurry pump .
159	37	Sec-VI, Part-A	Sub-Sec-VI, Chaper-2	14 OF 33	11a(vi)	**TURBINE DRIVEN BOILER FEED PUMP (BFP):** Set of filter elements / cartridges, O-rings, gaskets for Duplex Lube oil filter for both MDBFP & TDBFP	The heading of this item is Turbine Driven BFP. Henace customer is requested to delete the requirement mentioned for MDBFP under this clause.	Bidder to refer amendment TG-10 in this regard
160	38	Sec-VI, Part-A	Sub-Sec-VI, Chaper-2	15 OF 32	12(vi)	**MOTOR DRIVEN BOILER FEED PUMP (BFP) / BFP RECIRCULATION VALVE:** Set of filter elements / cartridges, O-rings, gaskets for Duplex Lube oil filter for both MDBFP & TDBFP	The heading of this item is Motor Driven BFP. Henace customer is requested to delete the requirement mentioned for TDBFP under this clause.	Bidder to refer amendment TG-11 in this regard
161	39	Sec-VI, Part-B	Sub-Sec-VI, Chaper-8	1 of 29	1.00.00.A.1 (iii)	Pump shafts line bearings/ bushes only (line bearings / bushes for impeller shaft, intermediate shafts, drive shaft, bowl bearing)	Line shaft is not applicable for offered pump. Bearings applicable for concrete volute pump is quoted under clause no-1.00.00.A.1(ii).	Bidder to refer amendment WS-15 in this regard.
162	40	Sec-VI, Part-B	Sub-Sec-VI, Chaper-8	1 of 29	1.00.00.A.1 (vi)	Wearing rings or equivalent for impeller (if applicable)	Not applicable for offered Pump. Equivalent items are not there.	Bidder's request reviewed. Spares (if applicable)of the offered equipment shall supplied by bidder.

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163	41	Sec-VI, Part-B	Sub-Sec-VI, Chaper-8	1 of 29	1.00.00.A.1 (vii)	Wearing rings or equivalent for Casing/ Bowl (if applicable)	Not applicable for offered Pump. Equivalent items are not there.	
164	42	Sec-VI, Part-B	Sub-Sec-VI, Chaper-8	1 of 29	1.00.00.A.1 (viii)	Impeller Shaft and Line shafts with fasteners (as applicable)	impeller shaft if applicable for offered pump only.Line shaft is not applicable.	
165	43	Sec-VI, Part-B	Sub-Sec-VI, Chaper-8	1 of 29	1.00.00.A.1 (ix)	All shaft Couplings with fasteners (as applicable)	Line shaft couplings are not applicable. Coupling between Pump & Motor is quoted under sl no-1.00.00.A.1 (X)	
166	44	Sec-VI, Part-B	Sub-Sec-VI, Chaper-8	1 of 29	1.00.00.A.1 (xi)	Bushes with fasteners for the all Couplings as applicable	Line shaft couplings are not applicable. Motor to Pump Coupling bushes is quoted under sl no-1.00.00.A.1 (XII)	
167	45	Sec-VI, Part-B	Sub-Sec-VI, Chaper-8	1 of 29	1.00.00.A.1 (xv)	Impeller with impeller nut	Impeller nut is not applicable for offered pump. Equivalent item i.e impeller plate is offered.	
168	46	Sec-VI, Part-B	Sub-Sec-VI, Chaper-8	1 of 29	1.00.00.A.1 (xvi)	Oil Seal Ring (if applicable)	Not applicable. Equivalent item is not there.	
169	47	Sec-VI, Part-B	Sub-Sec-VI, Chaper-8	1 of 29	1.00.00.A.1 (xvii)	Deflectors (if applicable)	Not applicable. Equivalent item is not there.	
170	1	Sec-VI, Part-A	Sec-IIA-06	6 of 10	6.01.00	One set of test kit for measuring oxygen content at deaerator outlet shall also be provided for the station.	Online oxygen measuring provision is being provided by Bidder. Hence, Offline test kit for measuring oxygen content at deaerator outlet is not required. Customer is requested to accept above.	Specification requirement is clear in this regard. Bidder to comply with the specification requirements.

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171	2	SECTION – VI, PART-A	SUB-SECTION-IIB ELECTRICAL SYSTEM / EQUIPMENTS	14 OF 19	1.19.00	EMPLOYER'S REQUIREMENT In addition to above, following items required for Em-ployer's use are also included in bidder's scope. These equipment's shall conform to technical specification requirements as stipulated in Part B for respective equipment's. 1. 415V switchgear feeders as indicated below (at suit-able location to be decided during detailed engineering). (a) 4 Nos. MCCB–125A (b) 4 Nos. MCCB–250A (c) 4 Nos. MCCB-400 A (d) 6 Nos. ACB outgoing – 1000 A (in unit emergency switchgear and station service switchgear for feeding owner's loads 2. Following requirements of construction power for employers' office/ construction use: Construction power at 415 V at two locations with total load 100 KVA along with suitable metering arrangement at each location.	Customer to furnish employer load requirement in each switchgear room of CHP/AHP/FGD to avoid any change in transformer sizing and MCC design during DE.	Employer requirement for feeders shall be provided as per Specification cl.no. 1.19.00 Sub - Section IIB Section-VI, Part-A. However, employer feeder requirement shall not be considered for transformer sizing.
172	3	SECTION – VI, PART-A	SUB-SECTION-IIC CONTROL & INSTRUMENTA-TION SYSTEM	06 of 18	2.02.00	For CHP DDCMIS, necessary signal exchange with Em-ployer's existing Stage-I/II CHP DDCMIS system shall also be in Contractor's scope. For this signal exchange, the number of I/O's shall be considered as DI: 32 DO: 16 AI:8 AO:8. The exact scheme shall be finalized dur-ing detail engineering. Employer's stage-I/II CHP DCS/RIO panel shall be the terminal point.	Cabling from CHP DDCMIS to external CHP is not considered in BHEL scope, only provision shall be made available in CHP DDCMIS as per the IO list shared in the contract.	Bidder's understanding is not correct. Cabling from contractor's CHP DDCMIS to Em-ployer's existing Stage-I/II CHP DDCMIS system (located inside plant premises) is in bidder's scope.
173	4	SECTION – VI, PART-A	Annexure C to IIC Contract quanti-ty	10 of 22	1.01.00	CONTROL DESKS AND PANELS Following are the contract quantities of control desks: Arc shaped Control Desks shall be provided as men-tioned below. 1. UNIT Control Room - 8m (1 per unit) 2. Unit In charge Desk (UID)- 3m (1 common) 3. Centralized Off-site Control Room-4m (for Water System) 4m (for Ash Handling System) 3m (for FGD System) 4. CHP System CR- 4m (1 per system) 5. FGD System CR- 3m (1 per system) Note-4 The following instruments shall be furnished for each Coal Handling Plant to be mounted on the draw out section of Control Desk of each Coal Handling Control Room. 1. Stop PB: 45 nos. 2. Release PB: 1 no. 3. Emergency stop PB: 1 no. (With cover)	For CHP application, Control desk with Stop PB and Emg PB is considered as per specification without Mimic/Annunciation panel. For AHP system arc shaped Control desk for placement of OWS/EWS without any PB's is considered. Please confirm	Bidder's proposal for CHP control desk is not acceptable. Bidder shall provide arc shaped control desk with draw out console meeting the requirements of the referred clause.

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174	5	SECTION –VI, PART-B	SUB SECTION B-06 LT SWITCH-GEARS & LT BUSDUCTS	11 of 19	3.01.00	All equipment associated with an incomer or outgoing feeder shall be housed in a separate compartment of the vertical section. Two-tier breaker arrangement in a vertical section shall be offered for outgoing breaker feeders of rating up to 1600A. Fixed part of vertical busbar and moving part of draw-out modules for pow-er connection shall be of Silver/Tinned plated Copper only. No live parts shall be accessible with equipment drawn out. The Module compartment door shall have external padlocking facility with MCC frame/fixed structure. The MCC module will have a hole with a grommet on side plate of the module truck for taking Profibus DP connector with 2 nos. armoured profibus DP cables from Cable alley to IMC's profibus DP port for making daisy chain connection of IMCs by DDCMIS vendor in an MCC panel. Alternatively, good quality Secondary Isolating Contacts(SICs) can be of-fered for Profibus DP communication port connection & isolation between moving & fixed parts of MCC. A separate compartment shall be provided for relays and other control devices associated with a circuit breaker. For breaker controlled motor feeders, an aux. relay shall be provided for taking Local push button sta-	EPB shall be wired directly as a DI to IMC and then communication established to DDCMIS through Profibus communication. No separate H/W is con-sidered between LT switchgear and DDCMIS panels.	Bidder proposal is not acceptable. Specification cl. no.3.01.00 Sub -Section B-06 Section-VI, Part-B to be followed.
175	6	SECTION VI, PART-B	SUB-SECTION-B-08 HT LT AND CONTROL CABLES	5 of 7	4.00.05	Cables shall be supplied in steel drums of heavy construction. The drum shall be designed on the basis of weight, diameter, bending radius and length of cable.	Steel drum is considered only for HT cables. Kindly confirm the requirement of steel drum for LT Power, control and instrumentation cables	Bidder proposal is not acceptable. Specification cl. no.4.00.05 Sub -Section B-08 Section-VI, Part-B to be followed.
176	7	SECTION VI, PART-B	SUBSECTION-B-11 STATION LIGHTING	15 of 18	Annexure-A Sl No-k	Avg lux level of 50 with Industrial type LED Luminaire for Cable galleries/vault	For overhead cable rack, Pipe cum cable rack illumination is not considered. Kindly confirm	Confirmed.
177	8	SECTION VI, PART-B	SUB-SECTION B-0 GENERAL ELEC-TRICAL SPECIFCIATION	9 of 16	3.06.00	m) Plant control cable Interconnections a) Standard control cable sizes shall preferably be 3CX1.5, 5CX1.5, 7CX1.5 & 10CX1.5 mm2 ,14CX1.5 mm2	19Cx2.5 sq.mm Control cable also to added to the standard cable size. Kindly confirm	Confirmed.
178	9	SECTION VI, PART-A	SUB-SECTION-I-A PROVENNESS	32 of 40	5.12.1	AUXILIARY OIL FILLED TRANSFORMERS AND HT TRANSFORMERS	Provenness criteria of only 16MVA, 11KV and above transformer is mentioned. For any Aux transformer up to 2500KVA/11KV or 3.3KV (Dry or oil type), standard provenness criteria of BHEL shall be used. Please confirm	Bidder understanding is not correct. Specification cl.no. 5.12.0 Sub -Section I-A Section-VI, Part-A to be followed.
179	10	SECTION VI, PART-A	SUB-SECTION-I-A PROVENNESS	1 to 40 of 40	5.00	PROVENNESS CRITERIA FOR ELECTRICAL EQUIPMENTS	Provenness criteria for many of the electrical equipment's are not defined in the specification. In such cases wherever criteria are not available, Standard provenness criteria of BHEL shall be used. Please confirm.	Bidder understanding is not correct. For provenness criterion of electrical equipments Specification cl.no. 5.0 Sub -Section I-A Section-VI, Part-A to be followed.
180	11	SECTION VI, PART-B	GENERAL			Make of components for HT/LT/Control/Instrumentation cables including make of XLPE cable	Make of components shall be as per vendor preferred including XLPE material. Special encouragement shall be given for made in India components as per government guidelines. Please accept	Bidder proposal isn't acceptable. BOI make controls shall be finalized during MQP approval.

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181	12	SECTION VI, PART-A	SUB-SECTION-I-A PROVENNESS	32 of 40	5.10.0	HT power cables. The bidder/Sub-vendor should have manufactured and supplied following cables	Customer may please specify the time line (eg. For the last ten years or so)	Time line is not applicable for HT power cable proveness criterion . Specification cl.no. 5.10.0 Sub -Section I-A Section-VI, Part-A to be followed.
182	13	SECTION VI, PART-A	SUB-SECTION-I-A PROVENNESS	31 of 36	5.12.2	Bidder/Sub-Vendor should have his own facilities for conducting all routine and type tests as per IS: 2026 (except short circuit test).	All Type tests if required for Auxiliary transformer up to 2500KVA-11KV/3.3KV, 11KV/415V and 3.3KV/415V shall be conducted in NABL accredited labs like CPRI/ERDA etc. Please confirm	Bidder proposal is not acceptable. Specification cl.no. 5.12.0 Sub -Section I-A Section-VI, Part-A to be followed.
183	14	SECTION VI, PART-A	SUB-SECTION-IIC CONTROL & INSTRUMENTA-TION SYSTEM	PAGE 8 OF 18	2.04.5	Wireless link	Wireless communication is envisaged only in Stacker reclaimer and not considered for the following area 1.AWRS, since we have considered standalone DDCIMS system 2.Paddle feeder 3.Coal/Lime sampling PLC	Bidder's understanding is not correct. 1.Bidder shall provide wireless for AWRS complying to technical specification. 2. Wireless link is not envisaged for Paddle feeder. 3. Wireless link is not envisaged for Coal/Lime sampling PLC
184	15	SECTION VI, PART-A	SUB-SECTION-IIC CONTROL & INSTRUMENTA-TION SYSTEM	Page 2 of 18	1.05.00	All electrical devices like switches/ transmitters/ con-troller/ analyzer/ solenoid valves which are located in the in hazardous areas like hydrogen gas area, seal oil area etc. shall be made intrinsically safe by providing suitable type of transformer isolated barrier / Zener barrier of standard make & shall be provided with explosion proof enclosure suitable for hazardous ar-eas described in National Electric Code (USA), Article 500, Class-I, Division-I or EN60079-14 or shall comply with the essential requirements of ATEX directives.	CHP/AHP/LHP/GHP are not envisaged under hazard-ous area	Bidder proposal is not acceptable. Bidder shall comply to specification requirement.
185	16	SECTION VI, PART-B	SUB-SECTION B-09 DG SETS	Page 9 of 13	9.00.00	Six numbers of Duplex type or 12 nos. Simplex type Resistance element Temperature Detectors (RTDs) shall be suitably distributed at locations where high-est temperatures may be expected in stator wind-ings and one (1) element in each bearing.	No of RTD per phase will be as per OEM(Alternator) standard .	Bidder proposal is not acceptable. Specification cl.no. 9.00.00 Sub -Section B-09 Section-VI, Part-B to be followed.
186	1	VI	Part C	58 of 119	30.00.00	The equivalent 'A' weighted sound pressure level measured at a height of 1.5 m above floor level in elevation and at a distance of one (1) meter horizontally from the nearest surface of any equipment/machine, furnished and installed under these specifications, expressed in decibels to a reference of 0.0002 microbar, shall not exceed 85 dBA.....	The noise level for Diesel Engine set required for Fire Water Pump will be as per OEM standard. No enclosure will be provided for emergency DE required for Fire water pump set. Customer is rquested to confirm the same.	Bidder's undersatnding is not correct. Bidder to comply with specification requirement. Necessary enclosure shall be provided to meet noise level as per specification.

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		Section	**Sub-Section**	**Page No.**	**Clause No.**			
187	2	VI	Part B--A18	3 of 16	5.04.00	Location of Infrared detectors on coal conveyors	1. One infra red detector shall be located near head of the coal/biomass conveyor. Infra red detector is not considered at the tail end of the conveyor. 2. No infrared detectors are considered for limestone, gypsum, ash and biomass conveyors. Customer may please confirm.	1. Bidder's proposal is acceptable 2. Bidder's understanding is not correct. Bidder shall provide infrared detectors for limestone, gypsum, ash and biomass conveyors complying to technical specification.
188	3	VI	Part B--A18	5 of 16	5.08.03	Interface between fire water pumps PLC, Fire Detection & Alarm (FDA) and plant DCS	1. Fire water pumps PLC shall be interface with station wide LAN for two –way transfer of signals for information sharing through dual fibre optic connectivity. 2. Fire detection & alarm system shall be interfaced with Fire water pumps PLC (drives running status) via hardwiring with interface modules. 3. Fire detection & alarm system shall be interfaced with plant DCS (fire alarm and system trouble) via hardwiring with interface modules. Customer may please confirm.	1. Bidder's proposal is not acceptable. Bidder shall comply to specification requirments. 2. Bidder's proposal is not acceptable. Bidder shall comply to specification requirments. 3. Bidder's proposal is not acceptable. Bidder shall comply to specification requirments.
189	4	VI	Part B--A18	9 of 16	5.15.00	Cabling for Fire Detection & Alarm (FDA)	1. Cable size of 1 Pair x 1.5 sqmm, armoured, shielded shall be used for loop wiring. 2. Cable size of 2C x 2.5 sqmm armoured shall be used for powering various devices in loop and solenoid valves of spray system 3. Inside buildings cables shall be laid directly on the wall with saddle spacers. No conduit shall be used for laying FDA cables. 4. In conveyor areas, cables shall be burried along the conveyor length with HDPE conduits. Customer may please confirm.	1. Bidder's proposal is not acceptable. Bidder shall comply to specification requirments. 2. Noted 3. Bidder's proposal is not acceptable. Bidder shall comply to specification requirments. 4. Bidder's proposal is not acceptable. Bidder shall comply to specification requirments.
190	5	VI	Part B--A18	10 of 16	5.18.00	Multisensor detector shall be provided for return air ducts of main plant, which shall consist of intake probe, detector housing, and exhaust pipe etc. The detector shall be mounted outside the duct.	Duct detectors are not considered as multisensor detectors shall be provided in the AHU room. Customer may please confirm.	Muti sensor detectors shall be provided inside AHU room and Duct detectors shall be provided inside return air duct.
191	6	VI	Part B--A18	8 of 16	5.13.00	Power Supply for Fire Alarm Panels & Repeater Alarm Panel	Fire Alarm Panels shall be powered from 1 no. of 230 V AC plant UPS system. Customer may please confirm.	Bidder's proposal is not acceptable. Bidder shall comply to specification requirements.
192	1	SECTION –V1, PART –A	SUB SECTION-II A-01	93/606	2.16.05A	Provision for Future Installation of SCR system	Please confirm whether the APH should be SCR ready or not	Bidder to refer Section A-02, Part B, Section VI for requirements of Air-Preheater construction, which are quite clear. Bidder to comply the specification requirements.

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193	2	SECTION-VI, PART-B	SUB SECTION-A-02	445/975	9.01.03	Air Heater Seals - The Contractor shall also demonstrate that the drift in air heater leakage (percentage change in air-in-leakage) does not exceed 1%, one year after demonstration of above guaranteed air-in-leakage.	The drift in air heater leakage will not exceed 2 or 3%, one year after demonstration of above guaranteed air-in-leakage.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
194	3	SECTION –V1, PART –A	SUB SECTION-II A-01	87/606	2.14.01	One (1) peripheral ACVFD drive connected to drive Air heater along with automatic Clutching/declutching arrangement. Alternatively, centrally mounted APH ACVFD. Drive system having sufficient space for mounting emergency drive and having Handling facility with proven experience may also be acceptable.	One (1) peripheral AC drive connected to drive Air heater along with automatic clutching/ declutching arrangement. APH rotational speed is decided in such a way to give maximum residual time for heat transfer. Reducing the rpm that is increasing the residual time further will not have any improvement in performance. On maintenance aspect also, VFD is not advisable. Hence, the constant speed drive which is the proven design and it is working satisfactorily in all the installations is recommended instead of VFD drive.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
195	4	SECTION –V1, PART –A	SUB SECTION-II A-01	88/606	2.14.01	Adequate number of thermocouples or platinum resistance temperature detectors (RTD) for measuring cold and hot end bearing metal temperature for interlock , Protection and monitoring shall be provided.	Adequate number of thermocouples or platinum resistance temperature detectors (RTD) for measuring of cold and hot end bearing oil temperature for interlock, protection and monitoring shall be provided.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
196	5	VI A	I-A	21 OF 40	4.25.1	**FGD:** The Bidder or Bidder's sub-vendor should have designed, engineered, supplied, erected/supervised erection and commissioned/supervised commissioning of at least one (1) no. of wet limestone based Flue GasDesulphurization System, having flue gas treatment capacity of not less than 23,00,000 Nm3/hr..	Proposed Modification in PQR: Bidder requests to modify as follows:“The Bidder or Bidder's sub-vendor should have designed, engineered, supplied, erected/supervised erection and commissioned/supervised commissioning of at least one (1) no. of wet limestone based Flue Gas Desulphurisation System, having flue gas treatment capacity of not less than 20,00,000 Nm3/hr”. Reason for PQR modification: Currently, bidder is executing many Wet Limestone based Flue Gas Desulphurisation (FGD) projects in India for pulverised coal fired power plants of various ratings 210/250/500/660/800 MW. Bidder has had an experience in completion of design, engineering, manufacturing, supplying, erection and commissioning for two wet limestone based FGD projects at Dadri (2x490MW) and Maitree (2x660MW), having flue gas treatment capacity up to 22,00,000 Nm3/hr and with desulphurisation efficiency of more than 90%. Bidder has completed one-year successful operation in Dadri FGD.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.

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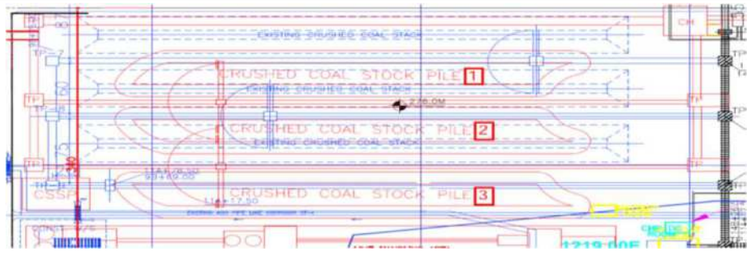
197	6	VI A	I-A	25 OF 40	4.26.1 (e)	**Agitators:** 1) Application: Wet Limestone based FGD application in Coal fired power plant. 2) Equipment Rating: Agitator rating not less than that supplied for 500 MW or higher size unit for similar application	Proposed Modification in PQR Agitator rating not less than that supplied for 500 MW or higher size unit for similar application supplied in Wet Limestone Based FGD application in Coal Fired Power Plant (or) Any other process application with a specific gravity of 1.2 (min) or with a slurry concentration (min) of 20% (wt). In both the above application, either the bidder can meet PQR based on its own credentials or through collaboration or licensing agreement with qualified equipment manufacturer. Reason for PQR modification: Currently Only one Indian vendor meeting Specified PQR requirements and the modification will increase in vendor base	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
198	1	SECTION-VI, PART-E And SECTION-VI, PART B	LIST OF TENDER DRAWINGS And SUB-SECTION-A-20 Coal & Biomass and Gypsum Plant	Page 9 OF 130 And Page 96 of 113	GENERAL LAYOUT PLAN And 2.0.0 SYSTEM DE-SCRIPTION	GENERAL LAYOUT PLAN And ….. The complete truck unloading system must not have any un-derground structures/facilities.	Due to the space constraint in this layout, we propose following: a) Truck tippler with pit/ underground arrangement in Limestone handling plant (LHP) and Biomass handling plant (BMHP) is proposed, so that ramp for trucks can be avoided, as provision of ramp occupies a lot of space in the limited area available in the plant. Kindly give your confirmation for Truck tippler with pit/ underground arrangement. b) In similar lines, partial underground arrangement for surface feeder in LHP and BMHP is being proposed. Kindly confirm. c) Bucket elevator with pit is proposed in LHP and BMHP, so that feeding conveyor to bucket elevator need not be elevated and length also gets reduced. So kindly give your confirmation for Bucket elevator with pit. So NTPC to amend the referred clause, allowing bidder to consider underground structures/ facilities in truck unloading system of both LHP and BMHP.	Bidder proposal shall be reviewed during detailed engineering. Underground/semi underground/over ground shall be finalised based on the available space in layout
199	2	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	GENERAL LAYOUT PLAN		We are proposing one yard-conveyor below stockpile-1 and second yard-conveyor below stockpile-3 and both stockpile-2&3 are proposed to be merged together, i.e. width of combined stockpile-2&3 shall be 100m, with-out any gap or road or retaining wall in between. Due to the limited space available in layout, this arrangement is proposed. Kindly confirm if bidder can follow this arrangement.	Bidder's proposal may be accepted (in case of layout constraint) during detail engg. Bidder to refer sl no MH-3 & MH-8 of the amendment 1 to technical spec.

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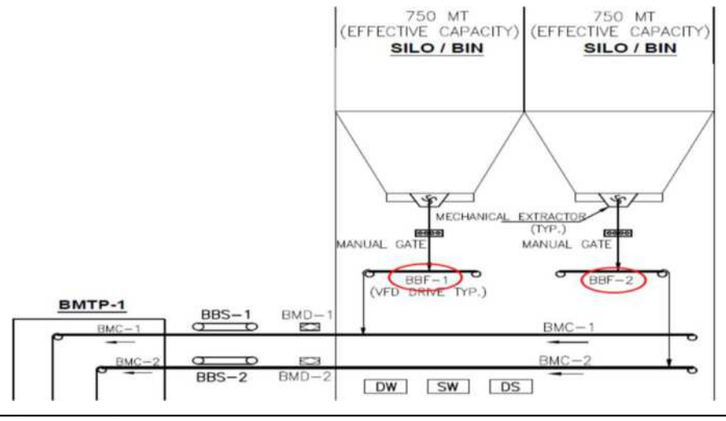
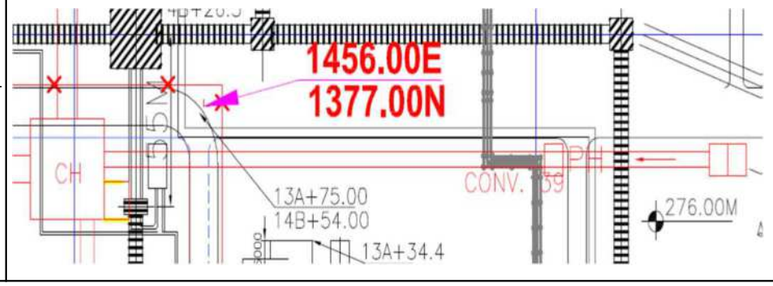
		Section	**Sub-Section**	**Page No.**	**Clause No.**			
200	3	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	GENERAL LAYOUT PLAN	Biomass handling system	Biomass handling system is proposed to be located near coal stockpiles, and biomass will be fed from biomass conveyor onto coal reclaiming path, i.e. BMTP-1 will be placed on CHP conveyor 35A/B (as per COAL AND BIOMASS FLOW DIAGRAM 9587-001(R)-POM-A-002 RevA), for further feeding to coal bunkers. Kindly confirm if this is acceptable.	Bidder may relocate the biomass facility within stockpile area. Biomass feed to coal conveyor in direct/reclaim path shall be acceptable
201	4	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 56 OF 130	COAL AND BIOMASS FLOW DIAGRAM 9587-001(R)-POM-A-002 RevA		Kindly confirm if biomass can be directly discharged from silo onto BMC-1 /BMC- 2 conveyors, without any belt feeders BBF-1 and BBF-2 in between, based on the layout prepared.	Bidder's proposal shall be acceptable provided that the proposed scheme(without Biomass belt feeder) shall meet the functional requirement
202	7	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	GENERAL LAYOUT PLAN	GENERAL LAYOUT PLAN	During the site visits, it was noticed that various facilities are existing near the proposed coal crusher house region, which are not appearing in NIT plot plan (GLP). NTPC is requested to furnish updated GLP incorporating all the existing facilities.	Bidder to note that facilities near proposed crusher house is updated in GLP. Bidder to refer GLP,Rev-1
203	8	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 56 OF 130	COAL AND BIOMASS FLOW DIAGRAM 9587-001(R)-POM-A-002 RevA	FLOW DIAGRAM AND GENERAL LAYOUT PLAN 	Proposed ERH conveyor 36 has to cross various existing facilities like 3 nos. pipe racks/ cable racks, Conveyor 3A/B Stage-I, conveyor feeding to TP-18, DE MCC building and two roads. So NTPC to arrange following drawings to check the feasibility. a) Civil drawings of 3 nos. pipe racks/ cable racks b) Structural drawings of 3 nos. pipe racks/ cable racks c) Drawings of existing DE MCC building d) Drawings of existing Conveyor 3A/B Stage-I e) Drawings of conveyor feeding to TP-18	proposed ERH conveyor has been deleted. Bidder to refer sl no MH-1 of the amendment 1 to technical spec

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204	2	VI/PART-A	IIA-16	12 of 17	1.01.08,(i)	Three (03) streams of horizontal combined ash slurry disposal pumps complete with drive motors, variable speed hydraulic cou-pling for first stage pumps and fixed belt drive arrangement for subsequent stages, base plate, foundation bolts, inserts, em-bedment and accessories as specified and as required, out of which two streams will be working, one stream will be normal standby and other stream will act as maintenance standby. Provisions shall be there for locating another additional Pump in series within the Pump House, for future use	Please clarify, No. of streams of combined ash slurry disposal pumps as 03 or 04 Nos. (2W+1SB+1Maintenance). Please note that, the total slurry of Fly ash is more than the Bottom Ash slurry. In case of combined ash slurry Pump, if same pump is used for both BA slurry disposal and FA slurry disposal, huge qty of make up water is required during BA slurry disposal. To avoid that either of the following scheme may be followed. 1. 02Nos (1W+1SB) BA slurry disposal pump for (BA+ coarse) BA slurry disposal and 02Nos (1W+1SB) FA slurry disposal pump for Fly ash slurry disposal from combined ash slurry dis-posal pump house. Space provision for future pump in series shall be only for BA slurry dis-posal pump series. 2. Fly ash slurry disposal capacity shall be de-signed for 8hrs ESP ash generation to be dis-posed in 8 hrs. Also slurry disposal concentration shall be 30% (w/w). Please clarify the same.	Bidder to refer sl no MH-12 of the amendment 1 to technical spec & provide Four (4) streams (2W+1BS+1Maintenance) of ash slurry disposal pump. 1. Bidder's proposal to provide Two (2) no BA slurry disposal pump series for BA & Coarse ash & Two (2) no FA slurry disposal pump series for FA is acceptable. 2. Bidder's proposal is acceptable
205	1	SECTION-VI, PART-B	A-20	34 OF 113	4.26.00	Wind barrier shall be installed all around the coal stockyard to a height of 11 m (1 m above the coal heap) to reduce wind force acting on the coal. Material of wind barrier screen mesh – HDPE monofilament knitted UV wind screen mesh with 80% blockade, 275 GSM (minimum), 6 gauge in black colour.	During the site visit, it is found that the area of the proposed coal stockpile is very less to accommodate the storage capacity of the coal. It is difficult to accommodate the wind barrier foundations (Approx. 3.0m wide over ground) within the proposed layout. NTPC to review the requirement of wind barrier to utilize the space for the coal stock pile	Bidder's proposal to delete wind barrier is acceptable due to layout constraint. Bidder to refer sl no MH-41 amendment -1 to technical specification

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Pre-Bid Clarifications

	SL. NO	ENQUIRY SPECIFICATION				SPECIFICATION REQUIREMENT	COMMENTS / CLARIFICATIONS	Reply
		SEC/ PART	SUBSEC.	PAGE NO.	CLAUSE NO.			
1	5	VI-A	SUB-SECTION-I	5 of 9	4.02.00	The Employer shall issue the following quantities of Fuel oil and Coal per unit for firing up to successful completion of “Initial Operation” (as defined in General Technical Requirements, Part-C, Section-VI of Technical Specification) for each unit free of charge.	The term "Initial Operation" may be replaced with "Full Load" for the first time as completion of Initial Operation can be delayed intermittently depending of the inputs and certain reasons beyond the Control of the Contractor. We request NTPC to consider following changes in the clause: 1. The Employer shall issue the following quantities of Fuel oil and Coal per unit for firing up to successful achievement of full load for the fiest time for each unit free of charge. 2. Further, coal and fuel oil as required for achievement of ‘Initial Operation” for both the units shall also be provided by Employer free of charge to the contractor.	Bidder proposal is not accepted. Please comply with requirement of technical specifications
2	19	VI-D & VII Book 3 of 3			27.00.00 Appendix-6 to Contract Agreement	Facilities to be provided by the Employer	We request NTPC to physically hand over the clear encroachment free land immediately after award of Contract i.e. within one month of issuance of NOA.Only Employer shall be responsible for coordinating and resolving all issues with Central & State Government, local bodies and local authority w.r.t land acquisition.	Area shall be provided in parts progressively to the Bidder as per Project requirement and Bidder's mobilization plan.
3	20	VI-A	I	8 OF 9	4.10.00	The vendor / contractor shall visit the site to ascertain the position of land acquisition etc.		
4	21	VI	C	46 of 119	28.00.00	Training of Employer's Personnel	We request NTPC that the number of man-months training shall be mutually agreed after Award. All the expenditure towards travel (internal & external), boarding and lodging and living expenses of Employer’s personnel shall be borne by the Employer for all types of trainings. Any kind of training shall only be provided by Bidder’s personnel experts at Bidder works / project site only. However if training is not availed by employer during the contract period no rebate on this account shall be admissible in contract price. NTPC to confirm.	Bidders proposal is not accepted provisions of clause 28.00.00 part C section VI of technical specifications shall prevail.
5	23	VI	F			Mandatory Spare List	Wherever, Bidder quotes lot price for a clause/system in the list of mandatory spares, the offered price will remain same regardless of the deletion / change of items / quantity corrections etc as applicable to the particular design/vendor selected during execution. This should not be a point of contention during execution of the order. NTPC to confirm the same.	Bidders proposal is NOT acceptable.
6	25	ITB VII Book 1 of 3	ITB	Page 11 of 46 Bid Form		**Attachment 4A : Special Tools and Tackles** The bidder shall provide the details regarding Special Maintenance Tools and Tackles. The cost of these Tools and Tackles shall be included in the Stage-II (Price) Bid	**Special Tools and Tackles:** The list of Special Tools and Tackles has been furnished at Attachment 4A. It is clarified that the supply of Special Tools and Tackles shall be limited to the list as furnished at Attachment 4A.	Based on the proposed erection strategy of the Bidder, the details of T&Ps and their deployment schedule shall be finalized during L2 schedule finalization with NTPC. However, EPC contractor will have to ensure the deployment of T&Ps as per actual requirement at site to meet the project milestones and implementation schedule. PM to review

7	27	VI-A	II-B & II-C	Page 4 of 19 Page 18 of 18	1.05.03 25.00.00	Switchgear /Numerical Relay Networking Annual Maintenance Services (AMS)	Annual Maintenance Contract/ Services(AMC) As per technical specification requirements, AMC/AMS to be provided for certain C&I / Instruments for 03 years. We understand that on successful completion of facilities and completion of defect liability period, NTPC will release the contractor's Bank Guarantees, applicable payments and close the contract. Therefore, providing AMC beyond defect liability period is not envisaged.	Bidder's understanding is not correct. Bidder to note that AMC/AMS is part of the EPC contract. Accordingly closure of EPC contract shall be done upon successful completion of AMC/AMS.
8	28	VI-B	E-59	2 of 6	4.0 b)	Structural steel (plates and rolled sections i.e. channels, beams & angles) conforming to IS 2062 and Reinforcement steel conforming to IS 1786 supply if in the scope of the contractor shall be procured from Primary Steel Producers (Refer NOTE below). Currently, Primary Steel Producers acceptable.....	Steel products are only to be procured from Primary Steel producers indicated in the NTPC specification. As per notification/order dated 14.12.16, 09.08.16 and 12.05.16 by the Ministry of Steel, Govt. of India, such classification fo steel producers is disposed off. Such classification will also lead to situation wherein deliveries committed by NTPC specified steel producers are not adhered or these steel producers are not evincing keen interest in supply of certain steel sections to match supply schedule. Request NTPC to amend the specification accordingly in the said clause and at other places wherever such classification is indicated.	The clause is as per Qualyfing requirement for steel producers in TS having production capacity of 1 Million Ton per annum.For sections, if any which are not being supplied by enlisted steel suppliers, provision for procuring such sections are already envisaged in the tech specifications. Hence Bidder has to follow the Technical Specification reqirements
9	29	VI-A	SUB SECTION-VI	3 of 3	13.00.00	Bidder shall not indicate “Not Applicable” against any of the spare (except for those items for which “if applicable” is specified). In case of not applicability, functionally equivalent spare to be ……	a. Generally, lot price is quoted by the bidder for a main system considering applicable items (for the offered design) under that heading. In such scenario, there should not be a question of rebate (for not applicable items in the lot) during execution/closing of the Contract. b. In case there is no equiv. spare technically for a specified spare, there should not be a question of rebate during execution/closing of the Contract. Kindly confirm the above understanding	Bidders understanding is NOT correct
10	30	SECTION – IV		38 of 85	19	Subcontracting:- Appendix 5 (List of Approved Subcontractors) to the Contract Agreement specifies major items of supply or services and a list of approved Subcontractors against each item, including vendors. Insofar as no Subcontractors are listed against any such item, the Contractor shall prepare a list of Subcontractors for such item for inclusion in such list. The Contractor may from time to time propose any addition to or deletion from any such list. The Contractor shall submit any such list or any modification thereto to the Employer for its approval in sufficient time so as not to impede the progress of work on the Facilities. Such approval by the Employer for any of the Subcontractors shall not relieve the Contractor from any of its obligations, duties or responsibilities under the Contract.	Bidder being PSU has standard practice to finalize the subcontractor through open/global tender. and the finalised subcontractors are well qualified satisfying the PQR criteria of NTPC specifications. Bidder shall select sub-contractor's through Open Tender and names of Technically qualified subcontractors shall be forwarded to owner for their approval. Any subsequent details will be provided only after technical approval. In view of this, we understand that bidder is not required to furnish the list of subcontractors to NTPC for their approval. Kindly Confirm.	Bidder understanding is not right - Bidder is to furnish the data as mentioned in Appendix 5 and GCC.
11	36	VI/C	GTR	4 of 119	5.06.00	Two (2) English language copies of all national and international codes and / or standards used in the design of the plant and equipment shall be provided by the Contractor to the Employer within two calendar months from the date of the Notification of Award.	These clauses may please be deleted.	Bidder request is NOT accepted. Please comply with requirement of technical specification

12	37	VI	Part D	10 of 70 (Page 11 of the Document)	28.1.00	**Contractor's site office Establishment** The Contractor shall establish a site office at the site and keep posted an authorized representative for the purpose of the contract, pursuant to GCC. The site office will include one conference meeting room (250-300 Sq. Ft) for site meetings between the Contractor and the Employer. The contractor shall also provide four (4) furnished office rooms (150-250 Sq. Ft.) for use by the Employer to facilitate effective coordination during the tenancy of the contract.	May please clarify the furnishing and other assets requirement to be provided regarding 04 nos office rooms for customer use. Further may pleas clarify that whether these rooms are to be built within the BHEL office establishment or a complete separate building will be required in isolation with BHEL office establishment. Whether these four rooms alongwith furnishings & other assets are to be handed over to NTPC after project completion.	Each of the four room shal be provided with functional requirement of seating and working of minimum four (4) executives. These rooms are to be within the BHEL office establishment. These rooms are not required to be handed over to NTPC after project completion.
13	38	VI	Part A	7,8 of 19 (Page 237 of the Document)	1.15.00	**CONSTRUCTION POWER-** The charges for the actual energy consumed by the bidder (Energy Charges Only) shall be recovered by the Employer based on prevalent rate of DISCOM	Please provide the present rate schedule of DISCOM for charging of construction power along with the category of rates under which construction power shall be charged. Feeder ratings (in MVA) and metering instrument requirements as per DISCOM standards may please be provided.	Actulay rate for supply of electricity for the offered connection type as per SERC approved tariff schedule (as applicable for each year) will be charged based on actuals. Details shall be shared after award.
14	40	VI	Part A	10 of 13 (Page 306 of the Document)	2.01.00(f)	**WORKER & STAFF COLONY**- Sole responsibility of development and maintenance of above facilities for construction workers hired by the Contractor or his sub-contractors shall rest with the Contractor. Land, water, electricity for the worker & staff colony shall be arranged by the Contractor as stipulated elsewhere in Technical Specification.	Please clarify whether the land will be provided free of cost for WORKER & STAFF COLONY including those for BHEL sub-contractors. Location of land will be in lay down area or somewhere else. May please clarify.	Bidder's proposal is not acceptable. WORKER & STAFF COLONY is to be arranged by bidder. Bidder to follow technical specification in this regard
15	42	VI	Part A	02 of 13 (Page 298 of the Document)	4	Dismantling, removal, and disposal of identified facilities/ structures/ substructures/ foundations of dismantled quarters/buildings/structures, reinforcement, pavement/paving, pipes and any underground structure/materials, debris etc. all complete.	May please be deleted from contractor's scope	Bidder's proposal is not acceptable. Bidder to follow technical specification in this regard
16	43	VI	Part A	04 of 13 (Page 300 of the Document)	5 (f)	Diversion of roads and drain	May please be deleted from contractor's scope	Bidder's proposal is not acceptable. Bidder to follow technical specification in this regard
17	44	VI	Part A	04 of 13 (Page 300 of the Document)	5(g)	Rerouting of Diversion Nalah along Kota Hill by providing two cell RCC box culvert of minimum 8M height and 5m width of each cell matching with invert level of existing nalah as shown in tender drawing	May please be deleted from contractor's scope	Bidder's proposal is not acceptable. Bidder to follow technical specification in this regard
18	45	VI	Part-B	Pg 01 of 04 (Page 220 of the Document)	10.02.00	Source of Sand and Aggregate	Recommended Source of aggregate and sand may please be confirmed by the employer. Alternately BHEL proposes to use Makrohar in MP or Dala in UP for source of aggregate, employer to confirm.	The source of agrregate shall be decided by bidder. The aggreegate shall meet the requirement as spcified in technical specification.
19	46	------	------	------	------	Borrowed Soil for earth filling	Soil for the earth filling by borrowed soil is scarce or unavailable in site vicinity. BHEL proposed to use OB (Overburden of Coal mines) for use instead of borrowed soil. Alternately crushed stone sand is proposed instead of borrowed soil. Employer to confirm.	Bidder to refer cl. No. 4.03.07 sub section D-1-4 section VI part B for suitability of filling material
20	47	------	------	------	------	Lead for disposal of excavated surplus soil.	Lead for disposal of excavated surplus soil for stacking during construction work to be clarified/ confirmed.	Bidder to refer GCC Cl 52.1 along with its amendments.

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	Section	Sub-Section	Page No.	Clause No.			
3	VI/A	IIB	3 OF 19	1.05.03	Communicable Numerical Relays (with IEC 61850) in all MV Switchgears & LV Switchgears. b) IEC 61850 Ethernet switches in Switchgear panels – Sufficient quantity of Ethernet switches as per requirement for all boards. At least 2 ports per switch shall be kept as spare ports. c) Cat5e Ethernet cable / FO cable for connection of Numerical Relays to Ethernet switches in all Switchgears. d) Optical Fibre Cable with fire-retardant outer sheath as required for the complete numerical relay network. e) Optical Fibre Cable termination equipment such as LIU, patch cord, etc. for the complete network.	1. Kindly clarify whether Data Concentrator is applica-ble or not. 2. Drawings 0000-205-POE-A-001 is not available in tender document.	1. Data Concentrator for switchgear SCADA is not applicable. 2. Bidder under standing is not correct. Drawing No. 0000-205-POE-A-001 is available in subsection B-05(B), part B of technical specification.
4	VI/A	IIB	7 OF 19	1.14.00	Control Philosophy for plant Electrical System Control of Electrical System of Main Plant, EHV Breakers of Generator Bay and Balance of Plant (BOP) shall be provided from DCS with suitable ECD (Electrical Control Desk) and/or Soft HMI. The details of the same are specified in relevant sec-tions of Control and Instrumentation.	No details are available for suitable ECD (Electrical Control Desk)in relevant sections of Control and Instrumentation. Kindly elaborate the requirement of ECD with what breakers are to be controlled etc in details.	Bidder to refer Clause no 4.05.00, SUB-SECTION-IIIC-11 CONTROL DESK & PANELS, Part-B of Technical specification. However, the detail scheme of ECD shall be finalised during detailed engg.
5	VI/A	IIB	3 OF 19	1.05.02	Spares (MCCB Modules less than 100 A and MPCB Modules): All Switchgears, Motor Control Centres (MCCs) & AC/DC distribution boards, etc. shall have at least twenty per cent (20%) or minimum two (whichever is higher) fully equipped MCCB/MPCB modules of each rating as spares which shall be uniformly distributed over different vertical sections.	Spares (MCCB Modules less than 100 A and MPCB Modules): All Switchgears, Motor Control Centres (MCCs) & AC/DC distribution boards, etc. shall have at least twenty per cent (20%) or minimum two (whichever is higher) fully equipped MCCB/MPCB modules of each rating range of the selection table as spares which shall be uniformly distributed over different vertical sections.	Bidder proposal is not acceptable. Specification cl. no.1.05.02 Sub - Section IIB Section-VI, Part-A to be followed.
6	VI/A	IIB	3 OF 19	1.05.02	Spares (MCCB modules—100A and higher—Starter/DAE-OG/DM Modules): In addition, all Switchgears, MCCs and AC distribution boards shall have as spares at least twenty per cent (20%) of starter modules/MCCB/DAE-OG/DM modules or at least one module (whichever is higher) of each rating range of the selection table, equipped for the rating of the largest auxiliary fed from that range.	It is requested to remove requirement of Spares for DM & DAE-OG, as same is in line with the standard practice followed in all projects.	Bidder proposal is not acceptable. Specification cl. no.1.05.02 Sub - Section IIB Section-VI, Part-A to be followed.
7	VI/A	IIB	14 OF 19	1.19.00	1. 415V switchgear feeders as indicated below for feeding owner's loads shall be provided (at suitable location to be decided during detailed engineering). (a) 4 Nos. MCCB–125A (b) 4 Nos. MCCB–250A (c) 4 Nos. MCCB-400 A (d) Total 6 Nos. ACB outgoing – 1000 A feeders in unit emergency switchgear and station service switchgear.	We understand that : i)Only un-cabled feeders shall be provided for feeding owner's loads as per the list in specification. The load of these feeders shall not be considered in system equipment (viz transformer, PMCC, MCC, Emergency DG etc) sizing. switchgear Also, there are no scope of cables, cabling (trays & support), civil works associated with clause 1.19.00. ii)The quantity of the feeders indicated in the list indicate total quantity (considering both the units). Total 18 nos. feeders for the project shall be provided for owner's load as per the list. Please confirm.	i) confirmed ii) confirmed.
8	VI/A	IIB	15 OF 19	1.19.00	Two Number 11kV feeders in 11 kV station switchgear, suitable for connection of 1MVA service transformer, for future owners use.	Total Two Number Uncabled 11kV feeders in 11 kV station switchgear, suitable for connection of 1MVA service transformer, for future owners useshall be provided. This load shall not be consider in station transformer/station switchgear sizing.	Bidder to Refer Ammendment No.-1.
9	VI/A	IIB	2 OF 19	1.05.01	For all the Switchboards, each section shall have minimum 2 nos. of spare modules (i.e 2 no's motor feeder/2 no's of transformer feeder/1 motor and 1 transformer feeder to be provided). Highest rating of each motor and transformer feeder must be included as spare.	If only motor feeders are there on a particular board/section, then only 1 no. spare motor feeder will be provided. Similarly, If only transformer feeders are there on a particular board/section, then only 1 no. spare transformer feeder will be provided. kindly confirm.	Bidder proposal is not acceptable. Specification cl. no.1.05.01 Sub - Section IIB Section-VI, Part-A to be followed.
10	VI/A	IIC	1 OF 22	A 1.00.00	.....ECP (for mounting synchronizing relays, aux. PTs, other relays etc. shall be provided on as required basis	ECP is not applicable. Only ECD i.e. Electrical Control Desk is applicable as per cl. no. 1.14.00, Vol.V, Part-A, Sub Sec-IIB, Page 9/20. Also as per Kindly confirm.	Both ECD and ECP are applicable. Specification to be followed.

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11	VI/A	IIB	5 OF 19	1.08.00	In addition to above, cabling works, as indicated under Clause 1.19.00, required for Employer's requirement shall also be in bidder scope.	Bidder understands that clause 1.19.00 refers to un-cabled 415V switchgear feeders & 11 KV Feeder to be provided for owner's requirement and there are no scope of cables, cabling (trays & support), civil works associated with clause 1.19.00. If any Cabling items are to be included in bidder's scope for Customer use its BOQ to be furnished.Customer to confirm.	Bidder understanding is correct
12	VI/A	IIB	6 OF 19	1.09.01	In addition to above, HT power cables, as indicated under Clause 1.19.00, if required for Employer's requirement shall also be in bidder scope.	Bidder understands that clause 1.19.00 refers to un-cabled 415V switchgear feeders & 11 KV Feeder to be provided for owner's requirement and there are no scope of cables, cabling (trays & support), civil works associated with clause 1.19.00. If any Cabling items are to be included in bidder's scope for Customer use its BOQ to be furnished.Customer to confirm.	Bidder understanding is correct
13	VI/B	B-0	5 OF 16	3.04.01	While calculation the total station load during HP-LP Bypass condition, Single stream operation of CHP/AHP shall be considered	While calculating Station Transformer size Single stream operation of CHP/AHP shall be considered. Pls. confirm.	Confirmed.
14	VI/B	B-0	6 OF 16	3.04.02	11KV,3.3 KV and 415V systems under most onerous conditions, with the criteria that each 3.3KV/415 V switchgear / MCC / DB shall be fed by 2x100% or 3 X 50 % transformers /feeders or as per feeding arrangement as shown in tender SLD, and these shall be rated to carry the maximum load including owner's load (if applicable) expected to be imposed. Individual Transformer for CHP systems shall be sized to cater to load of single stream running in case of one feeder/transformer outage	1. As per specification, owner's loads to be considered for sizing the Auxiliary Transformers is not specified under any clause/ section. Bidder is not considering any loads pertaining to owner for sizing of the Auxiliary Transformers. Customer to confirm the same. 2. Individual Transformer for CHP & AHP systems shall be sized to cater to load of single stream running in case of one feeder/transformer outage	1) Bidder understanding is correct w.r.t sizing calculation for aux.transformers. However, Bidder to refer clause 1.19.00 regarding owners feeders requirement. 2) Confirmed
15	VI/B	B-0	4 OF 16	3.04.00	All Auxiliary transformers (unless their ratings have been indicated in Single line Diagram or for which sizing criteria has been indicated in the specification), shall be sized so as to have 10% margin at design ambient conditions after considering final load requirements, including owner's load (if applicable), at peak load conditions and the No Load Voltage Correction Factor.	As per specification, owner's loads to be considered for sizing the Auxiliary Transformers is not specified under any clause/ section. Bidder is not considering any loads pertaining to owner for sizing of the Auxiliary Transformers. Customer to confirm the same.	confirmed.
16	VI/B	B-0	5 OF 16	3.04.01	Each unit transformer shall be sized for the following:…… ……..(d) SCR load requirement of 1 MVA plus…….	Bidder understands that only un-cabled 11kV feedes for future use of owner for SCR have to be provided from each 11kV Unit Switchboard (3UA, 3UB, 4UA, 4B). Bidder is not considering any scope of Cables, Trays, Transformers, LT/ HT Switchgear, Bus ducts, electrical & associated civil works pertaining to SCR. Customer to confirm the same.	Refer Ammendment No.-1
17	VI/B	B-0	7 OF 16	3.06.00	……Cable terminations located in cable alley shall be designed to meet the Form IVb Type 7 (as per IEC 60439) for safety purpose.	Type 7 requires Individual, integral cable glanding facilities to be provided for each circuit/module and Cable gland is not required in gland plate at bottom which is not suggested. Also if cable gland is provided at both places i.e. bottom gland plate & at each module then it is difficult to terminate & for future maintenance. Therefore it is requested to allow Cable alley design as per Form IVb Type 6 (as per IEC 60439) for safety purpose.	Bidder proposal is not acceptable. Specification cl. no.13.06.00 Sub - Section B-0 Section-VI, Part-B to be followed.
18	VI/B	B-0	8 & 9 OF 16	3.06.00	CLAUSE 3.06.00 k) - Each of the LV switchboards shall be designed for 1.1 times the required rating as a spare capacity. 3.06.00 h) Sizing of LT boards d) A spare capacity of about 10 % shall be kept for addition of loads during detail engineering as many of the LT loads cannot be predicted during the Rating selection of the Board.	Please note that 10% design margin is already considered in LT Swbd. Sizing to cater to future load variations as per referred clause no. 3.06.00(k). Therefore additional 10% spare capacity margin is not required & same is in line with the standard practice followed in all projects. Customer to confirm the same.	Refer Ammendment No.-1
19	VI/B	B-0	6 OF 16	3.05.00	c) The sizing Criteria for a Typical MV Switchboard shall be determined by the size of the transformer feeding the board. As a design Philosophy the Board continuous Current shall be selected as (1.1) * (Full load current at rated voltage on the Transformer's secondary) at 50 deg. C Ambient.	Since Aux. Transformer is already sized with 10% margin so HT switchgear fed from these transformer should have no margin. The HT switchgear rating shall be kept as secondary rated current of the Aux. transformer Please confirm.	Bidder understanding is not correct. Specification cl. no.3.05.00 Sub -Section B-0 Section-VI, Part-B to be followed.

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20	VI/B	B-0	8 OF 16	3.06.00	Welding sockets shall be connected from Welding DBs, which shall be fed through 1X100% Welding transformers	For main plant Welding sockets shall be connected from Welding DBs, which shall be fed through 1X100% Welding transformers, However for offsite Welding Socket shall be fed from LT switchgear of offsite. Pls. confirm.	Bidder understanding is not correct. Specification cl. no.3.06.00 Sub -Section B-0 Section-VI, Part-B to be followed.
21	VI/B	B-0	9 OF 16	3.06.00	**m) Plant control cable Interconnections :** At least one spare core shall be made available in each of the control cable	In line with standard practice followed in all projects , spare core shall be provided in control cable for size 5C & above. Same is in line with Section VI part-B, SUB-SECTION-B – 10, Page 3 of 6 cl. No. 4.04.15.Please confirm.	Refer Ammendment No.-1
22	VI/B	B-0	10 OF 16	3.07.00	Numerical Relay Networking	Since a lot of data to be interfaced with Numerical Relay to DDCMIS for which Data concentrator is required. NTPC may clarify the scope of data concentrator & its detials.	Bidder understanding is not correct. Specification cl. no.3.07.00 Sub -Section B-0 Section-VI, Part-B to be followed.
23	VI/B	B-0	10 OF 16	3.06.00	All the cables and bus ducts feeding switchboards from transformers shall be sized based on transformer rating	Kindly clarify 10% margin over rated Transformer secondary current is required for busduct rating as same is required for MV switchboard rating.	Bidder understanding is correct.
24	VI/B	B-0	11 OF 16	3.08.00	An ageing factor of 1.25 shall be considered.	Bidder understands that the ageing factor of 1.25 shall be applicable to Ni-Cd battery. The aging factor is not applicable for plante type battery as per standard practice and OEM & IEEE recommendation. Kindly confirm.	Refer Ammendment No.-1
25	VI/B	B-0	12 OF 16	3.08.00	DC Health Monitoring Systems for Main Plant (220 V) and switchyard (220V and 48V) shall be provided to monitor the condition of each battery cell of 220V battery banks on-line on 24x7 basis.	Scope of supply of DC Health Monitoring Systems shall as this clause only. Kindly confirm.	Confirmed
26	VI/B	B-0	5 OF 16	3.04.01	Station Transformer-Each Station transformer shall be sized to meet the requirements of the worst case of following contingencies: Case I: Outage of One Unit transformer a) Loads served by fully loaded Unit transformer as defined above plus b) MDBFP load for one unit plus c) Meeting the station loads distributed on the respective station boards plus d) Loads due to outage of largest transformer /outgoing feeder (except station to unit/station tie feeders) connected to the bus plus e) Multiplied by no load voltage correction factor as defined at 3.04.00	As per recent proposal with NTPC, sizing criteria for ST has been amended by NTPC and same is reproduced belowStation Transformer Scheme Each Station transformer shall be sized to meet the requirements of the worst case of following contingencies: Case I: Outage of One Unit transformer a) Loads served by fully loaded Unit transformer as defined above plus b) MDBFP load for one unit plus c) Meeting the station loads distributed on the respective station boards plus d) Loads due to outage of largest transformer /outgoing feeder (except station to unit/station tie feeders) connected to the bus plus "**Since outage of only one largest transformer is to be considered (Since it is case of One UT outage), therefore outage of another largest transformer is not applicable. Hence, sizing criteria point no.(d) above is not applicable and not considered.**"e) Multiplied by no load voltage correction factor as defined at 3.04.00. Pl. confirm that above sizing criteria excluding point no. (d) for ST	Refer Ammendment No.-1
27	VI/B	B-05 (B)	10 OF 10	0000-205-POE-A-001	No Data Concentrator is required.	Since a lot of data to be interfaced with Numerical Relay to DDCMIS for which Data concentrator is required. NTPC may clarify the scope of data concentrator & its detials.	Bidder understanding is not correct. Specification drg. no. 0000-205-POE-A-001 Sub -Section B-05(B) Section-VI, Part-B to be followed.
28	VI/B	B-0	11 OF 16	3.07.00	Earthing & Lightning Protection System	Soil resistivity may please be provided for grid designing	Soil resistivity report is attached as a part of Geo Technical survey report at subsection D-1-12 of section VI part B Civil Works
29	VI/B	B-04	17 OF 36	1.09.00	NGR (Neutral Grounding Resistor) (As per system requirement)	How many parallel path shall be applicable for NGR pls. clarify.	Design of NGR shall be as per functional requirement depending on current and Voltage level

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30	VI/B	B-04	28 OF 36	1.11.06	)Ohmic value measurement (For resistance & reactance separately)	Ohmic value measurement of reactance is not applicable.Pls. confirm.	Bidder understanding is not correct. Specification cl.no. 1.11.06 Sub -Section B-04 Section-VI, Part-B to be followed.
31	VI/B	B-04	11 OF 36	1.06.07	Bushings below 52 kV …….. epoxy RIP type. All condenser bushings shall be non-communicating type.	Bidder request to allow epoxy resin bushing in place of epoxy RIP bushing upto 1.1kV, since epoxy RIP bushing is not available upto 1.1kV.	Bidder understanding is not correct. Specification cl.no. 1.06.07 Sub -Section B-04 Section-VI, Part-B to be followed.
32	VI/B	B-04	19 OF 36	1.01.02 1.11.03	Type tests criteria for Auxiliary oil filled transformers rated upto 16MVA, 11kV (only type test report has to be submitted) II) TYPE TEST (#)	Both the clauses are contradictory. Kindly clarify weather type tests needs to be condcucted for Aux. transformer rated upto 16 MVA.	Bidder understanding is not correct. Specification cl.no. 1.11.00 Sub -Section B-04 Section-VI, Part-B to be followed. If valid type test report not available then type test to be conducted.
33	VI/B	B-06	3 OF 19	2.03.00 (6)	Vertical Busbar - Copper Only	It is requested to also allow High Conductivity Aluminium Alloy in Vertical Busbars for supply feeders.	Bidder proposal is not acceptable. Specification cl.no. 2.03.00 (6) Sub Section B-06 Section-VI, Part-B to be followed.
34	VI/B	B-06	4 OF 19	2.04.00 (5)	Internal Arc Classification - 50kA for 0.5sec	It is requested to allow Internal Arc Classification - 50kA for 0.3sec.	Bidder proposal is not acceptable. Specification cl.no. 2.04.00 (5) Sub Section B-06 Section-VI, Part-B to be followed.
35	VI/B	B-06	13 OF 19	3.14.00	Wireless temperature monitoring system to be provided and same shall be integrated to DDCMIS/ separate HMI. Temperature sensors shall be installed in all relevant joints, contact joints etc. as per the standard OEM Practice, however Position of such sensors shall be decided at the time of detailed engineering. This shall be provided for the following switchgears: USS, BMCC, TMCC and UES	Wireless temperature monitoring system has not been provided in LT Switchgears in Power Plants in any previous projects. It's provenness is also not established. Accordingly, bidder requests to exclude the same from the scope. If customer insists to provide the Wireless temperature monitoring system, kindly explicitly identify the switchgear names as specified switchgear names are not applicable. There is no USS in 800MW Power Plants and Boiler & Turbine switchgears are PMCC instead of MCC. Kindly list out the switchgears and also quantify the joints, contact joints, positions etc. to be considered for temperature monitoring for estimation by bidder.	Refer Tender SLD for nomenclature of switchgears
36	VI/B	B-08	3 OF 7	2.010.00	All LT power cables of sizes more than 120 sq.mm. shall be XLPE insulated, and sizes shall be of 1Cx150, 1Cx300, 1Cx630, 3Cx150,3CX185, 3Cx240 & 3Cx300 sq.mm	As per standard industrial practice, bidder proposes to include 1Cx400sqmm also.	Refer Ammendment No. 1
37	VI/B	B-08	2 OF 7	2.02.00	All cables including EPR cables shall be flame retard……	No HT Power/LT Power/LT control /Screen control cables are with EPR insulation. Fire Survival (FS) HT power/ LT Power/LT control/Screen control cables are not envisaged. Please confirm. No application and requirements defined in specification for EPR fire survival cable. EPR fire survival cable is not applicable and not to be considered. Please confirm.	Confirmed.Bidder under standing is correct.
38	VI/B	B-08	5 OF 7	4.00.05 (a)	Cables shall be supplied in steel drums of heavy construction……	Steel drum shall be provided for HT power cables. All other types of cables for the project shall be provided in wooden drums as a practice followed for all NTPC projects.	Bidder proposal is not acceptable. Specification cl.no. 4.00.05 (a) Sub Section B-08 Section-VI, Part-B to be followed.

EPC Package for Singrauli STPP Stage III (2x800 MW)
Pre-Bid Clarification

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
39	VI/B	B-08	3 OF 7	3.00.01 (b)	The voltage drop in the cable, during motor starting condition, shall be limited to 10% and during full load running condition, shall be limited to 3% of the rated voltage	The voltage drop in the cable, during motor starting condition, shall be limited to 15% and during full load running condition, shall be limited to 3% of the rated voltage	Bidder proposal is not acceptable. Specification cl.no. 3.00.01 (b) Sub -Section B-08 Section-VI, Part-B to be followed.
40	VI/B	B-10	2 OF 21	2.01.05	The cable vault/ / cable spreader room space below the HT / LT switchgear room, Control Rooms, unit control equipment room, Programmer room, UPS, Charger & Battery Rooms, shall have 800 mm wide and 2.1 m high movement passage all around the cable trays in the cable vault/ cable spreader room for easy laying/maintenance of cables.	Please note that at the junctions where multiple tray crosses each other, it will not be feasible to meet the height of 2.1m at such crossing portions Hence, customer is requested to allow for the lower movement passage height at such locations. At such locations, clear height shall not be less than 1.6 mts. KIndly accepts the same.	Bidder proposal is not acceptable. Specification cl.no. 2.01.05 Sub -Section B-10 Section-VI, Part-B to be followed.
41	VI/B	B-10	3 of 21	3.01.03	Cable trays shall have standard width of 150 mm, 300 mm & 600 mm and standard lengths of 2.5 metre.	Bidder proposes cable trays width of 450 mm alongwith 150 mm, 300 mm & 600 mm.	Bidder proposal is not acceptable. Specification cl.no. 3.01.03 Sub -Section B-10 Section-VI, Part-B to be followed.
42	VI/B	B-10	4 of 21	3.02.02(f)	Cantilever arms of 320 mm, 620mm and 750 mm in length are required,and shall be as shown in the enclosed drawing	Since only 600mm, 300mm and 150mm, cable trays are to be used as per technical specification, Cantilever arms of 170mm for 150mm wide tray, 320mm for 300mm wide tray and 620/750mm for 600mm wide cable tray shall be provided. Pls. confirm.	Confirmed
43	VI/B	B-10	3 of 21 & 10 of 21	3.01.04 & 4.4.09	Cable troughs shall be required for branching out few cables from main cable route. & Wherever few cables are branching out from main trunk route troughs shall be used.	The clause can be altered as i.e."Wherever few cables are branching out from main trunk route troughs/ Local Buried Pipe / Slit / ranch Trays shall be used.Please confirm.(The above is in line with other clauses of specification since the specification also informs to use Slits, branch trays.)	Confirmed
44	VI/B	B-10	6 of 21	3.09.01	The cable clamps/ties required to clamp multicore cables shall be of SS-316 material, 12mm wide, polyster coated ladder lock type.	Self-locking, Nylon ties shall be used for clamping of multicore cables.	Bidder proposal is not acceptable. Specification cl.no. 3.09.01 Sub -Section B-10 Section-VI, Part-B to be followed.
45	VI/B	B-10	10 OF 21	4.04.14 3)	Power and control cables for AC drives and corresponding emergency AC or DC drives shall be laid in segregated routes. Cable routes for one set of auxiliaries of same unit shall be segregated from the other set	It shall be complied to the extent feasible for essential drives only.	Bidder proposal is not acceptable. Specification cl.no. 4.04.14 (3) Sub Section B-10 Section-VI, Part-B to be followed.
46	VI/B	B-10	11 of 21	5.00.00	Earthing System	Soil resistivity may please be provided for grid designing	Soil resistivity report is attached as a part of Geo Technical survey report at subsection D-1-12 of section VI part B Civil Works
47	VI/B	B-10	19 OF 21	9.00.00 (b)1	Separate Switchgear Rooms shall be provided for each unit. For TG building, all HT boards shall be provided in HT switchgear room at only one floor and all LT boards shall be provided in LT switchgear room at only one floor	All LV switchgear pertaining to power house building cannot be placed at single floor. Generally, unit, station PMCCs are kept at one floor level and boiler boards are kept at other floor level. Also, AC plant swgr is also kept in AC plant room. Hence, please confirm different floor levels for LV boards as per load center in power house building. Also, as per requirement very limited numbers of LT board can also be placed inside MV swgr room in case of space constraint in LV switchgear room. Moreover, in offsite area Placing MV & LV switchgear in same switchgear room is allowed as per specification. Inline with that same may please be allowed in Power House building to keep emergency switchgear in HT switchgear room for ease of sandwitched bus duct routing.	Bidder proposal is not acceptable. Specification cl.no. 9.00.00 (b) (1) Sub -Section B-10 Section-VI, Part-B to be followed.
48	VI/B	B-10	19 of 21	9.00.00 (B)(2)(b)	Back Clearance - 1.5 M (Min.)	Back clearance as 1.5M (Min) shall be provided in general except for incomer feeder panel wherein back clearance of 1.0M (Min) shall be provided.	Bidder proposal is not acceptable. Specification cl.no. 9.00.00 (b) (2) (b) Sub -Section B-10 Section-VI, Part-B to be followed.

EPC Package for Singrauli STPP Stage III (2x800 MW)
Pre-Bid Clarification

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
49	VI/B	B-10	20 of 21	9.00.00 (B)(5)	Cable trench/Cable vault for LT switchgear/MCC room at EL 0.0M, 1400 wide x 1400 deep cable trench shall be provided to route the cables. Horizontal cable trays shall be routed in cable trenches	Bidder understands that more wider and deep trenches are allowed based on the cable tray requirements to suite site conditions and layout constraints.	Cable trenches are envisaged for the HT, LT switchgear/MCC room for low density of panels/cables up to 1400WX1400D. For higher requirement of cables, cable vault/galleries to be planned.
50	VI/B	B-11	7 of 18	10 (h)	Each lighting panel (LP-3) shall be fed from a 415V/42V, 3 phase-4 wire, 3 KVA transformer.	This shal be done by 24V Supply Module with transformer 240V/24V located inside the panel to feed the 24V 5A Receptacles for maintenance at TG Hall/ Boiler Platforms as mentioned in Annexure-I Chapter B-10. 24V Supply module shall be fed from 3PH lighting Panel which in turn shall be fed by Lighting Distribution Board (LDB). The same is in line with the recent NTPC executed jobs of North Karanpura and Patratu. Kindly confirm.	Bidder proposal is not acceptable. Specification cl.no. 4.00.00, 10 (h) Sub -Section B-11 Section-VI, Part-B to be followed.
51	VI/B	B-11	8 of 18	10 (i)	LP-1 : 415V, 63A(min.), 18Nos.,20 A, 240V MCB, AC2 duty contactor andProgrammable Digital Timer of 24 hour range 10A, 240V selector switch, fuse, etc. outdoor type and IP:55 degree of protection	LP-1: shall be with 415V 63A single incomer with 18 Nos Outgoing feeder with 240V MCB of Indoor, Outdoor and Decorative type.	Astrononomical Programmable Digital Timer are envisaged for automatic control of outdoor/periphery lighting. Speecification requirement to be met.
52	VI/B	B-11	8 of 18	10 (i)	LP-2 : 415V, 63A(min.), 12Nos.,20A, 240V MCB: AC2 duty contactor and Programmable Digital Timer of 24 hour range 10A, 240V selector switch, fuse, etc. outdoor type and IP:55 degree of protection:	LP-2: shall be with 415V 63A single incomer with 12 Nos Outgoing feeder with 240V MCB of Indoor, Outdoor and Decorative type.	Bidder refer the reply Sl. No:51
53	VI/B	B-11	8 of 18	10 (i)	LP-3 : 1 No., 4A fuse 3 KVA transformer,40A TPN MCB : 24 Nos., 16A, 45V MCB	This shall be 24V Supply Module with transformer **240V/24V 5A** located inside the panel to feed the **24V 5A Receptacles** for maintenance at Boiler Platforms. 24V Supply module shall be fed from 3PH lighting Panel which in turn shall be fed by Lighting Distribution Board (LDB).Kindly confirm.	Bidder proposal is not acceptable. Specification cl.no. 4.00.00, 10 (i) Sub -Section B-11 Section-VI, Part-B to be followed.
54	VI/B	B-11	8 of 18	10 (i)	LP-D1 1No. 220V,32 A, DP Isolator : 6Nos.,16A, 220V DP Switch & Fuse	LP-D : 220V 32A DP Switch & Fuse Incomer and 6 Nos 16A DP MCB outgoing.	Confirmed.
55	VI/B	B-11	8 of 18	10 (i)	There is no details of street lighting panel	Street Lighting panel (Outdoor Type) with 415V 100/63A Incomer and 6 Nos 415V 20A Outgoing	Bidder proposal is acceptable.
56	VI/B	B-11	8 of 18	12	Power supply shall be fed from 415 / 240 V normal AC supply, emergency AC supply and 220V DC supply through suitable number of conveniently located lighting distribution boards (LDB) and lighting panels (LP). AC lighting supply shall be isolated from main supply by 2x100% isolation transformers of max. rating of 50 KVA for 10/15 nos. outgoing feeder with changeover switch facility. The isolation transformer shall be fed from two different bus sections of MCC and fault level restricted to 3 KA at Lighting Panels.	Power supply shall be fed from 415 / 240 V normal AC supply, emergency AC supply and 220V DC supply through suitable number of conveniently located lighting distribution boards (LDB) and lighting panels (LP). AC lighting supply shall be isolated from main supply by **1x100% isolation transformers in Main Plant area and 2x100% isolation transformers in Off-site (Balance of Plant)** area of max. rating of **100 or 50 KVA for 12 to 8 nos**. outgoing feeder with changeover switch facility for 2x100% one. **The fault level restricted to 9 KA at Lighting Panels.**	i) Bidder proposal of 1X100% isolation Transformers in main plant area is not acceptable . Speficiation requirement to be followed. ii)The rating of 100 or 50KVA with Bus coupler to be envisaged.
57	VI/B	B-11	10 of 18	4.04.00	Junction box shall be made of Fire retardant material. Material of JB shall be Thermoplastic or thermosetting or FRP type.	Pl. allow JB made of galvanised 1.6MM CRCA sheet in normal areas and expoxy coated along with galvanised 1.6MM for Battery or corrosive areas in line with the recent NTPC executed jobs of North Karanpura and PATRATU. In case FRP type is allowed only, then the same shall not be fire retardent with Thermoplastic or Thersetting or FRP type material. Fire retardant JBs are required in Hazardous areas however now a days the hazardous area lighting fixtures comes with inbuilt JB so the indoor JBs are not required to be made of fire retardant material. Also FRP type only shall be used for Corrosive and non corrosive areas.	Bidder proposal is not acceptable. Specification cl.no. 4.04.00, Sub -Section B-11 Section-VI, Part-B to be followed.
58	VI/B	B-11	10 of 18	4.04.00	Flexible conduit shall be water proof and rust proof made of heat resistant TERNE coated steel.	We propose to provide Electro galvanised PVC coated flexible conduit. Please confirm.	Refer Amendment No:1

EPC Package for Singrauli STPP Stage III (2x800 MW)
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S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	Reply
	Section	Sub-Section	Page No.	Clause No.			
59	VI/B	B-11.	11 of 18	4.08.00	Lighting fixtures shall generally be group controlled directly from lighting panel. However, in office areas, control shall be provided through switch boxes. Each switch shall control a maximum of three fluorescent fixtures.	Lighting fixtures shall generally be group controlled directly from lighting panel. However, in office areas also pl. allow for looping more than 3 fixtures from Switch, as rating of LED fixture is very less w.r.t. conventional fixtures and as a standard practice 10-15 lighting fixtures are group controlled from the switch. If 3 fixtures are controlled from a switch, there will be lot of wiring and conduiting leading to difficulty in erection and maintenance.	Bidder proposal is not acceptable. Specification cl.no. 4.08.00 Sub - Section B-11 Section-VI, Part-B to be followed.
60	VI/B	B-11	11 of 18	4.12.00	Occupancy based Passive Infra-red sensors. The sensors shall be recess mounted, programmable type suitable for lighting load of 6A with variable off delay settings. The detection area shall be minimum 5 metres for standard room height of 3mt. All the calibrated settings shall be stored in non-volatile memory of PIR sensor which shall be unaffected by power supply fluctuations. Necessary 16A contactor shall be supplied along with each sensor & shall be located inside the switch box	Please note that in case occupancy sensor is used to control the lighting fixtures, the power supply from lighting panel is extended to occupancy sensor and lighting fixtures are controlled from occupancy sensor. 16A contactor shall be mounted inside LP for better maintenance. and so contactor is not required at the switchbox for sensor controlled fixtures. Accordingly, it is requested to remove the requirement of 16A contactor in switchbox.	Refer Amendment No:1
61	VI/B	B-11	18 of 18	ANNEXURE B DC LIGHTING	Avg Lux level for CCR/ CER - 100 SWYD CR - 20 Strategic Control Points - 20 (TG Bldg, Boiler, SWAS, etc) Cable Vault, Boiler Staircase	DC lighting shall be provided at strategic locations to enable safe man movement in line with Cl no:3.03.00. To mainten average lux level of 100/ 20 lux level for DC lighting will result in huge number of DC fixtures and more over AC emergency lighting also provided in all these mentioned Main Plant areas.	Bidder proposal is not acceptable. Specification cl.no. Annexure-B Sub -Section B-11 Section-VI, Part-B to be followed.
62	VI/B	B-12	1 of 7	2.01.00	Type A fire sealing system is either Silicone foam or equivalent foam system or using individual blocks for each cable along with suitable frame work rated for one hour. Type A is to be implemented at floor openings below C&I panels, control panels/Boards etc. in CER & CCR/Control Room	Type A fire sealing system shall be provided in panels of CCR/CER only. Type -A fire sealing system is not envisaged for other control room. Also please note that many control rooms are at zero meter above trench so fire sealing is not applicable for the panels placed above the cable trench.	Bidder proposal is not acceptable. Type -A fire sealing system is applicable for other control rooms where floor openings are envisaged.

