448	VI-A	I-A	8 of 35	Note for 4.3:	The Bidder/its sub-vendor should offer only the same type i.e. counter flow or cross flow and of the same construction type i.e. RCC construction or FRP construction of Cooling Towers for which the bidder/its sub vendor/Holding Company/Subsidiary/Collaborator/ Associate (i.e., the firm meeting requirements of clause 4.3.1 above) is qualified	Pl. note that this clause is restricting the no. of biddrs for qouting for thes package. Presently due to covid and other financial constraints the no. of bidders for this package are limited. Please note that the thermo-hydraulic design of cooling tower is same for RCC construction cooling tower and FRP construction cooling towers. Therefore customer is requested to accept the bidder who has done either type of the cooling tower construction to offer IDCT in any construction. To enable same, the bidder may be allowed to associate or employe a structural designer for RCC construction or FRP construciton, as the case may be.	Bidder's proposal reviewed and not accepted. Bidder to comply with technical specification requirements.
449	VI-A	I-A	8 of 35	4.3	Induced Draught Cooling Tower: The Bidder/its Sub-vendor should meet the qualifying requirements of any……	Cooling tower bidders who are meeting the provenness criteria shall design (thermo-hydraulic design as well as structural design), manufacture, supply, erect at site and supervise the construction of cooling towers. Customer is requested to accept the construction of cooling tower sub-structure (RCC basin including IDCT foundation) as well as superstructure (RCC structure including fan deck above the ground) by a civil construction company to be employed by EPC bidder, based on the design carried out by the successful cooling tower bidder. We have successfully executed the IDCT packages as per above philosophy for various projects 2X660 MW Maitree Bangladesh, 1X250 MW NSPCL Rourkela, 1X370 MW KPCL Yelahanka CCPP etc.	Bidder's proposal reviewed and not accepted. Bidder to comply with technical specifications requirement.
450	VI-B	SUB SECTION-A-15	13 of 40	4.00.00, S. no. 16	Recovery Stack: RCC for RCC IDCT	Pl. confirm recovery stack can be of FRP construction also in case of RCC IDCT for faster execution.	Bidder's proposal reviewed and not accepted. Bidder to comply with technical specifications requirement.
451	SUB-SECTION-I-A/ PROVENNESS		10 OF 35	Cl. No. 4.11	The Bidder/its sub-vendor should have executed contracts for cooling water treatment program of at least two (2) different cooling water systems each having a flow rate not less than 10,000 Cu.M/hr operating in alkaline pH range and both the treatment programs should have been in successful operation for at least one (1) year. These contracts should include supply of chemicals, operation and maintenance of the system. The Chemicals used in these programs should have been organic polymers/ organic phosphorous compounds/ organic phosphates-based chemicals.	Requirement of at least two (2) different cooling water systems w.r.t. provenness is stringent which will restrict the vendor's participation. Customer is requested to please review this provenness requirement and make it to one (1) no. of cooling water system in line with the latest tenders/ contracts e.g. 3 x 800 MW Patratu STPP.	Bidder's proposal reviewed and not accepted. Bidder to comply with technical specifications requirement.
452	P&ID OF CW CHEMICAL TREATMENT SYSTEM		59 OF 91	**P&ID No.:** XXXX-XXX-POM-A-060, Rev. A	Section X-X: Bulk Acid Storage Tanks : 3 nos. are indicated.	Kindly review the requirements, confirm the quantity and capacity of each Bulk Acid Storage Tank to be provided.	Section X-X is indicative, bidder to follow clause 1.04.0 (4) of sub-section IIA-11, Part-A of Technical specification in this regard.
453	IIA-11 CW SYSTEM		3 OF 4	1.04.0 CW CHEMICAL TREATMENT/ **4)**	Two (2) Nos acid storage tank (H_2SO_4) of capacity adequate for minimum 15 days requirement, however, capacity of each tank shall not be less than 50 cum.		
454	IIA-11 CW SYSTEM		3 OF 4	1.04.0 CW CHEMICAL TREATMENT	Complete CW Treatment System including acid handling, storage and dosing system, Chemical measuring tanks & dosing system for HEDP & PBTC (common), Polymeric dispersant, Bio-dispersant, Corrosion inhibitor (Zn) including monitoring equipment like Deposit monitor/fouling monitor, bio-fouling monitor, Corrosion test coupons with test racks, online instant corrosion rate monitor, online ORP monitor, analysis kits with reagents etc., online pH meter and conductivity meter etc. required for smooth operation of treatment program.	Detailed data sheet for CW chemical treatment system including valves MOC, CW chemical dosing line MOC etc. is also not found included/ mentioned in the respective technical specification/ P&ID. Kindly clarify/ provide the same.	Bidder to refer tender P&ID (POM-A-060) for MOC
455	P&ID OF CW CHEMICAL TREATMENT SYSTEM		59 OF 91	**P&ID No.:** XXXX-XXX-POM-A-060, Rev. A/ Notes 3	Drain from Acid Storage Area shall be collected and led to Neutralising Pit.	Requirement of collecting Acid from Acid Storage Area has only been specified in this Note. Please clarify about other CW speciality chemicals also. As per standard practice, all chemicals including Acid (H_2SO_4) shall be lead to N-PIT through drain. Please confirm. Further to above, disposal/ transfer arrangement and scope for this nutralised chemicals may also please be cofnirmed.	Bidder's understanding is correct. Treated discharge from N-Pit shall be led to CW channel and complete system is in bidder's scope. Bidder to refer tender P&ID (POM-A-060) for CW Chemical treatment system in this regard.
456	P&ID OF CW CHEMICAL TREATMENT SYSTEM		59 OF 91	**P&ID No.:** XXXX-XXX-POM-A-060, Rev. A/ Notes 7	Location of Tap off from CW Pump discharge/ common recirculation line for monitoring instruments such as diposit monitor/ pH monitor to be decided as per condition.	Kindly confirm that this requirement of specification is to be followed and tapping for mounting the monitors/ analysers shall not be taken from CW return (hot water) lines.	Bidder's proposal reviewed. Tap off for CW chemical treatment system shall be taken from cold CW water, and the scheme & location of tapping shall be decided during detail engineering to suit at Site condition.
457	SUB SECTION A-15 CW SYSTEM		28 OF 40	1.00.00/ C)	Acid (H_2SO_4) tanks shall be MS construction, horizontal, with dished (Toro spherical) ends.	Kindly confirm the capacity of acid day/ measuring tanks.	Bidder's query is not relevant on the specification clause indicated. However, bidder to refer clause 1.04.0 (2), sub-section IIA-11, Part-A of technical specification for capacity of H_2SO_4 day/measuring tanks.

458	VI / PART- A	SUB SECTION-IIA-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%) 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 Sl. No. TG-15 in this regard.
	VI / PART - B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	52 OF 87	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.		
459	VI / PART - E	TENDER DRAWINGS / SCHEME FOR PLANT EFFLUENT SEPARATION TG AREA	-	-	DRG NO.XXXX-001-POM-A-015A For transfer of effluent from BFP and COT/DOT area, effluent transfer pumps are shown.	In drg no. XXXX-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.
460	VI / PART- A	SUB SECTION-IIA-22 SEPARATION OF PLANT DRAINS FROM STORM WATER DRAINS	2 OF 3	1.01.0	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 proposes 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. Bidder also proposes that evacuation time shall be decided during detailed engineering based upon collection and treatment scheme finalisation. Hence, NTPC is requested not to restrict criteria for 20 minutes evacuation time.	Bidder to refer Amendment Sl. No. WS-10 in regards to type of pumps. Bidder's proposal regardinig criteria for 20 minutes evacuation time from RCC pit/sump reviewed and not accepted. Bidder to comply technical specification requirements.
	VI / PART- A	SUB SECTION-IIA-22 SEPARATION OF PLANT DRAINS FROM STORM WATER DRAINS	2 OF 3	1.01.00	g) Submersible pumps shall be permanently fixed in the pits/sumps.		Requirement of Technical specification is clear. Bidder to comply with the specification. Query pertaining to cl. No. 1.01.00 (g) not clear.
461	VI / PART- A	SUB SECTION-IIA-22 SEPARATION OF PLANT DRAINS FROM STORM WATER DRAINS	2 OF 3	1.04.00	Mill & Bunker Building Area The wash water from mill floor area shall be collected in the mill floor area RCC pit/ sump(s). Separate RCC pit/sump(s) for the mill bays shall be provided. The wash water from various floor such as tripper floor, feeder floor, Mill base etc. shall be led through down-comer pipes to the RCC pit/ sump(s). This water collected in the RCC pit/ sump shall be led to Coal slurry settling pond (CSSP) by pumping.	Bidder proposes that waste water from Mill & Bunker Building Area shall be pumped to nearest TPs, as the effluent from TPs shall be ultimately routed to CSSP for further disposal.	Bidder's proposal reviewed but not accepted. Bidder to comply with tender requirement.
462	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.The treatment plant shall be designed suitably to receive and treat excess storm water mixed with coal laden water in existing CSSP of Stage -II and supernatant water recycled to CW channel (meeting CW make-up quality), 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 specifications requirement.
463	VI / PART - B	SUB SECTION –VI CHAPTER-08 WATER SYSTEM	12-18 OF 29	2.00.00	Mandatory Spares for PT, DM, ClO2 Systems	C&I Mandatory 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 mandatory spares for LET system shall be governed by Mandatory spares for PT, DM, ClO2 systems.
464	VI / PART- A	SUB-SECTION-I INTENT OF SPECIFICATION	3 OF 8	1.02.00	Water Treatment Plant Including, - DM plant and CW chemical treatment. - Pre treatment and liquid effluent treatment plant - Chlorine di-oxide plant - Condensate polishing unit including regeneration facility **- Reverse osmosis plant for waste water**	Discrepancy is observed between referred drawing and tender specification for ETP as the RO system for Waste water is not mentioned in Equipment Sizing Criteria/ SUB SECTION-A-01/ PART - B / section -IV. In absence of clarity, Bidder understands that all liquid effluents shall be collected and treated with Flash Mixer / Tube Settler in line with tender drawing of Liquid Effluent Treatment System (XXXX-XXX-POM-A-001) and no any Reverse Osmosis System (RO) treatment is envisaged for waste water system. Please confirm the Bidder's understanding and kindly amend the specifications.	All liquid effluents shall be collected and treated with Flash mixer/tube settler and lamella clarifier in line with tender drawing of Liquid Effluent Treatment System and recycled/ reuse within plant boundary. Further, based on Bidder's design for the reuse of treated wastewater, any additional requirement of wastewater RO shall be decided by the bidder to ensure ZLD compliance.

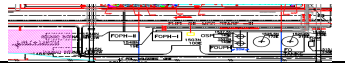
465	SECTION-VI, PART-B	SUB-SECTION-D-1-5	27 of 69	5.07.00	Complete sewerage system including Sewage Treatment Plant for facilities within the plant is in bidder's scope. Bidder shall provide 'De-centralized Sewage Treatment' units. The capacity of the Decentralized Sewage Treatment' units should be as 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. Pl. note that CI pipes are available in higher sizes i.e. 80 NB and above. Being very small capacity STP re-quirement, 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 understand that the EQMS is not to be provided. 5. Please confirm the type of control system to be envisaged for Sewage Collection Sumps and Decentral-ized 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.
466	SECTION – VI, PART-B	SUB-SECTION A - 14, WATER TREATMENT PLANT	20 OF 36	11.01.00 (7)	6) The ClO2 generation system shall have variable dosing rate of 10% to 100% of the design dosing rate or better. (7)To have optimum accuracy, the dosing pumps used shall be with powerful variable speed stepper motor with internal stroke speed control and have a minimum turn down ratio of 1:800 for precise control of ClO2 generation. Accuracy should be +/-1 % or better. Dosing pump should have LCD display to see the capacity set and alarms if any.	For Controllable capacity range of 10%-100% generator, dosing pumps with turn down ratio 1:800 can not be applicable. Both the clauses (6)&(7) are contradictory to each other, please clarify	Bidder's understanding is not correct. Bidder to comply to technical specification requirement.
467	SECTION – VI, PART-B	SUB SECTION- IIA-10WATER TREATMENT PLANT	5 OF 12	1.02.03(b)	Two(2) Nos (2x100%) of Bulk Acid Storage Tanks (33% HCl) (Tanks shall have net effective storage capacity of 15 days (minimum 4 hours dosing/day in case of CW System and continuous dozing in case of PT system) requirement or 2 x 35 m3 whichever is higher excluding free board and dead storage) with all nozzles, vents, fume collection/absorber, Density indicator, neutralization system, drain, overflows etc. These tanks shall be of FRP (with UV protection) construction.	Please calrify wether each storage tank shall have 15 days capacity or all 2 tanks shall have total net effective capacity of 15 days.	Each tank shall have net effective storage capacity of 15 days (min. 4 hours dosing/day in case of CW system and continuous dosing in case of PT system) requirement subject to minimum capacity of 35 m3 excluding free board and dead storage. Tender specifications are clear and bidder to comply technical specification requirements.
468	SECTION – VI, PART-B	SUB-SECTION A - 14 WATER TREATMENT PLANT	19 OF 36	11.00.00	Design capacity of generator(s) for CW system & PT system shall meet requirement for ClO2 dozing for the total circulating water flow to maintain a free chlorine dioxide residual of at least 0.2 mg/l in the far reaches of the distribution system at all times.	Please specify meaning of ''far reaches of the distribution system'' for PT-ClO2 system.	"far reaches of the distribution system" means farthest point of the distribution system starting from dosing point.