EPC Package for Singrauli STPP Stage III (2x800 MW)

Pre-Bid Clarification

<table>
<tr><th rowspan="2">SL. NO</th><th colspan="4">ENQUIRY SPECIFICATION</th><th rowspan="2">Item Details / SPECIFICATION REQUIREMENT</th><th rowspan="2">COMMENTS / CLARIFICATIONS</th><th rowspan="2">NTPC Reply</th></tr>
<tr><th>SEC/ PART</th><th>SUBSEC.</th><th>PAGE NO.</th><th>CLAUSE NO.</th></tr>
<tr><td>1.</td><td>VI -B</td><td>IIIC -04</td><td>19 of 35</td><td>10.01.07</td><td>AAQMS

CO Analyser

Range: 0-1 PPM to 0-1000 PPM</td><td>Revision in analyser ranges is proposed as below

CO Analyser

Range 0-1 PPM to 0-100 PPM

Above proposed ranges are adequate for ambient air measurement.
CPCB and NTPC, in their tenders for AAQMS, specify above ranges for CO analyzer.</td><td>Bidder to note that AAQMS is not envisaged in the scope of this Pkg.</td></tr>
<tr><td>2.</td><td>VI -B</td><td>IIIC -04</td><td>16 of 35</td><td>10.00.00</td><td>AMBIENT AIR QUALITY MONITORING STATION (AAQMS)</td><td>QUANTITY OF AAQMS/ANALYZERS IS NOT AVAILABLE IN THE TENDER DOCUMENTS. PCRI IS PROPOSING QUANTITIES OF ITEMS BASED ON RECENT SUPPPLY/REQUIREMENT IN NTPC PROJECTS AS MENTIONED BELOW:

<table>
<tr><th>Sr. No.</th><th>Item Description</th><th>Qua</th></tr>
<tr><td>1.</td><td>SOX, NOX, CO, O3 ANALYSER, Multi gas Calibration system, PC based Data logger for individual AAQMS stations, UPS</td><td>04 S</td></tr>
<tr><td>2</td><td>Mercury Analyser</td><td>01 S</td></tr>
<tr><td>3</td><td>Suspended Particulate Monitors</td><td>08 S</td></tr>
</table></td><td>Bidder to note that AAQMS is not envisaged in the scope of this Pkg.</td></tr>
</table>

Pre-Bid Clarification

<table>
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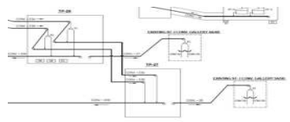
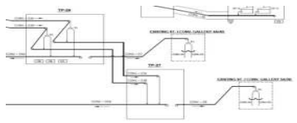
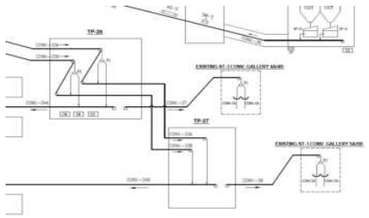
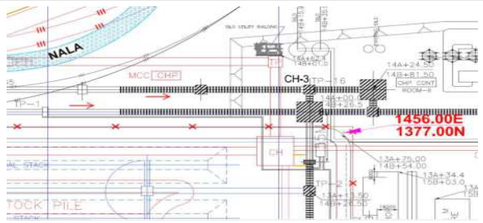
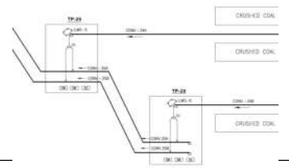
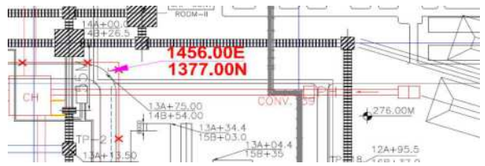
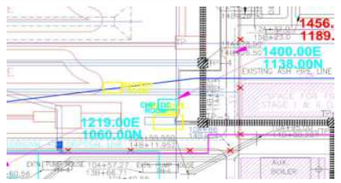
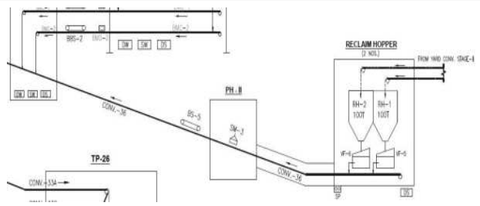
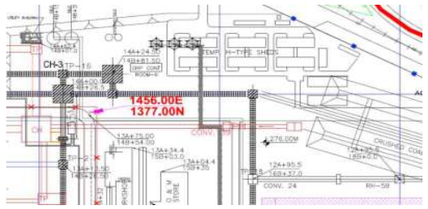
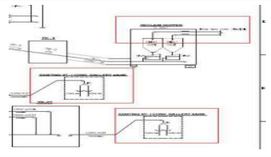
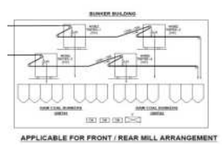
<tr><th>SEC/ PART</th><th>SUB SEC.</th><th>PAGE NO.</th><th>CLAUSE NO.</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td><table>
<tr><td>4</td><td>Sampling Inlet Heads – PM2.5, PM10, TSP</td><td>04 Sets</td></tr>
<tr><td>5</td><td>PC Based Data Logger for Central
Station with A4 Laser Printer Along
With UPS</td><td>01 Set</td></tr>
<tr><td>6</td><td>Meteorological sensors- Wind speed sensor, wind direction sensor, air temp sensor, relative humidity sensor, solar radiation sensor, rain gauge</td><td>01 Set</td></tr>
<tr><td>7</td><td>Meteorological Mast</td><td>01 Set</td></tr>
<tr><td>8</td><td>Sample Handling System Including
Compressed Air For Purging.</td><td>04 Set</td></tr>
<tr><td>9</td><td>CDAS and Connectivity of CDAS
Station to Individual AAQMS Stations</td><td>1 Set</td></tr>
<tr><td>10</td><td>Window A/C for AAQMS Stations
(1.5 Tons Each)</td><td>8 nos</td></tr>
</table></td><td></td></tr>
<tr><td>3.</td><td>VI-A</td><td>IIA-23</td><td>2 of 2</td><td>2.01.00</td><td>Sr. No. 45 – Stop Watch</td><td>QUANTITY OF STOP WATCH IS NOT AVAILABLE IN THE TENDER DOCUMENTS. PCRI IS PROPOSING 01 No. QUANTITY BASED ON RECENT SUPPPLY/REQUIREMENT IN NTPC PROJECTS.</td><td>Bidders proposal is accepted.</td></tr>
</table>

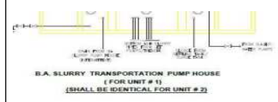
EPC package for Singrauli STPP Stage-III
PREBID QUERIES & CLARIFICATION

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
1	1	-TECHNICAL SPECIFICATIONS SECTION-VI PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	83 of 92	4.02.06	- f) For the purpose of volumetric computation, bulk density of coal shall be taken as 800 kg/m3 and for biomass 600 kg/m3 and blending ratio of Biomass with Coal is 20 % (by weight). Therefore, for calculation of belt conveyor capacity for their drives and drive motors KW requirement and sizing (volume calculations) of chute, hoppers etc., the above bulk density shall be considered. For all other purpose (viz) for stresses/load on structures, torque calculations of bucket wheel of Stacker Reclaimer, loading of VF tables, sizing of actuators, calculation of plugged chute, Hoppers loads etc., the bulk density of coal shall be taken as 1100 Kg/m3.	The Bidder requests the Owner to provide clarification regarding the required biomass density to be considered for load and stress calculations.	Bidder to consider 1100 kg/m3 as coal/biomass density for load & stress calculation.
2	2	TECHNICAL SPECIFICATIONS SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	91 of 92	4.04.18	Minimum clear cross section of chute: 800 mm X 600 mm (inside both ways)	For 800mm belt width the required skirt width is ~550mm. For the smaller belt width of 800mm, by providing 550mm skirt width, the clearance from the belt edge to the skirt sealing remains ~50mm, which may cause the material spillage in case of belt sway. To avoid material spillage bidder proposed to provide 900x500 mm chute dimension matching the skirt width of 500mm. Kindly confirm acceptance.	Bidder's proposal to provide 900x500mm chute dimension is acceptable.
3	3	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	7 of 113	4.3.4	Wire rope shall be of pre-formed type, hemp cored, regular lay 6/36 construction with a breaking strength of 160 -175 kgf/ sq. mm. The reverse bend of ropes is not acceptable. The minimum number of falls of rope shall be four (4).	As per manufacturer recommendation, steel cored wire rope is superior than hemp cored and used for hoist applications widely. Bidder requests Owner to accept.	Bidder's proposal is acceptable.
4	4	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-IIA-15 COAL& BIOMASSHANDLING PLANT	7 of 9 7 of 9	2.07.00 2.08.00	Two (2) numbers of Storage Hopper/Silo/Bins for Biomass Pallets shall be provided. The storage Hopper/Silo/bin shall have the minimum effective storage capacity (each) of 750 MT of Biomass Pallets. Storage Hopper/silo/bin shall be complete with all mechanical, electrical civil & structural works. One number (1 No) of Mechanical Extractor & Biomass Feeder below each biomass storage silos with drives, dust hoods (for Feeder), all mechanical, electrical accessories and supporting structures etc. to feed the Biomass to downstream conveyors. Mechanical extractor also known as Silo extractor/Rotary extractor, is a machine for efficiently extracting materials having poor natural flowing properties such as fibrous, wet materials prone to blockage. The Bidder to provide Silo extractor/Rotary extractor consists of rotating chute, extractor blade/sweeper arm/paddle wheel, slewing arrangement etc -Biomass feeders may be Belt feeder or Chain Feeders with VVVF drive. Suitable Biomass feed regulating mechanism to the Extractor and Biomass Feeder below silo/bins shall be provided for taking feed from silo and discharging onto onward conveyors..	1. Bidder would like to propose semi open storage shed of capacity1500T for biomass pallets instead of biomass storage silo. as an alternative option. Shed shall be semi open type . From the shed biomass shall be carried out by trucks & discharge to BRU. From BRU it will be directly feeding to biomass conveyors for further discharge to coal conveyor 36. Bidder requests Owner to accept the above alternative option.	Bidder's proposal is not acceptable.
5	5	SECTION-VI, PART-A '- PART-E, SEC-VI	SUB-SECTION-IIA-15 COAL & BIOMASS HANDLING PLANT & '- Drg no - 9587-001R-POM-A-002_Rev-A	57 of 130	1.38.00	Two (2) nos. conveyors (Conv 37 & Conv 38) shall feed the coal onto the stage-I conveyors 4A/4B and 5A/5B. The entire modification work including the conveyor 4A/4B & 5A/5B gallery modification, dismantling of any exiting facility is in the scope of the bidder. The dismantling activities shall be carried out in such a manner that the Stage-I operations shall be least affected. 	- Bidder understands that terminal point for Bidder shall be up to the new skirt board with chute arrangement from conveyor 37 and 38 on Existing conveyor 4A/B and 5A/B respectively. Please confirm - Further to the above, following existing drawings are required. 1. Existing building TP-2, TP-3 & TP-4 mechanical and structural drawing. 2. Existing conveyor 4A/B, 5A/B conveyor mech & structural GA drawing and technical parameters like belt speed which will be followed for rest of conveyors. 3. Drive motor calculation, along with gearbox and coupling details of existing conveyors 4A/4B & 5A/B	**Bidder to refer Sl. No MH-8 amendment no 1 to technical specification.**
6	6	TECHNICAL SPECIFICATION SECTION-VI, PART-A BID DOC NO CS-9586-001A-2	SUB-SECTION-VI CHAPTER-04 COAL HANDLING PLANT	7 & 9 of 18	(L) (Q)	FLAP GATES (INCLUDING THAT OF TRIPPERS) Actuator (complete with motor, gear box, limit switches etc.) - 1 nos. of each type & rating Flap gate shaft 1 nos. of each type & rating TRAVELLING TRIPPERS/MT Flap gate actuator with motor, gear box, position / thrust switches - 1 set of each type	Duplicate spares are included in the specification for both flap gates and traveling tripper sections within the mandatory spares. The bidder intends to account for the relevant spares for the traveling tripper flap gates using the item identified under serial number Q in the mandatory spare list. Consequently, these specific spare items will not be duplicated or reconsidered elsewhere in the list. Owner to confirm.	Bidder to provide mandatory spares for flap gate for tripper as per serial no Q
7	7	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	32 of 113	4.21.00	The Box Feeder should be a robust, proven, above the ground for unloading from trucks / self-tipping trucks or from loader shovels	Please provide details , type and dimension of trucks with number of maximum wheels to be used for biomass handling.	Bidder to consider all types of truck used for the transportation of bulk material ranging from 4 to 16 no of wheels.
8	8	- TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-IIA-15 COAL& BIOMASSHANDLING PLANT	7 of 9	2.07.00	The Bidder to provide Silo extractor/Rotary extractor consists of rotating chute, extractor blade/sweeper arm/paddle wheel, slewing arrangement etc.	The Bidder seeks clarification regarding the rotating chute aspect of the mechanical extractor. The Bidder requests the owner to provide additional information regarding the mechanical extractor's requirements.	Function requirements of mechanical extractor is already provided in technical specification.
9	9	- TECHNICAL SPECIFICATIONS SECTION – VI, PART-A	SUB-SECTION-VI CHAPTER-04 COAL HANDLING PLANT	7 of 18	J	Mandatory Spare- Vibrating screening feeder	The bidder understands that the vibrating screening feeder is not applicable and hence the mandatory spare parts indicated in the said clause are also not applicable. However, bidder requests owner to provide mandatory spare requirement for Vibrating feeder.	**Bidder to refer Sl. No MH-30 amendment no 1 to technical specification.**
10	10	- TECHNICAL SPECIFICATIONS SECTION – VI, PART-A	SUB-SECTION-VI CHAPTER-04 COAL HANDLING PLANT	10 of 18	S	Mandatory Spare- Elevator	The bidder would like to clarify that the mandatory spare parts indicated for the elevator are more relevant to rack & pinion type elevators. However, for rope & sheave passenger elevators, most of the items are not applicable. Bidder requests to provide mandatory spare requirement specific to Rope & sheave type elevator.	**Bidder to refer Sl. No MH-31 amendment no 1 to technical specification.**
11	11	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	82 of 92	4.02.01	Rated capacity of each stream of Coal handling Plant shall be 2200 TPH and minimum belt width shall be 1800 mm. Belt speed of trough conveyors shall not be more than 3.4 m/s.	Bidder understands that complete coal handling capacity is not 2200 TPH with 1800 mm belt width. For conveyor 36 & 37, capacity shall be 1200 TPH with 1000 mm belt width , Bidder requests Owner to confirm.	**Bidder to refer Sl. No MH-8 amendment no 1 to technical specification.**
12	13	- TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-IIA-15 COAL& BIOMASSHANDLING PLANT	5 of 9	1.38.00	Two (2) nos. conveyors (Conv 37 & Conv 38) shall feed the coal onto the stage-I conveyors 4A/4B and 5A/5B. The entire modification work including the conveyor 4A/4B & 5A/5B gallery modification, dismantling of any exiting facility is in the scope of the bidder. The dismantling activities shall be carried out in such a manner that the Stage-I operations shall be least affected.	Existing Conveyor 4A/B & 5A/B are considered as 1400mm wide belt width with 1200 TPH capacity. Please confirm the same and request to provide the existing conveyor details.	**Bidder to refer Sl. No MH-8 amendment no 1 to technical specification.**

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
13	14	SECTION-VI, PART-A '- PART-E, SEC-VI	SUB-SECTION-IIA-15 COAL & BIOMASS HANDLING PLANT & '- Drg no - 9587-001R-POM-A-002_Rev-A	57 of 130	1.38.00	Two (2) nos. conveyors (Conv 37 & Conv 38) shall feed the coal onto the stage-I conveyors 4A/4B and 5A/5B. 	Based on the above, considering existing conveyor belt width, the proposed conveyor 37 & 38 belt width shall be revised to 1400 mm belt width instead of 1000 mm wide belt width as mentioned in tender flow diagram. Bidder requests Owner to confirm	**Bidder to refer Sl. No MH-8 amendment no 1 to technical specification.**
14	15	- PART-E3	- Drg no - 9587-001(R)-POM-A-032	57 OF 130			The tender flow diagram does not shows the details of material feeding arrangement on to conveyor 37 & 38 from conveyor 33A/33B at TP-26 & TP-27 respectively. Bidder requests owner to provide the feeding arrangement details.	**Bidder to refer Sl. No MH-8 amendment no 1 to technical specification.**
15	16	TECHNICAL SPECIFICATION SECTION-VI, PART-A BID DOC NO.:CS-9586-001-A-2	SUB-SECTION-IIA-15 COAL& BIOMASSHANDLING PLANT	7 of 9	2.07.0	Mechanical extractor also known as Silo extractor/Rotary extractor, is a machine for efficiently extracting materials having poor natural flowing properties such as fibrous, wet materials prone to blockage. The Bidder to provide Silo extractor/Rotary extractor consists of rotating chute, extractor blade/sweeper arm/paddle wheel, slewing arrangement etc	Bidder proposes rod gate, rack pinion gate & vibrating feeder (with VFD) instead of mechanical extractor & belt feeder as there is no issue of flowability of Biomass. Bidder request Owner to accept our proposal.	Bidder to comply to the technical specification
16	17	- PART-E, SEC-VI	- Drg no -1150-999-POC-F-001_Rev-A	09 of 130	General Layout Plan		As per General layout plan, there are two conveyors coming out of existing track hopper of stage-1 & 2 and crossing the proposed conveyor 26A/26B at certain elevation. Bidder request Owner to provide the existing conveyor and other facility drawing/details to the check the interference of existing facility along the proposed of conveyor 26A/26B route from TP-19 to Crusher house	Bidder to note that GA of conveyor 2A/2B & 12A/12B shall be provided.
17	18	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	14 of 113 '83 of 92	4.9.2 4.02.07	The design average capacities shall be not less than 110% of rated (guaranteed) capacities as specified elsewhere for both stacking and reclaiming. The continuous motor rating at 50degC of the drive motor to be provided on each side of the yard conveyor shall be 120% of the actual power requirement at motor output shaft. '- a) For conveyors of belt conveyor systems *110% of actual power at drive motor output shaft at specified design capacity. The same shall be applicable for all drive motors of belt conveyors of Coal handling, Mill reject handling system, Limestone and Gypsum handing.	Bidder proposes to consider drive motor only at the discharge end of yard conveyor. Owner to accept and confirm. Further, due to discrepancies in the identified clause 4.9.2 & 4.02.07, bidder is considering motor rating at 110% of actual power at drive motor output shaft at specified design capacity. Owner to confirm.	Bidder to consider motor rating at 110% of actual power at drive motor output shaft at specified design capacity
18	19	TECHNICAL SPECIFICATIONS SECTION-VI, PART B TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant SUB-SECTION-IIA-15 COAL& BIOMASSHANDLING PLANT	23 of 113 4 of 9	4.16.3 1.26.00	The normal input feed size shall be considered as (-) 250 mm for coal sampling unit before coal crusher. However occasionally (-) 400 mm lumps may also arrive. Coal lump size after crusher (as fired coal) shall be (-) 20mm. However occasionally (-) 50 mm lumps may also arrive in as fired coal. Two (2) Nos. coal sampling units, one for (-) 250 mm size coal in crusher house and one for (-) 20 mm size coal on conveyor feeding to Main plant complete with all accessories and electrical, civil, structural works, supporting structures, approach/maintenance platforms, hoists etc.	The bidder seeks clarification regarding the coal sizes to be considered for the coal sampling unit after coal crusher. The output size of the coal after passing through the crusher is (-)20mm but specification mentions occasional (-) 50 mm lumps might also arrive. Hence, Bidder would like to know the size of the input coal received from stage-I.	Bidder to consider (-)20mm coal size for the design of coal sampling .
19	20	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	24 of 113	4.17.00	- i) Flooring of Cabin Vitrified ceramic tiles of mat finish '-Granite tiles to be provided for cabin flooring and bidder shall take care of the height of same in selecting counter weights.	There is discrepancy in type of flooring to be considered for cabin flooring of elevator. Owner to clarify type of flooring to be considered in elevator.	Bidder to consider vitrified tiles for elevator flooring
20	21	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	Page 14 of 113 Page 43 of 1138	4.9.2 2.8.3	- The continuous motor rating at 50oC of the drive motor to be provided on each side of the yard conveyor shall be 120% of the actual power requirement at motor output shaft. Drive Motors Continuous motor rating (Name plate rating) at 50OC Ambient - 110% of actual power requirement at motor output shaft at design capacity.	Due to discrepancies in the identified clause 4.9.2 & 2.8, Bidder is considering motor rating at 110% of actual power at drive motor output shaft at specified design capacity. Owner to confirm.	Bidder to consider motor rating at 110% of actual power at drive motor output shaft at specified design capacity

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
21	22	- PART-E, SEC-VI	- Drg no - 9587-001R-POM-A-002_Rev-A	57 of 130 Page 14 of 113	4.9.2	The continuous motor rating at 50oC of the drive motor to be provided on each side of the yard conveyor shall be 120% of the actual power requirement at motor output shaft.H36 	Bidder understands that for uni-directional conveyors, drive motor on each side of yard conveyor is not required and there will be a single drive at TP-28 and TP-29 solely for yard conveyor 34B and 34A at the discharge end of yard conveyor which will drive the yard conveyor for both stacking and reclaiming operation. Please confirm Bidder's understanding.	**Bidder to refer Sl. No MH-8 amendment no 1 to technical specification.**
22	23	'- PART-E3	- Drg no - 9587-001R-POM-A-002_Rev-A	9 of 130			In tender plot plan, the existing cable rack interfering with reclaim hopper conveyor 36 as well as at pent house also. Bidder request Owner to the share the detail of existing cable rack in order to check the interference details.	Bidder to refer Sl. No MH-1 amendment no 1 to technical specification.
23	24	TECHNICAL SPECIFICATION SECTION-VI, PART-A BID DOC NO.:CS-9586-001-A-2	SUB-SECTION-IIA-15 COAL& BIOMASSHANDLING PLANT	6 of 8	2.04.00	Biomass Bucket Elevator along with its supporting structures, Buckets, chain/Belt, drive motors, drive units, sprockets, pits etc., all electrical etc. including all civil, structural, and architectural works for tower, tower supporting structures and their associated foundations. Bucket Biomass elevator shall convey the biomass on the reversible belt feeder, placed over biomass main storage silos. Reversible belt feeder shall feed the biomass to either silo-1 or silo-2.	Specification ask for reversible belt feeder as a feeding arrangement to the biomass silos. However, bidder would like to propose alternate option of plough feeder for feeding to biomass silos, depending on the layout requirements and the feeding arrangement. Bidder requests Owner to accept.	**Alternate option with diverter plough arrangement shall also be acceptable for feeding into biomass silo.**
24	25	'- PART-E3	- Drg no - 9587-001R-POM-A-002_Rev-A	9 of 130			In tender plot plan, the existing ash pipe line corridor for stage - I & II, Battery room & CHP DC room are shown and same are interfering with proposed CHP & FGD facilities of stage - III power plant. Bidder understands that re-routing of these facilities shall be in Owner's scope of work. Please confirm Bidder's understanding is correct to keep all Bidders at par.	Bidder to note exisitng ash pipeline corridor for stage-I & II shall be re-routed by NTPC.. Existing CHP DC and battery room are also being shifted by owner. However scope of dismantling shall be as per Subsection IID part A section VI of technical specifications

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
25	26	- PART-E3	- Drg no - 9587-001(R)-POM-A-032	57 OF 130			Owner to note that there is mismatch in the belt width and TPH of Reclaim Conveyor no 36 in tender flow diagram i.e conveyor 36 marked with 1800 mm wide belt and its capacity indicated as 800 TPH. In view of above, Bidder understands that conveyor 36 belt width shall be considered as per its capacity of 800 TPH. Please confirm Bidder's understanding.	**Bidder to refer Sl. No MH-8 amendment no 1 to technical specification.**
26	27	- PART-E, SEC-VI	- Drg no -1150-999-POC-F-001_Rev-A	09 of 130	General Layout Plan		Owner to note that there is space constraint in Singrauli Project and new facility for Biomass handling system added and the same has not been shown in plot plan. Owner is requested to mark the Biomass facilities in plot plan.	**Bidder to refer Sl. No MH-8 amendment no 1 to technical specification.**
27	28	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	5 OF 113	4.1.6	Rating of all drive motors of conveyors shall not be less than 110 % of the power required at drive motor output shaft at specified design capacity. The motor rating shall be at 50 deg Cent. Ambient. Single LT drive motors shall be used for conveyor drive ratings up to 160 KW. For conveyor drive rating beyond 160 KW, single HT drive shall be used for conveyors.	Bidder understands that dual drive can also be provided wherever required for HT motors based on layout requirement. Please confirm acceptance.	Technical specification is clear. Bidder to provide only one HT drive for single conveyor.
28	29	TECHNICAL SPECIFICATION SECTION – VI, PART-E	TENDER DRAWINGS COAL + BIOMASS FLOW DIAGRAM Drg. No.-9587-001(R)-POM-A-002	Drg. No.-9587-001(R)-POM-A-002	COAL + BIOMASS FLOW DIAGRAM Drg. No.-9587-001(R)-POM-A-002		As flow diagram is silence about scope of DS/SW/PW In existing ST- I CONV. GALLERY 4A/4B & EXISTING ST- I CONV. GALLERY 5A/5B , whether Bidder to consider DS system at discharge Owner's conveyor from stage-II & Stage-I i.e yard conveyor , conveyor- 4A/4B, 5A/5B OR it will be in Owner's scope. Please clarify. If Bidder to consider it, Owner to provide details input of Owner's conveyor as required for DS connectivity with it.	**Bidder to refer Sl. No MH-8 amendment no 1 to technical specification.**
29	30	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	Page 61 of 113	2.5.0 (ii)	(ii) Capacity 50 cub.m /hr minimum with 10% margin	Bidder understands that 10% margin shall be considered on calculated Capacity, However, Pump Capacity shall be 50 cub.m /hr minimum . Please confirm Bidder's understanding.	Bidder's understanding is correct
30	31	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	Page 75 of 113	2.01.02 b) (1)	b) Stockyard Dust Suppression System (1) Maximum number of nozzles : Two (2) Nos. operating simultaneously	Bidder understands that Maximum number of nozzles : Two (2) Nos. operating simultaneously shall be considered for Pump selection for Stockyard Dust Suppression System. Please confirm Bidder's understanding.	Bidder's understanding is correct
31	32	TECHNICAL SPECIFICATIONS SECTION-VI, PART E(2)	COAL + BIOMASS FLOW DIAGRAM Drg. No.-9587-001(R)-POM-A-002	Page 56 of 130	COAL + BIOMASS FLOW DIAGRAM Drg. No.-9587-001(R)-POM-A-002		As per flow diagram there is no DE system at top of bunker. Bidder has not considered the same. please confirm.	Bidder's understanding is correct
32	33	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	Page 20 of 113	4.11.13	Electrically operated dampers shall be provided at all dust extraction points.	One independent dust extraction system for each stream shall be provided (Total 2 nos. system shall be provided). Bidder understands that Electrical Damper at extraction point for Stream selection is not required. Instead of Electrical damper, Manual butterfly dampers are considered at each suction hood inline with executed NTPC Projects. The setting / adjustment of this manual butterfly dampers is done one time during commissioning and no further adjustment is required. Hence, we are considering Manual Damper instead of Electrically operated dampers at all dust extraction points. Please confirm Bidder's understanding.	Bidder to provide electrically operated dampers at extraction points.
33	34	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	Page 32 of 113	4.21.00	Unloading area for Biomass shall be enclosed type so that dust could not spread into the surrounding. Adequate ventilation and dust extraction system shall be provided.	Bidder understands that DS system at BRU area/ BMTP area/ Biomass storage silo as per resolution to pre bid query point no 755 of in Lara Project. Please confirm Bidder's understanding.	Bidder's understanding is correct. Bidder to provide dry fog/cold fog dust suppression system as specified.
34	35	SECTION-VI, PART-A	CHAPTER-04 COAL HANDLING PLANT	17 OF 18	S)	Mobile Headers i) Drive unit assy complete with motor, gear box etc.	As per specification, Mobile Headers are not envisaged, hence, the referred clause for mandatory spares is also not applicable. Please confirm.	Bidder's understanding is correct

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
35	36	SECTION-VI, PART-A SECTION-VI, PART-B SECTION-VI, PART-E	SUB-SECTION-IIA-16 SUB-SECTION: A-21 SINGLE LINE FLOW DIAGRAM OF BOTTOM ASH HANDLING SYSTEM (JET PUMP SYSTEM) ASH DISPOSAL & ASH WATER SYSTEM DRG. No. (9587-001(R)-POM-A-025) Rev. No. A	4 of 17 30 of 41 -	1.01.05 (C-2) 4.00.00 -	(ii)Three (3) lengths of bottom ash slurry MS pipelines from the bottom ash slurry disposal pump house to to the combined ash slurry pump house with a branch to dewatering bins .... pneumatically actuated valves. Type: 20 thk. Cast basalt lined MS (MS shell of 6.00 mm thick) piping for BA slurry transportation from boiler area up to slurry sump of BA slurry pump house and slurry disposal pipes with ash slurry pump house. From ash slurry disposal pump discharge upto disposal point upto Dewatering Bins, & in culverts/trenches at rail/road crossings. Note No. 7 : THE ASH SLURRY PIPING FROM DISCHARGE OF JET PUMP UPTO BA SLURRY TRANSPORTATION PUMP HOUSE SHALL BE BASLAT LINED. ASH SLURRY TRANSPORTATION PIPING WITHIN BA PUMP HOUSE AND UPTO DEWATERING BIN SHALL BE BASLAT LINED.	There is contradiction in stated clause regarding pipe material for BA slurry piping from BA slurry sump to combined ash slurry pump house/dewatering bin. Hence, Bidder has considered total MS type BA slurry pipelines from BA slurry pumps house to dewatering bin/combine ash slurry pump house as per part-A, cl. no. 1.01.05 (C-2). Please confirm and issue an amendment suitably.	**Bidder to refer Sl. No MH-27 amendment no 1 to technical specification.**
36	37	SECTION-VI, PART-A SECTION-VI, PART-E SECTION-VI, PART-E	SUB-SECTION-IIA-16 SINGLE LINE FLOW DIAGRAM OF BOTTOM ASH HANDLING SYSTEM (JET PUMP SYSTEM) ASH DISPOSAL & ASH WATER SYSTEM DRG. No. (9587-001(R)-POM-A-025) Rev. No. A '1150-999-POC-F-001	4 of 17 - '-	1.01.05 (C-2) - -	APPLICABLE FOR JET PUMP SYSTEM (i) Three (3) streams (One (1) no. stream working + one (1) no. stream maintenance standby and one (1) no. stream operation standby) of horizontal bottom ash slurry disposal pumps, complete with drive motors, variable speed hydraulic couplings for first stage pumps and fixed belt drive arrangements for subsequent stages, base plates, foundation bolts, inserts, embedments and accessories as specified and as required. Tender flow diagram (Single line Flow Diagram of Bottom Ash handling system), Three (3) Nos. BA Slurry Transportation Pump (1W + 2S) are shown for each unit.  Common BASPH is indicated in Tender GLP. 	There is contradiction in stated clause regarding quantity of Bottom Ash Slurry Pump/house. Hence, Bidder has considered common BA slurry pump house for both the units as per part-A. Please confirm and issue an amendment suitably.	**Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.**
37	38	SECTION – VI, PART-E SECTION – VI, PART-E SECTION-VI, Part-A	1150-999-POC-F-001 9587-001(R)-POM-A-025 SUB-SECTION-IIA-16	-- '-- 3 of 17	-- '-- 1.01.05	Common BASPH is indicated in Tender GLP. Unitized BASPH is indicated in Tender P&ID (C) BOTTOM ASH SLURRY TRANSPORTATION/DISPOSAL SYSTEM Scope under this section starts from bottom ash slurry disposal pump house (in case of jet pump system)..... ... (C-2) APPLICABLE FOR JET PUMP SYSTEM (i) Three(3) streams (One(1) nos. streams working + one (1) no. stream maintenance standby and one (1) no. stream operation standby) of horizontal bottom ash slurry disposal pumps, complete with drive motors, variable speed hydraulic couplings for first stage pumps and fixed belt drive arrangements for subsequent stages, base plates, foundation bolts, inserts, embedments and accessories as specified and as required. (ii) Three (3) lengths of bottom ash slurry MS pipelines from the bottom ash slurry disposal pump house to to the combined ash slurry pump house.....	There is contradiction on the various Tender clauses. For Jet Pump system, Tender GLP and Part-A specification indicates common bottom ash slurry pump house for both units whereas in Tender P&ID unitized bottom ash slurry pump house is indicated. Bidder shall provide common bottom ash slurry pump house as per Tender GLP and Part-A of the specification. Please confirm.	**Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.**
38	39	SECTION-VI, Part-A SECTION-VI, PART-B SECTION-VI, PART-E	SUB-SECTION-IIA-16 SUB SECTION-A-21 SINGLE LINE FLOW DIAGRAM OF BOTTOM ASH HANDLING SYSTEM (JET PUMP SYSTEM) ASH DISPOSAL & ASH WATER SYSTEM DRG. No. (9587-001(R)-POM-A-025) Rev. No. A	5 of 17 29 OF 41 -	1.01.04 (D) 3.09.02 -	(vii) In case of intermittent type bottom ash handling system, two (02) nos. of MS Intermediate Ash slurry tanks for each unit along with two (02) nos. horizontal coarse ash slurry transportation pumps (1W + 1S) for each tank, complete with .... Slurry Disposal Sump. Data sheet : No. of tanks : Two (2) per unit One (1) No. of intermediate coarse ash tank shown with (1 W+ 1S) pump per unit.	There is contradiction in stated clause regarding quantity of intermediate slurry tank and pumps. Bidder shall consider Two (2) No. of MS Intermediate Ash slurry tanks for each unit along with four (04) nos. horizontal coarse ash slurry transportation pumps (2W + 2S) for each unit. Please confirm and issue an amendment suitably.	**Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.**

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
39	40	SECTION-VI, PART-A SECTION-VI, PART-E	SUB-SECTION-IIA-16 SINGLE LINE DIAGRAM FOR ASH CLASSIFIER SYSTEM (PRESSURE SYSTEM) DRG. No. (9587-001(R)-POM-A-029) Rev. No. A	9 of 17 -	1.01.06 (E) -	i)Suitable arrangement of aeration blowers (one for all hoppers + 1 standby) for the aeration of hoppers shall be provided. For the aeration of the above ash silo no, one working + one standby aeration blower shall be provided. ..... Tender Flow Diagram (Single Line Flow Diagram For Fly Ash Handling system) Aeration Blower 4 Nos. (3W +1S) (for Coarse Fly Ash Hopper and Fine Fly Ash Hopper)	There is contradiction regarding the quantity of aeration blowers for coarse fly ash hopper and fine fly ash hopper in stated clause and flow diagram, In line with tender flow diagram, bidder shall consider total 4 nos. (3W + 1S) aeration blowers along with heaters. Please confirm and issue an amendment suitably.	**Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.**
40	41	SECTION-VI, PART-A SECTION-VI, PART-E	SUB-SECTION-IIA-16 SINGLE LINE FLOW DIAGRAM OF FLY ASH HANDLING SYSTEM (PRESSURE SYSTEM) DRG. No. (9587-001(R)-POM-A-028) Rev. No. A	10 of 17 -	1.01.07 (iii) -	Two (2) nos. ... Mass flow meter/Solid flow meter (Five numbers below each silo) complete with all electrical, controls etc to be provided for measurement of ash quantity (total or part, as required) during filling of ash to the road tanker/Rail Wagons. Tender Flow Diagram Three Nos. of Mass flow meter are shown below Fly Ash and Fine Ash Silo in flow diagram.	There is contradiction in stated clause regarding quantity of Mass flow meter. As per Part A clause no. (1.01.07), the quantity of mass flow meter is 5 Nos. However, Bidder understands that 3 nos. Mass flow meter shall be considered as per tender flow diagram. Please confirm Bidder's understanding.	**Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.**
41	42	SECTION-VI, PART-A SECTION-VI, PART-B SECTION-VI, PART-E	SUB-SECTION-IIA-16 SUB-SECTION: A-21 SINGLE LINE FLOW DIAGRAM FOR FLY ASH HANDLING SYSTEM (PRESSURE SYSTEM) DRG. No. (9587-001(A)-POM-A-028) Rev. No. A	10 of 17 10 of 17 22 of 41 -	1.01.07 1.01.07 2.13.00 -	(iv) Pitless type Weigh Bridge for rail loading below dry fly ash silos (minimum seven numbers) complete with all electrical, controls, civil and structural works for weighment of rail Wagons during filling. (xiii) The pitching of ash silo and overall arrangement of hydro-mix conditioner units, telescopic chutes, air slides etc shall facilitate simultaneous loading of seven wagons (BOXN/BCFC/BCCW/BTAP) from four number of RCC Silos. ..... shall be provided. Weigh bridges Platform size 24m x 3m (approx.) Weigh bridge should take care of locomotive (weighing upto 150T) moving over weigh bridge at a speed of 8 Kmph. (For weigh bridges on the rail lines) Note no. 18: .....One (1) No. Weigh Bridge for rail unloading below each main fly ash silo complete with all electrical, controls civil and structural work for weighment from silos.....	There is contradiction regarding the quantity of Weigh Bridge below dry fly ash silos in stated clause (i.e. 4 vs 7). Bidder shall consider total 4 rail weigh bridges i.e. 3 nos. below Fly ash storage silo and 1 no. below fine ash storage silos. Also, platform length of 24m will not be possible with simultaneous loading of 4/7 wagons. The platform size shall be to suit weighment of various Ash Tankers/Rail wagons. Please confirm and issue an amendment suitably.	**Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.**
42	43	SECTION-VI, PART-A SECTION-VI, PART-E	SUB-SECTION-IIA-16 SINGLE LINE FLOW DIAGRAM FOR FLY ASH HANDLING SYSTEM (PRESSURE SYSTEM)	11 of 17 -	1.01.07 -	(xii) Five (5) numbers of Dry fly ash unloaders from each dry fly ash storage silo along with rotary feeders, telescopic chutes and other accessories as specified and as required. Tender Flow Diagram (Single Line Flow Diagram For Fly Ash Handling system) Dry fly ash unloaders - 8 Nos. (Shown) (Two (2) no. below each silo)	There is contradiction in quantity of Dry fly ash unloaders stated clause and flow diagram of Single line Flow Diagram For Fly Ash Handling System (Pressure System). Owner is requested to revisit the quantity of Dry fly ash unloaders below FA silos and fine FA silo.	**Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.**
43	44	SECTION-VI, PART-B SECTION-VI, PART-E	SUB-SECTION: A-21 SINGLE LINE FLOW DIAGRAM OF BOTTOM ASH HANDLING SYSTEM (JET PUMP SYSTEM) ASH DISPOSAL & ASH WATER SYSTEM DRG. No. (9587-001(R)-POM-A-025) Rev. No. A	33 of 41 -	5.01.00 -	4. No. of operating : BA Seal water pump: 1working + 1 standby Seal water pumps (Common for all units) shown with supply to Seal water to clinker grinder, BA over flow pump of Unit#1. Note No. 9: For sealing of BA overflow pumps, BA overflow pump fluid coupling, sealing of clinker grinders etc, Bidder shall provide Two (2) Nos. (1 Working + 1 standby) seal water pumps per unit.	There is a contradiction amongst stated tender clauses regarding BA seal pumps for each unit. Bidder has considered one common BA seal tank and two nos. (1W+1S) common BA seal water pumps, for both the units. Please confirm and issue an amendment suitably.	**Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.**

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44	45	SECTION-VI, Part-A SECTION-VI, PART-B SECTION-VI, PART-E	SUB-SECTION-IIA-16 SUB SECTION-A-01 9587-001(R)-POM-A-025	12 of 17 81 OF 92 -	1.01.08 4.01.04 -	Combined ash slurry disposal pumping system: i. Three (03) streams of horizontal combined ash slurry disposal pumps ....., out of which two stream will be working, one stream will be normal standby and other stream will act as maintenance standby. ..... ii. Three (03) lengths of combined ash slurry disposal MS pipe lines ..... iv. Three (03) nos slurry sump compartment isolation valves. x. Six (6) nos. solenoid operated pneumatically actuated knife gate valves at the suction [Three(3) nos.] and discharge [Three (3) nos.] of combined ash slurry disposal pumps. Standby arrangement for Ash handling system Combined Ash Disposal System-Two pump streams operating with One pump stream as operating standby per unit. Independent pipelines for each pump stream. 3 nos. of pump series is indicated in the Tender P&ID for combined slurry pump house	There are contradiction in stated tender clauses regarding quantity of Combined Ash Slurry Disposal Pump series and its associated items, Hence, Bidder has considered total Four nos. combined ash slurry streams (2W+2S) for both the units out of which two stream will be working, one stream will be normal standby and other stream will be maintenance standby. Please confirm and issue an amendment suitably.	**Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.**
45	46	SECTION-VI, PART-B	SUB SECTION-A-01	59 of 75	4.01.02	(F) Ash slurry disposal system (ii) Maximum pumping distance – 13 Km or as per actual distance for the farthest disposal point in ash dyke whichever is higher.	To ensure that all Bidders are at par, Owner is requested to kindly provide single value for maximum pumping distance including garlanding (in km) to be considered for ash slurry disposal pump head selection. Owner is request to kindly remove "or as per actual distance for the farthest disposal point in ash dyke whichever is higher" since the ash dyke location is not known.	**Bidder to refer Sl. No MH-10 amendment no 1 to technical specification.**
46	47	SECTION-VI, PART-B	SUB SECTION-A-01	78 of 92	4.01.02(F)	(i) Elevation of top of Ash dyke:- 26 m	Bidder understands that 26m is the static height to be considered for combined ash slurry disposal pump head selection. Please confirm Bidder's understanding.	**Bidder to refer Sl. No MH-10 amendment no 1 to technical specification.**
47	48	SECTION-VI, PART-B	SUB-SECTION: A-01	72 of 92	4.01.02	(C) Ash Densities: Type of Ash | Bulk Density (Tonnes per m^3): For Calculations Load | For volume Calculations Storage | Particle density (Tonnes per m^3) Bottom Ash | 1.6 | 0.65 | 2.0 Fly Ash | 1.6 | 0.75 | 2.0	Volumetric ash density for coarse ash (Eco hopper, APH & Duct hopper) is not specified in the tender specification. Hence, Bidder shall consider the same as 0.75 ton/m^3. Please confirm.	Bidder to consider 0.65T/m3 density for Eco, eco duct hopper and APH ash.
48	49	SECTION-VI, PART B SECTION-VI, PART-E	SUB-SECTION: A-21 SINGLE LINE FLOW DIAGRAM OF BOTTOM ASH HANDLING SYSTEM (JET PUMP SYSTEM) ASH DISPOSAL & ASH WATER SYSTEM DRG. No. (9587-001(R)-POM-A-025) Rev. No. A	15 of 41 -	1.13.00 -	VIBRATING FEEDER (i) Requirement: For uniform feeding of dewatered bottom ash onto conveyors/crushers Tender Flow Diagram Conveyors/crushers is not shown in Flow diagram	There is contradiction between stated clauses, regarding the discharge of vibrating feeder shall be for truck loading. Bidder understand that conveyors/crushers at outlet of dewatering bin are not applicable. Please confirm and issue an amendment suitably.	Bidder's understanding is correct
49	50	SECTION-VI, PART-E	SINGLE LINE FLOW DIAGRAM FOR FLY ASH HANDLING SYSTEM (PRESSURE SYSTEM) DRG. No. 9587-001(A)-POM-A-	-	-	Flow diagram Note no. 10 Necessary Head room (6.8 Min) to be provided below silo for truck/ Rail wagon movement.	There are contraction amongst various clauses regarding vertical clear headroom below fly ash silo mentioned herewith. Bidder understands that 6.8 mtr clear head room below fly ash silo for truck/ Rail wagon movement shall be provided.	Bidder's understanding is correct
50	51	SECTION-VI, PART-E	SCHEME OF GYPSUM DEWATERING SYSTEM DRG. No.: 9587-001(R)-POM-A-024, REV. NO.: A	-	-	Tender Flow Diagram (Scheme of Gypsum Dewatering System) FGD waste water to HCSD mixing tank.	As per tender specification HCSD system in not applicable. In view of this, bidder has considered FGD waste to combined ash slurry pump house for further disposal to ash dyke. Please confirm.	Bidder's understanding is correct
51	52	SECTION-VI, Part-A SECTION-VI, Part E	SUB-SECTION-IIA-16 SINGLE LINE DIAGRAM FOR ASH CLASSIFIER SYSTEM (PRESSURE SYSTEM) DRG. No. (9587-001(R)-POM-A-029) Rev. No. A	9 of 18 -	1.01.06 (E) -	(j) Ten (10) numbers (6 working + 4 stand by) screw type transport air compressors suitably sized and designed to cater to the ash transportation, along with silencer, filter, after cooler along with all other accessories and supporting structures, platforms etc. as specified and as Required. Tender Flow Diagram Nos. of Ash Conveying are working and (6W + 4S)- Transport Air Compressor are shown.	i) As tender specification and flow diagram, there are total 7 nos. FA conveying lines are working and no. of working transport air compressors are shown as 6 nos. Request owner to revisit the quantities of TACs and issue an amendment suitably.	**Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.**

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
52	53	SECTION – VI, PART-A SECTION-VI, PART-B PART-E1	SUB-SECTION-IV SUB-SECTION: A-21 SINGLE LINE FLOW DIAGRAM FOR Bottom ASH HANDLING SYSTEM DRG. No. 9587-001(R)-POM-A-025 Rev. no. A	36 of 76 33 of 41 -	1.03.09 5.01.00 -	Ash Handling Plant (i) In case bidder offers intermittent type bottom ash removal system employing..... from each individual hopper section in a unit will be removed in parallel. ..... Ash removal from APH and Duct Hoppers. Total time for evacuating four (4) hours of ash collection from all the hoppers of (APH +Duct Hoppers) of a unit corresponding to collection rates specified shall not exceed 45 mins (including change over time. The total time for evacuating four (4) hour collection of bottom ash from a unit corresponding to collection rates specified shall not exceed 85 minutes including five (5) minutes time required for starting, stopping, sequential change over from one unit to second unit ..... HORIZONTAL CENTRIFUGAL PUMPS 4. Nos. operating . BAHP Water pump: 2 working + 1standby BAHP Water pump: 2 working + 1standby	Inline with functional guarantees stated clause no. "'1.03.09" of SECTION – VI, PART-A, BA Slurry from each unit shall be evacuated sequentially from one unit to another unit. Hence, (1W + 1S) BAHP water pump shall be supplied instead of (2W + 1S) BAHP pumps common for both units. Please confirm.	Bidder to provide (2W+1S) BAHP pump in line with technical specification
53	54	SECTION-VI, Part-A	SUB-SECTION-IIA-16	10 of 17	1.01.07	Dry Fly Ash Storage System (i) Three (3) nos. (two working + one standby) fly ash storage structural steel intermediate silos of 100 MT effective storage capacity each, ... Four (04) numbers (two working + two standby) Feeder ejector below each intermediate Silo with expansion joints, vertical pipe connections, ...	As per tender specification, Three (3) nos. (two working + one standby) intermediate silo and Four (04) numbers (two working + two standby) Feeder ejector below each intermediate Silo shall be provided. Considering higher ash quantity, the size of feeder ejector below ISH is arriving of non proven design, Hence, Bidder has considered total 6 nos. working feeder ejectors + 6 nos. standby feeder ejectors below all three intermediate silos for conveying of fly ash slurry from both the units. Please confirm and issue an amendment suitably.	**Bidder to refer Sl. No MH-15 amendment no 1 to technical specification.**
54	55	SECTION-VI, PART-A	SUB-SECTION-IIA-16	13 of 17	1.02.00	e) All ash water and seal water piping from Owner's terminal points to all the equipments and sumps complete with fittings, valves, strainers, flanges, gaskets, nuts, bolts, hangers, supports, flushing nozzles, agitating nozzles, etc. as specified and as required.	AHP seal water shall be tapped from service water tank which is under Bidder scope. Hence, no separate terminal points with Owner/NTPC is envisaged. Please confirm.	Bidder's understanding is correct
55	56	SECTION-VI, Part-A	SUB-SECTION-IIA-16	14 of 17	1.02.01.01	(h) Decanted water shall be pumped from owners' pumping system located at ash dyke. There shall be two no. working AWRS Pump of 1100 m3/hr flow rate (owners' pumping system),. Hence, maximum recovery water received inside plant shall be 2200 m3/hr, accordingly pipeline of diameter 800 NB, within plant boundary upto terminal point shall be in Bidder's scope. Decanted water from ash pond shall be reused in Ash handling System.	Bidder understands that ash water recovery will be received when both BA and FA will be disposed in slurry mode. Accordingly, Bidder considers 70% recovery from ash pond during slurry mode operation. However, 800 NB pipe will be considered as per tender. Please confirm Bidder's understanding.	Bidder's understanding is correct
56	57	SECTION – VI, PART-E SECTION – VI, PART-A	1150-999-POC-F-001 SUB-SECTION-III	-- 3 OF 3	-- 4.01.00	Terminal point of Ash slurry piping & AWRS is not indicated in tender GLP c) Ash slurry piping & AWRS from 5 m inside plant boundary to Ash dyke shall be excluded from the Bidders' scope.	Terminal point of Ash slurry piping & AWRS is not indicated in tender GLP. Owner is requested to kindly provide the tentative location/co-ordinate for the same in GLP.	Bidder to provide BA slurry pipes and AWRS pipe upto 5m from the plant boundary. Bidder to refer terminal point chapter.
57	58	SECTION – VI, PART-E	1150-999-POC-F-001	--	--	Proposed Ash slurry pipe line corridor for Stage I&II	Bidder understands that all the activities (design, supply, erection, etc.) related to re-routing Ash slurry piping from Stage I&II is not included in Bidder's scope of work. Owner to confirm the same.	Bidder's understanding is correct
58	59	SECTION-V I, PART-A	SUB-SECTION-VI CHAPTER - 03 ASH HANDLING PLANT	'3 OF 12	'3.04.00 3.04.09	Mandatory Spares: Flushing Water Pumps/BA Hopper Overflow Water Pumps/Surge Tank Overflow Pumps Motor for Flushing water pump/BA Hopper overflow pump/Surge tank overflow pump may be included	Bidder understands that surge tank overflow pump is not envisaged as per specification, hence, the spares for the same mentioned in referred clause is also not applicable. Please confirm Bidder's understanding.	Bidder's understanding is correct
59	60	SECTION-V I, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	23 OF 76	 '5.	e) Ash Handling Plant List of drives with corresponding weightage factors thereof for which power consumption is to be guaranteed is as follows: Bottom Ash Slurry transportation pumps and Bottom ash slurry disposal pumps	Bidder understands that bottom ash slurry disposal pumps are not applicable as per specification. Please confirm Bidder's understanding.	Bidder to consider both BA transportaion/disposa and combined ash slurry disposal pumps in line with technical specification

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60	61	SECTION-V I, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	23 OF 76 '23 OF 76	5. 8. 9. 13. 6.	e) Ash Handling Plant List of drives with corresponding weightage factors thereof for which power consumption is to be guaranteed is as follows: (i) Fly ash conveying air compressors with air drying plant (ADP): 1 Transport air compressor with air drying plant (ADP): 1 Transport air compressor with air drying plant (ADP) for classification system: 0.40 Combined ash slurry disposal pumps: 0.5	Discrepancy observed in drive list for AHP package under station auxiliary power consumption. In view of lean and dry disposal of fly ash, Bidder understands that following referred drives shall be applicable: 8. (i) Fly ash conveying air compressors with air drying plant (ADP): 1 13. Transport air compressor with air drying plant (ADP) for classification system: 0.40 6. Combined ash slurry disposal pumps: 0.5 and 9.0 Transport air compressor with air drying plant (ADP): 1 will not be applicable. Please confirm Bidder's understanding.	Bidder to refer Sl. No MH-40 amendment no 1 to technical specification.
61	62	Part-A Part-E	Sub Section-IIA-10, Water Treatment Plant	1 of 12 68 of 130	1.01.01, c) 1150-999-POM-A-006	Three (3) numbers of inlet channels with flow measuring element in each channel (parshall flume) of RCC Construction. Two (2) numbers of parshall flume are shown in tender SLFD.	Discrepancy observed in referred clauses regarding pashall flumes. In tender P&ID, 2 numbers of parshall flumes are shown against 3 nos asked in the tender specifications. Bidder understands that 3 nos of Parshall flume at 3 nos of inlet channel for each PT-CW clarifier shall be considered. Please confirm Bidder's understanding and amend the drawing accordingly.	Bidder's understanding is correct, 3 nos of Parshall flume (one for each PT-CW clarifier) shall be provided. Bidder to refer amendment WS-01 in this regard.
62	63	Part-A Part-E	Sub Section- IIA-10 Water Treatment Plant	2 of 12 68 of 130	1.01.03 (d) 1150-999-POM-A-006	One (1) number bypass channel of RCC Construction to by-pass clarifier(s) with required isolation gate(s). Only inlet channel to PT-DM clarifier is shown in the P&ID. Bypass channel is not shown.	Discrepancy is observed in the mentioned clause. Bidder understands that a bypass channel shall be provided to bypass the PT-DM clarifier. Please confirm.	Bidder's understanding is correct. Bypass channel shall be provided to bypass the PT-DM clarifier. Bidder to refer amendment WS-01 in this regard.
63	64	Part-A Part-E	Sub Section- IIA-10 Water Treatment Plant	3 of 12 68 of 130	1.01.04-c & f 1150-999-POM-A-006	c) Alum Solution preparation & dosing system consisting of required number of RCC Alum solution preparation tanks, agitators, alum solution dosing pumps complete with all necessary piping, fittings, feed piping, water supply piping, overflow and drain piping, sampling connections etc. f) PAC dosing system consisting of required number of tanks, agitators, dosing pumps complete with all necessary piping, fittings, feed piping, water supply piping, overflow and drain piping, sampling connections etc. Only Alum dosing has been shown in the tender P&ID (Drg no.1150-999-POM-A-006)	Discrepancy observed for Alum and PAC dosing system. Owner to note that Alum and PAC, both are coagulants – hence, Bidder understands that two coagulants are not required, and dosing shall be considered as per P&ID only. Please confirm.	Bidder's understanding is not correct. Provision of both Alum & PAC dosing shall be kept as per technical specification. Details shown in P & ID are minimum requirement and indicative.
64	65	Part-A Part-E	Sub Section- IIA-10 Water Treatment Plant	3 of 12 68 of 130	1.01.04 (g) 1150-999-POM-A-006	One (1) number RCC overhead filtered water storage tank of required capacity, on top of chemical house with water supply line from the discharge of filtered water pumps, associated valves, piping, fittings etc. As per the tender P&ID, overhead filter storage tank make-up shall be done from the potable water pumps.	This is with regard to contradiction for overhead filtered water storage tank make up. Bidder shall consider that supply to overhead filter water storage tank will be from potable water pumps only, as per tender P&ID and separate filtered water pumps shall not be applicable. Please confirm.	Overhead filtered water storage tank make up shall be provided from filtered water pumps discharge as shown in scheme. Further,bidder to refer amendment WS-01 in this regard.
65	66	Part-B Part-B Part-E	Sub Section- A-14 Water Treatment Plant	6 of 36 6 of 36 68 of 130	3.08.0 3.07.00 1150-999-POM-A-006	Filter Backwash Water Disposal System Filter backwash water shall be led to a separate sump (twin section). Each section of the sump shall be provided with agitation by recirculation (jetting nozzles) system and air agitation system. Air blower shall be used for the air agitation system of the sump. PT Plant Clarifier sludge disposal system One (1) number sludge pit, in twin sections shall be provided to collect the sludge from all the clarifiers/tube settlers/lamella periodically. The sludge shall be transferred to the ash slurry tank/sump by means of sludge transfer pumps. Each section of the pit shall be provided with agitation by recirculation (jetting nozzles) system and air agitation system. Two (2) numbers air blowers shall be used for the air agitation system of the sludge pit. As per the tender P&ID, common (2 Nos) Air blowers for sludge disposal system and Filter Backwash Water Disposal System are shown in P&ID	There is contradiction between tender clause and P&ID for Air blower scope Bidder understands that Air blower for both Filter backwash waster disposal system and sludge disposal system are common and which is 2 Nos air blower Please confirm Bidder's understanding.	Bidder's understanding is correct. Common (2 x100%) Air blowers for Sludge disposal system and Filter backwash water disposal system as shown in P&ID shall be provided. Accordingly, bidder to size the air blowers considering simultaneous requirement in both the system.

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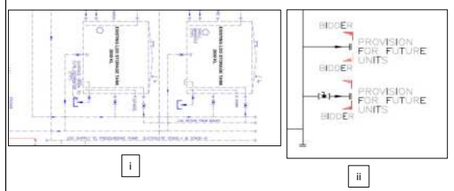
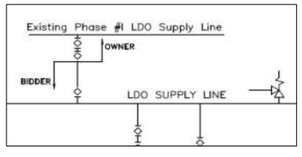
66	67	Part-B Part-E Part-B Part-A	Sub Section A-01, Equipment Sizing Criteria Sub Section A-14, Water treatment Plant Sub-section-IIA-10 Water treatment plant	52 of 87 68 of 130 1 of 36 6 of 12	3.06.00, C, (2) (a) 1150-999-POM-A-006 1.01.00, (4), (a) 1.03.02 (b)	The filters backwash water shall be collected and recycled back to the PT-DM clarifier. The filter backwash water to be recycled back to the stilling chamber of PT-CW clarifier, as per tender PID. The filter backwash water to be recycled back to the CW Clarifier. The filter backwash water of DM Plant to be recycled DM Clarifier. Backwash water pumps, its drives, associated piping and valves from the above pumps to stilling chamber of PT-DM system.	Discrepancy is observed in technical specifications and tender P&ID for recycle of filter backwash wastewater. Bidder suggests to recycle backwash wastewater back to stilling chamber of PT-CW system as shown in tender PID. Please confirm acceptance.	Bidder's proposal reviewed but not accepted.The filters backwash water shall be collected and recycled back to the PT-DM clarifier.Further,bidder to refer amendment WS-01 in this regard.
67	68	Part-B Part-E2	Sub Section A-01, Equipment Sizing Criteria	49 of 92 68 of 130	3.06.00, A, (6) (b) 1150-999-POM-A-006	Alum Solution preparation & dosing system consisting of minimum four (4)nos of Alum solution preparation tanks, agitators, alum solution dosing pumps (3W+1S) for PT-CW Clarifiers, (2x100%) for PT-DM Clarifier, (2x100%) for Lamella clarifier/tube settlers etc. 6 nos of alum dosing pumps are represented in tender SLFD, and 8 nos of pumps are written.	Bidder understands that in case of Option I - Ion exchange DM plant & ETP, 8 nos of alum dosing pump shall be provided as per specified tender clause 3.06.00, A, (6) (b). However, for option-II, UF+RO+MB based DM plant, no. of alum dosing pumps shall be 6 nos, since alum dosing is not envisaged in this option for PT-DM clarifier. Please confirm Bidder's understanding.	Bidder's proposal reviewed but not accepted.Bidder to follow specification requirement -Part- B,Sub Section A-01, Equipment Sizing Criteria, clause no-3.06.00, A, (6) (b) in this regard.
68	69	Part-B Part-E1	Sub Section A-01, Equipment Sizing Criteria	52 of 92 68 of 130	3.06.00, C, (2) (b) 1150-999-POM-A-006	Two (2) (2x100%) (1W+1S) numbers of backwash disposal pumps shall be provided. Three (3) numbers of backwash disposal pumps are shown in tender drawing.	Discrepancy is observed for quantity of backwash disposal pumps. Please confirm the quantity of pumps.	Two (2) (2x100%) (1W+1S) numbers of backwash disposal pumps shall be provided. Bidder to refer amendment WS-01 in this regard
69	70	Part-B	Sub Section A-01, Equipment Sizing Criteria	50 of 92	3.06.00, A, (6) (h & i)	Anti-scalant handling, storage, and dosage system with bulk storage for one(1) month's storage with design dose, Anti-scalant preparation tanks (2) with motorized agitator, capacities of both tanks together shall be sized to prepare and store 1 day requirement of Anti-scalant, Anti-scalant dosing pumps (2x100%). Anti-oxidant handling, storage, and dosage system with bulk storage for one(1) month's storage with design, Anti-oxidant preparation tanks (2) with motorized agitator, capacities of both tanks together shall be sized to prepare and store 1 day requirement of Anti-oxidant, Anti-oxidant dosing pumps (2x100%).	Discrepancy is noticed for bulk storage tanks for anti-oxidant & anti-scalant dosing. Bulk storage tanks for antiscalant & antioxidant are not shown in PID, but same has been provided in tender specifications (clause no. 3.06.00, A, (6) (h & i)) . Please confirm the requirement of bulk storage tanks.	Details shown in P & ID are minimum requirement and indicative. Bidder to provide complete system /equipment meeting specification requirement.
70	71	Part-B Part-E	Sub Section A-01, Equipment Sizing Criteria	55 of 82 64 of 130	3.06.00, D, 3, B, (c) 1150-999-POM-A-003	Degasser Blowers for Degasser (2x100%). 2 nos of Degasser blowers are shown for each degasser tower. Total 4 numbers of blowers are showing in PID.	Discrepancy is found with respect to degasser tower blowers configuration. Bidder shall consider 2 x 100% of blowers for each Degasser towers as per the P&ID. Please confirm.	Bidder understanding is correct.Bidder to provide 2 x 100% blowers for each Degasser tower.
71	72	Part-B Part-E Part-E	Sub Section A-01, Equipment Sizing Criteria	56 of 82 64 of 130 63 of 130	3.06.00, D, 4, (c) 1150-999-POM-A-003 1150-999-POM-A-002	Neutralizing waste disposal system- DM plant Effluent drains, UF back wash, UF/RO cleaning chemicals etc. shall be connected to the N-Pit and shall be led suitably to Ash handling system. UF backwash waste water is being sent to Filter backwash pit in the tender SLFD. UF backwash waste water is being sent to Filter backwash pit in the tender SLFD.	As per tender specification, UF backwash waste water for both the options of DM system, is going to N-pit, and further to Ash Handling Plant. This is in contradiction to Part E. Bidder shall consider the following: a. DM plant Effluent drains, UF/RO cleaning chemicals etc. shall be connected to N-pit and shall be led suitably to Ash handling system. b. UF backwash wastewater is being sent to Filter backwash pit (common pit for backwash wastewater of Gravity filters for potable system and DM system), which will be further pumped to stilling chamber to PT-CW system Kindly confirm.	Bidder's proposal reviewed. Bidder to refer amendment- WS-02 in this reagrd.
72	73	Part-B	Sub Section A-01, Equipment Sizing Criteria	56 of 92	3.06.00, D, 4, (d)	Backwash waste disposal system for DM plant - Backwash water from AC filters and fast/final rinse wastewater of DM plant shall be connected to the backwash collection pit (DM). Back wash water shall be pumped to the inlet channel of PT-DM clarifier.	Backwash/Rinse waste sump will be envisaged only in case of ion exchange based DM plant (for ACF backwash wastewater). In case of UF+RO based DM plant, UF backwash wastewater shall be sent to Filter backwash pit (common for Potable & DM RGF backwash) and MB regeneration waste shall be sent to N-pit. No wastewater will be sent to backwash/rinse waste sump. Please confirm.	Bidder's proposal reviewed but not accepted. Bidder to comply with technical specification requirements.

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
73	74	Part-B Part-B Part-A	Sub-section A-14 Water Treatment Plant Sub section-A-01 Equipment Sizing Criteria Sub section-IIA-10 Water Treatment Plant	6 of 36 52 of 92 6 of 12	3.10.00 b,2,d 3.06.00, C,3,a 1.03.03, b	d) Oil skimmer (2x100%) Oil centrifuge (2x100%) One (1) number RCC waste service water sump (WSWS) in two (2) sections shall be provided for collection of waste service water. Service water effluents and other plant effluents from various areas of the plant shall be routed to this waste service water sump. Facility shall be provided to collect free oil from these sumps to MS Oil drum and oil skimmers (2 nos.), Portable oil Centrifuge (2x100%) of suitable capacity shall be provided for reuse of oil. b) Facility to collect free oil from these sumps to a MS oil drum of 200 litre capacity with the help of Drum type (2 Nos.) oil skimmers, Centrifuge (1 no.) of required capacity.	Discrepancy observed between tender clauses for Oil centrifuge configuration. Please confirm Oil centrifuge Configuration	2x100% Oil centrifuge shall be provided for WSWS. Please refer amendment WS-11 in this regard.
74	75	Part-A Part-E Part-E	Sub section-A-01 Equipment Sizing Criteria	48 of 92 58 of 130 68 of 130	3.05.00, k) '1150-999-POM-A-037 1150-999-POM-A-001	Air pre-heater wash water pumps Air pre-heater wash water pumps shall draw water from service water tank. In P&ID,APH wash water pumps are taking suction from Clarified water distribution chamber. In P&ID, Air pre-heater wash water pumps are not shown but Recirculation line from Air pre-heater wash pumps is shown in service water tank.	There is contradiction between tender clause and SLFD for APH wash water pumps suction destination. Bidder understands that APH wash water pump shall be as per the showing in Plant water scheme (1150-999-POM-A-037) Kindly confirm	Bidder understanding is correct. APH wash water pumps suction shall be provided from Clarified water distribution chamber as per the showing in Plant water scheme (1150-999-POM-A-037) and its recirculation shall be returned to Clarified water distribution chamber.
75	76	Part-A Part-E Part-B	Sub section-IIA-10 Water Treatment Plant Sub section-A-01 Equipment Sizing Criteria	9 of 12 68 of 91 55 of 92	2.00.00 (B) (3) (d) 1150-999-POM-A-003 3.06.00, D,3,B, b)	Complete degassifier system for removal of CO2 in permeate water from RO units, consisting of one degasser towers of required capacity with spray nozzles, mist eliminators, packing, packing support structures, operating platforms, ladders, gratings etc. Two nos of degasser towers are shown in the tender PID, 1 for each stream. Complete Degassifier system for removal of CO2 in permeate water from RO units, consisting of minimum one (1) Degasser tower	Bidder understands that 1 number of Degasser tower has to be provided for each stream, hence total 2 numbers of degasser tower shall be provided. This is inline with tender PID. Please confirm.	Bidder to provide complete Degassifier system for removal of CO2 in permeate water from RO units, consisting of minimum one (1) Degasser tower inline with specification requirement, however, bidder may opt for more than one Degasser tower as per their system design. Details shown in P & ID are minimum requirement and indicative.
76	77	Part-E	--	--	--	P&ID for Coal Handling plant run-off water treatment system	Scheme for coal handling plant run-off water treatment system is not available in the tender P&ID. Owner is requested to provide P&ID for same.	Bidder to prepare P&ID meeting specification requirement.
77	78	Part-B Part-B Part-E	Sub section-A-01 Equipment Sizing Criteria 'Sub-section A-14 Water Treatment Plant	54 of 92 29 of 36 62 of 130	3.06.00, D, 2), (j) 19.00.00, VII-B 1150-999-POM-002	Two (2) nos. alkali measuring cum dilution tanks with a motorized agitator, one each for each Anion units and MB units. One (1) No. alkali preparation and dilution tanks (from alkali flakes), with dissolving baskets & motorised agitators, Alkali preparation tanks:- Two (2) (2) nos of Alkali preparation tanks are shown in p&id	There is contradiction between tender clauses and P&ID for alkali Preparation tanks Configuration Kindly confirm the Configuration of Alkali preparation tanks	Details shown in P & ID are indicative, bidder to provide two (2) Alkali preparation tanks inline with specification requirement.
78	79	Part-B Part-E	Sub section-A-01 Equipment Sizing Criteria	54 of 92 62 of 130	3.06.00, D, 2), (l, j) 1150-999-POM-002	Two (2) no Acid measuring cum dilution tanks, one each for Cation units and MB units, 2x100% Dosing/Metering pumps with associated accessories each One (1) number of alkali diluent water heating tank, 2x100% Metering pumps with associated accessories Ejector are shown in P&id	There is contradiction between tender clauses and P&ID for Acid and alkali Ejector scope Bidder understands that Metering pump shall be not used however, Ejector shall be used for regeneration of Exchangers as per past executed project of NTPC. Kindly confirm	Bidder's understanding is not correct. P&ID is indicative, and bidder to provide metering pumps as specified.

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
79	80	Part-B Part-E	Sub section-A-01 Equipment Sizing Criteria	54 of 92 64 of 130	3.06.00, D, 3), B), (f,g) 1150-999-POM-003	Complete Hydrochloric acid handling, bulk acid storage tanks, measuring tank, and dosage system with two (2) bulk acid tanks, each tank sized for minimum 25 T OR capacities of both the tanks together shall be sized for one month's storage with design dose. The tank shall be fitted with vent, drain, fume absorber, overflow seal pots etc., Two (2) no Acid measuring cum dilution tanks, one each for pH control and regeneration of MB units,2x100% acid dosing/metering pumps with associated accessories for pH control, 2x100% acid dosing/metering pumps with associated accessories... Complete Alkali handling, storage, and dosage system with two (2) bulk alkali tanks, each tank sized for minimum 25 T OR capacities of both tanks together shall be sized for one month's storage with design dose. The tank shall be fitted with vent, drain, CO2 absorber, overflow seal pots etc. Two (2) nos. alkali measuring cum dilution tanks with a motorized agitator, one each for each pH control and regeneration of MB units. One (1) No. alkali preparation and dilution tanks (from alkali flakes), with dissolving baskets & motorised agitators,2x100% alkali dosing/Metering pumps with associated accessories for pH control in RO and 2x100% alkali dosing/Metering pumps with associated accessories for MB regeneration... 2 nos Acid metering pump for pH control is shown in PID Acid metering pump for MB Regeneration is not shown. 1 Nos alkali metering pumps for pH control is shown in P&ID Alkali metering pump for MB Regeneration is not shown.	There is contradiction between tender clauses and P&ID for Acid and alkali metering pumps scope Kindly confirm the scope and configuration of Both Acid and alkali metering pumps for pH control and MB Regeneration	Details shown in P & ID are minimum requirement and indicative. Bidder to provide complete system meeting specification requirement - Part- B,Sub Section A-01, Equipment Sizing Criteria, clause no-3.06.00, '3.06.00, D, 3), B) (f,g).
80	81	Part-B Part-B Part-A Part-B	Sub-section A-14 Water Treatment Plant Sub section-A-01 Equipment Sizing Criteria Sub section-IIA-10 Water Treatment Plant 'Sub-Section A-14 Water Treatment Plant	7 of 36 52 of 92 6 of 12 '22 of 36	3.11.00 b, 3 3.06.00, C,4,f 1.03.03, b '12.00.00	Runoff water from coal slurry settling pond would be led to a sump and pumped (2x100%) for re-use in Coal handling plant and as well as treated in clarifier (1x100%) for recycle/reuse in CW system. Two (2) Reactor Clarifiers with stilling chamber, RCC channels, distribution chamber etc. shall be provided to receive excess storm water from settling ponds, along with piping, valves etc. One (1) number stilling chamber, Two (2) numbers of reactor clarifiers of RCC construction, RCC channels, distribution chamber etc. of required capacity to receive excess storm water from settling ponds, required number of pumps, piping, valves etc. to discharge treated supernatant water to CW channel. CSSP (Stilling chamber) design flow(min):- 4400 m3/hr + 3% for sludge Clarifier Design Flow of each :- 2200 m3/hr clarifier (Net output) (minimum)	Discrepancy observed between tender clauses for Clarifier configuration of Coal handling plant runoff water treatment system. Bidder understands that 1x100% clarifier of 2200 m3/hr capacity shall be considered in view of space constraints in the overall layout. Please confirm Bidder's understanding and issue an amendment accordingly.	Bidder's request reviewed & clarifier capacity modified (refer amendment -WS- 03) in this regard. Bidder to provide Two (2) Reactor Clarifiers with stilling chamber, RCC channels, distribution chamber etc. to receive excess storm water from settling ponds, along with piping, valves etc.
81	82	Part-B	Sub-section-A01 Equipment sizing criteria	52 of 92	3.06.00, c),4, (g&h)	g) One (1) number coal laden water sump of RCC Construction (2 sections) to receive water from drains in coal stockyard of stage-II. h) 2 x100 % capacity of coal laden water transfer pumps with required piping system to transfer the coal laden water from stage-II proposed sump to CSSP of Stage-III.	In absence of clarity, Bidder understands that decanted water sump is already located near stage-II of coal dust settling pond area. So separate coal laden water sump is not required. Owner to please confirm bidder's understanding. However if owner required to construct coal laden water sump then, Owner is requested to provide following details to design coal laden water sump and transfer pumps of stage-II. 1) Location of coal laden water sump. 2) Terminal point details at inlet of pit (Flow, Elevation, pipe/ channel size, pressure etc.) 3) Required capacity of sump and pumps. 4) Any other required details if any.	Bidder's understanding is not correct. Further, bidder to refer amendment -WS-04 in this regard.
82	83	Part-E	Plant Water Scheme		1150-999-POM-A-037	HCSD System is shown in Plant Water scheme	HCSD shown in plant water scheme is not applicable as HCSD is not envisaged in Ash handling system proposed plant. Please confirm.	Bidder to refer amendment -WS-05
83	84	Part-A Part-E	Sub-Section IIA-20 Water Treatment Plant --	1 of 2 69 of 130	2.02.00 1150-999-POM-A-013 (SH. 1 of 2)	Two (2) x 50% capacity back washable type cartridge pre-filters for each unit shall be provided for the commissioning period, start-up period as first cleaning step as well as normal continuous operation, complete with automatically operated by-pass, associated piping, pumps (with at least one stand-by), pneumatically operated valves etc. No pre filter shown in P&ID of CPU.	Discrepancy observed in the scope of pre-filter between referred clause of tender specification and P& ID. Hence, as per past execute NTPC project and as per tender flow diagram, Bidder has not considered any pre filters for CPU. Please confirm.	Details shown in P & ID are minimum requirement and indicative, bidder to provide required numbers of pre-filters in line with specification requirement -Part-A, Sub section -IIA-20, clause no-2.02.00.
84	85	Part-A Part-E	Sub-Section IIA-20 Water Treatment Plant --	1 of 2 70 of 130	2.04.00, b) 1150-999-POM-A-013 (SH. 2 of 2)	One (1) set of regeneration facilities consisting of Resin separation vessel, Cation, Anion regeneration vessel(s), Resin make-up hopper, Mixed resin storage vessels (1nos) etc. 2 nos of mixed resin storage vessel shown in P&ID	Discrepancy observed in the scope of Mixed resin storage vessels between referred clause and P& ID. Hence, as per past execute NTPC project and as per tender cl. No. 2.04.00,b), Bidder has considered 1 no. Mixed resin storage vessels. Please confirm.	Bidder's understanding is correct. Bidder to consider 1 no. mixd resin storage vessel as per clause 2.04.00 (b), Sub-section-IIA-20, Part-A of technical specification.

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
85	86	Part-B Part-B	Sub Section A-11 Condensate Polishing Unit Sub Section A-11 Condensate Polishing Unit	7 of 16 8 OF 16	4.06.00 e), (ii), (5) 5.03.00	Two (2) acid measuring tanks of adequate capacity to hold acid for two (2) regenerations. Each tank shall be adequate to hold chemical for 125% of one regeneration--	Discrepancy observed regarding measuring tank capacity. Bidder has considered Two(2) acid measuring tanks each of adequate capacity to hold chemical for 125% of one regeneration as per cl. No. 5.03.00. Please confirm.	Bidder's understanding is correct. Bidder to consider Two(2) acid measuring tanks each of adequate capacity to hold chemical for 125% of one regeneration as per cl. No. 5.03.00, Sub-section-A11, Part-B of technical specification.
86	93	Part-B	SUB-SECTION- A – 23 LP DOSING AND OXYGENATED TREATMENT SYSTEM	2 of 4	2.00.00	Oxygen Dosing System Complete Oxygen Dosing System shall be sup-plied and installed by the Bidder. It is proposed to dose Oxygen at two (minimum) locations in the Condensate and in Feed water circuit of each unit. i.e. one at outlet of condensate polishing Plant and another at the outlet of deaerator (suction line to feed water pumps) …… ……. at each dosing locations, system shall be designed for a maximum dosage rate of 150 ppb and number of oxygen cylinders to supplied and installed by the Contractor shall cater for one month requirement. However, the dosing facilities shall have redundancy of 100% for each location per unit. The condensate and feed water flow shall be of the order of 1500 CU.M/hr for each unit or actual design flow whichever is higher.	Please note that Oxygen dosing system shall be provided with redundancy of oxygen cylinder per skid (i.e. 2 x 100%) only. The redundancy of other dosing facility is not required, hence not envisaged. Thus, with above details, 2 nos. of Oxygen Dosing System Skids per unit shall be provided. Please confirm.	Bidder to note that for each location per unit, skid containing equipments required for dosing like isolation/ check valves, cylinder manifolds, regulating valves, instruments shall be redundant (2 nos. for each location of one unit), so that problem in one dosing skid of one location shall not hamper dosing process at that location.
87	94	Part-A	SUB SECTION –VI CHAPTER-08 WATER SYSTEM	28 OF 29	3.00.00	Mandatory spares of ClO2 Blowers: 1) Impeller with lock nuts and washers . . . . 6) V-belts-Belt Agitators: 1) Agitator ASSY of each type	Owner to note that air blower & agitator for CLO2 system are not applicable, hence, mandatory spares for air blower agitator mentioned under referred clause are not applicable. Kindly review and delete the requirement.	Bidder to refer amendment -WS-06
88	95	TECHNICAL SPECIFICATION SECTION-VI, PART-B BID DOC NO. CS-9587-001-2	SUB-SECTION-D-1-5 CIVIL WORKS SALIENT FEATURES AND DESIGN CONCEPT	PAGE 99 OF 127	5.27.00	Workshop Building	In absence of any detail of workshop equipment in mechanical section, Bidder understands that workshop building and workshop equipment are not applicable for Singrauli-III. Please confirm Bidder's understanding.	Workshop building is included in scope of the package. Workshop equipments are excluded from bidders scope of supply
89	96	TECHNICAL SPECIFICATIONS SECTION-VI, Part-A TECHNICAL SPECIFICATIONS SECTION-VI PART - E TENDER DRAWINGS	SUB-SECTION-IIA-13 FO UNLOADING SYSTEM (i) P&I DIAGRAM FOR LDO SYSTEM-9587-001(R)-POM-A-032	PAGE 1 OF 2 -	1.04.00 -	The pressurizing pumps of Stage-III shall take suction from the new LDO tanks (02 no's). Flow diagram shows the : (i) LDO pressurization suction of Stage-III from Existing LDO storage tank(As per P&I DIAGRAM FOR LDO SYSTEM) (ii) LDO pressurization suction of future unit from New LDO storage tank  i ii	Due to the discrepancy, Bidder understands that LDO pressurization pump suction for Stage-III shall be taken from new LDO tanks only. Owner is requested to confirm the Bidder's understanding.	Bidder's understanding is correct
90	97	TECHNICAL SPECIFICATIONS SECTION-VI PART - E TENDER DRAWINGS	FUEL OIL SCHEME - 1150-001-POM-A-017	-	-	Flow diagram shows that Existing phase -1 supply line will be connected to LDO discharge header. 	Bidder understands that no interconnection required between stage III pressurizing pump discharge header and phase -1 LDO supply line. Owner is requested to confirm the Bidder's understanding.	Bidder to refer Amendment at SG.38 in this regard
91	99	TECHNICAL SPECIFICATIONS SECTION-VI, Part-A	SUB-SECTION-IIA-13 FO UNLOADING SYSTEM	PAGE 2 OF 2	2.01.02	a. Two (2) no's (1W+1S) LDO transfer pumps motor sets each of capacity 25 m^3/hr complete with all the accessories of drive and mounting as specified for transfer of LDO from both existing LDO tanks to the day oil tanks located in Stage-II area.	Bidder requests Owner to provide pump head requirement to transfer oil from existing LDO tanks to the day oil tanks located in Stage-II area.	Bidder to note that same shall be finalised during detailed enginnering

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
92	100	TECHNICAL SPECIFICATIONS SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA and SUB SECTION-A-17 AIR CONDITIONING AND VENTILATION SYSTEM	69 of 92 and 1 of 31	3.13.01 and 3.01.00	DESIGN PHILOSOPHY - Air conditioning system 19.1 Pumping System : Pumping System: Chilled water pumping system should be of variable flow type i.e. pumps should be VVVFD driven. Condenser water pumping shall be constant flow type. and c) For Service Building: i) Screw type water chilling units: 2X50% ii) Primary Chilled water pumps: 2X50% iii) Secondary chilled water pumps (with VVVFD): 2X50% iv) Condenser water pumps: 2X50% v) Cooling Towers (with VVVFD Fan): 2X50% vi) AHUs (with VVVFD Fan): All working & no standby.	There is contradiction between the two Clauses. Bidder is considering that VFD for pumps is applicable only for Secondary chilled water pumps in line with Cl.3.01.00. Please confirm.	Bidder's understanding is correct that only secondary chilled water pumps shall be provided with VVVFD and primary chilled water pumps shall be without VVVFD. Bidder to refer Amendment-PU-06 in this regard.

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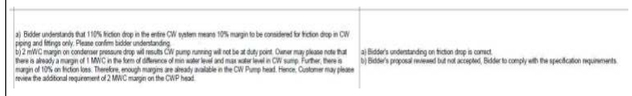
PREBID QUERIES & CLARIFICATION

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
93	101	TECHNICAL SPECIFICATIONS SECTION-VI, PART-B	SUB SECTION-A-17 AIR CONDITIONING AND VENTILATION SYSTEM	21 of 31 1 of 31	7.04.00 3.01.00	Air Handling Unit a) Inside room temperature and humidity shall be maintained by controlling the chilled water flow by means of motor operated three way modulating valve and by varying the flow by means of VFD driven AHU's which shall get its signal from the Control system for main plant A/C system and ESP/FGD/AHP control rooms A/C system. a) For Main Plant Areas [control room, control equipment room, UPS room, battery charger, static excitation control room (if applicable) SWAS room & water analysis lab] for both units: v) AHUs: At least one (1) no. unit, capacity same as each working unit shall be provided as common standby. b) For ESP control rooms & FGD control room etc. of both units: v) AHUs: 2x100% AHUs for each control room of ESP/FGD Building. c) Service Building: vi) AHUs (with VVVFD Fan): All working & no standby.	There is contradiction between the two Clauses. Bidder is considering that AHUs with VFD is applicable for Service building only. VFD for AHUs is not applicable for Main Plant/ESP/FGD/AHP control rooms A/C system. Please confirm.	Bidder's understanding is correct that only AHUs of Service Building shall be provided with VVVFD. Bidder to refer Amendment-PU-10 in this regard.
94	102	TECHNICAL SPECIFICATIONS SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA vs SUB-SECTION-A-20 Coal & Biomass and Gypsum Plant	70 OF 92 76 of 113	3.13.02 2.01.03	DESIGN PHILOSOPHY – Ventilation System 1. Minimum Air changes per hour in evaporative/ mechanically ventilated areas shall be as follows: i) For all evaporative cooled areas - 8 ii) General areas - 20 iii) Hydrogen generation plant(if applicable) /MCC/ Switchgear rooms and Battery rooms& other areas where gaseous fumes/ vapours are generated- 30 Ventilation System A Mechanical Ventilation System i. Underground Areas : Minimum 15 supply air changes and mini- mum 7 exhaust air changes per hour. ii. Other Areas : Minimum 10 supply air changes per hour. B. Pressurized Ventilation System: Minimum 15 supply air changes per hour	Ventilation rates differ in these two clauses for general areas above ground. Bidder understands that for building / area under Coal & Biomass and Gypsum plant ventilation rates as mentioned in respective clause shall be applicable (as per clause 2.01.03) and for all other areas ventilation rate shall be provided as depicted clause 3.13.02 under ventilation system design philosophy. Please confirm.	Confirmed
95	103	Section-VI/ Part-B	Sub Section-A-01 (Equipment Sizing Criteria)	44 of 92	3.01.00(e)	110% of friction drop in the entire CW system	Inline with NTPC recent tender (Lara stage- II) Bidder understands that 110% friction drop in the entire CW system means 10% margin to be considered for friction drop in CW piping and fittings only. Please confirm bidder understanding. 	Bidder's understanding is correct on friction drop.
96	104	Section-VI/ Part-B Section-VI/ Part-B	Sub Section-A-01 (Equipment Sizing Criteria) Sub Section-A-01 (Equipment Sizing Criteria)	44 of 92 45 of 92	3.01.00(l) 3.01.01	Size of the Pump Re-circulation Valve and pipe: To be sized for re-circulation of about 50% capacity of one CW pump. However, in case of Volute type pumps, the sizing should be adequate to carry flow of one pump to enable Performance test at Site. The common recirculation line for CW pumps shall be sized for minimum 30% (VT type) or 50% (CV type) of design flow of single pump operation or the recommended flow of the pump manufacturer whichever is higher.	Discrepancy found between the two clauses stated along side regarding the sizing of recirculation line. Hence, bidder has considered as per the tender cl.3.01.01, Sub Section-A-01, "The common recirculation line for CW pumps shall be sized for minimum 30% (VT type) or 50% (CV type) of design flow of single pump operation or the recommended flow of the pump manufacturer whichever is higher". Owner to please confirm.	Bidder to refer amendment -WS-07
97	105	Section-VI/ Part-B Section-VI/ Part-B	Sub Section-A-01 (Equipment Sizing Criteria) Sub Section-A-15 (CW System NDCT datasheet)	46 of 92 12 of 46 12 of 46	3.02.00(t) 5.00.00(18) 5.00.00(18)	Fasteners and other fitting materials: SS316 Hardware– All parts and embedment coming in direct contact with water/water vapor- SS 316 Mild steel parts or structures used in cooling tower or its vicinity: Heavily galvanized (610 gm/sq m) in accordance with IS: 2629	Discrepancy found between the two clauses regarding MOC of cooling tower fasteners and other fitting materials. Bidder understands that SS304 MOC shall be taken for the parts in direct contact with water only. Owner to please confirm.	Bidder's request reviewed, but not accepted. Bidder to follow specification requirement - Part- B,Sub Section A-15, clause no-5.00.00 in this regard. Further,Bidder to refer amendment -WS-08

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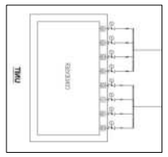
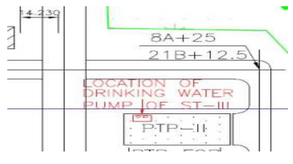
PREBID QUERIES & CLARIFICATION

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
98	106	Section-VI/ Part-B	Sub Section-A-15 (CW System)	3 of 46	1.02.00(15)	The model shall be based on Froude's law of similitude and shall be tested for following two more flow conditions, viz. - At twice the prototype maximum Froude number, i.e. the Froude number of the model is two times that of prototype. - At equal velocity criterion, i.e. the velocity is same both in the model and prototype.	Sump model shall be prepared considering Froude's law of similitude as per HI-9.8 and based on the scale ratio of 1:12 as per specification requirement. As per HI-9.8, Cl. No. 9.8.4.3, "Tests at prototype velocities are not recommended, as this will distort approach flow patterns and unduly exaggerate flow disturbances (e.g., vortices) in the model." Therefore, Bidder understands that "equal velocity criterion" means, equivalent velocity of model and prototype shall be established based on Froude's law of similitude (i.e. 1F for model and prototype) irrespective of actual prototype velocity as per HI-9.8. Request Owner to confirm bidder's understanding.	Bidder's request reviewed, but not accepted. Bidder to comply to Technical specification requirements.
99	107	PART-E	-	71 of 130	Scheme of circulating water system (1150-999-POM-A-059)	Condenser inlet and outlet tappings. (4 inlet and 4 outlet tappings are indicated in Scheme of circulating water system) 	Inline with NTPC recent tenders (Lara stage- II) Bidder understands that quantity indicated at inlet and outlet of the condenser is indicative. Bidder shall consider number of inlet and outlet tappings at condenser inlet and outlet as per condenser design. The scheme shall be finalised during detailed engineering in line with bidder's standard practice. Owner to please confirm. 	Bidder's understanding is correct. The scheme is typical and the details shall be finalised during detailed engineering in line with bidder's standard practice.
100	108	SECTION – VI, PART-B	SUB SECTION A-15 CW SYSTEM	45 OF 46	5.00.00	Pumps shall be able to pass through solids upto 100 mm and capable of handling waste water which may contain, sludge, plastic solids etc.	Pump OEMs recommend the maximum particle size handling requirement upto 40mm. Suppliers are not available for 100 mm solid waste. Accordingly, request to allow maximum particle size handled by submersible pumps upto 40 mm. Same has been followed in past executed projects. Please confirm.	Bidder to refer amendment -WS-09
101	109	SECTION-VI, PART-B PART-E	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA 1150-999-POM-A-037	47 OF 92 58 of 130	3.05.00 (k)	Air pre-heater wash water pumps shall draw water from service water tank. In Plant water scheme APH wash water pumps are draws water from Clarified water tank.	Discrepancy found between Plant water scheme and clause 3.05.00 of Part-B. Bidder understands that both service or clarified water is acceptable for APH/ESP wash. Owner to please confirm bidder's understanding.	Bidder understanding is correct. APH wash water pumps suction shall be provided from Clarified water distribution chamber as per the showing in Plant water scheme (1150-999-POM-A-037) and its recirculation shall be returned to Clarified water distribution chamber.
102	110	SECTION-VI, PART-B SECTION-VI, PART-B	SUB-SECTION-D-1-5 CIVIL WORKS SALIENT FEATURES AND DESIGN CONCEPT SUB SECTION A-15 CW SYSTEM SUB SECTION A-15 CW SYSTEM	62 OF 127 34 OF 46 34 OF 46	5.18.01.01 2.01.01 2.01.02	The over ground portion of CWPH, Aux. CT pump house and Raw Water Pump House including maintenance bay shall be framed structure of structural steel work with permanently colour coated metal sheeting at roof and side open. From the hot water discharge channel of Stage-II, raw water shall be drawn to the Aux. CT pump sumps and Aux CT pumps shall pump it to Aux Cooling Tower for its cooling. For each sump of Aux CT pump house (closed pump house), the Contractor shall provide a set of Trash rack, stop log gate to filter out debris etc. From the cold water basin of Aux Cooling tower, cold raw water shall be drawn to the Raw Water pumps located at raw water pump house (closed pump house).	Discrepancy found regarding type of pump house. As per clause 5.18.01.01 Auxiliary C.T pump house and raw water pump house is open from side and clause 2.01.01 and 2.01.02 indicates closed pump house. Bidder considered as per Cl.5.18.01.01, SUB-SECTION-D-1-5 CIVIL WORKS SALIENT FEATURES AND DESIGN CONCEPT "Aux. C.T pump house and raw water pump house shall be considered with framed structure of structural steel work with permanently colour coated metal sheeting at roof and side open" Owner to please confirm.	Aux. CT pump house and Raw Water Pump House including maintenance bay shall be framed structure of structural steel work with permanently colour coated metal sheeting at roof and side open as per Cl.5.18.01.01, SUB-SECTION-D-1-5 CIVIL WORKS SALIENT FEATURES AND DESIGN CONCEPT of Technical Specification.
103	111	SECTION-VI, PART-B	SUB SECTION A-15 CW SYSTEM Annexure-2 VERTICAL PUMPS	40 OF 46	1.01.00	This specification covers general requirements in respect of design, construction features, manufacture, inspection, and performance at Vendor's / sub-vendor's works delivery to site, erection field testing and commissioning of Makeup Water & Raw Water Pumps. The minimum technical requirements and equipment shall include, but not be limited to the following:	Owner to please note as per specification horizontal centrifugal type Raw water pumps are required for stage-III. Hence this specification is not applicable for raw water pumps.	Bidder's understanding is correct. Raw water pumps shall be of horizontal centrifugal type, and bidder to refer respective specification (horizontal pump) for the same. However, Bidder to note that Aux. CT pumps shall be of vertical type as per technical specification.
104	112	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	56 OF 92	3.06.00	Two (2) nos D.M. water storage tank (max dia 16m and min usable capacity of 2450m3) with all accessories like vent, drain, CO2 absorber, PVC balls, overflow, and seal pots etc. to store DM water in Existing DM plant area and interconnection with the existing DM Water tanks through necessary piping, valves and fittings.	Since dedicated DM plant is provided for Stage-III facilities, any interconnection with existing DM water tanks (stage-1 & stage-II) is not envisaged. Owner to confirm Bidder's understanding.	Bidder's understanding is not correct. Bidder to provide interconnection & comply to technical specification requirements.
105	113	SECTION – VI, PART-A	SUB-SECTION-III TERMINAL POINTS & EXCLUSIONS	1 OF 3	1.01.02	Potable water supply line up to Terminal point (as per GLP / tender drawing) to meet potable water requirement of colony/Township. Contractor shall ensure that pressure available at Terminal point shall not be less than 2.5 ksc (gauge).	Owner to please provide terminal point details (i.e. coordinate, elevation etc.) and water requirement for Colony/Township.	Potable water (Colony) pipeline terminal point in contractor scope shall be till Grid line coordinate (18A, 2B) shown in Tender GLP drawing no : 1150-999-POC-F-001 (Rev-A). Colony / township water requirement has already been specified in the technical specification.
106	114	SECTION – VI, PART-E	1150-999-POC-F-001	--	--	Potable/Drinking water system 	It is understood that there is not interface with PT Plant of Stage-II for Potable water system. No additional pumps are envisaged to be located as indicated in the Tender GLP. NTPC to confirm the same and remove it from GLP.	**Bidder to refer Ammendment 01 to GLP**
107	115	SECTION – VI, PART-B	SUB-SECTION-B-15 ELECTRICAL HOIST, CRANE AND ELEVATOR	PAGE 3 OF 5	8.02.00 (a)	Speed control of EOT crane shall be through Variable Voltage Variable Frequency System (VVVF) with minimum 6 (six) pulse design.	Bidder understand that the VVVF control shall be considered only for main EOT cranes (i.e. TG Building EOT Crane , BFP EOT crane and CW Pump House EOT Crane). The same is not applicable to other EOT Cranes and Hoists. Owner is requested to confirm bidder's understanding	Bidder understanding is not correct.Specification cl.no. 8.02.00 (a) Sub -Section B-15 Section-VI, Part-B to be followed.

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
108	116	SECTION – VI, PART-B	SUB-SECTION-B-15 ELECTRICAL HOIST, CRANE AND ELEVATOR	PAGE 3 OF 5	8.02.00 (f)	Provision for controlling the motion from operator cabin (in case of Turbine Hall EOT crane) as well as remote control shall be available.	Bidder understand that the Radio remote control shall be considered only for main EOT cranes (i.e. TG Building EOT Crane , BFP EOT crane and CW Pump House EOT Crane). For all other miscellaneous cranes and hoists pendent push button to be considered. Owner is requested to confirm bidder's understanding	Bidder understanding is not correct.Specification cl.no. 8.02.00 (f) Sub -Section B-15 Section-VI, Part-B to be followed.
109	117	TECHNICAL SPECIFICATION SECTION – VI, PART-A	SUB-SECTION-IIB ELECTRICAL SYSTEM / EQUIPMENTS	8 of 19	1.16.01 (i)	The scope of work comprises of Design, supply, erection, testing and commissioning of 400kV SF6 Gas Insulated Switchyard including AIS portion and Bay strengthening of Tie Line1 & 2 at VSTPP-IV switchyard as shown in single line diagram associated with Singrauli STPP stage-III (2X800MW) as shown in Single Line diagram(1150-999-POE-J-001).	Bidder understands that existing Isolators & CTs in the existing VSTPP-IV Switchyard are suitable for 3000A. Hence, Isolator, CTs, LA, CVT replacement is not in Bidder's scope of supply. Owner may please confirm.	The exisitng isolators & CT in VSTPP-IV switchyard are of 2000A rating. Bidder to comply the specification requirement by augmentation of equipments to match with 3000A rating for dia A & B. Bidder to refer Refer Ammendment to bidding document
110	118	TECHNICAL SPECIFICATION SECTION – VI, PART-A	SUB-SECTION-IIB ELECTRICAL SYSTEM / EQUIPMENTS ---------- SUB-SECTION-III TERMINAL POINTS & EXCLUSIONS	12 of 19 ---------- 3 of 3	1.16.05(xv) ---------- 4.02.00(a)	Following shall be provided for Control & Protection of EHV system and Generator Relay Panels (GRP) : PLCC/FOTE (Fiber Optic Terminal End) Equipment along with all necessary accessories. ---------- Supply erection and commissioning of PLCC, HF cable.	There is a discrepancy in the scope related to PLCC. Bidder understands that the supply, erection and commissioning of PLCC and its associated equipment are not in bidder's scope Owner may please confirm.	Bidder under standing is correct regarding the scope of PLCC. The FOTE equipment at Generation switchyard is in the scope of Bidder
111	119	TECHNICAL SPECIFICATION SECTION – VI, PART-A TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION-IIB ELECTRICAL SYSTEM / EQUIPMENTS SUB-SECTION-B-13 SUBSTATION AUTOMATION SYSTEM	12 of 19 25 of 46	1.16.05 (x) 11.03.00	Phasor measurement Units (PMUs), TSE & routers for all line bays. PMUs shall be considered for 400kV line bays except 400kV Tie Line Bays and shall be installed in switchyard control room and adjacent to line BPU panels.	Bidder understands that the PMU shall be supplied for Rihand line-1 & 2 & VSTPP-V line-1 & 2 only in line with the clause no. 11.03.00. Owner may please confirm.	Bidder to comply the caluse no: 11.03.00 & PMU shall be supplied for Rihand Line -1 & 2 only.
112	120	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION-B-17 SWITCHYARD	28 of 100	4.03.05	The insulator of the isolator shall conform to the requirements stipulated under clause no: 08.00.00 as specified in the specification and shall have a min. cantilever strength of 800 kg for 400kV.	The clause no. 08.00.00 of SUB-SECTION-B-17 SWITCHYARD corresponds to the details of the Wave trap. Bidder understands that the correct clause to be referred is 7.00.00 of SUB-SECTION-B-17 SWITCHYARD. Owner may please confirm.	Bidder understanding is correct and the clause no: 4.03.05 is read as " The insulator of the isolator shall conform to the requirements stipulated under clause no: 07.00.00 & 09.09.00 as specified in the specification and shall have a min. cantilever strength of 800 kg for 400kV. Bidder to refer amendment No:1
113	121	TECHNICAL SPECIFICATION SECTION – VI, PART-B ---------- TECHNICAL SPECIFICATION SECTION – VI, Part-E	SUB-SECTION-B-17 SWITCHYARD ---------- -	36 of 100 ---------- -	TABLE-I CORE DETAILS OF 400kV CTs-Protection (GIS) CT-C (ST / GT/ Bus reactor) ---------- 1150-999-POE-J-001 & XXXX-999-P0E-J-008,	-	There is a discrepancy between Single Line diagram doc. No. 1150-999-POE-J-001 & Protection SLD for Bus reactor bay doc no-XXXX-999-P0E-J-008. Since, there is a no additional CT in the bus reactor Bay, there is no requirement of it as well. However, details of CT-C includes the Bus Reactor bay name. Owner may please resolve the discrepancy.	Bidder to refer amendment No:1
114	122	TECHNICAL SPECIFICATION SECTION – VI, Part-E	400kV SWYD Single Line Diagram	-	1150-999-POE-J-001	-	For GIS, fault level of 63kA for 1 sec is indicated in SLD. However, for VSTPP-IV line-1 & 2 and VSTPP-V line-1 & 2, fault level of 50kA for 1 sec is indicated. Bidder understands GIS equipment shall be designed for 63kA for 1 Sec and AIS equipment for 50kA for 1 sec. Owner may please confirm.	For Singrauli-III switchyard, GIS and AIS equipment shall have fault level of 63kA. For bays at Vindhyachal-IV, Fault level of 50kA shall be considered.
115	123	TECHNICAL SPECIFICATION SECTION – VI, PART-B ---------- TECHNICAL SPECIFICATION SECTION – VI, Part-E	SUB-SECTION-B-17 SWITCHYARD ---------- -	36 of 100 ---------- -	TABLE-I CORE DETAILS OF 400kV CTs-Protection (GIS) CT-C (ST / GT/ Bus reactor) ---------- XXXX-999-POE-J-005 XXXX-999-POE-J	-	There is a discrepancy regarding the scope of GIS CT. As per Single Line diagram doc. No. 1150-999-POE-J-001, there is a GIS CT for metering in GT & ST bay. Also CT core details are included in Part-B of the mentioned clause. However, same is not shown in the Protection SLD for GT and ST Bay. Owner may resolve the discrepancy.	Bidder to refer amendment No:1

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
116	124	TECHNICAL SPECIFICATION SECTION – VI, Part-E	Protection SLD for ST bay	-	XXXX-999-POE-J-006	-	EM symbol is (*) marked, however there is no note present for the (*) mark. Please clarify the significance of (*).	Bidder to refer amendment No:1
117	125	TECHNICAL SPECIFICATION SECTION – VI, Part-E (1)	Protection SLDs for GT/ST/Line/BR bays	-	XXXX-999-POE-J-005 - 008	-	As per Single Line diagram doc. No. 1150-999-POE-J-001 GT/ST/BR/Line disconnector are shown with two Earth switches, whereas the protection SLDs show same disconnectors with single earth switch. Owner may please clarify.	All the equipments are to be considered as per Single line diagram . The disconnector with earth swithes are to be provided as per key single line diagram.
118	126	TECHNICAL SPECIFICATION SECTION – VI, PART-A TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION-IIB ELECTRICAL SYSTEM / EQUIPMENTS SUB SECTION B-05(B) MV & LV SWGRPROTECTIONS, CONTROL & METERING	4 of 19 10 of 10	1.05.03(g) -	GPS, Time synchronizing equipment & Digital Clocks. -	Separate GPS for Numerical Relay Network is not required in line with drawings 0000-205-POE- A-001. Owner may please confirm.	Bidder understanding is correct. But all numerical relays to be GPS synched through DDCMIS.
119	127	TECHNICAL SPECIFICATION SECTION – VI, PART-A	SUB-SECTION-IIB ELECTRICAL SYSTEM / EQUIPMENTS	14 of 19 6 of 19	1.19.00 1.08.00 1.09.01	EMPLOYER'S REQUIREMENT In addition to above, following items required for Employer's use are also included in bidder's scope. These equipment's shall conform to technical specification requirements as stipulated in Part B for respective equipment's. 1. 415V switchgear feeders as indicated below for feeding owner's loads shall be provided (at suitable location to be decided during detailed engineering). (a) 4 Nos. MCCB–125A (b) 4 Nos. MCCB–250A (c) 4 Nos. MCCB-400 A (d) Total 6 Nos. ACB outgoing – 1000 A feeders in unit emergency switchgear and station service switchgear. 2. Following requirements of construction power for employers' office/ construction use: Construction power at 415 V at two locations with total load 100 KVA along with suitable metering arrangement at each location. 3. Two Number 11kV feeders in 11 kV station switchgear, suitable for connection of 1MVA service transformer, for future owners use. In addition to above, cabling works, as indicated under Clause 1.19.00, if required for Employer's requirement shall also be in bidder scope. In addition to above, HT power cables, as indicated under Clause 1.19.00, if required for Employer's requirement shall also be in bidder scope.	Bidder understand that only feeders for employer's requirement as indicated in clause no-1.19.00 shall be considered by Bidder. Supply of cable and associated cabling work is not in Bidder's scope of supply. Owner may please confirm.	Bidder understanding is correct Bidder to provide feeders as per the clause no:1.19.00. Bidder to refer Amendment no:1
120	128	TECHNICAL SPECIFICATION SECTION – VI, PART-A	SUB-SECTION-III TERMINAL POINTS & EXCLUSIONS	2 of 3	3.01.03 3.01.04	Employer shall provide one (1) number, 415 V, three phase 3-wire, 50 Hz feerder for UPS at AWRS system. All required Cables from this feeder to Contractor UPS panel will be in contractors scope. Employer shall provide two (2) number, 415 V, three phase 3-wire, 50 Hz feerder for 24 VDC system at AWRS system. All required Cables from these feeder to Contractor 24VDC panel will be in contractors scope.	Bidder understands that 230V UPS & 24V DC for Employer's AWRS system is in Bidder's scope of supply. Owner may please furnish the employer's UPS load and DC load requirement.	Bidder's understanding is correct. Bidder to note that size of AWRS DDCMIS and count of HMI is specified in Section-IIC, Part-A of technical specification. Accordingly bidder shall calculate the load of UPS and 24 DC power supply system required for powering of AWRS DDCMIS and its HMI.
121	129	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION B-0 GENERAL ELECTRICAL SPECIFCIATION	9 of 16	3.06.00 (h) (a)	Power factor 415 V Uni-Directional drives is taken as 0.8 and efficiency as 0.85. Power factor of 415 V bidirectional drive loads is taken as 0.65 and efficiency as 0.8 for motor rating less than 15 kW. For motor ratings of 15 kW and above the corresponding values are 0.75 and 0.8.	S1 duty motor efficiency shall be considered as per IS:12615 Premium Efficiency class-IE3/IE4 (as per tender specification requirement) for sizing of LT Transformer/Boards. Owner may please confirm.	Bidder poposal is not acceptable. The mentioned clause is for finalisizing the sizing of Transformer under worst condtion. Specification cl. no. 3.06.00 h) a) Sub -Section B-0 section-VI, part-B Sizing of LT boards to be followed.
122	130	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION B-0 GENERAL ELECTRICAL SPECIFCIATION	6 of 16	3.05.00 (e)	Module Type DA (Motor feeder) : MV Motor Feeders < 2 MW Module Type DAF (Motor Feeder with Differential Protections) : MV Motor Feeders > 2 MW	Bidder understand that Module type DA will be applicable upto 2MW rating, i.e. Module Type DA : MV Motor Feeders ≤ 2 MW Module Type DAF : MV Motor Feeders > 2 MW Owner may please confirm.	Bidder understanding is not correct. DAF module shall be provided for motor rating >= 2MW

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
123	131	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION B-0 GENERAL ELECTRICAL SPECIFCIATION	6 of 16	3.05.00 (e)	Module Type DB (Transformer Feeder) :Transformer Feeders < 5 MVA Module Type DBF (Transformer Feeder with Differential Protections) : Transformer Feeders > 5 MVA		Bidder understanding is not correct. DBF module shall be provided for transformer rating >= 5MVA
124	132	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION B-0 GENERAL ELECTRICAL SPECIFCIATION	8 of 16 9 of 16	3.06.00 (h) (d) 3.06.00 (h) (k)	A spare capacity of about 10 % shall be kept for addition of loads during detail engineering as many of the LT loads cannot be predicted during the Rating selection of the Board. Each of the LV switchboards shall be designed for 1.1 times the required rating as a spare capacity. Further all LV Switchboard shall be provided with spare feeders / modules as specified in relevant clause of Part-A of Technical Specification.	Bidder understands that overall margin of 10% shall be provided while sizing LV Switchgear Busbar, incomers & bus coupler. Owner may please confirm.	Bidder to refer amendment No:1
125	133	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION B-0 GENERAL ELECTRICAL SPECIFCIATION	9 of 16	3.07.00	The auxiliary contacts of the MCCB shall be fed to the digital inputs available in the numerical relays of Incomer / bus coupler / motor circuit breaker feeders or 61850 Compatible IO Modules, for integration into the numerical relay network/ DCS.	Only ACB & VCB operated feeder breaker auxiliary contact will be wired to respective numerical relay. Owner may please confirm.	Bidder understanding is correct.
126	134	TECHNICAL SPECIFICATION SECTION – VI, PART-A	SUB-SECTION-IIB ELECTRICAL SYSTEM / EQUIPMENTS	9 of 19	1.16.01 (ii)	Existing transmission line towers between VSTPP-V & IV are suitable for twin moose conductor, however new interconnection between Singrauli STPP stage-III switchyard & VSTPP-IV switchyard shall have rating for quad moose / HTLS equivalent to quad moose conductor. In case existing towers cannot be used due to any limitations, the erection of new towers and line for establishing the LILO arrangement shall also be in the scope of contractor.	For validating of existing Towers with HTLS conductors, design and structural drawings of existing tower along with Type Test Report will be required. Owner may please confirm the accessibility of the existing tower design.	Required data shall be provided during detailed engineering
127	135	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION B-0 GENERAL ELECTRICAL SPECIFCIATION --- SECTION-VI, PART-B, SUB-SECTION-B-10 CABLING, EARTHING & LIGHTNING PROTECTION	9 of 16 --- 10 of 21	3.06.00 (m) --- 4.04.15	Plant control cable Interconnections: f)At least one spare core shall be made available in each of the control cable. --- No. of cores in cable — No. of spare cores 2C,3C — NIL 5C — 1 7C-10C — 2 14C & above — 3	There is a discrepancy between mentioned clauses. As per 3.06.00, Bidder has to provide a spare core for each control cable whereas it is mentioned nil for core 2C, 3C in clause 4.04.15. Owner may please resolve the discrepancy.	Philosophy as indicated in sub section B10 clause 4.04.15 is required to be followed. Bidder to refer Amendment No:1.
128	136	TECHNICAL SPECIFICATION SECTION – VI, PART-B	Sub-Section-G-03	9 of 15	1.03.00 (35)	Bidder to note that Power and earth conductor connecting transformer yard and switchyard shall be anchored on A-row columns. The loads due to the same shall be considered while designing the TG building.	Bidder understands that in some cases A-row stringing is not required for power conductor as per layout requirement. So, in case if stringing is considered on A-row, its loads on TG building will be considered. Owner may please confirm.	Confirmed
129	137	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION B-0 GENERAL ELECTRICAL SPECIFCIATION	7 of 16	3.06.00	LV Switchgears: All switchboards shall be of double front, draw out, complete closed-door operation, metal enclosed, indoor, floor-mounted, free-standing type of bolted design. Entire bus bar system shall be insulated with PVC sleeves (UL 224). Cable terminations located in cable alley shall be designed to meet the Form IVb Type 7 (as per IEC 60439) for safety purpose.	Owner is requested to allow soot blower switchboard (with IP 55 protection) on the boiler platform. This is inline with NTPC practice for Lara project. Refer attached file. Owner may please confirm. Lara-Clarification-pt no.864.pdf	Refer Ammedment No:1 to technical specifications
130	138	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION B-08: HT, LT AND CONTROL CABLES	3 of 7	2.010.00	All LT power cables of sizes more than 120 sq.mm. shall be XLPE insulated, and sizes shall be of 1Cx150, 1Cx300, 1Cx630, 3Cx150,3CX185, 3Cx240 & 3Cx300 sq.mm	Bidder requests Owner to consider a greater spectrum of cable sizes as opposed to one mentioned in the tender. Bidder proposes the following cable sizes which are in line with past executed NTPC projects. Multi core cable: Upto 400 Sq.mm. Owner may please accept the same.	Bidder proposal is not acceptable. Specification cl. no.2.010.00 Sub -Section B-08 Section-VI, part-B to be followed.
131	139	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION-B-08 HT LT AND CONTROL CABLES	5 of 7	4.00.05	Cables shall be supplied in steel drums of heavy construction.	Bidder requests Owner to consider both steel/wooden drums based on drum length/cable size. Owner may please accept the same.	Bidder proposal is not acceptable. Specification cl. no.4.00.05 Sub -Section B-08 Section-VI, part-B to be followed.
132	140	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION B-09 DG SETS	3 of 13	4.10.00	The DG set shall be capable of starting largest size of emergency 415 V drive (motor) having starting KVA/rated KW ratio of 8 (higher if starting current is more than 8) and starting power factor of 0.2.	Bidder understands that DG can be sized with actual starting current of Motor and actual starting power factor, if vendor is offering improved parameters of starting current and pf. Owner may please confirm.	Refer Ammedment No:1 to technical specifications

EPC package for Singrauli STPP Stage-III
PREBID QUERIES & CLARIFICATION

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
133	141	TECHNICAL SPECIFICATION SECTION – VI, Part-E	-	-	4540-999-POE-J-004	Dimension of Trestle is indicated as 4000mm and number of trays are mentioned as 18 in Notes. 	Owner may please review the overall dimension and number of cable trays mentioned in drawing. Bidder understands that the number of trays shall be 15 Nos. as shown in drawing and not 18 Nos. written in note. Also, the overall dimension shall be 3400 mm in line with NTPC practice followed for Lara and Singareni tender. Refer attached file. Owner may please review and update. 	Bidder understiang is correct for number of trays i.e 15nos. 1200mm clear space between structures along the cable tresle length for 6nos trays and 1000mm for 3nos trays. Bidder to refer Amendment No:1
134	142	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUB-SECTION B-0 GENERAL ELECTRICAL SPECIFCIATION	11 of 16	3.07.00	Grounding and lightning protection for the entire plant areas or buildings covered in the specification shall be provided in accordance with IS 3043, IEC 62305, IEEE 80 and IEEE 665.	Bidder understands that IEEE 665 has been withdrawn. Bidder will follow IEEE 80. Owner may please confirm.	confirmed
135	143	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUB-SECTION B-10 CABLING, EARTHING AND LIGHTNING PROTECTION	2 of 21 4 of 21	2.01.04 3.02.05 (b)	No sub zero level cable vault/trenches shall be provided below control building/ switchgear rooms. Cable trenches shall be provided only in Switchgear/ MCC rooms.	Bidder understands that Cable Trench may be accepted at offsite buildings for CHP area where cable trays layers are limited to 4 layers per row, which is inline with ongoing NTPC Projects. Owner may please accept the same.	Bidder understanding is not correct. Cable trecnhes in switchgear / MCC room in line with cl. no.2.01.04, 3.02.05 (b) Sub -Section B-10 Section-VI, part-B to be followed.
136	144	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUBSECTION-B-11 STATION LIGHTING	4 of 18	3.03.04	18W, 220V DC Lighting fixture shall be provided in underground portion of conveyor, each switchgear room, control room, office room, pump house, each drive floor of TPs, staircases of various TPs and buildings and each local control area. DC lighting fixtures shall be fed from 220V DC LDB which in turn will be fed from CHP DC system. The supply to the DC lighting panels shall be automatically switched ON in case of loss of normal AC supply.	Bidder proposes 10W, 220V DC LED lighting fixtures as per OEM. Owner may please confirm.	Bidder proposal is not acceptable. Specification cl. no.3.03.04 Sub -Section B-11 Section-VI, part-B to be followed.
137	145	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUB-SECTION B-0 GENERAL ELECTRICAL SPECIFCIATION	15 of 16	9.00.00	Cables to the feeders protected by breakers: Main protection fault clearing time with 0.12 second minimum.	Bidder proposes fault clearing time of feeders protected by vacuum contactor unit to be 0.01 sec since vacuum contactor unit has HRC fuse. Owner may please accept.	Confirmed.
138	146	TECHNICAL SPECIFICATION SECTION – VI, PART-A	IIB annexures	9 of 294 61 of 294	Annexure - IV	400kV DC NTPC Vindhyachal V to NTPC Singrauli-III Transmission Line (Option-1): DD types normal and with extensions, SPL+45 and SPL+50. 400kv DC NTPC Vindhyachal V to NTPC Singrauli-III Transmission Line (Option-2): DD types normal and with extensions, SPL+45 and SPL+50.	Special towers with more than 90m of height are required. Please note that due to the limitations of the testing facilities of the tower test bed, these special towers are not going to be type tested and the design will be done with reliability as per CEA guidelines. Please confirm.	Confirmed. Bidder to submit the design load calculation etc.
139	147	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B ---------- TECHNICAL SPECIFICATION SECTION – VI, PART-A	SUB-SECTION-B-17 SWITCHYARD ---------- IIB annexures	67 of 100 ---------- 21 of 294 22 of 294 56 of 294	13.04.02 ---------- -	Maximum Temperature is to be considered as 75Deg C. ---------- Profile and other sag-tension is prepared for ACSR Moose conductor with maximum operating temperature 85DegC.	There is a discrepancy in the value of maximum operating temperature of ACSR Moose conductor. Bidder requests Owner to resolve the discrepancy.	Bidder to considered Max.temperature as 85deg.c
140	148	TECHNICAL SPECIFICATION SECTION – VI, PART-A	IIB annexures	56 of 294	-	Transmission Line Corridor between AP-4, AP-5 & AP-6	(1) As per proposed profile drawing, Transmission Line corridor is overlapping with Railway line corridor. (2) Existing 400kV Transmission Line Tower No:-10 is located within the corridor of the proposed Line between AP-4 & AP-5 Bidder requests Owner to inform the revised TL route to be considered.	The attached survey report is preliminary basis for tower estimation purpose. Bidder to condcut preliminary , detailed route survey for finlisation tower spotting etc as per the scope & specifiication requirement.
141	149	TECHNICAL SPECIFICATION SECTION – VI, PART-A	IIB annexures	56 of 294	-	Transmission Line Corridor between AP-4, AP-5 & AP-6	Bidder understands that available Power Line crossing clearance is measured between Earth wire of existing Transmission Lines and Bottom Conductor of Proposed Transmission Line in survey report. Owner may please confirm.	Bidders understanding is correct.
142	150	TECHNICAL SPECIFICATION SECTION – VI, PART-A	IIB annexures	104 of 294	-	Termination of one circuit on existing tower no:-2 at NTPC Vindhyachal-IV Switchyard	Bidder understands that If the Transmission line is constructed with Quad Moose conductor then existing tower dismantling will be required and new tower needs to be erected. However, as per survey report for the same, line with quad Moose conductor is terminated on existing tower no:-2 which is suitable for Twin Moose conductor. Owner may please clarify.	Bidder to use exisitng tower with quad moose conductor. if any small modiifcation / strengthening of exisitng tower gantry is required is in the scope of Bidder .The owner will provide the required details during detailed engg stage .

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143	151	TECHNICAL SPECIFICATION SECTION – VI, PART-A	IIB annexures	104 of 294	-	Termination at NTPC Vindhyachal-IV Switchyard	Existing Gantry at NTPC Vindhyachal-IV Switchyard is designed for Twin Moose Conductor with specified parameters pertaining to existing System. Owner may please confirm the suitability of the take-off gantry with Quad Moose conductor at NTPC Vindhyachal-IV Switchyard. If the existing Gantry is not suitable then modification in the switchyard Gantry shall be in Owner's scope.	Bidder to study the suitability of exisitng gantry for quad moose conductor and if any small modiifcation / strengthening of exisitng gantry is in the scope of Bidder The owner will provide the required detailed during detailed engg stage.
144	152	TECHNICAL SPECIFICATION SECTION – VI, PART-A	IIB annexures	133 of 294	-	Route Alignment drawing of 400kV D/C Transmission Line from Singrauli-III Switchyard to Vindhyachal-IV Switchyard	Bidder observes that there are existing towers within the corridor of the proposed route between AP-2 & AP-3. Bidder may please inform the revised TL route to be considered.	There are existing transmission line in the route which need to be crossed. Prelimnary route survey for transmission line is attched for refrence of the bidders.Bidder to undertake detailed route survey and tower spotting during detailed engineering.
145	153	TECHNICAL SPECIFICATION SECTION – VI, PART-A	IIB annexures	-	-	-	Bidder requests Owner to share the Tower Spotting data of all applicable existing towers on which the proposed LILO line is to be terminated.	The attached survey report is preliminary basis for tower estimation purpose. Bidder to condcut preliminary , detailed route survey for finlisation tower spotting etc as per the scope & specifiication requirement.
146	154	TECHNICAL SPECIFICATION SECTION – VI, PART-A	SUB-SECTION-III TERMINAL POINTS & EXCLUSIONS	2 of 3	3.01.02 3.01.03 3.01.04	For AWRS: For Employer's Fieldbus(FF/Profibus) based Devices:-- a. TBs of Fieldbus positioners and instruments. b TBs of Fieldbus based non-intrusive actuators for fieldbus cable. All required cables from these TBs to contractors control system shall be supplied Employer shall provide one (1) number, 415 V, three phase 3-wire, 50 Hz feeder for UPS at AWRS system. All required Cables from this feeder to Contractor UPS panel will be in contractors scope. Employer shall provide two (2) number, 415 V, three phase 3-wire, 50 Hz feeder for 24 VDC system at AWRS system. All required Cables from these feeder to Contractor 24VDC panel will be in contractors scope.	1) Bidder understands that building layout, earthing & lightning protection system & layout, cable raceway & its layout, lighting system & its layout for these facilities shall not be in Bidder's scope. Owner may please confirm. 2) Accordingly, please share existing building electrical and C&I room layouts, cable raceway layouts. 3) Further, In order to estimate the Cables from UPS/24V DC system to Owner supplied equipment, Owner is requested to share the approximate length between Contractor supplied equipment and Owner's equipment.	1) Confirmed 2) All layouts related to AWRS shall be furnished during detailed engg. 3) Bidder to note that both power supply (UPS/24 DC system) and AWRS DDCMIS with HMI is in bidder's scope. Hence bidder to estimate cables accordingly.
147	155	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	Sub-Section -B-05(B) MV & LV SWGR PROTECTIONS, CONTROL & METERING SUB SECTION B-06 LT SWITCHGEARS & LT BUSDUCTS	4 of 10 13 of 19	3.03.14 7.00.00	All motor feeders (>30KW) shall have min one no. of 4-20mA analog output (current signal) for use in control logics in DDCMIS or for information in DDCMIS. Each motor/heater feeder shall consist of MPCB/MCCB (with S/C release only), Power contactor & intelligent motor controller (IMC) to ensure Type-2 Co-ordination.	As per Cl.No. 7.00.00, All MCC Motor/heater feeders are with iMCC. Accordingly, Bidder understands that for motors rated (>30kW), required current feedback shall be provided to DDCMIS via Profibus DP interface. Owner may please confirm.	Bidder understanding is not correct. All motor feeders HT/LT fed through ACB, VCB, VCU shall be provided with 4-20 mA analog output. Rest other drives: current shall be monitored through IMC in DDCIMS.
148	156	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	Sub-Section -B-05(B) MV & LV SWGR PROTECTIONS, CONTROL & METERING	10 of 10	-	Overall architecture of Switchgear Relay Network	Drawing is not legible. Owner is requested to provide a legible copy.	legible copy shall be provided
149	157	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUB-SECTION-B-17 SWITCHYARD	57 of 100	12.02.01	Right of way and way leave clearance shall be arranged by the Owner. To evaluate and tabulate the trees and bushes coming within 26 meters on either side of the central line alignment, the trees will be numbered and marked with quality paint serially from angle point 1 onwards and the corresponding number will be painted on the stem of trees at a height of one meter from ground level. The trees list should contain the following:	As per CBIP Manual-323 & CEA regulation (Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022), RoW for 400kV D/C Transmission Line shall be 46 meters (i.e. 23 meters on either side of the central line alignment) Hence, Owner is requested to re-check and confirm the exact requirement to be followed for RoW.	This clause pertain evaluation and tabulate the tress and bushes . Specification requirment to be followed.
150	158	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUB-SECTION-B-17 SWITCHYARD	57 of 100	12.03.03	From the field book entries the route plan with route details and level profile shall be plotted and prepared as per approved procedure.	Owner is requested to elaborate the requirement of "approved procedure".	Bidder to refer ammendment No.1
151	159	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUB-SECTION-B-17 SWITCHYARD	65 of 100	13.02.03	Weight Span	As uplift load is not specified for tower type A (Suspension), hence bidder understand that minimum weight span for Normal condition (NC) and Broken wire conditions (BWC) (i.e. -200m Min for NC and -100m Minimum for BWC) will not be applicable for tower type-A. As per 13.01.03 of the SECTION – VI, PART-B, SUB-SECTION-B-17 SWITCHYARD as well as CBIP manual-323, for uplift load only tension tower can be used. Please confirm	CBIP Manual 323 to be followed.
152	160	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUB-SECTION-B-17 SWITCHYARD	67 of 100	13.04.02	Design Temperatures: For HTLS Conductor	Owner may please provide maximum temperature to be considered for HTLS conductor.	Operating conductor temperature shall be considered as per stipulation sof CBIP manual -323 to meet the functional requirement
153	161	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUB-SECTION-B-17 SWITCHYARD	86 of 100	15.05.07	The proposed 66 kV transmission line may run parallel for certain distance with the existing Transmission lines which may remain energised during the stringing period.	Bidder understands that any 66kV transmission line is not applicable for this project. Owner may please confirm.	Bidder understanding is correct.
154	162	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUB-SECTION-B-17 SWITCHYARD	93 of 100	16.07.01	As alternate contractor may also offer long rod composite insulator for the above application.	Creepage distance for Long rod composite insulator is not specified. Please inform the creepage to be followed for long rod composite insulators.	The Creepage distance for long rod comnposite insulator shall be followed as 31mm/kV

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155	163	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUB-SECTION-B-17 SWITCHYARD	94 of 100	16.07.03	Bidder to ensure that optical fiber characteristic of the OPGW cable to be supplied shall be compatible with the existing OPGW cable if any.	Owner may please share the characteristics of the existing OPGW if any or please confirm the characteristics mentioned in the specification is compatible with the existing OPGW.	Confirmed. Specification requirement of OPGW cable to be followed.
156	164	TECHNICAL SPECIFICATIONS SECTION – VI, PART-E	SUBSTATION AUTOMATION SYSTEM ARCHITECTURE	-	1150-999-POE-J-003	-	Bidder understands that the Owner's LAN MMS PC and its connection hardware are not Bidder's scope. Also these PCs shall be installed in the existing Service Building. Bidder's scope shall be limited to the connection of the ABT metering system to the Owner's LAN. Owner may please confirm.	Bidder understanding is not correct .MMS PC and its coonection hardware is in the scope of Bidder .Howerver owners LAN arrangement is not in the scope of Bidder
157	165	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B ---------- TECHNICAL SPECIFICATIONS SECTION – VI, PART-E	SUB-SECTION B-0 ---------- -	1 of 16 2 of 16 ---------- -	1.02.00 1.08.00 ---------- 1150-999-POE-J-002	Short circuit fault level of Singrauli-III(2x800MW) generation switchyard shall be considered as 63 KA. 11 KV systems - 50 kA rms for 1 second ---------- 400kV : 50 kA 11kV : 40 kA	There is a discrepancy in the value of fault current. As per SLD, fault level of 400kV & 11kV system indicated as 50kA & 40kA respectively. However, as per clause 1.02.00 and 1.08.00, fault level of 400kV & 11kV system indicated as 63kA & 50kA respectively. Owner may please resolve the discrepancy.	The fault level requirement as per clause no:1.02.00 and 1.08.00 to be followed. Bidder to refer to Amendment No.1.
158	166	TECHNICAL SPECIFICATIONS SECTION – VI , PART-A	SUB-SECTION-IIB ELECTRICAL SYSTEM / EQUIPMENTS	19 of 19	1.25.00 (c)	Bidder shall provide all necessary technical data/models and carryout all necessary studies (in PSS/E) as indicated in "Formats of Technical Data for connectivity Agreement- FORMATCON- TD-2" applicable for Thermal Power plants as per the CERC (Central Electricity Regulatory Commission)-Connectivity and General Network Access to the Interstate Transmission system Regulation-2022.	Bidder would like to clarify that the PSS/E consists of programs which are used to perform studies related to transmission network. Since, Bidder is main contractor with EPC responsibility, it is not possible to perform such studies by Bidder. Generally such studies shall be performed by either Owner or Grid authority. Bidder will provide all necessary technical data to Owner during detail engineering for conducting grid related studies.	The submission of Technical data / models in PSS / E are statutory requirement for submission to CTU . Specification requirement to be followed.
159	167	Price Schedule- Break up of Type Test Charges for Equipment Priced in Schedule-1 & 2	-	-	-	Schedule-8A and 8B: Type test schedule	Bidder proposes Owner to delete the requirement of quoting type testing charges in Schedule-8A and 8B of Bid Price Schedules and accept type test certificate in lieu of conducting type test as per latest CEA guidelines on validity of type test certificate. Alternatively, Owner may please exclude the type test charges from bid evaluation since the requirement for conductance of type test is not clear at bid stage and is subject to Owner's discretion in-spite of having a valid type test certificate for similar equipment.	Bidder proposal is not acceptable. Schedule-8A and 8B: Type test schedule to be followed.
160	168	TECHNICAL SPECIFICATIONS SECTION – VI , PART-B	SUB SECTION B-06 LT SWITCHGEARS & LT BUSDUCTS	3 of 16	2.03.00 (6)	LT Switchgear Vertical Busbar : Copper only	Bidder proposes Owner to consider Aluminium alloy as an alternative to Copper for Vertical busbar of LT Switchgears because limited suppliers are available with panel design having Copper for vertical busbar.	Bidder proposal is not acceptable. Specification cl. no.2.03.00 (6) Sub -Section B-06 Section-VI, part-B to be followed.
161	169	TECHNICAL SPECIFICATIONS SECTION – VI , PART-B	SUB SECTION B-06 LT SWITCHGEARS & LT BUSDUCTS	13 of 16	3.14.00	Wireless temperature monitoring system to be provided and same shall be integrated to DDCMIS/ separate HMI. Temperature sensors shall be installed in all relevant joints, contact joints etc. as per the standard OEM Practice, however position of such sensors shall be decided at the time of detailed engineering.	As per bidders past experience and industry practice, wireless temperature monitoring system is generally not provided for LT switchgear since the switchgear design is type tested. Hence, Owner is requested to remove the requirement of wireless temperature monitoring system for LT switchgears. Alternatively, Bidder suggests to provide wired temperature sensors for temperature monitoring of LT switchgear as wireless temperature monitoring system is not a proven practice for LT Switchgear.	Bidder proposal is not acceptable. Same shall be provided for USS, BMCC, TMCC and UES switchgear. Ammendment No.1 to be referred.
162	170	TECHNICAL SPECIFICATIONS SECTION – VI , PART-B	SUB SECTION – B-13 SUBSTATION AUTOMATION SYSTEM	24 of 46	11.02.12.1	Bus bar Protection Each EHV bus bar shall be covered with a duplicated decentralized high-speed busbar protection scheme connected to two different CTs and merging units.	Bidder requests Owner to allow Centralized busbar protection as an alternative to Decentralized busbar protection. Bidder may propose either of the protection system during project execution. Owner may please accept.	Bidder proposal is not acceptable. Specification cl. no.11.02.12.1 Sub -Section B-13 Section-VI, part-B to be followed.
163	171	Section-VI, Part-A	Sub-Section - IIC	2 of 18 & 3 of 18	1.06.02	For open loop control of complete main plant and offsite areas fieldbus based control system, fieldbus based actuators, Profibus DP based IMC in LV SWGR/MCC and fieldbus based PT/DPT/TT shall be provided excluding applications given in Note-A. Contractor to note that Solenoid operated pneumatic open close actuators, HT/LV SWGR/MCC where IMC is not envisaged and instruments other than PT/DPT/TT envisaged under this package are conventional, i.e. not based on fieldbus system. Hence, in most of the FGs of DDCMIS mix of conventional and fieldbus based control system is envisaged. Notes: A. The control system and devices (Actuators, instruments) shall be conventional for following areas/ application: . . II. TG Integral : a. STG Integral Control and Protection System. b. Protection and governing controls of BFP Turbine. c. HP/LP Bypass system controls and protection.	Bidder understands that TG integral, BFPT,HP/LP Bypass system motors (e.g. lube oil, jacking oil etc.) shall have conventional control from respective control system. Please confirm. Accordingly, Bidder shall consider suitably designed iMCC module in respective MCC/Switchgear.	Bidder's understanding is correct. Bidder to refer Amendment No-C-05 in this regard.
164	172	Section-VI, Part-A	Sub-Section - IIC	2 of 18 & 3 of 18	1.06.02	For open loop control of complete main plant and offsite areas fieldbus based control system, fieldbus based actuators, Profibus DP based IMC in LV SWGR/MCC and fieldbus based PT/DPT/TT shall be provided excluding applications given in Note-A. Contractor to note that Solenoid operated pneumatic open close actuators, HT/LV SWGR/MCC where IMC is not envisaged and instruments other than PT/DPT/TT envisaged under this package are conventional, i.e. not based on fieldbus system. Hence, in most of the FGs of DDCMIS mix of conventional and fieldbus based control system is envisaged.	For 2-way/3-way valves and fire damper of Air conditioning and ventilation system, profibus DP based actuators may not be available commercially. Accordingly, Bidder may opt for conventional control for such applications. Please confirm.	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.

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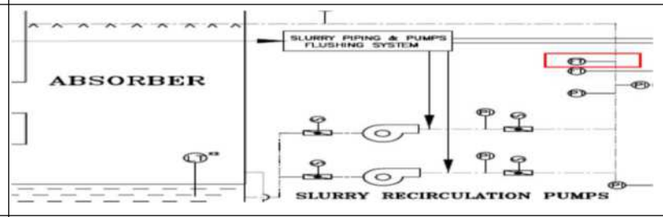
165	173	SECTION – VI, PART-A	IIC CONTROL & INSTRUMENTATION SYSTEM	8 of 18	2.04.5 (2)	Wireless Link:For the following system identified below, Bidder shall consider wireless link : Between AWRS system / DCS , located in AWRS control room and AHP system / DCS for operation and monitoring of AWRS system from HMI of AHP system (Operation & monitoring of AWRS system should be available from OWS located in AWRS control room, even in case of non-availability of wireless link between AWRS system / DCS & AHP system / DCS.	Bidder request Customer to kindly furnish following inputs for BOQ estimation: a) Layout of AWRS system to locate Wireless system b) Existing C&I room layout in AWRS	Required details shall be furnished during detail engg.
166	174	TECHNICAL SPECIFICATION PART – A SECTION - VI	SUB-SECTION-IIC CONTROL & INSTRUMENTATION SYSTEM	6 of 18	2.02.00	For CHP DDCMIS, necessary signal exchange with Employer's existing stage-I/II CHP DDCMIS system shall also be in Contractor's scope. For this signal exchange, the number of I/Os shall be considered as DI: 32 DO: 16 AI:8 AO:8. The exact scheme shall be finalized during detail engineering. Employer's stage-I/II CHP DCS/RIO panel shall be the terminal point.	All necessary hardware/ software modifications/ upgradation, as required at Employer's existing stage-I/II CHP DCS/ RIO end, to interface with Bidder's system shall be in Employer's scope. Please confirm.	Bidder's understanding is correct.
167	175	TECHNICAL SPECIFICATION PART – B (CONTROL & INSTRUMENTATION) SECTION - VI	SUB-SECTION-IIIC-20 CCR Design Guidelines	1 of 3	2.00.00.f	Furniture like Computer tables, Chairs and other furniture related to Central control room, Programmer room, PC room	Bidder understands that the relevant workstations and engineering workstation shall be located in Programmer room. Separate PC room is not required.	Separate PC room is not envisaged.
		TECHNICAL SPECIFICATION PART – B (CONTROL & INSTRUMENTATION) SECTION - VI	SUB-SECTION-IIIC-01 BASIC DESIGN CRITERIA	6 of 6	9.03.00.2	Programmer Room :Programmer Room is envisaged to be located near the CER. This shall house the servers/ other workstations & Engineer station for DDCMIS (SG, TG and BOP C&I systems), various PCs	Please confirm	
168	176	SECTION-VI, PART-A	Annexure C to IIC Contract quantity	5 of 22	2.04.07	Air Compressor Block This block shall include Air compressors(IAC/PAC) , Air compressor for Mill reject system. If the controller (Microprocessor / PLC based control system) is integral to compressor then suitable operator interface as per vendors practice for individual air compressor shall be provided. However, overall control and monitoring shall be through Stand Alone DDCMIS.	Since, Mechanical conveying system shall be employed for handling of the mill rejects, we understand that Air compressor for Mill reject system is not applicable. Please confirm.	Bidder's understanding is correct. Bidder to refer Amendment No-C-01 in this regard.
169	177	TECHNICAL SPECIFICATION PART – A SECTION - VI	Annexure C to IIC Contract quantity	17 of 22	I.22	Portable Testing and Commissioning tool-Ref Clause no.15.00.00, Sub-section IIIC-02, Part-B, Section VI for technical specification	Bidder wish to highlight discrepancy in the referred clauses. Clause no.15.00.00, Sub-section IIIC-02, Part-B does not indicate any requirement of Portable testing and commissioning tool. However, requirement of portable trolley mounted system is indicated in Cl. No. 32.00.00.	Bidder's understanding is correct. Bidder to refer Amendment No-C-02 in this regard.
		TECHNICAL SPECIFICATION PART – B (CONTROL & INSTRUMENTATION) SECTION - VI	SUB-SECTION-IIIC-02 DDCMIS	17 of 17	32.00.00	The testing and commissioning tool is intended to be used for test operation of any drive, in absence of DDCMIS during initial commissioning (e.g. fan trial run, etc.) While the tool shall be used for all type of drives envisaged in the specification, it is designed to be operated for one drive at a time. Portable trolley mounted system completed with necessary hardware for operating the drives and monitoring its parameter shall be supplied	Please confirm if the requirement indicated at Cl. No. I (22) is pertaining to portable trolley mounted system indicated at Cl. No. 32.00.00 of Sub-Section-IIIC-02.	
170	178	SECTION – VI, PART-A	IIC CONTROL & INSTRUMENTATION SYSTEM	11 of 18	2.06.00	Contractor to provide 5 nos. Fine pitch LED display (1 for Admin building gate, 1 for Main plant gate & 3 for locations to be finalized during detail engineering) for outdoor application and 5 nos. Indoor LED television (locations to be finalized during detail engineering). These displays shall communicate information & guidance about environment, Advisory from Management, NTPC generation (station wise/unit wise), Business Diversification Information, CSR Activities, safety advisories, Movie on Company's Journey & Awards and Recognitions etc. Additionally, 3 nos. Interactive display board (1 for Admin building conference room, 1 for Service building conference room & 1 for CCR conference room) shall also be provided for conference rooms. The exact location of these displays will be finalized during detail engineering.	Based on the purpose and applications defined in subject clause, Contractor understands that Fine Pitch LED Display, LED television & Interactive Display Boards shall be connected to Enterprise LAN provided by Employer. We understand that these devices shall not be connected to DDCMIS or Station LAN. Please confirm.	Bidder's understanding is correct.
171	179	TECHNICAL SPECIFICATION PART – B (CONTROL & INSTRUMENTATION) SECTION - VI	SUB-SECTION-IIIC-04 MEASURING INSTRUMENTS (PRIMARY & SECONDARY)	16 of 34 21 of 34	10.00.00 11.00.00	AMBIENT AIR QUALITY MONITORING STATION (AAQMS) DATA LOGGER AT AAQMS & METEOROLOGICAL STATION	Requirement of AAQMS & Meteorological station is not specified in Part-A of tender specifications. Hence, Bidder understands that AAQMS & Meteorological station is not in Bidder's scope. Please confirm.	Bidder's understanding is correct.
172	180	TECHNICAL SPECIFICATION PART – A SECTION - VI	SUB-SECTION-VI CHAPTER-02 STEAM TURBINE GENERATOR	31 of 31	General Notes-7	Control & Instrumentation Mandatory Spares for specific sub-systems such as hydrogen generation plant and Condensate Polishing Unit (if applicable), the spares shall be governed by the spares indicated against the corresponding specific clauses only.	Bidder understands that Hydrogen Generation plant is not applicable for this project. Please delete the requirements mentioned for Hydrogen Generation plant in the referred clauses.	Bidder's understanding is correct. Hydrogen generation plant is not in the scope of the bidder.
		TECHNICAL SPECIFICATION PART – B (CONTROL & INSTRUMENTATION) SECTION - VI	SUB-SECTION-IIIC-09 PROGRAMMABLE LOGIC CONTROLLER SYSTEM	1 of 6	1.00.00	All electrical devices like switches/ transmitters/ controller/ analyzer/ solenoid valves which are located in the hydrogen generation plant shall be made intrinsically safe by providing suitable type of transformer isolated barrier/ Zener barrier of standard make in case it is a standard and proven practice of the bidder.		
173	181	SECTION – VI, PART-B	SUB-SECTION-IIIC-14 CLOSE CIRCUIT TELEVISION (CCTV) SYSTEM	6 of 5	1.00.00	Thermal Camera System: Annexure-I	Application of Thermal camera system as specified in Cl. No. 1.00.00 Annexure-1 is not mentioned in Part A (Scope of Supply). Bidder requests customer to kindly specify relevant clause no in Part-A (Scope of Supply) for Thermal camera system application.	Thermal camera system is not envisaged under scope of supply for CCTV system.
174	182	TECHNICAL SPECIFICATION PART – B (CONTROL & INSTRUMENTATION) SECTION - VI	SUB-SECTION-IIIC-04 MEASURING INSTRUMENTS (PRIMARY & SECONDARY)	2 of 34	2.01.00	For HART transmitter SIL 2 certification is required.	Bidder understands that intention is to provide quality instruments due to which SIL-2 certified instruments have been asked in Tender. Hence, Bidder request customer to accept model wise SIL-2 certification instead of individual tag wise certification.	Bidder's proposal is acceptable.

EPC package for Singrauli STPP Stage-III
PREBID QUERIES & CLARIFICATION

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
175	183	TECHNICAL SPECIFICATION PART – A SECTION - VI TECHNICAL SPECIFICATION PART – B (CONTROL & INSTRUMENTATION) SECTION - VI	Annexure C to IIC Contract quantity SUB-SECTION - IIIC-12 SWAS	15 of 24 4 of 6	G 3.02.00	LIST OF ANALYSERS Note: 1. Multistream for Silica and Sodium Analyser shall be acceptable. Multistream analysers shall have at least one stream as spare. Minimum specifications of analysers Hydrazine: No. of Streams- Single	a) Bidder wish to clarify that Chloride analysis is not indicated in the list of analysers mentioned in the referred clause. In case, Chloride analysis is required as per Bidder's design then Multi Channel Chloride analyser shall be considered. Please confirm. b) Bidder request customer to accept Multi channel analyzer for Hydrazine with at least one stream as spare. Accordingly please update the tender specification.	a) Bidder's proposal is acceptable. b) Bidder's proposal is not acceptable. Bidder shall comply to specification requirements.
176	184	TECHNICAL SPECIFICATION PART – A SECTION - VI	SUB-SECTION-IIC CONTROL & INSTRUMENTATION SYSTEM	13 of 18	4.00.00.h	ANALYSER INSTRUMENTS OF DM / PT, LET, CHLORINATION (ClO2), CWT AND CPU PLANT : All weather Local Panel fitted with integral Air Conditioner shall be provided for housing analyzers etc if the same are not kept in AC rooms.	Bidder request Customer to confirm that the requirement indicated in the referred clause is for wet chemistry analyzers (Silica/ Sodium). All other analyzers (pH, conductivity, Residual chlorine etc.) shall be field mounted and suitable for ambient conditions.	Bidder's understanding is not correct. Bidder to note that the requirement is for all analysers. Bidder shall comply to specification requirements..
177	187	SECTION-VI, PART-A SECTION– VI, PART-B SECTION– VI, PART-B	SUB-SECTION-IIA-15 COAL & BIOMASS HANDLING PLANT SUB-SECTION-A-20 SUB-SECTION-A-20	5 of 9 3 of 113 3 of 113	1.31.00 3.4.0 4.11.7	e. Automatic Solenoid valves (of Stainless Steel Material) operated plain water sprinkler system for dust suppression and extinguishing of hotspot detected through Stockyard Management System in stockyard to be provided. These solenoid shall be operated automatically through PLC of Automatic Sprinkler System (part of Stockyard Management System, refer C&I Annexure to Part-B, A-20, subsection of the specification). Stacker cum reclaimer shall be provided with hydraulic drive for bucket wheel to reclaim at the required rate. Stockyard Management System shall be provided as per C&I Annexure-I to sub section A-20. These solenoids shall be operated automatically through PLC of Automatic Sprinkler System (part of Stockyard Management System, refer C&I Annexure to Sub Section A-20).	C&I Annexure-I to sub section A-20 for Stockyard Management System is not included in Tender document. Bidder request Customer to provide the same.	Bidder to refer Amendment No-C-03 in this regard.
178	188	SECTION – VI, PART-A SECTION – VI, PART-A	Annexure C to IIC Contract quantity Annexure C to IIC Contract quantity	6 of 22 6 of 22	2.07.00 2.08.00	Coal handling System (CHP) DDCMIS The Control System of CHP DDCMIS has following process blocks: CHP stream-A block CHP stream-B block Lime handling system stream-A block Lime handling system stream-B block Flue Gas De-Sulphurisation (FGD) DDCMIS …. The Control System of FGD DDCMIS has following process blocks. i. Unit-1 FGD ii. Unit-2 FGD iii. Gypsum De watering Handling common system block iv. Lime stone preparation common system block	Since, Lime handling system is a part of FGD, Bidder understands that process block requirements for Lime handling system mentioned in Section-VI, PART-A/Annexure C to IIC Contract quantity, Clause 2.07.00 is not applicable. For Lime handling system process block shall be considered as Section-VI, PART-A/Annexure C to IIC Contract quantity, Clause 2.08.00 S. No iv)	Bidder's understanding is not correct. Bidder shall comply to specification requirements.
179	189	TECHNICAL SPECIFICATION PART – E SECTION - VI	Dwg No: 1150-001-POM-A-022	Page no. 44 of 130	-		As per Bidder's design, flow measurement of slurry at outlet header of slurry recirculation pumps is not used for control purpose. Since flow measurement is not required in Bidder's design, flow element and transmitter for the same is not applicable. Please confirm.	Bidder to refer Amendment SG. 41 in this regard
180	190	Section-VI, Part-A Section-VI, Part-E	SUB SECTION-IIA-14 LIMESTONE AND GYPSUM HANDLING PLANT Dwg No: 1150-101-POM-A-022	6 of 6 -	4.00.00 -	For measurement of tank level in water application ultrasonic type level transmitter and for slurry-based application Radar type level transmitter are to be provided. For specification of these instruments and all other measuring instruments shall be complying to specification requirements of Part-B, Section-VI. Note 8. Only Ultrasonic/ Radar Type Level transmitters shall be provided for Slurry Tanks/ Sumps	Bidder proposes to consider DP type LT for water application & Ultrasonic/ Radar Type Level transmitters for Slurry Tanks/ Sumps. Bidder request Customer to accept Bidder's proposal.	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.
181	191	SECTION-VI, PART-B	D-1-4	3 of 4	4.03.1	The specified formation level(s) shall be achieved …….. by raising by controlled filling with borrowed earth where the existing ground levels are lower than the specified level.	Subject to suitability of earth, Bidder can alternatively consider surplus excavated earth from within the plant boundary for filling purpose. Please confirm	Bidder's understanding is correct.
182	192	SECTION-VI, PART-B	D-1-5	28 of 127	5.08.00	Plant Storm Water Drainage System	Bidder requests Owner to provide the size and invert level of inlet/outfall drains shown.	During detail engineering, Bidder to design the drain as per existing site condition and technical specification requirement.
183	193	SECTION-VI, PART-B	D-1-4	02 of 04	4.03.00	Bidder shall ensure that road access and drainage facilities for each block is available when site leveling in that block is completed. Unless otherwise mentioned, all roads and drains within a block shall be constructed by the bidder within a month from the date of completion of site leveling of that block.	Bidder understands that mentioned schedule is not feasible. Bidder proposes to construct road and drain as per requirement and progress at site.	Bidder's understanding is not correct. Roads and drains are to be provided as mentioned in the referred clause.

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184	194	SECTION-VI, PART-B	D-1-5	28 of 127	5.07.00	SEWERAGE SYSTEM	Bidder is requested to provide information regarding number of users for the design of sewage treatment plant.	As mentioned in the refered clause - "The capacity of the Decentralized Sewage Treatment' units should be as per the design requirements, subject to minimum combined capacity of 75 Cum/day."
185	195	SECTION – VI, PART-A	SUB-SECTION-IID CIVIL WORKS	12 of 12	2.03.01	d. RCC drains in the entire laydown area and along roads shall be planned so as to ensure proper disposal of rainwater.	Laydown being a temporary facility, Bidder understands that suitable RCC/PCC/Brick/Earthen drains etc. shall be provided in laydown area to ensure proper disposal of rainwater and avoid waterlogging. Please confirm	Bidder's understanding is not correct. Bidder is requested to follow technical specification.
186	196	SECTION – VI, PART-B	SUB-SECTION-D-1-5 CIVIL WORKS	31 of 127	5.10.00	All roads shall be of rigid pavements unless otherwise specified. Rigid pavements shall be constructed with Geopolymer concrete.	Bidder's request Owner to allow Cement Concrete roads as an alternative to Geopolymer concrete road.	Bidder's proposal is not acceptable.Bidder to comply specification requirement.
187	197	Section VI / Part B	D-1-9	2 of 36	9.03.01	All Buildings shall be designed with Toilets as per NBC norms.	Bidder understand that Toilet block shall be provided in buildings with permanent occupancy. Buildings like pump houses, electrical buildings, etc with no permanent occupancy shall not be requiring Toilet blocks. Please confirm.	Bidder understanding is not correct.Bidder to comply specification requirement.
188	198	Section VI / Part B	D-1-9	2 of 36	9.03.02.h	GI concealed water supply pipe of minimum 12 mm diameter of medium class, cast iron sanitary pipe (with lead joints) of minimum 75 mm diameter, floor trap with Stainless	The mentioned clause is contradicting with clause 9.03.01, where water supply pipes are mentioned as CPVC and drainage as UPVC. Owner requested to clarify.	Refer Amendment
189	199	Section VI / Part A	SUB-SECTION-IID CIVIL WORKS	8 of 12	1.00.00	24.i) Watch tower	As this is an existing plant, bidder is not envisaging any new watch towers. Owner to confirm.	Bidder understanding is not correct. Watch tower and boundary wall is in bidder scope. Pl refer Civil Scope chapter IID, Part A Cl. No.1.00.00 Sl No 24(i), 5(i) respectively.
190	200	Section VI / Part B	i) SUB-SECTION-D-1-6 ii) SUB-SECTION-D-1-5	i) 8 of 25 ii) 80 of 127 & 87 of 127	i) 6.03.03 ii) 5.23.02 & 5.23.14	i) Design of steel structures shall be done as per provisions of IS:800: 2007 (Limit state design) and other relevant IS standards including National Building Code(2016). For design of coal bins and loading hopper IS:9178 (part I to III) shall be followed. ii) The steel structures using tubular sections shall be designed and fabricated as per IS:806 – "Code of Practice for use of steel tubes in general building construction."	NTPC to kindly confirm: Steel section using tubular sections shall be design as per IS:800-2007(Limit state design), and not using IS : 806. IS:806 is not recommended as entire structure is being designed by limit state whereas bracing of tubular structures will be designed with work stress method.	Limit state design philosophy is to be followed for design of steel structures as per IS 800:2007.However, IS : 806 is to be referred for properties of tubular sections. Bidder to comply to specifications requirement.
191	201	Section VI / Part B	i) SUB-SECTION-D-1-5 ii) SUB-SECTION-D-1-9 iii) SUB-SECTION-D-1-5	i) 100 of 127 ii) 32 of 36 iii) 100 of 127	i) 5.31.00 ii) Table A INTERIOR FINISHING SCHEDULE iii) 5.30.00	i) FQA BUILDING ii) Vehicle parking sheds iii) PARKING	i) Owner to please confirm location and scope for FQA Building as same is not mentioned in Section VI / Part A (Sub-Section-IID Civil Works). Also Bidder understands that field Quality assuarance lab will be a temporary structure. ii) Kindly provide Location in plot plan & Size of vehicle parking sheds iii) Kindly provide Location in plot plan for open car/scooter parking	i) Bidder's understandingis not correct.FQA lab is in bidder scope. FQA lab is permanent building ii) GLP is to be further developed by bidder during detailed Engineering stage. Accordingly vehicle parking shed shall be located in GLP by bidder iii) GLP is to be further developed by bidder during detailed Engineering stage. Accordingly car/scooter parking shall be located in GLP by bidder
192	203	Section VI, Part A, Sub Section - IID Civil works	Sub Section - IID Civil works	3 of 13	1.00.00, 4	Dismantling of all existing facilities and disposal of dismantled material is in the scope of the bidder. The bidder has to take care this aspect while bidding. Bidder shall be responsible for safe disposal of all such materials outside the plant boundary in environmentally friendly manner meeting all statutory requirements. The liability for any payment w.r.t. removal /disposal of dismantled material including the applicable taxes/duties shall be that of the Bidder.	Bidder requests Owner to provide land within the vicinity of plant premises for disposal of dismanted items.	Bidder's proposal is not acceptable. Bidder to arrange land for disposal of dismantled material itself.
193	204	Section VI, Part A	Sub Section - IID Civil works	12 of 13	2.03.00	Bidder shall use a lay down area as shown in tender GLP Drawing. One area marked in GLP totalling 75 acres (approx.) are identified as laydown/preassembly area. Fencing of the laydown area in the area marked for laydown is in bidder's scope.	Laydown area of 75 acres is not adequate. For a typical 2x800 MW plant, Bidder would require approx 100 acres of land for laydown purpose. Hence Owner is requested to identify and provide additional land within the vicinity of plant premises.	Bidder's proposal is not acceptable. 75 acres of land is available for laydown purpose as marked in GLP. Bidder has to arrange additional land (if required) on its own without any additional commerciall implication to owner
194	207	SECTION-VI, PART-B	D-1-4	2 of 4	4.02.00	Please refer tender drawing no. 1150-999-POC-006 titled "Construction Store" (Pre- Engineered Building) - Plan, Elevation and Section".	Bidder could not find the mentioned drawing. Owner is requested to provide the same.	Bidder to refer amendment Sl No D1-35.
195	208	SECTION-VI, PART-B	D-1-5	101 of 127	5.35.00	NON-BIODEGRADABLE WASTE STORAGE BUILDING The Building for waste storage shall be as per Tender drawing	Bidder could not find the mentioned drawing. Owner is requested to provide the same.	Bidder to refer amendment Sl No D1-29. NON-BIODEGRADABLE WASTE STORAGE BUILDING is not in bidder's scope.
196	211	Part E - Drawings				General Layout Plan - Rerouted ash pipelines shown in the GLP.	Dismnatling and Rerouting of existing ash pipe lines included in Owner's scope of work. Please confirm.	Confirmed.
197	212	SECTION-VI, PART-A SECTION-VI, PART-E SECTION-VI, PART-B	SUB SECTION-II A-01 GENERAL LAYOUT PLAN (DWG NO.1150-999-POC-F-001) SUB SECTION G-03	27 OF 28 13 OF 15	5.00.00 1.03.00, 57	Provision for CO2 to Methanol in Singrauli STPP Stage-III 2 x 800 MW Project No space provision for CO2 to Methanol Generation Not Used	There are discrepancies in various referred documents regarding space provision for CO2 to Methanol (CO2 capture). In Part-B, Layout Requirements, the mentioned clause is indicated as 'Not Used' *(NTPC mentions space provisions in Cl. no. 1.03.00 (57) in various past and ongoing Tenders [viz. 2x800 MW Lara and 1x800 MW Sipat]*. Further, there is no space provision indicated in Tender Plot Plan for CO2 capture, H2 generation and Methanol Generation. Hence, Owner is requested to remove the mentioned clause in Part-A of tender specification.	Bidder to refer amendment no SG.8 in this regard

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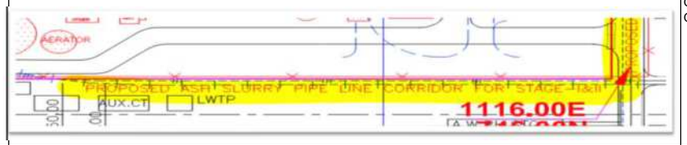
198	213	SECTION – VI, PART-E	`	--	--	General Layout Plan : 100 m wide evacuation line corridor	It is understood that the 100 m wide evacuation line corridor marked in General Layout Plan is not for the Transmission line in Bidder's scope and hence not applicable. NTPC to please confirm and remove the same from Plot Plan.	Confirmed
199	214	SECTION- VI, PART - B	SUB SECTION- G-03	1 of 15	1.01.02	c) Face of the buildings and facilities shall be located in such a way so as to have an offset of minimum 15 m with respect to center line of double lane road and 12 meter with respect to center line of single lane road.	Offset distance for building/facility from center line of road to face of the building may be compromise in some cases due to space constraint in the tender GLP. NTPC is requested to kindly allow the same on case to case basis.	Shall be reviewed and finalized during detailed engineering on case to case basis.
200	216	SECTION-VI, PART-E	GENERAL LAYOUT PLAN (DWG NO.1150-999-POC-F-001)			Rerouting of existing ash pipe line: 	Activities related to dismantling and re-routing of existing ash slurry pipe line (Stage-I & II) shall be in the scope of Owner. Owner is requested to confirm.	Confirmed
201	217	SECTION – VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	5 OF 76	1.01.01	CATEGORY-I GUARANTEES (ix) Unit Auxiliary power consumption (x) Station auxiliary power consumption	Bidder shall provide separate Auxiliary Power consumption guarantee for both the categories (i.e., Unit & Station auxiliaries) individually. However, for LD levy purpose shortfall in actual Auxiliary Power consumption in one of the categories, if any, shall be adjusted against benefit achieved in other category, if any. Please confirm acceptance.	Bidder's proposal is not acceptable. Bidder to comply with the specification requirements.
202	218	SECTION – VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	2 OF 76	1.00.01	Instruments for PG test and instruments for process control of similar applications are envisaged to be of same make and model having same accuracy level. However, instruments for PG test are also acceptable as per standard and proven practice of the contractor/OEM and in such case, instruments for process control shall be as per requirements specified in Part-B of technical specifications. Instruments to be used for PG test shall be additionally supplied over and above the instruments shown in tender P&IDs. PG test equipment being supplied, installed and commissioned for each unit, shall be retained by employer after completion of PG test. Control system loop tuning required to limit the variation of parameters during performance guarantee testing shall be completed prior to PG Test / initial operation. All PG test process parameters shall be made available in DDCMIS.	PG test shall be performed by using special test instruments required for PG test and shall be separate from the process instruments. High accuracy dataloggers shall be used to retrieve the data and the same shall be used for performance evaluation. Accordingly Bidder request owner to kindly modify the following clause inline with earlier NTPC Talcher project :- Instruments for PG test and instruments for process control of similar applications are envisaged to be of same make and ..... Control system loop tuning required to limit the variation of parameters during performance guarantee testing shall be completed prior to PG Test /initial operation. ~~All PG test process parameters shall be made available in DDCMIS.~~	Bidder's proposal is not acceptable. Bidder to comply with the specification requirements.
203	219	SECTION – VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	53 OF 76	2.02.02	No shutdown shall be allowed for installation of PG test instrument/ flow nozzle etc. Any advanced class instrument system such as those using electronic devices or mass flow technique shall be arranged by the contractor, if required. However, same shall be installed before start of initial operation of unit. For determination of primary flow to the turbine, a calibrated low Beta-ratio throat-tap nozzle assembly shall be installed permanently in condensate line prior to initial operation, same shall be also used for process control.	Bidder request owner to kindly modify the following clause inline with earlier tender of NTPC for Talcher project :- "No shutdown shall be allowed for installation of PG test instrument/ flow nozzle etc. Any advanced class instrument system such as those using electronic devices or mass flow technique shall be arranged by the contractor, if required. However, same shall be installed before start of initial operation of unit. For determination of primary flow to the turbine, a calibrated low Beta-ratio throat-tap nozzle assembly shall be installed permanently in condensate line prior to initial operation, ~~same shall be also used for process control.~~	Bidder's query regarding Singrauli Specification is not correct. Bidder to comply with the specification requirements.
204	220	SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	3 OF 40	3.1, p	Provenness criteria for critical equipment(s) and bought out items : p) Name of equipment : HP Bypass system Type of equipment : HP Bypass system for supercritical steam turbine generator sets Equipment rating : Capacity of each valve not less than 750 Ton/hr at 270 Kg/Cm2(abs) & 600 degC Main Steam pressure and temperature at Turbine inlet.	Bidder/Sub vendor should be allowed to meet the referred steam parameters & Flow requirement through multiple projects (i.e multiple/different project references can be considered for meeting individual parameters (i.e Pressure, Temperature & Flow) provenness). Please confirm acceptance.	Bidder's proposal is not acceptable. Bidder to comply with the specification requirements.
205	221	SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	4 OF 40	3.1, q	Provenness criteria for critical equipment(s) and bought out items: q) Name of equipment: LP Bypass system Type of equipment: LP Bypass system for steam turbine generator sets Equipment rating: Capacity of each valve not less than 750 Ton/hr at pressure corresponding to 100% TMCR condition reheat pressure (abs) & 600 degC reheat temperature at Turbine inlet.	Bidder/Sub vendor should be allowed to meet the referred steam parameters & Flow requirement through multiple projects (i.e. multiple/different project references can be considered for meeting individual parameters (i.e. Pressure, Temperature & Flow) provenness). Please confirm acceptance.	Bidder's proposal is not acceptable. Bidder to comply with the specification requirements.
206	222	SECTION - II (ITB)	-	43 OF 46	41.4	Any Bidder (including its Collaborator /Associate /DJU Partner/JV partner/Consortium Member/Assignee, wherever applicable) from a country which shares a land border with India will be eligible to bid in this tender only if bidder is registered with the Competent Authority as mentioned in Special Conditions of Contract (SCC).	Latest Government of India circulars related to "Restrictions on procurement from a Bidder of a country which shares a land border with India" to be followed. Please confirm acceptance.	Provisions of Bid document shall prevail.
207	223	Section – VI, part-A	SUB SECTION-VI MANDATORY SPARES	_	_	MANDATORY SPARES	Mandatory spares which are duplicated at different clauses in Mech/Elec/C&I sections, Bidder will consider the spare as per the section where higher qty is specified. Other sections shall be ignored for the same spares. Please confirm acceptance.	Bidder`s understanding is not correct. Bidder is requested to supply the mandatory spares as specified.

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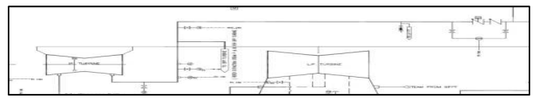
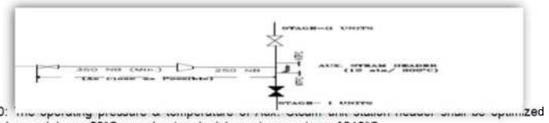
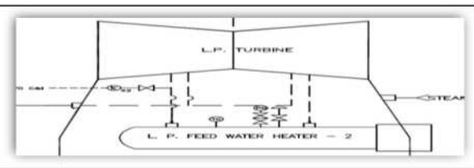
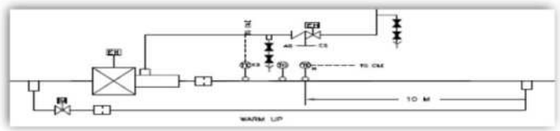
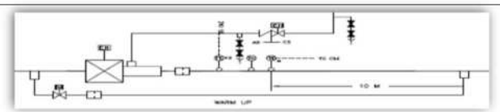
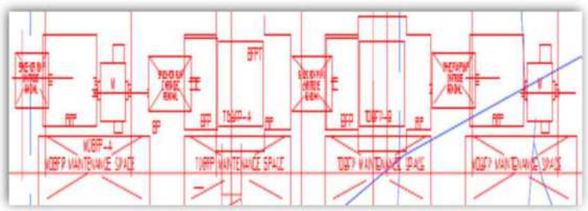
208	224	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES	5 of 32	17	HP control valve (Set of all internals required to complete one valve assembly except valve body) : 1 No of each type. (If Valves are similar then only one No)	Please clarify whether Bonnet to be included or it is excluding Bonnet.	Bonnet to be also provided.Bidder to comply with the specification requirements.
209	225	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES	5 of 32	18	HP control valve servomotor complete assembly : 1 No. of each type (If servomotors are similar then only one No)	Bare hydraulic actuator without Yoke and accessories will be offered against this clause. Please confirm acceptance.	Bidder's understanding is not correct. Bidder to please note that HP control valve servomotor complete assembly includes complete actuator & its yoke assembly along with directional valve (Proportional valve/Servo valve as applicable), trip solenoids, ATT solenoids and its position feedback transmitter, limit switches. Bidder to also refer amendment TG-1 in this regard.
210	226	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES	5 of 32	21	LP Bypass control valve (Set of all internals required to complete one valve assembly except valve body) : 1 No.	Please clarify whether Bonnet to be included or it is excluding Bonnet.	Bonnet to be also provided.Bidder to comply with the specification requirements.
211	227	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES	5 of 32	22	LP Bypass control valve servomotor complete assembly: 1 No.	Bare hydraulic actuator without Yoke and accessories will be offered against this clause. Please confirm acceptance.	Bidder's understanding is not correct. Bidder to please note that LP Bypass control valve servomotor complete assembly includes complete actuator & its yoke assembly along with directional valve (Proportional valve/Servo valve as applicable), fast opening/closing device (if applicable) and position feedback transmitter shall be supplied. Bidder to refer amendment no TG-1 in this regard.
212	228	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES	5 of 32	23	LP Bypass stop valve (Set of internals required to form one valve assembly except valve body) : 1 No.	Please clarify whether Bonnet to be included or it is excluding Bonnet.	Bonnet to be also provided. Bidder to comply with the specification requirements.
213	229	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES	5 of 32	24	LP Bypass stop valve servomotor complete assembly : 1 No.	Bare hydraulic actuator without Yoke and accessories will be offered against this clause. Please confirm acceptance.	Bidder's understanding is not correct. Bidder to please note that LP Bypass stop valve servomotor complete assembly includes complete actuator & its yoke assembly along with directional valve (Proportional valve/Servo valve as applicable), fast opening/closing device (if applicable) and position feedback transmitter. Bidder to refer amendment no TG-1 in this regard.
214	230	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES	6 of 32	29	Control fluid pump assembly including motor and complete coupling : 1 No.	Please clarify whether this spare is related to HPU of HP LP Bypass system pump-motor assembly or Main Turbine control fluid pump	Control fluid pump assembly including motor and complete coupling mentioned here is for Main Turbine governing oil supply system.Bidder to comply with the specification requirements.
215	231	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES	12 of 32	xxvii.)	Seal kit for Electrohydraulic actuators for HP and LP bypass system : 2 Sets of each	By pass system does it mean all valves in HP & LP i.e. HP & LP Steam control valve, LP steam stop valve, HP & LP spray control valve and HP spray stop valve. Please clarify.	The requirement against this clause is both for HP&LP Bypass system. Bidder has to provide seal kit for all electrohydraulic actuatotrs (Steam as well as spray valves) as per the quantity specified. Bidder to comply with the specification requirements.
216	232	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES	12 of 32	2 (ii)	Soft packing like gaskets/pressure seal/sealing ring, gland packing rings for HPSV, HPCV, HPBYPASS VALVE, HP BYPASS SPRAY STOP & CONTROL VALVE, IPSV, IPCV, LP BYPASS SV, LPBYPASS CV : 2 Sets for each kind of valve	What is the difference between HPCV and HP Bypass valve? Under rest of the clause when HP control valve was specified it was treated as HP bypass valve. Please clarify.	Bidder's understanding is not correct. HPCV means main turbine control valve. Bidder to comply with the specification requirements.
217	233	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES	25 of 32	5.00.00	PROCESS CONNECTION PIPING (FOR IMPULSE PIPING/TUBING, SAMPLING PIPING/TUBING AND AIR SUPPLY PIPING AS APPLICABLE)	Bidder understands that this requirement is not applicable to Tubing/ fitting coming on hydraulic actuators, Field Tubing and Fittings of Hydraulic Power Supply Units of HP-LP Bypass system. Please confirm acceptance.	Bidder's understanding is correct.
218	234	Section – VI, part-A	SUB SECTION-VI MANDATORY SPARES	5 of 32	26	HP Bypass Valve complete assembly : 1 no.	Bare stem valve excluding complete servomotor assembly will be offered against this clause. Please confirm acceptance.	Complete HP Bypass valve with all internals and valve body excluding servomotor/Actuator ,yoke assembly, controls and feedback transmitters to be supplied. Bidder to comply with the specification requirements.
219	235	Section – VI, part-A	SUB SECTION-VI MANDATORY SPARES	24 of 32	4.00.00 A (2)	a. Electro-Hydraulic Converter/Servo unit/proportional valve for LPBP b. Blocking unit for LPBP (as applicable) c. Position feedback transmitter for LPBP d. Positioner for LPBP 1 set	Please clarify LP BP means only LP bypass stop & control valve or it is inclusive of LP bypass spray control valve also.	LP BP means complete set of valves in LP Bypass system including stop valve, control valve & spray control valves.
220	236	Section – VI, part-A	SUB SECTION-VI MANDATORY SPARES	24 of 32	4.00.00 A (3)	a. Electro-Hydraulic Converter/Servo unit/proportional valve for HPBP b. Blocking unit for HPBP (as applicable) c. Position feedback transmitter for HPBP d. Positioner for HPBP 1 set	Please clarify HP BP means only HP bypass control valve or it is inclusive of HP BP spray control valve & HP BP spray block valve.	HP BP means complete set of valves in HP Bypass system including HPBP control valve, spray block & control valves.
221	237	Section – VI, part-A	SUB SECTION-VI MANDATORY SPARES	25 of 32	4.00.00 (F)	(i) Solenoid valves in the Electrohydraulic governing & protection circuit of main turbines, BFP turbines, HPBP & LPBP : 10 % or 1 no. of each type and model whichever is more	Please clarify HP/LP BP means only HP/LP bypass control valve or inclusive of other valves like HP BP spray control valve, HP BP spray block valve & LP bypass spray control valve also.	Bidder's understanding is not correct. Quantity envisaged is 10% of total quantity of each type of solenoids for complete HPBP/LPBP system being supplied in this package.