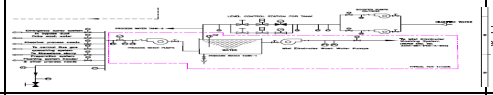
SL. NO	ENQUIRY SPECIFICATION				SPECIFICATION REQUIREMENT	COMMENTS / CLARIFICATIONS	NTPC Reply
	SEC/ PART	SUBSEC.	PAGE NO.	CLAUSE NO.			
469	SECTION – IV	GCC	73 of 90	40	The Time(s) for Completion specified in the SCC shall be extended if the for Completion Contractor is delayed or impeded in the performance of any of its obligations under the Contract	We understand, Contractor shall be eligible to claim Price Adjustment for the work executed during extended period even with provisional time extension approval. Also no LD shall be deducted even provisional time extension has been provided by customer. 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.	Provision of Bidding Documents shall prevail
470	SECTION – IV	GCC	57 OF 90	25.3.3	The Project Manager shall, after consultation with the Employer, and within forty five (45) days after receipt of the Contractor's notice, issue an Operational Acceptance Certificate.	We request the Owner to consider 7 days in place of 45 days after the notice.	Provision of Bidding Documents shall prevail
471	SECTION – IV	GCC	59 OF 90	27.8.1	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 Defects Liability Period. For the purpose of the this clause, the latent defects shall be the defects inherently lying within the material or arising out of design deficiency which do not manifest themselves during the Defects Liability Period as defined in this GCC clause 27, but later.	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 warranty shall be limited to a period of One (1) years from the Completion of defect liability period. The cost burden of the proof that the damage of the facilities is caused by a latent defect ishall be with the employer.	Provision of Bidding Documents shall prevail
472	SECTION-IV (GCC)	Terms of Payment	31-32 of page 90	12.4	A single designated ESCROW account shall be opened by the Contractor in any Scheduled Bank of India under intimation to Employer. All payments related to Erection / Civil / 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 Detailed Operative Procedure and Terms and Conditions of Escrow Account (Schedule III of draft agreement) shall be finalized between the Employer, Contractor and the Escrow Bank within 15 days of the placement of award.	Bidder has to face following dificulties due to 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 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. In view of the above, NTPC is requested to kindly delete the provision of single designated ESCROW account.	Provision of Bidding Documents shall prevail
473	SECTION-IV (GCC)	No Claim for interest or damage	83 of 90	50.1	1.Interest on money due to the contractor Contractor shall not be entitled to any interest or damage in case of any delay on the part of the Employer to pay the amount due upon measurement---------- 2.No claim for interest or damage: 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, difference or misunderstanding between the parties by way of arbitration or court proceedings----------	We request Employer to introduce provision for suitable compensation in case there is any delay in payment due to reasons not attributable to the Contractor.	Provision of Bidding Documents shall prevail
474	SECTION – VI, PART-A	SUB-SECTION-IIB ELECTRICAL SYSTEM / EQUIPMENTS	08 of 20	1.15.00	The Employer shall provide Two Number (2no) 11kV feeders in Existing Employer 11kV FGD Tie switchgear of Sipat Stage-1 to meet the construction power requirements along with Employer's requirements as indicated under Clause 1.19.00..... 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 and type of connection used	Power for the purpose of construction and commisssioning may please be provided by Owner free of all charges at 415 V. Also customer may provide supply point of electricity at major construction sites i.e. SG,TG area for both units Further to note that incase construction power is not provided by the customer free of all charges, we understand that only Energy charges shall be recovered from contractor and all the fixed charges shall be borne by Owner. Kindly confirm.	Bidder's understanding is not correct.
475	SECTION – VI, PART-A SECTION – VI, PART-D	SUB-SECTION-IID CIVIL WORKs ERECTION CONDITIONS OF CONTRACT	07 of 8 11-12 of 70	2.02.00 28.09.00	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 Contractor shall make all arrangements himself for the supply of construction water as well as potable water for labour and other personnel at the worksite/colony. However, drawal of construction/potable water from bore-well shall be permitted if found suitable. Any statutory clearance required shall be obtained by the contractor. Assistance, if required shall be provided by the owner.	1) Water for construction purposes may please be provided by customer on free of all charges. 2) Customer shall provide a supply point of water at construction sites i.e SG/ TG area for both units. If owner is not able to provide construction water free of all charges, may kindly confirm same shall be Provided by customer on chargeable basis and charges for construction water may also be provided in bid document. If above mentioned proposal is not acceptable and bidder has to inevitably arrange construcion water at their own, Employer may please confirm construction of borewell is permitted in plant premises or not.	Bidder's proposal is not acceptable. 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.
476	SECTION - VII, BOOK 3 OF 3 (PART-1)	Appendix-3	2 of 3	Note- 3	Any loss or damage to the plant and equipments 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	Bidder shall take Inusrance till Full Load /COD, whichever is earlier as per IRDAI guidelines guidelines and after that Owner has to take O&M policy of its own.	Provision of Bidding Documents shall prevail
477	SECTION – VI, PART-A	SUB-SECTION-I INTENT OF SPECIFICATION	6 of 8	4.03.00	All the first fills of consumables and one year's topping requirements of consumables such as greases, oil, lubricants, servo fluids / control fluids, gases (excluding H2, CO2 and N2 for Generator) etc. which will be required to put the equipment covered under the scope of specifications, into successful commissioning / initial operation and to establish completion of facilities shall be supplied by the Contractor	First fill of consumables such as greases, oil, lubricants, servo fluids/control fluids, gases (excluding H2, CO2 and N2 for Generator) and essential chemicals shall be supplied by Bidder till Full Load/COD whichever is earlier.	Bidder's proposal reviewed and not accepted. Bidder to comply tender specification requirements.
478	SECTION – VI, PART-A	SUB-SECTION-D-1-5 CIVIL WORKS	6 of 8	2.01.00	Development of Bidders temporary staff colony and worker colony along with toilets & fencing etcFor safety of worker, bidder to provide separate approach road for their movement, as per site conditions, which shall be completely isolated from material movement road/path. No material movement shall be allowed on approach road meant for worker 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.	For construction of labor colony Land of 30,000 SqM may please be provided by customer within plat premises/in proximity of plant premises free of all charges. Apart from this ownner may kindly provide adequate water, electricity fuel supply, sanitation, fire prevention and fire-fighting equipment for contractor's staff and labour free of all charge	Bidder's proposal is not acceptable.
479	SECTION – VI, PART-A	SUB-SECTION-D-1-5 CIVIL WORKS	6 of 8	2.02.00	Construction of following temporary facilities of bidder a) Construction office, b) Construction stores (covered) & open stores as per his requirement. c) Workshops for maintenance of construction plant and equipment. d) Material/field testing laboratory facilities and any other temporary building.	Owner may please provide land free of charge for temporary offices, fabrication yard, and storage facilities with in plant boundary. Temporary accommodation, including all fencing, water supply at two points (both for drinking and construction purposes), electricity, fuel, supply, sanitation, fire prevention and fire-fighting equipment for contractor's staff and labour free of charge.	Bidder's proposal is not acceptable.
480	SECTION – VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	8 OF 73	1.01.02 (Note iv)	Contractor's aggregate liability to pay liquidated damages for failure to attain the functional guarantee shall not exceed Fifteen percent (15%) of the Contract Price.	Aggregate liability for liquidated damages for failure to attain the functional guarantee may please be limited to a maximum of 05% of the Contract Price	Provision of Bidding Documents shall prevail
481	SECTION – VI, PART-D	-	29 of 70	44.19.00	If any contractor worker found working without using the safety equipment like safety helmet, safety shoes, safety belts, etc. or without anchoring the safety belts while working at height the Engineer I/c shall have the right to regulate the payment in accordance with provisions of SCC. Further such defaulting worker shall be sent out of the workplace immediately and shall not be allowed to work on that day. Engineer I/c / Safety Officer of NTPC will also issue a notice in this regard to the contractor.	Owner is requested to delete the penalty clause. No penalty shall be imposed on contractor as mentioned in the clause.	Bidder's proposal reviewed and not accepted as safety is paramount. Bidder to comply tender specification requirements.
482	SECTION – VI, PART-D	-	12 of 70	31.00.00	The Contractor shall have total responsibility for all equipment and materials in his custody stores, loose, semi-assembled and/or erected by him at Site. The Contractor shall make suitable security arrangements including employment of security personnel to ensure the protection of all materials, equipment and works from theft, fire, pilferage and any other damages and loss. All materials of the Contractor shall enter and leave the Employer Site only with the written permission of the Employer in the prescribed manner.	Watch and ward arrangement shall be taken care by contractor. However, the arrangement for a strong security set up to insulate complete project contours shall be costumer's responsibility.	Bidder to consider the arrangements as specified in the specifications only.
483	SECTION – VI, PART-A	SUB-SECTION-IIB ELECTRICAL SYSTEM / EQUIPMENTS	11 OF 20	1.16.04.II. Point I)	Dismantling of existing fencing roads, temporary sheds and building, foundations, re-routing of pipelines above the ground and below the ground available in present scope of bays is also in the scope of the bidder.	Since, the underground facilities are not visible, the underground facilities to be modified/ re-routed/ dismantled may please be taken care by the Owner. Hence, Scope of dismantling may please be deleted from bidder's scope. If above proposal not acceptable to customer,please share the details (drawing, quantity in nos., weight in tonnage etc.) for any existing above and below ground facilities which are to be dimolished/ rerouted/ reinstalled/dismantled.	For extension of 765KV,132KV bays in existing switchyard, dismantling of existing road , fencing is applicable if required . The same will be finalised during detailed engg stage . The existing drawings of road, fencing will be provided during detailed engg stage .

484	SECTION-VI, PART-A,	SUB-SECTION-IIA-01 STEAM GENERATOR AND AUXILIARIES INCLUDING ESP	1 of 28	1.03.03	Supply of all consumables (except coal oil and limestone) like chemicals for chemical cleaning, passivation, inhibition etc., Catalysts, fuel oil & coal for firing be-yond declared quantity (during bid stage as per Sub Section-I, 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.	Fuel oil till Trial Run/ Initial Operation beyond predefined quantity may please be provided by Owner free of cost.	Bidder's proposal is not acceptable. Bidder to comply with the requirements of the technical specification.
485	SECTION VI, PART- B	SUB-SECTION E-59 CIVIL WORKS	2-3 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).	Procurement from BIS APPROVED SOURCES HAVING VALID BIS LICENCE may kindly be allowed without any approval from NTPC after the award.	Bidder to follow Technical Specifications . Procurement of steel to be done as per TS and mentioned qualifying requirements.
486	SECTION VI, PART- B	SUB-SECTION E-59 CIVIL WORKS	2-3 of 6	4.0 (b)	In case of non-availability of certain steel section/s i.e. Angle smaller than 100x100x10 mm, MS flats, rounds, square bars and chequered plate from above acceptable primary steel producers, an option is given to the Main contractor to source these sections directly from SAIL Conversion/Wet Leasing agent subject to the conditions given at point no. A) below:-------	Procurement from BIS APPROVED SOURCES HAVING VALID BIS LICENCE may kindly be allowed without any approval from NTPC after the award.	Bidder to follow Technical Specifications . Procurement of steel to be done as per TS and mentioned qualifying requirements.
487	SECTION VI, PART- B	LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB-SUPPLIER APPROVAL. SUB-SYSTEM:SG(MECH)	4 of 25	15	-	Procurement from BIS APPROVED SOURCES HAVING VALID BIS LICENCE may be allowed without any approval from NTPC after the award.	Bidder to follow Technical Specifications . Procurement of steel to be done as per TS and mentioned qualifying requirements.
488	SECTION-VI, PART-A	SUB-SECTION-I-A, Proveness	32 of 35	7.1	Bidder or its agency should have executed civil and steel structural works of 500 MW or higher capacity coal based/Lignite based power plant/Nuclear Power Plant, Earth work in filling involving mechanical compaction and cutting in rock, piling, Main power house building and Foundation for Turbo generator..-----	For civil work proveness criteria - subagency through consortium to be allowed. For civil work proveness criteria work in any infrastructure project may kindly be considered.	Bidder proposal is not acceptable.Bidder to follow PROVENNESS CRITERIA FOR CIVIL & STRUCTURAL WORKS requirements.
489	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. Fuel Oil -11200 kL Coal- 2.7 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.	Bidder requests NTPC to delete this clause. Coal & fuel oil should be provided free of all charges during Pre-commissioning and commissioning activities. If consumption of Coal & Fuel oil Qty. goes beyond the specificed quantity same has to be borne by NTPC and no penalty/recovery shall be imposed on bidder. May please confirm the same.	Bidder's proposal is not acceptable. Bidder to comply with the requirements of the technical specification.
490	SECTION-VI, PART-A	SUB-SECTION-I (INTENT OF SPECIFICATION)	32 of 35	7.1	Bidder or its agency should have executed civil and steel structural works of 500 MW or higher capacity coal based/Lignite based power plant/Nuclear Power Plant, Earth work in filling involving mechanical compaction and cutting in rock, piling, Main power house building and Foundation for Turbo generator..-----	Civil & Structural works execution should not be linked with prior experience of TG/Bunker/other building. It should be modified in line with NTPC earlier tender enquiries / contract under execution. Therefore, bidder requests NTPC to amend the QR as follows: "In case Bidder or its agency do not meet the requirements at 7.1 and the Bidder proposes to engage agency (ies) for civil & structuralworks on work volume basis (except for Chimney works), Bidder or its agency (ies) should have executed such works in the past and the annual rate of execution in the reference works should not be less than eighty percent (80%) of the asking rate of such works, (structural steel fabrication & erection, RCC, and earthwork in filling involving mechanical compaction) for which it is being engaged	Bidder proposal is not acceptable.Bidder to follow PROVENNESS CRITERIA FOR CIVIL & STRUCTURAL WORKS requirements.
491	SECTION – VI, PART-A	SUB-SECTION-IID CIVIL WORKS	8 OF 8	2.03.00	Bidder shall use a Lay down area as shown in tender GLP drawing. area marked in GLP totalling 50 acres (approx.) are identified as laydown /preassembly area. Fencing of the laydown area in the area marked for laydown is in bidder's scope.	We understand the Employer shall provided encumbrance free land for storageyard, Site office etc.	NTPC shall provided encumbrance free land of 50 acres (approx.) as laydown area and fencing will be in scope of bidders.
492	SECTION – VI, PART-A	SUB-SECTION-IIA-21 (SOLAR P.V.)	1 of 1	bullet point 3	Complete design, engineering, manufacture, inspection, supply, transportation, storage, insurance, civil work, erection, testing, commissioning and one year O&M of the grid connected rooftop Solar PV plants including all auxiliaries.	NTPC has one of the best O&M capabilities in India for power projects whereas Bidders do not have such competence. Even the system suppliers and equipment(s) supplier do not have such competency to operate the plant. Bidder requests NTPC to delete O&M services from EPC scope.	Bidder's proposal reviewed and not accepted. Bidder to comply tender specification requirement
493	SECTION – VI, PART-A	SUB SECTION IIA-11 CW SYSTEM	3 of 4	1.04.0 (8)	Supply of all chemicals and O&M for complete CW Treatment System for one (1) year operation after PG test including first fill for all the units, etc. for the complete plant as per system requirement and as specified.	Owner is requested to delete the scope of O &M from the scope of the bidder.	Bidder's proposal reviewed and not accepted. Bidder to comply tender specification requirement
494	SECTION – VI, PART-A	SUB-SECTION-IIC CONTROL & INSTRUMENTATION SYSTEM	18 OF 19	25.00.00	Comprehensive Annual Maintenance Services (AMS) for three (03) years after warranty period shall be provided for the following system 1. Distributed Digital Control, Monitoring & Information System (DDCMIS) 2. Analyzer instruments of DM / PT, LET, Chlorination (ClO2), CWT and CPU plant. 3. CEMS and EQMS 4. Public address system (PA) 5. Wireless Instruments & System including fieldbus instruments 6. Closed circuit television system (CCTV)	Owner is requested to delete the scope of three years Annual Maintenance Services (AMS) from the scope of the bidder.	Bidders proposal is not accepted .Bidder to comply technical specifications
495	SECTION – VI, PART-A	SUB-SECTION-IID CIVIL WORKS	1 OF 8	1.00.00	Site clearance including cutting of trees of girth less than 30 centimeters. Cutting of trees of girth more than 30 centimeters shall be done by the owner. However, removable and disposal of roots, trees of girth less than 30 centimeters and other vegetations in the bidder scope.	The land with approach for disposal shall be identified and arranged by the Owner within maximum leads upto 5 Km from Plant boundary free of all cost. Further, treee cutting of below 30 cm girth also to be done by owner.	Bidder's proposal is not acceptable.
496	SECTION – VI, PART-A	SUB-SECTION-IID CIVIL WORKS	5 OF 8	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. Coal bunkers with hoppers, Lime stone and Biomass silos, Chimney flue liners, CW duct liners can either be fabricated at factory in segments, transported and welded at site before erection or fabricated at site. For coal bunkers, hoppers and chimney flue liners, to prevent coal dust/flue gas leakages, the applicable field joints shall necessarily be welded.	Bidder request employer to provide sufficient levelled & graded land / space for development of site fabrication facility	Bidder's proposal is not acceptable.
497	SECTION – VI, PART-A TECHNICAL SPECIFICATION SECTION-VI, PART-A	Annexure- C to subsection II C SUB-SECTION-I-A PROVENNESS	20 of 21 31 of 35	N(1) 6.6 (f)	Safety Control Room: 1) IP based PTZ dome camera (HD)(wired/wireless) Proveness Criteria: The combination of offered make of IP based camera and offered make of video management software, for CCTV system, should have been in successful operation for a period of not less than one (1) year in a large industrial setup viz power plant, cement plant, petroleum refinery, steel plants or coal mine, having installation of minimum forty (40) nos. cameras.	As per Bid condition readiness of safety control room is Criteria for processing of RA bill, in view of above it is proposed that Camera with same specificaton shall be installed for safety control room however Provenes shall shall not be established at that time. Bidder's RA bills shall be processed without establishment of Proveness Criteria. Further, Proveness shall be established at the time of installation of O &M cameras as both has to be interchangable and earlier cameras shall be taken back by bidder.	Bidders proposal is not accepted .Bidder to comply technical psecifications
498	SECTION – VI, PART-A	SUB-SECTION-I INTENT OF SPECIFICATION	5 of 8	4.02.00	Pre-commissioning and commissioning activities Commissioning Fuel	Calorific Value and other parameters of Fuel Oil and Coal should be specified and same may please be incorporated in the formula for arriving at corrected coal quantity to be issued free of cost.	Bidder's proposal is not acceptable. Bidder to comply with the requirements of the technical specification.
499	SECTION – VI, PART-C	GENERAL TECHNICAL REQUIREMENTS	44 of 119	26.02.00	**Initial Operation:** ...(b) The 'Initial Operation' of the complete facility as an integral unit shall be conducted for 720 continuous hours. During the period of initial operation of 720 hours, the contractor shall conduct the trial run as per clause 26.05.00 to demonstrate the compliance to the requirements as stipulated in the CERC (Indian Electricity Grid Code) Regulations, 2023. The Initial Operation shall be considered successful, provided that each item/part of the facility can operate continuously at the specified operating characteristics, for the period of Initial Operation with all operating parameters within the specified limits and at or near the predicted performance of the equipment/ facility.	Operating parameters shall be within specified limits and at or near predicted performance provided necessary boundary conditions are met at the least. Hence, this portion of this clause may be modified as below. The Initial Operation shall be considered successful, provided that each item/part of the facility can operate continuously at the specified operating characteristics, for the period of Initial Operation with all operating parameters within the specified limits and at or near the predicted performance of the equipment/ facility **subject to the condition that specified boundary/battery limit conditions are met and fuel oil and coal with specified characteristics are fired.**	The specification requirements are clear, bidder to comply.
500	SECTION – VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES	11 of 73	1.01.03.02 (e)	Unless otherwise specified, the guarantees shall be based on design coal firing with coal/ ash analysis as given in the table at Annexure-IV-2, Sub-Section-I-B (Project Information) of Part-A of Technical Specification. The performance guarantee test will be carried out along with the Initial Operation of facilities or as per the time frame specified for a particular equipment/ plant/ system in the Technical specifications. Delay in conductance of the test beyond this period will not be normally permitted by the EMPLOYER. In the event of EMPLOYER agreeing to conductance of such tests after Initial Operations, for reasons not attributable to the EMPLOYER, as assessed by the Employer, no factor for ageing shall be considered for computing performance of the equipment.	This clause should specify a way out or suitable compensation if Employer is not able to fire design coal. Firing coal beyond specification may cause accelerated deterioration of equipment and same may be economically irreversible. This situation may lead to potential loss, both direct and indirect, to bidder. Owner is requested to delete the clause.	The specification requirements are clear, bidder to comply.
501	SECTION – VI, PART-E	LIST OF TENDER DRAWINGS			List not legible	kindly provide the legible list of applicable drawings	Drawings are legible and needs to be opened in latest version of the software else can be opened in web browser.