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
222	238	Section – VI, part-A	SUB SECTION-VI MANDATORY SPARES	8 of 32	VI (1)	Complete drip pump assembly with coupling sets (Without Motor) : 1 no	Bare pump assembly without canister will be offered against this clause. Please confirm acceptance.	Cannister is not required, however coupling requirement is clear and shall be provided.
223	239	Section – VI, part-A	SUB SECTION-VI MANDATORY SPARES	8 of 32	V (5&6)	DRIVE TURBINE OF BFP : Auxiliary Control valve complete assembly : 1 No. Auxiliary control valve servomotor complete assembly : 1 No.	Not applicable in our design & also no equivalent spare has been envisaged. Please confirm acceptance.	In case the specified item is not applicable, equivalent mandatory spares pertaining to the offered design shall be supplied by the bidder.
224	240	Section – VI, part-B	SUB SECTION-B-02, Motors	3 of 4	7.10.00	3.3/6.6 KV motors shall be offered with dust tight phase segregated double walled (metallic as well as insulated barrier) Terminal box.	Alternately Elastimold type Terminal box should also be accepted as per OEM standard proven practice. The same was accepted in earlier tender of NTPC for Talcher 2x660 MW project. Please confirm acceptance.	This shall be finalised during the detailed engineering.
225	241	Technical Specification Section - VI, Part B	Sub-Section A-01 Equipment Sizing Criteria	37 of 92	2.03.07	Maximum oxygen content shall be 0.005 cc/litre at deaerator outlet measured as per ASTM D5543-09 or Indigo Carmine method at all operating conditions.	All super critical units operated in oxygenated treatment mode and hence guarantee for maximum oxygen content in feed water system is not applicable for super critical sets.	Sometimes there may be requirement of AVT operation during unit running also. In case of oxygenated treatment mode oxygen content may be more but when unit will run in AVT mode this should be less than 0.005 cc/lit. So dearator should be capable for maintaining maximum oxygen content of 0.005 cc/lit at deaerator outlet.Bidder to comply specification requirement.
226	242	Technical Specification Section - VI, Part A	Sub-Section, IV Functional Guarantees & Liquidated Damages	4 of 76 8/9 of 76	1.01.01 1.01.03	ii) Unit Heat Rate at 55% TMCR load Guaranteed Unit Heat rate in kcal/kWhr under turbine throttle main steam pressure of 150 Kg/cm2 (abs) and rated Main Steam and Reheat Steam temperature at 77mmHg(abs) condenser pressure with zero make up at 440 MW load (i.e. 55% of rated load) . iii) Turbine Cycle Heat rate in kcal/kWhr under turbine throttle main steam pressure of 150 Kg/cm2 (abs) and turbine throttle main steam temperature / reheat steam temp. at turbine inlet of 600 deg C / 600 to 610 deg C (as selected) at 77 mmHg(abs) Condenser pressure with zero make up at 440 MW unit load (i.e. 55 % of rated load) with one TDBFP in operation.	Bidder understand that for 55% TMCR Heat rate guarantee, One (1) TDBFP shall be in operation. Please confirm.	Bidder understanding is correct. Bidder to further refer clause No. 1.01.03/(iii) of the functional guarantee chapter/sub-section-IV/Part-A.
227	243	Technical Specification Section - VI, Part B	Sub-Section, G-01 Operating Capability Of Plant Sub-Section, A-01 Equipment Sizing Criteria	1 of 4 43 of 92	1.01.00 2.08.00	(j) TG output for house load operation may be considered 50 MW atleast for 1 hours. (d) HP-LP bypass operation under rated steam conditions with bypass valve open to full capacity and turbine on house load (5% of rated load).	As per Sub-Section-G-01/Clause 1.01.00 (j), Houseload operation is mentioned with 50 MW. However, as per Sub-Section-A-01/Clause 2.08.00 (d), it is mentioned as "5% of rated load" which is 40 MW. Please confirm correct Houseload power output.	Bidder to refer amendment TG-2 in this regard
228	244	Technical Specification Section - VI, Part E Tender Drawings	Dwg. No.: XXXX-999-POM-A-007 (Extraction Steam P&ID for Heaters)	-	-		As per tender P&ID, extraction steam tapping for BFPT prior to power operated NRV. Bidder proposes to take extraction steam tapping for BFPT after power operated NRV as per their standard proven practice as followed in past executed NTPC projects. Please confirm acceptance.	Specification requirements are clear. However, Bidder proposal regarding extraction steam tapping point shall be finalised during detail engineering.Bidder to comply with the specification requirements.
229	245	Technical Specification Section - VI, Part A	Sub-Section, IIA-06 Turbine Generator & Auxiliaries	6 of 10	7.03.00	Two (2) steam turbine drives for the turbine driven boiler feed pump per unit complete with ESV, control valves, non return valves for single admission drives, permanent & temporary steam strainers.....	Bidder propose permanent strainer for steam turbine drives for the turbine driven boiler feed pumps in place of temporary strainer for better steam quality management as per turbine drive manufacturer recommendation. Please accept the same.	In addition to permanent strainer, additional strainer shall be provided. Specification requirement is clear, Bidder to comply with the specification requirements.
230	246	Technical Specification Section - VI, Part A	Sub-Section, IIA-06 Turbine Generator & Auxiliaries	6/7 of 10	7.03.00	Two (2) steam turbine drives for the turbine driven boiler feed pump per unit complete with ESV, control valves, non return valves for single admission drives, permanent & temporary steam strainers, preferably hydraulic turning gear, hand barring device, atmospheric relief diaphragm and it's vent piping, all interconnecting piping, foundation base plates, integral gland seal system, complete lube oil and control oil system including oil tank, oil coolers, duplex oil filters, 2x100% vapour exhausters, 100% capacity centrifuge for each steam turbine driven pump.....	Bidder propose 1x100% capacity portable centrifuge common for two steam turbine drives / turbine driven boiler feed pumps. This is based on the past executed projects and has been accepted in supercritical projects including NTPC & other state electricity board projects. Please confirm acceptance.	Bidder's proposal is not acceptable. Bidder to comply with the specification requirements.
231	247	Technical Specification Section - VI, Part B	Sub-Section-A-08 Power Cycle Piping	1 of 20	1.02.00	Bends used in Piping of BFP-T Exhaust to Condenser should be of Alloy Steel of A 691 Grade 2-¼ Cr class 21 / 22 or A-691 grade 1-¼ Cr Class 21 / 22	Owner to please note that Material of Bends used in Piping of BFP-T Exhaust to Condenser shall be same as that of parent pipe. Please accept the same.	Bidder's Proposal is not acceptable. Bidder to comply with the Technical specification requirements.
232	248	Technical Specification Section - VI, Part B	Sub-Section-A-07 Steam Turbine & Auxiliaries System	16 of 25	6.05.09 (d)	In case bidder offer extraction steam to BFPT arrangement as per BOX-B of tender P&ID of extraction steam to BFPT, then the pressure regulating valves in the CRH and Auxiliary steam line shall necessarily be electro hydraulically operated.	As per tender P&ID, separate electro hydraulically operated control valves in auxiliary steam and CRH steam line to BFPT is shown. Bidder proposes to supply common electro-hydraulic control valve in Auxiliary steam and CRH steam line to BFPT as per OEM standard and proven practice followed in past executed NTPC projects and other state board projects. Owner is requested to approve the same.	Bidder proposal is not acceptable. Actuators for BFPT shall be provided as per scheme given in Tender drawing. Bidder to comply with the specification requirements.

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
233	249	Technical Specification Section - VI, Part B Technical Specification Section - VI, Part E Tender Drawings Technical Specification Section - VI, Part A	Sub-Section-A-02 Steam Generator & Auxiliaries including ESP Dwg. No.: XXXX-999-POM-A-006 (Auxiliary Steam System P&ID) Sub-Section - III Terminal Points & Exclusions	50 of 67 - 1 of 3	16.01.01 - 1.01.01	The operating parameters of the aux. steam header(s) shall be optimized by the bidder maintaining a minimum 50 degC superheat and minimum temperature of 310°C.....Further, the Bidder shall provide an interconnection arrangement at station header with High Temperature Aux. Steam station header of existing stage-I (2x800 MW) units (Approx. length of interconnecting line is about 2250 meters). Auxiliary steam when sourced through this interconnection shall be available at a maximum rate of 60 T/hr with parameters 16 ata/ 310°C at Stage-I TP. Bidder shall consider the same for start-up procedures during initial commissioning.  Note 10: The operating pressure & temperature of Aux. Steam unit Station Header shall be optimized by the bidder maintaining a minimum 50°C superheat and minimum temperature of 310°C. TP for Auxiliary Steam interconnection for Auxiliary Steam Station Header with existing Stage-II with motorized isolation valve and NRV as indicated in the tender drg.	In absence of clarity between Cl. No. 16.01.01 and Auxiliary Steam System P&ID (Dwg. No.: XXXX-999-POM-A-006), Owner is requested to connect the Stage-I & Stage-II header as shown in the Auxiliary Steam System P&ID (Dwg. No.: XXXX-999-POM-A-006) and provide a single Terminal Point location (i.e. co-ordinate) with elevation at the existing aux. steam header for the further extension of the station aux. steam header to the Stage-III header as these inputs are not available in Cl. No. 1.01.01, Sec-VI, Part-A. Bidder understands that connection of Stage-I & Stage-II aux. steam header is not in the Bidder's scope of work. Owner is requested to confirm and amend the clause 16.01.01 accordingly. Further, in the tender drawing of Auxiliary Steam System, it is mentioned in Note-10, the minimum temperature to be maintained in the station aux. steam header as 310°C. Therefore, considering the temperature requirements of Turbine & Boiler OEM, Owner is requested to provide the steam parameters at the TP as 16 ata / 320°C. In addition to above, allocation of auxiliary steam as 60 T/Hr is very less for 800 MW unit. Owner is requested to enhance the requirement by another 30 T/Hr so that uninterrupted aux steam supply will be available for different consumers of Boiler and Turbine during trouble-free operation of various start-up cases.	Bidder to refer amendment in this regard. Only 40 TPH of aux steam is available from Stage-II.For any extra steam requirements bidder shall make its own arrangement. Further, Bidder shall comply all the specification requirement.Specification is clear in this regard.
234	250	Technical Specification Section - VI, Part B	Sub-Section-G-02 Unit Operating Philosophy	3 of 5	8.2	Run Back Operation: In case when both the TDBFP's are running MDBFP shall be kept in Hot standby mode. In case when one TDBFP trips, runback shall be initiated to 75% Load.	As per OEM Feed water to fuel firing ratio is an important parameter to be maintained in OTSC boilers. It is extremely important that minimum required waterwall flow to be maintained at all times when firing is ON in the boiler to prevent. Further, single TDBFP operation capability will be checked during detail engineering based OEM pump characteristic envelope. Therefore runback percentage with single TDBFP operation will be decided during detail engineering.	Specification requirements are clear. However, Bidder proposal regarding runback shall be finalised during detail engineering.
235	251	Technical Specification Section - VI, Part B	Sub-Section-G-02 Unit Operating Philosophy	4 of 5	8.2	No BFP trip will be initiated on Separator level high-high, BFP shall be run in recirculation.	BFP trip is a safety protocol and deviation is not acceptable as per the bidders' operational philosophy. This clause may be modified or deleted as stated below: "Bidder propose that BFP recirculation valve shall be opened at separator level high and BFP to be tripped at separator level high-high ".	Bidder proposal regarding recirculation valve opening at separator level high will be finalised during detail engineeering. However, bidder proposal is not acceptable regarding BFP tripping at separator level high high.
236	252	Technical Specification Section - VI, Part B	Sub-Section-E-12 Boiler Feed Pumps	2 of 4	1.00.00 (1)	Performance Tests on each Boiler Feed Pump to determine the characteristic curve (Head, Capacity, Efficiency & Power) at Design Speed and to ensure compliance with design requirements specified in the specification. Measurement shall be carried out at 10%, 25%, 50%, 65%,80%, 100% & 125% of Design Flow with loop water at design temperature. Performance Test at other specified Conditions shall be carried out on all Boiler Feed Pumps at their respective Speeds at design temperature.	Many manufacturers does not offers / recommend to conduct performance test below recommended flow, therefore performance tests at 10%, 25% flow will not be done. It's more like pump running in dry conditions which may damage the pump internals. Performance test is performed at reduced speed and temperature meeting HIS guidelines and Note 5 of Sub Section E-12.	Bidder understanding is not correct as Detailed test requirement is discussed & finalised during detail engg.Bidder to meet specification requirements.
237	253	Technical Specification Section - VI, Part B	Sub-Section-E-12 Boiler Feed Pumps Sub-Section-E-10 Condensate Extraction Pumps	3 of 4 2 of 2	Note (1) Note (2)	Shop tests shall be conducted with soften Quality Water.	Water quality used for shop tests shall be as per approved manufacturer standard practice.	Bidder understanding is not correct as Detailed test requirement is discussed & finalised during detail engg.Bidder to meet specification requirements.
238	254	Technical Specification Section - VI, Part B	Sub-Section A-07 Steam Turbine & Auxiliaries System	11 of 25	5.02.00 (e)	Hardened 400 series stainless steel impingement plates for flashed drain inlet from HP heaters, BFP recirculation, boiler start-up drains etc.	As per bidder's experience of super critical plants, Hardened 304 series stainless steel impingement plates are also suitable for this purpose. Owner is requested to amend the clause as "Hardened 400 series or 304 series stainless steel impingement plates"	Hardened 400 series stainless steel is better material for specified requirements. Bidder proposal is not acceptable.Bidder to comply specification requirement.
239	255	Technical Specification Section - VI, Part B	Sub-Section A-07 Steam Turbine & Auxiliaries System	11 of 25	5.02.00 (f)	All water spray valves, splash plates, trays, vent condenser and other elements in contact with undeaerated water or non-condensable gases shall be of SS-304 or SS-410.	Customer is requested to modify the clause as mentioned below: "Elements in contact with undeaerated water or non-condensable gases shall be of SS304 material / SS304 lining material". This is in line with the Deaerators supplied for all 500 MW and above projects.	SS304 lining is not acceptable.Bidder to comply specification requirement.
240	256	Technical Specification Section - VI, Part B Technical Specification Section - VI, Part B	Sub-Section-A-01 Equipment Sizing Criteria Sub-Section-G-05, Standard Type Test Procedure	41 of 92 2 of 38	2.06.04 1.03.00	(b) First stage suction specific speed: Not in excess of 10000 (US units) and 9500 US units based on 3% head break down of that impeller of main pump and booster pump respectively at their respective design point. Acceptance Criteria : 2. NPSH(R) (3% head drop) at Design point shall not be less than the NPSH(R) determined by the suction specific of 8000 US unit and 9500 US unit for main pump and booster pump respectively calculated with the flow of Design point with Inter-stage closed.	Due to mismatch between Cl. No. 1.03.00 and 2.06.04, Bidder propose to consider suction specific speed (NPSHR at 3% head drop) of 10000 (US units) for main pump (BFP) at design point. Kindly confirm acceptance.	Bidder to refer amendment TG-3 in this regard
241	257	Technical Specification Section - VI, Part B	Sub-Section A-07 Steam Turbine & Auxiliaries System	24 of 25	Annexure-I	Note (6): In the sliding pressure mode of operation the throttle pressure will slide down from rated pressure to a value corresponding to 40% of rated pressure. For computing heat balance for sliding pressure mode of operation at 80%, 70%, 60%, 50% & 30% of Unit rated load, rated temperature shall be used for main steam and hot reheat steam respectively.	For loads below 50% of rated load the main steam temperature and reheat steam temperature shall be fine tuned based on Boiler OEM proven practice. Please confirm acceptance,	Bidder to refer complete Note (6) ANNEXURE-I Sub-section A-07, Steam Turbine and Auxiliaries System (Page 23 of 25). Bidder to comply with the specification requirements.

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
242	258	Technical Specification Section - VI, Part E Tender Drawings	Dwg. No.: XXXX-999-POM-A-007 (Extraction Steam P&ID for Heaters)	-	-		As per tender P&ID, PT connection has been shown for the Extraction lines to LPH#1 & 2. Owner to please note that these are neck mounted heaters mounter in the condenser neck. Therefore, it is not feasible to install PT in the extraction lines to LPH#1 & 2. Please confirm acceptance.	Bidder to provide the instruments as per tender P&ID and comply with the specification requirements.
243	259	Technical Specification Section - VI, Part E Tender Drawings	Dwg. No.: XXXX-999-POM-A-005 (HP & LP Bypass System P&ID)	-	-		As per tender P&ID, Warm-up arrangement has been shown. Owner to please note that Warm-up arrangement for HP/LP Bypass Valves shall be as per Bypass Valves OEM recommendation. Please confirm acceptance.	Bidder to refer NOTE 3 in Referred Tender drwaing. Bidder to comply with the specification requirements.
244	260	Technical Specification Section - VI, Part B	Sub-Section-A-01 Equipment Sizing Criteria	37 of 92	2.03.06 (f)	Provide sentinel relief valve on tube side. Relief valve on shell side sized to pass flow from two ruptured tubes (four open ends) or 10% of water flow…….at 10% accumulation whichever is higher	Owner to please note that Shell side relief valve shall be sized for 10% of the feed water flow, or Flow based on the clean rupture of one heater tube resulting in two (2) open ends discharging , whichever is greater, at 10% accumulation as per criteria stipulated in HEI. Please confirm acceptance.	Bidder's proposal is not acceptable, as specified requirement is over and above code. Bidder to comply with the specification requirements.
245	261	Technical Specification Section - VI, Part B	Sub-Section-A-01 Equipment Sizing Criteria	36 of 92	2.03.04	Each of the LP heaters and drain cooler shall be capable of handling 110% of the design condensate flow from 2x50% condensate extraction pumps without undue vibration and other deleterious effects. Each of HP heaters shall be capable of handling 110% of the design flow from one BFP without undue vibration and other deleterious effects.	Owner to please note that LP & HP heaters needs to be designed to handle design flow of CEP & BFP respectively. As design flow of BFP & CEP has sufficient margin on actual requirement hence additional 10% margin over and above the design flow is not required. Please provide acceptance on the same.	Specification requirement is clear in this regard, heaters shall be capable of handling 110% of design flow. Bidder to comply with the specification requirements.
246	262	Technical Specification Section - VI, Part E Tender Drawings	Dwg. No.: XXXX-999-POM-A-005 (HP & LP Bypass System P&ID)	-	-		Bidder would like to clarify that breakdown orifice is not required in HP bypass downstream piping as per bidder's standard practice followed in all executed projects. Hence, the same will not be considered as per bidder's standard practice. Please confirm acceptance.	Bidder to refer NOTE 3 in Referred Tender drwaing. Bidder to comply with the specification requirements.
247	263	Technical Specification Section - VI, Part B Technical Specification Section - VI, Part B	Sub-Section A-01 Equipment Sizing Criteria Sub-Section A-08 Power Cycle Piping	40 of 92 2 of 20	2.06.01 (i) 1.03.00 (d)	4) Emergency point (TDBFP) Two turbine driven boiler feed pumps to be capable of generating the discharge pressure not less than steam generator highest safety valve set pressure corresponding to 105% of boiler maximum continuous rating (at 0% make up). The design pressure of complete feed water discharge piping system downstream FRS first isolation valve shall not be less than maximum of the following: (i) 1.05 times the maximum operating pressure (including BMCR condition) at BFP discharge. (ii) Pressure required at BFP discharge under lowest spring-loaded safety valve on boiler separator blowing condition. (iii) Design pressure as required by IBR / ASME.	Attached is Interpretation to PG-61.5, Feed Water Supply for a Steam Generator With No Fixed Water Level. This was published in ASME website in July 2014. PG-61.5 Per interpretation 1-13-15, it is not required to size the BFP as per PG-61.5. Further as per Cl. No. 1.03.00 (d) of Power Cycle piping, design pressure for FW piping downstream FRS first isolation valve shall be selected for lowest safety valve set pressure at BMCR flow. Hence, Bidder would like to consider the emergency point for BFP capability as flow corresponding to BMCR condition and head corresponding to maximum expected pressure at economizer inlet or corresponding to lowest safety safety valve set pressure which ever is maximum. Please confirm acceptance.	Bidder's proposal is not acceptable. Bidder to comply with the specification requirements.
248	264	Technical Specification Section - VI, Part B	Sub-Section A-01 Equipment Sizing Criteria	3 of 92	1.04.00	(ii) Start-up: The steam generator shall also be capable of start-up without HP-LP by-pass system in service.	Owner to please note that as per OEM standard start-up procedure for supercritical plant, it is only possible to start the boiler with the HP-LP bypass valve in operation. Please confirm acceptance.	The capability is required based on the operational experience of employer. Bidder to make necessary modifications to their philosophy to comply to the technical specification requirement.
249	265	Technical Specification Section - VI, Part B Technical Specification Section - VI Part E - Tender Drawings	Sub-Section A-01 Equipment Sizing Criteria General Layout Plan	40 of 92 -	2.06.01 -	ii) Motor driven BFP: 1) 1x30% MDBFP shall meet all the above conditions (i.e. (i) (1) to (5) above) except that the flow of 1x30% Motor driven Boiler feed pump shall be 30% of the total flow arrived for 2x50% TDBFPs. 	Owner to please note that in Cl. No. 2.06.01, Sec-VI, Part-B as well as in tender drawing of Feedwater System P&ID (8024-999-POM-A-010), the BFP configuration for each unit is mentioned as: a. 1 x 30% MDBFP b. 2 x 50% TDBFP However, in the General Layout Plan (Dwg. No.: 1150-999-POC-F-001, Rev A), four (04) nos. of Boiler feed Pumps (02 nos. MDBFP & 02 nos. TDBFP) has been shown. Bidder understands that the BFP configuration for each unit as mentioned in Cl. No. 2.06.01, Sec-VI, Part-B as well as in tender drawing of Feedwater System P&ID (8024-999-POM-A-010) shall be followed and no space provision for future MDBFP shall be envisaged in the TG Building. Please confirm our understanding.	Bidders understanding is correct.

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
250	266	Technical Specification Section - VI, Part B	Sub-Section A-07 STEAM TURBINE AND AUXILIARIES SYSTEM	15 of 25	6.05.07	Design of drive turbines generally in accordance with API 612 and 614 and testing in accordance with ASME PTC-6.	American Petroleum Institute (API) is usually applicable for oil & gas industries & same is not applicable for Power projects. Hence API will not be considered for this project for any equipment design. Please confirm acceptance. Accordingly Bidder proposes to design BFP drive turbine as per IEC 45 / as per the OEM standard proven practice. Please confirm acceptance. Further, Bidder would like to inform that a separate PG test as per PTC-6 is not envisaged exclusively for BFP drive turbine as the same is part of overall PG test done for the STG. Owner is requested to confirm the acceptance.	Bidder's proposal for Drive Turbine design code as IEC 45 is not acceptable. Bidder to comply with the specification requirements.
251	267	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	7 of 92	1.05.02 (e)	Austenitic stainless steel, SA- 213 UNS S30432 Shot Peened, or approved equivalent.	Please note that the SA-213 UNS S30432 shot peened material will be used at SH and final RH outlet where the high steam temperature is experienced. The length (straight tube) of the shot peened SA-213 UNS S30432 will be decided by bidder during detail engineering stage based on bidder experience. NTPC may note that the shot peened tube loses its properties once it is undergone with the manufacturing process (Bending). NTPC to kindly confirm.	The criteria for material selection for SG components is based on Design Metal Temperature. For Design metal temperatures Upto & above 610 degree Celcius Austenitic stainless steel, SA- 213 UNS S30432 Shot Peened, TP347H FG or approved equivalent is specified considering excursions and exfoliation issues. Bidder to provide the material in line with the design temperature criteria specified. This is applicable for the entire section based on the specified crtieria. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
252	268	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	5 of 92	1.05.01 Note	Minimum number of coal pulverisers to be provided for each steam generator shall not be less than Eight (8)	Bidder would request that the Minimum no of coal pulverisers shall be as per OEM standard proven design.	Bidder's proposal is not acceptable. The minimum number of mills has been specified considering the acceptable level of mill redundancy requirements, reserve margin in each mill and the loss in load due to outage of one mill. Bidder to comply technical specification requirement.
253	269	SECTION-VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	13 of 67	7.01.01 (3)	2 Meters or maximum soot blowing radius, whichever is lower. Bidder can also provide the higher depth limited to 2.5 m also, only if it's a bidder's proven practice. References shall be provided in support of the same. However it will be limited to maximum soot blower radius.	Bidder understand this clause and technical requirement is also applicable to Economiser also, i.e. 2.5 depth as per bidders proven practise.	The specified requirements are applicable to the heat transfer surfaces against the given clause. For economiser, bidder to comply with the specification requirements.
254	270	SECTION-VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	14 of 67	7.01.01 (10)	Space Provision Keep provision of space for atleast 20% addition of additional economizer and 10% for the reheater surfaces in future. The surface provisioning shall be flue gas upstream section of the economizer. Structure/hanger design shall be suitable for loads due to these additional surfaces (filled with water) also.	NTPC is requested to note that Bidder has achieved the rated RH outlet temperature in all previous installation. Moreover as per bidder design RH temperature is control / achieved by gas biasing damper. Hence there will not be any issue to achieve the rated RH temperature. The requirement of RH additional surface is not applicable for bidders design. NTPC is requested to confirm acceptance.	The requirement of space provision for additional heating surfaces has been specified based on the performance issues faced in the recent units, and also to cater to any future requirements due to variation of fuel characteristics, change in operation regime and degradation of heat pickup surfaces. Bidder to comply technical specification requirement.
255	271	SECTION-VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	18 of 67	9.01.03	Heating Elements b) Hot end -- Made of carbon steel minimum 0.8 mm thick.	Bidder would request this clause to be modified as follows - b) Hot / Intermediate end -- Made of carbon steel minimum 0.8mm thick.	Bidder to refer amendment at SG.22 in this regard.
256	272	SECTION-VI, PART-E	9586-001-POM-A-019	-	C4-C5	Motor operated valve upstream of control valve at flash tank inlet	Bidder would like to clarify that the water separator drain control valve is critical for boiler start up system. Warm up connection is required for instant operation of valve during plant operation. Since the control valve is shown at down stream of the motor operated isolation valve, proper warm up can not be provided to the control valve. Hence, bidder proposed the motor operated valve will be provided at down stream of the control valve instead of upstream as per tender P&ID.	Detailed aspects w.r.t. the valve location shall be reviewed during detail engineering based on the selected specific equipment/sub-system.
257	275	SECTION-VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	5 of 76 8 of 76	1.01.01 (xiii) 1.01.02 (xiii)	LD for 0.1% increase in APH Leakage against the shortfall (as per part-B guarantee condition description). LD for 0.1% increase in APH Leakage (as per part-B guarantee condition description)	NTPC is requested to note that as per contract, the boiler efficiency will be calculated as per EN_12952-15-Acceptance tests which include the air heater leakage. It means that LD will be applicable twice for boiler efficiency (plant heat rate) as well as separately for APH leakage. Hence, we request NTPC to remove the APH leakage from Category-I guarantee and remove the LD.	APH Leakage is a critical requirement for Air Preheater performance. Therefore, Category-I guarantee has been specified to ensure minimum air preheater leakage. Bidder to comply technical specification requirement.
258	276	SECTION-VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	7 of 76	1.01.02 (v)	Coal Pulveriser Wear Parts Warranty Life of Coal Pulveriser wear parts in hours of operation	Bidder would like to clarify in case of Mills wear measurement test- Since 6 mills are mostly running, top & bottom mills running hours criteria is not met even after 3 years of Plant operation. Hence for this case- suitable sunset clause to be included such as- a. If out of 8 Mills- 4 Mills wear measurement test criteria achieved , then other 4 mills wear test to be deemed completed. OR b. Mill wear measurement test also to be inline with Mill Capacity test i.e., only 4 mills out of 8 mills after completion of required operating hours. Please confirm.	Number of mills are dependent on coal quality and unit load. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
259	277	SECTION-VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	2 of 76	1.00.01 (i) 2	For Performance / Acceptance tests other than those identified at 1 above: After the conductance of Performance test, the contractor shall submit the test evaluation report of Performance test results to Employer promptly but not later than 7 (seven) days from the date of conductance of Performance test. However, preliminary test reports shall be submitted to the Employer after completing each test run.	Bidder would like to inform that since the coal and ash analysis is in customer scope, test report shall be submitted to customer after 7 days of receipt of this report.	The coal and ash analysis is carried out at site on regular basis and is promptly available. Sufficient time is available with the bidder to submit PG test report after conductance of PG Test. Bidder to comply technical specification requirement.

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
260	278	SECTION- VI, PART - B	SUB SECTION- G-04 STANDARD PG TEST PROCEDURE	229 of 229	-	1) PG test should be done at design coal GCV, however for conductance of PG test coal GCV variance can be allowed from -10% to +5% of design coal. 2) Formula for applying correction shall be as per BSEN 12952-15 (2003).	As per bidder understanding the GCV variation given here are for conductance of PG test. However, any correction due to coal analysis shall be as per formula / value indicated in the BS EN 12952-15 (2003) as specified in the tender specification.	The specified criteria of GCV variation has been given in the referred clause are for conductance of PG test. Corrections due to variation in the parameters as specified in BS EN 12952-15 (2003) shall be applicable. The specification requirements are clear in this regard. Bidder to comply technical specification requirement.
261	279	SECTION- VI, PART - B	SUB SECTION- G-04 STANDARD PG TEST PROCEDURE	229 of 229	-	3) PG test to be done irrespective of any shortfall from rated parameters if it is attributed to design issues.	Bidder would like to know the requirement of this condition for conductance of PG test. As per bidder's understanding, the shortfall from rated parameters will have negative impact on the plant heat rate and hence, PG test conductance will not be suitable in such conditions. NTPC is requested to further clarify.	The requirement is intended to complete the PG test as per the scheduled time.
262	280	SECTION- VI, PART - B	SUB SECTION- G-04 STANDARD PG TEST PROCEDURE	229 of 229	-	Penthouse maximum & minimum MTM temperature difference should be within 40 degC. Necessary combustion tuning shall be done to ensure the same.	NTPC to kindly clarify requirement of this clause and purpose of same in PG Test Procedure.	The requirement is intended to optimize the performance and contain the temperature variations.
263	281	SECTION-VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	16 of 67	8.02.00 (d)	Supported by steam or water cooled hanger tubes forming part of Steam circuit with hanger tubes designed for a minimum of 2 times the calculated load so as not to cause any dislocation/damage to the tube banks/setting. Necessary calculations in support of this shall be furnished by the bidder. Structural type hanger support will not be acceptable.	NTPC is requested to note that the economiser support by steam or water cooled hanger tubes will be new supporting arrangement for bidder as compare to the previous installation. Bidder would like to clarify once again that Economiser coils are supported by structural arrangement as per proprietary and proven standard design, which will not interfere the normal operation and maintenance of the boiler. Further bidder confirms that the structural support arrangement shall be designed taking care of erosion problems for fly ash. Further the supporting arrangement shall be designed for a minimum of two times the calculated load so as not to cause any dislocation/ damage to tube bank / sections. Hence, we request NTPC to accept structural type hanger support also.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
264	282	SECTION-VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	12 of 67	6.04.00	A CFD and FEM analysis to conform to specified cyclic requirements shall be carried out and furnished by the contractor along with the pump data sheet.	Bidder would like to inform that CFD / FEM analysis will be conducted to conform to specified cyclic requirements as applicable to BCP.	Bidder's proposal is not acceptable. CFD and FEM analysis have different functions and are required to be carried out to ensure the desired performance of BCP due to cyclic loading. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
265	283	SECTION-VI, PART-B	SUB-SECTION-A-22 MILL REJECT HANDLING SYSTEM	2 of 3	2.03.00 (7)	Tensioning arrangement. Hydraulic/pneumatic	Bidder would request to update this clause as per following Tensioning arrangement. Hydraulic/pneumatic or **as per OEM standard and proven practice.**	**Bidder's proposal is not acceptable. Bidder to provide tensioning arrangment in line with tech spec**
266	284	SECTION-VI, PART-B	SUB-SECTION-A-22 MILL REJECT HANDLING SYSTEM	2 of 3	2.03.00 (12)	Reliable and proven hydraulic/pneumatic auto take up arrangements, with facility of adjustment of tension. The tension assembly shall be designed to absorb any momentary shock loading.	Bidder would request to update this clause as per following: Reliable and proven hydraulic/pneumatic auto take up arrangements with facility of adjustment of tension **or as per OEM standard and proven Tensioning Arrangement…..**	Bidder's proposal is not acceptable
267	285	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	11 0f 92	1.05.06.01	Rotational speed for drive selection 1 r.p.m. or actual offered whichever is higher	Bidder would request that RAPH speed will be decided by OEM as per standard design. NTPC to kindly confirm.	The minimum rpm of the APH has been specified for drive selection which will be optimized at site through VFD based on the actual site conditions and APH performance. The employer intends to have the flexibility of setting up the rotational speed upto 1 rpm or actual offered whichever is higher, based on the actual site conditions and APH performance throught the life of the plant. Hence the same has been specified. Bidder to comply technical specification requirement.
268	286	SECTION-VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	29 of 67	10.07.13	2 x 100% Scanner Air Fans for all the scanners of one Steam generator unit shall be provided preferably at firing floor and away from Economiser Hopper ash evacuation system to avoid any ash ingress in scanner air fan system.	The scanner air fans shall be located at coal feeder floor as per previous projects with NTPC.	The location of scanner air fan has been specified to avoid any dust ingress. Specification is clear in this regard and Bidder to comply with the specification requirements. Further the exact location details shall be discussed during detail engineering in line with the specifications requirements.
269	287	SECTION-VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	57 of 67	22.01.01	Full range and full scale performance testing shall be conducted at shop on one number each of the following Fans as per BS 848-1:2007 / BS EN ISO 5801:2008.	Bidder would request for modification of the clause as per below. Full range and full-scale performance testing shall be conducted at shop on one number each of the following Fans as per BS 848-1:2007 or as per latest revision / BS EN ISO 5801:2008 or as per latest revision.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
270	288	SECTION-VI, PART-E	9586-001-POM-A018	H-9, H-8	-	Suction for emergency air from atmosphere of Scanner Cooling Fan shown after Duplex Air Filter	Bidder would like to clarify that Suction for emergency air from atmosphere shall be before Duplex Air Filter. As provided in previous executed NTPC projects.	The specific details shall be discussed during detail engineering in line with the specifications requirements.
271	289	SECTION-VI, PART-B	SUB SECTION-A-08 Power Cycle Piping	11 of 20	1.08.00	Note 18. Unless otherwise agreed, all valves shall be fitted with the spindle in upright position	Customer is requested to note that valve will be installed in horizontal pipeline with stem upright and in vertical pipeline will have horizontal stem. Customer is requested to kindly confirm acceptance.	Bidder understanding is correct.

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
272	290	SECTION-VI, PART-A	SUB SECTION-II A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	25 of 28	2.30.00	Metal temperature measurement shall be done for valves mentioned at point a,b & c and sound monitoring for safety valves & ERVs mentioned at point d.	The requirement of metal temperature measurement of drain and vents is not clear. Kindly elaborate.	The requirement of metal temperature measurement for valves of drains and vents is already covered in the specified clauses to minimize losses. Specification is clear in this regard and bidder to comply with the specification requirements.
273	291	SECTION-VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	18 of 67 19 of 67	9.01.03 (4) 9.01.03 (6)	ii) The maximum air-in-leakage to flue gas of the Steam Generator with coal shall be guaranteed and demonstrated along with the Boiler PG test. (6) APH Guarantee Condition 1. Air Leakage (at 100% TMCR i.e. 800 MW unit load for design coal) – 10% (Max.) 2. Design Ambient Temperature & Relative Humidity: 25 degC& 60% RH 3. Excess Air – 20% 4. The maximum air-in-leakage to flue gas after 3000 hours continuous operation of the Steam Generator with coal shall be guaranteed.	Discrepancy has been observed for RAPH air-in-leakage test condition. As per clause number 9.01.03(4) the test shall be conducted along with boiler PG test i.e during trial operation whereas as per clause number 9.01.03(6) the test shall be conducted after 3000 hours continuous operation. As per bidder understanding the RAPH air-in-leakage shall be conducted along with boiler PG test and not after 3000 hours continuous operation. NTPC to confirm.	Bidder to refer Amemdment no SG.23 in this regard
274	292	SECTION – VI, PART-A	SUB-SECTION-I INTENT OF SPECIFICATION	5 of 9	4.02.00	The Employer shall issue the following quantities of Fuel oil and Coal per unit for firing up to successful completion of "Initial Operation" (as defined in General Technical Requirements, Part-C, Section-VI of Technical Specification) for each unit free of charge. **Unit Size** | **800 MW** | **660 MW** Fuel Oil | 11200 kL | 9240 kL Coal | 2.7 Lakh MT | 2.3 Lakh MT	NTPC to kindly note that since the specification is for 800 MW, 660 MW values mentioned shall not be applicable for this proposal. Also limiting values provided for Coal quantity is very low. NTPC to kindly revise the value after discussions with Bidders.	The values mentioned against the applicable unit size to be referred by the bidder. The values indicated are adequate based on employer's assessment. Bidder to comply with the specification requirements.
275	293	SECTION – VI, PART-A	SUB-SECTION-I INTENT OF SPECIFICATION	Page 7 of 9	4.08.00	Contractor shall prepare 3D design review model (network ready, which shall include visual interference check, walk-through animation, video simulation for major equipment placement and removal, visual effect, photo realism etc), which is extracted from intelligent 3D model, for employer's review as & when desired by employer.	Considering Progress of Engineering, Bidder propose total 4 nos. of model review during the engineering of the project. Schedule of the same can be decided during detail engineering as per mutual discussion with Customer. This is inline with Bidder practice in recently executing projects.	Bidder to follow specification requirement .
276	294	SECTION – VI, PART-C	GENERAL TECHNICAL REQUIREMENTS	Page 16 of 118	8.03.04 (iv)	Contractor shall prepare and provide 3D design review model (network ready, which shall include visual interference check, walk-through animation, video simulation for major equipment placement and removal, visual effect, photo realism etc.), which is extracted from intelligent 3D model and shall make a presentation of the same every 3 months from LOA to enable DVC to review the progress of engineering or as & when required by employer.	Considering Progress of Engineering, Bidder propose total 4 nos. of model review during the engineering of the project. Schedule of the same can be decided during detail engineering as per mutual discussion with DVC. This is inline with Bidder practice in recently executed NTPC projects.	Bidder to follow specification requirement .
277	295	SECTION – VI, PART-A	SUB SECTION-II A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	Page 13 of 28	2.15.03 (d)	The coal mill shall be suitable for installation on RCC block type foundations and also at a suitable height in order that complete mill reject system as (described at sub section II A -17 of Part A) should be above the finished floor level of mill area or zero meter whichever is higher. Adequate maintenance space all around the mill zero meter have to be provided. However, the non drive end part of bucket elevator may be allowed to placed at minus meter with adequate maintenance space.	Bidder understands that facilities of Mill reject system other than Bucket elevator to be placed above ground level of Boiler. However, non-drive end of Bucket elevator shall be placed inside pit arrangement with adequate maintenance space.	Bidder understanding is correct.
278	296	SECTION – VI, PART-B	SUB SECTION- G-03 LAYOUT PHILOSOPHY	Page 13 of 15	1.03.00 (58)	All facilities of mill reject handling system specified elsewhere in the specification such as pump, tank, conveyor, piping etc shall be above ground level in boiler area.	Bidder understands that facilities of Mill reject system other than Bucket elevator to be placed above ground level of Boiler. However, non-drive end of Bucket elevator shall be placed inside pit arrangement with adequate maintenance space.	Bidder understanding is correct.
279	297	SECTION – VI, PART-A	SUB SECTION-II A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	Page 16 of 28	2.16.05A (2)	Suitability of duct between Boiler and future interconnection ofSCR system with minimum modification. Suitable duct tap-offs (including blanking plate) for Flue gas duct sections as indicated below: (a) Connection from Economiser outlet to each SCR reactor inlet. (b) Connection from each SCR reactor outlet to each RAPH (Bi-sector or Trisector, as applicable) inlet ducts to and (c) Connection for Economiser bypass duct from economizer inlet/intermediate position or from other alternative suitable location to SCR inlet for maintaining SCR Inlet flue gas temperature.	NTPC to kindly note that since only Provision for Future Installation of SCR system is applicable, Point b and c of clause 2.16.05A (2) are not applicable and request to kindly delete the same.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
280	298	SECTION – VI, PART-A	SUB SECTION-II A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	Page 24 of 28	2.30.00	Following specific elevations of Boiler requiring installation of vacuum cleaning arrangement in Boiler Front, Rear, LHS and RHS are also to be covered other than required areas: 1) Penthouse Floor 2) Gooseneck area floor covering both first pass and backpass. 3) Boiler Scaffolding door floor covering both first pass and backpass 4) Top wall blower tier floor covering both first pass and backpass 5) Top burner top floor covering both first pass and backpass 6) Burner bottom floor covering both first pass and backpass 7) S Panel (approx.8.5 to 9M)	Boiler is provided with open grating only, and the possibility of dust accumulation is minimum. Hence, Bidder propose to proceed without vacuum cleaning system for reduction of Aux.power and thus overall optimisation of the project cost.	Bidder to comply with the installation of vacuum cleaning arrangements as per the specifications requirement.

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281	299	SECTION – VI, PART-A SECTION – VI, PART-B SECTION – VI, PART-B SECTION – VI, PART-B	SUB-SECTION-IIA-17 MILL REJECT HANDLING SYSTEM SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA SUB-SECTION-A-22 MILL REJECT HANDLING SYSTEM SUB-SECTION-A-22 MILL REJECT HANDLING SYSTEM	Page 1 of 1 Page 87 of 92 Page 1 of 3 Page 1 of 3	1.01.01 4.03.03 1.00.00 2.00.00	**Mechanical feeder including Vibrating Feeder (if applicable)** for mill rejects below each pyrite hopper for feeding at consistent rate to the mill reject conveyor. A vibrating feeder and metallic belt/chain flight conveyor carry mill reject from hopper to subsequent metallic /chain flight conveyor for further conveying to Bucket elevator for final storage at Silo. Mechanical conveying system shall be employed for handling of the mill rejects. Each mill reject discharge hopper shall be fitted with Feeder which shall discharge the mill rejects through Mechanical Conveyors to a storage Silo. Material from pyrite hoppers shall be removed by Mechanical conveyor and fed to main conveyor for further conveying. The main conveyor shall feed to a bucket elevator which in turn will feed to main storage silo.	Bidder understand that vibrating feeder shall be considered if required for the system. However, as per OEM recommendation of Bidder, vibrating feeder is not required. Hence, Bidder propose to proceed without Vibrating feeder.	**Bidder's proposal is not acceptable**
282	300	SECTION – VI, PART-B	SUB SECTION- G-03 LAYOUT PHILOSOPHY	Page 6 of 15	1.03.00	Clear head room for material movement at ground level in Boiler Envelop - 5.0m (Minimum) (Unless specified Otherwise)	First elevator landing level of Boiler has been considered at EL +4.00 Mtr where Mill maintenance platform has been considered. Hence, Bidder propose to maintain min. 3.5 Mtr headroom at Ground floor considering various sizes of equipment located at Ground floor inside the Boiler envelope wherever required. Remaining areas will be considered with piping, ducting and other boiler facilities at Boiler ground level based on system requirement. However, for maintenance of Major equipment like Fans, Mill etc.., min. 5 Mtr headroom has been considered inline with executed projects of Bidder.	Bidder to follow specification requirement .
283	301	SECTION – VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	Page 27 of 67	10.05.30	The mill and its motor, gear box foundation bolts shall have adequate maintenance space and accessibility for tightening both from top and bottom side of foundation bolts. Alternatively, additional minimum four (04) numbers of extra foundation bolt shall be provided at extreme corners of base plate which can be used in case of failure of existing foundation bolts.	As per Bidder design, entire foundation bolts will be embedded inside the RCC with anchor frame arrangement. Further, foundation bolt sleeves will be filled with grouting and nuts at bottom side of the bolts will be tack welded. Hence, tightening of bolts from bottom side is not required. Same design has been followed in all the projects executed by Bidder. Further additional bolts are also not required considering the above.	The details shall be decided during detail engineering based on the system offered, in line with the specifications requirements.
284	302	SECTION – VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	Page 39 of 67	13.01.01	The CFD modelling shall be carried out in two steps. a. First Step: Single phase flow model to establish the optimized duct layout among different options and the location of flow guides to achieve the criteria mentioned in point 4 above. b. Second Step: In the second step of CFD modeling, 2-phase flow model shall be developed for analyzing the sensitivity of ash settlement in different segments while considering different ash particle sizes and velocities. The results of the 2-phase CFD model shall be used to locate fly ash hopper location in different duct segments.	Duct layout will be prepared based on CFD recommendations of similar ducting arrangement in executed projects as well as disposition of the equipment in plot plan. Further based on project specific CFD reports, necessary guide vanes and flow splitters will be added inside the ducting during detail engineering. Hence, preparation of different options for ducting layout is not required as the equipment location and size is already fixed during development of the plot plan itself.	Bidder's proposal is not acceptable. The bidder shall prepare project specific ducting layout(s) and optimize them based on CFD analysis. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
285	303	SECTION – VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	Page 40 of 67	13.01.04	All interconnecting gas ducts between the boiler and the ESP shall have a minimum slope of 45 degree with respect to horizontal so that any chance of accumulation of ash particles in the duct can be avoided under all normal/abnormal operating conditions.	NTPC to kindly note that no significant ash accumulation has been experienced in interconnecting gas ducting of the Non NTPC projects supplied by bidder without 45 deg slope. Hence, Bidder propose to consider the inter connecting duct without slope for simplification of the arrangement.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
286	304	SECTION – VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	Page 53 of 67	17.01.05	Suitable all round platform for manual operation of all valves, for all dampers , for ash hoppers, APH drives, for all lubricated equipment bearings and equipments requiring access during operation for normal day to day inspection & maintenance shall be provided. Suitable access to these platforms shall also be provided. Suitable pathway from air preheater to ESP shall be provided in a safe manner.	Suitable approach for ESP inlet duct and its instruments shall be considered from ESP top platform with suitable ladder/stair approach. As Common duct has been considered in between RAPH & ESP, continuous platform from APH to ESP is not feasible and not recommended. However, bidder will provide platform from Air preheater area upto common duct for the approach of Air preheater outlet damper and PG test ports.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
287	305	SECTION – VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	40 OF 67	13.01.05	(a) Minimum 8 mm thick steel plates for gas ducts upstream of ESP and minimum 6 mm thick steel plates for gas ducts downstream of ESP.	Bidder propose to use 6 mm thick for Gas Duct inline with executed reference projects. Employer to confirm the same.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
288	306	SECTION – VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	42 OF 67	13.01.11	The expansion joints shall be tested as per requirements specified elsewhere in the Technical Specification. Each identical type (corresponding to various size, operating/design parameters, material, design etc.) from the given populace shall be selected for representing the identical sets. The number of EJs to be selected for performing tests shall be discussed and finalized. A minimum of 5 expansion joints, however, shall undergo performance testing.	The expansion joints shall be tested as per OEM's recommendation. A minimum of 3 expansion joints, however, shall undergo performance testing inline with bidders past executed reference. Employer is requested to confirm the same.	Bidder's proposal is not acceptable.The numbers shall be as per the specified criteria. Bidder to comply with the specification requirements.
289	307	SECTION – VI, PART-A	SUB-SECTION-VI CHAPTER -01 SG & AUXILIARIES	19 of 39	1.22.02	Gates in Flue Gas System of Air Flue gas path of Boiler including FGD. 1. Seals : 1 set of each type and size 2. Actuator : 1 no. of each type	Bidder understands this clause is applicable for FGD gates only and not applicable for Boiler Gates. Kindly confirm that our understanding is correct.	This clause is applicable for Gates in Flue Gas System of Air & Flue gas path of Boiler including FGD. Bidder to refer amendment no SG.20 in this regard.

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290	308	SECTION – VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	43 OF 67	13.02.02	(iv) Flue gas biasing damper in boiler second pass (if applicable). 13.02.05 Damper Gas Tightness Damper at locations Min. Guaranteed Gas tightness Efficiency As per Clause No. Without Seal Air (13.02.01 (e), 13.02.02(ii) 13.02.02 (iii) & 13.02.02(iv)) =99.50% & With Seal Air** =100%	Note that as per clause no 13.02.02 iv) Flue gas biasing damper in boiler second pass is required sealing efficiency of 99.5% on flow. Based on bidder experience and proven practice, flue gas biasing damper in second pass is Pneumatic operated control type damper ,doesn't require any sealing efficiency and the same is inline with bidder executed reference with NTPC projects. Same philosophy is applied for Pneumatic operated control damper of Hot and cold air inlet to each mill. Employer is requested to confirm the same.	Bidder to refer Amendment no SG.25 in this regard.
291	309	SECTION-VI, PART-A SECTION-VI, PART-B	SUB SECTION-II A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP SUB-SECTION-IIIC-08	3 of 28 3 of 5	2.06.00 (2) 5.00.00	Double isolation (one motorised and one manual) valve at the suction and Motorised isolation, Electrohydraulic operated control valve and a non return valve on the discharge of the pump. Alternatively, Electrohydraulic operated control valve and a motor operated stop cum check valve is also acceptable. All control valves shall be furnished with pneumatic actuators except for pressure and temperature control valve for auxiliary PRDS application (electro-hydraulic / pneumatically operated) and separator drain control valve (electro-hydraulic type).The Bidder shall be responsible for proper selection and sizing of valve actuators in accordance with the pressure drop and maximum shut off pressure and leakage class requirements.	Bidder clarify that type of actuator for control valve will be based on actuator thrust requirement as per process conditions.	Bidder's understanding is not correct. Sizing of actuator for control valve shall be based on actuator thrust requirement as per process condition. Bidder to note that the type of actuator shall be as per specification requirement.
292	310	SECTION-VI, PART-A	SUB SECTION-II A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	9 of 28	2.13.01	Forced Draft Fans At least two (02) nos. of duplex thermo couples or duplex platinum RTD's (100 ohms at 0°C) and one no of. temperature indicator shall be provided for bearing metal temperature measurement, control & monitoring shall be included in the scope.	As per space availability and protection interlock requirement , bidder will provide three RTD, inline with previously executed NTPC Projects. Please accept.	Bidder to refer Amendment No-SG.5 in this regard.
293	311	SECTION-VI, PART-A	SUB SECTION-II A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	9 of 28	2.13.02	Induced Draft Fans At least two (02) nos. of duplex thermo couples or duplex platinum RTD's (100 ohms at 0°C) and one no of. temperature indicator shall be provided for bearing metal temperature measurement, control & monitoring shall be included in the scope.	As per space availability and protection interlock requirement , bidder will provide three RTD, inline with previously executed NTPC Projects. Please accept.	Bidder to refer Amendment No-SG.6 in this regard.
294	312	SECTION-VI, PART-A	SUB SECTION-II A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	13 of 28	2.15.04	Primary Air Fans At least two (02) nos. of duplex thermo couples or duplex platinum RTD's (100 ohms at 0°C) and one no of. temperature indicator shall be provided for bearing metal temperature measurement, control & monitoring shall be included in the scope.	As per space availability and protection interlock requirement , bidder will provide three RTD, inline with previously executed NTPC Projects. Please accept.	Bidder to refer Amendment No-SG.7 in this regard.
295	313	SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -01 SG & AUXILIARIES: MANDATORY SPARES	25 of 39	2.01.00	10. Any other instruments (If applicable) 11. Any other control system (If applicable)	Bidder clarifies that no other Instruments or Control System is considered than the type of Mandatory Spares mentioned in the List.	Bidder to refer Amendment No-C-04 in this regard.
296	316	SECTION – VI, PART-B	SUB-SECTION-IIIC-02 DDCMIS	3 of 17	13.00.00	Analog Signal Conditioning & Processing	Bidder clarify that IO modules supplied will be as per OEM proven design of DDCMIS vendors approved by NTPC. Customer is requested to kindly confirm acceptance to our request.	Bidder shall supply IO modules complying to technical specification.
297	317	SECTION – VI, PART-B	SUB-SECTION-IIIC-02 DDCMIS	3 of 17	14.00.00	Binary Signal Conditioning & Processing	Bidder clarify that IO modules supplied will be as per OEM proven design of DDCMIS vendors approved by NTPC. Customer is requested to kindly confirm acceptance to our request.	Bidder shall supply IO modules complying to technical specification.
298	318	SECTION – VI, PART-B	SUB-SECTION-IIIC-02 DDCMIS	4 of 17	16.00.00	Wiring Scheme for inputs to Control System 4. If based on the same set of sensors, any protection action is required in OLCS (e.g., protection stop of drive) in another controller(s), then CLCS Controller shall provide three digital outputs for each such controller from three separate output modules (at defined LVM-Limit Value Monitor blocks inside Controller). The three such digital outputs of CLCS controller shall be acquired in each of the OLCS controllers in three separate digital input modules.	The Philosophy of Triple redundant Signal Exchange is only considered for Protection Signals from DCS to BPS. Signal Exchange within DCS FGs are through dedicated redundant Communication Network, inline with already executed NTPC projects.	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.
299	319	SECTION – VI, PART-B	SUB-SECTION - IIIC-02 DDCMIS, ANNEXURE IIIC-02C	1 of 6	1.01.01	The Servers/Workstations/PC Stations/Laptop to be provided by the Contractor should be latest available in the market, with maximum possible configuration of memory & storage and 4K resolution graphics capability for the offered make and model at the time of supply to prevent early obsolescence and shall be subject to Employer's approval. The software packages including OS, Application software as per the functional requirement and Anti-Virus Software with IPS# to be included with the Servers/Workstations/PC Stations/Laptops shall also be the latest version available at the time of supply. Additional softwares viz. Latest MS OFFICE professional (for PC stations), Microsoft Visual Studio (only for Programmer PC), Adobe Acrobat professional (for PC stations) shall also be the latest version available at the time of supply.	Hardware specification of workstation will be selected by DCS OEM as per HMI software requirement	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.
300	320	SECTION – VI, PART-B	SUB-SECTION-IIIC-04 MEASURING INSTRUMENTS (PRIMARY & SECONDARY)	2 OF 35	2.01.00	SPECIFICATION FOR ELECTRONIC TRANSMITTER FOR PRESSURE, DIFF PRESS AND DP BASED FLOW / LEVEL MEASUREMENTS Range: >400mmwc, Accuracy: 0.060%	For DP Transmitters of Range >400mmwc Accuracy of 0.060% cannot be met incase of Static Pressure is more than 420Kg/Cm2. Accuracy of such DP Transmitters shall be 0.1% of Range. Please accept.	Bidder's proposal is inline with specification requirement.

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301	321	SECTION – VI, PART-B SECTION – VI, PART-B	SUB-SECTION-IIIC-04 MEASURING INSTRUMENTS (PRIMARY & SECONDARY) SUB-SECTION-IIIC-04	5 OF 35 5 OF 36	3.00.00 3.02.00	Temperature Elements and accessories 2 No. of element : Duplex Resistance Temperature Detector (RTD)- No. of element- Duplex	For applications where duplex Temperature Element cannot be provided, Bidder will provide 2 nos Simplex type temperature elements. Please accept.	Bidder's proposal is acceptable. However, same shall be discussed and finalised during detailed engg.
302	322	SECTION – VI, PART-B	SUB-SECTION-IIIC-04	5 OF 36	3.01.00	MEASURING INSTRUMENTS(PRIMARY & SECONDARY) Thermocouple-	Thermocouple of FEGT is integral to the equipment and is selected as per OEM requirement complying ANSI MC 96.1 standard. It cannot be supplied complying conventional Thermocouple specification	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.
303	323	SECTION – VI, PART-B	SUB-SECTION-IIIC-04 MEASURING INSTRUMENTS (PRIMARY & SECONDARY)	6 OF 35	3.03.00	Metal Temperature Thermocouples Thermocouple wire gauge 16 AWG Protective sheath SS 321 Protective sheath dia 4 mm OD (minimum)	Bidder proposes to use 21AWG K Type Thermocouples with 4.8mm Sheath OD in line with previously executed NTPC Projects for MTTC applications. 16AWG wires cannot be accommodated in 4mm OD Sheath Please accept.	Bidder's proposal is acceptable.
304	324	SECTION – VI, PART-B	SUB-SECTION-IIIC-04 MEASURING INSTRUMENTS (PRIMARY & SECONDARY)	7 OF 35	3.04.00	Thermo well (for all process temp. elements) (d) For furnace zone, impervious ceramic protecting tube of suitable material along with Incoloy supporting tubes and adjustable flanges.	Since protecting tube with impervious ceramic material is prone to damage , Bidder proposes to use protecting tube of inconel material. Please accept.	Bidder's proposal is acceptable.
305	325	SECTION – VI, PART-B	SUB-SECTION-IIIC-04 MEASURING INSTRUMENTS (PRIMARY & SECONDARY)	8 OF 35	3.08.00	Multi Input Temperature transmitter (Temperature Multiplexer) For only information related temperature inputs fieldbus based Multi input temperature transmitters can be provided. Transmitters shall be capable of withstanding ambient temperature upto 85 deg C. Maximum number of inputs per such temperature transmitter shall be eight. One (1) no. input shall be kept as spare wired upto TBs of field mounted panel in each multi input TT. These shall be installed in field mounted panels with minimum IP 55 protection class. Exact applications shall be as defined in PART-A of specifications.	Multi Input TTs are capable of withstanding ambient temperature upto 50 deg C and not upto 85 deg C. Further these will be mounted away from High Temperature zones. Please accept.	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.
306	326	SECTION – VI, PART-B	SUB-SECTION-IIIC-04 MEASURING INSTRUMENTS (PRIMARY & SECONDARY)	22 OF 35	12.00.00	SPECIFICATION FOR CORIOLIS FLOW TRANSMITTER Process Temperature range 0-200 degree Celsius Others Drain / purging arrangement shall be provided as per standard practice.	Bidder considers Coriolis Mass Flowmeter for LDO Flow Measurement wherein Process Temperature will not exceed ambient Temperature and also Drain/ Purging arrangement is not required for the application. Please accept.	Bidder to refer Amendment No-C-16 in this regard.
307	327	SECTION – VI, PART-B	SUB-SECTION-IIIC-04 MEASURING INSTRUMENTS (PRIMARY & SECONDARY)	23 OF 35	13.02.00	Flow Nozzle Beta Ratio Around 0.7	Flow Nozzle Beta Ratio will be considered between 0.4 - 0.7, meeting the process requirements. Please accept.	Bidder shall comply to specification requirement. However, same shall be discussed and decided during detail engineering based on application.
308	328	SECTION – VI, PART- E	-	-	-	1150-001-POM-A-018b, SCHEME OF AIR & FLUE GAS PATH WITH INSTRUMENTATION (WITH TRI-SECTOR AH) Aerofoil and Associated Instruments FOR AIR FLOW CONTROL	As per Bidder's proven practice Secondary Air Flow is measured using Index Differential Pressure at each FD/ PA Fan Inlet Elbow. Aerofoil as mentioned in NTPC Specification is not used for any of the Control or Monitoring application, hence request NTPC to exclude the requirement from the scope of Bidder.	Bidder's proposal to exclude aerofoil is not acceptable. Bidder shall comply to technical specification. However, control shall be as per OEM's standard and proven practice.
309	329	SECTION – VI, PART- E	-	-	-	1150-001-POM-A-020, SCHEME FOR PULVERISER (VERTICAL MILL) Hot PA Venturi type Flow Element at Mill Inlet	As per Bidder's proven practice, Hot PA Flow at Mill Inlet is measured using Slant Orifice, inline with previously executed NTPC Projects. Please accept.	Bidder's proposal is acceptable as per standard and proven practice of OEM.
310	330	SECTION – VI, PART-B	SUB SECTION-A-02	6 OF 67	3.02.01	As a part of the static stability, interalia, the outlet temperature profile for each tube at the intermediate header inlet (if applicable) and vertical wall outlet header be calculated. The variance of tube outlet temperature shall be validated by carrying out site demonstration for the first boiler during commissioning by affixing metal temperature thermocouples at each evaporator outlet tube (at intermediate header inlet, if applicable, and vertical wall outlet). These thermocouples shall be over and above the requirements for metal temperature thermocouples specified elsewhere. In case the temperature variance in the evaporator tubing temperature during such demonstration is found to exceed the design considerations necessary modifications to the evaporator flow circuits shall be done by the contractor to control the tube temperatures.	Metal Temperature Thermocouples on each tube of Water Wall at top & bottom of Intermediate Header forms a huge number of Thermocouples, difficult to route/ manage at site and are not required for any monitoring, control or protection purposes, hence request NTPC to exclude these MTTC from the scope of supply. Bidder proposes to consider metal thermocouples similar to NTPC Khargone project	Specification requirement is clear. Bidder shall comply to technical specification.
311	331	SECTION – VI, PART-B	SUB SECTION-A-02	8 OF 67	3.07.00	Provide stainless steel expansion markers/indicator on all the four furnace walls to monitor thermal expansion. Predicted thermal expansion at different levels to be indicated. In addition to local indicators, measurement system (4-20mA Output) for remote indication shall also be provided on all the four furnace walls.	Bidder has no experience of providing thermal expansion measurement system with 4 - 20mA. Hence not considered in the scope of Bidder. If still required, employer is requested to furnish detail specification of the Instrument required for the application along with Suppliers having reference of supplied such systems which are in successful operation.	Bidder to provide thermal expansion measurement inline with Specification requirement. Same shall be discussed during detailed engg.

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312	332	SECTION – VI, PART-B	SUB SECTION-A-02	9 OF 67	3.09.00	Suitable temperature monitoring system consisting of 80 nos. of thermocouples should be provided for Bottom hopper, Pent House, Economizer, APH hopper etc. The exact location and number of thermocouples shall be finalized during contract stage. However, Bidder shall furnish unit rates for addition/deletion of the thermocouples with respect to the numbers mentioned above	Bidder has no experience and find no utility in providing temperature measurements at Bottom hopper, Penthouse, Economizer, APH hopper etc., hence not considered in the scope. Customer is requested to kindly confirm acceptance to our request.	Specification requirement is clear. Bidder shall comply to technical specification. Further bidder to refer table under Clause M, Annexure C to IIC Contract quantity, Part-A of tech spec.
313	333	SECTION – VI, PART-B	SUB SECTION-A-02	30 OF 67	10.08.03	Primary air flow measurement (b) PA flow measuring devices shall be provided at air inlet to each Pulverizer as well as at the suction of each fan. PA Fan inlet flow measurement shall be provided using fan inlet elbow. However, if such an arrangement is not possible flow element (venturi/aerofoil / orifice system) shall be provided with three pair of tapping points at suction of each PA Fan.	PA Fan inlet flow measurement shall be provided using fan inlet elbow. Since the measurement is only for monitoring and not used for any Control, Single instrument scheme is considered. Customer is requested to kindly confirm acceptance to our request.	Bidder's proposal is noted. However, triple redundant measurement to be provided for PA fan inlet flow.
314	334	SECTION – VI, PART-B	SUB SECTION-A-02	38 OF 67	12.09.00	Flow Measuring Devices (e) Fan inlet flow measurement shall be provided using fan inlet elbow. However, if such an arrangement is not possible, flow element (venture/aerofoil) shall be provided with three pairs of tapping points at suction of each FD fan.	Bidder clarifies that Fan inlet flow measurement shall be provided using fan inlet elbow with three pairs of tapping points at suction of each FD fan. The same is used for Control & Protection Application. Hence Aerofoil measurement shown in Tender P&ID for Secondary Air measurement is not required. Customer is requested to kindly confirm acceptance to our request.	Bidder's proposal to exclude aerofoil is not acceptable. Bidder shall comply to technical specification. However, control shall be as per OEM's standard and proven practice.
315	335	SECTION – VI, PART-B	SUB-SECTION-IIIC-09	2 of 6	9.00.00	Diagnostics &Indication Channel Level Diagnostics (with reverse polarity, wire break, short circuit & optical /galvanic isolation) for DI / DO, AI & AO shall be provided. Each individual Channel healthiness shall be monitored at workstation / GUI level. 2. Individual signal status of each Input / Output, power supply status shall be indicated on the module faceplates.	Bidder clarify that IO modules supplied will be as per OEM proven design of DDCMIS vendors approved by NTPC. Customer is requested to kindly confirm acceptance to our request.	Bidder shall supply IO modules complying to technical specification.
316	336	SECTION – VI, PART-B	SUB-SECTION - IIIC-02 DDCMIS ANNEXURE IIIC-02D	4 of 4	9.03.00	The measurement system of control system should be capable of acquiring data from various equipment & system in digital form through serial port, field bus / profibus, Ethernet connection using industry standard protocols. The control system shall include requisite modules for accepting such signals. Examples of such signals will be from remote I/O signals (through extended I/O bus), field bus/profibus type temperature transmitters, fault/diagnostic signals from vibration monitoring system, UPS/DC system etc. Requirement of such ports is indicated at Part-A	Bidder proposes Field bus/profibus for field instruments in DDCMIS /BMS except for Boiler protection system where protection signals shall be hardwired.	Bidder's proposal is not acceptable. Bidder to refer Amendment No-CI-05 in this regard.
317	337	SECTION – VI, PART-B	SUB-SECTION-IIIC-04	15 OF 36	7.00.00	Microprocessor based vibration monitoring system shall be provided for fan/pumps/motors etc. qty. of which shall be as indicated in Part A.	Bidder clarify that vibration monitoring is not applicable for Boiler circulation pump due to following reason BCP and motor is an integrated unit installed in hanged pipe support. The vibration of pump motor unit will be absorbed by the connecting pipe unit as it is suspended from the boiler recirculation pipe work. Hence vibration measurement for BCP is not considered.	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.
318	338	SECTION – VI, PART-B	SUB SECTION-A-02	49 OF 67	15.14.00	All soot blowers shall be suitable for local and remote automatic sequential operation	Local Operation of Soot Blower shall be manually through inbuilt LPBS provided with each Soot Blower. Automatic sequential operation is not envisaged locally. Please confirm bidder understanding is correct.	Bidder's understanding is correct.
319	339	SECTION – VI, PART-B	SUB SECTION- G-03 LAYOUT PHILOSOPHY	2 of 15	1.01.03	Control Rooms / Control Equipment Rooms/ RIO rooms shall be air-conditioned. Batteries for power supply systems as required shall be placed in separate ventilated Battery rooms	Bidder clarify that Air conditioned rooms will be provided subject to feasibility. Else Bidder will consider air conditioned panels for the same. Customer is requested to kindly confirm acceptance to our request.	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.
320	340	SECTION – VI, PART-E	Drawing No XXXX-999-POM-AA-004			Scheme for main steam, Hot reheat & Cold reheat steam	The conductivity type level switch is shown for drip leg in main steam. No specification requirements mentioned for conductivity type level switch in tender. NTPC shall clarify	Details of conductivity type level switch shall be decided and finalised with the contractor during detail engg.
321	341	SECTION – VI, PART-A	SUB SECTION-II A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	25 OF 28	2.30.00	Safety valves and critical valves to be provided with temperature & sound monitoring (may be IOT based) to detect early passing and ensure reliability. Temperature point shall be provided on these valves/lines. For control and monitoring purposes the temperature values shall be taken between 50-75 Deg. C and sound value normally less than 75 db as trigger. The necessary provision shall be accordingly provided with alarm signal in the control room.	Bidder request NTPC to give details of proven suppliers and clarify of any such system installed at any of NTPC projects.	This shall be discussed during detail engineering in line with specification requirement.
322	342	SECTION – VI, PART-A	SUB SECTION-II A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	25 OF 28	2.30.00	Sonic leak detection system installation in Safety valves & ERV: 1) Installation of Sonic leak detection system installation in all SLSV and ERVs of critical piping's such as M.S. Safety Valves & ERV/ EBV, CRH SV, HRH SV & ERV/ EBV.	Bidder request NTPC to give details of proven suppliers and clarify of any such system installed at any of NTPC projects.	This shall be discussed during detail engineering in line with specification requirement.
323	343	SECTION – VI, PART-A	SUB-SECTION-VI CHAPTER -01	26 OF 38	2.05.01	Pneumatic and electro-hydraulic actuator assembly	Bidder clarify regarding spare for electrohydraulic actuator as below a) Complete assembly will be provided in case of self contained E/H actuator b) For oil skid type , the applicable components will be provided as per OEM recommendation.	Bidder's proposal is not acceptable. Bidder shall comply to technical specification.
324	344	SECTION – VI, PART-A	IIA-01	16 of 28	2.16.05A	Provision for Future Installation of SCR System	Since SCR is not applicable, Bidder is not considering any Electrical & Instrumentation System/items for Future Provision. Please confirm.	Bidder's understanding is correct.

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325	345	TECHNICAL SPECIFICATION SECTION-VI, PART-B TECHNICAL SPECIFICATIONS SECTION VI, PART-C	SUB-SECTION- E-00 INTRODUCTION TO QUALITY ASSURANCE SPECIFICATION GENERAL TECHNICAL REQUIREMENTS	1 of 1 3 of 119	- 5.02.00	Various standards referred in this document shall be the latest revisions. Unless covered otherwise in the specifications, the latest editions (as applicable as on the date of bid opening), of the codes and standards given below shall also apply:	Bidder request to follow clause no. 5.02.00 of Part-C, General technical requirements, as there is different requirement in different sections of specification	Bidder understanding is not correct E-00 which is QA Chapter part is to be followed for QA Portion of the specification.
326	346	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-01 STEAM GENERATOR AND AUXILIARIES	Page 2 of 13	(d)	(d) i) SHOP WELDS: Finished butt welds shall be subjected to RT or UT. Wherever the code/standard/process specifies random sampling, the same shall be minimum 20%. (ii) FIELD WELDS: a) Finished butt welds shall be subjected to RT or UT. Wherever the code/standard/process specifies random sampling, the same shall be minimum 20% b) Finished butt welds not covered under random sampling for RT/UT, referred above at point(a) shall be subjected to RT or UT or PAUT.	Bidder propose to perform extent of RT/UT at field welds shall be same as Shop welds. Additionally PAUT /Recordable UT may be used in lieu of RT/UT. Bidder understand, clause (ii) b) will be applicable to joints not part of clause a) (i.e. 20%)	Bidder proposal is not acceptable. The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
327	347	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION –E-05 LP PIPING PACKAGE (MECHANICAL)	2 of 3	Note 1	100% Hydraulic test shall be carried out. Weld joints not subjected to hydraulic test due to some unavoidable reasons, shall be subjected to 100% RT/PAUT.	Bidder request to provide option for performing RT/PAUT in lieu of Hydraulic Test	Bidder proposal is not acceptable. Hydrotest is carried out to validate the design & strength of the component. Bidder to follow the technical specification requirements.
328	348	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-06 POWER CYCLE PIPING	Page 1 of 5	1.01.00	(f) All butt welds in alloy steel piping of P-91, X -20, X-22 & material P15E group & above shall be checked for RT/ UT/PAUT+TOFD & MPI after SR.	(f) All butt welds in alloy steel piping of P-91, X -20, X-22 & material P15E group & above shall be checked for RT/ UT/PAUT/TOFD & MPI after SR. Bidder has worked with similar NDT process and has successfully completed activity in past projects. Bidder request to kindly confirm	Bidder proposal is not acceptable. The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
329	349	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-06 POWER CYCLE PIPING	Page 2 of 5	2 3	Piping (h) Non-destructive examination of welds shall be carried out in accordance with the relevant design/manufacturing codes. However, as a minimum, the following requirements shall be met. Further statutory requirement, wherever applicable shall also be complied with. (1) Temperature > 400 Deg, C or pressure exceeding 71 bar. (i) 100% RT/UT on butt welds and full penetration branch welds. (ii) 100% MPE. (2) Temperature > 175 Deg, C upto 400 Deg. C or pressure exceeding 17 bar and upto 71 bar. (i) 100% RT/UT on butt welds and full penetration branch welds for pipe dia. more than 100 NB. (iii) 100% MPE.	Bidder request to provide option for performing Penetrant testing in lieu of MPE. Where ever the vent pipes are used under these conditions will be 10% RT or UT tested as these are open to atmosphere. Also, alternative to RT, UT/Advanced NDT may be performed in line with bidder standard practice	Bidder proposal is not acceptable. The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
330	350	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-06 POWER CYCLE PIPING	3 of 5	1.05.00	(b) Hardened/stellitted valve disc and seat are to be subjected to LPI and hardness check.	Hardness testing on seat/disc may be performed on a sample test coupon (PTC) instead of actual seat. The Sample test coupon will undergo same process as that of actual seat material and the hardness of this test coupon will be measured. As the hardness test on actual seat creates indentation on seat, which may become a leak path in the feature during the valve operation. (inline with Sub section E-08 1.07.01).	Bidder proposal is not acceptable. LPI & Hardness testing requirements are clearly specified. Bidder to comply technical specification requirement.
331	351	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-6 POWER CYCLE PIPING	Page 1 of 5	1.01.00	Piping (b) All pipe lengths under this package, including piping where alloy steel is used shall be subjected to 100 % ultrasonic examination as per material specification standard with acceptable notch depth of 5% of the selected wall thickness (1.5mm maximum) except for the following piping system:	All pipe lengths shall be subjected to100% Ultrasonic Examination or 100% Hydrotest as per Material specification.	Bidder proposal is not acceptable. The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
332	352	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-6 POWER CYCLE PIPING	Page 1 of 5	1.01.00	Piping (e) Non-destructive examination of welds shall be carried out after post weld heat treatment, if any. Piping: (i) Wherever SR/PWHT is envisaged for alloy steel, above NDTs shall be after SR/PWHT.	Bidder request, RT or UT of butt joints will be done before PWHT and MPI or DPT will be after PWHT	Bidder proposal is not acceptable. The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
333	353	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-07 HYDROGEN GENERATION PLANT	Page 1 of 1		Hydrogen Generation Plant - Tests	Hydrogen Generation plant is not applicable for this project. Hence this clause is not applicable	Bidder clarification is noted.
334	354	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-08 STEAM TURBINE & INTEGRAL AUXILIARIES	Page 24 of 26	1.10.02	(c) All welds between condenser neck and LP turbine shall be subjected to 100% radiographic and magnetic particle examination.	Bidder request to perform PT in lieu of Magnetic Particle Testing as there is very limited access available for performing NDT.	Bidder understanding is not correct as Detailed test requirement is discussed & finalised during detail engg.Bidder to meet specification requirements.