502	General	-	-		Building & Other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996	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. Customer shall not recover amount against BOCW Act from Bidder and proof of payment in the form of challan shall be submitted to Customer for compliance against BOCW Act.	Provisions of Bidding Documents shall prevail.
503	General				Approach road to construction site shall be done by NTPC.	NTPC to confirm	Bidder's query is not clear. Road for constrcution phase is in bidder's scope
504	General				Excavated earth disposal	NTPC to confirm the availablity of land for disposal along with approach road at the start of the project.	As such any disposal of earth is not envisaged. In case of requirement of disposal of balance back fill earth, the same shall be done in the areas in consultation with NTPC during the project execution.
505	General				2 Nos. of material entry/exit gates requied	NTPC to confirm the exact location of entry gate and material gate in GLP. These should be provided near bidders identified storage yard .	One material gate & one Main gate is availible for plant. For approach to stage III area one level crossing and one underpass is available.
506	General				Availability of Flats in township for bidders staff.	NTPC to confirm the availability with rates.	Bidder to note that no accomodation is available for Bidder's staff in NTPC township.

SL. NO	ENQUIRY SPECIFICATION					SPECIFICATION REQUIREMENT	COMMENTS / CLARIFICATIONS	NTPC Reply
	SEC/ PART	SUBSEC.	Chapter	PAGE NO.	CLAUSE NO.			
507	VI/A	VI	2	19 of 34	C.19.f	Stator winding bar and connector (one set comprises of one full pitch of top bars and two bars of each variant)	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.
508	VI/A	VI	2	20 of 34	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.
509	VI/A	VI	2	27 of 34	5.00.00	Process connection piping (for impulse piping/tubing, sampling piping/tubing and air Supply 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 requirements
510	VI/A	VI	2	2 of 34	A.6	Aux oil pump/startup oil pump 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-9 in this regard.
511	VI/A	VI	6	2 of 4	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's proposal not acceptable. Bidder to comply specification requirement.
512	VI/A	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.

SL. NO	ENQUIRY SPECIFICATION				SPECIFICATION REQUIREMENT	COMMENTS / CLARIFICATIONS	NTPC Reply
	SEC/ PART	SUBSEC.	PAGE NO.	CLAUSE NO.			
513	TECHNICAL SPECIFICATION SECTION-VI, PART-B BID DOC NO.	SUB-SECTION-D-1-5 CIVIL WORKS SALIENT FEATURES AND DESIGN CONCEPT	31 of 69	5.12.00	Fuel Oil Handling system The civil works are to be provided for following fuel oil handling system areas as mentioned below: a. Fuel Oil pressurizing pump house. **b. Pedestals and foundations to support the interconnecting piping between LDO tanks to the pressurizing pumps as well as piping from tanker unloading area to the** Unloading pump house and further on to the LDO tank. c. Oil water separator pit.	In Present Tender, Fuel oil unloading system is not being envisaged in contractor Scope and only Fuel Oil Pressurizing pump house is being envisagde. On account of Space Constrainst as well as Optimizing the Layout/Space Requirement, Bidder proposes to place new Fuel Oil Pressurizing pump House with tentative space requirement of (**30 m X15 m**)near to FOPH I & FPOH II. (Print Screen & Google Image Screen in given below) Kindly accept:-  	Bidder's proposal is accepted provided space 30mx15m availability at site.
	TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC.NO.	SUB-SECTION-III TERMINAL POINTS & EXCLUSIONS AND OWNER'S INPUT	PAGE 1 OF 3	1.06.00	Terminal point for LDO supply and return - Supply line (400 NB) from existing Stage-II FO storage tanks (2x4000 KL) - 200 NB return line header to the existing Stage-II FO storage tanks (2x4000 KL) for LDO return line from the boiler.		
514	TECHNICAL SPECIFICATION SECTION-V I, PART-A	SIPAT SUPER THERMAL POWER PROJECT STAGE-III (1X800 MW) EPC PACKAGE	PAGE 33 OF 34	SUB-SECTION-VI CHAPTER-02 STEAM TURBINE GENERATOR	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. For all remaining systems / equipments offered under the present scope of work, the spares shall be offered in totality as per the complete C&I items supplied in accordance with the applicable clauses of C&I items.	Please note that we have not found any detailed technical specification of hydrogen Generation plant in the tender. In view of same we understand that the same is not in bidder's scope. Please clarify. In case same is in Bidder scope, customer is requested to provide the detailed specification for the same.	Bidder's understanding is correct. Hydrogen generation plant is not in the scope of the bidder.
515	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B BID DOC. NO. CS	SIPAT SUPER THERMAL POWER STATION STAGE- III (1X800 MW) EPC PACKAGE	PAGE 1 OF 1	ANNEXURE IIIC-02B TG C&I CONTROL SYSTEM	Other Miscellaneous TG system controls : (1.) Condenser on load tube cleaning (as applicable) , **Debris Filter (as applicable)** & SCS controls (as applicable)	Since No Detailed Specification are Provided for Debris Filter, We understand same is not applicable. In case same is in Bidder scope, customer is requested to provide the detailed specification for the same urgently.	Debris filter is not in scope of the package
516	SIPAT SUPER THERMAL POWER PROJECT STAGE-III (1X800 MW) EPC PACKAGE	TECHNICAL SPECIFICATION SECTION-VI, PART-B BID DOC NO.	PAGE 1 OF 2	SUB-SECTION-E-9 COLTCS	CONDENSER ON LOAD TUBE CLEANING SYSTEM/DEBRIS FILTER FOR MAIN TURBINE CONDENSER AND DRIVE TURBINE CONDENSER (IF OFFERED)		
517	SIPAT SUPER THERMAL POWER PROJECT STAGE - III (1X800MW) BID DOC NO.: CS-8003-001-2	EPC PACKAGE APPENDIX-II TO SECTION – III (BDS)	PAGE 1 OF 10	Work Schedule for Sipat STPP Stage-III (1X800 MW)	Suggestive Schedule for award of BoP's Fire Detection & Protection System, **Fire tender and Fire Station Equipment**	Bidder understand existing **Fire Tender and Fire Station System/Building & its equipments** to be used & not envisaged in Present Tender. Also, Layout of Sipat is very Compact & accordingly, Same is not being considered in our Offer. If same is applicable, Kindly furnish the detailed Specification.	Bidder's understanding is correct that Fire Tender and Fire Station Equipment have not been envisaged.
518	SIPAT SUPER THERMAL POWER PROJECT STAGE-III (1X800 MW) EPC PACKAGE TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC.NO.	SUB-SECTION-III TERMINAL POINTS & EXCLUSIONS AND OWNER'S INPUT	PAGE 1 OF 3	TERMINAL POINTS & EXCLUSIONS AND Owner's INPUT Clause 1.01.00	Auxiliary Steam system a) 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. b) The stub/Tee-off connections with Isolating valve and blank flange on the auxiliary steam Unit/Station header for future connections as indicated in the tender drg. All the interconnection with existing piping system to be done by the bidder. All the valves and fittings, Anchors / Additional Supports required for interconnection shall be provided by the bidder	As per specification, **interconnection for Auxiliary Steam Station Header** with existing Stage -II with motorized isolation Valves and NRV are to be provided. Kindly specifiy the Parameters & Routing for the same. Also, Bidder understand **existing** Trestles/Pipe Rack etc. can be utilised for Routing of Same please Confirm.	Bidder to refer clause no. 2.10.03/Sub-section-A-01/Part-A/Section-VI & 16.01.01/Sub-section-02/Part-B/Section-VI alongwith their amendments SG.4 and SG.26 Bidder to make own arrangements for routing of Aux. steam interconnection pipes from existing stage. Existing pipe/cable trestle shall not be used.
519	SIPAT SUPER THERMAL POWER PROJECT STAGE-III (1X800 MW) EPC PACKAGE TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC.NO.	SUB-SECTION-III TERMINAL POINTS & EXCLUSIONS AND OWNER'S INPUT	PAGE 1 OF 3	TERMINAL POINTS & EXCLUSIONS AND Owner's INPUT Clause 1.02.00	Plant Water System a) Potable water supply line up to Terminal point for interconnection with colony supply line.	As per specification, interconnection for Potable water supply line up to Terminal point for interconnection with colony supply line is to be provided. Customer is requested to **Kindly specifiy the Parameters & Routing for the same**. Also, Bidder understand existing Trestles/Pipe Rack etc. can be utilised for Routing of Same please Confirm.	Potable water system for Colony is not under bidder's scope.
520	SIPAT SUPER THERMAL POWER PROJECT STAGE-III (1X800 MW) EPC PACKAGE TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC.NO.	SUB-SECTION-III TERMINAL POINTS & EXCLUSIONS AND OWNER'S INPUT	PAGE 1 OF 3	TERMINAL POINTS & EXCLUSIONS AND Owner's INPUT Clause 1.05.00	WATER SYSTEM a. Interconnection of Raw water common header with existing stage(s).	As per specification, interconnection for Raw water common header with existing stage(s) is to be provided. Customer is requested to kindly claify the following:- a) Routing of Raw Water Pipe line with **ST-III (1X800 MW)**. b) Bidder understands Raw Water pipe line has to cross MGR Railway line. Accordingly, Customer is requested to kindly clarify whether MGR Crossing envisaged is through Over head Line crossing or Under the MGR crossing i.e. Burried Pipeline to be planned. Kindly clarify c) Incase Customer, mentioned Burried Pipeline to be planned, Kindly mark the area for MGR Crossing along with necessary provisions to be illustrated for Crossing. Also, Bidder understand all approval for MGR Pipeline Crossing from Competent authority to be taken care by Customer.	Routing of the Raw water pipeline for Stage-III is already shown in GLP. Bidder to refer GLP. Burried pipeline under MGR crossing is proposed, however, based on feasibility bidder to decide. For MGR crossing, necessary approval from competent authority shall be sought by the owner.
521	SIPAT SUPER THERMAL POWER PROJECT STAGE-III (1X800 MW) EPC PACKAGE TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC.NO.	SUB-SECTION-III TERMINAL POINTS & EXCLUSIONS AND OWNER'S INPUT	PAGE 1 OF 3	TERMINAL POINTS & EXCLUSIONS AND Owner's INPUT Clause 1.06.00	Terminal point for LDO supply and return - Supply line (400 NB) from existing Stage-II FO storage tanks (2x4000 KL) - 200 NB return line header to the existing Stage-II FO storage tanks (2x4000 KL) for LDO return line from the boiler.	 A) During Site Visit, It was apprised by Customer that existing HFO Pumps placed in FOPH P/H can be dismantled & St-III HFO Pumps, can be placed inside existing FOPH pump house. Customer to kindly confirm whether existing P/H after dismantling of HFO pumps to be planned or new FOPH Pump House to be provided. B) Incase of new FOPH(Fuel Oil Pressurizing & Heating unit) to be planned. Kindly confirm space available near to FPOH I & FOPH II can be used. Also Provide Routing of planned FOPH lines. C) Bidder understand from Terminal point that only Supply line (400 NB) from existing Stage-II FO storage tanks (2x4000 KL) & 200 NB return line header to the existing Stage-II FO storage tanks (2x4000 KL) for LDO return line from the boiler is to be provided only. Provision for Interconnection is already available in existing system D) Bidder understand existing Trestles/Pipe Rack etc. whereever possible can be utilised for Routing of FOPH Line. please Confirm.	Space under utilisation for existing HFO not to be used for new pumps. New buidling as shown in the revised GLP need to be considered. Further, bidder to refer amendment sl. No. MH-52.
522	SIPAT SUPER THERMAL POWER PROJECT STAGE-III (1X800 MW) EPC PACKAGE TECHNICAL SPECIFICATION SECTION – VI, PART-A BID DOC. NO.	SUB SECTION- IIA-10 WATER TREATMENT PLANT	PAGE 10 OF 11	TERMINAL POINTS & EXCLUSIONS AND Owner's INPUT Clause 1.02.03	C) **Interconnection with existing Stage-I (3660 MW) DM Plant:** a) Interconnection of Stage-III DM tanks to be made with existing Stage-I Boiler fill pumps (Pump parameters- 175 m3/h & 150 mWC; tentative route length 3000 m). b) Necessary provision of isolating valve in existing Stage-I DM water line to its boiler and interconnecting DM water line from Stage-I to stage-III DM tank shall be in bidder's scope. c) Piping with associated valves and other equipment required to complete the system shall be in bidder's scope.	As per specification, Interconnection with existing Stage-I (3660 MW) DM Plant is to be provided. Customer is requested to Kindly specifiy the Parameters & Routing for the same. Also, Bidder understand existing Trestles/Pipe Rack etc. whereever possible can be utilised for Routing of Same. please Confirm.	Tentative route length has been furnished in the tender. Feasible route for interconnectionis to be decided by bidder. Bidder's understanding is not correct for utilising existing Trestles/Pipe rack etc.