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335	355	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-8 STEAM TURBINE & INTEGRAL AUXILIARIES	Page 13 of 26		(d) To ensure dimensional control of condenser, parts\sub assemblies shall be trial assembled at shop. BIDDER shall furnish his proposal in this regard, which will be subject to Employer's approval. The extent/need for trial Assembly of various parts of Condenser / sub assemblies like Water Box, Water Chamber, Hotwell, Main Tube plate and support plate, its alignment and trial insertion of few tubes etc. shall be as per Manufacturers standard established practices. Such established practices shall be furnished to NTPC during finalization of quality plan.	As per Bidder standard practice, all the Support plates and main tube sheets assembled one above the other for ensuring alignment through insertion of few tubes. As per Bidder standard, it is not envisaged to trial assemble water box, water chamber, hot well Main tube plate and support plate at the workshop.	Bidder understanding is not correct as Detailed test requirement is discussed & finalised during detail engg.Bidder to meet specification requirements.
336	356	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-8 STEAM TURBINE & INTEGRAL AUXILIARIES	Page 16 of 26		1.04.02 Vacuum pump: The test should be conducted with the respective motors to be supplied.	The test shall be done either job motor or calibrated shop motor	Bidder understanding is not correct as Detailed test requirement is discussed & finalised during detail engg.Bidder to meet specification requirements.
337	357	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-8 STEAM TURBINE & INTEGRAL AUXILIARIES	Page 18 of 26		1.06.02 Metallic Expansion Bellows (f) Life cycle test, meridional yield rupture test and squirm test to be carried out on a prototype/expansion bellow as per Sec.D clause 3.2 of standards of Expansion joint Manufacturer Association (EJMA). In case these tests have already been accepted by NTPC on a prototype expansion bellow, as defined in Sec.D Clause 3.2 of Expansion Joints Manufacturers Association (EJMA) test reports may be furnished by manufacturer for consideration and approval of Employer.	The type test reports witnessed by NTPC or other customers or third party agencies of Metallic Expansion bellow manufacturers may be submitted in-place of performing actual test	Bidder understanding is not correct as Detailed test requirement is discussed & finalised during detail engg.Bidder to meet specification requirements.
338	358	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-8 STEAM TURBINE & INTEGRAL AUXILIARIES	Page 20 of 26		1.06.03 Rubber Expansion Joint (h) Life cycle test shall be carried out on bellows of each type, design and size. In case these tests have already been accepted by NTPC in earlier projects for the same type / size /design, test certificate for the same may be furnished for approval of Employer.	As per rubber expansion joint manufacturer standard practice, if the higher size of the rubber expansion joint Life cycle test is done then the lower sizes are automatically considered as approved. It is not envisaged to carryout life cycle test of each type, design and size of bellow.	Bidder understanding is not correct as Detailed test requirement is discussed & finalised during detail engg.Bidder to meet specification requirements.
339	359	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-10 CONDENSATE EXTRACTION PUMP SUB SECTION- G-05 STANDARD TYPE TEST PROCEDURE SUB-SECTION-E-12 BOILER FEED PUMP SUB SECTION- G-05 STANDARD TYPE TEST PROCEDURE	Page 2 of 2 Page 12 of 38 Page 2 OF 4 Page 2 of 38	Note 3.03.00 Note (2) 1.03.00	CEP: NPSH (R) test shall be carried out on one Condensate Extraction Pump using cold water at pump flows of 25%, 50%, 80%, 100% and 125% of Design Flow at Design Speed. This shall be done at 3% head break by Suction Throttling Procedure / varying suction pressure. Plots will be made for NPSH vs head developed by 1st stage for all flows. From the plots NPSH values corresponding to 1% & 3% head drop will be determined for all the above % flows. Finally, Flow vs NPSH characteristic (1% & 3% head drop) will be drawn & value of NPSH at rated flow corresponding to "Design point" will be the requirement of the pump. BFP: NPSH (R) test shall be carried out on one Boiler Feed Pump and one booster pump using cold water at pump flows of 25%, 50%, 80%, 100% and 125% of Design Flow at Design Speed. This shall be done at 3% head break by Suction Throttling Procedure. Plots will be made for NPSH vs head developed by 1st stage for all flows. From the plots NPSH values corresponding to 1% & 3% head drop will be determined for all the above % flows. Finally, Flow vs NPSH characteristic (1% & 3% head drop) will be drawn & value of NPSH at rated flow corresponding to " Design point" will be the requirement of the pump.	NPSH(R) test already done for the same model will be submitted for review and acceptance by Customer. If NPSH(R)already done for the same model, it is not envisaged to repeat the test. Bidder understand that, NPSH Test shall be performed at 3% head break by Suction Throttling Procedure. NPSH test at 1% head drop not envisaged	Bidder to refer clause no 12.00.00 Sub-section A-07 Part-B, Section-VI w.r.t. Type test requirement. Bidder to comply technical specification requirement. Type test procedure shall be finalised during detail engineering
340	360	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-12 BOILER FEED PUMP	Page 2 of 4	1	(a) Performance Tests on each Boiler Feed Pump to determine the characteristic curve (Head, Capacity, Efficiency & Power) at Design Speed and to ensure compliance with design requirements specified in the specification. Measurement shall be carried out at 10%, 25%, 50%, 65%,80%, 100% & 125% of Design Flow with loop water at design temperature. Performance Test at other specified Conditions shall be carried out on all Boiler Feed Pumps at their respective Speeds at design temperature.	Many manufacturers does not offer / recommend to conduct performance test below recommended flow, therefore performance tests at 10 % , 25 % flow will not be done. It's more like pump running in dry conditions which may damage the pump internals Performance test is performed at reduced speed and temperature meeting HIS guidelines and Note 5 of Sub Section E-12	Bidder understanding is not correct as Detailed test requirement is discussed & finalised during post award MQP finalisation.
341	361	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-12 BOILER FEED PUMP	Page 2 of 4		BFP; Type tests mentioned (NPSH, Pressure pulsation & Axial thrust measurement in the specification.	BFP; Type tests mentioned (NPSH, Pressure pulsation & Axial thrust measurement) already done for the same model then the reports will be submitted for review.	Bidder to refer clause no 12.00.00 Sub-section A-07 Part-B, Section-VI w.r.t. Type test requirement. Bidder to comply technical specification requirement.
342	362	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB SECTION-E-13 RAW WATER SYSTEM (MECHANICAL)	Page 2 of 12 Page 7 of 12 Page 10 of 12	3) x xo vii ix	Hydraulic Test: 100%, 1.5 times the design pressure or 2 times the working pressure whichever is higher x. 5% RT/ 5% UT by TOFD/PAUT techniques on those butt weld joints which can be 100% hydro tested. xo. 100% RT / 100% UT by TOFD/PAUT technique of the butt weld joints of pipeline shall be carried out which cannot be Hydro tested. viii. 5% RT/ 5% UT by TOFD/PAUT techniques on those butt weld joints which can be 100% hydro tested. ix. 100% RT / 100% UT by TOFD/PAUT technique of the butt weld joints of pipeline shall be carried out which cannot be Hydro tested.	Bidder request to perform RT/UT/ PAUT/TOFD in lieu of Hydraulic Test	Bidder has to follow the Technical Specification reqirementsHydraulic test is carried out to test the system design & integrity hence Bidder request to perform RT/UT/PAUT/TOFD in lieu of Hydraulic test is not acceptable .
343	363	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-17 AC AND VENTILATION SYSTEM(MECH	Page 1 of 3	3.04.00	3.00.00 CENTRIFUGAL PUMP: 3.04.00 Standard Running Test i) All pumps shall be tested in the manufacturer's works preferably with contract motor (or as specified in Engg Tech spec) for capacity, efficiency, head and brake horse power.	As per standard Manufacturer practice, pumps will be tested either contract motor or Calibrated shop motor.	Shop test of Centrifugal Pump can be performed with job motor or equivalent rating calibrated Shop motor. However, preferably job motor to be used for testing of pump at Shop.

			EPC package for Singrauli STPP Stage-III PREBID QUERIES & CLARIFICATION					
	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
344	364	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-59 QA Civil Works	Page 5 of 6	A. Fabrication Works B. Erection Works at site	CW LINER/DUCT: NDT by RT in various Options	It is proposed to carryout UT instead of RT	For lesser thickness plates/ liners there may be a possibility of not detecting the defects in case of UT.Hence Bidder has to follow the Technical Specification reqirements
345	365	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION E-59 CIVIL WORKS	PAGE 4 OF 6	II	(II) CW Liner/ Pipes Fabricated using H.R. coils with spiral weld joints at DPT on root run: 100% DPT for pipes up to 1200mm diameter	Pipes fabricated using HR Coils with Spiral Weld Joints at factory is an automated process of welding and it is not possible to carryout DPT on root run.	As per QA Civil input vide Pradip file Ref: 316628 for referred point Clause of DPT on Root run is already mentioned as" NOT applicable," for CW Liner/ Pipes Fabricated using H.R. coils with spiral weld joints fabricated at Factory.
346	370	GENERAL TECHNICAL REQUIREMENTS SECTION - VI	QA- Disclaimer of Indicative Vendor list	Page 1 of 2 Page 2 of 2	1.1 1.7	However, in case of error/omission, if any, and represented by the successful bidder this will be addressed during the execution of the contract based on the material evidence available with NTPC / Main Contractor. 1.7 The list of sub-vendors is periodically revised to include new sub-vendors. Such a revision may also see a deletion of certain sub-vendors who may have been disqualified on grounds of inadequate performance or banned in line with NTPC's banning policy. The then current list will be shared with the successful bidder immediately on award	Bidder understand that a) In case vendors who are already approved/have executed various items in NTPC project are not in the indicative vendor list, bidder may consider same b) Bidder request to share the banned vendors as on date, which will help bidder for taking in to consideration. This list shall be part of contract at the time of award or order.	Bidder understanding is not right. a] In case sub vendor is not mentioned in the list , That will be tied up during detailed enginnering in post award. b] The updated banned list of Sub vendors in line with NTPC's banning policy will be shared with the successful bidder immediately on award as mentioned in technical specification. Shall be replied as & when reqired
347	371	GENERAL TECHNICAL REQUIREMENTS SECTION - VI	QACP (QA Coordination Procedure)	Page 3 of 7		13 d) Inspection Calls d) Inspection Calls: Bidder shall give inspection call to the respective Employer QA&I RIO in Windsor-X system. For foreign inspection calls Main Contractor shall give inspection call to Employer QA&I (in Windsor-X system) Coordinators and through email as well, as per following schedule:- i. Supplier of Indian origin : 15 working days	Considering the Project cycle time, L&T considers the following inspection notification time; i. Supplier of Indian origin : 7 working days	Bidder consideration is not right : For doing the proper planning of Inspection activities , it is mentioned as 15 Days for Indian Origin Sub Vendors.
348	373	SECTION - I, II, III, IV & V	EPC PACKAGE SECTION-IV (GCC)	Page 39 of 85	19.4	The Contractor shall not be allowed to sub-contract works to any subcontractor/ sub-vendor from a country which shares a land border with India unless such contractor is registered with the competent Authority. The Competent Authority for the purpose of registration shall be as mentioned in Annexure-IV to SCC. However, the said requirement of registration will not apply to subcontractors from those countries (even if sharing a land border with India) to which the Government of India has extended lines of credit or in which the Government of India is engaged in development projects. The Contractor may apprise itself of the updated lists of such countries available in the website of the Ministry of External Affairs.	Bidder understand that In case vendors who are already approved/have executed various items in NTPC/equivalent project/s are not in the indicative vendor list, bidder may consider same subject to meeting government regulation at the time of ordering	Bdder understanding is not right : Government Circulars are to be followed along with GCC Clasue
349	374	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION CIVIL WORKS FOUNDATION SYSTEM	PAGE 3 OF 10	7.03.00	PILE FOUNDATIONS The pile foundation shall be of RCC, Cast-in-situ bored piles as per IS:2911. Pile boring shall be done using Self erecting Crawler mounted Rotary Hydraulic Rigs. Two stage flushing of pile bore shall be ensured by airlift technique duly approved by the Employer	Bidder would like to request to also consider for flushing with air lift technique and tremie method may also be permitted for construction of bored piles.	Bidder's proposal is not acceptable.
350	375	SECTION – VI, PART-B	SUB-SECTION-D-1-12(B) CIVIL WORKS ANNEX_B_CONSTRUCTION METHODOLOGY	PAGE 1 OF 1	D-1-12(B)	Construction Methodology Pile installation equipment suitable for flushing with air lift technique shall be used for construction of bored piles.	Bidder would like to request to also consider for flushing with air lift technique and tremie method may also be permitted for construction of bored piles.	Bidder's proposal is not acceptable.
351	376	SECTION-VI, PART-B	SUB-SECTION-D-1-5 CIVIL WORKS SALIENT FEATURES AND DESIGN CONCEPT	PAGE 55 OF 127	5.17.02.00	REQUIREMENTS FOR CONSTRUCTION MATERIAL Durability of the concrete shall confirm to severe exposure category as per table 19 of IS:456 except noted specifically otherwise. Minimum cement content of all RCC structures shall be 360 kg/Cu. M.	Bidder understand that the exposure category and minimum cement content for concrete shall be as per Table - 5 of IS 456. Owner is requested to confirm the same	Bidder to refer amendment Sl No D1-68
352	377	SECTION-VI, PART-B	SUB-SECTION-D-1-10 CIVIL WORKS MATERIAL SPECIFICATION	PAGE 3 OF 4	10.05.00	Bricks Only fly ash bricks shall be used in all construction, except for elevator shafts, which can be either of burnt clay bricks or RCC construction as per functional / codal provisions.	Bidder understand that use of fly ash bricks as per IS: 13757 or IS: 12894 is depend upon availability of fly ash bricks. However, in case if not available burnt clay bricks meeting requirement of compressive strength 75kg/cm2 and as per IS: 1077 shall be allowed for use. Owner is requested to confirm acceptance.	Bidder's proposal is not acceptable.

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
353	378	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-D-1-5 CIVIL WORKS SALIENT FEATURES AND DESIGN CONCEPT	PAGE 31 OF 127	5.10.00	Roads All roads shall be of rigid pavements unless otherwise specified. Rigid pavements shall be constructed with Geopolymer concrete. Concrete road/pavement or rigid pavement, mentioned in specification, shall mean road /pavement constructed with Geopolymer Concrete. All concrete roads shall be unreinforced jointed plain concrete pavement having dowels in transverse joints and tie bars at longitudinal joints.	Bidder would like to clarify that, there is limited exposure in Geopolymer based concrete within India and experiencing in quick setting within 30-40 min with crack development afterwards. This concrete is still under development and establishment stage for its usage in Permanent Road works. Bidder request to consider Cement based Pavement quality concrete road also.	Bidder's proposal is not acceptable.
354	379	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-D-1-5 CIVIL WORKS SALIENT FEATURES AND DESIGN CONCEPT	PAGE 32 OF 127	5.10.00.01	Roads The road construction including its shoulders, base, sub base and concrete pavement shall be as per MORTH. The road base shall be with minimum 150 mm thick dry lean concrete over granular sub base. Dry lean concrete shall be laid by a mechanical paver and compacted by vibratory rollers. Concrete pavement of the road shall be done with fully mechanized paver fitted with electronic sensors for construction techniques. Laying /placing of Concrete DLC and PQC manually with hand-guided means or by semi-mechanized methods may be permitted around BTG area provided acceptance criteria as per MORT&H specification is achieved.	Bidder request to consider Cement based Pavement quality concrete road also. In case of laying /placing of Geopolymer concrete DLC and PQC manually with hand guided means or by semi-mechanized methods may be permitted considering the quick setting characteristic. Acceptance criteria as per MORT&H specification is achieved`	Bidder's proposal is not acceptable.
355	380	SECTION-VI, PART-B	SUB-SECTION-D-1-8 CIVIL WORKS GENERAL SPECIFICATION	PAGE 3 OF 20	8.01.02.29	Interlocking concrete block confirming to IS:15658, kerb blocks or concrete block specified for various uses shall be precast blocks made of alkali-activated concrete /Geopolymer concrete as per IS:17452- 2020.	Bidder would like to request that to consider cement concrete based interlocking concrete blocks. Kindly confirm the same	Bidder's proposal is not acceptable.
356	381	SECTION VI, PART- B	SUB-SECTION-E-59 QA Civil Works	Page 1 of 6	1.0 (A)	SAMPLING AND TESTING OF CONSTRUCTION MATERIALS a) Before execution of any civil work the contractor shall conduct full-scale suitability tests on various construction and building material such as soil, fine and coarse aggregates, cement, construction chemicals, supplementary cementitious materials and construction water to ascertain their suitability for use and the concrete mix designs conducted from reputed institutes such as NCCBM-Ballabgarh, CSMRS-Delhi, selected IIT's as agreed by the Employer.....	Bidder would like to request for addition of other reputed institutes for conducting suitability tests and concrete mix design such as NIT's, NTH, Govt. technical universities and NABL accredited laboratories along with NCCBM-Ballabgarh, CSMRS-Delhi, selected IIT's. a) Before execution……concrete mix designs conducted from reputed institutes such as NCCBM-Ballabgarh, CSMRS-Delhi, selected IIT's, NIT's, NTH, Govt. technical universities and NABL accredited laboratories and in-house laboratory at site as agreed by the Employer.	This is as per the prevailing third party lab list circular of NTPC acceptable labs consisting of more than 25 reputed labs/ govt institutes. The same shall be shared with contractor as and when required. Hence Bidder has to follow the Technical Specification reqirements.
357	382	SECTION VI, PART- B	SUB-SECTION-E-59 QA Civil	Page 1 of 6	2.0	LABORATORY AND FIELD TESTING a) The field laboratory for QA and QC activities shall be established and installed with the adequate facilities to meet the requirement of envisaged day to day tests during execution of the work. Temperature and humidity controls shall be available wherever necessary during testing of samples. The contractor shall furnish a comprehensive list of testing equipment/ instrument required to meet the planned/scheduled tests for the execution of works for EIC acceptance/ approval. The contractor shall establish the requisite laboratory equipment/set up and skilled QA&QC manpower within 30 days from the mobilization date of Main contractor at site.	LABORATORY AND FIELD TESTING a) The field laboratory for QA and QC activities shall be established and installed with the adequate facilities to meet the requirement of envisaged day to day tests during execution of the work. Temperature and humidity controls shall be available wherever necessary during testing of samples. The contractor shall furnish a comprehensive list of testing equipment/ instrument required to meet the planned/scheduled tests for the execution of works for EIC acceptance/ approval. The contractor shall establish the requisite laboratory equipment/set up and mobilize skilled QA&QC manpower progressively according to discipline-wise work progress	Setting up of FQA lab with skilled QA / QC manpower within 30days from mobilization date of main contractor at site is requred for minimizing delays in testing and adversely affecting site work progress. Also well equipped lab and manpower reduces non confirmity from approved quality plans. For discpline wise QA & QC manpower requirement, provision is already envisaged in indicative FQP. Hence Bidder has to follow the Technical Specification reqirements .
358	383	SECTION VI, PART- B	SUB SECTION-B-02 MOTORS	PAGE 3 OF 4	10.01.00	LIST OF TESTS FOR WHICH REPORTS HAVE TO BE SUBMITTED The following type test reports shall be submitted for each type and rating of HT motor (b) Terminal box-fault level withstand test for each type of terminal box of HT motors only.	Not Applicable for Elastimold type terminations	Bidder understanding is correct.
359	384	SECTION VI, PART- B	SUB-SECTION-B-03 VFD	PAGE 10 OF 11	28.02.00	Type test LIST OF TYPE TESTS TO BE CONDUCTED The following type tests shall be conducted under this contract for MV E8) Overall efficiency determination of VFD system including transformer/ Harmonic filters etc at motor full load	Bidder would like to clarify that test may be conducted with regenerative load	Bidder understanding is correct.

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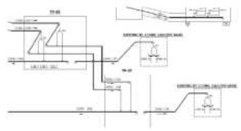
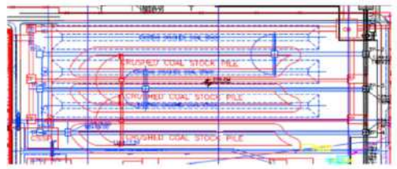
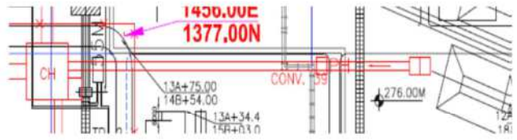
	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
360	385	SECTION VI, PART- B	SUB-SECTION B-04 TRANSFORMERS AND ASSOCIATED MAINTENANCE, MONITORING & TESTING EQUIPMENTS	PAGE 19 OF 36	1.01.02	Type tests criteria for Auxiliary oil filled transformers rated upto 16MVA, 11kV (only type test report has to be submitted) A) The Type Test reports should be of a transformer which is generally similar to the transformer being offered as per IEC 60076-5, Annexure-B and also identical to the offered transformer in the following aspects:... A)) The Type Test reports should be of a transformer which is generally similar to the transformer being offered as per IEC 60076-5, Annexure-B and also identical to the offered transformer in the following aspects: i) Voltage ratio ii) MVA/KVA rating iii) Percentage Impedance iv) Internal design v) Type of tap changer equipment vi) Cooling arrangement vii) Temperature rise viii) Individual and total loss values of the offered transformer shall be same as that indicated in the GTP of transformer for which Type Test Reports are submitted	Bidder would like to clarify that for similarity conditions shall be considered as mentioned in IEC 600076-5, annexure B.	Bidder understanding is not correct.Specification cl.no. 1.01.02 Sub -Section B-04 Section-VI, Part-B to be followed.
361	386	SECTION VI, PART- B	SUB-SECTION B-04 TRANSFORMERS AND ASSOCIATED MAINTENANCE, MONITORING & TESTING EQUIPMENTS	PAGE 25 OF 36	1.11.04	ROUTINE / TYPE TESTS ON TRANSFORMERS: vi)**During Infra red thermography test of GT, the temperature of any part of tank shall be limited to 110 deg C.	We would like to clarify that Infra red thermography tests will be conducted for records only	Bidder understanding is not correct.Specification cl.no. 1.11.03 Sub -Section B-04 Section-VI, Part-B to be followed.
362	387	SECTION VI, PART- B	SUB-SECTION B-04 TRANSFORMERS AND ASSOCIATED MAINTENANCE, MONITORING & TESTING EQUIPMENTS	PAGE 23 OF 36	1.11.04 Sr. No 31	ROUTINE / TYPE TESTS ON TRANSFORMERS: Short duration heat run test (Not applicable for unit on which temperature rise test is performed)	Bidder would like to understand the procedure & acceptance criteria of this test. As this tests is not covered in generally used standards	Short duration heat run test (Not applicable for unit on which temperature rise test is performed) to be performed in line with CEA guideline.
363	388	SECTION – VI, PART-B	SUB-SECTION II-B-03 VFD	PAGE 11 OF 11	28.02.00 Sr. No. 4	4) Transformers i. As per requirements mentioned in subsection for Transformer chapter in technical specifications.	Bidder Would like to clarify that for MV VFD transformer will be the part of VFD panel therefore separate Type test will not be conducted on transformer , however Routine test mentioned in relevant QA section shall be conducted before dispatch from transformer manufacturer works LV VFD transformers will be an isolation transformers therefore Type test shall not be conducted, however routine test report as mentioned in relevant QA section shall be conducted	Bidder's proposal is not acceptable..If standalone transformer (outside VFD panel) is supplied for VFD application then all tests (routine & type) to be followed as per Specification cl.no. 28.02.00 (4) Sub -Section B-03 Section-VI, Part-B.
364	389	Part E - Drawings Section VI, Part A	Sub Section - IID Civil works	11 of 12	2.03.00	Bidder shall use a lay down area as shown in tender GLP Drawing. One area marked in GLP totalling 75 acres (approx.) are identified as laydown/preassembly area. Fencing of the laydown area in the area marked for laydown is in bidder's scope.	During site visit, Bidder has observed that the laydown area identified in the GLP is partially encroached (~35 to 40 acres). a) Bidder understands that Owner will provide complete 75 acres of encroachment free land (including cutting of trees girth more than 30 cm) for laydown area on the date of NOA. b) In case encroachment is not removed on the date of NOA, Owner shall provide equivalent area at alternate location within the vicinity of plant premises. Please confirm.	Area shall be provided in parts progressively to the Bidder as per Project requirement and Bidder's mobilization plan. Cutting of trees girth more than 30 cm is in the scope of NTPC.
365	390	Part E - Drawings	1150-999-POC-F-001	1 of 1	-	General Layout Plan	During site visit, Bidder observed that at multiple locations, materials like steel plates, pipes, cable drum etc. are lying within the Stage III premises. Bidder understands that all such materials lying with the proposed Stage III plant premises shall be cleared by Owner on or before the date of NOA. Please confirm.	Loose material lying in Stage-III area shall be removed by owner. Area shall be provided in parts progressively to the Bidder as per Project requirement and Bidder's mobilization plan.
366	391	SECTION – VI, PART-A	SUB-SECTION-IID CIVIL WORKS	03 of 13	b	Dismantling of facilities which are in employer's scope.	Bidder understands that dismantling of facilities such as Stores, IT Building etc. which are included in Owner's scope shall be completed on or before the date of NOA. Please confirm.	Area shall be provided in parts progressively to the Bidder as per Project requirement and Bidder's mobilization plan.
367	392	SECTION – VI, PART-A	SUB-SECTION-IID CIVIL WORKS	03 of 13	vi	Dismantling of Coal Stock yard including stacker -Reclaimer	Bidder understands that existing Stage I Coal stock piles shall be cleared by Owner in order to take up construction of Stage III CHP facilities. Please confirm.	Bidder's understanding is correct. Existing stock pile shall be cleared by owner. However the dismantling work in Stage-I stockyard area shall be in bidder's scope inline with technical specification

	S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
368	393	SECTION – VI, PART-B	Chapter 6	6_1 to 6_19	-	Area Drainage study Report Table 6.1 Area of Stage III plant and green belt Sl. No. / Item / Area in acres / Area in hectares 1 / Stage III Plant area / 198 / 80.13 2 / Required green belt area as per EC condition(40%) / 79.2 / 32.05 3 / The area already provided for green belt / 65 / 26.31 4 / Additional area for green belt proposed / 35 / 14.16 5 / Total green belt area including additional green belt / 100 / 40.47 6 / Total area of stage III project including green belt / 298 / 120.6	Area Drainage layout furnished with the tender document is having discrepancy as below. a) Mismatch in the drains shown in the area drainage layout (figure 6.4....6.15) vis a vis drain section mentioned in the table 6.4, Design of Channels Drain C8 and C9 mentioned in the table 6.4 are not appearing in the drainage layout. b) As per Table 2.1 of Area Drainage Study Report, the area of Stage III plant is not as per the GLP furnished with the tender specification. The area allocated for Stage III is substantially less. Total area mentioned in the Area Drainage study report table 2.1 is 298 acres vis a vis 167 acres of area available to EPC Contractor for Stage III facilities. Therefore the calculation for catchment area and drain sizing as per the area drainage study report is not correct. c) In the note no. 9 of Drain layout (Drg No -1150-001-POC-A-006) furnished with tender document, 400 acres has been mentioned as minimum catchment area. This is more than 298 acres mentioned in Area Drainage study. Owner to clarify this discrepancy, Owner to kindly note that in case Bidder has to consider drain sizes as per the drain section furnished in Area drainage study report or as per the note no. 9 mentioned in drain layout. In either of the case, the proposed Stage III plant facilities may not be accommodated within the allocated land of 167 acres. Therefore Bidder shall design the storm water drainage system for Stage III including drain sizes meeting functional requirements as per specification considering the catchment area for Stage III facilities. Also Bidder will provide Box culvert as per specification adjacent to Kota hill.	a) Drain C8 & C9 is not shown in figure 6.4..6.15 hence these drain not to be considered. b) Total area of 298 acres is including green belt area for stage III mentioned in table 2.1 and 6.1 . Therefore, the calculation for catchment area and drain sizing shall be as per the area drainage study report and specification requirement. c) Note no. 9 of Drain layout (Drg No -1150-001-POC-A-006) is to be deleted. Bidder to refer amendment Sl no D1-36 in this regard. Bidder's proposal is not acceptable.Bidder to note that the drain sizing shall meet the technical specification requirement. Biddder to refer Cl no 5.08.00 of Part-B Sub section VI for details regarding design of area drainage systema nd box culvert for Kota Hill.
369	394	SECTION – VI, PART-B, Sub Section D-01-05	SUB-SECTION-IID CIVIL WORKS	28 of 127	'-	Complete storm water drainage system of Plant area is in bidder's scope. Storm water drain shall be designed taking into account the finished ground levels of the plant & surrounding area, drainage pattern, intensity of rainfall, etc. with a return period of 50 years as stipulated/mentioned in 'Area drainage study report'. Area Drainage study report (Executive summary, Page No. 2) The carrying capacity of existing drains, outfalls, and the Balia nala should be maintained by repairing and removing weed, debris, by desilting the drains, and by bank stabilization of nala bank, and giving aesthetic look.	Area Drainage study report also mentions restoration, repairing of Balia nallah. Bidder understands that conservation (desilting and repair work) and modification of natural nallah (including Balia nallah) and existing drains outside Stage III plant boundary is not included in EPC scope of work. Please confirm.	Restoration/connection of outfall drain of stage III to exisitng nala is in bidder's scope. Conservation (desilting and repair work) and modification of natural nallah (including Balia nallah) and existing drains outside Stage III plant boundary is not included in bidder's scope of work.
370	395	SECTION – VI, PART-B, Sub Section D-01-05	SUB-SECTION-IID CIVIL WORKS	28 of 127	'-	Area Drainage study Report	Bidder request Owner to clarify the scope of trunk drain from Stage III plant boundary up to existing out fall point/natural nallah/drain outside the plant boundary as below. a) Bidder understands that EPC Contractor shall terminate their outfall storm water drains at Stage III plant boundary. Further connection with existing natural nallah/drain/outfall point which are located outside the Stage III plant boundary are excluded from EPC scope of work. Please confirm. b) Modification, Dismantling or Rerouting of storm water drains catering to Stage I and Stage II Units are excluded from EPC scope of work. Please confirm.	a) Drain up to final disposal point (existing natural nallah/drain/outfall point) is in biddere's scope. Complete drainage upto outfall point to be completed by bidder. b) Modification, Dismantling or Rerouting of storm water drains catering to Stage I and Stage II which is going through stage III area is in bidder's scope.
371	396	SECTION-VI, PART-B	D-1-4	13 of 127	5.02.09	Minimum area of office area shall be 350 sq. m. This area shall be positioned over the CR with good aesthetic view and noise reduction and dust isolation.	Since Service Building will be provided adjacent to Main Power House Building, bidder understands that 350 sq. m. office space as mentioned within the Main Power House Building is not required. Owner to kindly review and confirm.	Biddder's understanding is correct. Bidder to refer amendment sl no D1-37 in this regard
372	398	SECTION-VI, PART-B	D-1-4	2 of 4	4.02.00	Please refer tender drawing no. 1150-999-POC-006 titled "Construction Store" (Pre- Engineered Building) - Plan, Elevation and Section".	Bidder could not find the mentioned drawing. Owner is requested to provide the same.	Pl refer amendment sl no D1-35 for tender drawing no. 1150-999-POC-012 titled "Construction Store" (Pre- Engineered Building)
373	399	SECTION-VI, PART-B	D-1-5	101 of 127	5.35.00	NON-BIODEGRADABLE WASTE STORAGE BUILDING The Building for waste storage shall be as per Tender drawing	Bidder could not find the mentioned drawing. Owner is requested to provide the same.	Bidder to refer amendment sl no D1-29
374	400	SECTION – VI, PART-A	SUB-SECTION-IID CIVIL WORKS	10 of 13	2.01.00	General Layout Plan	Due to limited laydown area available for execution of Stage III, Bidder requests Owner to provide land for Labour colony. Please confirm.	Bidder's proposal is not acceptable. Bidder is requested to arrange land for labour colony on its own without any commercial implication to owner.
375	401	SECTION-VI, PART-B	SUB-SECTION-D-1-5 - Civil Work	63 of 127	5.18.01.01	f) For Aux. CT pump house , connection with existing concrete lined hot water channel of Stage-I&II shall be provided to meet the flow requirement with all necessary arrangement & precautions.	Bidder understands that Owner will provide necessary shutdown of stage I & II plant for the connection with existing hot water channel of Stage I&II. Please confirm.	For Aux. CT pump house , suitable connection shall be provided to meet the flow requirement to the existing concrete lined by cutting & making of concreting works including dewatering and under water works with all necessary arrangement & precautions. During construction it should be ensured that in any case running operation of water channel/ RCC conduit of Stage- I&II shall not be hampered. Further, associated structure for & including supply of valves/gates are also to be provided for isolation of the connection.

SINGRAULI SUPER THERMAL POWER PROJECT, STAGE - III (2X800MW)

EPC PACKAGE

PREBID QUERIES & CLARIFICATION

S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
402	TECHNICAL SPECIFICATIONS SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	85 of 92	4.02.12	No. of days of crushed coal storage based on BMCR Design coal consumption at 100% PLF: Bidder to maximize the coal stockyard storage capacity by utilizing the available space. However, stockyard capacity in any case shall not be not less than 17 days considering 800T/m3 bulk density of the coal. Also, in case of uni-directional stacker cum reclaimer, yard conveyor may be elevated near head end to accommodate takeup above ground Height of stockpile to be formed: 10 meters Width of each stockpile at base : 50 meters	As per Singrauli Old tender (2018), Owner to note the there was 5 days storage of stockpile was envisaged (refer Annexure-1) without additional facilities i.e 2 nos CSSP clarifiers, Biomass Handling System and CSSP for Stage-I, Stage-II & Stage-III whereas in current tender, all the additional facilities are envisaged in the same space, In view of these additional facilities, it is not feasible to provide the stock pile capacity for 17 days with reduced available space. Hence, Bidder requests Owner to review the same after locating all the facilities in the plot plan. Due to space constraints, Owner to note the stockpile capacity shall be provided considering maximum space available after placing all the facilities with meeting their functional and operational requirement. Owner is requested to amend the clause to keep all the Bidders at par.	Bidder to refer Sl. No MH-5 amendment no 1 to technical specification.
403	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-IIA-15 COAL & BIOMASSHANDLING PLANT	3 of 9 5 of 9	1.14.00 1.38.00	Provision for discharge of each yard conveyor to the reclaim path (Both streams) of Stage-III and direct path (Both streams) of Stage-I by providing suitable modifications of existing system/ arrangement Two (2) nos. conveyors (Conv 37 & Conv 38) shall feed the coal onto the stage-I conveyors 4A/4B and 5A/5B. The entire modification work including the conveyor 4A/4B & 5A/5B gallery modification, dismantling of any exiting facility is in the scope of the bidder. The dismantling activities shall be carried out in such a manner that the Stage-I operations shall be least affected.  	Owner to note that feeding to Stage-I direct path from Stage-III stockpile, is not shown either in referred flow diagram or in Plot Plan, Also, as per tender specification , unidirectional stacker reclaimer is mentioned which contradicts with referred clause "1.14.00" of part-A. Further, Owner to note that discharge of coal at either end of yard conveyor is not feasible using unidirectional stacker cum reclaimer(SCR) machine. The belt looping arrangement in SCR tripper makes impossible to deliver the coal onto the direction of conveyor 37 & conveyor 38 path to feed the existing conveyor system/ arrangement side,. during the reclaim path with the SCR machine. However, coal from stage-III track hopper after crushing at crusher house is feasible to feed in direct path of existing Stage-I. In view of above, Owner is requested to show the feasible option of Stage-I connectivity from stage-III in flow diagram and plot plan after locating additional facilities i.e CSSP clarifiers, CSSP, Biomass Handling System. etc and issue a suitable amendment to keep all the Bidders at par.	Bidder to refer Sl. No MH-8 amendment no 1 to technical specification.
404	Part E - Drawings	1150-999-POC-F-001	1 of 1	-	General Layout Plan - ERH 	Owner to note that construction of proposed ERH in existing Stage-II stockpile area is not feasible in view of existing stacker foundation, Also the proposed ERH conveyor route is overlapping with the existing pipe racks, existing budlings & other facilities which are not shown in the GLP. In view of this, Owner is requested to either provide the alternate feasible route for the ERH or exclude the same from EPC scope of work.	Bidder to refer Sl. No MH-1 amendment no 1 to technical specification.

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405	SECTION - VI , PART – A,	SUB-SECTION-I-A PROVENNESS	16 OF 40	4.23	Provenness for SCR system.	Bidder understands that the SCR system is deleted from the scope and hence provenness related to SCR shall be deleted.	Bidder to refer Amendment no SG.1 and SG.2 in this regard
406	SECTION - VI , PART – A,	SUB SECTION-II A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	28 OF 28	7.00.00	Architectural Features for Steam Generator Enclosure Boiler structure being the heart of the power plant shall be architecturally treated to have an aesthetic appearance and shall be comparable with international buildings of repute. Boiler structure shall be in complete harmony with the main plant building, surrounding structures and environment. Accordingly, to achieve the same following provision (not limited to) shall be applied. 1. Boiler enclosure shall be covered with colour coated metal sheeting. The metal sheet shall display a visually appealing painting (which will be informed later) on outside. The height covered for sheeting will be from boiler roof to Penthouse and 15 m below from penthouse. During Overhauling or repair, the covering should not restrict material movement from Top and Sides of the boiler. Accordingly, removable type sheet shall be provided for such location. Necessary approach and lugs shall be provided for this purpose.	Bidder would request to kindly remove this clause as the bidder is providing suitable boilers casing at the Roof and Penthouse. The additional requirement shall increase the heat and ventilation given in same area may not be suitable, which will create a space where carrying out any online maintenance or inspection work will not be possible.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
407	SECTION - VI , PART – A, SUB SECTION-II A-01	Forced Draft Fans	9 OF 28	2.13.01	Forced Draft Fans Two (2) nos. of axial type, constant speed variable pitch controlled FD fans each with drive motor, base plates, foundation bolts & nuts, inlet bird and trash screen, suitable arrangement to prevent rain water entry to fan motor, coupling and coupling guard and acoustic silencer. Each fan shall be provided with bearing lubrication and hydraulic blade pitch control unit(s) consisting of:	Bidder would like to clarify that the Fan shall be directly placed on the foundation similar to all previous Projects executed for Employer. Thus Base Plate is not required as part of BIDDER'S OEM design. However, drive motor shall have its own base plate. Kindly confirm acceptance.	
	SECTION - VI , PART – A, SUB SECTION-II A-01	Induced Draft Fans	9 OF 28	2.13.02	Two (2) nos. two stage ID fans (Axial type, Constant speed, variable pitch controlled) each with drive motor, base plates, foundation bolts and nuts, inlet box, discharge case, coupling, coupling guard and suitable arrangement to prevent rain water entry to fan motor. Each ID fan shall be provided with bearing lubrication and hydraulic blade pitch control unit(s) consisting of.		The details shall be decided during detail engineering based on the equipment/system offered, in line with the specifications requirements.
	SECTION - VI , PART – A, SUB SECTION-II A-01	Primary Air Fans	13 OF 28	2.15.04	Two (2) numbers of two stage axial PA fans for each steam generator, with hydraulic blade pitch control system each with motor, base plates, foundation bolts, inlet box, inlet bird and trash screen, inlet rain water canopy, inlet cone, diffuser, coupling, coupling guard and silencer.		
408	SECTION - VI, Part_B_Mechanical_SUB SECTION-A-02	Fan balancing	37 OF 67	12.06.00	The fans shall be statically and dynamically balanced before shipment.	Blades will be balanced statically and hubs will be balanced dynamically at manufacturer's workshop. The combination of these will therefore be a balanced rotor.	Bidder's proposal is not acceptable. Specification requirement is clear & bidder to comply the technical specification requirements.
409	SECTION - VI, Part_B_Mechanical_SUB SECTION-A-02	Fan balancing	37 OF 67	12.06.00	Balancing of each fan shall be checked and adjusted at site, if necessary.	Blades and Hub will be balanced separately at the workshop and in view of this site balancing is not required. Bidder will support for site balancing, if necessary.	Bidder's proposal is not acceptable. Specification requirement is clear & bidder to comply the technical specification requirements.
410	SECTION - VI, Part_B_Mechanical_SUB SECTION-A-02	Fan balancing	37 OF 67	12.06.00	Natural frequency of all fan components shall be established by vibration testing to ensure that no part of the wheel is adversely excited by any force generated at operating speeds.	Bidder/its OEM shall carry out natural frequency test for one set of blades for one Hub for the first set of fans as per OEM practice. Natural frequency test is not required for other rotating parts.	Bidder's proposal is not acceptable. Specification requirement is clear & bidder to comply the technical specification requirements.
411	SECTION - VI, Part_B_Mechanical_SUB SECTION-A-02	Fan balancing	37 OF 67	12.06.00	d) The fan blade shall be subjected to natural frequency test. The other components of ID & FD fan wheels need not be subjected to natural frequency test if supplier can prove that these components are very rigid and have very high natural frequency compared to the operating frequency of respective fans giving justification..	Bidder/its OEM shall carry out natural frequency test for one set of blades for one Hub for the first set of fans as per OEM practice. Natural frequency test is not required for other rotating parts.	Bidder's proposal is not acceptable. Specification requirement is clear & bidder to comply the technical specification requirements.

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Sr. No.	**Section / Part**	**Sub-Section**	**Page no.**	**Clause No.**	**Bid Specification Stipulation**	**Clarification/Deviation**	**Owner's Clarification**
412	SECTION - VI, Part_B_Mechanical_SUB SECTION-A-02	Fan Casing	38 OF 67	12.10.00	The fan casing shall be split to provide easy removal of the fan hub/impeller for replacement and repairs.	Bidder's design consists of rolling diffuser / inlet box for onsite maintenance, diffuser (in case of single stage and two stage fans) and inlet box (in case of two stage fans only) are mounted on rails for easy maintenance of hubs and blades. However Fan components like inlet box and diffuser will be supplied in split for ease of transportation and handling at site.	Bidder to comply the specifications requirements. Further details shall be discussed during detail engineering in line with the specifications requirements.
413	SECTION - VI , PART – A, SUB SECTION-II A-01	Regenerative Air Pre-heater (RAPH)	10 OF 28	2.14.01	(1) One (1) peripheral ACVFD drive connected to drive Airheater along with automatic clutching/declutching arrangement. Alternatively, centrally mounted APH ACVFD Drive system having sufficient space for mounting emergency drive and having handling facility with proven experience may also be acceptable.	Bidder shall provide 1no. Centrally mounted AC VFD Drive, 1 No. air motor drive, mounted on common gear box with automatic clutching/declutching arrangement. Air receiver tank and related accessories shall be in Customer's scope of supply	
	SECTION - VI, Part_B_Mechanical_SUB SECTION-A-02		19 OF 67	9.01.03	Air Heater drive s ys item (i) 1 No. peripheral / centrally mounted AC VFD drive, with gear box and automatic clutching/declutching facility. Alternatively, centrally mounted APH AC VFD Drive system having sufficient space for mounting emergency drive and having handling facility with proven experience may also be acceptable. ii) 1 No. independent air motor drive, with its gear box and automatic clutching, declutching facility for rotation during non availability of A.C. drive system. (iii) An air receiver tank of storage capacity adequate to operate air pre-heater using air motors for 10 minutes (minimum) with no air make-up during this period. Air motor valve for air supply from air receiver tank to APH shall have lock open arrangement.		Bidder's proposal is not acceptable. Specification requirement is clear & bidder to comply the technical specification requirements.
414	SECTION - VI, Part_B_Mechanical_SUB SECTION-A-02	Regenerative Air Pre-heater (RAPH)	11 OF 28	2.14.01	(13) Adequate number of thermocouples or platinum resistance temperature detectors (RTD) for measuring cold and hot end bearing metal temperature for interlock , protection and monitoring shall be provided.	Duplex RTD shall be provided for cold and Hot end for bearing metal temperature	Bidder's proposal of providing duplex RTDs is noted.
415	SECTION - VI, Part_B_Mechanical_SUB SECTION-A-02	Regenerative Air Pre-heater (RAPH)	11 OF 28	2.14.01	Forced lubrication system for bearing of each air heater shall be provided and shall include two (2) x 100% capacity oil pumps with motor, two (2) x 100% oil coolers and two (2) x 100% oil filters etc.	Oil unit system based on Khurja scheme shall be provided. The scope of instruments shall be furnished separately after detailed review of specifications.	Specification requirement is clear & bidder to comply the technical specification requirements.
416	SECTION - VI, Part_B_Mechanical_SUB SECTION-A-02	REGENERATIVE AIR PRE-HEATERS AND STEAM COIL AIR PREHEATERS	18 OF 67	9.01.03	(ii) The maximum air-in-leakage to flue gas of the Steam Generator with coal shall be guaranteed and demonstrated along with the Boiler PG test. The Contractor shall also demonstrate that the drift in air heater leakage (percentage change in air-in-leakage) does not exceed 1%, one year after demonstration of above guaranteed air-in-leakage. Within this period of operation till all air heater leakage demonstrations are completed there will be no need for any shut down for seal replacements or any internal adjustments. The seal design/construction shall be such that the above requirements are satisfied.	1. The air heater sealing system, and thus leakage will be adversely impacted by operating conditions beyond the control of L&T. For example, operating the air heater with gas flow and little to no air flow (bottle-up) will result in extensive wear and damage to the hot end radial seals, hot end sector plates, hot end circ seal (and possibly its holding bar) and cold end axial and circ seals. 2. Similarly, operation at elevated gas temperature may result in larger than expected rotor capping/turndown, resulting in seal wear and possible damage to the seals and cold end sector plates. 3. Demonstration of guaranteed leakage values is contingent upon the air heater sealing system being in the as-designed condition as called for in the ASME PTC 4.3 test code. The code recommends that the sealing system be inspected, and all necessary repairs carried out, just prior to guarantee testing to ensure that the equipment is suitable for testing. 4. Based on various testing experience in last few scenarios it was noticed that the RAPH is being operated within initial 3000 hours including bottling-up and elevated temperature scenarios as indicated above, which in turn impact the part and thereby the RAPH performance as informed above. 5. Hence, Bidder do not recommend the leakage guarantee demonstration after 3000 hours of operation and demonstration of drift (% as per tender) one year after the initial demonstration/ operation, unless until all the sealing system and related parts are under as designed condition as stated in first point, in the basence of which necessary repairs to be carried out as required.	
	SECTION - VI, Part_B_Mechanical_SUB SECTION-A-02	Air Heater drive system	19 OF 67	9.01.03	APH Guarantee Condition 1. Air Leakage (at 100% TMCR i.e. 800 MW unit load for design coal) – 10% (Max.) 2. Design Ambient Temperature & Relative Humidity: 25 degC& 60% RH 3. Excess Air – 20% 4. The maximum air-in-leakage to flue gas after 3000 hours continuous operation of the Steam Generator with coal shall be guaranteed. 5. Contractor shall demonstrate that the air-heater air-in-leakage do not exceed the guaranteed or specified value (whichever is lower) as per description at Sub section-A-01 & A-02, Part-B (Mechanical), of Technical specifications.		Bidder's proposal is not acceptable.The specified requirements are based on the criticality of the equipment as also given the coal & ash type towards the unit performance. Bidder to comply the specifications requirements.

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Sr. No.	**Section / Part**	**Sub-Section**	**Page no.**	**Clause No.**	**Bid Specification Stipulation**	**Clarification/Deviation**	**Owner's Clarification**
417	SECTION - VI, Part_B_Mechanical_SUB SECTION-A-02		19 OF 67	9.01.03	(iv) One of the drive of each of the air preheater shall be provided with VFD for speed regulation from full design rotational speed or 1 rpm, whichever is higher, to about 0.3 rpm. The Contractor shall carry out a test after commissioning to detect the optimum speed of the air preheater to maximize gas temperature reduction at its gas side outlet. Optimum rotation speed for 100% TMCR, 80 % TMCR and 60% TMCR unit loads shall be recommended by the contractor based on such tests. The test shall be made by incrementally reducing the speed in steps of 0.1 rpm from its present maximum operating speed onto the minimum specified speed. Suitable soaking time at each speed step shall be given during the test before recording the temperatures and other performance parameters. Test procedure shall be furnished during detail engineering.	APH Rotor rotational speed is decided in such a way to give optimized heat transfer with maximum residual time possible. Reducing the optimized rpm will not have any further improvement in thermal performance. In case testing is to be done, scope of carrying out the test (with or without pre-defined test procedure) shall be by the End-Customer. Further, Bidder would like to inform that, there is no internationally recognized standard for conducting such a test. Also, it would be very difficult, if not impossible to identify any changes in thermal performance due to the small changes in speed (as defined in tender).	Bidder's proposal is not acceptable. Specification requirement is clear & bidder to comply the technical specification requirements.
418	SECTION - VI/ Part B	E - 01	1 of 13	1.01.01 (a)	Each plate shall be subjected to a 100% normal ultrasonic at the mill to meet the minimum requirements of EN 10160:1999 / equivalent ASTM standards. Elevated temperature tensile tests shall also be carried out on plate material for each heat.	Bidder clarifies that we normally use forged material as per pressure part schedule and design instead of plate material for water separator as per ASME material specification.	Bidder proposal is not acceptable. Specification requirement of Ultrasonic Testing is clearly specified for this application. Bidder to comply technical specification requirement.
419	SECTION - VI/ Part B	E - 01	1 of 13	1.01.01 (j)	all butt welds shall be subjected to 100% radiography.	All butt welds shall be subjected to 100% ultrasonic / radiography / PAUT+TOFD examination after stress relief same as mentioned in (h)	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement. Further, the same may be discussed during detailed engineering if
420	SECTION - VI/ Part B	E - 1	2 of 13	1.01.02 (b)	All butt welds shall be subjected to RT/PAUT+TOFD examination	All butt welds shall be subjected to 100% ultrasonic testing/radiography/PAUT+TOFD examination after stress relief same as Point (h).	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement. Further, the same may be discussed during detailed engineering if required.
421	SECTION - VI/ Part B	E - 1	2 of 13	1.01.02 (c)	All full penetration nozzle and attachment welds shall be subjected to UT prior to stress relieving	Bidder suggest UT shall be performed considering Nozzle Size ID More than 250 mm. for less than 250 mm ID as per JV partner practices. Bidder would like to clarify that maximum area shall be covered. Some location full coverage not possible due to nearby Stubs, Hole, opening or nozzle.	Bidder proposal is not acceptable. Specification requirement of Ultrasonic Testing is clearly specified for this application. Bidder to comply technical specification requirement.
422	SECTION - VI/ Part B	E - 1	2 of 13	1.01.02 (d)	All nozzles, branches, stubs and load bearing attachment shall be examined by MPI techniques after the toes of the weld have been ground smooth and stress relieved.	Bidder suggest MT/PT shall be performed before PWHT/ SR for CS and alloy steel Gr.11,12 and Gr.22. For Gr.91 , Gr.92 it shall be performed after PWHT considering CSEF material.	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement. Further, the same may be discussed during detailed engineering if required.
423	SECTION - VI/ Part B	E - 01	2 of 13	1.01.03 (c)	All tubes/panels/coils shall be checked for clearance by steel ball test and for cleanliness by sponge passage	For Steel Ball & Sponge test of Panels, There are constraint due to Y-pieces, Riffle tubes, 3-Dimensional Opening (3D) etc in WW panels. Bidder proposes to carry out Sponge & ball pass only for flat Panel & coils as per Bidder practice.	Bidder proposal is not acceptable. Looking into criticality of component, Steel ball & Sponge test is to check the presence of any foreign material. Bidder to comply technical specification requirement.
424	SECTION - VI/ Part B	E - 1	2 of 13	1.01.03 (d)	Quantum of RT or UT on shop and field weld butt joints	Bidder proposes for quantum as per design code and IBR with minimum of 20% by RT/UT/PAUT	Bidder proposal is not acceptable. Quantum of NDT is clearly specified. Bidder to comply technical specification requirement.
425	SECTION - VI/ Part B	E - 1	3 of 13	1.01.03 (f)	Tubes and fabricated panels/coils shall be subjected to hydraulic pressure test including water wall panels, burner panels, preheaters, super heaters & economizers.	Bidder proposes to perform the hydrotest on critical burner panel -100 % and 10 % for other water wall panels, Reheater ,Economiser, super heaters & hydro test shall be excluding loose tubes and coils without butt joints. Bidder perform welding majority through auto Tig (automatic TIG welding) machines which has high accuracy level and defect rate. Bidder has stringent internal quality checks for welding. 10 % Random Hydrotest will improve project schedule.	Bidder proposal is not acceptable. Hydrotest is carried out to vaidate design & strength of the component. Bidder to comply technical specification requirement.

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426	SECTION - VI/ Part B	E - 1	3 of 13	1.01.04 (c)	All bent pipes shall be checked for ovality and thinning by UT on first off lot & on random samples for subsequent pieces. Outer surface of bends shall be subjected to MPI/LPI.	Bidder propose PT/MT on bend area for Hot Bends only as Per its OEM procedure. Bidder does not envisaged PT/MT for Cold bends of pipes. As per Bidder's standard practice & PT/MT performed at extrodes of hot bend pipe to check surface defect like cracks due to hot shortness and tensile forces at the bend extrados portion after S.R.which cannot be sometime visible during visual examination. Based on past executed and all NTPC projects zero indication observed. Bidder propose to check ovality and thinning 100 % of production bend pipes. Eliminate the first off lot for bend piping as bidder has established bending parameters data and system to control the required dimensions.	Bidder proposal is not acceptable. The requirements of NDT is clearly specified. Further, the same may be discussed during detailed engineering if required.
427	SECTION - VI/ Part B	E - 1	3 of 13	1.01.04 (d)	The edge preparation for shop and site welds in stainless steel /alloy steel shall be subjected to dye penetrant check. Non-destructive examination of welds shall be carried out after post weld heat treatment, if any	Bidder have not envisaged PT for the edge preparation for shop and site weld in SS and alloy steel. 100 % MT/PT for all WEP of SS & AS Pipes. L&T uses 100% UT tested pipes and at shop WEP is carried out at sophisticated CNC machines & followed by visual inspection. WEP of pipes are done through Machining only. Gas cutting and grinding process is not used. In past executed projects, no indication observed on machined WEP of pipes. Therefore bidder request to waive this check which has not much significance in quality of product.	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement. Further, the same may be discussed during detailed engineering if required.
428	SECTION - VI/ Part B	E - 1	4 of 13	1.01.04 (i)	Wherever SR/PWHT is envisaged for alloy steel, above NDTs shall be after SR/PWHT	Bidder propose that NDE shall be performed before and after PWHT for all Gr.91 and Gr.92 considering CSEF material. For other than Gr.91 /Gr,92 NDE shall be done one time before PWHT.	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement. Further, the same may be discussed during detailed engineering if required.
429	SECTION - VI/ Part B	E - 1	4 of 13	1.01.06 (b)	Hardened/stellitted valve disc and seat are to be subjected to LPI and hardness	Hardness shall be checked on sample piece and not directly on valve disc and seat	Bidder proposal is not acceptable. LPI & Hardness testing requirements are clearly specified. Bidder to comply technical specification requirement.
430	SECTION - VI/ Part B	E - 1	4 of 13	1.01.06 (c)	Color matching of valve disc/plug and seat shall be carried out to ensure min. 80% contact and no through passage	Color matching is not emphasised as now a days matching technology has improved a lot, moreover tightness of disc/plug to seat shall be carried out by performing air/water leak test as per standard	Bidder proposal is not acceptable. Blue matching is a critical check for ensureing no leakages during operation. Bidder to follow the technical specification requirements.
431	SECTION - VI/ Part B	E - 1	8 of 13	1.02.03 (d)	Full range performance test shall be carried out on one fan of each type and size as per BS 848, Part-1.	Please note that BS 848, Part 1 is now withdrawn and replaced by BSEN ISO 5801. Bidder proposes to perform testing as per BSEN ISO 5801 or equivalent.	Please refer E-00 (page 01 of 01) of Part-B regarding applicability of latest revision of Codes & Standards. Bidder to follow the technical specification requirement.
432	SECTION-VI, PART-B	SUB-SECTION-E-1	8 of 13	1.02.04 (a)	Raw material for shaft, coupling, gears and pinions, top and bottom races and other rotating components shall be subjected to UT. MPI/LPI shall be carried out to check surface soundness.	Forged shafts used in Roller Journal Assembly / Tensioning Parts Assembly shall be subjected to UT & MPI, as applicable, during stages of production. However, Shaft, Coupling, Gears & Pinions, Top & Bottom races and other rotating components are the part of bought-outs viz., Gear Box with Lubrication units, Hydraulic Tilting Device, Roller Loading Device etc. These are compliant to supplier internal quality norms & no reports for UT/MPI/LPI will be produced.	Bidder proposal is not acceptable. The requirements of NDT is clearly specified. Bidder to comply technical specification requirement. Further, the same may be discussed during detailed engineering if required.
433	SECTION-VI, PART-B	SUB-SECTION-E-1	8 of 13	1.02.04 (b)	Wear-resistant parts shall be UT/ RT tested to check soundness after suitable heat treatment. Check for chemical composition, hardness and microstructure shall be carried out. For ceramic materials check for various properties including hardness, density, wear rate and composition shall be carried out.	Wear resistant parts viz. Roller Liners (Roller Journal Assembly) & Table Liners are composites comprising of SG Iron & Hi chrome material. For such composite material, UT/RT/MPI is technically not feasible. However, LPI shall be conducted to ensure surface integrity. (LPI acceptance norms will be as specified by the supplier specification & approved by Bidder Engg).	Bidder proposal is not acceptable. The requirements of NDT is clearly specified. Bidder to comply technical specification requirement. Further, the same may be discussed during detailed engineering if required.
434	SECTION-VI, PART-B	SUB-SECTION-E-1	9 of 13	1.02.04 (c)	Butt welds in the tube/ separator /body casing of the mill shall be tested by UT / RT and MPI. All other welds in main tube/separator shall be tested by MPI/LPI for acceptance. The tube shall be statically balanced.	Butt welds shall be subjected to UT and LPI after PWHT, as applicable. LPI is proposed due to positional difficulty.	Bidder proposal is not acceptable.MPI has advantage of detecting both surface & sub-surface discontinuities where as LPI is for checking surface discontinuities. Bidder to follow the technical specification requirements.
435	SECTION-VI, PART-B	SUB-SECTION-E-1	9 of 13	1.02.04 (d)	All gearboxes shall be run tested for adequate duration to check rise in oil temperature, noise level and vibration. Check for leak tightness of gear case also shall be performed.	Trial run duration shall be as per manufacturer specification. Oil leakage shall be checked during no load trial run test at supplier's works.	Bidder to comply the Technical specification requirements. The same may be discussed during detailed engineering

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436	SECTION-VI, PART-B	SUB-SECTION-E-1	9 of 13	1.02.04 (e)	Trail assembly (stacking) of at least one Mill complete with all major components needs to be carried out at shop.	At shop, only one mill will be trial assembled with 01 no. Grinding Table Assembly, 01 no. Roller Journal Assembly, 01 no. Lower Housing Assembly and 01 no. Middle Housing Assembly.	Trail assembly with all major components as per drawing needs to be carried out at shop. Bidder to follow the technical specification requirements.
437	SECTION-VI, PART-B	SUB-SECTION-E-1	9 of 13	1.02.04 (f)	Fabricated pipe welds should be examined by MPI.	In case of Pulveriser mill, pipe welds are applicable only for Lower housing –seal air piping arrangement. This is a low pressure piping & hence LPI is proposed.	Bidder proposal is not acceptable.MPI has advantage of detecting both surface & sub-surface discontinuities where as LPI is for checking surface discontinuities. Bidder to follow the technical specification requirements.
438	SECTION - VI/ Part B	E - 1	9 of 13	1.02.06 (c)	All pumps including spare cartridges shall be subjected to performance test at the manufacturer's works under as near site conditions as possible and strip down examination after the test.	Bidder Clarifies that strip test shall be performed only in case there is an abnormal sound during performance test of pump.	Bidder understanding is correct. Further, This may be discussed during detailed engineering if required.
439	SECTION - VI/ Part B	E - 1	10 of 13	1.02.07 (7.0)	Cross Travel test of cranes at shop	Cross Travel test of cranes shall be applicable and performed at site during commissioning	Cross Travel test of cranes is critical check & to be carried out before dispatch. Bidder to follow the technical specification requirements.
440	SECTION - VI/ Part B	E - 1	11 of 13	1.02.11 (c ii)	For plates of 25mm < thickness < 32mm - 10% RT/UT and 100% MPI	Bidder proposes to perform MPI/PT in lieu of MPI alone	Bidder proposal is not acceptable.MPI has advantage of detecting both surface & sub-surface discontinuities where as LPI is for checking surface discontinuities. Bidder to follow the technical specification requirements.
441	SECTION - VI/ Part B	E - 1	11 of 13	1.02.11 (c iv)	All fillet welds of built up plate girders shall be inspected 100% by MPI	Bidder proposes to perform MPI/PT in lieu of MPI alone	Bidder proposal is not acceptable.MPI has advantage of detecting both surface & sub-surface discontinuities where as LPI is for checking surface discontinuities. Bidder to follow the technical specification requirements.
442	SECTION - VI/ Part B	E - 1	12 of 13	1.02.15 (a)	All the bellows subjected to vacuum service shall be subjected to vacuum test.	NTPC is requested to note that bidder will perform air leak test in place of hydrotest for metallic expansion joint/below. Roof Penetration expansion joint bellow Hydro test is not practical due to lesser thickness and size. As per Manufacturer's practice leak test is applied for small expansion bellows.	Bidder proposal is not acceptable. Air leakage/ Hydrotest is not a substitute for Vacuum test. Bidder to comply the technical specification requirements.
443	SECTION - VI/ Part B	E - 6	1 of 5	1.01.00 (b)	All pipe lengths under this package, including piping where alloy steel is used shall be subjected to 100 % ultrasonic examination as per material specification standard with acceptable notch depth of 5% of the selected wall thickness (1.5mm maximum) except for the following piping system:	Depth of notch shall be 5% (0.3mm minimum, 1.5mm maximum)	Bidder understanding is correct. Further, This may be discussed during detailed engineering.
444	SECTION - VI/ Part B	E - 6	1 of 5	1.01.00 (c)	The edge preparation for shop and site welds in stainless steel /alloy steel shall be subjected to dye penetrant check. Non-destructive examination of welds shall be carried out after post weld heat treatment, if any	Bidder have not envisaged PT for the edge preparation for shop and site weld in SS and alloy steel. 100 % MT/PT for all WEP of SS & AS Pipes. L&T uses 100% UT tested pipes and at shop WEP is carried out at sophisticated CNC machines & followed by visual inspection. WEP of pipes are done through Machining only. Gas cutting and grinding process is not used. in past executed NTPC -Tanda, Khargone, SJVN-Buxar, THDC-Khurja , no indication observed on machined WEP of pipes. Therefore bidder request to waive this check which has not much significance in quality of product.	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement. Further, the same may be discussed during detailed engineering if required.
445	SECTION - VI/ Part B	E - 6	1 of 5	1.01.00 (d)	Pipe bend shall be checked for ovality and thinning by ultrasonic or other acceptable methods on first off lot & on random samples for subsequent pieces for high pressure applications. Outer surface of bends shall be subjected to magnetic particle examination/LPI.	Bidder propose PT/MT on bend area for Hot Bends only as Per MHI JV partner & L&T procedure.. Bidder does not envisaged PT/MT for Cold bends of pipes. As per LMB's JV Partner standard practice & PT/MT performed at extrudes of hot bend pipe to check surface defect like cracks due to hot shortness and tensile forces at the bend extrados portion after S.R.which cannot be sometime visible during visual examination. Based on past executed NUPPL,all NTPC projects zero indication observed. Bidder propose to check ovality and thinning 100 % of production bend pipes. Eliminate the first off lot for bend piping as bidder has established bending parameters data and system to control the required dimensions.	Bidder proposal is not acceptable. The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
446	SECTION - VI/ Part B	E - 6	2 of 5	1.01.00 (i)	Wherever SR/PWHT is envisaged for alloy steel, above NDTs shall be after SR/PWHT	Bidder propose that NDE shall be performed before and after PWHT for all Gr.91 and Gr.92 considering CSEF material. For other than Gr.91 /Gr,92 NDE shall be done one time before PWHT.	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement. Further, the same may be discussed during detailed engineering if required.
447	SECTION - VI/ Part B	E - 6	3 of 5	1.05.00 (b)	Hardened/stellitted valve disc and seat are to be subjected to LPI and hardness	Hardness shall be checked on sample piece and not directly on valve disc and seat	Bidder proposal is not acceptable. LPI & Hardness testing requirements are clearly specified. Bidder to comply technical specification requirement.

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448	SECTION - VI/ Part B	E - 6	3 of 5	1.05.00 (c)	Color matching of valve disc/plug and seat shall be carried out to ensure min. 80% contact and no through passage	Color matching is not emphasised as now a days matching technology has improved a lot, moreover tightness of disc/plug to seat shall be carried out by performing air/water leak test as per standard	Bidder proposal is not acceptable. Blue matching is a critical check for ensureing no leakages during operation. Bidder to follow the technical specification requirements.
449	SECTION - VI/ Part B	E - 6	5 of 5	1.07.00 (a)	Hydraulic pressure test shall be carried out on each pipe and expansion bellow	NTPC requested to note that bidder will perform air leak test in place of hydrotest for metallic expansion joint/below. Roof Penetration expansion joint bellow Hydro test is not practical due to lesser thickness and size. As per Manufacturer's practice leak test is applied for small expansion bellows.	Bidder proposal is not acceptable. Air leakage is not a substitute for Hydrotest. Bidder to follow the technical specification requirements.
450	SECTION - VI/ Part B	D - 1-10	2 of 4	10.04.01 (a)	Impact test requirement in IS 2062 plates for structural fabrication	Impact test shall be applicable for thickness above 20 mm	Bidder understanding is not correct
451	SECTION - VI/ Part B	E – 37	4 of 4	Note (a)	In case of manufacturers / supplier who have supplied cables in the past through Corporate Centre:- Routine Test of manufacturer internal test report are to be verified by owner and Main Contractor at the time of final inspection. Owner and Main Contractor will also witness routine tests on cables on 10% sample basis.	Bidder proposal for review of Routine Test report at the time of Final Inspection However Acceptance Test will be carried out as per relevant standard and sampling plan	Bidder request is not acceptable. Bidder to follow QA specification indicated in bid document and NTPC approved MQP for the respective type of cables for the applicable standard as well as sampling plan.
452	SECTION - VI/ Part B	E – 40	3 of 3	Note (a)	Routine Test of manufacturer internal test report are to be verified by owner and Main Contractor at the time of final inspection. Owner and Main Contractor will also witness routine tests on cables on 10% sample basis.	Bidder proposal for review of Routine Test report at the time of Final Inspection However Acceptance Test will be carried out as per relevant standard and sampling plan	Bidder request is not acceptable. Bidder to follow QA specification indicated in bid document and NTPC approved MQP for the respective type of cables for the applicable standard as well as sampling plan.
453	SECTION - VI/ Part B	E – 42	02 of 02	Note 5	For LT Motors, stator core stack length & grade, no load loss and winding resistance w.r.t. type tested motor for IE2/IE3 shall be checked/verified in addition to Compliance of relevant standard IS:12615/IEC requirement. In case actual results are not within the tolerance limit as declared by manufacturer during QP submission, the motor shall be subjected to efficiency test.	Bidder proposal For LT Motor no load loss and winding resistance w.r.t. type tested motor for IE2/IE3 shall be checked/verified in addition to Compliance of relevant standard IS:12615/IEC requirement. In case actual results are not within the tolerance limit as declared by manufacturer during QP submission, the motor shall be subjected to efficiency test.	Bidder request is not acceptable.Bidder to follow QA specification indicated in bid document for the IE2/IE3 motor like certification of core stack length and grade, winding Resistance, No Load loss w.r.t type tested motor, as efficiency test is not the part of Routine Tests as per Relevant Std.
454	-	-	-	-	Wherever MPI is mentioned and option for PT due to inaccessible areas is not mentioned	Bidder proposes for PT for inaccessible areas	Bidder proposal is not acceptable. MPI is for checking surface & sub-surface discontinuties. Air leak test is not a substitute for MPI. Hence Bidder to comply technical specification requirement.
455	Technical Specification, Section-VI, Part-A,	Sub Sec-1 Intent of Specification	4.02.00	5 of 9	**Pre-commissioning and commissioning activities:** The contractor's scope shall include all pre-commissioning and commissioning activities, materials and services as detailed in other portion of technical specifications including supply of all consumables (except coal, oil and limestone for which subsequent para may be referred), temporary equipment and pipings, instruments, labour / skilled manpower's etc. The scope includes complete requirement of flushing oils including fresh oil refilling during the pre-commissioning and commissioning activities and subsequent initial operation.	Ammonia for SCR Ready system , if required at later stage should be supplied by Customer.	SCR Ready system is not envisaged. Bidder to refer relavant clauses of the technical specifications for its scope regarding SCR Provisioning.
456	Technical Specification, Section-VI, Part-A,	SUB SECTION-II A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	1.03.03	1 of 28	Supply of all consumables (except coal oil and limestone) like chemicals for chemical cleaning, passivation, inhibition etc., Catalysts, fuel oil & coal for firing beyond predefined quantity limits as specified in clause no 4.02.00, Sub-Sec-I, Sec-VI, Part A , oil for line flushing, nitrogen for blanketing, consumables for air/ gas tightness tests and any other consumable as may be required for above pre-commissioning/ commissioning activities.	Catalyst usage is not there anywhere in commissioning. Further For coal and LDO , we understand that supply shall be by the Employer only, even if the quantity goes beyond the pre-defined limit as specified in clause no 4.02.00, sub sec-1, Sec -VI, Part A. Please confirm.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.

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457	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION- G-06 PRE-COMMISSIONING & COMMISSIONING ACTIVITIES	3.03.10	9 OF 14	**Capabilities of all drives:** After completion of installation of drives, contractor shall demonstrate the capability of all drives as specified elsewhere in Section VI Part B of Technical Specifications.	Demonstration of capabilities of all individual drive is not possible at site. Shop test report will be provided.	Bidder's proposal is not acceptable. Specification requirement is clear & bidder to comply the technical specification requirements.
458	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION- G-06 PRE-COMMISSIONING & COMMISSIONING ACTIVITIES	3.03.11	9 OF 14	**Margin on Fans:** After completion of installation of fan drives, Fans, inlet and outlet ducting, measuring equipments etc. contractor shall demonstrate the margin on seal air fans, primary fans, Forced draft fans and induced draft fans as specified elsewhere in Section VI Part B of Technical Specifications.	Demonstration of Margins on Fans and other drives are not possible at site. Shop test report will be provided.	Bidder's proposal is not acceptable. Specification requirement is clear & bidder to comply the technical specification requirements.
459	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION- G-06 PRE-COMMISSIONING & COMMISSIONING ACTIVITIES	3.03.13 a)	10 OF 15	Performance characteristic of fans (PA/FD/ID fan capacity, head developed, etc.)	NTPC to kindly note that only shop test report will be provided.	Bidder's proposal is not acceptable. Specification requirement is clear & bidder to comply the technical specification requirements.
460	TECHNICAL SPECIFICATIONS SECTION – VI, PART-A	SUB SECTION-II A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	13 of 28	2.15.03 (b)	If lubrication of various bearings of mill gear box is done by common lubricating oil feed line having single flow switch, an additional flow switch with necessary interlock and protection should be provided in input shaft bearing lubricating oil feed line. Oil supply line for input shaft bearing should be taken from side/top of the common line, having a collection chamber at the bottom side to trap debris if any.	Design of Gear box supplier as per their standard practice will be followed for collection chamber.	The detailed aspects shall be reviewed based on the selected mill specific design/scheme. Bidder to comply the specifications requirements.
461	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	14 of 87	1.05.08.03 (a)	The YGP index for the specified coal is indicated in Project Information, Subsection-I-B, Part-A, Section-VI of Technical specification when measured as per BS Standard BS-1016 Part-111. The Bidder shall furnish a curve along with his offer indicating the variation in guaranteed wear life with variation in YGP index of coal fired. Separate curves for different wear elements of mill shall be furnished e.g. for grinding rolls, grinding rings, clearly indicating its relationship with YGP index of coal. The curve shall be subject to Employer's approval.	Separate curves for Roller liners & Table liners only, indicating its relationship with YGP index of coal will be furnished.	Specification requirement is clear & bidder to comply the technical specification requirements.
462	TECHNICAL SPECIFICATION SECTION– VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	25 of 67	10.05.10	Pulverize Motor Capability: Ensure minimum Pulverizer motor capability to restart the Pulverizer after a trip with Pulverizer full of coal. Such restart shall not call for any emptying of pulverisers.	Restart of Pulveriser when Pulveriser is full of coal is not feasible without emptying. This Clause to be modified accordingly.	Bidder's proposal is not acceptable. Specification requirement is clear & bidder to comply the technical specification requirements.
463	TECHNICAL SPECIFICATION, SECTION– VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	27 of 67	10.05.28	Adequate numbers of hinged access doors/windows with access ladders shall be provided to facilitate access to various parts of Pulverizer. The access doors shall be suitable for on load inspection and maintenance of Pulverizer.	Bidder understands "On load" means "Mill under running condition". In this condition inspection & maintenance of Pulveriser is not feasible because mill is working under pressure. This clause to be modified accordingly.	The requirement is functional towards inspection & maintenance. Specific construction/access details shall be provided by the bidder during detail engineering based on the offered mill type.
464	SECTION – VI, PART-B	II-B-03 VFD	215 of 586	5.02.00	The system shall be either Current Source Inverter (CSI) or Voltage Source Inverter (VSI) type with minimum Twelve (12) pulse design / 6 pulse with active frontend harmonic filter.	This clause allows 6Pulse diode VFD with active frontend filter in contrast to clause 1.24.00 of Part-A which mentions only 12Pulse VFD . Request to accept MRS LV VFD with 6pulse design.	Bidder proposal is not acceptable. Specification cl. no.1.24.00 Sub -Section IIB Section-VI, Part-A and 5.02.00 Sub -Section B-03 Section-VI, Part-B is clear and to be followed.
465	SECTION – VI, PART-A	IIB ELECTRICAL SYSTEM / EQUIPMENTS	604 of 953	1.24.00	415 V/690 V LV VFD: The Variable frequency drive (VFD) system shall be of a modern proven design for similar applications in power plants/industry. The system shall be either Current Source Inverter (CSI) or Voltage Source Inverter (VSI) type with minimum Twelve (12) pulse design.	From SECTION – VI, PART-B, SUB-SECTION II-B-03 VFD, point number 5.02.00, we understand that VFD with Six (6) pulse design is acceptable. Hence the MRS VFD will be with Six (6) pulse design.	Bidder proposal is not acceptable. Specification cl. no.1.24.00 Sub -Section IIB Section-VI, Part-A and 5.02.00 Sub -Section B-03 Section-VI, Part-B is clear and to be followed.

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466	SECTION – VI, PART-A	IIC CONTROL & INSTRUMENTATION SYSTEM	609 of 953	1.06.02	For open loop control of complete main plant and offsite areas fieldbus-based control system, fieldbus based actuators, Profibus DP based IMC in LV SWGR/MCC and fieldbus based PT/DPT/TT shall be provided excluding applications given in Note-A.	It is understood that the PT/DPT/TT shall be of Fieldbus type. If the level transmitter used is Ultrasonic type or Radar type, it will be with HART protocol (4-20mA). Pls clarify	Bidder's understanding is correct.
467	SECTION – VI, PART-B	II-B-02 MOTORS	208 of 586	3.01.00	Continuous duty LT motors up to 50 KW Output rating (at 50 degC ambient temperature), shall be super Premium Efficiency class-IE4, 50-200 KW shall be of Premium efficiency class – IE3, conforming to IS 12615, or IEC:60034-30.	MRS motor of Pulveriser is a 10Pole motor and standard defines efficiency class for motors upto 8pole only. Therefore Efficiency class of MRS motor of Pulveriser will be as per manufacturers standard.	Bidder understanding is correct.
468	SECTION – VI, PART-B	II-B-03 VFD	216 of 586	8.00.00	BYPASS ARRANGEMENT (OPTIONAL, IF SPECIFIED)	NTPC to kindly clarify 'IF SPECIFIED' Where would this be specified?	Owner confirms that Bypass arrangement is NOT considered.
469	SECTION – VI, PART-B	II-B-03 VFD	217 of 586	9.00.00	STANDBY VFD ARRANGEMENT (OPTIONAL, IF SPECIFIED)	NTPC to kindly clarify 'IF SPECIFIED' Where would this be specified?	Owner confirms that Standby VFD is NOT considered.
470	SECTION – VI, PART-F	VI - Chapter I SG and Auxiliaries Mandatory spares	767 of 953	1.06.00 (24)	VFD assembly for dynamic classifier = 4sets	We understand that VFD assembly means VFD module. Therefore, 4nos of VFD module to be supplied as mandatory spare.	Complete VFD Assembly is applicable. Bidder to comply with the specification requirements

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PREBID QUERIES & CLARIFICATION

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471	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB SECTION-VMANDATORY SPARESI	1 of 39	1.01.00	The list of mandatory spares considered essential by the Employer is indicated in this chapter. The bidder shall indicate the prices for each and very item in the 'Schedule of mandatory Spares' whether or not he considers it necessary for the Employer to have such spares. If the bidder fails to comply with the above or fails to quote the price of any spare item, the cost of such spares shall be deemed to be included in the contract price. The bidder shall furnish the population per unit of each item in the Bid Forms and Price Schedules. Whenever the quantity is mentioned in "sets" the bidder has to give the item details and prices of each item.	Customer to kindly note that many of the items indicated in the spares list here is not applicable and the same has not been considered by the bidder. Bidder has indicated the same in deviation list mentioned below. Further, Bidder shall not provide any rebate for this during contract stage. In case the same is found applicable during detailed engg. Stage the same shall be provided without any cost implication.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items. Further bidder may also refer respective replies against such listed queries.
472	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	1 of 39	1.01.00 (A) Economiser	4. Coil Saddle Clamp/Alignment band / Male & Female sliding Spacers / Sliding Hooks /Straight Shields for boiler tubes & Profile Shields for Boiler tube bends/ Tube clamps	As per Bidder standard, Male & Female Casting are applicable. Hence, Bidder has considered spares for Male & Female Casting. Please confirm.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
473	TECHNICAL SPECIFICATION SECTION-VI, PART-A	-	1 of 39	1.01.00C. Low Temperature Super Heater (LTSH)	4. Coil Saddle Clamp/Alignment band / Male & Female sliding Spacers / Sliding Hooks /Straight Shields for boiler tubes & Profile Shields for Boiler tube bends/ Tube clamps	As per Bidder standard, Male & Female Casting are applicable. Hence, Bidder has considered spares for Male & Female Casting. Please confirm.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
474	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	2 of 39	1.01.00 D. Low Temperature Re-Heater	2. Bends 100Nos. of each size, type, thickness, radius and material. 50 Nos supply tubes, bends/offset	Bidder has considered 50 Nos of tube bend of each size, type, thickness, radius and material only. NTPC is requested to clarify the requirement of 50 Nos of supply tubes, bends/offset	Bidder's propoal is not acceptable. Bidder to comply specification requirements.
475	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	2 of 39	1.01.00 E. Intermediate Temperature Superheater (ITSH) / Platen Super Heater	5. Male & Female connectors, male female couplings spacers and alignment bands	As per Bidder standard, Male & Female Casting are applicable. Hence, Bidder has considered spares for Male & Female Casting. Please confirm.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
476	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	2 of 39	1.01.00 E. Intermediate Temperature Superheater (ITSH) / Platen Super Heater	9 Spacer Tube connectors and stoppers	NTPC is requested to clarify the requirement of Spacer Tube connectors and stoppers the same is not applicable as per the bidder design, hence we have not considered any alternate spares for the same.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
477	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	3 of 39	1.01.00 F. High Temperature Superheater (HTSH)/ Final Superheater	5. Male & Female connectors, male female couplings spacers and alignment bands	As per Bidder standard, Male & Female Casting are applicable. Hence, Bidder has considered spares for Male & Female Casting. Please confirm.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
478	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	3 of 39	1.01.00 F.High Temperature Superheater (HTSH)/ Final Superheater	9 Spacer Tube connectors and stoppers	NTPC is requested to clarify the requirement of Spacer Tube connectors and stoppers the same is not applicable as per the bidder design, hence we have not considered any alternate spares for the same.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
479	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	3 of 39	1.01.00 G. Reheater	5. Male & Female connectors, male female couplings spacers and alignment bands	As per Bidder standard, Male & Female Casting are applicable. Hence, Bidder has considered spares for Male & Female Casting. Please confirm.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
480	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	3 of 39	1.01.00 G. Reheater	9 Spacer Tube connectors and stoppers	NTPC is requested to clarify the requirement of Spacer Tube connectors and stoppers the same is not applicable as per the bidder design, hence we have not considered any alternate spares for the same.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
481	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	4 of 39	1.04.00 (A) Steam Generator start-up re-circulation pump (for once through boiler)	1. Complete Pump & Motor Assembly	Bidder has considered spares for pump and motor assembly excluding motor cooler. Please confirm.	The specification includes Complete Pump & Motor Assembly including motor cooler and other accessories for complete replacement of the installed pump assembly in boiler. Bidder to comply with the specification requirements.
482	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	4 of 39	1.04.00 (A) Steam Generator start-up re-circulation pump (for once through boiler)	5. Impeller wear rings	Not applicable as per the bidder's design, Hence, not considered.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
483	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	4 of 39	1.04.00 (A) Steam Generator start-up re-circulation pump (for once through boiler)	8. Gland packings	Not applicable as per the bidder's design, Hence, not considered.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
484	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 39	1.05.00 A . ID Fan	1. Fan rotor assembly (excluding servo motor, blade & coupling)	Please note the bidder offering as - (1 +1) No. Hub & 1 No. Shaft Only without blades	Bidder has to supply Fan rotor assembly, consisting of main bearing assembly & rotor assembly (excluding servo motor, blade & coupling). Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.

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PREBID QUERIES & CLARIFICATION

Sr. No.	Section / Part	Sub-Section	Page no.	Clause no.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
485	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 39	1.05.00 A . ID Fan	4.1 Fan Bearing	Bidder has considered Main bearings only for this item.	All applicable fan bearings as per the bidder's offered fan type shall be provided in line with the specification requirements.
486	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 39	1.05.00 A . ID Fan	4.2 Fan bearing Housing	Please note that the Bearing Housing is not recommended as per the OEM. Hence the same may be deleted.	This is the main bearing housing assembly of fan. Same has to be supplied by bidder. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
487	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 39	1.05.00 A . ID Fan	5.4 Metallic rings	Not applicable as per the bidder's design, Hence, not considered.	Bidder to provide applicable equivalent items (such as Snap Ring, Retaining Ring, Securing Ring etc as applicable) against this item. The details shall be finalised during detail engineering.
488	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 39	1.05.00 A . ID Fan	5.5 Intermediate piece (if applicable)	Not applicable as per the bidder's design, Hence, not considered.	Bidder to note that the item has been specified with "if applicable". Accordingly, the applicability of the item shall be as per the bidder's offered type/design of the fan. Also, bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
489	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 39	1.05.00 A . ID Fan	6.3 Pressure regulator	2 Nos. Priority Valve Fan side and 1 No. Priority Valve for HT Motor side	Bidder to supply the item as specified, based on the bidder's offered type/design of the fan, which shall be discussed during detail engineering. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
490	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 39	1.05.00 A . ID Fan	6.6 Pump Mechanical Seal	Not applicable as per the bidder's design, Hence, not considered.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
491	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 39	1.05.00 A . ID Fan	9.0 Hydraulic servomotor	Electric Actuators shall be supplied as per the bidders applicable design, Kindly accept the same.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
492	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 39	1.05.00 A . ID Fan	9.1 Hydraulic servomotor assembly with link rods	Not applicable as per the bidder's design, Hence, not considered.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
493	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 39	1.05.00 A . ID Fan	9.2 Hydraulic servomotor Seal ring kit(complete)	Not applicable as per the bidder's design, Hence, not considered.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
494	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 39	1.05.00 A . ID Fan	10.ID fan impeller liner	Not applicable as per the bidder's design, Hence, not considered.	Bidder to refer amendment no SG.18 in this regard.
495	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 39	1.05.00 A . ID Fan	11. ID fan casing liner	Not applicable as per the bidder's design, Hence, not considered.	Bidder to refer amendment no SG.19 in this regard.
496	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 39	1.05.00 B . FD Fan	1. Fan rotor assembly (excluding servo motor,	Please note the bidder offering as - (1) No. Hub & 1 No. Shaft Only without blades	Bidder has to supply Fan rotor assembly, consisting of main bearing assembly & rotor assembly (excluding servo motor, blade & coupling). Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
497	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 39	1.05.00 B . FD Fan	2.1 Fan Bearing	Bidder has considered Main bearings only for this item.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
498	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 39	1.05.00 B . FD Fan	2.2 Fan bearing Housing	Please note that bidder is offering for Bearing Housing (Excluding Main Bearings and Shaft)	This is the main bearing housing assmbly of fan. Same has to be supplied by bidder. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
499	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 39	1.05.00 B . FD Fan	3.4 Metallic rings	Not applicable as per the bidder's design, Hence, not considered.	Bidder to provide applicable equivalent items (such as Snap Ring, Retaining Ring, Securing Ring etc as applicable) against this item. The details shall be finalised during detail engineering.
500	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 39	1.05.00 B . FD Fan	3.5 Intermediate piece (if applicable)	Not applicable as per the bidder's design, Hence, not considered.	Bidder to note that the item has been specified with "if applicable". Accordingly, the applicability of the item shall be as per the bidder's offered type/design of the fan. Also, bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
501	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 39	1.05.00 B . FD Fan	4.3 Pressure regulator	4 Nos. Priority Valve Fan side shall be provided.	Bidder to supply the item as specified, based on the bidder's offered type/design of the fan, which shall be discussed during detail engineering. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.