523	General Layout Plan				Existing Sheds placed near to ST III 	 Customer is requested to kindly Clarify Present status of Sheds. We understand these **sheds will be dismantled by** Customer & encumberance free land will be provided by Bidder.Accordingly, Bidder can plan its facilities, as per requirements. Please confirm.	Bidder's understanding is not correct. These sheds are not to be dismantled. Bidder plan accordingly.
524	SIPAT STAGE-III (1X800 MW) EPC PACKAGE	TECHNICAL SPECIFICATION SECTION – VI, PART-A BID DOC. NO ..... SUB-SECTION-A-12 PLANT UTILITIES	PAGE 3 OF 11	2.00.00 €	Miscellaneous areas:All other areas like compressor houses, ash silo utility building, pump houses, MCC/switchgear rooms, electrical and C&I battery rooms,water system control building, **workshops**, stores, cable vaults, etc. covered under Bidder's scope and shall be ventilated by a combination of 'supply air fans & roof exhauster fans' or 'supply air fans & exhaust fans' or 'supply air fans & back draft dampers' or 'fresh air in-take louvers & exhaust air fans'. For ventilation of battery rooms and oil rooms, flame proof motor shall be used. Further, toilets shall be provided with propeller type exhaust air fans.	We understand **Workshop & its equipment** are already avaialble in SIPAT ST-I & II Units. Accordingly, Same is not being envisaged & required for STAGE III. Kindly confirm Bidders understanding. If same is required, Kindly provide Detailed specification of same.	Bidder's understandins is correct that O&M workshop has not been envisaged.
525	SIPAT STAGE-III (1X800 MW) EPC PACKAGE	Scheme of Gypsum Dewatering Scheme	PAGE 3 OF 12	2.00.00 €	Scheme of Gypsum Dewatering Scheme	Bidder request NTPC to allow Usage of CW Blowdown water in FGD Process Water areas in place of Clarifed Water like FGD NTPC Projects. Following, benefits can be availed by usage of same:- 1) Minimization of Water Consumption, 2) Optimization of Overall Water Cycle. Kindly review & Confirm.	Bidder to refer clause 13.02.00 of sub section IB, Part A and tender drawing POM-A-037 of technical specifications.
526	SIPAT STAGE-III (1X800 MW) EPC PACKAGE	General			FQA Lab	We understand FQA lab are already avaialble in SIPAT ST-I & II Units. Accordingly, Same is not being envisaged & required for STAGE III. Kindly confirm Bidders understanding. If same is required, Kindly provide Detailed specification of same.	Blider's understanding is correct. No FQA lab is envisaged.
527	SECTION-VI, PART-B	SUB-SECTION A - 11 CONDENSATE POLISHING UNIT	04 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 proposal reviewed and not accepted. Bidder to comply with tender specification requirement
528	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 correct with regard to nomenclature of resin separation & regeneration vessels. Bidder to comply with tender specifications.
	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 (XXXX-XXX-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) .		
529	SECTION-VI, PART-A	SUB-SECTION IIA-20 CONDENSATE POLISHING UNIT	2 of 2	2.04.00 j)	One (01) number of DM water Storage tank for CPU regeneration system.	Customer to please note that there is ambiguity regarding number of dedicated DM water Storage tanks required for CPU package as mentioned in different clauses of the specification and tender P&ID: Bidder understands that one (1) number dedicated DM water storage Tank of vertical cylindrical type in MS construction internally painted with epoxy has to be provided in case CPU regeneration facility are located away from DM plant regeneration area. Kindly confirm bidder's understanding.	Bidder's understanding is not correct. Bidder to provide two (02) numbers of DM water storage tank for CPU regenerations system. Bidder to also refere Amendment Sl. No. WS-7.
	SECTION-VI, PART-B	SUB-SECTION A - 11 CONDENSATE POLISHING UNIT	10 of 16	5.10.00	DM Water storage tanks for Condensate polishing Plant : Two (2) numbers of DM Tanks of vertical cylindrical type in MS construction internally painted with epoxy shall be provided. ..... Note: If CPU regeneration facility are located in DM plant regeneration area, total DM water .....Also, minimum two (2) numbers of DM water storage tanks shall be provided.		
	SECTION – VI, PART-E	LIST OF TENDER DRAWINGS	P&I Diagram for Condensate Polishing Plant (XXXX-XXX-POM-A-013 sheet 2 of 2)		As per CPU tender P&ID, 2 nos. DM storage tanks have been indicated.		
530	VI/B	B-06	13 OF 18	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.	Bidder proposal is accepted in line with the provisions of clause 7.00.00 of Sub section B-06 Part B Section VI
531	SECTION-VI, PART-F	SUB-SECTION-VI CHAPTER -01 SG & AUXILIARIES	PAGE 22 OF 38	1.22.12	Mandatory Spares- Belt (if applicable): 1 Set	For spare belt, bidder shall supply wear belt or sealing belt. We are not considering the mother / drainage belt in mandatory spares. **Kindly confirm.**	BIdder's proposal is not acceptable. Bidder to comply with te specfication requirements.

SL. NO	ENQUIRY SPECIFICATION				SPECIFICATION REQUIREMENT	COMMENTS / CLARIFICATIONS	NTPC Reply
	SEC/ PART	SUBSEC.	PAGE NO.	CLAUSE NO.			
532	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 specification- 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 applicable.**	Bidder to refer amendment no SG.13 in this regard.
533	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 Sipat STPP Stage-III 1 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 isolation 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. Also, it is mentioned that "Provisions shall be given in both the units". It shall be noted that for Sipat STPP Stage-III 1x800 MW project, only 1 unit is applicable.	Bidder's understanding is correct. Further, bidder to comply the specifications requirements for details on tap-off duct.
534	Section-VI, Part F	Sub-Section- VI (Mandatory Spares) Chapter-01 SG & Auxiliaries	Page 19 of 38	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.
535	Section-VI, Part F	Sub-Section- VI (Mandatory Spares) Chapter-01 SG & Auxiliaries	Page 19 of 38	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.
536	Part-E (Tender Drawings), Section-VI	Scheme of FGD-Absorber System (Drg. No: XXXX-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 specification). Temperature Transmitter (TT), Temperature 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, Temperature 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.
537	Part-E (Tender Drawings), Section-VI	Scheme of Air & Flue Gas Path with Instrumentation (With Tri-sector AH) Drg. No: 001 POM A 1, 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, in light grey colour.	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, in light grey colour. 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 the legend in the referred P&ID where in the light grey colour, mentioned in the Bidder's clarification, is to be read in conjunction with the Biddder's scope mentioned in Part-A of the technical specification. The provisioning for future installation of SCR is clear in the specification
538	Section-VI, Part B	Sub-Section- A-02 (SG & Auxilia-ries in-cluding ESP)	Page 58 of 67	22.01.02	Leak tightness testing of dampers for each type and size of damper at shop to demonstrate the guaranteed gas tight-ness 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.
539	Section-VI, Part A	Sub section-II, A-01	454/953	2.16.05A	Provision for Future Installation of SCR system	Please confirm whether the APH should be SCR ready or not	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
540	Section-VI, Part B (Book 1 of 5)	Sub section-II, A-02	487/963	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%, one year after demonstration of above gauranteed air-in-leakage	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
541	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 5 OF 38	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 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.
542	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 6 OF 38	1.05.00 Fans B. FD Fans Sl no. 8	FD Fans: Hydraulic servomotor Seal ring kit(complete)		
543	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 7 OF 38	1.05.00 Fans C. PA Fans Sl no. 8	PA Fans: Hydraulic servomotor Seal ring kit(complete)		
544	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 5 OF 38	1.05.00 Fans A. ID Fans Sl no. 10	ID fan impeller liner	Impeller liners and Casing liners are not applicable for Axial Reaction ID Fans as per Bidder design practise followed in all the super-critical 660 MW, 800 MW TPP's executed by Bidder 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. 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.
545	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 5 OF 38	1.05.00 Fans A. ID Fans Sl no. 11	ID fan casing liner		
546	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 9 OF 38	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.
547	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.
548	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 5 OF 38	1.05.00 Fans A. ID Fans Sl 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 be 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.
549	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 6 OF 38	1.05.00 Fans B. FD Fans Sl no. 4.4	FD Fans: Lube Oil / Hydraulic Oil system: Filters		
550	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 7 OF 38	1.05.00 Fans C. PA Fans Sl no. 6.4	PA Fans: Lube Oil / Hydraulic Oil system: Filters		

551	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 5 OF 38	1.05.00 Fans A. ID Fans Sl no. 12	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 description as Lube oil cooler assembly to offer complete assembly. Ambiguity may please be 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.
552	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 6 OF 38	1.05.00 Fans B. FD Fans Sl no. 11	FD Fans: Lube Oil cooler		
553	SECTION – VI, PART-F	SUB-SECTION-VI CHAPTER -01	PAGE 7 OF 38	1.05.00 Fans C. PA Fans Sl no. 11	PA Fans: Lube Oil cooler		
554	VI Part-A	II-B ELECTRICAL SYSTEM / EQUIPMENTS	3 of 20	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.
555	VI Part-B	A-02 STEAM GENERATOR & AUXILIARIES INCLUDING 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.	Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
556	VI Part-B	A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	64 of 67	8.07.00	Acoustic 3D Level Scanner Based Level Monitoring System / NOGS (Naturally Occurring Gamma Sensor) 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.
557	VI Part-B	B-0 GENERAL ELECTRICAL SPECIFCIATION	7 of 15	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.
558	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.
559	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.
560	VI Part-B	IIIC-04 MEASURING INSTRUMENTS (PRIMARY & SECONDARY)	5 of 36	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.
561	VI Part-A	SUB-SECTION-IIC CONTROL & INSTRUMENTATION SYSTEM	5 of 19	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	IIIC-17 ELECTRICAL ACTUATORS	2 OF 4	4.11.00	SIL Certification:		
562	VI Part-E / Tender SLD	Part-E/Elect_Cnl/ 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 SLD . However in Sec-B-04-/1.03.01, it is mentioned that ONAN transformers are allowed only till 2.0 MVA. Kindly review and confirm that ONAN LT transformers can be provided till 2.5 MVA. The same is in-line with the other NTPC EPC projects also. Owner may kindly review and confirm.	LT ONAN Transformer upto 2.5MVA is acceptable. Please refer Amendment Sl.No. EE-48.
	VI Part-B	SUB SECTION B-06 LT SWITCHGEARS & LT BUSDUCTS	13 of 18	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. 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.
563	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.
564	VI Part-B	SUB-SECTION-IIIC-04 MEASURING INSTRUMENTS (PRIMARY & SECONDARY)	2 of 36	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.
565	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.

566	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.	It is clarified that in case Mandatory spares are repeated at more than one location, Bidder to consider item/spare indicated with maximum quantity, unless otherwise specifically stated.
567	VI/A	SUB-SECTION-IV FUNCTIONAL GUARANTEES	17 of 73	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.
568	VI/A	SUB-SECTION-IV FUNCTIONAL GUARANTEES	17 of 73	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 specification requirement.
569	VI/A	SUB-SECTION-IV FUNCTIONAL GUARANTEES	20 of 73	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.	Bidder's proposal reviewed and not accepted. Bidder to follow the procedure as given in the clause 1.01.07.01 of sub section IV, Part A Section VI.
570	VI/A	SUB-SECTION-IV FUNCTIONAL GUARANTEES	2 of 73	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 requirement.
571	VI/A	SUB-SECTION-VI CHAPTER -01 SG & AUXILIARIES	31 of 38	5.01.00	3) Emitting Electrodes	Helical wire type emitting electrodes will be envisaged as per bidder's proven design & hence other types of emitting electrodes are not applicable. Customer is requested to suitably amend the specification title with "as applicable for the specific design"	Bidder to refer to amendment to technical specification sl. no. SG.11 in this regard.
572	VI/A	SUB-SECTION-VI CHAPTER -01 SG & AUXILIARIES	31 of 38	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 to amendment to technical specification sl. no. SG.8 in this regard.
573	VI/B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING 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.
574	VI/B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	60 of 67	2.01.01 (b)	The model study shall include all connecting duct work from air preheater gas outlets to the induced draft fans inlets, induced draft fan outlet to FGD inlet, FGD outlet to chimney flue inlet and also from the induced draft fan outlet to chimney flue inlet (in FGD bypass condition) including 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 excluded 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.
575	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.
576	VI/B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING 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.

577	VI/B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING 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.

SL. NO	ENQUIRY SPECIFICATION				SPECIFICATION REQUIREMENT	COMMENTS / CLARIFICATIONS	NTPC Reply
	SEC/ PART	SUBSEC.	PAGE NO.	CLAUSE NO.			
578	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION-IIIC-09 PROGRAMMABLE LOGIC CONTROLLER SYSTEM	Page 1 of 6	1.00.00.3	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	CHP/AHP/LHP/GHP are not envisaged under hazardous area	Bidder proposal is not acceptable. Bidder shall comply to specification requirement.
579	SECTION VI, PART-B	SUB-SECTION B-09 DG SETS	Page 10 of 13	9.00.00.ix	Six numbers of Duplex type or 12 nos. Simplex type Resistance element Temperature Detectors (RTDs) shall be suitably distributed at locations where highest temperatures may be expected in stator windings 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.
580	Section-VI/Part-A	SUB-SECTION-IIB ELECTRICAL SYSTEM / EQUIPMENTS	15 OF 20	1.19.00	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 (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) 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.
581	SECTION – VI, PART-A	Annexure C to IIC Contract quantity	9 of 21	1.01.00	CONTROL DESKS AND PANELS Following are the contract quantities of control desks: Arc shaped Control Desks shall be provided as mentioned 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.
582	SECTION –VI, PART-B	SUB SECTION B-06 LT SWITCHGEARS & LT BUSDUCTS	11 of 18	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 power 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 offered 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 station(EPB) "normally open (NO)" contact input from field and provide potential free output to DDCMIS to avoid probable mixing of switchgear control voltage with DDCMIS 24V DC voltage. This aux. relay shall have 2NO+2NC contacts.	EPB shall be wired directly as a DI to IMC and then communication established to DDCMIS through Profibus communication. No separate H/W is considered 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.
583	SECTION VI, PART-B	SUB-SECTION-B-08 HT LT AND CONTROL CABLES	5 of 7	4.00.05.a	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.
584	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.
585	SECTION VI, PART-B	SUB-SECTION B-0 GENERAL ELECTRICAL SPECIFCIATION	9 of 15	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.
586	SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	26 of 35	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 Bidder shall be used. Please confirm	Bidder understanding is not correct. Specification cl.no. 5.12.1 Sub -Section I-A Section-VI, Part-A to be followed.
587	SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	1 to 35 of 35	5	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 Bidder shall be used. Please confirm.	Bidder understanding is correct. For provenness criterion of electrical equipments Specification cl.no. 5.0 Sub -Section I-A Section-VI, Part-A to be followed.
588	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.
589	SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	26 of 35	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.

590	SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	26 of 35	5.12.1.2	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. 5.12.1 Sub - Section I-A Section-VI, Part-A to be followed.
591	Section-VI/Part-A	SUB-SECTION-IIC CONTROL & INSTRUMENTATION SYSTEM	Page 5 of 19	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/O's 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.	Cabling from CHP DDCMIS to external CHP is not considered in Bidder 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.
592	SEC VI/ PART-A	SUB-SECTION-IIC CONTROL & INSTRUMENTATION SYSTEM	PAGE 8 OF 19	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

Sl. No.	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	NTPC Reply
	Section	Sub-Section	Page No.	Clause No.			
593	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 of 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 requested 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.
594	VI	Part B--A18	3 of 14	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 all biomass conveyors complying to technical specification.
595	VI	Part B--A18	5 of 14	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.
596	VI	Part B--A18	8 of 14	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.
597	VI	Part B--A18	10 of 14	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.	Multi sensor detectors shall be provided inside AHU room and Duct detectors shall be provided inside return air duct.
598	VI	Part B--A18	8 of 14	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.

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	NTPC Reply
	Section	Sub-Section	Page No.	Clause No.			
599	VI (PartA)	VI (Chapter-02)	6 OF 34	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.
600	VI (PartA)	VI (Chapter-02)	12 OF 34	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.
601	VI (PartA)	VI (Chapter-02)	12 OF 34	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.
602	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.
603	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.
604	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-12 in this regard.
605	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.
606	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.
607	VI (PART-B)	A-08	9 OF 19	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.	Bidder's understanding is correct. Body of the Spring Loaded Bypass Valve shall be of A216 Gr.WCC in place of A234 Gr. WCC.
608	VI (PART-B)	LIST OF ITEMS REQUIRING QUALITY PLAN AND SUB SUPPLIER APPROVAL (E-60)	7 OF 12	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.
609	VI (PartA)	II- A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	22 OF 28	2.24.01 (b) (2) (Vi)	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.
610	VI (PartA)	II- A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	PAGE 25 OF 28	2.30.00Sl. no. 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.	Safety valves with sound monitoring (IOT based) is not available. Hence safety valves shall be as per earlier executed projects without sound monitoring.	This shall be discussed during detail engineering in line with specification requirement.
611	VI (PartA)	II- A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	PAGE 25 OF 28	2.30.00Sl. no. 8	8 d. Sonicleak 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 & ERV with sonic leak detection is not available. Hence safety valves and ERV shall be as per earlier executed projects without Sonic leak detection system.	This shall be discussed during detail engineering in line with specification requirement.
612	VI (PART-B)	E-60 INDICATIVE VENDOR LIST	PAGE 14 OF 25	Sl No. 40	ELECTROMATIC RELIEF VALVE (ERV): Bidder is not appearing in the approved vendor list for Electromatic relief valve	Bidder is to be included as approved vendor supplying Electromatic relief valve.	To be discussed during detail engineering with relevant supporting documents

SL NO	CHAPTER/ VOLUME	CLAUSE NO	DESCRIPTION AS GIVEN IN THE TENDER DOCUMENTS	COMMENTS/ CLARIFICATION	NTPC Reply
613	Technical specification Section-VI & Technical specification Section-VI, Part-E: tender Drawings (Electrical)	Cl. 1.05.00 of Section-VI & Drg no. : 0000-501-POE-A-002	Monitoring system of GT & Transformer outdoor layout	We understand that composite monitoring system (CMS) is not required with 315 MVA, 765 Kv GT. Customer to confirm the same, and arrange to furnish the revised Transformer outdoor layout drg no. 0000-501-POE-A-002 after removing CMS as shown in drawing.	Bidder's understanding regarding Non-applicablity of CMS for GT is correct. Please refer amendment Sl.No. EE-66.
614	Technical specification Section-VI & Technical specification Section-VI, Part-B: (book 2 of 5 -electrical)	1.04.07 _Winding and bushing details: -- as per & Cl. no. 6.00.00 Insulation level	Cl:1.04.07 _Winding and bushing details: -- For GT: as per Annexure-A of CEA.... & Cl. no. 6.00.00 Insulation level for 800 kV class transformer windings & bushings	Insulation level for 800 KV class transformer winding and bushing at both clauses of respective documents are different. Customer to confirm which insulation level for 800 KV winding and bushing shall stand applicable.	Clause no. 1.04.07 to be followed for BIL of winding and GT Bushing. Refer Amendment Sl.No EE-49.
615	Technical specification Section-VI	1.07.00	Neutral Grounding Reactor (NGR)	As per SLD, GT is shown to be directly grounded. Therefore, we understand NGR for 315 MVA, 765 Kv GT is not required. Customer to confirm the same	Bidder query is not correct. Clause no 1.07.00 refers to Neutral Grounding Resistor(if applicable). Further, Neutral Grounding Resistor is not applicable for GT.