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PREBID QUERIES & CLARIFICATION

Sr. No.	Section / Part	Sub-Section	Page no.	Clause no.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
502	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 39	1.05.00 B . FD Fan	4.6 Pump Mechanical Seal	Not applicable as per the bidder's design, Hence, not considered.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
503	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 39		4.4 Filters	4 Nos.Filter Element shall be provided.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
504	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 39	1.05.00 B . FD Fan	7 Hydraulic servomotor/ Hydraulic Actuator device	Please note that Electric Actuator shall is Provided.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
505	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 39	1.05.00 B . FD Fan	8 Hydraulic servomotor Seal ring kit(complete)	Not applicable as per the bidder's design, Hence, not considered.	This item is seal ring kit (O rings, seals, gaskets etc) for servomotor or Hydraulic cylinder assembly or equivalent for blade pitch operation of axial fans. Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
506	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 39	1.05.00 C . PA Fan	1. Fan rotor assembly (excluding servo motor,	Please note the bidder offering as - (2 +2) No. Hub & 1 No. Shaft Only without blades	Bidder has to supply Fan rotor assembly, consisting of main bearing assembly & rotor assembly (excluding servo motor, blade & coupling). Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
507	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 39	1.05.00 C . PA Fan	2. Fan Bearings including bearing housing	Please note that bidder is offering Main Bearings- 2 Sets & Bearing Housing (Excluding Main Bearings and Shaft)- 2 Sets	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
508	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 39	1.05.00 C . PA Fan	2.1 Fan Bearing	Bidder has considered Main bearings only for this item.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
509	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 39	1.05.00 C . PA Fan	2.2 Fan bearing Housing	Please note that the Bearing Housing (Excluding Main Bearings and Shaft).	This is the main bearing housing assmbly of fan. Same has to be supplied by bidder. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
510	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 39	1.05.00 C . PA Fan	5.4 Metallic rings	Not applicable as per the bidder's design, Hence, not considered.	Bidder to provide applicable equivalent items (such as Snap Ring, Retaining Ring, Securing Ring etc as applicable) against this item. The details shall be finalised during detail engineering.
511	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 39	1.05.00 C . PA Fan	5.5 Intermediate piece (if applicable)	Not applicable as per the bidder's design, Hence, not considered.	Bidder to note that the item has been specified with "if applicable". Accordingly, the applicability of the item shall be as per the bidder's offered type/design of the fan. Also, bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
512	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 39	1.05.00 C . PA Fan	6.3 Pressure regulator	4 Nos. Priority Valve Fan side shall be provided.	Bidder to supply the item as specified, based on the bidder's offered type/design of the fan, which shall be discussed during detail engineering. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
513	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 39	1.05.00 C . PA Fan	6.4 Filters	4 Nos. Filter Elements shall be provided.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
514	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 39	1.05.00 C . PA Fan	6.6 Pump Mechanical Seal	Not applicable as per the bidder's design, Hence, not considered.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
515	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 39	1.05.00 C . PA Fan	7 Hydraulic servomotor/ Hydraulic Actuator device	Not applicable as per the bidder's design, Hence, not considered.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
516	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 39	1.05.00 C . PA Fan	8 Hydraulic servomotor Seal ring kit(complete)	Not applicable as per the bidder's design, Hence, not considered.	This item is seal ring kit (O rings, seals, gaskets etc) for servomotor or Hydraulic cylinder assembly or equivalent for blade pitch operation of axial fans. Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
517	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 39	1.06.00	Coal Pulveriser		
518	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 39	1.06.00 (2)	2. Gear box internals (except bearings & seals)	Bidder has considered Following as per its OEM Design. Bevel stage: Gear Wheel & Pinion. Planet stage: Sun pinion, Planet gear & Annulus gear (Ring Gear). Please Confirm.	Gear box internals include Gears, shafts, couplings between shafts, thrust pads etc. This clause include all gear box internal spares except bearings & seals.
519	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 39	1.06.00 (3)	3. Complete Gear Box	Complete gear box (excluding lub oil system, Instruments & coupling) considered	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
520	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 39	1.06.00 (7)	7. Liners with brackets & fasteners	Ceramic tiles for classifier, Middle housing, deflector plates considered	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.

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PREBID QUERIES & CLARIFICATION

Sr. No.	Section / Part	Sub-Section	Page no.	Clause no.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
521	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 39	1.06.00 (9)	9. Multiport outlet & liners	Bidder has considered Outlet port with Ceramic tiles.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
522	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 39	1.06.00 (10)	10. Mill main shaft/yoke	Not applicable & Not considered since offered mill is with Planetary Gear Unit	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
523	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 39	1.06.00 (11)	11. Spring	Spring is not applicable since offered mill is with Hydraulic Loading Cylinder (Hydraulic loading cylinder considered in sr. no. 13)	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
524	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 39	1.06.00 (14)	14. Filter Cartridges	Filter element for Hydraulic loading system considered.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
525	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 39	1.06.00 (18)	18. Oil cooler assembly for coal mills	Oil coolers for Hydraulic loading system & Gear Unit Lubrication system considered.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
526	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 39	1.06.00 (19)	19. Bearings for gear box	All Antifriction Bearings for Gear Unit considered as given below. 1. Input Pinion Bearings 2. Bevel Gear Bearings 3. Planetary Gear Bearings Thrust pads & radial Bush not considered.	All bearings of gearbox are to be supplied in line with the specification requirements.
527	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 39	1.06.00 (23)	23. Mill lube oil motor	Motor for Gear unit Lub system considered	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
528	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 39	1.06.00 (25)	25. Mill lower skirt	Lower Air Seal Ring with Gaskets, Retainers & hardware considered	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
529	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 39	1.06.00 (26)	26. Labyrinth seal assembly	Upper Air Seal Ring with Gaskets, Retainers & hardware considered. Mill Bottom is already considered in sr. no. 15 4.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
530	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 39	1.06.00 (28)	28. Mill Scrapper assembly	Hub Skirt with Scraper Assembly considered	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
531	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 39	1.06.00	* One set means one complete replacement of one mill	Unit of measurement of Spares Quantity given in set* (with star mark) & Set (without star mark). Definition given for set* (with star mark), however set (without star mark) definition not given. LMB has considered the same definition for both. Unit of measurement for set to be corrected in tender document.	Bidder's understanding is not correct. Bidder has to consider the definition of set as per the details given in the specifications.
532	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 39	1.07.00 C . Feeders	4. Counter assembly (complete)	Not applicable as per the OEM's design, Hence, not considered.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
533	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 39	1.07.00 C . Feeders	8. Worm	Not applicable as per the OEM's design, Hence, not considered.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
534	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 39	1.07.00 C . Feeders	9. Worm wheel	Not applicable as per the OEM's design, Hence, not considered.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
535	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 39	1.07.00 C . Feeders	10. Feeder gate	Please confirm that only 2 Nos of Feeder inlet gate is required. Bidder has currently considered only inlet gates.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
536	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	9 Of 39	1.08.00 A . Coal Burners/Coal Pipe Bends (for tangential firing)	1. Coal compartment assembly	Coal Compartment (1 sets) consist of Coal Nozzle castings (as per 10)(d) - 1 sets) and Adjustable Coal Nozzle tips (as per 10)(e) - 1 sets) . As there repetition in10 (d) & 10 (e) need not be considered bidder's scope of supply.	Bidder shall supply each spares seperately as per Specification. Bidder proposal is not acceptable.Bidder to comply with the specification requirements.
537	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	9 Of 39	1.08.00 A . Coal Burners/Coal Pipe Bends (for tangential firing)	5.Coal nozzle castings	Please refer our comment for Sl. 1.08.00 (1) above for repetition. The same is not considered twice. Please accept the same and provide suitable modification.	Bidder shall supply each spares seperately as per Specification. Bidder proposal is not acceptable.Bidder to comply with the specification requirements.
538	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	9 Of 39	1.08.00 A . Coal Burners/Coal Pipe Bends (for tangential firing)	6. Adjustable coal nozzle tips	Please refer our comment for Sl. 1.08.00 (1) above for repetition. The same is not considered twice. Please accept the same and provide suitable modification.	Bidder shall supply each spares seperately as per Specification. Bidder proposal is not acceptable.Bidder to comply with the specification requirements.

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PREBID QUERIES & CLARIFICATION

Sr. No.	Section / Part	Sub-Section	Page no.	Clause no.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
539	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	11 Of 39	1.10.00 B. Trisector RAPH	1. Support Bearing	Bottom bearing only	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
540	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	11 Of 39	1.10.00 B. Trisector RAPH	2. Guide Bearing	Top bearing only	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
541	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	11 Of 39	1.10.00 B. Trisector RAPH	10 Fluid coupling (if NA then other applicable coupling)	Normal coupling shall be supplied.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
542	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	11 Of 39	1.10.00 B. Trisector RAPH	11 Other couplings with inserts & fasteners	Shrink Disc coupling between shaft and gear box	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
543	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	11 Of 39	1.10.00 B. Trisector RAPH	12 Worm & worm wheels for gear reducer	1 set = 1 no. Geared motor ASSY for hot end and 1 no. geared motor assy. for cold end	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
544	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	11 Of 39	1.10.00 B. Trisector RAPH	12.2 Coupling	Not applicable, Normal coupling shall be supplied.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
545	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	12 Of 39	1.10.00 B. Trisector RAPH	13.Spare kit for rotor stoppage alarm (if applicable)	1 Set = 3 Nos. of only Speed Sensor requirement of one RAPH	Bidder's understanding is correct.
546	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	12 Of 39	1.10.00 B. Trisector RAPH	14. Bushings for worm gear reducer	Not applicable,. Equivalent item shall be supplied as per OEM design	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
547	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	12 Of 39	1.10.00 B. Trisector RAPH	16. Rack & Pinion Assy	Not applicable as per OEM design. Hence alternatively, Gear Box Assembly will be offered.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
548	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	12 Of 39	1.10.00 B. Trisector RAPH	18 Air preheater guide bearing and support bearing lube oil pump motor (if Applicable)	Noted for each type and rating	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
549	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	12 Of 39	1.10.00 B. Trisector RAPH	20 Air preheater blower motor	One no. Cold end motor only as it can be used for hot end soot blower as well	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
550	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	13 Of 39	1.12.00 HEA Ignitors	2. HEA spark rod (including special cables from exciter)	HEA spark rod without spark tip. Please confirm.	Bidder's understanding is correct.
551	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	13 Of 39	1.13.00Soot Blowers	1a Motor for water wall deslagger	Motor already covered in Sl. No. 1, hence deslagger motor not considered separately.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
552	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	13 Of 39	1.13.00Soot Blowers	3 a) Motor for long retractable soot blower	Motor already covered in Sl. No. 9 below, hence long retractable Soot Blower motor not considered separately.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
553	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	13 Of 39	1.13.00Soot Blowers	6.1 Long retractable soot blower	Bearings shall be provided. However, oil seals are not applicable.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
554	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	13 Of 39	1.13.00Soot Blowers	6.2 Water wall deslagger	Bearings shall be provided. However, oil seals are not applicable.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
555	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	13 Of 39	1.13.00Soot Blowers	12. Complete power pack assembly for Long Retractable soot blower	Rotary & insert / retract motion is accomplished by single motor, which is considered in Sl. No. 1.14.09 above, separate Power pack assembly is not applicable hence spare not considered.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
556	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	13 Of 39	1.13.00Soot Blowers	14.1 Set of Gears & shaft (Spur & worm)	Not applicable. OEM is having rack & pinion design and a single motor is capable of both rotary as well as traverse motion.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
557	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	14 Of 39	A.Spares for Steam Separator Safety valves	4.Locking pin set	Bidder shall supply these spares if applicable as per OEM design	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
558	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	14 Of 39	A.Spares for Steam Separator Safety valves	6. Safety Valve Spindle	Bidder shall supply these spares if applicable as per OEM design	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
559	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	14 Of 39	B. Spares for SH Safety Valves	4. Locking pin set	Bidder shall supply these spares if applicable as per OEM design	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.

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PREBID QUERIES & CLARIFICATION

Sr. No.	Section / Part	Sub-Section	Page no.	Clause no.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
560	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	14 Of 39	B. Spares for SH Safety Valves	10. Set of Washer	Bidder shall supply these spares if applicable as per OEM design	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
561	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	14 Of 39	C. Spares for Hot RH safety Valves	4. Locking pin set	Bidder shall supply these spares if applicable as per OEM design	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
562	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	15 of 39	C. Spares for Hot RH safety Valves	10. Set of Washer	Bidder shall supply these spares if applicable as per OEM design	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
563	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	15 of 39	D. Spares for Cold RH safety Valves	4. Locking pin set	Bidder shall supply these spares if applicable as per OEM design	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
564	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	15 of 39	D. Spares for Cold RH safety Valves	10. Set of Washer	Bidder shall supply these spares if applicable as per OEM design	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
565	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	15 of 39	E-1. Spares for Electromatic Relief Valves	2.4 Seal bushing for main valve 4 nos. of each type	Bidder shall supply these spares if applicable as per OEM design	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
566	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	15 of 39	E-1. Spares for Electromatic Relief Valves	2.3 Seal ring 4 nos. of each type	Bidder shall supply these spares if applicable as per OEM design	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
567	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	15 of 39	E-1. Spares for Electromatic Relief Valves	2.6 Bushing for pilot valve 4 nos. of each type	Bidder shall supply these spares if applicable as per OEM design	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
568	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	15 of 39	E-1. Spares for Electromatic Relief Valves	E-2. Spares for Electromatic Ball Valves	Not applicable as per the OEM's design, Hence, not considered.	Bidder to clarify their supply. In case Electromatic Ball Valve (EBV) is only supplied in place of Electromatic Relief Valves (ERV), then additional mandatory spares for EBV as listed in E-2 shall be supplied against E – 1 spares for ERV.
569	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	16 Of 39	1.17.00 Spares for boiler main steam stop valve	1. Boiler main stop valve assy	complete valve assembly except the valve body, valve actuator will be supplied.	Boiler main stop valve assembly shall include valve body, valve actuator and the assembly to be supplied for complete replacement of installed valve in boiler.
570	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	16 Of 39	1.18.00 Boiler Feed Check Valve	4. Gland packings	Bidder shall supply these spares if applicable as per OEM design.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
571	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	17 Of 39	1.19.00 Start-up vent valve	3. Body seat rings 4 sets*	Bidder shall supply these spares if applicable as per OEM design.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
572	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	25 of 39	2.01.00, OTHER RELATED CONTROL AND INSTRUMENTATION SYSTEMS / EQUIPMENTS	6. Furnace and Flame viewing system	Spares considered under 6.1 & 6.2	Bidder's proposal is not acceptable. Bidder shall comply to specification requirements.
573	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	25 of 39	2.01.00, OTHER RELATED CONTROL AND INSTRUMENTATION SYSTEMS / EQUIPMENTS	6.1 Flame Cameras	Furnace TV Mandatory Spares: Electronic Modules of Furnace Camera are not user replaceable, hence Camera Electronics is not considered part of Mandatory Spare, however complete Camera is offered as per Mandatory Spare. Accordingly commercial rebate shall not be applicable for such items.	Bidder to note that Electronic modules indicated in referred clause pertains to Furnace Flame Viewing system and not limited to Camera only. Bidder shall comply to specification requirements.
574	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	25 of 39	2.01.00, OTHER RELATED CONTROL AND INSTRUMENTATION SYSTEMS / EQUIPMENTS	8. Acoustic steam Leak Detection system (ASLD) (if applicable)	No spare considered against LOT. Spares considered under 8. (i) & 8. (ii)	Bidder's understanding is correct.
575	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	25 of 39	2.01.00, OTHER RELATED CONTROL AND INSTRUMENTATION SYSTEMS / EQUIPMENTS	10. Any other instruments (If applicable)	No other Instruments are considered other than that are specifically mentioned	**Bidder to refer Amendment No-C-04 in this regard.**
576	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	25 of 39	2.01.00, OTHER RELATED CONTROL AND INSTRUMENTATION SYSTEMS / EQUIPMENTS	11. Any other control system (If applicable)	No other Instruments are considered other than that are specifically mentioned	**Bidder to refer Amendment No-C-04 in this regard.**
577	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	25 of 39	2.02.00,MEASURING INSTRUMENTS (for all systems supplied under this chapter including Auxiliary Boiler, FOPH, Dosing System, ECW, Air compressor system, FGD, De- NOx, Skids)	De-NOX Skid	Not Applicable, Since no SCR is envisaged for this plant.	Bidder's understanding is correct.
578	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	26 of 39	2.05.01, CONTROL VALVES, ACTUATORS & ACCESSORIES (FOR ALL SERVICES UNDER THIS CHAPTER)	-	Excludes control valves covered under Light oil system under 1.11.00/soot b lower under 1.13.00/spray control valves Valves under 1.14.00/Aux PRDS under 1.20.00/Aux boiler under 1.21.00	Bidder's understanding is not correct. Bidder shall comply to specification requirements.

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Sr. No.	Section / Part	Sub-Section	Page no.	Clause no.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
579	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	27 of 39	2.05.02, PNEUMATICALLY OPERATED ISOLATION / BLOCK VALVES, ACTUATORS & ACCESSORIES	-	Excludes pneumatically operated isolation/block valves covered under Light oil system under 1.11.00/soot b lower under 1.13.00/spray control valves Valves under 1.14.00/Aux PRDS under 1.20.00/Aux boiler under 1.21.00	Bidder's understanding is not correct. Bidder shall comply to specification requirements.
580	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	28 of 39	3.00.00, Elevator	1. Friction block	Bidder shall supply these spares if applicable as per OEM design.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
581	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	28 of 39	2	Guide roller of each type	Bidder shall supply these spares if applicable as per OEM design.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
582	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	28 of 39	5	Time device	Bidder shall supply these spares if applicable as per OEM design.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
583	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	28 of 39	8	Bidder shall supply these spares if applicable as per OEM design.	Bidder shall supply these spares if applicable as per OEM design.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
584	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	28 of 39	15	Transmitters	Bidder shall supply these spares if applicable as per OEM design.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
585	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	29 of 39	21 (a)	Fan	Bidder shall supply these spares if applicable as per OEM design.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
586	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	29 of 39	23	Pinion	Bidder shall supply these spares if applicable as per OEM design.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
587	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	29 of 39	B (1)	Friction block	Bidder shall supply these spares if applicable as per OEM design.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
588	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	29 of 39	B (2)	Guide roller of each type	Bidder shall supply these spares if applicable as per OEM design.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
589	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	29 of 39	B (5)	Time device	Bidder shall supply these spares if applicable as per OEM design.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
590	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	29 of 39	B (8)	Auxiliary relay	Bidder shall supply these spares if applicable as per OEM design.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
591	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	30 of 39	B (15)	Transmitters	Bidder shall supply these spares if applicable as per OEM design.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
592	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	30 of 39	B (21)	Fan	Bidder shall supply these spares if applicable as per OEM design.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
593	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	30 of 39	B (23)	Pinion	Bidder shall supply these spares if applicable as per OEM design.	Bidder to please refer clause 13.00.00 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
594	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	1 of 3	2.00 Power Cycle Piping	7) Complete gate valves assembly up to the size of 50 NB	Not Applicable, As there are no gate valve below 50 NB	Bidder to please refer note-8 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
595	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	1 of 3	2.00 Power Cycle Piping	13) Gasket for each flanged connection on high pressure steam and feed line. 3 Nos. per unit	Not Applicable there are no flange connection in the high pressure valve.	Bidder to please refer note-8 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
596	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	1 of 3	2.00 Power Cycle Piping	14a) Safety valve up to 50 NB size 02 nos. of each type, material, size & class per unit 14b) Safety valve above 50 NB size 01 no of each type, material, size & class per unit	Safety valves are already covered under 1.14.00	Specification requirements are clear in this regard and bidder to comply with the specification requirements.
597	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	1 of 3	2.00 Power Cycle Piping	15) Steam traps and Y-Strainers	Bidder shall supply these spares if applicable as per OEM design.	Bidder to please refer note-8 of section-VI/Part-A, sub-section-VI Mandatory spares chapter page 3 of 3 regarding not applicable items.
598	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	PAGE 01 OF 03	3 L.P. Chemical dosing system	1) Mandatory spare requirements of Valves and specialties for power cycle piping systems (Sub Section: A-07 of Part-A of Technical Specifications) specified above does not include items/valves/specialties which are already specified/ covered elsewhere in this Technical specification for mandatory spare requirement.	1)Bidder insist if there is one no. valve only of particular type , class and size then only one no. of mandatory Spare shall be supplied. Customer to add this note in the PCP valve	Specification requirements are clear in this regard and bidder to comply with the specification requirements.
599	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	PAGE 01 OF 03	3 L.P. Chemical dosing system	2) Wherever complete valve assembly as mandatory spare has been specified above for power cycle piping, it shall include complete gear operator/ box assembly which forms part of original valve assembly/supply.	1)Bidder insist if there is one no. valve only of particular type , class and size then only one no. of mandatory Spare shall be supplied. Customer to add this note in the PCP valve	Specification requirements are clear in this regard and bidder to comply with the specification requirements.
600	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	PAGE 01 OF 03	3 L.P. Chemical dosing system	3) Mandatory spares for valve actuators (for Pneumatically, Hydraulically & Electrically operated valves) shall be supplied as per actuator quantity/details specified elsewhere in this technical specification for mandatory spare requirement.	1)Bidder insist if there is one no. valve only of particular type , class and size then only one no. of mandatory Spare shall be supplied. Customer to add this note in the PCP valve	Specification requirements are clear in this regard and bidder to comply with the specification requirements.

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PREBID QUERIES & CLARIFICATION

Sr. No.	Section / Part	Sub-Section	Page no.	Clause no.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
601	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	PAGE 01 OF 03	3 L.P. Chemical dosing system	4) Mandatory spare requirement for complete valve assembly above 50NB in power cycle piping systems shall include Gate valve, Globe valve, check valve, safety valve, Angle valve, butterfly valve etc.	1)Bidder insist if there is one no. valve only of particular type , class and size then only one no. of mandatory Spare shall be supplied. Customer to add this note in the PCP valve	Specification requirements are clear in this regard and bidder to comply with the specification requirements.
602	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	PAGE 01 OF 03	3 L.P. Chemical dosing system	5) In case the quantity of mandatory spares so calculated happens to be a fraction, the same shall be rounded of to next higher whole number. For example 10% of 11 is equal to 1.1, then it should be rounded as 2 instead of 1.	1)Bidder insist if there is one no. valve only of particular type , class and size then only one no. of mandatory Spare shall be supplied. Customer to add this note in the PCP valve	Specification requirements are clear in this regard and bidder to comply with the specification requirements.
603	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	PAGE 01 OF 03	3 L.P. Chemical dosing system	6) Mandatory spares for valves above 50NB made of A105 / A216 WCC installed on 15NiCuMoNb5 (EN 1.6368) / ASTM A335 Grade P36 piping shall be supplied with suitable matching pieces (in welded condition with valve ends at valve manufacturing works).	1)Bidder insist if there is one no. valve only of particular type , class and size then only one no. of mandatory Spare shall be supplied. Customer to add this note in the PCP valve	Specification requirements are clear in this regard and bidder to comply with the specification requirements.
604	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	PAGE 01 OF 03	3 L.P. Chemical dosing system	7) Wherever Mandatory spares are specified as “per unit”, Total Mandatory spares quantity shall be arrived by multiplying the specified quantity with number of units under the package.	1)Bidder insist if there is one no. valve only of particular type , class and size then only one no. of mandatory Spare shall be supplied. Customer to add this note in the PCP valve.	Specification requirements are clear in this regard and bidder to comply with the specification requirements.
605	SUB-SECTION-VI CHAPTER -01 SG & AUXILIARIES: MANDATORY SPARES	SECTION-VI, PART-A	25 of 39	2.01.00	10. Any other instruments (If applicable) 11. Any other control system (If applicable)	Bidder clarifies that no other Instruments or Control System is considered than the type of Mandatory Spares mentioned in the List.	**Bidder to refer Amendment No-C-04 in this regard.**
606	SUB-SECTION-VI CHAPTER -01 SG & AUXILIARIES: MANDATORY SPARES	SECTION-VI, PART-A	25 of 39	2.01.00	10. Any other instruments (If applicable) 11. Any other control system (If applicable)	Wherever Mandatory Spare quantity is mentioned in Percentage, Bidder is considering the quantity as per percentage on Total Population of the item in one Unit. Please confirm Bidder Understanding is correct.	Refer reply against query no 314.
607	SUB-SECTION-VI CHAPTER -01 SG & AUXILIARIES: MANDATORY SPARES	SECTION-VI, PART-A	25 of 39	2.01.00	10. Any other instruments (If applicable) 11. Any other control system (If applicable)	Spares terminology will depend on OEM as approved by Customer. Customer shall accept as per OEM specific terminology as per Customer approved vendors. Any item not applicable for the OEM design will not be considered and commercial rebate shall not be applicable for such items.	Refer reply against query no 315.

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608	SECTION-VI, PART-A	SUB SECTION-II A-01	27 OF 28	5.00.00	In order to make the plant more efficient and environmentally friendly, provisions shall be provided for capturing carbon di-oxide from the flue gas generated from the plant…. The tap-off duct portion shall be provided with necessary isolation gates in each tap-off. These Gates are to be made of Carbon steel with C276 cladding of sheet of minimum thickness 1.6 mm along with 2x100 % Seal Air fans. Also, seals to be made of Alloy C-276 or better material. Blanking plates shall also be provided in each tap-off duct after isolation gates.	Bidder proposes Carbon steel (STEN-1) material for blades and frame (in contact of flue gas) for carbon capture tapping point dampers. However, seal material shall be of C276.	Bidder to refer Amendment no SG.8 in this regard
609	SECTION-VI, PART-A	SUB-SECTION-IIA-04	1 OF 7	2.04.00	Clean gas from the absorber shall be taken to the Chimney through three stage mist eliminators.	The quantity of mist in flue gas in JBR technology is significantly lower as compared to Spray Tower Process as Flue gas does not come in contact with any spray to pick up mist. Hence, bidder request owner to consider 2 stage ME for JBR.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
	SECTION-VI, PART-B	SUB-SECTION-A-05 (FGD)	10 OF 29	5.06.06	Three stage chevron type Mist Eliminators (ME) made of polysulfone or stainless steel shall be provided at the exit of the absorber.		
610	SECTION-VI, PART-A	SUB-SECTION-IIA-04	2 OF 7	2.04.01	Gates at outlet to Absorber shall also be provided with 2x100 electrical heaters. Further, Quick opening Bi-plane motorized/pneumatic damper along with 2x100% seal air fans & 2x100 electrical heaters shall also be provided by the Contractor in the by-pass	Since the MOC of the dampers (indicated in CL.No:3.03.04 / Section-VI / Part-B / Sub-Section-A05 / Pg 425 of 868) at the Absorber outlet and By-pass duct are suitable for corrosion resistant, bidder is not envisaging any heaters in seal air for the same. Kindly confirm. Further if customer insists for heater at by-pass and Absorber outlet damper, bidder proposes Carbon steel (STEN-1) material for blades and frame with seal material of SS 316L instead of C276.	Bidder's proposal is not acceptable.The requirements w.r.t electrical heaters and gate MoC are clearly specified in the clauses referred by the bidder. Bidder to comply with the specification requirements.
	SECTION-VI, PART-A	SUB-SECTION-IIA-04	3 OF 7	4.01.04	Motorized isolation gates at Absorber gas inlet, Absorber gas outlet along with 2x100 seal air fans for each gate and 2x100 heaters for absorber outlet gate & bypass gate. A bi-plane bypass damper along with 2x100 seal air & 2x100 heaters shall also be provided in the bypass duct.		
	SECTION-VI, PART-B	SUB-SECTION-A-05 (FGD)	5 OF 29	3.03.01	The Gates shall be provided with 2x100% seal air fans. Gates at outlet to Absorber shall also be provided with 2x100 electrical heaters.		
	SECTION-VI, PART-B	SUB-SECTION-A-05 (FGD)	5 OF 29	3.03.02	Quick opening Bi-plane motorized/pneumatic damper along with 2x100% seal air fans & 2x100 electrical heaters shall also be provided in the by-pass duct.		
	SECTION-VI, PART-B	SUB-SECTION-A-05 (FGD)	5 OF 29	3.03.02A	Bidder may provide common seal air skid for FGD Outlet guillotine gate and the bi-plane damper in the FGD bypass duct. Seal air skid (with 2x100% fans + 2x100% heater) shall be sized considering either the requirements of FGD outlet gate (when FGD loop is closed / FGD not in operation) OR for bypass damper (when bypass loop is closed /FGD under operation), whichever is higher.		
	SECTION-VI, PART-B	SUB-SECTION-A-05 (FGD)	5 OF 29	3.03.04	The blade and other components in the gas path, of the bypass damper and gate at Absorber outlet shall be made of Carbon steel with C276 cladding of sheet of minimum thickness 1.6 mm or better material. The seals shall be made of Alloy C-276 or better material.		

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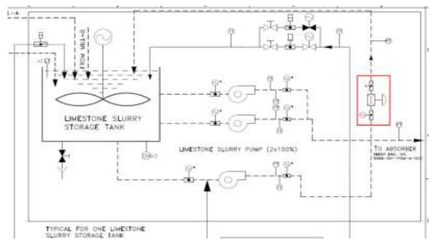
611	SECTION-VI, PART-A	SUB-SECTION-IIA-04	2 OF 7	3.01.05	3.01.05 Limestone slurry piping to each absorber, along with recirculation lines, all isolation and control valves. On/Off type Diaphragm valves in Limestone circulation lines to be provided instead of pinch control valve.	Kindly note, there is discrepancy in the clause and the P&ID for the type of valve to be provided in the re-circulation line of limestone slurry. Bidder request customer to check and update accordingly. As per the bidders past experience of ongoing projects, Bidder proposes pneumatic actuated On/Off valves for the re-circulation line.	Bidder to refer Amendment no SG.42 in this regard
	SECTION – VI, Part-E	-Scheme of FGD Milling System	-	1150-001-POM-A-023			
612	SECTION-VI, PART-A	SUB-SECTION-IIA-04	2 OF 7	1.02.00	The Steam Generators which are designed to burn pulverised coal will use LDO during start-up and at low loads for warm up and flame stabilization. Further, the frequency and duration for start-up and low loads operation may be quite high during the first year of unit commissioning and operation. The Steam Generator has been designed for cyclic/two shift operation. Expected numbers of Steam Generator start-ups during 25 years of design life shall be as per clause 1.05.00, A-02, Part B The Contractor, shall take into account the entire characteristics of expected combination of fuels to be fired and the expected numbers of Steam Generator start-ups while designing the FGD system.	Bidder recommends to by-pass the FGD system during oil firing.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
613	SECTION-VI, PART-B	SUB-SECTION-A-05 (FGD)	3 of 29	1.03.08	In case of a power failure all items of equipment (e.g. minimum one agitator in absorber and limestone slurry tank, Process water pump & lube oil system of Booster Fan & Ball Mill) which may cause irreversible damage to the FGD System shall be connected to the emergency power supply system to be provided by the Contractor.	For JBR type, the agitator in the absorber is not needed to be connected to the emergency power supply Since the agitator blades will be located well above the slurry settling height and can work even after a long duration shut-down.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
614	SECTION-VI, PART-B	SUB-SECTION-A-05 (FGD)	2 of 29	1.03.09	Draining and flushing for the items in contact with limestone/gypsum slurry (pipes, tanks, pumps etc.) which are required even during short time outages or an emergency shutdown shall be started automatically and by remote control from the Control Room.	As per bidder's standard practice, only critical items in contact with limestone/gypsum slurry shall be provided automatic draining and flushing arrangement.	Avoiding deposition of slurry & its flushing is a critical aspect for the FGD system smooth O&M. Specifications requirements are clear and bidder to comply with the specification requirements.
615	SECTION-VI, PART-B	SUB-SECTION-A-05 (FGD)	5 OF 29	3.02.04	The duct from Absorber outlet to bypass duct & duct after by pass damper/gate to chimney inlet shall be made of cladded sheet of minimum 2 mm thickness of either Titanium (Grade 2 as per ASME SB265) or C-276 over 7 mm thick (minimum) mild steel base metal. Cladding shall be done to achieve the required quality as per ASTM B 898-11.	As per bidder's Collaborator's proven practise, the duct from Absorber outlet to wet stack shall be made of Carbon steel of minimum 6 mm thickness with flake glass lining of minimum 2 mm thickness. Please confirm.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
616	SECTION-VI, PART-B	SUB-SECTION-A-05	8 OF 29	5.03.02	For Bubbling Type process actual requirement considering choking/ blockage of minimum 10% of the oxidation nozzles / sprayers or minimum 3500 mmwc whichever is higher. Margin on Head: 10% margin on the higher value of above.	In JBR technology head requirement of oxidation blower is much less than 3500 mmWC as per ongoing projects. Hence, minimum head requirement should be as per actual calculation. Also requirement of additional 10% margin on minimum head is not required and 10% margin on frictional loss of actual head will be considered.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
617	SECTION-VI, PART-B	SUB-SECTION-A-05	8 OF 29	5.03.03	Oxidation nozzles / spargers shall have a minimum redundancy of 10% or as per the contractor's proven practice whichever is maximum and justification to be provided during detailed engineering.	For JBR type absorber, oxidation air system shall not be of sparger type. Oxidation air injected in the JBR through pipe without any nozzle. Hence minimum redundancy of 10% on oxidation air nozzles/ spargers is not applicable as per our technical collaborator proven design. Please accept and confirm.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement
618	SECTION-VI, PART-B	SUB-SECTION-A-05	8 & 9 OF 29	5.04.00	Gypsum Bleed Pump Margins Flow -- 15% Head – 20%	The margin on Flow shall be 10% and on frictional head shall be 15% as per standard design practice. Bidder request owner to accept.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.

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619	SECTION-VI, PART-B	SUB-SECTION-A-05	9 OF 29	5.06.02	The design of flue gas ducts and inlet and outlet hoods of the FGD as well as [guide vanes and baffle plates shall ensure a homogeneous flue gas flow with respect to the distributions of: (i) temperature (ii) velocity (iii) dust content (iv) slurry injection and distribution. The above shall be proven by two phase Computational Fluid Dynamics simulations (liquid and gas). The scope of modelling shall include flue gas path inside the absorber vessel including inlet and outlet duct.	Since JBR technology is a proven technology worldwide, Bidder will conduct CFD model of the FGD system gas path excluding absorber	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
620	SECTION-VI, PART-B	SUB-SECTION-A-05	9 OF 29	5.06.02	Homogeneity shall be ensured, if the deviation from average is less than +10%.	This requirement is too strict and cannot be met. Homogeneity shall be less than ±30%.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
621	SECTION-VI, PART-B	SUB-SECTION-A-05	10 OF 29	5.06.06	Three stage chevron type Mist Eliminators (ME) made of polysulfone or stainless steel shall be provided at the exit of the absorber.	In addition to the Material mentioned for ME MOC, bidder request owner to include Polypropylene and FRP as per Bidder's proven practice.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
622	SECTION-VI, PART-B	SUB-SECTION-A-05	10 OF 29	5.06.06	The headroom shall have a height of more than 2200 mm.The mist eliminator support beams shall be designed to act as maintenance walkways approximately 300 mm wide and shall allow for a minimum 500 Kg/m2 load.	Bidder understands that the headroom of 2200mm mentioned is between beam to beam clear headroom for maintenance purpose. Please confirm.	Bidder's understanding is not correct. Clear headroom is required. Specification requirement is clear in this regard. Bidder to comply technical specification requirement
623	SECTION-VI, PART-B	SUB-SECTION-A-05	11 OF 29	5.06.10	The raw gas inlet duct of the absorber shall be equipped with a flushing device of the side walls and the ground, which shall operate continuously as well as intermittently.	Please note that, in the offered JBR type absorber, the gas cooling mechanism which is provided at raw gas inlet duct of the absorber will be continuously operated. Hence, no separate flushing devise is required and envisaged.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
624	SECTION-VI, PART-B	SUB-SECTION-A-05	11 OF 29	5.06.11	The complete absorber vessel (absorber oxidation tank, absorber tower & absorber outlet duct upto absorber outlet flange) shall be made of clad sheet of C276 / Alloy 59 (minimum 2 mm thickness) by explosion bonding or hot rolling, having minimum 7 mm thick carbon steel as base material.	As per the bidders' collaborator experience and proven practice, the complete absorber vessel shall be made of minimum 7 mm thick carbon steel with 3 mm thick flake glass lining. And also all internal members and other bridges shall be lined with 2mm thick flake glass lining. Please confirm.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
	SECTION-VI, PART-B	SUB-SECTION-A-05	11 OF 29	5.06.13	All internal members shall be lined with minimum 2 mm Alloy 59/ C276. All metallic fasteners which are provided inside the absorber/absorber wet-dry interface ducting shall be of Alloy 59/ C276.		
	SECTION-VI, PART-B	SUB-SECTION-A-05	11 OF 29	5.06.15	The other bridges (supports) shall be lined with minimum 2 mm Alloy 59/ C276.		
625	SECTION-VI, PART-B	SUB-SECTION-A-05	11 OF 29	5.06.14	The absorber wet-dry interface shall be made of solid Alloy 59 or C276 of minimum 6 mm thickness.	As per our Collaborator's proven practise, for JBR we propose to use wet dry interface of CS with 2 mm FLRP lining. Please confirm.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
626	SECTION-VI, PART-B	SUB-SECTION-A-05	12 OF 29	5.06.22	For the agitators a flushing system for start ups shall be provided.	In case of JBR technology the impeller of absorber agitators are mounted above the slurry settling zone and can start without flushing system after a long shutdown as per collaborator proven design. Hence, requirement of separate flushing system is not envisaged.	Avoiding deposition of slurry & its flushing is a critical aspect for the FGD system smooth O&M. Specifications requirements are clear and bidder to comply with the specification requirements.
	SECTION-VI, PART-B	SUB-SECTION-A-05	20 OF 29	7.08.03	Agitation shall be provided to prevent settlement of slurry by sufficient no. of Top entry agitators or side entry agitators (as per the proven practice of bidder) with emergency flush start system.		
627	SECTION-VI, PART-B	SUB-SECTION-A-05	12 OF 29	5.06.24	At the head of the absorber two manholes shall be provided to reduce the draught of the stack during outage.	Kindly note, this clause is applicable only for spray type absorber and hence not considered for JBR.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement

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628	SECTION-VI, PART-B	SUB-SECTION-A-05	16 OF 29	6.07.01	Limestone Slurry Supply Pumps& Piping iv) Margins Heads 15% (minimum)	Bidder understands that the 15% margin on head indicated is on friction head only. Please confirm.	Bidder's understanding is not correct. Bidder to comply the specification requirements.
629	SECTION-VI, PART-B	SUB-SECTION-A-05	16 OF 29	6.07.03	The slurry pipes shall be lined with replaceable wear resistant natural rubber lining of minimum 6mm thickness. Additional thickness of 2 mm in rubber lining shall be provided at bends.	For JBR, Bidder proposes FRP pipes for all the slurry pipes as per bidder's practice and experience.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
	SECTION-VI, PART-B	SUB-SECTION-A-05	23 OF 29	12.02.00	All the pipes handling slurry shall be provided with replaceable rubber lining of proven quality. The Contractor can provide slurry pipes size up to 400 NB made up of FRP material as per ASTM 2310 and testing as per ASTM B2583(silicon carbide coating on slurry exposed surface) if it has previous experience of providing the same		
630	SECTION-VI, PART-B	SUB-SECTION-A-05	16 OF 29	7.03.01	The outlet water content in the gypsum shall be as per the requirement of the vacuum belt filters.	Bidder understands that the vacuum belt filter shall be designed as per primary hydro cyclone underflow inlet to VBF maintaining gypsum production and moisture content as per the tender condition. Please confirm bidder's understanding.	Bidder's understanding is not correct. The requirement is intended for the design of Primary Cyclone to meet downstream system requirements including Vacuum Belt Filter. Bidder to comply technical specification requirement
631	SECTION-VI, PART-B	SUB-SECTION-A-05	17 OF 29	7.04.03	The complete frame of the filter and all parts in contact with gypsum shall be made of corrosion resistant material or shall be provided with corrosion resistant liners of proven design.	As the frame for vacuum belt filter shall never come in contact with gypsum slurry, hence shall be made of carbon steel painted with corrosion resistant paint. Bidder request owner to please agree and confirm the same.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
632	SECTION-VI, PART-B	SUB-SECTION-A-05	18 OF 29	7.04.10	A 2 m (min.) wide platform shall be provided around each belt filter.	Platform requirement and width of the platform shall be decided during detail engineering based on the OEM's recommendation and Layout arrangement and the same will be subject to customer's approval.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement
633	SECTION-VI, PART-B	SUB-SECTION-A-05	18 OF 29	7.05.05	The vacuum receiver and pump internals shall be suitably lined to protect against the corrosive environment	It is not suggested to do the rubber lining on the vacuum receiver/ water separator and pump internals as the liner may fall off after operating for a certain period, which will impact the performance of the pump. The material for casing without liner is acceptable as per our experience and proven practice. Addition to this, we would like to justify that there will be no corrosion since the sealing water is clarified water.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
634	SECTION-VI, PART-B	SUB-SECTION-A-05	18 OF 29	7.06.03	The pump shall be capable of pumping of filtrate water with solid concentration of not less than 10% & particle lumps of 6-7mm.	Filtrate pumps handling slurry will have a slurry concentration much less than 10%. Also the filtrate pumps handling slurry will never have a particle size of 6-7 mm. Hence this clause is not applicable. Please clarify the requirement.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
635	SECTION-VI, PART-B	SUB-SECTION-A-05	19 OF 29	7.07.06	2x100% horizontal centrifugal pumps shall be provided for pumping the waste water from waste water tank to the mixing tanks of HCSD system or in any other area with suitable treatment so as to suit/not to disturb the destination fluid quality. The material of Casing shall be rubber lined or Hi-chrome steel. The impeller shall be made of Hi-chrome steel. Shaft shall be of stainless steel 410 and shaft sleeve shall be stainless steel.	As shaft shall never come in contact with the medium of flow, hence, the shaft shall be of EN8 instead of stainless steel 410. Please confirm.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
636	SECTION-VI, PART-B	SUB-SECTION-A-05	20 OF 29	7.07.10	Bucket conveyors shall be provided by the contractor to feed lime to each of the lime storage silos from ground level. The Bucket conveyors shall be sized to completely feed each lime silo within 2hrs. Adequate storage and feeding system required for feeding the lime to the Bucket conveyors is also in the Contractor's scope	As the slacked lime quantity required for lime dosing is very less, hence bucket elevators are not required. For handling of lime a chain pulley arrangement shall be provided. Please confirm.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.

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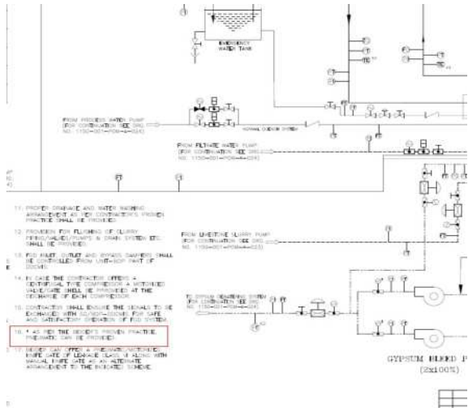
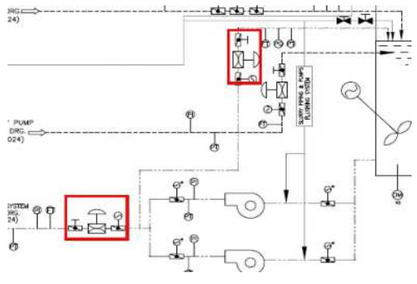
637	SECTION – VI, Part-E	SCHEME OF FGD - ABSORBER SYSTEM	-	1150-001-POM-A-022		Bidder shall consider pneumatic operated valves at suction and discharge of the pumps inline with the tender P&ID (Scheme of FGD-Absorber system)	Bidder to note that the P&ID requirement is already marked with " asterisk" which allows the bidder to provide pneumatic valve as per its proven practice. Bidder to comply technical specification requirement
	SECTION-VI, PART-B	SUB-SECTION-A-05	21 OF 29	8.04.00	All the slurry pumps shall be provided with motorized suction and discharge valves.		
638	SECTION-VI, PART-B	SUB-SECTION-A-05	21 OF 29	8.05.00	In case of pump with rubber lined casing, the casing should be radially split to allow easy removal of impeller.	Bidder understands that even in case of pump with hi chrome casing, the casing shall be radially split. Please confirm.	Kindly refer the complete clause along with experience requirements as specified. Bidder to comply with the specification requirements.
639	SECTION-VI, PART-B	SUB-SECTION-A-05	23 OF 29	11.07.00	To prevent mechanical blocking load start-up after standstill of pumps, piping and agitators for slurries shall be applied with C-hose connection.	In case of JBR technology the impeller of absorber agitators are mounted above the slurry settling zone and can start without flushing system after a long shutdown as per collaborator proven design. Hence, requirement of separate flushing system is not envisaged.	Avoiding deposition of slurry & its flushing is a critical aspect for the FGD system smooth O&M. Specifications requirements are clear and bidder to comply with the specification requirements.
640	SECTION-VI, PART-B	SUB-SECTION-A-05	23 OF 29	12.01.00	The contractor may provide a recirculation line with motorized isolation valve / restriction orifice made of erosion resistant material for the above purpose.	Bidder request owner to include the option of pneumatic operated valves as per proven practice.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
641	SECTION – VI, Part-E	SCHEME OF FGD - ABSORBER SYSTEM	-	1150-001-POM-A-022		As per bidder's collaborator's standard practice and past experience, control valve for gypsum bleed pump shall be placed only in the discharge line and not in recirculation line. Please accept and confirm.	Bidder to refer Amendment no SG.41 in this regard
642	TECHNICAL SPECIFICATIONS SECTION – VI, PART-A	SUB-SECTION-IIA-14 LIMESTONE AND GYPSUM HANDLING PLANT	1 of 4	1.01.01	Limestone will be received to power plant through road by trucks.	Please provide details, type and dimension of trucks with number of maximum wheels.	Bidder to consider standard truck dimensions with max no of wheels (16 nos) to be considered for bidding purpose. However, the same be finalised during detailed engg

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Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
643	TECHNICAL SPECIFICATIONS SECTION – VI, PART-A TECHNICAL SPECIFICATIONS SECTION-VI, PART-B BID DOC NO: CS-9586-001A-2	SUB-SECTION-IIA-14 LIMESTONE AND GYPSUM HANDLING PLANT SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	1 of 4 87 of 92	1.01.01 4.04.01	- Two (2) numbers Box Feeders/ Bulk-material Receiving Unit/ Surface feeder each of 200 TPH Capacity, for unloading of limestone from trucks/ self-tippling trucks/ loader shovels, complete with drives, accessories all mechanical, electrical and C&I, Civil & structural works, including its supporting foundations etc. This unit shall feed limestone onto the conveyor/bucket elevator before Limestone crusher house. - (a) Rated capacity of Limestone handling system for truck unloading and reclaim conveyors from storage shed/silo to limestone mill bunkers shall be 150 MTPH (min).	- Based on conveying carrying capacity, Bidder is considering rated capacity of BRU as 150 TPH and design capacity as 165 TPH. - Bidder also understand that self tippling truck are not in the scope of bidder. Kindly confirm	Bidder to comply to technical specification.
644	- TECHNICAL SPECIFICATIONS SECTION – VI, PART-A - PART-E2 -TECHNICAL SPECIFICATIONS SECTION-VI, PART-B BID DOC NO: CS-1150-001R-2	- SUB-SECTION-II A-14 LIMESTONE AND GYPSUM HANDLING PLANT - Drg no : 9587-001(R)-POM-A-031 (SH-1) -SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	1 of 4, 53 of 130 88 of 92	1.01.01 4.04.03	- Limestone shall be conveyed to usage point through single stream conveyors & Bucket Elevators of capacity 100% for conveying. - As per flow diagram, after crusher house to bucket elevator, two stream of conveyors (LBF-1 & 2) are provided. -One working conveying (Conveyors & Bucket Elevators) stream shall be provided for Limestone Handling Plant. 2x100 % (one working + one standby) conveying stream shall be provided for GHP.	Due to contradiction of said clauses, Bidder understand, " Limestone shall be conveyed to usage point through single stream conveyors & Bucket Elevators of capacity 100% for conveying." Accordingly only one no of conveying stream is provided between crusher house discharge to bucket elevator feeding at storage silo, instead of LBF-1 & 2 shown in the flow diagram. Please confirm our understanding	Bidder to refer Sl. No MH-29 amendment no 1 to technical specification.
645	- TECHNICAL SPECIFICATIONS SECTION – VI, PART-A - PART-E2	- SUB-SECTION-IIA-14 LIMESTONE AND GYPSUM HANDLING PLANT - Drg no : 9587-001(R)-POM-A-031 (SH-1)	1 of 4, 53 of 130	1.01.03	- One (1) number Limestone crusher house (CH) complete with all civil, structural, architectural and electrical works etc. accommodating suitable nos. crushers and associated Vibrating screening feeders, passenger cum goods elevator, conveyors, chute work along with actuator operated flap gates, monorails & hoists, hoist maintenance platform, external and internal staircases, hand rails and other equipment such as sampling unit, dust extraction system etc. as specified elsewhere. - As per flow diagram, at crusher house rod gate and rack & pinion gate is provided.	Due to contradiction of said clauses, bidder is considering 1 no of flap gate arrangement at crusher house (after discharge chute of LC-1 above vibrating screen) for smooth and quick changeover of the stream path from one stream to another instead of Rod gate & R&P gate arrangement shown in the flow diagram.	Bidder to refer Sl. No MH-29 amendment no 1 to technical specification.
646	- TECHNICAL SPECIFICATIONS SECTION – VI, PART-A	- SUB-SECTION-IIA-14 LIMESTONE AND GYPSUM HANDLING PLANT	4 of 6	2.07.0	Gypsum from storage shed shall be loaded to user's trucks directly from discharge chute or using front end loader/ pay loader.	Please provide exact detail of truck, type of trucks and dimension of trucks.	Bidder to consider standard truck dimensions with max no of wheels (16 nos) to be considered for bidding purpose. However, the same be finalised during detailed engg
647	- TECHNICAL SPECIFICATIONS SECTION – VI, PART-A - PART-E2	- SUB-SECTION-IIA-14 LIMESTONE AND GYPSUM HANDLING PLANT - Drg no : 9587-001(R)-POM-A-031 (SH-1)	3 of 4 4 of 6 53 of 130	1.01.23 3.001.0	- Minimum one (1) no. Weighing Bridge of capacity 100 MT for Road trucks / Tipplers shall be provided each in Limestone unloading area. - COMMON SCOPE FOR LHP & GHP - As per flow diagram weighing bridge is to be provided for limestone and Gypsum handling system.	Bidder understand to provided 100 MT capacity Weighing Bridge for following system. 1. 1 no for Limestone handling system 2. 1 no for Gypsum handling system	Bidder's understanding is correct
648	- TECHNICAL SPECIFICATIONS SECTION – VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	65 of 76	2.03.07	Output coal/ Limestone size to be sieve analysed and (-) 20 mm coal/Limestone to be more than 98% for ring granulator type crusher.	Please provide sieve analysis report of incoming limestone	Bidder to consider (-) 250mm for incoming limestone. Occasionally 1-2% of 400mm may also to be considered
649	TECHNICAL SPECIFICATIONS SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	91 of 92	4.04.18	Minimum clear cross section of chute: 800 mm X 600 mm (inside both ways)	For 800mm belt width the required skirt width is ~550mm. For the smaller belt width of 800mm, by providing 550mm skirt width, the clearance from the belt edge to the skirt sealing remains ~50mm, which may cause the material spillage in case of belt sway. To avoid material spillage bidder proposed to provide 800x500mm chute dimension matching the skirt width of 500mm.	Bidder's proposal to provide 800x500mm chute dimension is acceptable.
650	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	4 of 113	4.1.4	Belt Take-up Arrangement	Bidder has considered screw type take upto 60m conveyor length as per IS 11592, considering take-up travel length 1.5% of horizontal crs of belt length as per IS 4776 .Please confirm.	Bidder to provide screw takeup arrangmenet for conveyor having length more than 25m with travel of 4% of the total belt length.

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Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
651	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	7 of 113	4.3.4	Wire rope shall be of pre-formed type, hemp cored, regular lay 6/36 construction with a breaking strength of 160 -175 kgf/ sq. mm. The reverse bend of ropes is not acceptable. The minimum number of falls of rope shall be four (4). All running shafts and wheels shall be fitted with ball / roller bearings with a rated life of not less than 20 years based on equivalent running time as per IS:3938.	As per manufacturer recommendation, steel cored wire rope is superior than hemp cored and used for hoist applications widely. Bidder requests Owner to accept.	Bidder's proposal is acceptable.
652	TECHNICAL SPECIFICATION SECTION-VI, PART-B BID DOC NO CS-9586-001A-2	SUB-SECTION-A-05 (FGD)	20 of 29	7.07.10	Bucket conveyors shall be provided by the contractor to feed lime to each of the lime storage silos from ground level. The Bucket conveyors shall be sized to completely feed each lime silo within 2hrs. Adequate storage and feeding system required for feeding the lime to the Bucket conveyors is also in the Contractor's scope.	As the lime quantity required for lime dosing is very less, hence bucket elevators are not required. For handling of lime bags hoist shall be provided. Please confirm.	Bidder's proposal is not acceptable.
653	---	---	---	---	General	Due to layout constraint, bidder has considered upto 10 meter gypsum stockpile height with three side retaining wall & one side kept open for truck bay for truck loading. Bidder request Owner to confirm.	Bidder's proposal is acceptable.
654	---	---	---	---	General	No any bull dozer, pay loader or trucks are considered in the scope of bidder.	Bidder's understanding is correct
655	---	---	---	---	General	Angle of repose to be considered for limestone & gypsum does not given in specification. Kindly provide the same.	Bidder to consider angle of repose as 25deg and 35deg for limestone and gysum respectively.
656	---	---	---	---	General	Please provide maximum surface moisture content for incoming limestone.	Bidder to 15% max moisture content.
657	---	---	---	---	General	Please furnish limestone flow analysis report for silo design. Else Owner is requested to provide following material characteristics & source of limestone for flow analysis: 1) Cohesive strength 2) Wall Friction 3) Compressibility 4) Permeability 5) Segregation Tendency	Bidder to consider the inputs in line with latest executed/ongoing Lot FGD projects.
658	TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC NO: CS-1150-001R-2	SUB-SECTION-IIA-04 FLUE GAS DESULPHURISATION SYSTEM	2 of 7	3.01.00	The contractors scope shall include a common limestone grinding system for the two units with an interconnection from existing Stage-II & III system and shall comprise of:	In the specification there is no any further details regarding interconnection with existing Stage-II & III system. Please clarify the requirement of interconnection.	Bidder to note that no interconnecton is envisaged for Stage-II & Stage-III
659	TECHNICAL SPECIFICATION SECTION – VI, PART-A BID DOC. NO :CS-9586-001A-2 '- PART-E2	SUB-SECTION-IIA-14 LIMESTONE AND GYPSUM HANDLING PLANT '- Drg no - 9587-001(R)-POM-A-31 (SH2)_Rev-A	4 of 6 54 of 130	2.02.00	One number of covered storage shed for gypsum. The storage shed shall be sufficient to store gypsum equivalent to gypsum generation of minimum 7 days at Design point (Generation of all units to be considered). - As per flow diagram for gypsum storage shade capacity of 6000 MT is specified.	Both the mentioned clause are contradictory with each other. Bidder has considered Gypsum storage shed capacity as 7 days gypsum generation at FGD Design point (Generation of all units to be considered). kindly confirm.	Bidder to consider gypsum storage shed capacity as 7 days gypsum generation at FGD Design point (Generation of all units to be considered)
660	- PART-E2	- Drg no - 9587-001(R)-POM-A-31 (SH2)_Rev-A	54 of 130	---	- As per flow diagram for gypsum conveyor rated capacity is 150TPH.	For 2x800 MW project, generally gypsum generation is ~40 to 45 MT and Gypsum conveyor capacity performance can be conducted inline with the progressive generation of Gypsum & carried out from vacuum belt filter. Bidder propose to consider the Gypsum conveying & associated equipment (i.e. tripper etc) rated capacity similar to the vacuum belt capacity. Please confirm	Bidder's proposal is not acceptable.
661	TECHNICAL SPECIFICATIONS SECTION – VI, PART-A	SUB-SECTION-IIA-04 FLUE GAS DESULPHURISATION SYSTEM	6 of 7	9.01.00	One (1) number passenger cum goods elevator of minimum capacity of 1000kgs for each Absorber (to be provided in case height of absorber is higher than 15m) and One (1) number passenger cum goods elevator of minimum capacity of 1000 kgs in each for Limestone Grinding System Building & Gypsum dewatering building irrespective of building height shall be provided for easy access & movement of man/materials. **Passenger Elevator of minimum capacity of 680 kg for MCC cum control room building of FGD plant irrespective of building height.**	Elevator can be considered for MCC room if number of landing levels are 2 or more. Bidder requests Owner to relook the requirement of elevator & confirm.	Bidder to refer Amendment no SG.37 in this regard

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Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
662	TECHNICAL SPECIFICATIONS SECTION-VI, PART B TECHNICAL SPECIFICATIONS SECTION-VI, Part-A	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant SUB SECTION-IIA-14 LIMESTONE AND GYPSUM HANDLING PLANT	16 of 113 4 of 6	4.10.1 2.06.0	Mobile Trippers on Coal bunker conveyors/Gypsum Conveyor along with belt sealing arrangement shall be furnished and erected complete with rails, including necessary supporting structures, approach/ maintenance platforms with ladders and hand railings, **trailing cables with Energy chain arrangement**, all electricals including machine mounted local control panel & control panel on one end of Bunker/Gypsum storage shed. The Mobile tripper on bunker conveyors/Gypsum Conveyor shall be motor driven type. Suitable number of motorized travelling tripper on each feeding conveyor for feeding the gypsum to the covered storage shed. Trippers shall be complete with all mechanical, electrical equipment, rails, chute work, rail supporting structure (along with structural stools, as required), **cables with cable festooning arrangement**, thruster brakes, rail clamps, electric hoist, actuator flap gates etc.	Due to contradictions in the mentioned clauses, the bidder understands that bidder can consider either the cable festooning / CRD /Energy Chain arrangement for travelling tripper. Owner to confirm.	Bidder to provide energy chain for travelling tripper.Bidder
663	TECHNICAL SPECIFICATION SECTION-VI, PART-B TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-05 (FGD) SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	26 of 29 84 of 92	14.09.00 4.02.09	Contractor shall provide motorized hoists and trolleys for all items requiring maintenance and weighing 500 kg or more. All auxiliary structures, monorails, runway beams for all lifting tackles, hoists etc., are included in Contractor's scope of supply. Access ladders with suitable platform shall also be provided for approach to all motorized hoists/trolleys mounted on their runway beams for the maintenance of hoists/trolleys. Items weighing more than 50 kg and required to be replaced for maintenance shall be provided with manual hoists/trolleys with runway beams/supporting structure etc/chain pulley block mounting arrangement. -More than 2.0 tonne or more than 10.0 m lift /coming out-side the buildings. except for other hoists including the hoists for handling take-up - pulley and take-up weight	Due to contradictions in the mentioned clauses, the bidder is considering motor-operated hoists for a lifting capacity greater than 2.0 tons or a lift height exceeding 10.0 meters. For hoists related to GTU and bend pulleys, hand-operated manual hoist blocks for both long travel and lift operations will be provided. For hoists with capacities below the specified limits, hook or chain pulley blocks shall be provided. Owner to confirm.	Bidder's understanding is correct. However, bidder to follow this clause 4.02.09, page 84/92, A-01, part-B for all material handling systems i.e Ash handling, coal/biomass/limestone,gypsum handling system

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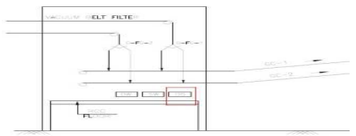
Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
664	SECTION – VI, PART-A	SUB-SECTION-A-14 LIMESTONE AND GYPSUM HANDLING PLANT	PAGE 4 OF 6	2.03.00	Minimum four (4) Nos. sump pumps in gypsum storage shed complete with motors, local control panel, level switches, individual discharge piping with fittings and valves up to ash disposal slurry sump.	i) In line with specification -SECTION-VI, PART B,SUB-SECTION-A-20 **Coal & Biomass and Limestone & Gypsum Handling Plant,** Clause 4.11.8, page-20 of 138, bidder understands that Sump Pump shall be provided at all locations wherever natural drainage is not possible in Coal & Biomass and Limestone & Gypsum Handling Plant. ii) Bidder also understands that Gypsum storage area where natural drainage system is possible by gravity, Sump pumps is not required. We shall connect this Gypsum storage area drainage line to Dewatering area drainage line for further process. Kindly confirm bidder understanding is correct.	It shall be finalised during detailed engg.
	SECTION – VI, PART-A	SUB-SECTION-A-14 LIMESTONE AND GYPSUM HANDLING PLANT	PAGE 2 OF 6	1.01.11	Minimum two (2) Nos. sump pumps in each Junction Tower (if applicable) complete with motors, local control panel, level switches, individual discharge piping with fittings and valves to ash disposal slurry sump.		
	SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	Page 19 of 113	4.11.8	Sump pumps along with level switches & piping upto nearest drain (max upto 50.0 mtrs. from outside the building) shall be provided at all locations wherever natural drainage is not possible.		
665	SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	Page 77 of 133	2.01.02 f)	Dust Suppression System (Plain water type) (1) Operation : Water sprayed with fogging nozzle (2) Location of spray : Gypsum storage area (3) Capacity / Pressure at : 2.0 lpm / 2.5 kg/cm2 inlet of spray head	Bidder request to approve alternative Sprinkler spraying arrangement instead of fogging nozzles to cover the total storage zone. Kindly confirm.	Bidder's proposal is not acceptable.
666	SECTION-VI, PART E(1)	Gypsum Flow Diagram Drg. No.-9587-001®-POM-A-031 (SH-2)	Page 54 of 130	Gypsum Flow Diagram Drg. No.-9587-001®-POM-A-031 (SH-2)		Bidder understands that wet type gypsum shall be fed to GC-1 from Vacuum Belt filter. Dust will not be generated from wet material here. In case of DS running here water % of Gypsum will be increased. Hence, we are not considering DS system on GC-1. Bidder request owner to approve the same	Bidder's proposal is acceptable.
667	SECTION – VI, PART-A	SUB-SECTION-A-14 LIMESTONE AND GYPSUM HANDLING PLANT	PAGE 3 OF 6	1.01.18	Complete dust extraction system for control of fugitive dust in limestone Silos, junction towers (if applicable), crusher house complete with fans, drives, hoisting arrangements, ducting, piping, valves etc. electrical, accessories, civil, structural and architectural works.	As NIT specification is silence about detail specifications of dust extraction system in FGD area , L&T has considered dry type DE system in line with standard engineering practice & ACGIH guideline. Please confirm.	Bidder to provide DE system for Limestone handling and DS system for gypsum handling plant.
668	TECHNICAL SPECIFICATIONS SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	PAGE 91 & 92	4.04.15	Dust extraction system Type: Dry type dust extraction system Location: Truck un-loading points, Junction Towers (limestone/ gypsum discharge & receipt points), limestone crusher house (including belt feeder & vibrating screening feeder) and lime stone/gypsum storage Shed/Silo.	There are discrepancies in said two specifications regarding dust control system in Gypsum storage area. Bidder has considered dust suppression system in Gypsum storage area. Please confirm	Bidder to refer Sl. No MH-17 amendment no 1 to technical specification.
	TECHNICAL SPECIFICATION SECTION – VI, PART-A	SUB-SECTION-A-14 LIMESTONE AND GYPSUM HANDLING PLANT	PAGE 4 OF 6	2.04.00	Complete dust suppression system for control of fugitive dust in gypsum storage shed, complete with pumps, water tanks, drives, hoisting arrangements, ducting, piping, valves etc. electrical, accessories, civil, structural and architectural works.		
669	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION B-0 GENERAL ELECTRICAL SPECIFCIATION	11 OF 16	3.08.00	An ageing factor of 1.25 shall be considered. The no. of cells, end cell voltage shall be considered based on the minimum and maximum voltage window and cable drop etc. as per system requirement.	Aging factor for plante type battery is considered 1 as per standard practice and as per OEM and IEEE recommendation. Please accept.	Bidder proposal is acceptable. Ammendment No.1 to be referred.
670	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION-B-08 HT LT AND CONTROL CABLES	5 of 7	4.00.05	CABLE DRUMS: Cables shall be supplied in steel drums of heavy construction.	Cable Drums shall be Steel / wooden based on drum length/cable size.	Bidder proposal is not acceptable. Specification cl. no.4.00.05 Sub - Section B-08 Section-VI, Part-B to be followed.
671	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION B-09 DG SETS	3 of 13	4.10.00	The DG set shall be capable of starting largest size of emergency 415 V drive (motor) having starting KVA/rated KW ratio of 8 (higher if starting current is more than 8) and starting power factor of 0.2	We understand that DG can be sized with actual starting current of Motor and actual power factor during starting, if vendor is offering improved parameters of starting current and pf.	Bidder understanding is correct.
672	Typical section of Cable tray arrangement in trestle, Part E			Typical section of cable tray arrangement (upto 18 trays)	Dimension of Trestle is indicated as 4000mm and number of trays are indicated as 15Nos.	Owner is requested to provide clarification/revised section for consideration.	Ammendment No.-1 to be referred.

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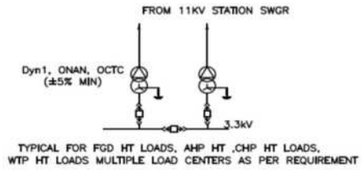
673	Single Line Diagram 1150-999-POE-J-002					Bidder clarifies that this FGD HT Motor loads shall be directly taken from Main Plant Unit/Station 3.3KV Switchgears. Hence this part will not be applicable to FGD. Owner to confirm.	Bidder understanding is not correct. Non unitised FGD motors above 200KW upto 1500KW shall be fed from 3.3kV switchgear fed from station supply.
674	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUB-SECTION B-0	11 of 16	3.07.00	Earthing & Lightning Protection System Grounding and lightning protection for the entire plant areas or buildings covered in the specification shall be provided in accordance with IS 3043, IEC 62305, IEEE 80 and IEEE 665.	Bidder clarifies that IEEE 665 has been withdrawn. Bidder will follow IEEE 80.	Bidder understanding is correct.
675	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUB-SECTION B-10	2 of 22 4 OF 21	2.01.04 3.02.05 b)	No sub zero level cable vault/trenches shall be provided below control building/ switchgear rooms. Cable trenches shall be provided only in Switchgear/ MCC rooms.	Bidder clarifies that Cable Trench may be accepted at offsite buildings for CHP area where cable trays layers are limited to 4 layers per row, inline with ongoing NTPC Projects.	Bidder understanding is not correct. Cable trecnhes in switchgear / MCC room in line with cl. no.2.01.04, 3.02.05 (b) Sub -Section B-10 Section-VI, part-B to be followed.
676	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUBSECTION-B-11	4 of 18	3.03.04	18W, 220V DC Lighting fixture shall be provided in underground portion of conveyor, each switchgear room, control room, office room, pump house, each drive floor of TPs, staircases of various TPs and buildings and each local control area. DC lighting fixtures shall be fed from 220V DC LDB which in turn will be fed from CHP DC system. The supply to the DC lighting panels shall be automatically switched ON in case of loss of normal AC supply.	Bidder proposed 10W, 220V DC LED lighting fixtures as per OEM. Please confirm	Bidder proposal is not acceptable. Specification cl. no.3.03.04 Sub - Section B-11 Section-VI, part-B to be followed.
677	SECTION – VI, PART-B	B-0 GENERAL ELECTRICALSPECIFCI ATION	14 OF 16	9.00.00	Cables to the feeders protected by breakers- Main protection fault clearing time with 0.12 second minimum.	feeder protected by Vacuum contactor unit shall be 0.01 sec as a fault clearance time since vacuum contactor unit is given with HRC fuse. Kindly accept	Bidder proposal is acceptable.
678	SECTION – VI, PART-B	B-06 LT SWITCHGEARS & LT BUSDUCTS	12 OF 19	3.03.00	MCCs located on the Stacker reclaimer, Paddle Feeders, Travelling Trippers shall be fixed type, single front	As per standard industrial practice machine mounted MCC 's shall be fixed type, single front, non intelligent due to space constrain as per OEM designs. Kindly accept.	Bidder proposal is acceptable.
679	SECTION-VI, PART-B --- SECTION-VI, PART-B	SUB SECTION-A-01 --- SUB SECTION-A-01	27 / 92 --- 28 / 92	1.05.22.01 --- 1.05.22.01	The chimney flue liner cladding shall be made of 1.5 mm thick Titanium (Grade 2 as per ASME SB265) or C-276 (ASTM B575, UNS N10276) alloy over 8 mm thick (minimum) mild steel base metal of flue liner. --- The external surface of chimney flue liner projecting over the chimney roof shall be wrapped with 2 mm thick Titanium / C-276 sheet over insulation for titanium/C-276 lining and without insulation for borosilicate lining.	There is a ambiguity in the clauses. Please confirm the cladding MOC of the flue liner projected above roof slab.	It is already specified that the external surface of chimney flue liner projecting over the chimney roof shall be wrapped with 2 mm thick Titanium / C-276 sheet over insulation for titanium/C-276 lining and without insulation for borosilicate lining. It is also specified that for Titanium/C-276 lining, the top flue liner above the roof slab shall be made of solid C276 (ASTM B575, UNS N10276) / Titanium (Grade 2 as per ASME SB265) of minimum 10 mm thickness. Specification requirements are clear and bidder to comply with the technical specification requirements.
680	SECTION-VI, PART-B	SUB SECTION-A-01	28 / 92	1.05.22.01	For Borosilicate lining, top portion of the flue can shall be fitted with stop bar of 8 mm thick capping of Titanium / C-276 sheet to avoid any damage in between flue can and borosilicate lining.	The bidder would like to propose **2 mm thick capping** of Titanium / C-276 sheet to avoid any damage in between flue can and borosilicate lining.	Bidder's proposal is not acceptable. Specification requirement is clear and bidder to comply with the technical specification requirement.
681	SECTION-VI, PART-B	SUB SECTION-A-01	28 / 92	1.05.22.01	The minimum length of the capping inside the chimney shall be atleast equal to 150mm diameter of flue liner.	The bidder understands that the minimum length of the capping inside the chimney shall be atleast **equal to 150mm**.Please Confirm.	Bidder to refer amendment no SG.21 in this regard.
682	SECTION-VI, PART-B	SUB SECTION-A-01	28 / 92	1.05.22.01	However, minimum inside diameter of flue liner shall not be less than 8000 mm	Bidder request owner allow to consider minimum inside diameter as per process requirement.	Specification requirement is clear and bidder to comply with the technical specification requirement.
683	SECTION-VI, PART-B	SUB-SECTION-D-1-5	20 / 127	5.03.03	The across wind analysis of the chimney shall be carried out as per the provisions of IS 4998.	The bidder understands that wind shield shall be analysed and designed for cases with and without flue liner loads as per IS 4998: 2015 using limit state method. Please confirm.	Bidder understanding is correct

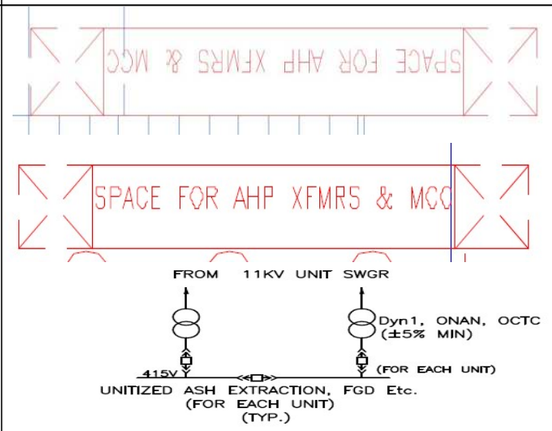
SINGRAULI SUPER THERMAL POWER PROJECT
STAGE - III (2X800MW)

PREBID QUERIES & CLARIFICATION

Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
Electrical							
686	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	34 of 40	5.14 (I)	400 kV AIS INSTRUMENT TRANSFORMERS 400 kV Instrument Transformers being offered should be from Manufacturer who has manufactured and supplied at least fifteen (15) nos. of single phase Instrument Transformers suitable for Air Insulated Substation/ Switchyard of 400 kV or above class which should have been in successful operation for minimum two (2) years prior to the date of Techno-Commercial bid opening.	Bidder understands that there is no relevance of the date of Techno-Commercial bid opening with provenness criteria as per industry standard. Bidder requests Owner to refer Annexure-10 for the same. Therefore, Bidder proposes the clause to be read as:400 kV Instrument Transformers being offered should be from Manufacturer who has manufactured and supplied at least fifteen (15) nos. of single phase Instrument Transformers suitable for Air Insulated Substation/ Switchyard of 400 kV or above class which should have been in successful operation for minimum two (2) years ~~prior to the date of Techno-Commercial bid opening.~~Owner may please accept. Annexure10_Provenness.pdf	Bidder Understanding is NOT correct .Bidder refer to page no 1 of 40 (Proveness),For the purpose of qualification of Bidders / Sub-vendor(s), experience shall be reckoned as on the techno-commercial bid opening date of EPC package unless otherwise specified in the respective clauses. Bidder to comply the specification requirement .
687	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	34 of 40	5.14 (II)	400 kV DISCONNECTORS: 400kV Disconnectors being offered should be from Manufacturer who have manufactured and supplied atleast five (5) nos. of three phase Disconnectors suitable for Air Insulated Substation/Switchyard of 400kV or above class which should have been in successful operation for minimum two (2) years prior to the date of Techno-Commercial bid opening.	Bidder understands that there is no relevance of the date of Techno-Commercial bid opening with provenness criteria as per industry standard. Bidder requests Owner to refer Annexure-10 for the same. Therefore, Bidder proposes the clause to be read as:400kV Disconnectors being offered should be from Manufacturer who have manufactured and supplied atleast five (5) nos. of three phase Disconnectors suitable for Air Insulated Substation/Switchyard of 400kV or above class which should have been in successful operation for minimum two (2) years ~~prior to the date of Techno-Commercial bid opening.~~Owner may please accept. Annexure10_Provenness.pdf	Bidder Understanding is NOT correct .Bidder refer to page no 1 of 40 (Proveness),For the purpose of qualification of Bidders / Sub-vendor(s), experience shall be reckoned as on the techno-commercial bid opening date of EPC package unless otherwise specified in the respective clauses. Bidder to comply the specification requirement .
688	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	34 of 40	5.14 (III)	400kV SURGE ARRESTER The Bidder/Sub-vendor should have manufactured and supplied minimum fifteen (15) nos. of single-phase respective equipment of offered voltage class or above, suitable for Air Insulated Substation/ Switchyard and which must have been in successful operation for a minimum period of two (2) years prior to the date of Techno-Commercial bid opening.	Bidder understands that there is no relevance of the date of Techno-Commercial bid opening with provenness criteria as per industry standard. Bidder requests Owner to refer Annexure-10 for the same. Therefore, Bidder proposes the clause to be read as: The Bidder/Sub-vendor should have manufactured and supplied minimum fifteen (15) nos. of single-phase respective equipment of offered voltage class or above, suitable for Air Insulated Substation/ Switchyard and which must have been in successful operation for a minimum period of two (2) years ~~prior to the date of Techno-Commercial bid opening.~~Owner may please accept. Annexure10_Provenness.pdf	Bidder Understanding is NOT correct .Bidder refer to page no 1 of 40 (Proveness),For the purpose of qualification of Bidders / Sub-vendor(s), experience shall be reckoned as on the techno-commercial bid opening date of EPC package unless otherwise specified in the respective clauses. Bidder to comply the specification requirement .
689	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-IIB ELECTRICAL SYSTEM / EQUIPMENTS	18 of 19	1.23.00	Electrical Testing Lab, with an air conditioned space of approx. 200 sq.m, shall be provided. in the Switchyard Control Room/ Auxiliary Building. Electrical Workshop shall be part of O&M workshop with an area of approx. 50m X 25m.	Bidder requests Owner to provide list of electrical lab equipment to be provided as a part of Electrical Testing Lab and Electrical Workshop.	an air conditioned space of approx. 200 sq.m, shall be provided. in the Switchyard Control Room for Electrical Testing Lab. Lab equipments are not in bidders scope. Electrical Workshop equipments are not in bidders scope
690	TECHNICAL SPECIFICATION SECTION – VI, PART-A	SUB-SECTION-IIB ELECTRICAL SYSTEM / EQUIPMENTS	9 OF 19	1.16.01 (ii) 1.16.01 (iii)	Further the scope also includes LILO of existing 400kV VSTPP-V to VSTPP-IV D/C Twin Moose Transmission Line at Singrauli STPP stage-III switchyard .Existing transmission line towers between VSTPP-V & IV are suitable for twin moose conductor, however new interconnection between Singrauli STPP stage-III switchyard & VSTPP-IV switchyard shall have rating for quad moose / HTLS equivalent to quad moose conductor. In case existing towers cannot be used due to any limitations, the erection of new towers and line for establishing the LILO arrangement shall also be in the scope of contractor. Establishment of D/C Interconnection Between VSTPP-V to Singrauli-III with twin Moose conductor as indicated in SLD. The scope of D/C transmission line Between VSTTP-IV & V and Singrauli STPP-III shall be executed as per the Tender drawing No: 1150-999-POE-J -001.	Bidder requests Owner to exclude supply of 400kV Transmission Lines from scope of EPC bidder as it is outside plant boundary and proposition is in line with earlier NTPC projects like Talcher where complete scope of work outside plant boundary were deleted.	Bidder proposal is not acceptable . Scope and specification requirement to be followed.

SINGRAULI SUPER THERMAL POWER PROJECT
STAGE - III (2X800MW)

PREBID QUERIES & CLARIFICATION

Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
691	PART - E, Book_I_of_II	GENERAL LAYOUT PLAN-1150-999-POC-F-001 Single Line Diagram – Main Plant-1150-999-POE-J-002	2 of 130 83 of 130	-		Bidder proposes that Unitized Bottom Ash Extraction Switchgears for both the Units can be located in BMCC room or nearest adjacent electrical building or separate common building. Please confirm. In line with above, Ash Extraction transformers can be dry type if located in BMCC room.	Bidder proposal is not acceptable. Speification requirement in Single Line Diagram – Main Plant-1150-999-POE-J-002 to be followed. Ash extraction transformer shall be Oil filled ONAN type.

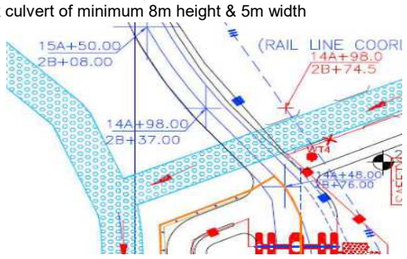
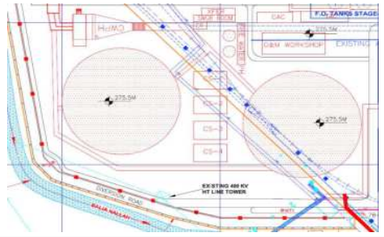
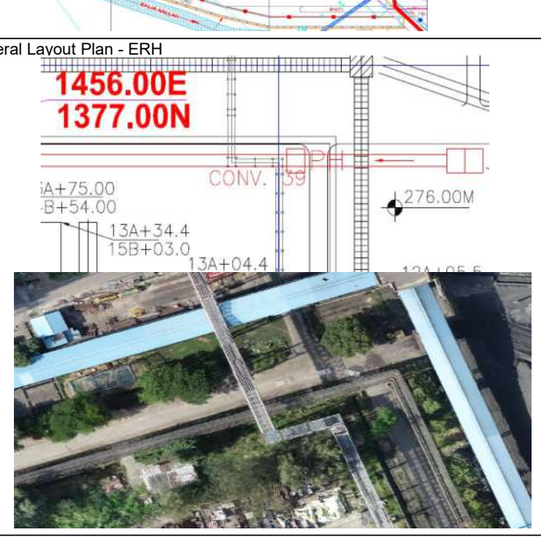
SINGRAULI SUPER THERMAL POWER PROJECT
STAGE - III (2X800MW)

PREBID QUERIES & CLARIFICATION

Sr. No.	Section / Part	Sub-Section	Clause No.	Page no.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
692	SECTION – VI, PART-B	SUB-SECTION B-0 GENERAL ELECTRICAL SPECIFCIATION	7 of 16	3.06.00, a)	All switchboards shall be of double front, draw out, complete closed-door operation, metal enclosed, indoor, floor-mounted, free-standing type of bolted design.	Bidder proposes to use double front, Fixed type switchgear panel for soot blowers. Please accept.	Bidder proposal is not acceptable. Specification cl. no.3.06.00 (a) Sub -Section B-0 Section-VI, part-B to be followed.
693	SECTION – VI, PART-B	SUB-SECTION B-0 GENERAL ELECTRICAL	9 of 16	3.06.00, m,a)	Standard control cable sizes shall preferably be 3CX1.5, 5CX1.5, 7CX1.5 & 10CX1.5mm2,14CX1.5 mm2	Standard control cable sizes shall preferably be 19CX1.5mm2 also may please be accepted on case to case requirement	Bidder proposal is acceptable.
694	SECTION – VI, PART-B	SUB SECTION-II-B-02 MOTORS	1 of 4	5.00.00	80 deg. C over inlet cooling water temperature mentioned elsewhere, by resistance method for both thermal class 130(B) & 155(F) insulation	For Boiler circulation pump motor, Bidder proposes Owner to allow class-Y insulation with 90°C temperature rise inline with NTPC executed projects.	For Boiler Re circulation pump motor, specification is clear. Please refer Sec-VI, Part-B,SS-A-02, Steam generator & auxiliaries including ESP, Clause 6.03.00 (iii) Motor specification & (iv) cooling system. Specification requirement to be followed.
695	SECTION – VI, PART-B	SUB-SECTION II-B-03 VFD	5 of 11	11.03.00	Air cooled VFDs shall be provided with cooling fans mounted integral to the VFD/ enclosure. The VFD shall include air-flow pressure switches and temperature detectors to monitor proper operation of the air cooling system. If the fan fails, the system must generate the alarm/trip for the fan failure.	No. of fan, air flow pressure switches and other accessories shall be provided as per OEM design and system requirement. Please accept the same.	Bidder proposal may be acceptable. However, equipment reliability & safety to be ensured with prpoper protection system and the same shall be decided during detailed engineering.
696	SECTION – VI, PART-B	SUB-SECTION-B-15 ELECTRICAL HOIST, CRANE AND ELEVATOR	4 of 5	7.06.0, b)	Limit voltage drop at motor terminals within 2% at extreme positions	The voltage drop at motor terminal during motor starting condition, shall be limited to 10% and during full load running condition, shall be limited to 3% of the rated voltage as per sub section-B-08 HT LT and control cables, Clause no. 3.00.01.	Bidder proposal is not acceptable. This clause is applicable for sizing of DSL only. Specification cl. no.7.06.0 (b) Sub -Section B-15 Section-VI, part-B to be followed.
697	SECTION – VI, PART-B	SUB-SECTION-B-15 ELECTRICAL HOIST,	5 of 5	7.06.0, c)	Transformer	Control transformer (Rating & Qty) in elevetor EOT / Hoist system shall be as per OEM proven design of NTPC approved vendor.	Bidder proposal is acceptable.
698	SECTION – VI, PART-B	SUB-SECTION B-10 CABLING, EARTHING AND LIGHTNING PROTECTION	3 of 21	3.02.02	Support system for cable trays shall essentially comprise of the two components i.e. main support channel and cantilever arms. The main support channel shall be of two types : (i) C1:- having provision of supporting cable trays on one side and (ii) C2:-having provision of supporting cable trays on both sides.	Cable trays in boiler & ESP area shall be supported from the boiler and ESP structures. with respect to Clause No 2.01.06., B-10, Page 2 of 21. Owner may kindly confirm.	Bidder proposal is acceptable.
699	SECTION – VI, PART-B	SUB SECTION-II-B-02 MOTORS	1 of 4	3.01.00, b)	Continuous duty LT motors upto 50 KW Output rating (at 50 deg.C ambient temperature), shall be super Premium Efficiency **class-IE4**, 50-200 KW shall be of Premium Efficiency class – IE3, conforming to IS 12615, or IEC:60034-30.	Bidder proposes Owner: Continuous duty LT motors upto 50 KW Output rating (at 50 deg.C ambient temperature), shall be super Premium Efficiency **class-IE3**, 50-200 KW shall be of Premium Efficiency class – IE3, conforming to IS 12615, or IEC:60034-30.	Bidder proposal is not acceptable. Specification cl. no.3.01.00 (b) Sub -Section B-02 Section-VI, part-B to be followed.

SIGRAULI SUPER THERMAL POWER PROJECT
STAGE-III (2X800MW)

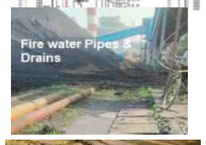
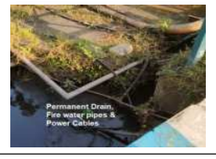
PREBID QUERIES & CLARIFICATION

Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
700	Part E - Drawings	Drg No -1150-001-POC-A-006	1 of 1	Note 8	Diversion of Kota Nallah adjacent to proposed Track Hopper for Stage III - RCC two cell box culvert of minimum 8m height & 5m width 	**Diversion of Kota Nallah adjacent to proposed Track Hopper for Stage III** a) Owner has mentioned minimum dimension of 8 M Height and 10 M Width for the proposed box culvert adjacent to Kotah nallah. As area drainage study has been conducted by Owner, firm dimensions may please be shared with all Bidders. b)During site visit, Bidder observed that existing culvert dimensions (located in downstream of road crossing) are lower than the proposed box culvert dimensions (8 M Height x 10 M Wide) as specified in tender. Owner is requested to revisit and accordingly reduce the dimensions of proposed Box culvert.	a) Bidder to comply with Technical specification requirement of minimum dimension of 8 M Height and 10 M Width of the proposed box culvert for re routing of diversion nalla along Kota Hill. Firm dimension shall be arrived at during detailed engineering b)Bidder's proposal is not acceptable.Bidder to comply with specification requirement of minimum dimension of 8 M Height and 10 M Width of the proposed box culvert for re routing of diversion nalla along Kota Hill. Firm dimension shall be arrived at during detailed engineering.
701	Part E - Drawings	1150-999-POC-F-001	1 of 1	-	General Layout Plan - NDCT 	Construction of NDCT may not be feasible as existing HT lines are passing very close to this structure(~25 m). Bidder understand that Owner will get these HT lines shifted from constructability and safety point of view. Please confirm.	Bidder's understanding is not correct.Existing HT line shall not be shifted. The location/layout of NDCT indicated in the tender drawing is tentative. Necessary minor modification in location/layout of NDCT may be done considering constructibilty and safety point of view.
702	Part E - Drawings	1150-999-POC-F-001	1 of 1	-	General Layout Plan - ERH 	Owner to note that construction of proposed ERH in existing Stage-II stockpile area is not feasible in view of existing stacker foundation, Also the proposed ERH conveyor route is overlapping with the existing pipe racks, existing budlings & other facilities which are not shown in the GLP. In view of this, Owner is requested to either provide the alternate feasible route for the ERH or exclude the same from EPC scope of work.	Bidder to refer Sl. No MH-1 amendment no 1 to technical specification.

SINGRAULI SUPER THERMAL POWER PROJECT, STAGE - III (2X800MW)

EPC PACKAGE

PREBID QUERIES & CLARIFICATION

S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
703	TECHNICAL SPECIFICATIONS SECTION-VI, PART-A	SUB-SECTION-IIA-16 ASH HANDLING SYSTEM	8 of 17	(b) (d)	ASH CLASSIFICATION AND BAGGING SYSTEM Suitable numbers of ash classifier as required shall be provided to meet the requirement. The ash classifier shall be of proven design for similar application. Efficiency of the Classifier shall be 95% minimum. No standby classifier shall be required. The classified fine ash shall have a size of (-) 45 microns (95%). All the ash conveying and generation rates shall be considered as per clause no 4.01.02 of sub section A-02 of part B of section VI.	Regarding the requirement of classifier system please clarify the following: 1) Particle size distribution of fly ash is required to select the classifier and to guarantee the output. 2) Classifier efficiency is mentioned as 95%. Quality of product is mentioned as 95% less than 45 microns. Both cannot happen together. Hence, please clarify the requirement. Owner is requested to furnish the above mandatory clarifications for designing ash classification system. In absence of these, Bidder can not guarantee the ash classification system as mentioned in the specification and requests Owner to exclude the ash classification system from Bidder's scope of work.	Bidder to refer Sl. No MH-25 amendment no 1 to technical specification.
704	TECHNICAL SPECIFICATIONS SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	78 OF 92	(F)	(i) Elevation of top of ash dyke : 26m (for both S1 & S2 dyke)	Owner is requested to furnish the Reduced Level of Top of Ash Dyke (with respect to Reduced Level of Main Plant FGL) to design ash slurry disposal pumps.	Bidder to refer Sl. No MH-10 amendment no 1 to technical specification.
705	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	14 OF 40	(iii)	4.19 Ash Handling System Notes to Clause no. 4.19.1 The systems mentioned at 4.19.1 (a), (b),(c) & (d) above, should have been in successful operation in at least one (1) plant for at least two (2) years. For the purpose of qualification, the experience as at 4.19.1 (a), (b), (c) & (d) above in separate plants also is permissible.	Owner is requested to modify the provenness criteria as follows in line with recent joint discussion with CEA: "The systems mentioned at 4.19.1 (a), (b),(c) & (d) above, should have been in successful operation in at least one (1) plant for at least one (1) ~~two (2)~~ years~~.~~ For the purpose of qualification, the experience as at 4.19.1 (a), (b), (c) & (d) above in separate plants also is permissible."	Bidder to refer Sl. No MH-38 amendment no 1 to technical specification.
706					4.19 Ash Handling System 4.19.1 The Bidder/ its Sub- vendor(s) should be supplier of ash handling system(s) and should have executed ash handling system(s) involving design, engineering, manufacturing/got manufactured, supply, erection /supervised erection and commissioning/ supervised commissioning for- (a) (i) Wet Bottom Ash handling system comprising either a jet pump system in conjunction with water impounded Bottom Ash Hopper or a submerged Scraper Chain Conveyor system designed for pulverized coal fired boilers: (ii) Wet Bottom Ash handling system comprising either a Jet pump system (for Water impounded Bottom Ash Hopper) consisting of Feed Gate, Clinker Grinder, Oil/Air Convertor tank, Water pumping system as a minimum or a Submerged Scraper Chain Conveyor system The above Wet Bottom Ash handling system under (i) & (ii) shall be designed for the following conveying capacities for pulverized coal fired boilers: Jet Pump System : 50 tonnes/hour (dry ash basis) or more per jet pump. Submerged Scraper : 20 tonnes/hour (dry ash basis) Chain Conveyor System or more per Conveyor. The reference Bottom Ash Handling systems should be of the same type i.e. jet pump system or submerged scraper chain conveyor system as is being offered by the Bidder/ its Sub- vendor. In case, Bidder/its sub-vendor qualifies through (a) (ii), the bidder shall engage a design agency who has done design/vetting of design of bottom ash handling system comprising of Jet pump system in conjunction with Water impounded Bottom ash hopper.	In view of limited AHP qualified vendors, Bidder request Owner to amend the AHP provenness criteria as follows in line with our joint discussion with CEA. "4.19 Ash Handling System 4.19.1 The Bidder/ its Sub- vendor(s) should be supplier of ash handling system(s) and should have executed ash handling system(s) involving design, engineering, manufacturing/got manufactured, supply, erection /supervised erection and commissioning/ supervised commissioning for- (a) (i) Wet Bottom Ash handling system comprising either a jet pump system in conjunction with water impounded Bottom Ash Hopper or a submerged Scraper Chain Conveyor system designed for pulverized coal fired boilers: **OR** (ii) Wet Bottom Ash handling system comprising either a Jet pump system (for Water impounded Bottom Ash Hopper~~)~~ consisting of Feed Gate, Clinker Grinder, Oil/Air Convertor tank**)** Jet Pumps, Water pumping system as a minimum or a Submerged Scraper Chain Conveyor system The above Wet Bottom Ash handling system under (i) & (ii) shall be designed for the following conveying capacities for pulverized coal fired boilers: Jet Pump System : 50 tonnes/hour (dry ash basis) or more per jet pump. Submerged Scraper : 20 tonnes/hour (dry ash basis) Chain Conveyor System or more per Conveyor. The reference Bottom Ash Handling systems should be of the same type i.e. jet pump system or submerged scraper chain conveyor system as is being offered by the Bidder/ its Sub- vendor. In case, Bidder/its sub-vendor qualifies through (a) (ii), the bidder shall engage a design agency who has done design/vetting of design of bottom ash handling system comprising of ~~Jet pump system in conjunction with~~ Water impounded Bottom ash hopper, **feed gate, air-oil convertor tank & clinker grinder."**	Bidder to refer Sl. No MH-35 amendment no 1 to technical specification.
707	Part E - Drawings	1150-999-POC-F-001	1 of 1	-	General Layout Plan - ERH   	a) Bidder would like to highlight that based on site visit information, many existing facilities are falling in the proposed path of ERH conveyor route (viz. Conveyor gallery tressle, Pipe racks, permanent drains, sheds, fire water pipes, power cables, sheds, etc. These existing facilities are not shown in the Tender GLP. Bidder request Owner to indicate all the facilities falling in the ERH conveyor route in the revised GLP. b) Bidder request Owner to provide drawings of existing facilities falling in the path of ERH & ERH conveyor to further study the feasibility of ERH. b) Rerouting all the existing facilities (underground & above ground) shall be carried out by Owner and clear route for construction of ERH & ERH conveyor shall be provided by Owner on NOA date. Please confirm.	Bidder to refer Sl. No MH-1 amendment no 1 to technical specification.

SINGRAULI SUPER THERMAL POWER PROJECT
STAGE - III (2X800MW)

PREBID QUERIES & CLARIFICATION

Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
708	SECTION – VI, PART-A	SUB-SECTION-I INTENT OF SPECIFICATION	5 OF 9	4.02.00	The Employer shall issue the following quantities of Fuel oil and Coal per unit for firing up to successful completion of "Initial Operation" (as defined in General Technical Requirements, Part-C, Section-VI of Technical Specification) for each unit free of charge. **Unit Size** | **800 MW** | **660 MW** Fuel Oil | 11200 kL | 9240 kL Coal | 2.7 Lakh MT | 2.3 Lakh MT Fuel oil and coal required for the successful completion of the "Initial Operation", more than the above-specified quantity limits, would be issued by the Employer. However, the Employer shall charge the Contractor the cost of these as per the prevailing landed rates at the site at that time.	Fuel oil and Coal quantities being provided by NTPC for Singrauli project is too low. In the recent Lara 2x800 MW (Ph-2) project NTPC is providing 15,300 kL Fuel oil & 3.43 Lakh MT of Coal free of cost to the successfull bidder for each unit. Since there is an variation in the coal properties between Lara & Singrauli projects, request NTPC to provide the following corrected values of coal & Fuel oil quantities free of cost to the successfull bidder for Singrauli project. Fuel oil : **15,300 kL** per unit (Same as NTPC Lara values) Coal : **3.25 Lakh MT** per unit (Corrcted values from NTPC Lara) Request NTPC to issue suitable amendment in this regard.	The quantities indicated are adequate based on employer's assessment. Bidder to comply with the specification requirements.

SINGRAULI SUPER THERMAL POWER PROJECT
STAGE - III (2X800MW)

PREBID QUERIES & CLARIFICATION

Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
709	TECHNICAL SPECIFICATION SECTION – VI, PART-A	SUB-SECTION-IIA-04 FLUE GAS DESULPHURISATION SYSTEM	PAGE 2 OF 7	3.01.00	The contractors scope shall include a common limestone grinding system for the two units with an interconnection from existing Stage-II & III system and shall comprise of:	Bidder is not clear about the requirement of interconnection from existing stage-II and stage III system. Please clarify. Moreover, bidder is not considering any interconnection with existing units. Bidder scope will be restricted only for stage -III units. Please confirm.	Bidder to refer amendment no SG.11 in this regard

SINGRAULI SUPER THERMAL POWER PROJECT
STAGE - III (2X800MW)

PREBID QUERIES & CLARIFICATION

Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
710	SECTION – VI, PART-A SECTION-VI, PART B	SUB-SECTION-IIC CONTROL & INSTRUMENTATION SYSTEM SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	PAGE 13 OF 18 Page 41 & 42 of 113	4.00.00(h)-3 2.7.1, 2.7.2, 2.7.3	**The instruments for CHP** and AHP ash conveyor system shall be provided as per standard and proven practice of respective supplier. However, for temp elements, DIN rail type temp transmitters mounted in JBs shall be provided. For Pull Chord Switches, Belt Sway Switches & Zero Speed Switches **Degree of Protection** **Flame proof/Explosion proof for NEC Class 2,Division 1 area**	For CHP application Flame Proof Belt Protection Switches shall be considered. CHP does not fall under explosion proof application area . Hence, these switches shall be provided as per bidder's standard and proven practice of OEM. Kindly Accept the Same.	Bidder's proposal is not acceptable. Specification requirement is clear. Bidder shall comply to technical specification.
711	SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	Page 43 of 113	2.7.4	One number trip indicator panel per conveyor, which shall display the exact number of safety switches (pull chord or belt sway switches) operated in a loop of conveyor considering 10 % spare switches.	Bidder understands that one number trip indicator(Controller) module shall be supplied for each conveyor. There shall be dedicated Sensor/Terminator Module for each loop of PCS & BSS. The Indicator cum Controller for each loop shall be residing inside Belt Watch Panel (Common for CHP A & B Stream) located at CHP Control Room. **Kindly confirm the same**	Bidder to refer Amendment No-1 in this regard.
712	SECTION – VI, PART-B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	Page 11 of 113	4.7.4	To mount vibration sensors suitable arrangement including vibration pads and **notches in the shaft of Crusher for mounting Key Phasor shall also be provided.**	The provision for the notch shall be provided at the Non-Drive End of Crusher's Shaft. **Kindly accept the same.**	Specification requirement is clear. However location of the notch shall be discussed and finalised during detailed engg.

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PREBID QUERIES & CLARIFICATION

Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
713	SLD for Ash Classifier System (Vacuum System)	Dwg. No. 9587-001 (R)-POM-A-029	-	-	All the Pressure conveying lines from Buffer Hopper are routed to The Coarse Ash Silos for further transfer to the ain Fly Ash Storage Silos	Kindly note that the Main Silos are located approx. 1050 M from the farthest ESP buffer Hopper and single stage ash transportation is possible upto the Main Silo. Moreover, it is possible to route that Fly Ash from the ESP 4th field onwards only to the classifier as the complete system is automated as in case of the pressure - pressure conveying system. Please find Annexure-1 for the Sketch showing the changes suggested.	Bidder's proposal is not acceptable. Bidder to refer sl.no MH-15 of the amendment 1 to technical specification.
714	Section-VI, Part-A	Sub-section-IIA-16	8 of 17	1.01.06 (E) (c)	..... Classification of 40 % of ESP ash	As the ESP system is divided into 3 parts, the capacity of each Pressure conveying system will 33.33% of capacity. Hence the classification required should be 33.3% instead of 40% as specified.	Bidder's proposal is not acceptable. Further Bidder to refer sl.no MH-42 of the amendment 1 to technical specification for clarity
715	Section-VI, Part-A	Sub-section-A-21	21 of 41	2.10.00	Bag filters	Please confirm that the vent filters provided on top of the Silos (Main, intermediate, classifier) shall be sized for one unit operation only.	Bidder's understanding is correct in case of main and intermediate silos and bidder's proposal is not acceptable in case of Classifier silos. Bidder to follow technical specification in case of classifier silos.
716	II_Part_A_IIB_annexures	-	57 of 294	Route Alignment drawing for Route-1: 400kV D/C Twin Moose Singrauli-III to Singrauli-V Transmission Line: (1) Location AP-2 (2) Span between AP-1 to AP - 2 as well as AP-2 to AP-3		Bidder understands that the marked area is under Green Belt area. Owner may please clarify. Further, Bidder understands that approval for tree cutting shall be in Owner's scope for both interconnecting Transmission lines. Please confirm.	Refer Ammendmnt 1 to technical specification
717	II_Part_A_IIB_annexures	-	57 of 294	Route Alignment drawing for Route-1: 400kV D/C Twin Moose Singrauli-III to Singrauli-V Transmission Line: Location AP-3, AP-4 & AP-5		Bidder observed that clearance from existing Railway line is less than the minimum requirement i.e. Tower height + 6 meter as per Tender Cl. No. 12.03.05 of V_Part_B_Electrical_Book_II_of_V. Owner is requested to clarify. Further, Bidder understands that seeking approval for railway line crossing of transmission line shall be in Owner's scope. Please confirm.	Refer Ammendmnt 1 to technical specification

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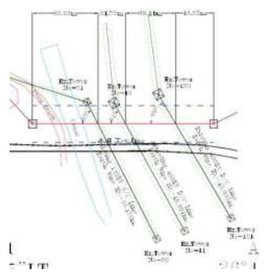
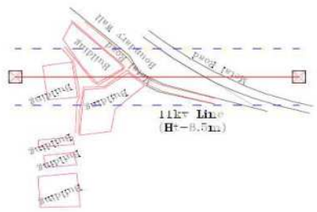
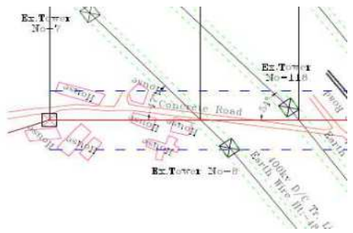
PREBID QUERIES & CLARIFICATION

Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
718	II_Part_A_IIB_annexures	-	56 of 294 57 of 294	Route Alignment drawing for Route-1: 400kV D/C Twin Moose Singrauli-III to Singrauli-V Transmission Line: Span between AP-4 to AP - 5		Bidder understands that existing towers are located within the corridor of proposed 400kV Transmission line. Shutdown of the existing lines and approval from respective authority will be required during stringing, erection & commissioning which shall be obtained by Owner. Please confirm	Refer Ammendmnt 1 to technical specification
719	II_Part_A_IIB_annexures	-	57 of 294	Route Alignment drawing for Route-1: 400kV D/C Twin Moose Singrauli-III to Singrauli-V Transmission Line: Span between AP-7 to existing Tower		Bidder observed encroachment in the section between AP-7 and existing Tower. Bidder understands that removal of this encroachment is under Owner's scope. Please confirm.	Refer Ammendmnt 1 to technical specification
720	II_Part_A_IIB_annexures	-	132 of 294 133 of 294	Route Alignment drawing for 400kV D/C from Singrauli-III to Singrauli-IV Transmission Line:: (1) Location AP-2 (2) Span between AP-2 to AP-3		Bidder observed encroachment in the area of proposed towers and corridor. Bidder understands that removal of this encroachment is under Owner's scope. Please confirm.	Refer Ammendmnt 1 to technical specification
721	II_Part_A_IIB_annexures	-	133 of 294	Route Alignment drawing for 400kV D/C from Singrauli-III to Singrauli-IV Transmission Line: Span between AP-2 to AP-3		Bidder observed multiple Power line crossings between Section AP-2 to AP-3 & AP-3 to AP-4. Shutdown of the existing lines and approval from respective authority will be required during stringing, erection & commissioning which shall be obtained by Owner. Please confirm	Refer Ammendmnt 1 to technical specification

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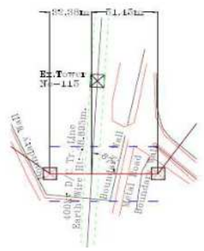
PREBID QUERIES & CLARIFICATION

Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	Owner's Clarification
722	II_Part_A_IIB_annexures	-	132 of 294 133 of 294	Route Alignment drawing for 400kV D/C from Singrauli-III to Singrauli-IV Transmission Line: Span between AP-2 to AP-3		Bidder understands that sufficient clearance is not available for installation of tower at location AP-3 as it is very close to the existing 400kV Power Line corridor. Owner may please suggest alternate solution for crossing existing transmission lines.	Refer Ammendmnt 1 to technical specification
723	II_Part_A_IIB_annexures	-	132 of 294 133 of 294	Route Alignment drawing for 400kV D/C from Singrauli-III to Singrauli-IV Transmission Line: Span between AP-3 to AP-4		Bidder observed that the Power line crossing between AP-3 to AP4 is 500kV HVDC Transmission line instead of 400kV Transmission line mentioned in survey report. Owner may verify the voltage level as well as specify the clearances to be maintained for proposed 400kV Transmission line.	Refer Ammendmnt 1 to technical specification
724	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION-B-17 SWITCHYARD	57 of 100	12.02.01	Right of way and way leave clearance shall be arranged by the Owner.	Bidder understands that Owner will compensate Bidder with time and cost in case of any delays in providing right of way and clearances for proposed transmission lines. Owner may please confirm.	Refer Ammendmnt 1 to technical specification

Sr. No.	Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
				1 OF 40		For the purpose of qualification of Bidders /Sub - vendor(s), experience shall be reckoned as on the techno-commercial bid opening date of EPC package unless otherwise specified in the respective clauses.	For sub-vendor items/ package/ system, it is proposed that experience qualifying date shall be reckoned **as on the date of submission of vendor proposal for approval but not later six (6) months from LOA.**" This shall enable new and qualified suppliers to participate in respective package tender.	**Bidder to also refer amendment in this regard.**
1	**LOT3 tab PEM sl 3**	SECTION-VI, PART-A	SUB-SEC-TION-I-A					
				53 of 76	2.02.02	No shutdown shall be allowed for installation of PG test instrument/ flow nozzle etc. Any advanced class instrument system such as those using electronic devices or mass flow technique shall be arranged by the contractor, if required. However, same shall be installed before start of initial operation of unit. For determination of primary flow to the turbine, a calibrated low Beta-ratio throat-tap nozzle assembly shall be installed permanently in condensate line prior to initial operation, same shall be also used for process control. All the instruments including the flow nozzle shall be calibrated by the contractor before initial operation in a reputed international institute. All calibrations reports shall be made available prior to the start of initial operation and calibration certificates in original submitted to Employer. All instruments including flow nozzles as necessary for conductance of PG tests shall be installed prior to the start of initial operation.	PG test instruments are with special accuracy class and shall be calibrated before start of actual PG test and will be installed in running unit. Flow Nozzle shall be installed just before start of TG-PG test to ensure accuracy of flow measurement and its reading will be recorded in separate data logger.	Bidder's proposal is not acceptable. Bidder to comply with technical specification requirement.
2	**lot 4 tab hwr sl 16**	VI/A	IV					
				9 of 229	3.4	Condensate flow nozzle (ASME PTC 6) will be installed by vendor Prior to initial operations. Condensate flow data will be available during performance test. Average value of test data of the specified test period will be collected for evaluation purpose. Vendor to ensure calibration validity of all instruments used for PG Test. Calibration certificates of test instruments shall be submitted to Employer at least 15 days before the conductance of performance test. Instrument Calibration to be carried out in a NABL accredited Laboratory.	Flow Nozzle shall be installed just before start of TG-PG test to ensure acuracy of flow measurement and its reading will be recorded in separate data logger.	Bidder's proposal is not acceptable. Bidder to comply with technical specification requirement.
3	**lot 4 tab hwr sl 19**	VI/B (Mecha nical)	G-04					

4	**lot 4 SGci**	VI/A	VI-Chapter-01			Mandatory spares for SG & Auxiliaries : 2.01.00 1.1 Flame Scanner Assembly - 20 % or 4 nos., whichever is more 2.02.00 a) Transmitters - 10%. of each type and model whichever is more; b) Thermocouples - 10% or 2 nos. of each type and length, whichever is more	For mandatory spare clauses pertaining to SG & auxiliaries, whenever the spare is specified as percentage(%), tender specification does not indicate whether the spare estimation shall be percentage(%) of the total population of the plant or percentage(%) of population in one of the unit. NTPC is requested to clarify and issue amendment in the specification.	Bidder to refer General Note at the end of Ch-01 Section VI, Part A Pg 39 of 39 which is reproduced below: ''Wherever quantity has been specified as percentage (%), it shall mean percentage (%) of the total population of the item in the station (project), unless specified otherwise and the fraction will be rounded off to the next higher whole number. '
5	**lot 4 sg qa 34**	Sec-VI/ Part-B	Sub-Sec-E-01	6	1.01.10 (g) Steam Generator Startup Drain Re-Circulation pump	Following test shall be carried out on assembled units: Type Test: i) Tests to establish unit functioning of pump at temp and pressure. (ii) Hot standstill and start up tests.	Type tests, if already done for the similar design/size/capacity of 800 MW supercritical boilers then, reports will be shown and tests will not be repeated. Else, tests will be done.	In this regard, Bidders to refer clause no-22.04.00, Sub Section- A-02, Part-B of technical specification.
6	**lot 4 sg qa 38**	Sec-VI/ Part-B	Sub-Sec-E-01	9	1.02.05 (b) Coal Feeders	Type tests including degree of protection and routine tests shall be done as per relevant Indian Standards or equivalent International Standards.	Tests if already done for the similar design/size/capacity of 800 MW supercritical boilers then, reports will be shown and tests will not be repeated. Else, tests will be done.	For type test requirement, Bidders to refer clause no-22.04.00, Sub Section- A-02, Part-B of technical specification. The routine tests including degree of protection test are critical for coal feeders and bidder's proposal is not acceptable. Bidder to comply the specification requirement.
7	**lot 4 sg qa 51**	Sec-VI/ Part-B	Sub-Sec-E-01	12	1.02.15 (f) Metallic expansion Joint for piping	The testing of MEJ shall be as per Expansion joint Manufacturer Association (EJMA) standard.	Life cycle test (type test) if already done for the similar design/size/capacity of 800 MW supercritical boilers then, reports will be shown. Other tests are not envisaged.	Specification requirement is clear. Bidder to comply specification requirements.
8	**lot 4 sg qa 53**	Sec-VI/ Part-B	Sub-Sec-A-02	6	3.02.01 Furnace/ Evaporators and water walls	Water/Steam walls shall be of membrane wall construction and shall be made of cold drawn tubes	Water/ Steam wall tubes will be both Hot drawn and Cold drawn tubes.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
	BHEL lot 6							
9	**17**	VI A	I-A	1 of 40		For the purpose of qualification of Bidders / Sub-vendor(s), experience shall be reckoned as on the techno-commercial bid opening date of EPC package unless otherwise specified in the respective clauses.	In the recent past, it has been observed that there is significant time gap between opening of Techno-commercial bid date and actual award date. Therefore, we request NTPC to modify the said clause as below, in line with earlier NTPC tenders: "For the purpose of qualification of Bidders / Sub-vendor(s), experience shall be reckoned as on the date of consideration for approval but not later than six months after award date of EPC package unless otherwise specified in the respective clauses."	Bidder's proposal is not acceptable. **Bidder to also refer amendment in this regard.**
10	Pre-bid queries Singrauli EPC - Lot5 dated 10.11.2023	VI, PART-B	SUB SECTION- G-05 STANDARD TYPE TEST PROCEDURE	28 of 38	6.03.00	Weigh bridges	Customer to note that in the referred sub section weigh bridge is mention, however detail of the same is not available in the specification. Customer is requested to confirm scope of supply and location of the weigh bridge. Further if same is in bidders scope, then specification of weigh bridge may please be provided.	This is a part of type test facility. It is not in bidders scope.
11	Pre-bid queries Singrauli EPC - Lot5 dated 10.11.2023	VI, PART-A	SUB-SECTION-IID	9 of 13	24 e)	O&M workshop	Customer to note that in the referred sub section O & M workshop is mention, however detail of the mechanical workshop equipment is not available in the specification. Customer is requested to confirm scope of supply of the Mechanical Workshop Equipment. Further if same is in bidders scope then specification of Mechanical Workshop Equipment may please be provided.	O&M workshop equipments is not part of EPC Package.
12	Pre-bid queries Singrauli EPC - Lot5 dated 10.11.2023	VI, PART-A	SUB-SECTION-IID	8 of 13	24 c)	FQA Lab	Customer to note that in the referred sub section FQA Lab is mention, however detail of the Mechanical FQA Lab is not available in the specification. Customer is requested to confirm scope of supply of the Mechanical FQA Lab. Further if same is in bidders scope then specification of Mechanical FQA Lab may please be provided.	Mechanical FQA LAB equipments are not part of EPC Package.

13	Pre-bid queries Singrauli EPC - Lot5 dated 10.11.2023	SECTION-VI, PART-A	IIA-01	22 of 28	2.24.03	Contractor shall provide motorized hoists and trolleys for all items requiring maintenance and weighing 500 kg or more.	All the mentioned three clauses are contradictory w.r.t selection of electric or manual hoist. We shall follow clause 4.02.09 of sub-section A-02/Section VI part B for selection of electric or manual hoist. Kindly confirm	Bidder to refer the corresponding clauses of specification for the corresponding items/equipments.Bidder to comply with the specification requirements.
14	Pre-bid queries Singrauli EPC - Lot5 dated 10.11.2023	Sec-VI,Part-B	Sub-Sec-G-05 & E-12	1 of 38 and 2 & 3 of 4	1.01.00 and 1.00.00	Type tests for TDBFP, TDBP, MDBFP & MDBP: (i) NPSH (R) Test on one BFP and one BP (ii) Pressure pulsation test on one BFP (iii) Axial thrust measurement on one BFP (iv) Complete strip down test of BFP which undergone above tests (v) Pressure drop test on one strainer for each type and size	Type test of BFP will be carried out at reduced speed.	Bidder proposal is not acceptable. Bidder shall comply to specification requirement.
15	Pre-bid queries Singrauli EPC - Lot5 dated 10.11.2023	Sec-VI, Part-A	Sub-Sec-VI	3 of 3	13.00.00	Bidder shall not indicate “Not Applicable” against any of the spare (except for those items for which “if applicable” is specified). In case of not applicability, functionally equivalent spare to be mentioned with price in the relevant price schedules. Bidder shall not mention any remark other than price value in relevant price schedule.	Some of the items against a Bought Out Item for a bidder may not be applicable . Equivalent item if any as per the equipment supplier will be supplied. Incase there is no equivalent items are there, then Customer should not ask for rebate againt that item	Bidder proposal is not acceptable. Bidder shall comply to specification requirement.
16	Pre-bid queries Singrauli 17.11.23	SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Bi-omass and Gypsum Plant	Page 41 of 113	2.7.1 Pull Chord switches 2.7.2 Belt sway switches 2.7.3 ZSS	Degree of Protection for Pull chord switch, Belt sway Switch & Zero Speed Switch :: Flame proof/Explosion proof for NEC Class 2,Division 1 area	NEC Page no: 374 of 879, (B) Class II Group Classifi-cations. ("Atmospheres containing combustible carbonaceous dusts that have more than 8 percent total entrapped volatiles"). Hence, this area will not fall under Hazardous area. The presence of the dust suppression and extraction systems shall ensure non-accumulation of dust clouds. Moreover, switch enclosure provided is Dust Proof type (IP65 Enclo-sure – IP rated as "dust tight" and protected against water projected from a nozzle) switches. Hence the coal particles if any generated in the CHP area will not enter inside the switches, hence there is no chance of getting the arcs come in contact with the coal particles. This way Fire hazard is nullified in the CHP area. Hence, flame proof enclosure will not be required. PCS,BSS,ZSS: I6-65, Non-Flammable, addressable, Indicating type shall be provided. Please confirm.	Bidder proposal is not acceptable. Bidder shall comply to specification requirement.
17	**1**	VI/PART-A	GENERAL		GENERAL		1. Bidder understand that cutting of trees and demolition of existing buildings towards silo area is not in the scope of bidder. 2. Bidder propose to consider nallah crossing and railway crossing of fly ash pipe rack to-wards silo to be considered in NTPC scope Please confirm.	1. Bidder to refer clause no 1.00.00 sl no 3 of Section-VI Part-A Sub section IID with it's amendment. 2. Bidder's proposal is not acceptable.

	LnT lot 3 and 4							
	Sr. No.	**Section / Part**	**Sub-Section**	**Page no.**	**Clause No.**	**Bid Specification Stipulation**	**Statement of Prebid Queries & Clarification**	**NTPC's Clarification**
1		SECTION – VI, PART-B	SUB-SECTION-B-17	80 / 100	14.05.00	The chimney portion of the foundation shall be designed as per limit load method described at clause 38.6 of IS-456-1978.	There is a ambiguity in the clauses. The bidder understands that Chimney Foundation shall be designed as per limit state method conforming to IS 4998 : 2015. Kindly confirm.	This "chimney portion of the foundation" referred to in this clause, refers to switchyard tower foundation. Latest revision of IS:456 to be used.
	684	SECTION-VI, PART-B	SUB-SECTION-D-1-5	22 / 127	5.03.07	The chimney foundation shall be designed as per limit state method as per IS 4998 for the most critical combination of forces and moments,		Bidder's understanding is correct.Bidder to refer Section-VI,PART-B,SUB-SECTION-D-1-5, Cl no 5.03.07 for chimney foundation.
2	685	SECTION-VI, PART-B	SUB-SECTION-E-4	05-May	1.17.00	Borosilicate block shall conform to NTPC data sheet and to be tested as per Relevant applicable standard .	Bidder requests owner to provide detailed technical specifications/NTPC data sheet for borosilicate lining over the steel flue.	Bidder to submit datasheet of Borosilicate block/lining to NTPC for approval inline with technical specification during detail engineering.
3	450	SECTION - VI/ Part B	D - 1-10	2 of 4	10.04.01 (a)	Impact test requirement in IS 2062 plates for structural fabrication	Impact test shall be applicable for thickness above 20 mm	Bidder's understanding is not correct. All plates are to be impact tested.
	LnT lot 1 and 2							
	Sr. No.	**Section / Part**	**Sub-Section**	**Page no.**	**Clause No.**	**Bid Specification Stipulation**	**Statement of Prebid Queries & Clarification**	**NTPC's Clarification**
4	12	----	----	----	----	General	NIT is silent about the requirement of in-motion weigh bridge. Bidder understands that there is no requirement of in-motion weigh bridge. Please confirm acceptance.	Bidder's understanding is correct. In-motion weigh bridge is not in the scope of the Bidder.
5	87	SECTION-V I, PART-A	SUB-SECTION-VI CHAPTER-2 STEAM TURBINE GENERATOR	27 OF 32	1.00.00	CPU/Regen Area Blowers 4 Gears	Owner is requested to delete the requirement of “Gear” as the same is not applicable.	Bidder to provide spares for Gear if applicable.
6	88	SECTION-V I, PART-A	SUB-SECTION-VI CHAPTER-2 STEAM TURBINE GENERATOR	27 OF 32	1.00.00	Agitators 4 Any other agitator assembly with motor & gear box	Owner is requested to delete the requirement of “Any other agitator assembly with motor & gear box” as the same is not applicable.	Bidder to provide spares for “Any other agitator assembly with motor & gear box” if applicable..
7	89	SECTION-V I, PART-A	SUB-SECTION-VI CHAPTER-2 STEAM TURBINE GENERATOR	27 OF 32	1.00.00	CPU/Regen Area Pumps including N-pit & Backwash 6 Stuffing box for each type	Owner is requested to delete the requirement of “Stuffing box for each type” as the same is not applicable. Hence, Bidder understands that Stuffing box, if applicable, will be considered. Kindly confirm Bidder's understanding.	Bidder's understanding is correct.
8	90	SECTION-V I, PART-A	SUB-SECTION-VI CHAPTER-2 STEAM TURBINE GENERATOR	29 OF 32	1.00.00 (4)	Process Actuated Switch Devices -As applicable for this package, as per the following items: i) Temperature switches: 1 no. of each range and type ii) Pressure switches: 1 no. of each range and type iii)D differential Pressure switches: 1 no. of each range and type iv)L evel switches: 1 no. of each range and type v) Flow switches: 1 no. of each range and type	Bidder would like to clarify that as per CPU OEM, transmitters are used instead of process actuated switches and spares for transmitters are already indicated in Cl. No. 1.00.00 (1). Hence, Bidder request customer to delete spares requirement for process actuated switches.	Bidder's understanding is correct. Bidder shall provide mandatory spares complying to specification requirements for all items being supplied for CPU.
9	91	SECTION-V I, PART-A	SUB-SECTION-VI CHAPTER-2 STEAM TURBINE GENERATOR	30 OF 32	1.00.00 (7)	4. Complete Turbidity Analyzer (including sensing unit, Electronic Transmitter unit, Pre-fabricated cable with connector as minimum) 5. Dissolved O2 Analysers(including sensing unit, Electronic Transmitter unit, Pre-fabricated cable with connector as minimum) (if applicable) 6. Turbidity analysers (including sensing unit, Electronic Transmitter unit, Pre-fabricated cable with connector as minimum) (if applicable)	a) Bidder wish to inform that Turbidity analyzer spares are repeated, Please refer Sr. No. 4 and Sr. no. 6. Please delete repeated clauses. b)B bidder wish to clarify that Turbidity analyzer and Dissolved O2 analyzer are not applicable as per CPU OEM design. Bidder understands that since Turbidity analyzer and Dissolved O2 analyzer are not required as per OEM design, spares for these analyzers shall be considered as not applicable. Please confirm.	a) Sl no-4 under the referred clause stands DELETED. b) Bidder's understanding is correct. Bidder shall provide mandatory spares complying to specification requirements for all items being supplied for CPU.
10	92	SECTION-V I, PART-A	SUB-SECTION-VI CHAPTER-2 STEAM TURBINE GENERATOR	30 OF 32	3.00.00	6. Air Lock relays- 2 nos. of each type	Bidder understands that since air lock relays are not required as per OEM design, spares for these items shall be considered as not applicable. Please confirm.	Bidder's understanding is correct. Bidder shall provide mandatory spares complying to specification requirements for all items being supplied for CPU.

11	98	TECHNICAL SPECIFICATIONS SECTION-VI, Part-A	SUB-SECTION-IIA-13 FO UNLOADING SYSTEM	PAGE 1 OF 2	1.06.00	Two (02) no's LDO transfer pumps shall be provided to transfer LDO from two existing LDO tanks to Stage-II day oil tank by providing suitable connection to the existing discharge header of the existing transfer pumps. These pumps can be located in shed.	Owner is requested to provide the preliminary coordinates for existing discharge header of Stage-II for connection.	Terminal point for interconnection shall be 100 M (approx.) from St-I FO unlaoding Pump House.
12	273	SECTION-VI, PART-E	9586-001-POM-A-020 9586-001-POM-A-018	-	-	Scheme for Pulveriser (Vertical Mil) Scheme of Air & Flue Gas Path with Instruments (With Trisector APH)	Bidder have considered the flow measurement as per bidder standard practice as follows: 1. Mill inlet air flow is as per bidder proven practice based on slant orifice flow measurement. This proven OEM design has been successfully executed in Power projects in India. 2. FD/ID/PA fans inlet flow based on Pressure measuring Annular pipes at inlet box opening and inlet cone.	1. Bidder's proposal for Mill inlet air flow is acceptable as per standard and proven practice of OEM. 2. Bidder's proposal for inlet elbow flow measurement for FD/ID/PA fans is acceptable. Further, bidder shall comply to the requirements of tender drawings.
13	314	SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -01 SG & AUXILIARIES: MANDATORY SPARES	-	-	-	Wherever Mandatory Spare quantity is mentioned in Percentage, Bidder is considering the quantity as per percentage on Total Population of the item in one Unit. Please confirm Bidder Understanding is correct.	Bidder to refer General Note at the end of Ch-01 Section VI, Part A Pg 39 of 39 which is reproduced below: ''Wherever quantity has been specified as percentage (%), it shall mean percentage (%) of the total population of the item in the station (project), unless specified otherwise and the fraction will be rounded off to the next higher whole number. ‘
14	315	SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -01 SG & AUXILIARIES: MANDATORY SPARES	-	-	-	Spares terminology will depend on OEM as approved by Customer. Customer shall accept as per OEM specific terminology as per Customer approved vendors. Any item not applicable for the OEM design will not be considered and commercial rebate shall not be applicable for such items.	Bidder's understanding is not correct. Further, bidder to refer clause 13.00.00 Sub-Sec VI Part A wherein the details are clearly specified.
15	366	TECHNICAL SPECIFICATION SECTION-VI, PART-D	Part D ERECTION CONDITIONS OF CONTRACT	PAGE 2 OF 70	4.01.00	Complete recording of the temperatures through out the stress relieving cycle of the material and the weld subjected to heat treatment shall be made by means of chartless recorder / IIOT sensors duly password protected with a connectivity to remote server /Cloud .	Presently IBR inspectors accept only physical/hardcopy chart Digital Recorders with chartless recorder / IIOT sensors may be used, however Director Boiler need to accept the digital form of recording and issue a directive to all IBR Inspectors to accept the same Hence bidder request to use digital Smart PWHT - Pre-heating, post-heating and post-weld stress relief heat treatment for only P91/P92 materials, as with induction M/c digital data will be available However, if we work this initiative as part of digital journey, 10% of FWS may be used with such system.	Bidder's proposal is not acceptable. The chartless recorder for stress relieving of the material are available and being used in the industry. Bidder to comply the specification requirement.
16	367	TECHNICAL SPECIFICATION SECTION-VI, PART-D	Part D ERECTION CONDITIONS OF CONTRACT	PAGE 41 OF 70	55.00.00	Computed RT shall be used as an advanced Engineering Practice. Main contractor to ensure minimum 10% computed radiography of weld joint to be performed in construction phase for scope agreed in FWS for boiler pressure parts. Main contractor to ensure the transfer & storage of these records in Server	Bidder would like to have exemption for the clause owing to following a) The acceptance from IBR at site for Computed RT shall be taken in to consideration from the boiler board b) In case of other alternative NDT method (such as UT/PAUT) adopted in past project same may also be permitted subject to statutory compliance.	Bidder's proposal is not acceptable. The computed radiography of the weld joints are available and being used in the industry. Bidder to comply the specification requirement.

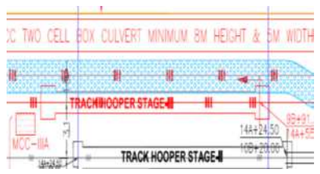
17	368	TECHNICAL SPECIFICATION SECTION-VI, PART-D	Part D ERECTION CONDITIONS OF CONTRACT	PAGE 2 OF 70	3.05.00	Welding Equipment for high pressure (Boiler , PCP) - For GTAW process: HF Welding machines to be used. For SMAW process: Inverter based welding machine are to be used.	Welding equipment shall be used as per earlier practice of bidder as there were no impact of use of existing method welding while operation of plant.	Bidder's proposal is not acceptable. The required welding equipment details are clearly specified and the same are useful for control of the welding parameters properly. Bidder to comply the specification requirement.

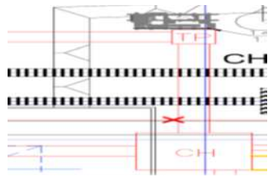
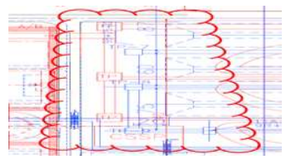
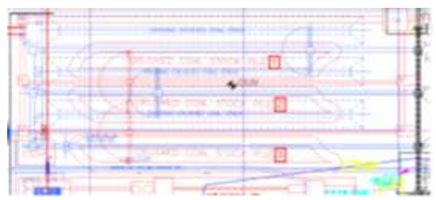
Technical clarifications no-02

SN	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
1	TECHNICAL SPECIFICATIONS SECTION VI, PART-C	GENERAL TECHNICAL REQUIREMENTS	20 of 119 21 of 119 21 of 119	8.03.05.03 8.03.05.03 (4a) 8.03.05.03 (4d)	These packages shall be installed on the Learning Management Server (LMS) of Power Management Institute (PMI) , NTPC located at Noida . The Mobile responsive courses shall run on Android, Windows Mobile, Blackberry, iOS etc. Courses shall be SCORM (Sharable Content Object Reference Model) compliant, version 1.2 which is compatible with LMS at PMI.	a) Bidder understands that e-Learning course shall be contents in SCORM (Sharable Content Object Reference Model) format which shall be integrated in LMS of NTPC PMI. Software applications for viewing the content is part of NTPC PMI server, further no hardware is required for e-learning package. Please confirm. b) Bidder would like to clarify that certain items like Blackberry, Windows Mobile are outdated and might not be in use. Please delete this requirement.	No specific hardware is envisaged. Content to be developed in latest HTML format. Bidder to comply with the specification requirements.
2	Section-VI, Part-C	General Technical Requirements	16 of 119	8.03.04	Further, two Licenses of the used 3D Modelling Software (One for Engineering View and One for Site View) shall be provided along with compatible Hardware for possible review and study of the Model Files being submitted by the Bidder Time to time. All software provided shall necessarily include cost for perpetual license(s) for use on all the machines and an Annual maintenance contract (AMC) which shall include software upgrades as & when released by the software agency for a period of three years after warranty/ guarantee period	Bidder wish to clarify that all major 3D design review software suppliers (viz Autodesk, Aveva, Bentley, etc.) have moved to subscription model and no longer offering perpetual licenses. Software are provided by suppliers on annual subscription basis. In view of above, Bidder request Customer to delete the requirement of perpetual licenses. Further, Bidder will consider annual subscription upto handing over of the plant to the customer. Please confirm.	As per information available with NTPC, Suppliers are prepared to offer software with perpetual licences. Hence Bidder to comply with requirements of Technical specification.
3	Section VI, Part A, Sub Section - IID Civil works	Sub Section - IID Civil works	3 of 13	1.00.00, 4	Complete Dismantling of the following equipments/structures in the existing and operational stockpile of Stage-I Existing yard conveyors, Reclaim conveyor, Stacker cum reclaimers including its rails and all associated facilities	Bidder requests Owner to clarify Ownership related to dismantled material. Bidder understands that all the dismantled items including equipment, reinforcement & structural steel, rails, stacker cum reclaimers etc. complete shall be considered as scrap by Bidder and the aforesaid scrap material will be Bidder's property. Please confirm Bidder's understanding.	Dismantled material arising from civil facilities such as reinforcement & structural steel ,reinforced concrete etc shall be the property of the bidder. Refer amendment Sl No D1-13 in this regard. All other Mechanical, electrical and C&I equipments obtained through the dismantling of existing facilities/excavation shall be the property of the owner. Same shall be transported and unloaded at a pre-identified area (which will be intimated by Project Manager) within plant boundary and duly handed over to the Project Manager
4	Section VI, Part A, Sub Section - IID Civil works	Sub Section - IID Civil works	4 of 13	1.00.00, 4	For Area Handover Schedule (For above Ground dismantling under Owner’s Scope) refer Owner’s input in Terminal Points & Exclusions	Bidder could not find the Area Handover schedule in the specification and therefore understands that encumbrance free land shall be handed over to EPC Contractor on the date of NOA.	Area shall be provided in parts progressively to the Bidder as per Project requirement and Bidder's mobilization plan.
5	Section VI, Part A, Sub Section - IID Civil works	Sub Section - IID Civil works	6 of 13	1.00.00, 7 v	Civil, Structural & Architectural works for rooms for Owner’s Electrical equipment like HT/LT switchgear, cable vault, batteries/battery chargers, foundation of service transformers, space for bus ducts and cable trays etc. as listed in Electrical Chapter & Layout Chapter PART-B.	Bidder could not find such requirement in the Electrical Chapter and Layout Chapter Part B of specification and therefore understands that there is no such requirement. Pleae confirm.	Bidder is requested to refer clause 1.19.00 of subsection-IIB, Part-A Section VI of technical specifications for requirement related to electrical equipments required for owners use.

6	Part E - Drawings				General Layout Plan - Laydown area	Bidder understands that dismantling of existing facilities, if any, within the laydown area earmarked in the General Layout Plan is included in Owner's scope. Please confirm.	Available encroachment free laydown area shall be made available to bidder progrssively. Any additional laydown area required by bidder shall be arranged by the bidder on their own without any financial implication to NTPC.
7	Part E - Drawings Section VI, Part A	Sub Section - IID Civil works	11 of 12	2.03.00	General Layout Plan - Laydown area - **75 acres** Bidder shall use a lay down area as shown in tender GLP Drawing. One area marked in GLP **totalling 65 acres (approx.)** are identified as laydown/preassembly area	Bidder would like to clarify the discrepancy between the area of laydown area shown in drawing vis a vis mentioned in specs. Bidder understands that 75 acres of land will be made available by Owner as laydown area.	Available encroachment free laydown area shall be made available to bidder progrssively. Any additional laydown area required by bidder shall be arranged by the bidder on their own without any financial implication to NTPC.
8	SECTION-VI, PART-B	SUB SECTION-A-01	48 OF 92	3.05.00	l) Aux CT pumps system to Water Aux Cooling tower (Vertical turbine pumps) Aux CT pumps shall draw the makeup water of stage-III from hot water discharge channel of stage-II and shall pump it to Aux cooling tower (Aux. IDCT) for its cooling.	NTPC to provide stage II (existing), open channel details like dimensions of channel, invert level, MWL, HWL etc.	Bidder to refer Amendement Sl No D1-77
9	SECTION-VI, PART-A	SUB SECITON IB PROJECT INFORMATION Annexure-IV-7(B)	-		HGI of Biomass	Bidder would kindly request to provide the HGI of biomass, as the same is not provided.	Bidder may note that biomass is not a brittle but a fibrous material. That is why HGI is not applicable in the case of biomass. To facilitate the pulverization of fibrous biomass material in coal mills, biomass is first grinded in a hammer mill before pellet manufacturing. In a coal mill, biomass pellets just get broken down to their original particle size and further downsized due to abrasion along with coal.
10	SECTION-VI, PART-B	SUB SECTION-A-08 Power Cycle Piping	(c)	PAGE 5 OF 19	2. Supplementary requirement S5: Certificate of conformity “COC” from pipe supplier for microstructure and delta ferrite (to be maintained within 3%max. when measured as per VD TUV 1272). Certificate of conformity “COC” from pipe supplier for microstructure and delta ferrite (to be maintained within 3%max.when measured as per VD TUV 1272).	Bidder would like to use VD TUV 1272/equivalent ASTM standard	Same shall be discussed and finalized during Detailed Engineering.
11	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-D-1-10 CIVIL WORKS MATERIAL SPECIFICATION	PAGE 2 OF 4 & Page 3 of 4		10.04.01 Mild Steel & 10.04.02 Medium and High Tensile Steel: All steel plates shall be of Grade designation E250, Quality BR (fully killed), conforming to IS 2062 and shall be tested for impact resistance at room temperature. Plates beyond 12mm thickness and up to 40mm thickness shall be normalized rolled.	Bidder request to perform impact test beyond 12 mm thick as per IS 2062 requirement. In general all the steel mills mentions in the Material Test Certificates as "Hot rolled" instead of Normalized Rolled.	Bidder's proposal is not acceptable. Bidder to comply specification requirements.
12	Section VI, Part A, Sub Section - IID Civil works	Sub Section - IID Civil works	6 of 13	1.00.00, 7 v	Civil, Structural & Architectural works for rooms for Owner’s Electrical equipment like HT/LT switchgear, cable vault, batteries/battery chargers, foundation of service transformers, space for bus ducts and cable trays etc. as listed in Electrical Chapter & Layout Chapter PART-B.	Bidder could not find such requirement in the Electrical Chapter and Layout Chapter Part B of specification and therefore understands that there is no such requirement. Please confirm.	Bidder is requested to refer clause 1.19.00 of subsection-IIB, Part-A Section VI of technical specifications for requirement related to electrical equipments required for owners use.

Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
13	VI-A	I	Page 7 of 9	4.09.00	The Contractor shall be responsible to undertake some activities related to its Corporate Social Responsibility (CSR) in the immediate vicinity of the project. The Contractor shall undertake such activities after prior consultations with the Employer to ensure that the efforts of the Employer and Contractor are complemented. The share of CSR expenditure to be incurred by the vendor / contractor for this project in the total CSR expenditure incurred by the vendor/contractor as a company will be in the same proportion as the turnover of the project concerned to the total company turnover. This will be certified by the charted accountant once every fiscal year. Such activities will be undertaken by the contractor / vendor in consultation with the Employer.	Please refer specification requirements regarding share of CSR expenditure to be incurred by the vendor / contractor for this project. This does not provide the level playing field to all the bidders. We request NTPC to indicate expenditure to be incurred for carrying out the CSR activities in the immediate vicinity of the project as stated.	CSR activities as per the provision (Rules) under section 135 of the companies Act 2013 relating to CSR and other circulars / instructions of various government departments viz MoEF etc. are to be carried out by the contractor, being statutory in nature."
14	VI-A	I	8 OF 9	4.10.00	The vendor / contractor shall visit the site to ascertain the position of land acquisition etc.		Bidder has not raised any query against the referred clause
15	SECTION – VI, PART-A SUB-SECTION-I INTENT OF SPECIFICATION		1 of 9	1.01.00 (d)	Compliance with statutory requirements and obtaining clearances from statutory authorities, wherever required	Bidder request Owner to obtain the necessary statutory approval and clearances. However, bidder may assist the Owner for the obtaining the same. Owner is requested to provide an exhaustive list of statutory approval where bidder's assistance is required.	Bidder's proposal is not acceptable. Bidder to comply specification requirements
16	General				Access to & Possession of site	Employer shall ensure the site is approachable from state & national highways for material movement. If there is any obstruction or local issues pertaining to movement of goods the Employer shall be responsible for resolving same, the Contractor shall be entitled to suspend the work till such site issues are resolved	Bidder to refer Cl no 2.00.00 Sub-section-I, Intent of Specification, Part-A/Section- VI of technical Specification.
17	VI	Part A	11 of 13 (Page 307 of the Document)	2.02.00	**Construction Water -** Construction water shall be the responsibility of Bidder during all stages of construction. However, construction water may be provided by Owner at one point on chargeable basis. Bidder shall arrange for further distribution/transportation to required location by their own.	Rate schedule for water charges may please be provided. Please also clarify, whether the rates for water supply shall remain firm over the contract period or subject to change.	Construction water may be supplied at one point on chargeable basis based on availability. Rate of the same shall be decided by NTPC based on the cost to NTPC, which shall be intimated during the execution stage.

18	VI	Part A	12 of 13 (Page 308 of the Document)	2.03.01	**DEVELOPMENT OF LAYDOWN AREA-** Bidder shall use a lay down area as shown in tender GLP Drawing. One area marked in GLP totalling 75 acres (approx.) are identified as laydown/preassembly area. Fencing of the laydown area in the area marked for laydown is in bidder's scope. 2.03.01 The contractor shall develop the following facilities before using the allocated laydown area. a. Site clearance including cutting of trees of girth less than 30 centimetres. b. Bidder shall construct and maintain approach road from plant area to laydown area as shown in Tender General layout Plan and road network in the interior of laydown area. Further bidder to ensure measures to avoid noise and dust pollution to habitants during the contract period.	NTPC is requested to provide encroachment free land at the time of NOA. Any delay in providing the laydown area/ statutory clearances for reasons not attributable to contractor shall be suitably compensated and suitably extend the project timeline. Further please note te following: a. BHEL request for site clearance including Tree cutting by NTPC. Accordingly request for deletion of the clause. b. There are various railway crossings and public roads being currently used which may come in the approach road from Laydown area to plant. BHEL understands that necessary Statutory clearances shall be arranged by employer for execution of work.	Available encroachment free laydown area shall be made available to bidder progrssively. Any additional laydown area required by bidder shall be arranged by the bidder on their own without any financial implication to NTPC. a. Bidder to refer cl.no. 1.00.00, Sl.no.3 along with its amendment. b. Please refer cl.no.1.01.00, Sl.no.(d)Part-A of Sub-section-I of Sec-VI of technical specifications
19	VI/A	IID	9 OF 13	1.00.00	32. Civil, structural, architectural works for SOLAR PV plant on roof top of building/facilities in the bidder's scope.	Please provide the list of buildings/facilities on the roof of which SOLAR PV plant is to be provided.	List of building to be finalised during detailed engineering. Selection of roof top shall be done as per sub section II A-21, Part A section VI of technical specification
20	-	-	-	-	General	Please provide the High flood level of site.	FFL of rihand resoervoir is 271.12
21	SECTION – VI, PART-B	SUB-SECTION-B-15 ELECTRICAL HOIST, CRANE AND ELEVATOR	3 of 5	8.02.00 (f)	Provision for controlling the motion from operator cabin (in case of Turbine hall EOT crane) as well as remote control shall be available.	We understand that RRC are not applicable for BFP handling crane. Kindly confirm.	Bidder understanding is not correct. Provision of Pendant Push Button station and Radio remote control Both to be provided.
22	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	GENERAL LAYOUT PLAN	GENERAL LAYOUT PLAN	Proposed Track hopper for Stage-III and outgoing conveyor (tunnel, pent-house and gallery partly) are coming in the existing nala region. Following details are required from NTPC for bidder to work further on this proposal, kindly arrange: a) Civil drgs. of existing track hopper stage-II b) Drawing/ measurements of existing nala Also following data is missing in the NIT spec, which is required for prepara-tion & checking the feasibility of CHP conveyor profiles, as track hopper is starting point for CHP, so NTPC is requested to arrange: i. Co-ordinates of Track hopper stage-III ii. Rail top elevation for Track hopper stage-III	Available drawings/ data have already been included in the specification. General layout plan (GLP) in AutoCAD format would be provided to the successful bidder. Approximate coordinates as per requirement can be extracted by the bidder from the AutoCAD drawing.
23	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 56 OF 130	COAL AND BIOMASS FLOW DIAGRAM 9587-001(R)-POM-A-002 RevA	FLOW DIAGRAM AND GENERAL LAYOUT PLAN 	Proposed TP-19 and conv.26A/B are coming in the region of existing conv.2A/B Stage-I, existing conv.12A/B Stage-II and silo utility building. Fol-lowing drgs. So NTPC to arrange following drawings to check the feasibility. a) Gallery and trestle drgs. of existing conv.2A/B Stage-I b) Gallery and trestle drgs. of existing conv.12A/B Stage-II c) Drgs. of existing silo utility building and silos	Preliminarily, NTPC has checked the feasibility of the proposed conveyors in the region. a)Available drawings/ data have already been included in the specification. b) GA of Conveyor 12A/B is furnished c) GA of Silo utility buildings is furnished

24	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	GENERAL LAYOUT PLAN		Interconnection of proposed stage-III coal stockpiles to existing stage-I conveyors is not feasible with the NIT coal flow scheme. For working out a provision and to check feasibility, various drawings of existing facilities are re-quired from NTPC, kindly arrange following: a) Drawings of existing TP-2, TP-3, TP-4, TP-5, TP-6 b) Drawings of CHP control room/ MCC and DC room near existing TP-5 c) Drawings of existing stage-I conveyors 3A/B, 4A/B, 5A/B, 6A/B, 7A/B	Bidder to refer Amendment sl. MH-08 for revised Coal Flow Diagram. With the revised Coal Flow diagram, interconnection from St-III Stackyard to St-I Conveyors is feasible. Available drawings/ data have already been included in the specification.Bidder to further refer amendment in this regard.
25	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	GENERAL LAYOUT PLAN		Following drawings of existing facilities are required, as these are in close vicinity to proposed TP-28 and TP-29, kindly arrange a) Drawings of existing TP-7, TP-8, TP-9 b) Drawing of connecting conveyor tunnel	Available drawings/ data have already been included in the specification.Bidder to further refer amendment in this regard.
26	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	PAGE 52 OF 92	4. Coal handling plant run-off water treatment system	g) One (1) number coal laden water sump of RCC Construction (2 sections) to receive water from drains in coal stockyard of stage-II. h) 2 x100 % capacity of coal laden water transfer pumps with required piping system to transfer the coal laden water from stage-II proposed sump to CSSP of Stage-III.	Following details are required as NIT spec is silent, NTPC is requested to arrange the same: a) Capacity of coal laden water sump (of each section) at coal stockyard of stage-II b) Capacity of these 2 x100 % capacity of coal laden water transfer pumps c) Apart from RCC sump and pumping arrangement, kindly clarify if any other equipment / facility has to be provided like hoist, shed, etc.	Bidder to refer amendment -WS-04 regarding (a) & (b). (c) One (1) Number of electric hoist and framed structure shed of structural steel to provided by bidder for pumping system.
27	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	PAGE 52 OF 92	4. Coal handling plant run-off water treatment system	d) Two (2) numbers (2x100%) Coal Decanted Water Pumps for reuse of coal decanted water in CHP dust suppression system.	Bidder is considering 150 m3/hr as the capacity of each Coal Decanted Wa-ter Pump, Kindly confirm.	Bidder to refer amendment -WS-04 in this regard.
28	SECTION-VI, PART-E	LIST OF TENDER DRAWINGS	PAGE 9 OF 130	GENERAL LAYOUT PLAN		In the proposed stock pile, the existing underground TPs, TP7, TP8 and TP9 and the interconnecting un-derground tunnel are within the vicinity/overlap of the proposed TPs and Coal settling pond. NTPC to provide the foundation drawings of the TPs and the interconnecting tunnel.	Available drawings/ data have already been included in the specification.

				SINGRAULI SUPER THERMAL POWER PROJECT STAGE - III (2X800MW)						
				PREBID QUERIES & CLARIFICATION						
Sr. No.	**Clarification/ Amendment Reference**	**Section / Part / Chapter / Volume**	**Sub-Section**	**Page no.**	**Clause No.**	**Bid Specification Stipulation**	**Statement of Prebid Queries & Clarification**	**Owner's Clarification/Amendment**	**Query on Owner's Clarifications & Amendments**	**Owner's Response**
756	Technical Clarification-01, Sr.No 389, PDF Page 146 of 191	Part E - Drawings Section VI, Part A	Sub Section - IID Civil works	11 of 127	2.03.00	Bidder shall use a lay down area as shown in tender GLP Drawing. One area marked in GLP totalling 75 acres (approx.) are identified as laydown/ preassembly area. Fencing of the laydown area in the area marked for laydown is in bidder's scope.	During site visit, Bidder has observed that the laydown area identified in the GLP is partially encroached (~35 to 40 acres). a) Bidder understands that Owner will provide complete 75 acres of encroachment free land (including cutting of trees girth more than 30 cm) for laydown area on the date of NOA. b) In case encroachment is not removed on the date of NOA, Owner shall provide equivalent area at alternate location within the vicinity of plant premises. Please confirm.	Area shall be provided in parts progressively to the Bidder as per Project requirement and Bidder's mobilization plan. Cutting of trees girth more than 30 cm is in the scope of NTPC.	Owner's response with respect to laydown handover as per "**Bidder's mobilization plan**" is not acceptable and it possesses high risk of project delay without any recourse to the Bidder. In view of the above, Bidder would like to inform that substantial area of laydown indicated in revised GLP is encroached and therefore cannot be utilized. Also the balance area is full of trees which will require extensive tree cutting by Owner. Please appreciate that the area needs to be developed in totality including levelling and grading, construction of roads and drains etc. **We, therefore, request Owner to specify firm month from NOA, when the complete laydown area indicated by Owner in revised GLP (~95 acres) including the encroached area will be available to Bidder.**	Front Handover Schedule is being included as a part of Technical specifications in view of bidders request. Refer Technical Amendment no. 5. Further, Bidders Understanding regarding area available for Laydown and Pre-assembly is NOT correct. Only 75 Acre of land is available for Laydown and Pre-assembly purpose as indicated in clause 2.03.00 of Subsection IID Part A Section VI of the Technical Specifications. Revised GLP is being issued along with Technical Amendment no. 5 for better clarity of the bidders

SINGRAULI SUPER THERMAL POWER PROJECT
STAGE - III (2X800MW)

PREBID QUERIES & CLARIFICATION

Sr. No.	Clarification/ Amendment Reference	Owner's Response
1	We write with a request to modify the provenness clause for HP Bypass system as follows: *"The Bidder/ Sub vendor should have previously designed (either by itself or under collaboration / licensing agreement), manufactured / got manufactured the HP Bypass system for supercritical steam turbine generator with Capacity of each valve not less than 750 Ton/hr* ***at ~~270 Kg/Cm2(abs) & 600 deg. C~~ Supercritical parameters*** *and are in successful operation in at least one (1) plant for a period not less than one (1) year."*	it may be noted that for supply of HP Bypass valve there is already provision in contract i.e., "PROVENNESS clause 14.0" which gives liberty to supply indigenously manufactured HP Bypass valves. In view of above no further revision is required regarding HP Bypass valve Provenness criteria.
2	These site enabling works which we propose to be excluded from Bidder's scope are as follows: ➢ Cutting of Kota hills ➢ Rerouting of Nalah ➢ Rerouting of existing Boundary wall and Road running along the same ➢ Construction of 400kV Transmission Line ➢ Development of Storage/Lay down Area ➢ Dismantling of identified facilities/ structures ➢ Cutting of trees of girth less than 30 centimetres	Bidders proposal regarding deletion of scope is NOT acceptable EXCEPT for the scope related to construction of 400kV transmission line
3	EPC Package for Singrauli STPP, Stage-III (2x800 MW) - ***Regarding request for deletion of scope with respect to LILO of existing 400kV VSTPP-V to VSTPP-IV D/C Twin Moose Transmission Line at Singrauli STPP stage-III switchyard.*** In view of the above, NTPC is requested to kindly exclude the requirement of construction of 400 kV Transmission Line (LILO) from EPC scope of work and issue necessary amendment to this effect. Please let us know a convenient time for a meeting to discuss this matter further.	Bidder to refer Sl. No. P-1 of Technical Amendment-1 in this regard

SINGRAULI SUPER THERMAL POWER PROJECT STAGE - III (2X800MW)		
PREBID QUERIES & CLARIFICATION		
Sr. No.	**Clarification/ Amendment Reference**	**Owner's Response**
4	As per Clause 4.02.00 of Sub-Section-I of Section-VI, Part-A, "The Employer shall issue 11200 kL of Fuel oil and 2.7 Lakh MT of Coal per unit for firing up to successful completion of "Initial Operation" (as defined in General Technical Requirements, Part-C, Section-VI of Technical Specification) for each unit free of charge" The above conditions are not in line with the prevalent industry practise and past NTPC tenders prior to Talcher EPC tender. In view of above, NTPC is requested to kindly delete the limits mentioned in the tender for fuel oil and coal consumption in the overall interest of the project.	Bidder proposal is NOT acceptable. Provisions of technical specification shall prevail.
5	This refers to the requirement of various specialties pertaining to Project management tools specified in NTPC tenders in Singrauli. The same has been introduced by NTPC in its Talcher and Lara specification. These specialties inter-alia includes specialized project management tool (cloud-based etc.), Drone-based project monitoring and visualization system, smart material and Manpower Management, Construction Manpower Tracking, Quality Control with Smart Storage area/yard monitoring & 4D modelling etc. In view of the above, it is requested to kindly issue necessary amendment for removal of above project management tools from tender specifications to enable BHEL submit a compliant & competitive bid for your prestigious project.	Bidder proposal is NOT acceptable. Probvisions of technical specification shall prevail

SINGRAULI SUPER THERMAL POWER PROJECT STAGE - III (2X800MW)		
PREBID QUERIES & CLARIFICATION		
Sr. No.	**Clarification/ Amendment Reference**	**Owner's Response**
6	This has reference to Clause No. 8.07.00 (Fabrication and Erection of Steel structures), Sub-section D-1-8 (Civil Works), Section VI, Part B of the bid specifications for Singrauli STPP, Stage-III (2x800 MW) EPC package and our earlier letter dated 22.11.2023 in this regard. In view of the above, NTPC is requested to amend the aforesaid clause introducing a provision for allowing the bidder to fabricate the steel structures at site with bolted or welded connections.	Bidder to refer Technical Amendment-6 in this regard

SINGRAULI SUPER THERMAL POWER PROJECT
STAGE - III (2X800MW)

PREBID QUERIES & CLARIFICATION

Sr. No.	Clarification/ Amendment Reference	Owner's Response
1	This is with reference to the limiting value of coal to be provided free of cost by the Employer up to successful completion of Initial operation in tender specifications. The pre-commissioning involves a lot of enabling activities including tuning (as per tender Cl.no.26.03.00 (a), Page no 45 of119, Section VI, PART-C), for successful completion of Initial Operation and PG tests. Around 24 days are required for completing all these pre-commissioning activities. Hence considering the total duration of more than 54 days, coal consumption value considered by NTPC is very low. The bidder requests to increase the limiting value of coal consumption (to be issued free of cost) from 2.7 lakh MT to about 3.65 lakh MT.	It is understood that the bidder has proposed a period of 24 days of unit operation [for tuning and enabling activities] before the start of stipulated initial operation period of 720 hours. In ths regard, attention is drawn to cl 26.02.00 (a) of part-C section VI of technical specification where following is indicated: "..... complete facilities shall be put on 'Initial Operation' during which period all necessary **adjustments** shall be made while operating over the full load range enabling the facilities to be made ready for the Guarantee Tests." Considering the above, bidders proposal is NOT acceptable.It is reiterated that quantities indicated are adequate based on employer's assessment and Bidder shall comply with the specification requirements. Further, Amendment to clause 26.03.00 a) of part C secion VI of the technical specification is being issued for better clarity.

ANNEXURE-20 Rev01 DECLARATION REGARDING SUBMISSION OF CREDENTIALS PERTAINING TO SUB-
QUALIFICATION REQUIREMENT MENTIONED AT 6.1 OF TCC Except Civil and Structural Package

CONFIRMATION/DECLARATION

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir/Madam,

Sub: DECLARATION REGARDING SUBMISSION OF **SUB QUALIFICATION REQUIREMENT** OF AHP and ALL OTHER ITEMS/EQUIPMENTS REQUIRED FOR THE COMPLETION OF THE PACKAGE

TOWARDS SUB- QUALIFICATION REQUIREMENT MENTIONED AT CLAUSE 6.1 OF TCC

Ref: NIT/Tender Specification No: _____

I/We, _____
declare that, I/We shall submit the **SUB QUALIFICATION REQUIREMENT of all the** items/equipments required for the completion of the package as mentioned at Clause 6.1 of TCC for qualification, before commencement of any activity towards the said work.

In case, I/We fail to submit the requisite documents, BHEL shall be entitled to take any contractual action.

Sign. of the AUTHORISED SIGNATORY

(With Name, Designation and Company seal)

ANNEXURE-20 Rev-01 DECLARATION REGARDING SUBMISSION OF CREDENTIALS PERTAINING TO SUB- QUALIFICATION REQUIREMENT MENTIONED AT 6.1 OF TCC

CONFIRMATION/DECLARATION

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir/Madam,

Sub: DECLARATION REGARDING SUBMISSION OF **SUB QUALIFICATION REQUIREMENT** OF AHP Civil and Structural FOR THE COMPLETION OF THE PACKAGE.

TOWARDS SUB- QUALIFICATION REQUIREMENT MENTIONED AT CLAUSE 6.1 OF TCC

Ref: NIT/Tender Specification No: _____

I/We, _____
declare that, I/We shall submit the **SUB QUALIFICATION REQUIREMENT** of AHP Civil And Structural Works required for the completion of the package as mentioned at Clause 6.1 of TCC for qualification, before commencement of any activity towards the said work.

In case, I/We fail to submit the requisite documents, BHEL shall be entitled to take any contractual action.

Further, the list of probable Agencies for execution of AHP Civil and Structural Works are submitted here with: -

1)
2)
3)

Sign. of the AUTHORISED SIGNATORY

(With Name, Designation and Company seal)

Customer tender condition calls for the same make DCS, VMS etc,

	Description	Terminal Point
Scope		
DDCMIS for AHP System	BHEL DCS (Following details are required for sizing of AHP DCS -Control room locations and layout(of all electrical areas) -Routing distance of cable from one control room to another. - Total count of IOs at each location with Types of IO's (AI/AO/DI/DO) For detailed engineering the following needs to be submitted by vendor. P&ID diagrams (with KKS for drives and IO's) IO List (including KKS, Description, Type of signal, Alarm limits, Ranges, units, JB grouping, control location, voltage ratings etc) Drive List Drive control philosophy JB grouping (including cable details) Alarm Schedule SOE list Logic diagrams (block diagram) Control write up (with KKS tags included) Plant graphics)	- Cable scope (all power, control, instrumentation cables along with glands and lugs in AHP-EPC -Bidder scope) - UPS,ACDB/DCDB in all AHP control rooms, in AHP EPC Bidder scope - Erection of Commissioning of DCS panel is excluded from BHEL scope. Only commissioning supervision shall be provided by BHEL EDN as chargeable on mandays basis.
AHP Process LAN Connectivity	with SG/TG/BOP DDCMIS using BHEL DCS potocol	FO Terminal point at CCR(SG/TG/BOP Control room)
AHP PLC's Connectivity *(see note)	with AHP DDCMIS *	FO Terminal Point at AHP CR/ Wireless Terminal Point at AHP CR
AHP Network Management LAN Connectivity	with CCR StationLAN	FO terminal point at CCR
Access Control, IPS Firewall, IDS Firewall, DMZ connevtivity & StationLAN	To CCR(SG/TG/BOP Control room) StationLAN	FO terminal point at CCR
Administrative LAN Connectivity, Domain Controller, Cyber Securiy Package,SIEM,WSUS(Patching)	To CCR i-DMZ	FO terminal point at CCR
LVS, DESK& Furniture	AHP EPC Bidder's scope unless explicitly procure from BHEL EDN along with the BHEL DCS to maintain uniformity.	
miniUPS, FOC, HDPE, Wireless	AHP EPC Bidder's scope unless explicitly procure from BHEL EDN along with the BHEL DCS to maintain uniformity.	
Communication Protocols for connectivity with		
Air Compressor PLC to AHP DDCMIS*	Modbus	AHP DDCMIS
HCSD PLC to AHP DDCMIS *	Modbus	AHP DDCMIS
AWRS PLC (if applicable)to AHP DDCMIS *	Modbus	AHP DDCMIS
	*Note: The interfaces considered in the above cases are limited to those between the AHP PLC system and the AHP DDCMIS. If any AHP system PLC is contractually required to interface with the HMIPIS/STATIONLAN system, the data transfer protocol shall be OPC, with a preference for OPC UA-based communication. In such cases, the termination point shall be the Station LAN at the Central Control Room (CCR)	

एन टी पी सी लिमिटेड
(भारत सरकार का उद्यम)
NTPC Limited
(A Govt. of India Enterprise)
(Formerly National Thermal Power Corporation Ltd.)
(केंद्रीय कार्यालय नोएडा)
Corporate Center NOIDA

Reference : CC-ENGG-1150-001-301-POC-C-107 **Date :** 11/03/2025

From : RAHUL GUPTA ENGINEER	**To :** BHEL PEM,NOIDA **Cc :**

Subject : EPC package of Singrauli Stage-III

Please find enclosed following drawings/ documents for necessary action at your end.

Vendor Drg. No.	:	PE-DG-512-603-C003
Orgn. Drg. No.	:	1150-001-301-POC-C-107
Revision No.	:	01
Drg. Title	:	PLANT ROADS LAYOUT
App. Category	:	CATREL
Release Date	:	11/03/2025

Scan to verfiy

Comments : This is Auto Archive drawing / document developed & released by BHEL. Review & approval of the same by NTPC Engineering is not envisaged.