S No	BID SPECIFICATION				SPECIFICATION REQUIREMENT	Pre-Bid Queries/ Clarifications	NTPC Reply
	Section	Sub-Section	Page No.	Clause No.			
616	VI (PartA)	II- A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	22 OF 28	2.24.01 (b) (2) (Vi)	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.
617	VI (PartA)	II- A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	PAGE 25 OF 28	2.30.00Sl. no. 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.	Safety valves with sound monitoring (IOT based) is not available. Hence safety valves shall be as per earlier executed projects without sound monitoring.	This shall be discussed during detail engineering in line with specification requirement.
618	VI (PartA)	II- A-01 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	PAGE 25 OF 28	2.30.00Sl. no. 8	8 d. Sonicleak 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 & ERV with sonic leak detection is not available. Hence safety valves and ERV shall be as per earlier executed projects without Sonic leak detection system.	This shall be discussed during detail engineering in line with specification requirement.
619	VI (PART-B)	E-60 INDICATIVE VENDOR LIST	PAGE 14 OF 25	Sl No. 40	ELECTROMATIC RELIEF VALVE (ERV): Bidder is not appearing in the approved vendor list for Electromatic relief valve	Bidder is to be included as approved vendor supplying Electromatic relief valve.	To be discussed during detail engineering with relevant supporting documents
620	VI/ A	IIA-03	1 of 1		Biomass 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. M/s NTPC is requested to indicate any special monitoring & analytical instrument for bio-mass co-firing in tender specification.	Bidder to consider all monitoring and analytical instruments as per system/process specified in technical specifications.
621	VI/ A	IIB	3 of 20	1.05.02	LV SWITCHGEARS… 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 controllers and associated specification requirements. M/s NTPC is requested to confirm.	Bidder proposal is acceptable.
	VI/ B	B-0	7 of 15	3.06.00 (f)	LV Switchgears 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/ B	B-0	10 of 15	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		
622	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 which is 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 ammendment sl. No. C-17 in this regard.
623	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 technical specification .Further same shall be discussed & finalised during detal engineering
624	VI/A	II-A-01	24 of 28	2.30.00 (6)	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 technical specification .Further same shall be discussed & finalised during detal engineering
625	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 technical specification .Further same shall be discussed & finalised during detal engineering

626	VI/A	II-C	12 of 19	4.00.00 (d)	Temperature Transmitters: (i) 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.	For temperature elements of PA/FD/ID fan bearings & HT motor bearings, as per Cl 4.00.00 (d)-Vol VI-Part A-Sec II-C-Page 12 of 19, one number of dual input TT & two numbers of single input TT are envisaged. M/s. NTPC is requested to confirm.	Bidder's proposal is not acceptable. Bidder to follow Clause no 7.07.00 of Part-B, Chapter B-02 of Section-VI.
	VI/B	II-A-02	31 of 67	10.08.07	PRIMARY AIR FANS (d) Three nos. Duplex Pt-RTD (100 ohm at 0 deg.) with dual input temperature transmitters shall be provided for local and remote monitoring of each bearing metal temperature of fans.		
	VI/B	II-A-02	31 of 67	12.05.00	FD & ID FANS Fan Bearings (c) Three nos. Duplex Pt-RTD (100 ohm at 0 deg.) with dual input temperature transmitters shall be provided for local and remote monitoring of each bearing metal temperature of fans.		
	VI/B	II-B-02	3 of 4	7.07.00	Each bearing of HT motor shall be provided with 3 numbers duplex RTDs connected to three numbers dual input transmitters with display.		

SL. NO	ENQUIRY SPECIFICATION				SPECIFICATION REQUIREMENT	COMMENTS / CLARIFICATIONS	
	SEC/ PART	SUBSEC.	PAGE NO.	CLAUSE NO.			NTPC Reply
627	SECTION – VI/PART-E				Civil Tender drawings - GLP (TP-17 & 18)	1) There are space constraints for providing new conveyor along existing conveyor as shown in GLP. For tapping from the existing TP, there is huge quantum of work involved w.r.t.modifications, dismantling, re-erection & strengthening of existing TP. NTPC to ensure that required design related inputs like design document, staad file, loading details, all civil & strucutural drawings etc. for the existing TP shall be provided. 2) Cable rack outside TP needs to be re-routed, Electrical, civil and structural inputs shall be provided by NTPC. 3) For the modification works, site fabrication works may be involved, bidder should be allowed to do welding/welded connections for the same. 4) Any system shut down due to above modification shall be taken care by NTPC and bidder shall not be liable for any financial implication for the same.	Bidder to refer Ammendment S. No. No. D1-46 for Civil Drawings. Bidder to refer Cl. 8.07.00 of Section-VI, Part-B, Sub-Section-D-1-8. The shutdown proposal of the system shall be submitted well in advance to NTPC for review & necessary action as per contract.
628	SECTION – VI/PART-E				Civil Tender drawings - GLP (TP-24 & 25)	1) There are space constraints for providing new conveyor along existing conveyor as shown in GLP. For tapping from the existing TP, there is huge quantum of work involved w.r.t.modifications, dismantling, re-erection & strengthening of existing TP. NTPC to ensure that required design related inputs like design document, staad file, loading details, all civil & strucutural drawings etc. for the existing TP shall be provided. 2) Any system shut down due to above modification shall be taken care by NTPC and bidder shall not be liable for any financial implication for the same.	Bidder to refer Ammendment S. No. No. D1-46 for Civil Drawings. The shutdown proposal of the system shall be submitted well in advance to NTPC for review & necessary action as per contract.
629	Section-VI/ Part-E	Tender Drawings	PAGE 1 OF 7	GLP	General Layout Plan (dwg. No. XXXX-999-POC-F-001)	Bidder request NTPC to allow site fabrication for tapping point related structures/Chutes (TP-17,TP-18,TP-24 & TP-25) as lot of modification work is involved and it has to be done at suite at site condition.	Bidder to refer Cl. 8.07.00 of Section-VI, Part-B, Sub-Section-D-1-8
	Section-VI/ Part-A	SUB-SECTION-IIA-15 COAL CONVEYING & BIOMASS HANDLING PLANT	PAGE 1 OF 6	1.00.00	SCHEME OF COAL CONVEYING PLANT: Coal required for the proposed unit shall be catered from the existing Coal Handling plant ……..		
630	Section-VI/ Part-A	SUB-SECTION-IIA-15 COAL CONVEYING & BIOMASS HANDLING PLANT	PAGE 1 OF 6	1.00.00	SCHEME OF COAL CONVEYING PLANT: Coal required for the proposed unit shall be catered from the existing Coal Handling plant ……..	Bidder request customer to provide following drawings for checking of feasibility/fouling etc. 1. Cable gallery/bridge of CHP stage-II which covers areas of TP-17,TP-18,TP-24 & TP-25, Pump house near TP-27, proposed area of CHP stage-III areas like pump house near TP-27,TP-28 etc. 2. GA of CHP pump house near proposed TP-28 3. GA of MCC near Proposed TP-27 & MCC near proposed TP-26 4. Piping layout drawings of Fire fighting,DS,PW,SW water systems for in and around areas covering of TP-17,TP-18,TP-24 & TP-25, Pump house near TP-28 and MCC near Proposed TP-27 & MCC near proposed TP-26 5. Fire water piping and related pipes drawings marked in plot plan near proposed TP-26 6. Interconnecting chutes and flap gate drawings of TP-17,TP-18,TP-24 & TP-25. 7. Roads & Drain layout drawings near TP-17,TP-18,TP-24 & TP-25 and CSSP-II.	Critical drawings are already shared in tender. Further, drawings required shall be shared with successful bidder during detailed engineering
631	Section-VI/ Part-E	Tender Drawings	PAGE 1 OF 7	GLP	General Layout Plan (dwg. No. XXXX-999-POC-F-001)	Bidder understands that tree cutting, dismantling of EMD sheds near proposed TP-28/27, removal of mill reject/scrap/temporary canteen & sheds etc. in proposed CHP stage-III area, Biomass handling area and LHP/GHP area is in Customer scope. **Please confirm.**	Bidder to refer Amendment D1-27 for revised GLP for shed to be dismantled by owner
632	Section-VI/ Part-A	SUB SECTION-IIA-14 LIMESTONE & GYPSUM HANDLING PLANT	PAGE 4 OF 5	3.07.00	Gypsum from storage shed shall be loaded to user's trucks directly from discharge chute or using front end loader/ pay loader	Following equipments/facilities are not considering in Bidders scope of supply. 1. Front end loader/ pay loader 2. Dozers 3. Front end loader/ pay loader & dozer sheds 4. Area repair shop 5. Locomotive shed etc. **Please confirm.**	Bidder's understanding is correct
633	Section-VI/ Part-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	PAGE 79 OF 87	4.02.06	i) The coal delivered to power station, shall be of size 250 mm and below. However, occasionally 1-2% coal of 400 mm lump size may also be encountered. ii) Due to open cast method of mining involved, the coal may contain shale and sand stone as high as 20%. Also, occasionally, metal pieces like broken shovel teeth, brake shoe, wires etc. may also come along with coal	Stage-III CHP system is designed for crushed coal, hence refered clauses is not applicable for CHP. **Please confirm**.	Bidder's understanding is correct for i) Further, ii) is applicable for crushed coal.

SL. NO	ENQUIRY SPECIFICATION				SPECIFICATION REQUIREMENT	COMMENTS / CLARIFICATIONS	NTPC Reply
	SEC/ PART	SUBSEC.	PAGE NO.	CLAUSE NO.			
634				Drg no. XXXX-999-POC-F-005	General Layout Plan		Bidder to refer Ammendment No . D1-27
635	VI-B	B-17	49 of 98	11.03.01	The detailed survey shall be carried out along the Transmission Line alignment by successful bidder/contractor. The report shall be in line with CBIP-Manual- Transmission line -323 guidelines.	During Site visit, and subsequesnt discussion with transmission line OEMs following observations are made in 765kV Line routing (as per the General layout plan and the marked notch area) Due to limited space, and close vicinity to cooling tower and narrow corridoor space,feasibility of overhead transmission line is practically difficult. It is requested to provide land corridor of minimum 64 metres (Same is the requirement as per CBIP manual)	Bidder refer to Amendment Sl. No:EE-47, Annexure-E2 (Preliminary route survey)

SL. NO	ENQUIRY SPECIFICATION				SPECIFICATION REQUIREMENT	COMMENTS / CLARIFICATIONS	NTPC Reply
	SEC/ PART	SUBSEC.	PAGE NO.	CLAUSE NO.			
636	VI -B	IIIC-04	19 of 36	10.01.07	AAQMS CO Analyser Range: 0-1 PPM to 0-1000 PPM	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.	AMBIENT AIR QUALITY MONITORING STATION (AAQMS) is not in the scope of the bidder
637	VI -B	IIIC-04	16 of 36	10.00.00	AMBIENT AIR QUALITY MONITORING STATION (AAQMS)	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: 1. SOX, NOX, CO, O3 ANALYSER, Multi gas Calibration system, PC based Data logger for individual AAQMS stations, UPS - 04 Sets 2 Mercury Analyser - 01 Set 3 Suspended Particulate Monitors - 08 Sets 4 Sampling Inlet Heads – PM2.5, PM10, TSP - 04 Sets 5 PC Based Data Logger for Central Station with A4 Laser Printer Along with UPS - 01 Set 6 Meteorological sensors- Wind speed sensor, wind direction sensor, air temp sensor, relative humidity sensor, solar radiation sensor, rain gauge - 01 Set 7 Meteorological Mast - 01 Set 8 Sample Handling System Including Compressed Air For Purging. - 04 Set 9 CDAS and Connectivity of CDAS Station to Individual AAQMS Stations - 01 Set 10 Window A/C for AAQMS Stations (1.5 Tons Each) - 8 nos	
638	VI-A	IIA-23	2 of 2	2.01.00	Sr. No. 45 – Stop Watch	QUANTITY OF STOP WATCH IS NOT AVAILABLE IN THE TENDER DOCUMENTS. BIDDER IS PROPOSING 01 No. QUANTITY BASED ON RECENT SUPPPLY/REQUIREMENT IN NTPC PROJECTS.	Bidder's understanding is correct.

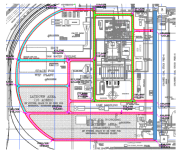
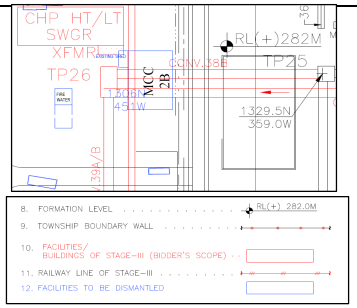
SL. NO	ENQUIRY SPECIFICATION				SPECIFICATION REQUIREMENT	COMMENTS / CLARIFICATIONS	NTPC Reply
639	VI	C	46 of 119	28.00.00	Training of Employer's Personnel	We request that the number of man-months training shall be mutually agreed after Award. All the expenditure towards travel (internal & external), 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.
640	VI-A	VI			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.	Bidder's proposal reviewed and not accepted. Bidder to comply technical specification requirements
641	VI-A	VI		13.00.00	Mandatory Spare List	Bidder shall indicate "Not Applicable" against any of the spare if the same is Not Applicable as per its/OEM/vendor design. Technical equiv. shall be supplied if it is establish during detailed engg., however, there shall be no rebate for NOT applicable items indicated by the bidder in its offer if no tecnical equiv. item is found . Wherever Lot price is quoted by the bidder for a clause/system in the list of mandatory spares, the offered price will remain same if any sub-item is found Not applicable during detailed engg. for the design of the supplier and no rebate shall be offered for such items.	Bidder to refer clause 13.00.00 of sub section VI of Part A of technical specifications in this regard.
642	VI-A	II-D	Page 6 of 8	2.01.00	**LABOUR & STAFF COLONY**	We request NTPC to provide Land for labour & staff colony within Plant boundary. Availability of above land within plant boundary shall help in smooth execution of the project.	Bidder's proposal is not acceptable. Bidder to refer clause no. 2.01.00 f).
643	VI-A	II-B & II-C	Page 3 of 20 Page 18 of 19	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.	Bidders 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
644	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
645	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	Bidder's proposal reviewed and not accepted. Bidder to comply technical specification requirements
646	SECTION – VI, PART-A	SUB-SECTION-I INTENT OF SPECIFICATION	1 of 8	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 to be obtained by NTPC for Sipat EPC project.	Bidder's proposal is not acceptable. Bidder to comply tender requirements.
647	General				Dismantling of existing structures/substructures/facilities, as per specifications.	Bidder request NTPC to dismantle the super-structure / sub-structure of various facilities/buildings specified in bidding documents prior to award, and provide the encumbrance free land for complete facilities under the scope of bidder as on date of NOA. NTPC to confirm and issue suitable amendment.	Bidder to refer Amendment D1-27 for revised GLP for sheds to be dismantled by owner. Further, removal of any sub-structure is in bidder's scope.
648	General				Movement of ODC consignment in Material Storage Yard wherein existing overhead transmission line is present	Bidder request NTPC to arrange any type of clearance/ liasoning/ associated fees etc. with state authority for shutting down the transmission line for movement of materails and any delay in arranging the permission shall be attributable to NTPC.	Bidder to arrange all clearances on their own and has to plan its own arrangement for movement of ODC consignment up to plant site.
649	General				Approach to site/Material Storage Yard	Bidder request NTPC proper entry to site 7 Stogare yard/lay down area. The complete land for Stage-II is in MGR bulb wherein only 02 entry points are available. One is underpass which is very low in height and material/T&P movement is not possible thru it. Second access is above groung, howver, the MRG rail has to be crossed for that and we envisage following difficulties : 1) Each Consignment has to cross MGR crossing with overhead transmission line as height of underass is too low. Due to the transmission line each of the ODC may be stranded at the aforesaid rail crossing. It is most likely that the transmission line has to be removed for few of the ODC consignments. Due to retention of vehicles, contractor will have to pay huge demurrage charges also to its transporter as hydraulic trailers carrying ODC consignment have very high demurrage charges. 2) During Peak erection time, movement of vehicles will be hindered due to Railway crossing and this may lead to long queue of vehicles within existing plant. 3) 20 Acre of laydown area is outside MGR. Movement of erection material/equipment from that area to the erection site is difficult. This has safety issues also. NTPC to provide clear access to the site/storage/laydown are.	Bidder has to plan the execution activities based on the site assessment. Materials which cannot be transported through RUB, Bidder has to co-ordinate with the owner for movement over MGR rail crossing. For critical ODC consignment requiring removal of MGR overhead transmission line inside the plant, the successful bidder has to furnish the exact movement plan to the owner well in advance for making necessary arrangement for the same. Bidder has to comply the tender requirements.