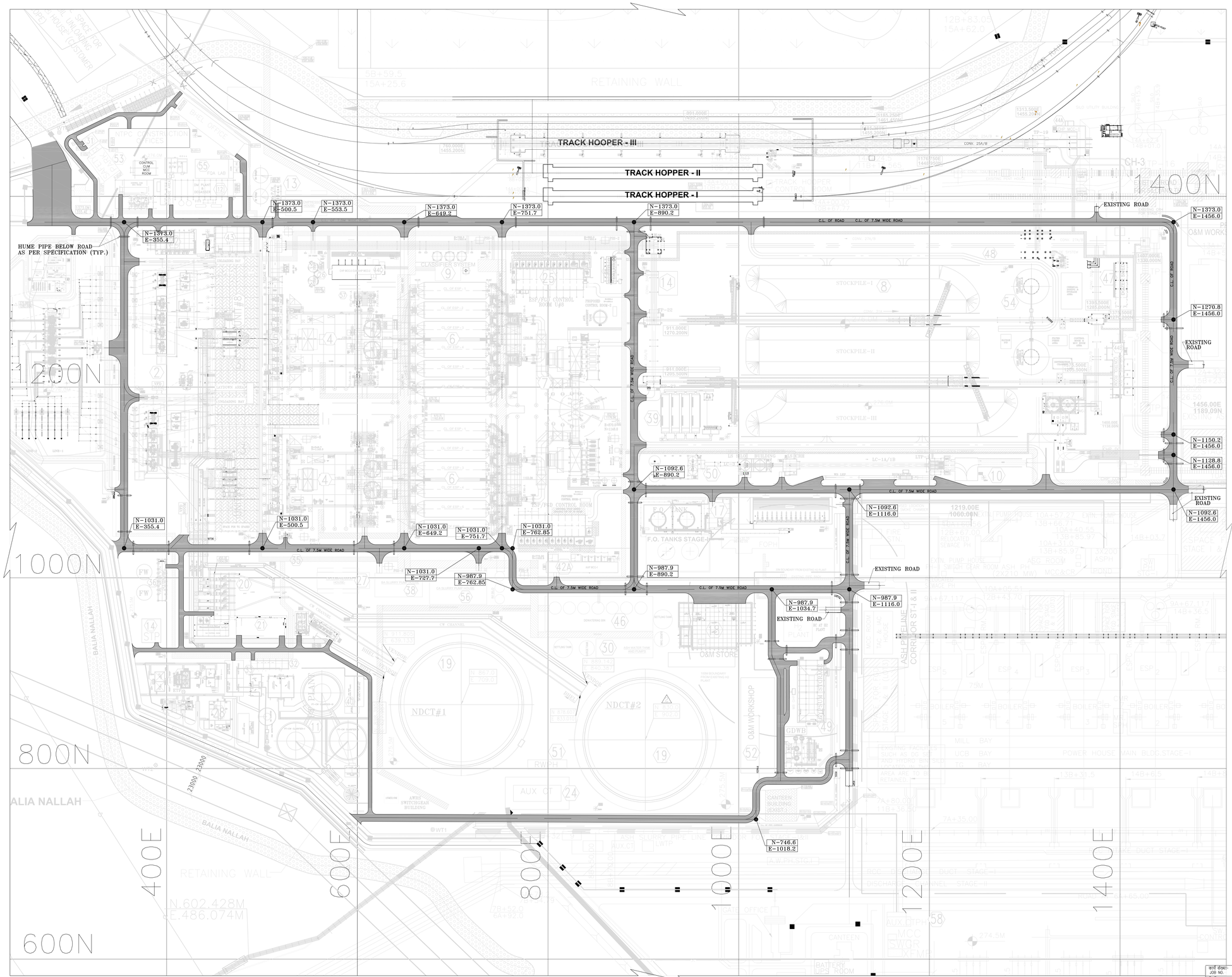
Digitally signed by RAHUL GUPTA

Name of the Project/ Package	:	SINGRAULI SUPER THERMA: POWER PROJECT STAGE-III, EPC package of Singrauli Stage-III
Drawing / Document Number	:	1150-001-301-POC-C-107
Drawing / Document Title	:	PLANT ROADS LAYOUT

"We confirm that this document meets all the contract requirements including safety and statuary requirements and facilitate ease of operation and maintenance. In case any deviation is found, the Contractor shall carry out all required changes/ modifications without any cost implications to NTPC. In addition, Penalty on account of non-compliance of contract specification as deemed fit by the Employer shall be recovered"

1150-001-301-POC-C-107/01/CATREL/Page 2 of 2
Digitally signed by RAHUL GUPTA

COPY RIGHT AND CONFIDENTIAL/कॉपीराइट और गोपनीय
The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED/इस दस्तावेज़ की जानकारी भारत हेवी इलेक्ट्रिकल्स लिमिटेड की संपत्ति है
it must not be used directly or indirectly in any way detrimental to the interest of the company./इसका प्रयोग प्रत्यक्ष या अप्रत्यक्ष रूप से कंपनी के हितों के प्रतिकूल नहीं होना चाहिए
ELECTRONIC FILE NAME :



PLANT ROAD LAYOUT

NORTH

NOTES: –

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. ALL ELEVATIONS ARE MARKED AS REDUCED LEVEL(RL)
3. ROAD CONSTRUCTION SHALL BE AS PER IRC: 15–2011 & MORTH SPECIFICATIONS.
4. LONGITUDINAL SLOPE OF ROAD SHALL NOT MORE THAN 1V:30H.
5. INTERNAL ROADS/APPROACH ROADS SHALL BE SHOWN IN RESPECTIVE FACILITIES/BUILDING AREA DRAWING AND SHALL BE UPDATED PROGRESSIVELY.
6. SITE SHALL DETERMINE ACTUAL CBR VALUE BY REMOULDED SAMPLE IN SOAKED CONDITION AND IF THE ACTUAL CBR VALUE FALLS BELOW 5% THE SAME TO BE CONVEYED TO DESIGN ENGINEER FOR ACCEPTANCE.
7. SITE TO ENSURE LAYING OF STP/ETP NETWORK & FIRE PROTECTION TRENCHES/PIPES BEFORE CONSTRUCTION OF ROAD.
8. IF THERE IS ANY SITE CONSTRAINT, ROAD SIZE MAY BE SUITABLY ADJUSTED AS PER DIRECTION OF ENGINEER IN–CHARGE.
9. EXPANSION JOINTS SHALL BE PROVIDED AT CULVERT ABUTMENTS.
10. ROAD CREST LEVEL SHALL BE 350 MM ABOVE THE FINISHED GROUND LEVEL(FGL).
11. ALL EXCAVATION WORK, BACK FILLING, LAYING OF VARIOUS LAYERS OF ROAD CONSTRUCTION SHALL BE AS PER TECHNICAL SPECIFICATIONS.
12. THE SURROUNDING GROUND SHALL BE ADEQUATELY SLOPED TOWARDS THE ADJACENT DRAIN SUITABLY.
13. NO GRADIENT (SLOPE) SHALL BE PROVIDED ON EITHER SIDE OF TURNINGS/BENDS.
14. ALL THE COORDINATES FOR THE CL. OF ROADS INDICATED IN THIS DRAWING SHALL BE VERIFIED AT SITE BEFORE CONSTRUCTION.
15. ALL INTERNAL ACCESS ROADS TO BUILDINGS/ STRUCTURES SHALL BE CONSTRUCTED LATER, AFTER COMPLETION OF CIVIL WORKS OR AS DIRECTED BY THE ENGINEER.
16. SITE SHALL BE STRIPPED DOWN UP TO A MAXIMUM DEPTH OF 300 MM BELOW EXISTING GROUND LEVEL SO AS TO EXCLUDE ALL DEBRIS, GRASS, VEGETATION, BUSHES, TREES INCLUDING ROOTS & ORGANIC MATERIALS ETC. BEFORE TAKING UP FILLING/CUTTING. STRIPPED SURFACE SHALL BE CONSOLIDATED BY ROLLING AS DIRECTED BY THE ENGINEER SUBJECT TO A MINIMUM OF SIX PASSES OF 8–10 TONNES ROLLER.
17. FILLING SHALL BE DONE WITH APPROVED QUALITY OF COMPULSARILY EXCAVATED SOIL EARTH AS PER SPECIFICATION AND AS DIRECTED BY ENGINEER–IN–CHARGE.
18. EARTH WORK IN FILLING SHALL BE DONE IN HORIZONTAL LAYERS NOT EXCEEDING 300MM IN COMPACTED THICKNESS SO AS TO ACHIEVE ATLEAST 95% MAXIMUM DRY DENSITY AS PER IS:2720, PART–VII.
19. SLOPE PROTECTION WITH 300 MM THICK DRY STONE PITCHING ON THE SLOPES OF EARTH FILL/CUT SHALL BE IN LEVELLING AND GRADING CONTRACTOR SCOPE. AND THE SAME IS NOT CONSIDERED IN THIS PACKAGE.
20. GEO POLYMER CONCRETE SHALL BE USED FOR (M–10) DRY LEAN CONCRETE (DLC) AND (M–35) PAVEMENT QUALITY CONCRETE (PQC).
21. TURNING CIRCLE RADIUS ADEQUATE FOR 16 WHEEL TRUCK SHALL BE PROVIDED AT ALL RELEVANT POINTS INCLUDING APPROACH (ENTRY/EXIT) AND ACCESS ROAD FOR TRUCK MOVEMENT AT LOADING/UNLOADING/WEIGHMENT FACILITIES OF LIMESTONE, GYPSUM, ASH, BIOMASS FOR EFFICIENT AND SAFE MOVEMENT OF TRUCK.

ENGINEERING REFERENCE DRAWINGS : –

1. PE–DG–512–100–M001 (1150–001–301–POC–F–001)–PLOT PLAN
2. PE–DG–512–603–C001 (1150–001–301–POC–C–101)–SITE LEVELLING AND GRADING–PLAN & SECTION
3. PE–DG–512–603–C004 (1150–001–301–POC–C–108)–PLANT ROADS CROSS SECTION AND DETAILS
4. PE–DG–512–603–C005 (1150–001–301–POC–C–988)–DIVERSION ROAD –LAYOUT
5. PE–DG–512–603–C006 (1150–001–301–POC–C–989)–DIVERSION ROAD –CROSS SECTION AND DETAILS
6. PE–DG–512–672–C001 (1150–001–301–POC–C–111)–LAYOUT OF DRAINS
7. PE–DG–512–672–C002 (1150–001–301–POC–C–112)–PLANT DRAINS DETAILS
8. PE–DG–512–673–C001 (1150–001–301–POC–C–117)–LAYOUT OF SEWAGE DISPOSAL SYSTEM–PART 1

LEGEND–

- 7.50M WIDE RIGID PAVEMENT ROAD (SHOULDER OUT SIDE)
- 7.50M WIDE RIGID PAVEMENT ROAD (SHOULDER BOTH SIDE)
- 3.750M WIDE RIGID PAVEMENT ROAD

BHEL–PROJECT ENGINEERING MANAGEMENT(CIVIL)

THIS DRAWING MARKED (✓) IS RELEASED FOR

☑ COMMENTS/APPROVAL	☐ FABRICATION
☐ PLANNING	☐ INFORMATION
☐ CONSTRUCTION	☐ AS BUILT DRAWING

Before proceeding with construction please scan the QR code to know the latest revision.

STAMP ALL PREVIOUS REVISION AS SUPERSEDED

ISSUED BY

NAME	AMIT KUMAR THAKUR
SIGNATURE	–Sd–
DATE	26.02.2025

REV.	DATE	ALTD	CHD	APPD
01	26.02.25	YSR	AKT	DKM

REVISED AS PER LATEST PLOT PLAN.

ग्राहक ड्राईंग संख्या CUSTOMER DRAWING NO. 1150–001–301–POC–C–107

एन टी पी सी NTPC

ग्राहक/CUSTOMER: एन टी पी सी लिमिटेड N T P C LIMITED

परियोजना PROJECT: 2x800 मेगावाट सिंगरौली सुपर थर्मल पावर परियोजना चरण – III
2x800MW SINGRAULI SUPER THERMAL POWER PROJECT STAGE–III

भारत हेवी इलेक्ट्रिकल्स लिमिटेड BHARAT HEAVY ELECTRICALS LTD
पावर सेक्टर/POWER SECTOR
परियोजना अभियांत्रिकी प्रबंधन
PROJECT ENGINEERING MANAGEMENT
नोएडा (उ॰प्र॰)/NOIDA (U.P.)

DEPT. CODE		नाम NAME	हस्ताक्षर SIGNATURE	दिनांक DATE
C	तैयारकर्ता/DSN	YSR	–sd–	01.08.2024
	डिजाइनकर्ता/DESN	KA	–sd–	31.07.2024
	जाँचकर्ता/CHD	RKP	–sd–	02.08.2024
	अनुमोदनकर्ता/APPD	DKM	–sd–	03.08.2024

कार्य संख्या JOB NO. 512
स्थिति STATUS CONTRACT
मुद्रण स्केल मीटर में PRINT SCALE IN METRE 0.0 4.0 8.0 10 20 30 40 50

शीर्षक/TITLE: PLANT ROADS LAYOUT

एमपीएल MPL	सिविल CIVIL	इलेक्ट्रिकल ELEC	सीएण्डआई C&I	एमएसई MSE	मैक्स MAX	विभाग DEPT.	स्केल – SCALE–

ड्राईंग संख्या / DRAWING NO. PE–DG–512–603–C003

शीट SHEET 1 OF 1 पुनरीक्षण REV. 1

R0

फॉर्मेट साइज़ A0 FORMAT SIZE A0

Details of facilities to be dismantled - Annexure-P(R0)

Sl. No.	Name of facility	Total No. of Units	Plinth Area per Unit {Sq.m.}	Total Plinth Area {Sq.m.}	Type of Super-structure	Type of Sub-structure	Storey Configuration	Scope of Dismantling	Facilities envisaged under SSTPS Stage-III	Type & Present Location of facility
1	Central Store Area	19		136747	Brick Masonsry Work with shed	RCC & PCC	Single Storey	Super Str by NTPC & Sub str by EPC Vendor	BTG	Facilities in Plant area
2	Central repair facility for Boiler and Electrical.	5		45827	Brick Masonsry Work with shed	RCC & PCC	Single Storey	Super Str by NTPC & Sub str by EPC Vendor	BTG	
3	Coal Settling Pond (CSSP) Near BHEL Gate			2790		Brick Masonsry Work & PCC	Pond	By EPC Vendor	BTG	
4	LWTP-10 Near BHEL Gate			140	RCC & Brick Masonsry	RCC & PCC	Single Storey	By EPC Vendor	BTG	
5	FO Tank Stage-II	4		4000			Metal Tank	By EPC Vendor	TAC / CAC	
6	Fuel Oil & GT Carriage Rail Track			--------			Rail Track	By EPC Vendor	BTG / NDCT	
7	Abandoned Construction Workshop Infront of Central Stores	1		2304	Brick Masonsry Work with shed		Single Storey	By EPC Vendor	Lime Handling System	
8	Abandoned office of BHEL	2		1920	Brick Masonsry Work		Single Storey	By EPC Vendor	AHP Transformer & MCC	
9	Existing Plant Boundary Wall & Existing Outside Road(including culverts, etc)			1 km (Approx.)	Brick Masonsry Work & Bitumin Road			By EPC Vendor	NDCT & Switch Yard 400KV& GIS, NDCT , CS-1,2,3 4 & CWPH	
10	220VDC DCDB Room Near CHP Control Room Sage-I	1		83	RCC & Brick Masonsry		Single Storey	By EPC Vendor	Coal Yard	
11	Sewage PH Stage-I (Behind H2 Plant)			25	RCC & Brick Masonsry	RCC & PCC	Single Storey	By EPC Vendor	CASPH and AWPH	
12	Exiting BHEL Gate			350	RCC & Brick Masonsry		Gate Complex	By EPC Vendor	With New Gate Complex.	
13	Plant STP (in Ranibari)			450	RCC & Brick Masonsry	RCC	RCC tank	By EPC Vendor	NDCT & CWPH	
1	IT Building (Satelite Earth Station Building)			3890	RCC & Brick Masonsry	RCC & PCC	Single Storey	Super Str by NTPC & Sub str by EPC Vendor	ASH Silo & Utility Biuildings	Non-residential facilities in Township
2	11 KV Township substation			320	RCC & Brick Masonsry	RCC & PCC	Single Storey	Super Str by NTPC & Sub str by EPC Vendor	New Rail Track	

A Report

On Scanning of underground facilities by Ground penetrating Radar (GPR) for SINGRAULI-III

Client Name: NTPC Limited (SINGRAULI SUPER THERMAL POWER STATION)

Work Order No. 5500041640-002-1004 Dated: 15/11/2022
NIT No. 9900248964/002/1004 Dated 11.11.2022

Done By:

Quantum Integrated Technical Solutions

Faridabad

Regd. Office: B-91, 2nfloor, Greenfield's colony
Faridabad, Haryana - 121010
Email: info@qitsolutions.in

	QiT Solutions Representative	
Signature	Pramod Kumar 9319378872	Quantum Integrated Technical Solutions Proprietor

Content

1. Standard Methodology of Ground Penetrating Radar (GPR): including Underground Utility Survey and Cable & Pipe locator.

   1.1 CrossOver1760 Impulse Radar Sweden Ground Penetrating Radar

   - GPR Principle & Its applications

   1.2 Leica DD120 Cable Avoidance tool

   - Pin Point the Underground Utility by Locator
   - Inductive search
   - Technical Limitation of Electromagnetic Locator

2. GPR Field Work

   - Equipment Positioning
   - Grid Marking
   - Signal Penetration Depth
   - GPR Data processing
   - Interpretation and representation of result
   - Process of Survey

3. DGPS Use for pinpoint the location as per plant grid

4. Study Areas with Remarks

5. PDF Reports

1. Standard Methodology of Ground Penetrating Radar (GPR): including

Underground Utility Survey and Cable & Pipe locator.

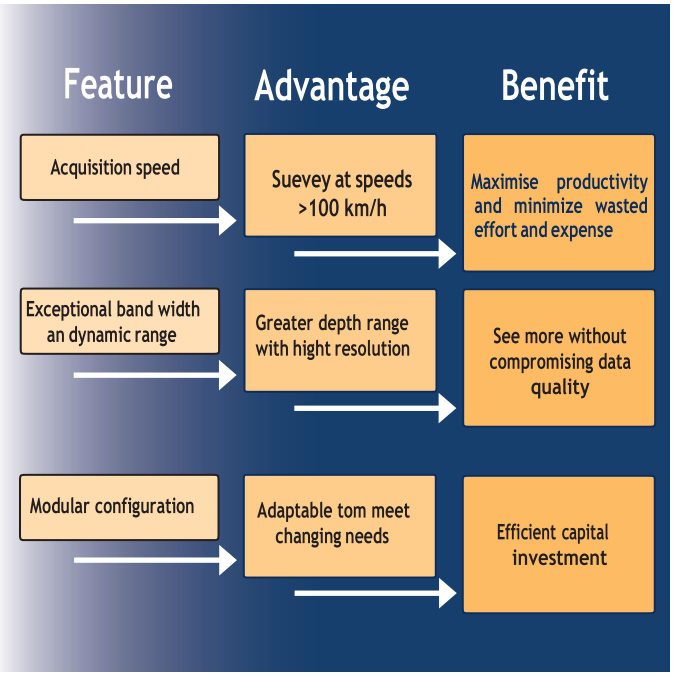
For doing GPR survey or we can say underground utility survey based on two different technologies or combinations of technologies, where we need to use one most important equipment as GPR (Ground Penetrating Radar) and second is Cable & Pipe Locator. So which equipment we will use on site and how do we do it on ground: we trying to explain here to give some brief idea about it.

1.1 CrossOver1760 Impulse Radar Sweden Ground Penetrating Radar

We use advance technologies for **Ground Penetrating Radar (GPR) to have dual Frequencies** to detect and map all of the information from Sub-surface. Deliverables include AutoCAD drawings of underground cables and pipes networks and detailed reports.

- GPR Principle & Its applications
- Technical Limitations of Ground Penetrating Radar

We use CrossOver1760 ImpulseRadar Sweden, a special GPR to get good accuracy and capable to penetrate in even wet Soil.



CrossOver benefits

Real-Time-Sampling (RTS) based GPR antenna designs have much better performance (increased dynamic range, sensitivityand depth penetration) than conventional GPR antenna designs.Impulse Radar's revolutionary dual-channel GPR antenna designtakes it to the next level. The unique range of dual-channel solutions reduces the need for investments in multiple single-channel antennas to achieve the same objectives. Whilst the high-speed performance increase-sees productivity.

An Android-driven user interface offers flexibility in your choiceof the acquisition and control.

ImpulseRadar CrossOver CO1760 Antenna

Frequency: LF: 170 MHz | HF: 600 MHz

Dimensions: 695 x 445 x 205 mm
Weight:9.5 kg (including battery)
Depth range: down to 10m*

- **GPR PRINCIPLE: -**

Ground Penetrating Radar or GPR is an electromagnetic geophysical method for high resolution detection, imaging and mapping of subsurface soils. The GPR uses high-frequency-pulsed electromagnetic waves (10 to 1000 MHz) to acquire subsurface Information about all metallic and non-metallic utilities. The electromagnetic wave is radiated from a transmitting antenna, travels through the material at a velocity which is determined primarily by the *permittivity* of the material. If the wave hits a buried object that has different electrical properties from the surrounding medium, then part of the energy is "reflected" back to the surface, while part of its energy continues to travel downward. The wave that is reflected back to the surface is captured by a receive antenna, and recorded on a digital storage device as a hyperbola sign.

Features:

- Easy-to-use flexible GPR solution
- Flexible GPR configuration for a wide range of applications
- Well designed
- In-the-field processing and interpretation
- No wire is needed for any connection between antenna and display

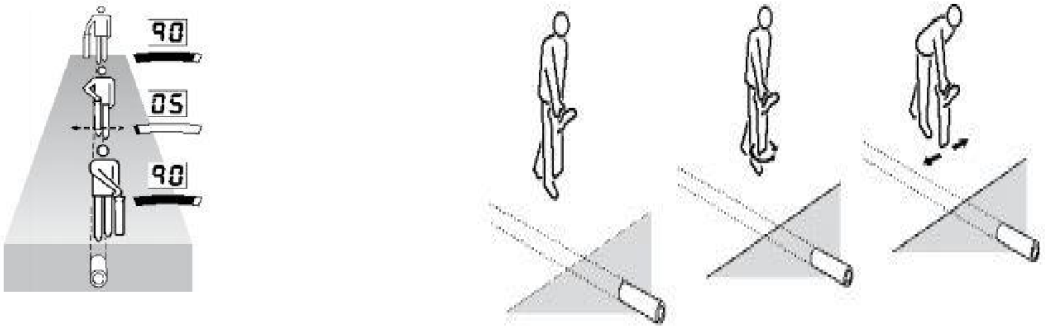
1.2 Leica DD120 Cable and Pipe Locator

Handheld multi-frequency undergroundservice locator

The Leica DD100 Series cable locators feature advanced automatic controls making the DD100 Series easy-to-use, requiring minimal user experience. Avoiding underground cables and pipes is a major concern on construction sites. Therefore, detecting the position of buried cables and pipes before excavation work can help prevent operator injury, asset damage and any subsequent costs.

PIN POINT THE UNDERGROUND UTILITY: Figure. Pin pointing underground utility

Set the locator sensitivity to approximately 50%. NOTE: it may be necessary to adjust the sensitivity level throughout the pinpointing to keep the bar graph on scale.



INDUCTIVE Method:

An inductive search procedure is a more certain technique for locating unknown lines. This type of search requires a transmitter and locator and two people. This type of search is referred to as

a 'two person sweep'. Before starting the sweep, define the area of search and the probable direction of lines crossing the area. Ensure the transmitter is switched on in induction mode. The first person operates the transmitter and the second person operates the locator. The transmitter induces a signal onto lines as it passes over them and the lines are then detected with the locator at a suitable distance away from the transmitter. A suitable distance is around 15 meters – although this will depend upon the transmitter used and the level of induction power used.

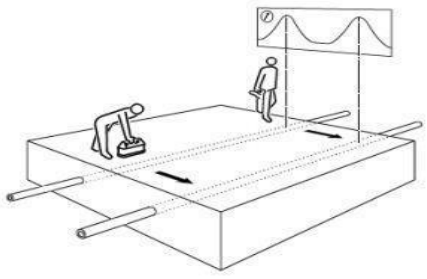


Figure. Inductive search

Hold the transmitter with its length aligned with the assumed direction of any lines. The second person holds the locator at the start of the area to be searched and with the locator antennae at right angles to the probable direction of the buried lines. Set the locator sensitivity level as high as possible without the locator picking up any airborne signals directly from the transmitter. When the transmitter and locator are in line both operators start to move forward in parallel. The operator with the locator sweeps it backwards and forwards, keeping the locator vertical, as they proceed in parallel with the transmitter. This method allows for misalignment of the transmitter, locator and buried line. The transmitter applies the strongest signal to the lines directly below it, which are then located with the locator. Move the transmitter from side to side to establish the highest signal which indicates that the transmitter is also directly above the line(s). Mark the ground at the point of each peak signal detected with the locator. Repeat the search along any other possible paths of lines. Once the positions of any lines have been marked, reverse positions, place the transmitter over and along each line in turn, and trace the line out of the search area.

Another Cable Avoidance Tool:- The Leica DD100 Series cable locators feature advanced automatic controls making the DD100 Series easy-to-use, requiring minimal user experience. Avoiding underground cables and pipes is a major concern on construction sites. Therefore, detecting the position of buried cables and pipes before excavation work can help

prevent operator injury, asset damage risks and any subsequent costs. Use the DD100 Series cable locators in conjunction with a DA220 signal transmitter and/or the Digi system accessories to achieve improved accuracy and application scope.

2. GPR FIELD WORK

- **Equipment Positioning:** Equipment can be carried in a vehicle with antenna towed behind, or by pushing the wheel cart by man for operations in narrow areas with obstacles. The light portable system allows use even in very narrow or inaccessible terrains.

- **Grid Marking:** Prior to survey grid is marked on the ground along the survey lines. As explained earlier, GPR produces a cross section of subsurface along the survey lines. In case of utility detection, all the lines crossing the survey line are detected during the pass. To detect all the utilities running in any possible direction, therefore, survey is performed in grid pattern. The grid spacing is carefully chosen based on expected size of anomaly (in case of localized targets), congestion (in case of utility detection) and resolution required.

- **Signal Penetration Depth**

  The penetration depth of GPR signal depends primarily on two factors:

  1. **Conductivity of soil**
  2. **Frequency of antenna**

  Based on standard equations for propagation of EM waves (skin depth), signal attenuates fast when the ground is conductive, hence reducing the penetration depth of GPR signal. The stratification and top surface also become important in estimating the penetration depth. High contrast interfaces reflect significant amount of energy, hence reducing effective depth of penetration. The moisture level in top soil is mainly responsible for conductivity, and should be carefully considered before embarking on a detailed GPR investigation plan.

  The other factor that controls penetration is frequency of EM signal used for GPR survey. Low frequency EM waves travel to greater depths than high frequency EM waves. The resolution however is lesser in case of low frequency waves. The frequency used is also of importance since the resolution of the system and the rate of signal attenuation is proportional to the frequency of the GPR system.

- **GPR data processing**

  All the collected scan profiles are processed to enhance its clarity and accuracy, using Cross Point software. The raw data were processed to get the accurate noise free profiles. Data processing focuses on the highlighted areas: data editing, basic processing, advanced processing, and for visualization/interpretation processing. Processing Parameter such as Wavelet filter, Background noise removal, Band-pass Filter etc. were done.

- **Interpretation and Presentation of Results**

  GPR results are interpreted by recognizing diagnostic reflection patterns on the radar-grams.
  Targets are recognized and classified with reference to the objectives of the survey.

  The final GPR interpretation generally leads to a conceptual model of the site conditions (geologic, cultural, etc.). A conceptual model is a simplified characterization of a site that incorporates all the essential features of the physical system under study.

  - **Process of Survey**

  Whole above process required total 4 numbers of process as below;

  Step D – In this step we should have general idea about utilities and we should have drawing from dpt.

  Step C – This is very important step to have QLA, to have all visual manholes, lines and landmarks

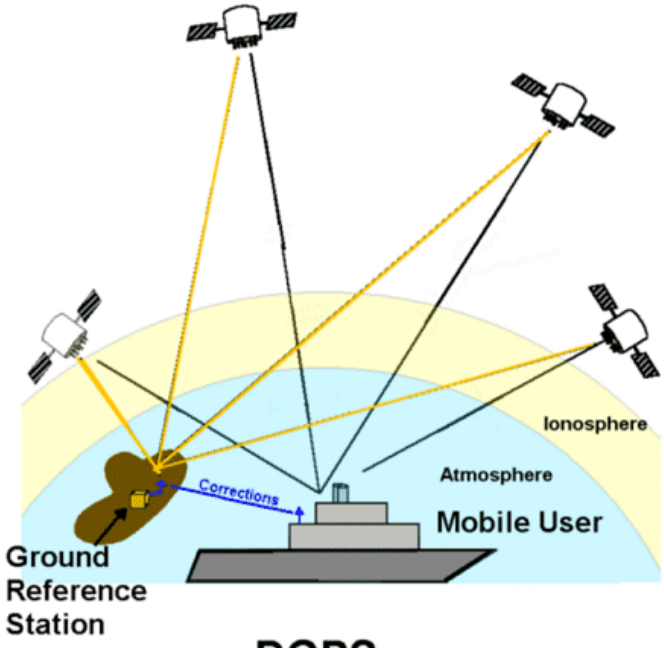
  Quality B – In this Quality control, we have to use GPR and Locator to have all the data including QLA process

  Quality A – This is final step to make drawing to have all the details from above steps and quality.

  So, we should always follow these processes to get maximum accuracy on the ground.

3. DGPS Use for pinpoint the location as per plant grid

DGPS (Differential GPS) is essentially a system **to provide positional corrections to GPS signals**. DGPS uses a fixed, known position to adjust real time GPS signals to eliminate pseudo range errors. An important point to note is that DGPS corrections improve the accuracy of position data only.



DGPS Geometry

The principle behind DGPS is to **use the reference location of the base receiver to correct for the error position of the unknown rover position**. Since the base station is fixed, we can use the difference between the measurement of the base and the rover receivers to create an error correction vector.

A Differential Global Positioning System (DGPS) is an enhancement to the Global Positioning System (GPS) which provides **improved location accuracy**, in the range of operations of each system, from the 15-meter nominal GPS accuracy to about 1–3 cm in case of the best implementations of DGPS.

4. Study Areas with Remarks

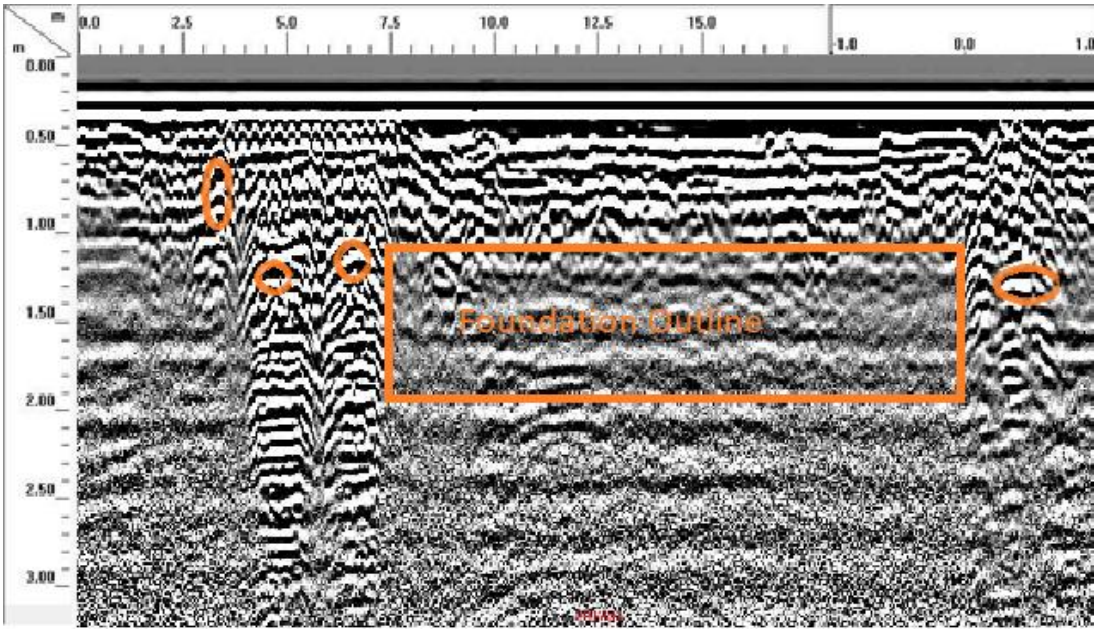
Total 9 Sites have been covered for GPR survey as below;

- Site - 1 Central Stores Gate Front side Area
- Site - 2 Central Stores Gate Back Side Area
- Site - 3 Central Stores Machinery Area
- Site - 4 Light Diesel Oil Pump House
- Site - 5 Main Road Culvert Area No.02
- Site - 6 Nearby Canteen Area
- Site - 7 Water Sump & Pump House Area
- Site - 8 BHEL Gate Railway Crossing Area
- Site - 9 IT Complex Area

We have been covered total area in term to get better results with accuracy. We have taken the data with every corner of building to the get foundation depth and its dimensions. We detected multiple lines as Power cables, water lines, Sewer lines etc.

So further we will explain the remarks/findings based on every sites.

Site - 1 Central Stores Gate Front side Area



Raw Data Sample

Remarks;

I. Foundation depth from Shed no. B-1 building up to Shed no. B8 were detected approximately 1.56 meter and dimension of the same buildings were found approximately 1.5m × 1.2m.

II. Foundation depth of building GAS ward and Transformer Oil central store were detected approximately 1.45 meter and foundations Dimension of the same buildings were found approximately 1.40m × 1.0m.

III. Metallic line and Power cable detected, crossing from Central store main gate having depth 0.8 M and 0.6 M respectively.

IV. Two Power cables detected, crossing from Security room to Shed no B-1 having depth 0.50 Meter and 0.10 M.

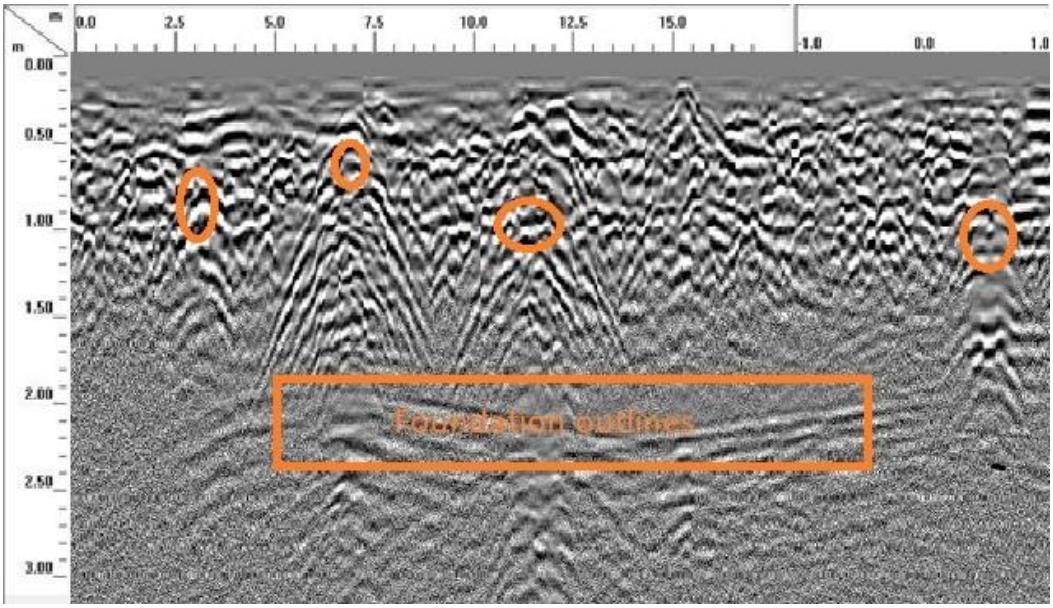
V. Two Water lines detected, passing parallel with Shed no B-1 with depth of 0.50 M.

VI. Two Water lines detected, passing parallel in between Shed no B-2 and shed no 3 with depth of 0.20 M & 0.30M respectively.

VII. One Metal lines, passing in between Shed no. B- 4 to Shed no B – 5 having depth of 0.45 M.

VIII. One Metal and Fire hydrant detected passing to the boundary wall behind the Transformer Oil room and Gas ward building having depth 0.70 M and 0.30 M respectively.

Site - 2 Central Stores Gate Back Side Area



Raw Data Sample

Remarks;

i. Foundation depth of Shed no. C - 1 to Shed no. C - 4 were detected approximately 1.65 meter and dimension of the same buildings were found approximately 1.6 m × 1.3m respectively.

ii. Metal and Power cable detected at the left side of main gate and right side of the building shed no. C – 1 at the depth of approximately 0.9 M and 0.85 M respectively.

iii. Power Cable and Fire hydrant line was detected, which is running in front of shed no C 1 – 4 at the depth of approximately 1.20 M and 0.30 M respectively.

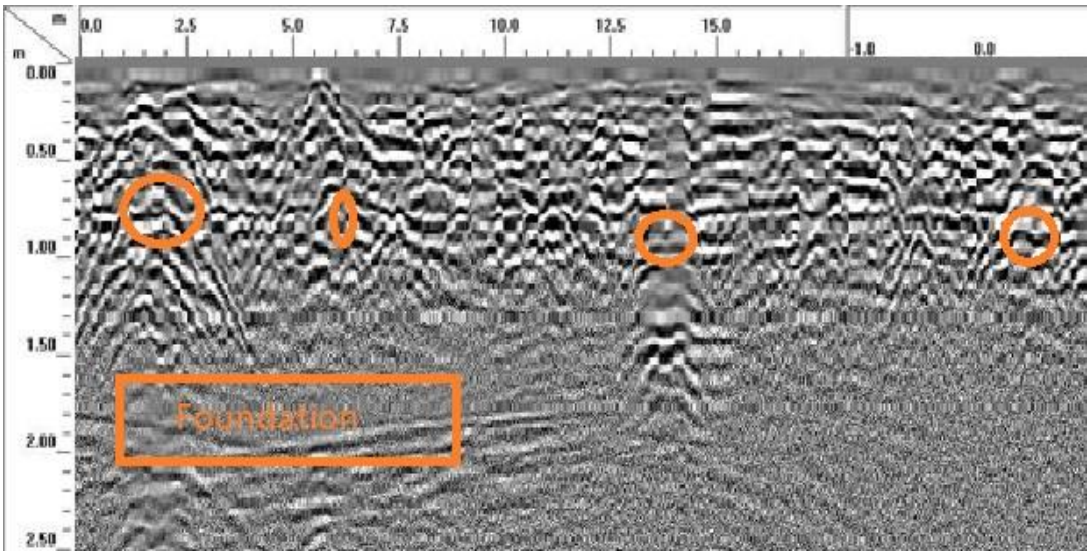
iv. Sewer Line detected, running parallel to shed no C 1-4 at the depth of approximately 2.9 M.

v. One fire hydrant line detected which running parallel to shed no. C 1-4 at the depth of approximately 0.35 M.

vi. Two water pipe lines detected at crossing the road in front of shed no. C-2 at the depth of approximately 0.35 M & 0.25 M respectively.

vii. One metal line detected at crossing the road in front of shed no. C-2 at the depth of approximately 0.45 M.

Site - 3 Central Stores Machinery Area



Raw Data Sample

Remarks;

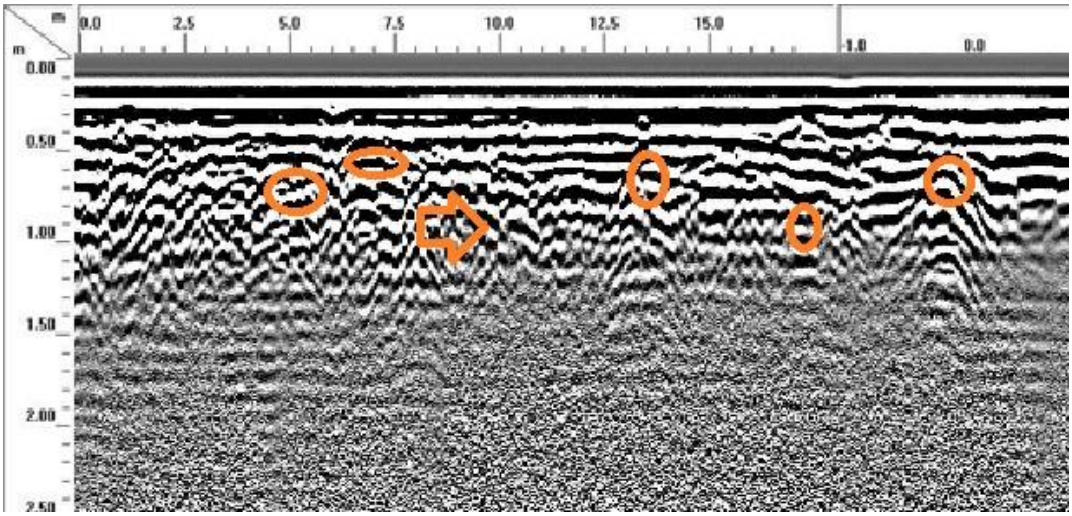
I. Foundation depth of two buildings adjacent to boundary wall were detected approximately 1.65 meter and dimension of the same buildings were found approximately 1.6 m × 1.2m.

II. Foundation depth of three buildings adjacent to entry gate were detected approximately 1.55 meter and dimension of the same buildings were found approximately 1.5 m × 1.2m.

III. Metal lines was detected, which running parallel to both entry gate at the depth of approximately 0.78 m.

IV. Power cable and Metal line were detected at the out side Central stores Machinery Area adjacent to Nala at the depth of approximately 0.68 m and 0.80 Meter respectively.

Site - 4 Light Diesel Oil Pump House



Raw Data Sample

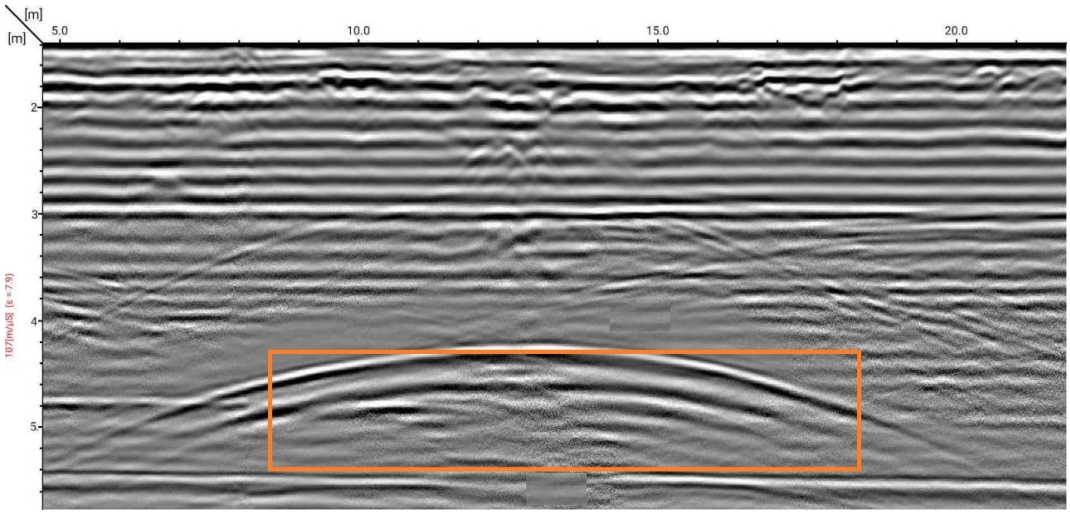
Remarks;

i. Power cable and Metal line detected, crossing the road at the depth of approximately 1.50 m and 0.70 m respectively starting from the left side of the drawing from the culvert.

ii. Power cable and Metal line detected, crossing the road at the depth of approximately 1.20 m and 1.10 m respectively starting from the left side the drawing from the culvert at the distance of 20M on the left side.

iii. Two metal and two power cables detected crossing the road the right side of culvert at the depth of approximately 1.00 m, 1.50 m, 0.40 m & 0.40 Respectively.

Site - 5 Main Road Culvert Area No.02



Raw Data Sample

Remarks;

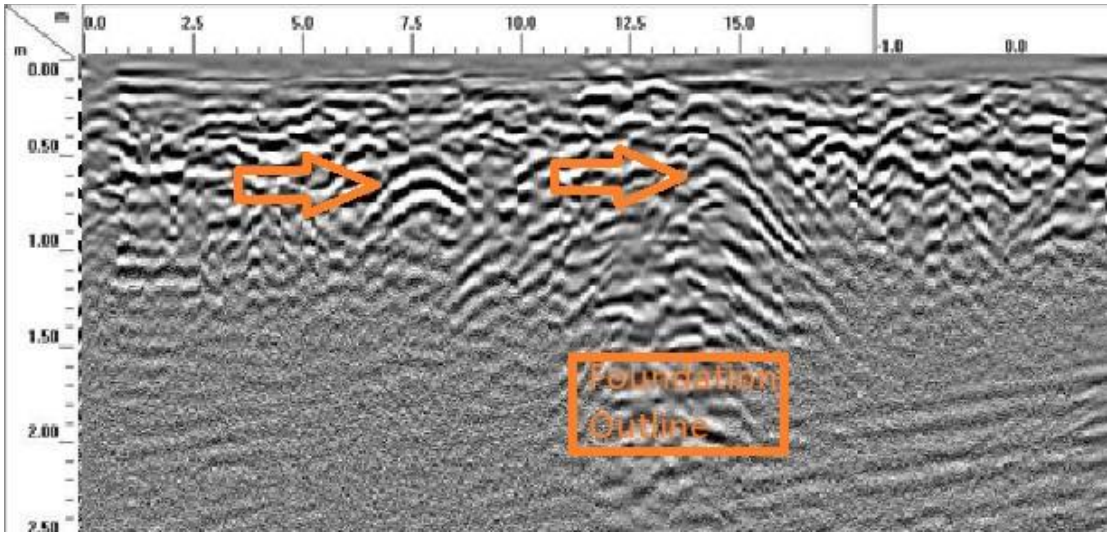
I. Foundation depth of Water Tank was detected approximately 6 -7 meter and dimension of the same Water Tank was found approximately 6 m × 2.5 m.

II. Power cable was detected at near by kachha road at the depth of approximately 0.77 m.

III. One metal line was detected near water tank at the depth of approximately 0.50 m.

IV. Sewer line was crossing below first culvert at the depth of approximately 3.50 m.

Site - 6 Nearby Canteen Area



Raw Data Sample

Remarks;

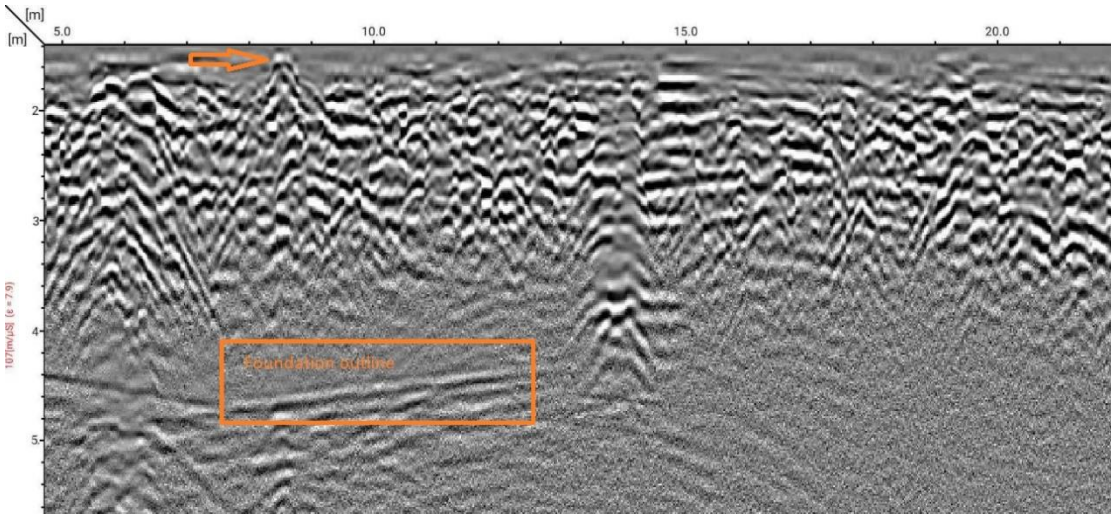
i. Foundation depth of left side Teen shed near water tank gate were detected approximately 1.65 meter and dimension of the same buildings were found approximately 1.6 m × 1.1 m.

ii. Foundation depth of right-side Teen shed near water tank gate were detected approximately 1.0 meter and dimension of the same buildings were found approximately 1.5 m × 1.0 m.

iii. Foundation depth of two Teen shed near security room gate were detected approximately 1.4 meter and dimension of the same buildings were found approximately 1.4 m × 1.0 m.

iv. Metal and power cable detected which is crossing the kachha road near security room at the depth of approximately 1.10 m and 1.10 m respectively.

Site - 7 Water Sump & Pump House Area



Raw Data Sample

Remarks;

I. Foundation depth of both Pump oil Tank were detected approximately 2.2 meter and dimension of the same buildings were found approximately 2.2 m × 1.5 m.

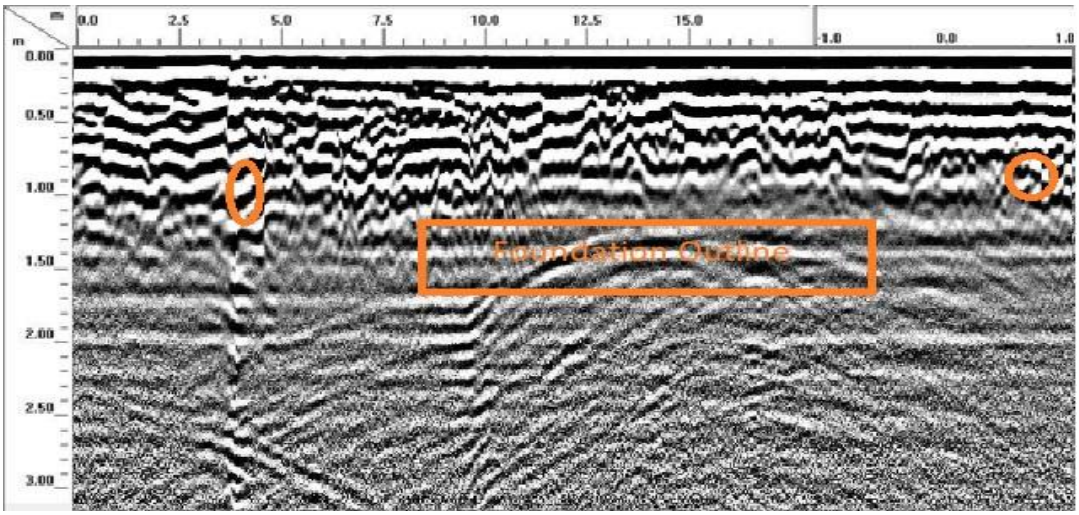
II. Foundation depth of Pump house were detected approximately 4.2 meter and dimension of the same buildings were found approximately 4.2 m × 1.2 m.

III. Two metal lines and Two power cables were detected at just outside of Pump House at the depth of approximately 1.50 m, 0.50 m, 0.45 m & 0.80 m Respectively.

IV. One Power cable, running parallel to the road with open drain and crossing through the Pump house with variable depth approximately 0.50m to 0.90 m.

V. One metal line, crossing though the pump house with the depth of approximately 0.80 m.

Site – 8 BHEL Gate Railway Crossing Area



Raw Data Sample

Remarks;

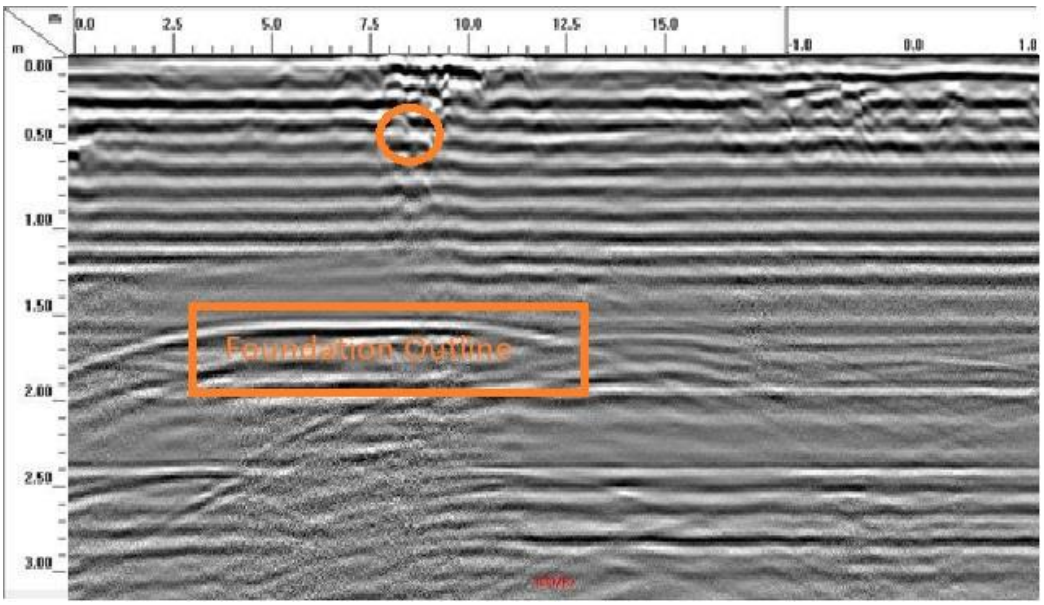
i. Foundation depth of Bhel Gate detected approximately 1.0 meter and dimension of the same gate pillars were found approximately 1.0 m × 0.8 m.

ii. Foundation depth of Security room were detected approximately 1.45 meter and dimension of the same building were found approximately 1.45 m × 1.0 m.

iii. Three power cables detected inside the Bhel Gate which is crossing the road in front of security room at the depth of approximately 0.60 m, 0.60 m, & 0.50 m respectively.

iv. One water line and power cable were running parallel out side the Bhel gate at the depth of approximately 1.05 m & .70 m respectively.

Site - 9 IT Complex Area



Raw Data Sample

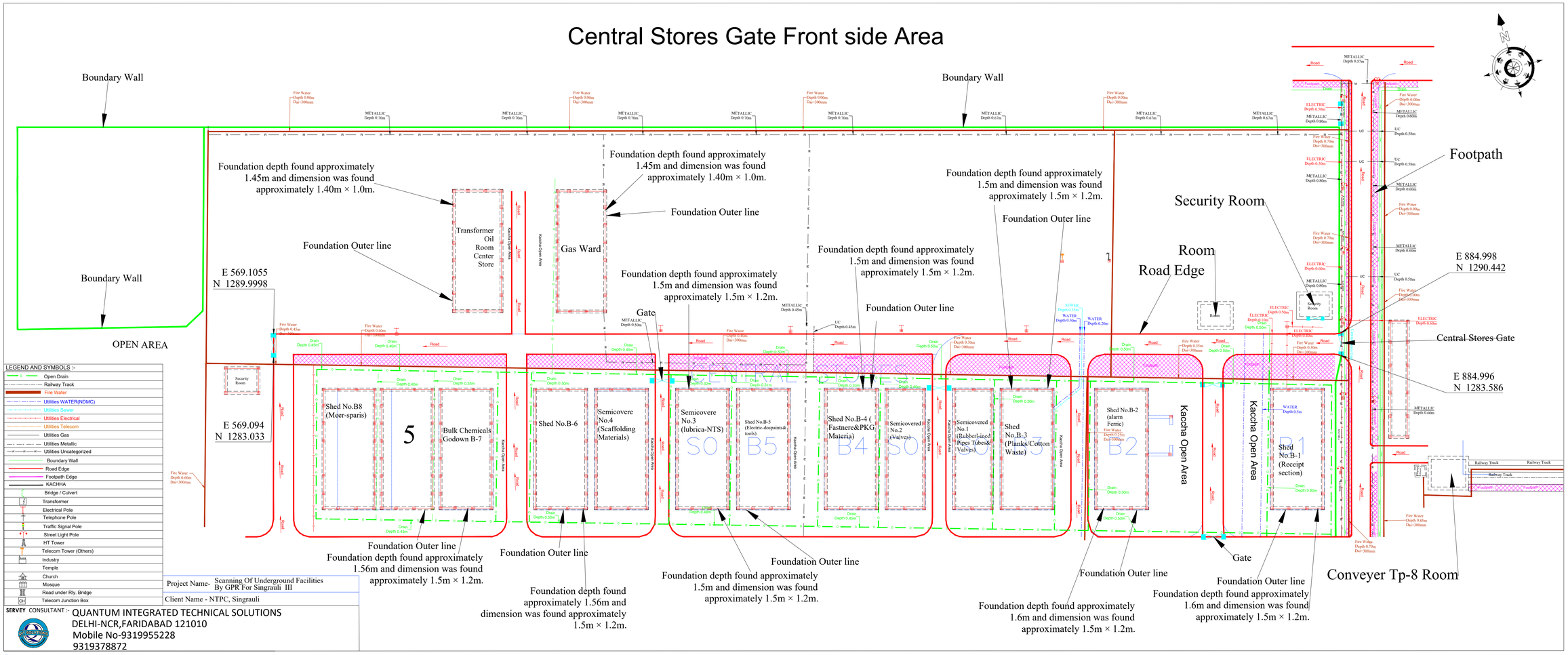
Remarks;

I. Foundation depth of Indention Tower were detected approximately 1.35 meter.

II. Foundation depth of building in front of Indention Tower were detected approximately 1.45 meter and dimension of the same building was found approximately 1.40 m × 1.1 m.

III. Foundation depth of Tower Pillar were detected approximately 2.80 meter and dimension of the same building was found approximately 2.80 m × 2.3 m.

Central Stores Gate Front side Area



LEGEND AND SYMBOLS :-

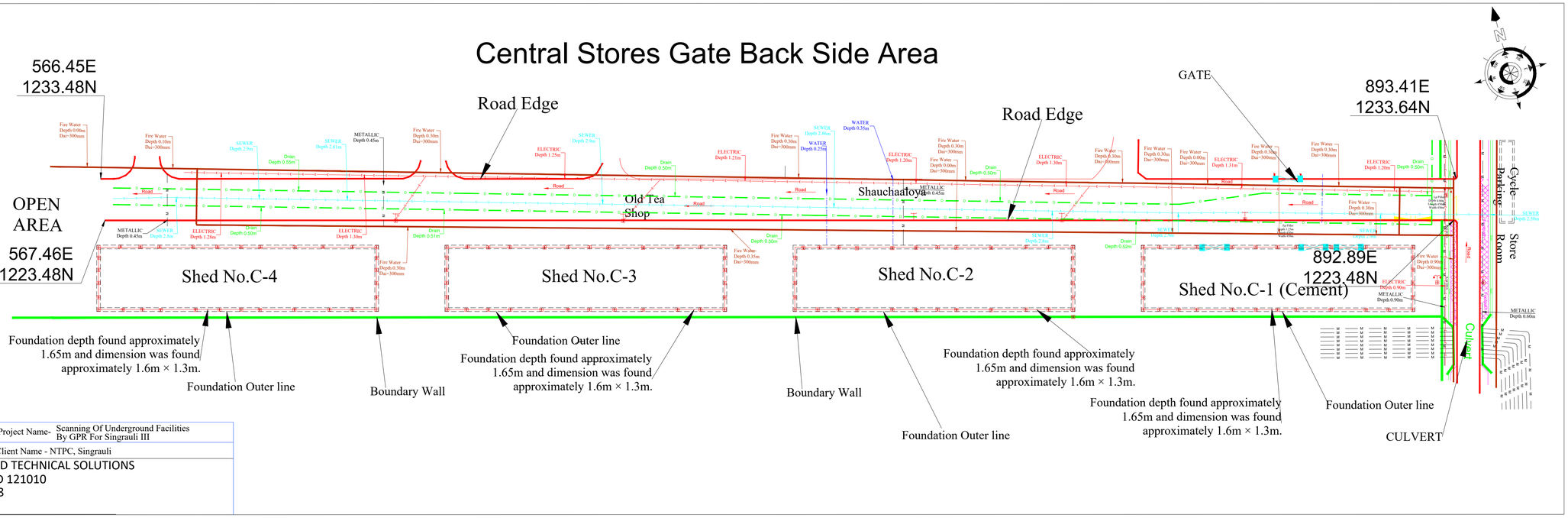
- Open Drain
- Railway Track
- Fire Water
- Utilities WATER(NDMC)
- Utilities Sewer
- Utilities Electrical
- Utilities Telecom
- Utilities Gas
- Utilities Metallic
- Utilities Uncategorized
- Boundary Wall
- Road Edge
- Footpath Edge
- KACHHA
- Bridge / Culvert
- Transformer
- Electrical Pole
- Telephone Pole
- Traffic Signal Pole
- Street Light Pole
- HT Tower
- Telecom Tower (Others)
- Industry
- Temple
- Church
- Mosque
- Road under Rly. Bridge
- Telecom Junction Box

Project Name- Scanning Of Underground Facilities By GPR For Singrauli III

Client Name - NTPC, Singrauli

SERVEY CONSULTANT :-
QUANTUM INTEGRATED TECHNICAL SOLUTIONS
DELHI-NCR,FARIDABAD 121010
Mobile No-9319955228
9319378872

Central Stores Gate Back Side Area



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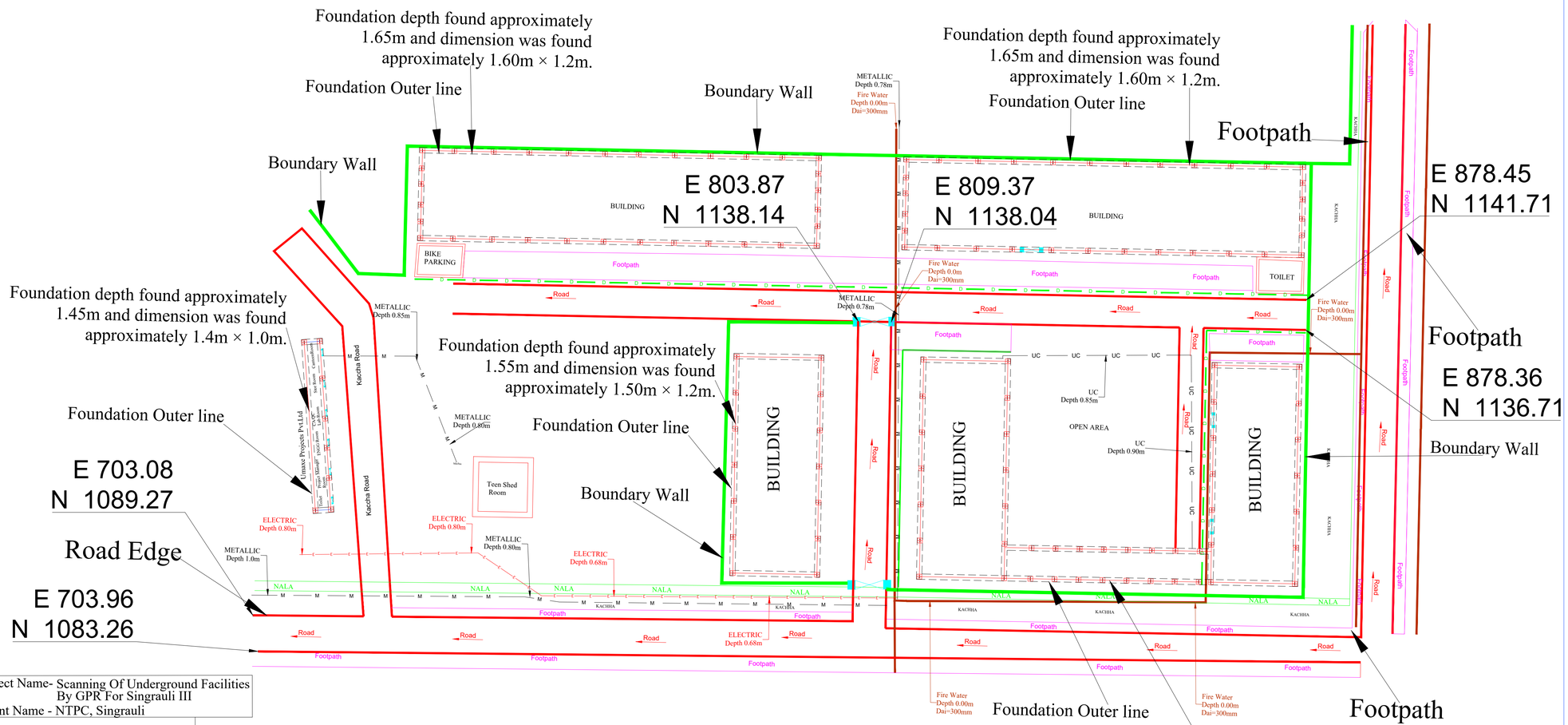
Central Stores Machinery Area



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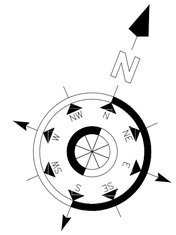
LIGHT DIESEL OIL PUMP HOUSE



LIGHT DIESEL OIL PUMP HOUSE

Footpath

Fire Water
Depth 0.00m
Dai=300mm

ELECTRIC
Depth 1.50m

METALLIC
Depth 0.70m

E 977.57
N 995.74

METALLIC
Depth 1.10m

ELECTRIC
Depth 1.20m

Fire Water
Depth 0.00m
Dai=300mm

METALLIC
Depth 1.40m

METALLIC
Depth 1.50m

Culvert

Footpath

METALLIC
Depth 1.00m

ELECTRIC
Depth 1.50m

Fire Water
Depth 0.00m
Dai=300mm

METALLIC
Depth 0.40m

Fire Water
Depth 0.50m
Dai=300mm

ELECTRIC
Depth 0.40m

Road Edge

E 1112.58
N 995.74

Road

Open Drain

M

E 1112.65
N 988.24

ELECTRIC
Depth 0.50m

E 977.64
N 988.24

Footpath

CULVERT

Fire Water
Depth 0.50m
Dai=300mm

NALA

Boundary Wall

Road Edge

Footpath

LEGEND AND SYMBOLS :-

D	Open Drain
	Railway Track
	Fire Water
W	Utilities WATER(NDMC)
S	Utilities Sewer
E	Utilities Electrical
OFC	Utilities Telecom
G	Utilities Gas
M	Utilities Metallic
UC	Utilities Uncategorized
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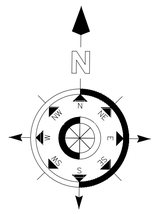
9319378872

Main Road Culvert Area No.02

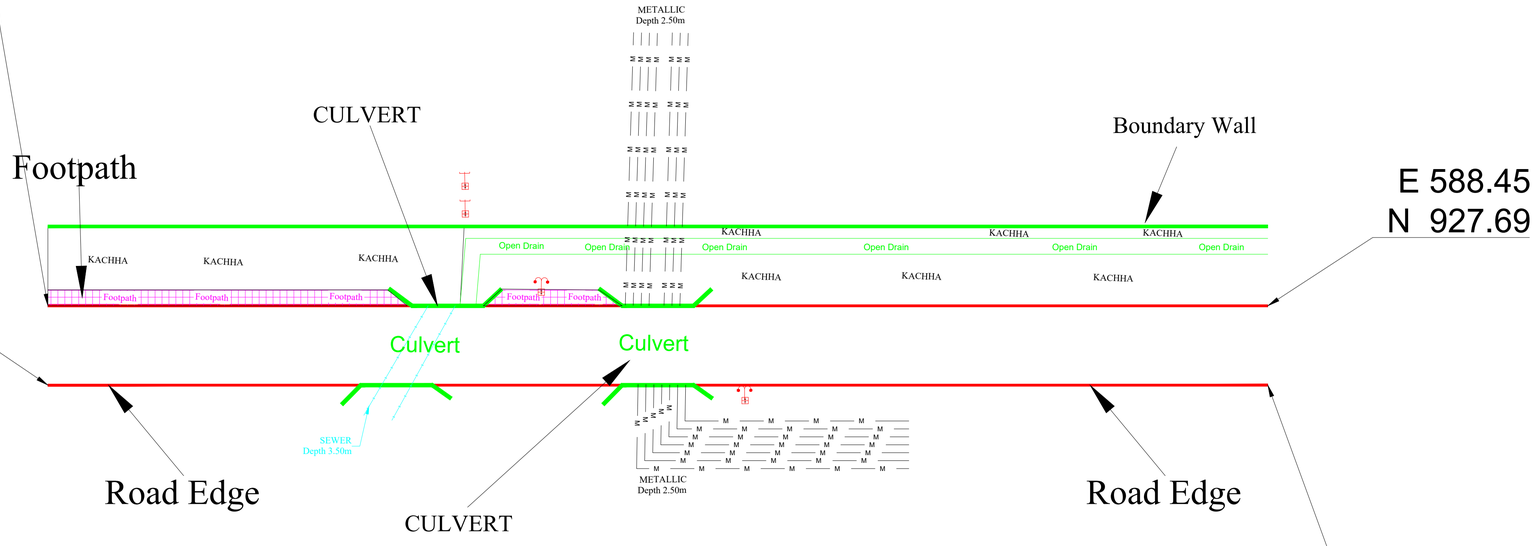


E 434.63
N 927.69

E 434.63
N 917.69

E 588.45
N 927.69

E 588.45
N 917.69



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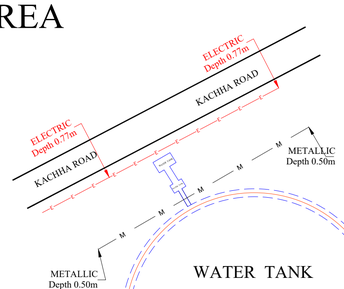
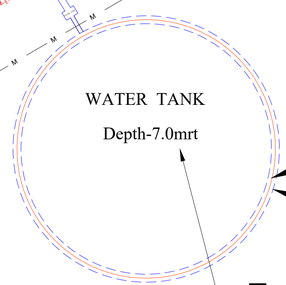
Telecom Junction Box

OPEN AREA



OPEN AREA



Foundation depth found approximately 6.0m-7.0m and dimension was found approximately 6.0m × 2.5m.

Foundation Outer line

E 478.17
N 842.20

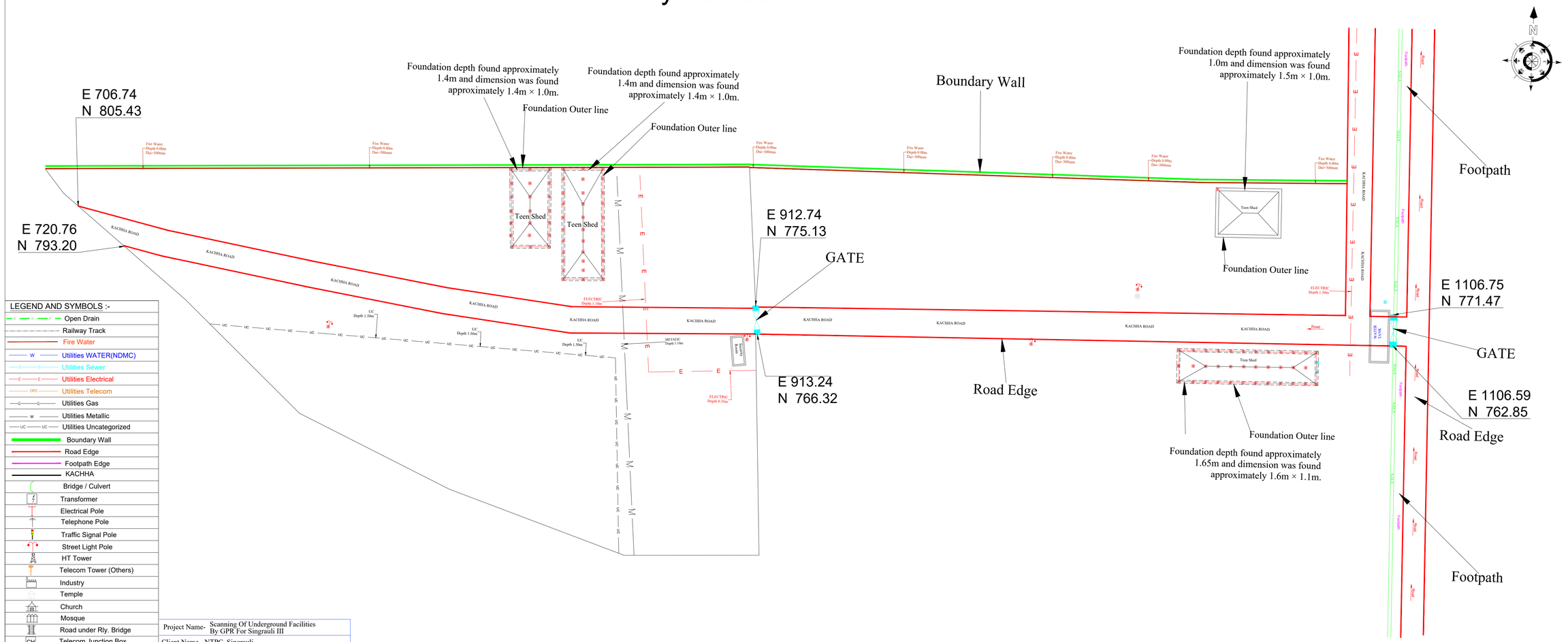
Project Name- Scanning Of Underground Facilities By GPR For Singrauli III

Client Name - NTPC, Singrauli

SERVEY CONSULTANT :-

QUANTUM INTEGRATED TECHNICAL SOLUTIONS
DELHI-NCR, FARIDABAD 121010
Mobile No-9319955228
9319378872

Near by Canteen Area



LEGEND AND SYMBOLS :-

- Open Drain
- Railway Track
- Fire Water
- Utilities WATER(NDMC)
- Utilities Sewer
- Utilities Electrical
- Utilities Telecom
- Utilities Gas
- Utilities Metallic
- Utilities Uncategorized
- Boundary Wall
- Road Edge
- Footpath Edge
- KACHHA
- Bridge / Culvert
- Transformer
- Electrical Pole
- Telephone Pole
- Traffic Signal Pole
- Street Light Pole
- HT Tower
- Telecom Tower (Others)
- Industry
- Temple
- Church
- Mosque
- Road under Rly. Bridge
- Telecom Junction Box

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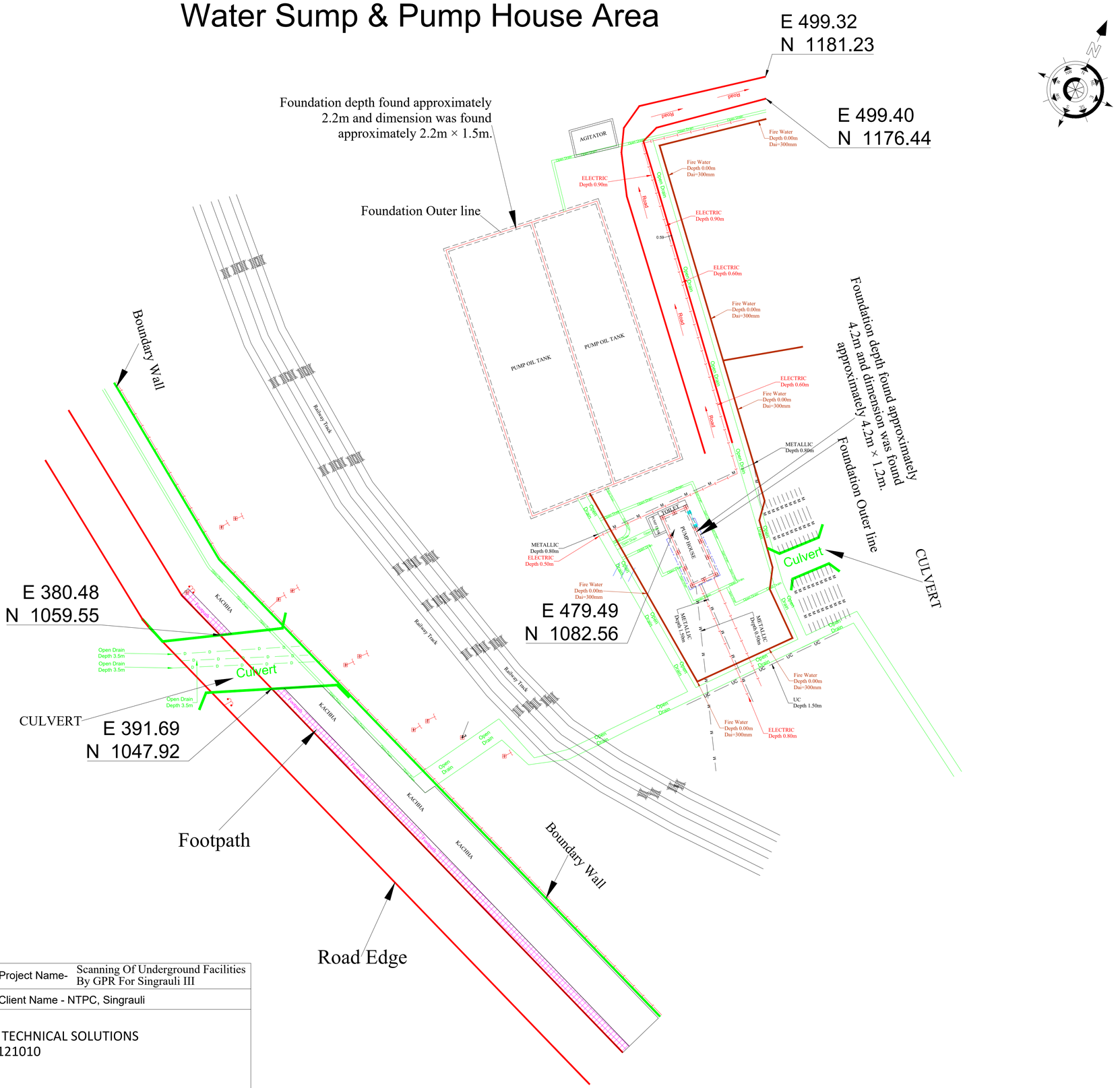
9319378872

Water Sump & Pump House Area



LEGEND AND SYMBOLS :-
Open Drain
Railway Track
Fire Water
Utilities WATER(NDMC)
Utilities Sewer
Utilities Electrical
Utilities Telecom
Utilities Gas
Utilities Metallic
Utilities Uncategorized
Boundary Wall
Road Edge
Footpath Edge
KACHHA
Bridge / Culvert
Transformer
Electrical Pole
Telephone Pole
Traffic Signal Pole
Street Light Pole
HT Tower
Telecom Tower (Others)
Industry
Temple
Church
Mosque
Road under Rly. Bridge
CH Telecom Junction Box

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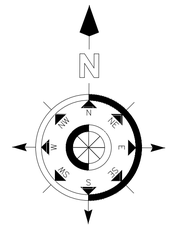
Mobile No-9319955228
9319378872

BHEL GATE Railway Crossing Area



Foundation depth found approximately 1.45m and dimension was found approximately 1.45m × 1.0m.

E 307.42
N 1389.45

E 354.00
N 1387.19

E 307.26
N 1382.13

E 357.13
N 1379.84

Foundation Outer line

Foundation depth found approximately 1.0m and dimension was found approximately 1.0m × 0.8m.

Office Room

Safety Room

Security Room

Boundary Wall

BHEL GATE

NALA

Road

Railway Track

CCTV Camera

ELECTRIC Depth 0.70m

ELECTRIC Depth 0.60m

ELECTRIC Depth 0.50m

METALIC Depth 1.10m

WATER Depth 1.05m

UC Depth 1.70m

UC

BHEL GATE

LEGEND AND SYMBOLS :-
Open Drain
Railway Track
Fire Water
Utilities WATER(NDMC)
Utilities Sewer
Utilities Electrical
Utilities Telecom
Utilities Gas
Utilities Metallic
Utilities Uncategorized
Boundary Wall
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Telecom Tower (Others)
Industry
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Mosque
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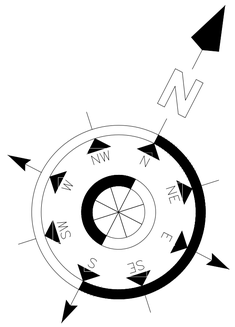
IT COMPLEX AREA



Foundation depth found approximately 2.80m and dimension was found approximately 2.80m ×2.30m.

E 131.83
N 1948.07

Foundation Outer line

Foundation depth found approximately 1.45m and dimension was found approximately 1.4m × 1.1m.

Cable Tray

Foundation Outer line

BUILDING

Cable Tray

Foundation depth found approximately 1.35m

Foundation Outer line

Aviation Tower

walk way

walk way

E 98.60
N 1907.00

METALLIC
Depth 0.35m

LEGEND AND SYMBOLS :-

D	Open Drain
	Railway Track
	Fire Water
W	Utilities WATER(NDMC)
S	Utilities Sewer
E	Utilities Electrical
OFC	Utilities Telecom
G	Utilities Gas
M	Utilities Metallic
UC	Utilities Uncategorized
	Boundary Wall
	Road Edge
	Footpath Edge
	KACHHA
	Bridge / Culvert
	Transformer
	Electrical Pole
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9319378872