SL. NO	ENQUIRY SPECIFICATION				SPECIFICATION REQUIREMENT	COMMENTS / CLARIFICATIONS	NTPC Reply
	SEC/ PART	SUBSEC.	PAGE NO.	CLAUSE NO.			
650	Section-VI/ Part-A	Sub Section VI Chapter 03 AHP	1 of 14	1.01.02	Bottom ash hopper Liners	Bidder understands that this shall be "Bottom ash hopper Liners (As applicable)"	Bidder's understanding is correct. Bidder to refer Amendment Sl MH-47.
651	Section-VI/ Part-A	Sub Section VI Chapter 03 AHP	4 of 14	4.02.02	Air lock/Pump tank outlet valve	Bidder understands that for 1st stage ash conveying the outlet valve is not applicable and hence the mandatory spares shall also be not applicable. Kindly confirm	Bidder to note that for 1st stage conveying, referred spares shall be provided in case it is applicable. Hence, Technical specification is clear.
652	Section-VI/ Part-A	Sub Section VI Chapter 03 AHP	5 of 14	4.02.03	Air lock/Pump tank inlet/outlet valve seats (each)- 16 nos	Bidder understands that for 1st stage ash conveying the outlet valve is not applicable and hence the mandatory spares shall also be not applicable. In such case, the quantity should be 8 nos. Kindly confirm	Bidder to note that for 1st stage conveying, referred spares shall be provided in case it is applicable. Hence, Technical specification is clear. Bidder to comply for quantity of spares.
653	Section-VI/ Part-A	Sub Section VI Chapter 03 AHP	5 of 14	4.03.00	Vacuum Conveying system	Bidder understands that this shall be read as " Vacuum Conveying system (if applicable)"	Bidder's understanding is correct. Bidder to refer Amendment Sl MH-47.
654	Section-VI/ Part-A	Sub Section VI Chapter 03 AHP	7 of 14	4.08.00	Vacuum Pump	Bidder understands that this shall be read as " Vacuum pump (as applicable)"	Bidder's understanding is correct. Bidder to refer Amendment Sl MH-47.
655	Section-VI/ Part-A	Sub Section VI Chapter 03 AHP	8 of 14	5.00.00	Fly Ash Conveying Line / isolation valves/ fittings couplings	Bidder understands that this clause pertains to Vacuum Conveying system and hence it should be " As applicable" Kindly confirm.	Bidder's understanding is correct. Bidder to refer Amendment Sl MH-47.
656	Section-VI/ Part-A	Sub Section VI Chapter 03 AHP	9 of 14	6.01.02	Storage Silo Aeration pads	Bidder understands that these aeration pads are either the fabric or ceramic stones which are used in fludidiisng pads. Kindly confirm	Bidder's understanding is correct. Aeration Pads are fluidising pads and either Fabric type or Ceramic stone type or other types proven for such application.
657	Section-VI/ Part-A	Sub Section VI Chapter 03 AHP	9 of 14	6.01.03	Storage Hopper aeration Sectionalizing valves	Kindly elaborate these valves.	Generally, there is one common header for fluidization of all the Silos/Hoppers. However, fluidization is done in loaded Silos/Hoppers. Hence, Fluidization is done in individual Silo/Hopper as per the requirement. The valve used for that is termed as sectionalizing valve.
658	Section-VI/ Part-A	Sub Section VI Chapter 03 AHP	9 of 14	6.01.06	Interconnection Valves at silo top/ FA transport pressure lines	Bidder understands that these valves refer to valves provided on silo top or on piperack near silos for interconnection of FA transport pressure lines in different silos.	Bidder's understanding is correct.
659	Section-VI/ Part-A	Sub Section VI Chapter 03 AHP	9 of 14	7.00.00	Bottom & Fly Ash Slurry Disposal System	Bidder understands that this refers to BA Transportation pumps and combined ash slurry disposal pumps. Kindly confirm.	Bidder's understanding is correct. Bidder to refer Amendment Sl MH-47.
660	Section-VI/ Part-A	Sub Section VI Chapter 03 AHP	10 of 14	7.03.01	Ash Slurry Pipes and fittings (bends)- 25% of popluation of each size	1. Bidder understands that 25% quantity on bends used in ash slurry pipes are only to be considered for mandatory spares. Kindly confirm. 2. In case pipes are also to be considered for mandatory spares, then kindly review the quantity mentioned as 25% as we feel 5% of total population of ash slurry pipes are sufficient in place of 25%. Kindly confirm. 3. In case pipes are also to be considered, we understand that it shall be on MS pipes and not on cast basalt lined pipes. Kindly confirm.	Bidder to refer Amendment Sl MH-47.
661	Section-VI/ Part-B	Sub Section A-21 AHP	4 of 42	1.04.00	Sl No. 3- Size of valves- Same as parent pipe size.	In case of 225 NB pipe size, the valves shall be 200 NB. Kindly confirm.	Bidder's proposal is not acceptable. Bidder to comply Technical specification requirement.
662	Section-VI/ Part-B	Sub Section A-21 AHP	13 of 42	1.09.00	Sl No. 5- Approximately 350 mm seal will be maintained.	Bidder understands that the based on the expansion details of respective hoppers provided by boiler manufacturer, the water type expansion joints shall be designed. Kindly cofnirm.	Bidder's understanding is correct. Approximate seal (towards principal z-z axis) has been specified.
663	Section-VI/ Part-B	Sub Section A-21 AHP	13 of 42	1.10.01	2nd para- The feeder ejectors shall be designed to extract the ash at the above specified rates, for a minimum of 25 mm wear on the throat without changing the input water parameters…	Bidder understands this 25 mm wear on the throat is not applicable to feeder ejectors. This clause is only applicable for jet pumps. Kindly confirm.	Bidder's understanding is correct.
664	Section-VI/ Part-B	Sub Section A-21 AHP	27 of 42	3.03.00	Sl No. 2- Same as parent pipe size	For special applications and proven design of AHP suppliers, size of few valves like vent valve above vessel, equalising/pressurising valve of ash vessels, control valve (as applicable) shall not be same as parent pipe size. The valve sizes shall be as per recommendation and proven design of OEMs of AHP. Kindly confirm	Bidder's proposal is not acceptable. Bidder to comply Technical specification requirement.
665	Section-VI/ Part-B	Sub Section A-21 AHP	34 of 42	5.01.00	Sl No. 3- "15% margin shall be provided in the pump capacity for all water pumps"	Bidder requests for 10% as per all executed NTPC projects against specified 15% margin. Kindly confirm.	Bidder's proposal is not acceptable. Bidder to comply Technical specification requirement.
666	Section-VI/ Part-B	Sub Section A-21 AHP	34 of 42	5.01.00	Sl No. 5 i) Pump speed- 1500 rpm	Bidder requests that in case of HP seal water pumps (if provided), which are high head and low flow pumps, 2900/3000 rpm pumps will also be accepatble to NTPC. Kindly cofnirm.	Bidder's proposal is not acceptable. Bidder to comply Technical specification requirement.
667		Tender Drawings- Plot plan			Temporaray/Permanent structures in the plot plan	1. Bidder requests for updated autocad copy of the Plot plan. Plot plan should be updated with all facilities prevailing/constructed at site like cable trestles in CHP area, Ash silos, MCC rooms, cable trestles in ash silo area,culverts, any other facilities overground/underground which are permanent in nature for aasessment of the owrk involved in the contract. 2. Bidder understands that the facilities which are not shown in plot plan are either temporary structure or minor in nature and customer will provide clear front of all the encumbraces for carrying out Stage-III construction works. While visiting the site, we have noticed few temporary facilities like Mahamaya canteen, coal stoarge space along with boundary wall near CHP office (coal bhavan), Portable sewage treatment plant and toilet which are near to existing silo utility builidng, ash bagging system and ash bag storage area in between space of last existing silos and upcoming Stage-III silos. These facilities will hamper the stage-III construction works.	1. Only PDF format Tender drawing is provided in Tender. Auto cad format drawing may be provided to Successful bidder. Exisitng structure like cable trestle, MCC room, etc are not shown for clarity. Exustingash silo and some major culvert are shown in GLP. 2. Bidder's understanding is not correct. Bidder has to develop GLP as per the scpe of work and system requirements.
668					GA and layout drawings of exiting AHP facilities which are having interface with Stage-III contract	Bidder requests for following drawings: 1. Ash Silo area complex. 2. GA of Pitless weigh bridge arrangement provided in exisiting silos for rail wagons along with truck movement. 3. Mech Layout of ash slurry pedestals outisde plant boundary. 4. Mech layout of ash dyke garlanding pipes. 5. Civil drawing of pedestals, culvert outside plant boundary and in and around ash dyke. 6. Civil foundation drg of existing ash silos and silo utility builidng near envisaged Stage-III silos.	"For drawing of Pitless weigh bridge arrangement at Silo refer amendment no. D2-56. Other civil drawings shall be shared to succesfull bidder."
669					General Query	Due to larger dia structures, Site fabrication may please be permitted for Settling tank, surge tank and dewatering bins of AHP as logistics for bringing these pre-fab structures are more cumbersome.	Bidder's proposal is not acceptable. Bidder to comply Technical specification requirement.
670					General Query	Bidder understands that the railway track will be dismantled by customer for carrying out works of Ash Silos. Kindly confirm.	NTPC will dismantle the required stretch of Railway track for specific period only, on request of qualified bidders for carrying out the works of ST-III Ash silo.
671					General Query	Bidder understands that obstruction free clear front will be provided by customer for construction of stage-III ash silos and there will not be any rail wagon unloading operation from the existing silos.Obstruction free front is mandatory to meet the stringent plant milestone schedules. Kindly cofirm.	NTPC will provide the obstruction free clear front for construction of stage-III ash silos.
672					General Query	Bidder understands that cable rack from silo utility building to ash silos shall be modified by customer to provide clear approach of trucks/bulkers.	The modification of cable/pipe rack or construction of underground culvert from silo utility building to ash silos ST-I to provide clear approach of trucks/bulkers from Stage-III Silo shall be in bidder's scope. Necessary cable/pipe removal and its fresh laying will be carried out by NTPC.
673					General Query	In case pipe bridge is provided for crossing ash slurry pipes over electrified rail tracks near plant boundary, required permit, necessary approvals and time shall be provided by customer. Kindy confirm.	Necessary approval will be provided by NTPC.
674	SEC VI/ PART-B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	PAGE 65 OF 79	4.02.00	All the above local control panels shall be accessi-ble and located near their respective equipment and shall be complete with all the re-quired controls, interlocks, annunciation's etc. However, for items (h) and (i) above, controls shall be through Employer's DDCMIS/contractor's PLC as applicable. Further, necessary controls, indications and annunciations for all the above equipment shall also be provided at main CHP Control Room as described under relevant clause.	Please provide the details of Equipment to be controlled from Employer DDCIMS and main CHP Control room. Bidder understand that main CHP Control room to be provided by the Bidder.	Refer ammendment sl. No MH-05

675	SEC VI/ PART-B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	PAGE 64 OF 79	4.01.00	The assessment of available space in the existing CHP Control room shall be undertaken by the contractor. Further control room expansion and (or) modification if required shall be in the scope of the Contractor.	1) Please share the Layout drawing of Existing CHP Control room and its Location. 2) Also clarify whether Bidder supplied CHP system to be controlled from main CHP Control room or Existing CHP Control room.	1. The same shall be shared during detail engineering 2. Bidder's query not clear .however, refer clause 4.00.00(operation & Control philosophy) sub section A-20 Part-B
676	SECTION-VI, PART-A	I-B PROJECT INFORMATION	18 OF19	Annexure-IIIA	Total Suspended Solids (TSS) data not availabel in Raw water analysis.	Please provide 'Total Suspended Solids (TSS) data in Raw water Analysis	Bidder to refer Amendment Sl. No. WS-11 in this regard.
677	VI / A	IV	30 of 73	1.03.03 vi)	The contractor shall demonstrate that the purity of the gypsum produced shall not be less than 90%, chloride content shall not be more than 100ppm and the moisture content shall not be more than 10% for the range of specified coal(s) and based on CaO content of 51% in limestone.	As per sub section IV, limestone purity to be considered for Gypsum purity guarantee is CaO 51% ⇒**CaCO3 91%** As per Sub section IB, limestone purity to be considered for Gypsum purity guarantee is **CaCO3 89%** Both clauses are contradictory. Kindly clarify.	Bidder to refer to amendment to technical specification sl. no. 46 in this regard
678	VI / A	IB	14 of 19	Notes. 1	Guaranteed parameters (guarantee on limestone consumption, auxiliary power consumption & gypsum purity) shall be based on available (reactive) CaCO3 content of 89%.		
679	SECTION – IV	GCC	43 of 90	19.1	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 has its own robust and exhaustive process to qualify a vendor prior to award of contract. Our Bidders are meticulously scrutinized and qualified based on thorough evaluation including Technical as well as financial capability . Hence in order to minimize the ordering time owner may please exempt vendor approval for all type of subcontracting works viz. Civil, E & C and site fabrication etc.	Bidder's understanding is not right. Bidder to furnish the data as mentioned in appendix 5 and GCC.
680	Section-VII Book 3 of 3 (Part-1) (Form of Contract Agreement) SECTION – VI, PART-B	Appendix-1 (Terms and Procedures of Payment) SUB-SECTION E-59 QA CIVIL WORK	28 of 32	Payment Procedure INDICATIVE FIELD QUALITY PLAN, Cl. No. 4.2 (ii) Concreting		Concrete Cube strength Test: As this is a long term project & concreting is continous process, in order to maintain cash inflow bidder's RA bills shall be processed against 7 days test report only. May kindly confirm.	INDICATIVE FIELD QUALITY PLAN, Cl. No. 4.2 (ii) Concreting has provision for 7 and 28 days test which needs to be complied as per TS. Bidder's proposal not accepted
681	SECTION – VI, PART-A, SUB-SECTION-I INTENT OF SPECIFICATION	5 OF 9	4.02.00	Pre-commissioning and commissioning activities	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. Fuel Oil -11200 kL Coal- 2.7 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.	Bidder requests NTPC to delete this clause. Coal & fuel oil should be provided free of all charges during Pre-commissioning and commissioning activities. If consumption of Coal & Fuel oil Qty. goes beyond the specificed quantity same has to be borne by NTPC and no penalty/recovery shall be imposed on bidder. May please confirm the same.	Bidder proposal is not acceptable.Bidder to comply specification requirement.
682					Regarding fuel oil and coal issued free of charge	Deletion of limit or alternatively increasing the free limit to 15700 kL and 3.8 lakh MT upto successful completion of Initial Operation	The specified values for fuel oil and coal, to be issued free of charge by the Employer, is based on Employer's internal assessment of quantities required for the specified activities. Correction of coal quantity for the unit electricity generation during the initial operation is already provided in the bidding documents. The bidder to comply with the requirements of the bidding documents.
683	VI-A	I	Page 7 of 8	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.
684	VI-D & VII Book 3 of 3		10 of 70	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.	Land acquisition is not envisaged for the plant area. Bidding documents are clear, bidder to comply.
685	VI-A	I	Page 7 of 8	4.10.00	The vendor / contractor shall visit the site to ascertain the position of land acquisition etc.		
686	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.
687					Regarding Coal characteristics	Worst coal HGI of 40 petains to very poor grindable coal quality which has not been noticed by the Bidder it its experience. Further, in NTPC Lara, the HGI for same was specified as 48. Request NTPC to retain the coal parameters (w.r.t HGI) in sync with that of NTPC Lara	Bidder's proposal reviewed but not accepted. Bidder to comply tender requirement.
688					Regarding critical issues of CHP and AHP	NTPC to review the technical & demographic constraints. Bidder request NTPC to do upfront coal TPs modification and delete the scope of ash slurry disposal pipeline.	TPs modification reviewed and found technically feasible. Bidder' s proposal is not acceptable, bidder to comply with tender specifications. The proposed ash slurry disposal pipeline is to be laid on NTPC land. Bidder's proposal is not acceptable, bidder to comply with tender requirements.

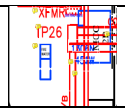
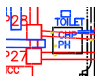
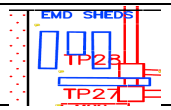
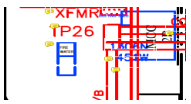
689	Section VI, Part B	D-I-8 (Civil Works)		8.07.00	Rgarding site fabrication of steel structures	Amendment of the clause for allowing Bidder to fabricate the steel structures at site with bolted or welded connections	The bidder's proposal is not acceptable. Please refer clause 1.00.01 of part A section VI, sub section IID (civil work) of technical specification, as per which site fabrication is allowed only for specific items. Additionally, Bidder is advised to refer to clause 8.07.00 of part B subsection D-1-8, section VI , part B of technical specification.
690	SECTION-VI,PART-A	SUBSECTION – 1-A	3 of 35	3.1 (p)	Provennes 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 clause may be revised as: "Capacity of each valve not less than 750 Ton/hr at super crtiical steam parameters (i.e. Pressure and temperature)"	Bidder proposal is not acceptable.Bidder to comply specification requirement.

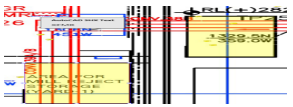
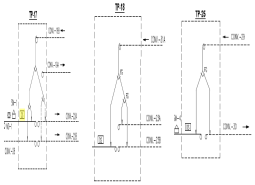
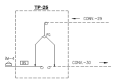
Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
691	SECTION-VI, PART-B BOOK 4 OF 5 – CIVIL WORKS	D-1-4	2 of 4	4.03.1	The specified formation level(s) shall be achieved …… by raising by controlled filling with borrowed earth where the existing ground levels are lower than the specified level.	Subject to suitability of earth, Bidder can consider surplus available excavated earth from within the plant boundary for filling purpose. Please confirm	Bidder's understanding is correct. Further, Bidder to refer amendment Sl. No. D2-57.
692	SECTION-VI, PART-B BOOK 4 OF 5 – CIVIL WORKS	D-1-5	39 of 86	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.
693	SECTION-VI, PART-B BOOK 4 OF 5 – CIVIL WORKS	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 levelling 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 levelling 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.
694	SECTION-VI, PART-B BOOK 4 OF 5 – CIVIL WORKS	D-1-5	39 of 86	5.07.00	SEWERAGE SYSTEM	Bidder request to give 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."
695	SECTION – VI, PART-A	SUB-SECTION-IID CIVIL WORKS	8 of 8	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.
696	SECTION-VI, PART-B BOOK 4 OF 5 – CIVIL WORKS	SUB-SECTION-D-1-5 CIVIL WORKS	40 of 86	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 with specification requirement.
697	SECTION-VI, PART-B BOOK 4 OF 5 – CIVIL WORKS	D-1-9	2	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 with specification requirement.
698	SECTION-VI, PART-B BOOK 4 OF 5 – CIVIL WORKS	D-1-9	2	9.03.02.e	One toilet with required facilities shall be provided for physically challenged persons as per National Building Code requirement	Bidder understands Handicap toilet shall be applicable only for Service building. As per scope of works, Service building is not envisaged, Hence, this clause may not be applicable.	Bidder understanding is not correct. Bidder to refer amendment D1-28
699	SECTION-VI, PART-B BOOK 4 OF 5 – CIVIL WORKS	D-1-9	3	9.03.02.h 9.03.01	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 Chlorinated Polyvinyl Chloride (CPVC) pipes, confirming to IS 15778, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings shall be used for internal piping works for service water and potable water supply. For installation of CPVC pipes guidelines as stipulated in Clause No. 18.9 , CPWD specifications shall be followed	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.	Bidder to refer amendment D1-28
700	SECTION – VI, PART-A	SUB-SECTION-IID CIVIL WORKS	5 of 8	1.00.00	29) Two nos. covered sheds (70mX20M) with steel superstructure and metal sheeting at roof and side sheeting above 1 meter of brick wall with RCC column, beam & Foundation. 22) Shed for O&M Workers	a) **Covered shed** : Kindly provide Location in plot plan and Height of covered shed Also clarify the purpose of these two cover sheds. b) **O&M Worker Shed**: Kindly provide Location in plot plan for Shed of O&M Workers	a) GLP is to be further developed by bidder during detailed Engineering stage. Accordingly covered shed shall be located in GLP by bidder Purpose of these two covered sheds is for storage of materials. b) GLP is to be further developed by bidder during detailed Engineering stage. Additionally bidder to refer amanedment no. D1-18. Further Construction workers and O&M Workers shed shall be located in GLP by bidder.
701	SECTION – VI, PART-A	SUB-SECTION-IID CIVIL WORKS	5 of 8	1.00.00	20.a) Watch tower	As proposed plant is located in existing plant, bidder is not envisaging any new watch towers requirements. Owner to confirm.	Bidder understanding is not correct. Watch tower (4 nos.) is in bidder scope. Pl refer Civil Scope chapter IID, Part A Cl. No.1.00.00 Sl No 20(a).
702	SECTION-VI, PART-B BOOK 4 OF 5 – CIVIL WORKS	i) SUB-SECTION-D-1-6 ii) SUB-SECTION-D-1-5	i) 8 of 23 ii) 55 of 69 & 61 of 69	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.	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.
703	SECTION-VI, PART-B BOOK 4 OF 5 – CIVIL WORKS	i) SUB-SECTION-D-1-5 ii) SUB-SECTION-D-1-9 iii) SUB-SECTION-D-1-5	i) 67 of 69 ii) 29 of 33 iii) 67 of 69	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) Bidder understands that same is not in the scope of work and temporary FQA lab will be provided during construction period. Incase permanent FQA building is envisaged, request owner to furnish necessary details such as size of FQA building, location in plot plan etc. Owner to also confirm. ii) Location in plot plan & Size of vehicle parking sheds, capacity etc. iii) Location in plot plan & Size of open car/scooter parking, capacity etc.	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

Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
704	SECTION VI / PART E TENDER DRAWINGS (CIVIL)	-	80 of 91	Layout of Roads		Road marked in "Blue" colour in the attached image Point A: 434.99W, 599.57N Point B: 434.99W, 1390N As existing road is present at Blue marked area, Bidder understand that the same is excluded from the Bidder's scope of work. Please confirm.	Bidder's understanding is correct.
705	SECTION VI / PART E TENDER DRAWINGS (CIVIL)	-	i) 84 of 91 ii) 83 of 91		i) Maintenance Building ii) Safety Park	i) Scope for Maintenance Building is not mentioned in the Part A: Civil Works & Part B (Civil). Bidder understands that same is not in the scope of work. Incase same is envisaged, request owner to furnish necessary details (Building type, size of building, Crane/Hoist, capacity, travel etc.) for scope consideration. Owner to confirm. Ii) Scope for Safety Parks is not mentioned in the Part A: Civil Works & Part B (Civil). Bidder understands that same is not in the scope of work. Owner to confirm.	i) Maintainance building is not in scope of bidder. Tender drawing no. XXXX-001-POC-A-009 Rev A to be ignored. ii) Safety park is not in scope of bidder. Tender drawing no. XXXX -001-POC-A-008 to be ignored.
706	SECTION VI / PART E TENDER DRAWINGS (CIVIL)	-	78 of 91	-	Area Grading	Removal of existing materials lying at site within proposed Stage III premises are in Owner's scope. Also any building or facility fouling with proposed units of Stage III shall be either dismantled or relocated by Owner. Please confirm.	Removal of existing materials lying at site within proposed Stage III area is in Owner's scope. Dismantling or relocation work within proposed Stage III area is not in the scope of bidder.
707	SECTION-VI, PART-B BOOK 4 OF 5 – CIVIL WORKS	SUB-SECTION-D-1-12(D) CIVIL WORKS	2 of 2	Annexure B	The basic wind speed "Vb" at ten meters above the mean ground level : 47 meters/second	As per IS 875 (Part 3) : 2015; Plant location is locating within Zone -2 i.e. Basic Wind Speed = 39m/s. However as per Annexure B Basic Wind Speed is mentioned as 47m/s. Owner is requested to confirm basic wind speed to be considered for the plant.	Bidder to refer amendment Sl No D1-79.
708	SECTION – VI, PART-A	SUB-SECTION-IID CIVIL WORKS	3 of 8	1.00.00	i. RCC pedestals for ash slurry disposal pipes lines Miscellaneous works like Transformer Foundation, Fencing, Paving etc. j. Culverts/local humps or bridges as per site conditions, for routing of the ash pipes at crossing for nallah /water body crossing /roads/rail lines etc.	Owner is requested to descope providing and laying of ash slurry pipelines outside the plant boundary. Please confirm.	Bidder's proposal is not acceptable.
709	SECTION – VI, PART-A	SUB-SECTION-IID CIVIL WORKS	8 of 8	2.03.00	Bidder shall use a Lay down area as shown in tender GLP drawing. area marked in GLP totalling 50 acres (approx.) are identified as laydown /preassembly area.	Laydown area provided in the General Layout Plan is not sufficient. Bidder would require approx. 100 acres of land as laydown area. Owner to provide additional land for laydown area within the vicinity of plant premises.	Bidder's proposal is not acceptable. 50 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
710	Tender Drawings			XXXX-999-POC-F-001 GENERAL LAYOUT PLAN		Existing electrical building MCC-2B shown in blue colour. Legend marking in drawing shows that building marked in blue colour will be dismantled. However, bidder understand that this building facilitates the Stage I & Stage II operational requirement and hence cannot be dismantled. Kindly confirm bidders understanding.	Existing electrical building MCC-2B shown in blue colour is not to be dismantled. Bidder to refer amendment Sl No D1-27
711	Tender Drawings			XXXX-999-POC-F-001 GENERAL LAYOUT PLAN		Bidder found that existing pipe rack/cable gallery nearby CHP facilities have not been shown in general layout plan. Bidder request owner to update general layout plan drawing showing all existing facilities.	Bidder to refer amendment Sl No D1-27.

Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
712	VI/B	G-07 MDL	2 OF 2	Tentative Master Drawing List		Drawing list is not updated in line with Stage III facilities in coal handling plant. Bidder request to provide updated drawing list.	This is Tentative Master Drawing List. Detailed Master Drawing List shall be finalised after awrad of the contract.
713	VI/B	D-1-5	62 OF 69	5.23.17.01	For all coal Conveyors, each down comer shall lead the water / coal slurry to RCC pit (of 2 Cu.M capacity) to allow settling of coal. The water from the pit shall overflow into contractor's R.C.C drain, which will lead the discharge finally into coal slurry settling pond.	Bidder understand that coal slurry drain of Stage III facilities shall be connected to existing coal slurry drainage network/CSSP. Bidder request to provide existing coal slurry network drawing as a part of tender drawing.	Bidder to refer amendment Sl No D1-45.
714	VI/B	D-1-6	8 OF 23	6.03.03	x	The steel design method to be used in the existing transfer house's modification and strengthening work must follow the working stress approach, which was originally used to build the steel structure. Kindly confirm bidders understanding.	Bidder's understanding is correct.
715					General	Owner to share complete Mechanical and Civil foundation & Structural drawings and design calculation of of existing transfer towers wherein modifications are envisaged.	Bidder to refer amendment Sl No D1-45 for civil drawing. Mechanical drawings shall be shared with the successful bidder during detailed engineering.

Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
716	SECTION-VI, PART-A SECTION-VI, PART-B	SUB-SECTION-IIA-15 COAL & BIOMASS HANDLING PLANT SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	1 of 6 23 of 79	1.02.00 4.19.00	Designated Conveyors shall have arrangements for manual stone picking arrangement at an appropriate location. Manual Stone Picking arrangement at a suitable location in the conveyor gallery of before Crusher House shall be provided complete with platforms, overhead lighting, hand railings, suitable seating, safety hook & holding arrangement for manual pickers, disposal chutes to ground level etc.	The Bidder understands that proposed plant CHP scope begins with receiving material from the existing transfer towers. Therefore, there is no need to include a manual stone picking arrangement. Please confirm Bidder's understanding.	Bidder's understanding is correct. Further, Bidder to refer Amendment SL MH- 21 in this context.
717	SECTION-VI PART-E	Coal + Biomass flow diagram (drg No.XXXX-001-POM-A-040 (Option-2). Rev.A)				In existing TP-24, Conv 28 is feeding to Conv-29. Bidder understands that in TP-24, Bidder to provide provision to feed both Conv-29 and Conv-33. Please confirm Bidder's understanding.	Bidder's understanding is correct. Bidder to provide provisions to feed both the downstram conveyors. Further, bidder to refer revised Coal & Biomass Flow Diagram issued as Amendment Sl MH-22.
718	SECTION-VI, PART-A SECTION-VI PART-E	SUB-SECTION-IIA-15 COAL & BIOMASS HANDLING PLANT Coal + Biomass flow diagram (drg No.XXXX-001-POM-A-040 (Option-2). Rev.A)	1 of 6	1.00.00	Rated capacity of the all the conveyors shall be 2600 MTPH.	There is a discrepancy in the specified capacities of the traveling trippers. The CHP system's capacity is stated as 2600TPH, while the traveling tripper's capacity is indicated as 2200TPH. Owner is requested to confirm the capacity of the traveling tripper to be considered.	Rated capacity of travelling tripper shall be 2600 TPH in line with the rated Conveyor capacity. Bidder to refer further Revised Coal & Biomass Flow Diagram issued as Amendment Sl MH-22.
719	SECTION-VI, PART-A	SUB-SECTION-IIA-15 COAL & BIOMASS HANDLING PLANT	4 of 6	2.08.00	Biomass blending rate shall be controlled automatically based on feedback of Coal feed rate from Belt scale at Employers' Coal conveyor and Biomass conveyors. Belt scale at Employers' Coal conveyor shall be in the scope of the Bidder.	Since Bidder is considering Belt scale in Conv 32 and Conv 33, which in turn is taking feed from existing conveyors 14A/B and 19A/B. Hence, Bidder has not considered separate belt scale in existing conv 14A/B. Bidder requests Owner's acceptance on the same.	Bidder's procesal for not considering separate Belt scale in existing conv 14 A/B is not acceptable. Bidder to refer further Revised Coal & Biomass Flow Diagram issued as Amendment Sl MH-22.
720	SECTION-VI, PART-A	SUB-SECTION-IIA-15 COAL & BIOMASS HANDLING PLANT	6 of 6	3.14.00	Bidder to note that the above list is not exhaustive and any work required for integration of complete system and ensuring its satisfactory running shall be in the scope of work and supply for this package.	Bidder understands that the scope of work not explicitly mentioned in the specification will be considered an additional scope during detail engineering. Owner is requested to confirm the above.	Technical specification is clear with respect to the Coal & Biomass Handling system. Bidder to comply stipulation of Technical Specification.
721	-TECHNICAL SPECIFICATIONS SECTION-VI PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	80 of 87	4.02.06	ii) HGI of coal shall be between 44 to 65. Normally, moisture content in coal vary between 12% to 15%. However, for design purposes moisture content of 20% shall be considered for both coal and limestone.	Bidder requests Owner to provide sieve analysis report of incoming coal and limestone.	In this context, Bidder to refer Limestone characteristics furnished in Sub-section IB, Part A of Technical Specification. For coal, Bidder to note that Coal shall be conveyed after Crushing i.e. size of Crushed Coal are mostly (-) 20 mm size.
722	-TECHNICAL SPECIFICATIONS SECTION-VI PART-B '- SECTION-VI PART-E	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA '- Drg no - XXXX-001-POM-A-040(OPTION-2)	80 of 87 '53 of 91	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. - As per flow diagram bio mass conveyor BMC-1/2 capacity is 260TPH.	Considering 20% blending ratio with rated capacity of coal handling system i.e. 2600TPH, the blending capacity of Bio mass conveyor BMC-1/2 shall be ~520TPH (rated). However, as per referred tender specification Biomass conveyor capacity is mentioned as 260 TPH while biomass equipment capacities are 240TPH. In view of above discrepancy, Bidder shall consider the Biomass equipment capacity as 240 TPH and biomass conveyor capacity as 240TPH in line with recent tenders. Kindly confirm.	20% blending ratio shall be achieved by running two Biomass conveyor BMC-1/2 simultaneously into a single downstream Conveyor. Further, for revised capacity, Bidder to refer Amendment Sl MH-56 & MH-22 of the Coal + Biomass flow diagram.
723	-TECHNICAL SPECIFICATIONS SECTION-VI PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	80 of 87	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.	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.
724	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	7 of 79	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 the steel cored wired ropes.	Bidder's proposal is acceptable.
725	- SECTION-VI PART-E	'- Drg no - XXXX-001-POM-A-040(OPTION-2)	53 of 91		No metal separation shown in flow diagram.	Bidder would like to clarify that, there are currently no provisions for ferrous metal separation in biomass handling system. Bidder proposes to provide additional, Suspended Magnet on conv BMC-1/2 before metal detector to avoid frequent tripping of conveyor due to ferrous metal detection. Bidder request Owner to relook & issue amendment suitably.	Bidder to refer Amendment Sl MH-22 for revised Coal + Biomass flow diagram.
726	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-IIA-15 COAL& BIOMASSHANDLING PLANT	4 of 6	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 Nos) 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. Silo extractor/Rotary extractor consists of rotating chute, extractor blade/sweeper arm/paddle wheel, slewing arrangement etc. shall be provided. -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 capacity 1500T for Biomass pellets instead of biomass storage silo as an alternative option. From the shed biomass can be further conveyed considering either of the two following options: a. Pellets are carried by trucks and discharged into the BRU. From the BRU, they will be directly fed into biomass conveyors for further discharge onto existing coal conveyor 14A/B. b. Dozer will doze the pellets to underground hopper (50 T or as decided by Owner). gates & vibrating feeder (with VFD) provided below the hoppers will discharge pellets in biomass conveyor which will further convey biomass to feed existing coal conveyor 14A/B. Bidder requests Owner to accept the above alternative option.	Bidder's proposal is not acceptable. Bidder to comply to the technical specification requirement.
727	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER-04 COAL HANDLING PLANT	5 of 13	(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	As per referred clauses, there are duplicate spares mentioned for flap gate actuators of traveling tripper. In view of above, Bidder understands that flap gates actuator for travelling tripper shall be considered as per clause (Q) only and not as per clause (L). Please confirm the Bidder's understanding.	Confirmed. Bidder to provide mandatory spares for flap gate for tripper as per serial no Q

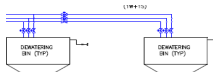
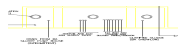
728	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	25 of 79	4.21.00	The Box Feeder should be a robust, proven, above the ground for unloading from trucks / self-tipping trucks or from loader shovels	Please provide details , type and dimension 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.
729	- TECHNICAL SPECIFICATIONS SECTION – VI, PART-A '- SECTION-VI PART-E	SUB-SECTION-IIA-15 COAL& BIOMASSHANDLING PLANT - "- Drg no - XXXX-001-POM-A-040(OPTION-2)	2 of 6 53 of 91	1.13.00	Four (04) Nos. Electronic Belt weighers complete with all mechanical, supporting arrangement, electrical, and accessories on Conveyors (C-32, C-33 and C- 38 A/B).	Owner to note that Number of belt weighers as mentioned in referred tender clause are not matching with Flow diagram. Please check and confirm the numbers of belt weighers are to be provided.	Bidder to refer revised Coal & Biomass Flow Diagram issued as Amendment Sl MH-22. Belt weigh scale required for existing Conveyor 14A/B for Biomass blending purpose is also included in revised Coal + Biomass Flow Diagram.
730	- TECHNICAL SPECIFICATIONS SECTION – VI, PART-A '- SECTION-VI PART-E	SUB-SECTION-IIA-15 COAL& BIOMASSHANDLING PLANT - "- Drg no - XXXX-001-POM-A-040(OPTION-2)	2 of 6 53 of 91	1.14.00	Four (04) Nos. Metal Detectors complete with all mechanical, electrical, civil, structural works and accessories on Conveyors (C-32, C-33 and C- 38 A/B).	Owner to note that Number of metal detectors as mentioned in referred tender clause are not matching with Flow diagram. Please check and confirm the numbers of belt weighers are to be provided.	Bidder to refer revised Coal & Biomass Flow Diagram issued as Amendment Sl MH-22.
731	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-IIA-15 COAL& BIOMASSHANDLING PLANT	4 of 6	2.08.00	Silo extractor/Rotary extractor consists of rotating chute, extractor blade/sweeper arm/paddle wheel, slewing arrangement etc. shall be provided.	The Bidder seeks clarification regarding the rotating chute aspect of the mechanical extractor. Bidder requests the Owner to provide additional information regarding the mechanical extractor's requirements. Also, Bidder request Owner to furnish the suppliers of Mechanical Extractor for Biomass Handling	Functional requirements of mechanical extractor is provided in technical specification. Mechnical extractor shall be used to feed Biomass pallet from storage silo in a control rate as per the blending requirement. Bidder may provide alternate equipment suitable for this application, as per the Technical specification.
732	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-IIA-15 COAL& BIOMASSHANDLING PLANT	4 of 6	2.08.00	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. Silo extractor/Rotary extractor consists of rotating chute, extractor blade/sweeper arm/paddle wheel, slewing arrangement etc. shall be provided.	Bidder suggests an alternative solution by proposing the use of a rod gate, rack pinion gate, and vibrating feeder (with VFD) instead of the mechanical extractor and belt feeder, as there are no concerns regarding the flowability of biomass. The Bidder requests Owner to accept the above proposal.	Bidder's proposal is not acceptable. Bidder to comply to the technical specification requirement.
733	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	20 of 79	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
734					General	Bidder understands that following items are not in the Bidder's scope as they are not mentioned in tender documents and flow diagram: a) Dozer b) Pay loader c) Any Trucks required Kindly confirm Bidder's understanding.	Bidder's undertsanding is correct.
735	- SECTION-VI PART-E 'TECHNICAL SPECIFICATION SECTION-VI, PART-A	'- Drg no - XXXX-001-POM-A-040(OPTION-2) 'SUB-SECTION-IIA-15 COAL& BIOMASSHANDLING PLANT	53 of 91 '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.	As per Flow diagram & Specification, there is 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 the alternate option.	Alternate option with diverter plough arrangement shall also be acceptable for feeding into biomass silo.
736	- TECHNICAL SPECIFICATIONS SECTION – VI, PART-A '- SECTION-VI PART-E	SUB-SECTION-IIA-15 COAL& BIOMASSHANDLING PLANT - "- Drg no - XXXX-001-POM-A-040(OPTION-2)	1 of 6 '53 of 91	1.00.00	Conveyor C-32 shall take feed from upstream conveyor C-19B at TP-17 and C-33 shall take feed from existing upstream conveyor C-28 at TP-24. Both C-33 and C-32 shall discharge into C-34A/B at TP-27 and TP-28. Similarly, C- 38A taking feed from existing upstream conveyor C-31A at TP-18 and C-38B taking feed from existing upstream conveyor C-29 at TP-25, shall discharge into C-39A/B at TP-26.	Owner is requested to share following existing drawings 1. Existing building TP-17, TP-18,TP-24 & TP-25 mechanical and structural drawing. 2. Existing conveyor 28, 29, 30, 19A/B, 31A, 22A/B, 23A/B, 14A/B conveyor mech & structural GA drawing and technical parameters like belt speed which will be followed for rest of the conveyors. 3. Drive motor calculation, along with gearbox and coupling details of above listed existing conveyors. 4.Mechanical, structural and foundation drawings of all the cable racks around the existing transfer towers and in the path of proposed conveyors 32,33, 38A and 38B. 5. Firefighting pipe layout and valve rooms located near to the existing transfer towers. 6. Details and piping layout of dust control and other utility system in the existing transfer towers.	All the major drawing of existing system are furnished in Tender Drws. Other Drws. of the existing system shall be shared with the sucessful bidder, if required.
737	- SECTION-VI PART-E	- Drg no - XXXX-999-POM-F-1	90 of 91			Owner is requested to share GA, structural and civil drawings of CHP MCC room and fire water tank indicated in the Plot plan.	Bidder to refer amendment no. .D1-46 for For CHP related drawings of existing structures
738	- SECTION-VI PART-E	- Drg no - XXXX-999-POM-F-1	90 of 91			Owner is requested to share GA, structural and civil drawings of CHP pump house indicated in the Plot plan.	CHP Pump house Drawing shall be shared with the sucessful bidder
739	- SECTION-VI PART-E	- Drg no - XXXX-999-POM-F-1	90 of 91			The plot plan specifies that structures marked in blue will undergo dismantling. Bidder understands that dismantling work of the same is not in Bidder's scope Please confirm Bidder's understanding.	Bidder to refer Amendment no. .D1-27 for revised GLP
740	- SECTION-VI PART-E	- Drg no - XXXX-999-POM-F-1	90 of 91			Owner is requested to confirm, whether existing CHP MCC room and underground fire water tank will also be dismantled?, since same is marked in blue colour. Please clarify about dismantling and scope of work.	Bidder to refer Amendment no. .D1-27 for revised GLP

741	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	10 of 79	4.6.4	While deciding the layout of buildings namely Transfer Points, Crusher house, Pump Houses the Bidder shall consider the following parameters. (1) Working space around the equipment shall be approx.1000 mm as a good engineering practice. (2) Generally, 1200 mm passage all around inside periphery of the Transfer points/Crusher house (except at Conveyor entry/ exit) shall be provided. (3) Building height shall take care of the following parameter: In case of handling of the equipment one over the other, the clearance between moving & stationary equipment shall be 500 mm (minimum).	Due to space constraints in existing junction towers, there may be no possibility to provide conventional maintenance facilities. Further, Bidder will check during detail engineering to provide either hook or hoist for the maintenance as per the space and height availability in existing transfer towers. Owner is requested to review the same during detail engineering & allow for relaxations in the existing towers only.	Bidder's understanding is correct. Suitable relaxations (from the specifed practices) shall be allowed for existing Transfer Points after review during detail Engineering.
742	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	42 of 79	2.1.2	2.1.2 Floors-- RCC construction with facility to wash the floors. Min. slope of 1:80 for floors in TPs and 1:100 for floors in crusher house shall be provided towards drain pipes.	Due to modifications in the current transfer towers, if new belt feeders or equipment are added to any floor or if a new floor is being constructed within the existing transfer towers, the flooring will not be reinforced concrete (RCC) due to height constraints. Owner is requested to confirm.	Bidder's proposal shall be accpted for new Belt Feeder or equipment in existing Transfer Tower only.
743	- SECTION-VI PART-E	- Drg no - XXXX-999-POM-F-1	90 of 91			The highlighted yellow area on the plot plan is used for the storage of mill rejects at site. It is obstructing the path of conveyors 38A/38B and 34A/B. Owner is requested to confirm that the mill rejects will be cleared, ensuring the entire area is made available for the CHP facilities.	It is confirmed that mill rejects will be cleared by NTPC.
744	TECHNICAL SPECIFICATIONS SECTION-VI, PART E(2)	COAL + BIOMASS FLOW DIAGRAM Drg. No.-XXXX-001-POM-A-040	Page 52 of 91	COAL + BIOMASS FLOW DIAGRAM Drg. No.-XXXX-001-POM-A-040		As flow diagram is silence about scope of DS/SW/PW In existing TP-17,TP-18 & TP-25 whether Bidder to consider DS system at discharge & receiving of owners' conveyor 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 consider DS at receiving end of the proposed conveyors under the scope of the Bidder in exisiting TP-17, TP-18, TP-24 & TP-25.
745	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	Page 48 of 79	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. In case calculated pump capacity with margin is less than 50 cub. M /hr ,Pump Capacity shall be 50 cub. M /hr . Please confirm Bidder understanding is correct.	Bidder's understanding is correct.Pump capacity shall be 50 cub. M /hr.
746	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	Page 25 of 79	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 shall be provided at all Biomass transfer points and Biomass unloading encloser area also in line with Lara project PBQ reply. Please confirm the Bidder's understanding.	Bidder's understanding is not correct to arrest dust nuisance in Biomass handling. Bidder to provide DE (Dry type) at all Biomass transfer points and Biomass unloading encloser area in line with Limestone Handling as per cl 2.01.02 (c) (ii) , A-20, Part B of Technical Specification. Further, Bidder to refer Amendment Sl MH-22 for revised Coal + Biomass flow diagram and Amendment Sl MH- 50.
747	- SECTION-VI PART-E	*- Drg no - XXXX-001-POM-A-040(OPTION-2)	53 of 91			Bidder propose to provide alternate option in place of Flap gate to make feasible. Bidder request Owner to allow & confirm.	Alternate option in place of Flap gate in existing Transfer points shall be accepted during detail engineering , if found feasible & suitable to meet the functional requirement.
748	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	8 of 79	4.4.3	The height of the skirt board for belt feeders/ reversible belt feeders shall be minimum 1000 mm.	In the existing transfer towers, skirtboard of height as mentioned in the clause no. 4.4.3 cannot be accommodated due to existing building dimensions. Bidder will consider the skirtboard height as per design requirement to accommodate in the existing transfer towers. Owner is requested to confirm.	Relaxation on the height of the skirt board for belt feeder/reversible belt feeder shall be accepted (applicable for existing Transfer Points) during detail engineering due to the Layout constraints.
749	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	5 of 79	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 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.
750	SECTION-VI, PART B	SUB-SECTION: A-21	15 of 42	1.13.00	**VIBRATING FEEDER** (i) Requirement: For uniform feeding of dewatered bottom ash **onto conveyors**/open trucks	Bidder understands that conveyors below dewatering bins are not envisaged. Please confirm Bidder's understanding.	Bidder's understanding is correct. Conveyors are not envisaged below dewatering bins.
751	SECTION-VI, PART-A PART-E1	SUB-SECTION-IIA-16 SUB-SECTION-IIA-16 SINGLE LINE DIAGRAM FOR ASH CLASSIFIER SYSTEM (PRESSURE SYSTEM) DRG. No. (XXXX-001-POM-A-029) Rev. No. A	9 of 18 9 of 18 -	1.01.07 1.01.07 -	(j) **Six (6) numbers (4 working + 2 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. (e) The fine ash and coarse ash after classification shall be stored in RCC/Structural steel hoppers, separate for fine ash and coarse ash respectively. The capacity of the fine ash hopper (01 No) and coarse ash hopper (02 No) shall be 250 Tonnes each. Tender Flow Diagram: **2 x 5 Nos. Transport Air Compressor** has been mentioned. and 5 nos. of Conveying ash streams are working.	Owner to review and clarify the following points: (i) Normally for two units, two numbers of coarse ash hoppers are envisaged per recent NTPC Singrauli & Lara Projects. Here in flow diagram and tender specification for Sipat (1x800 MW) two numbers of coarse ash hopper are mentioned. Bidder understands that one number of coarse ash hopper shall be provided for single unit. Kindly confirm the numbers of coarse ash hoppers along with the FA evacuation working lines to be considered as there is no standby coarse ash hopper envisaged as per tender. ii) As tender specification and flow diagram, there are total 5 nos. FA conveying lines are working and no. of working transport air compressors are shown as 4 nos. Request Owner to recheck the quantity of **working TACs and working lines.**	Bidder to refer Amendment Sl MH- 27 for revised Single Line diagram for Ash Classifier system.

752	SECTION-VI, PART-A PART-E1	SUB-SECTION-IIA-16 SINGLE LINE DIAGRAM FOR ASH CLASSIFIER SYSTEM (PRESSURE SYSTEM) DRG. No. (XXXX-001-POM-A-029) Rev. No. A	9 of 18 -	1.01.07 -	(b) 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. Tender Flow Diagram: **2 nos ash classifiers are shown**	Discrepancy observed regarding numbers of ash classifier in referred clauses. In view of single unit, Bidder understands that there will be only one ash classifier and not two numbers. Owner is requested to confirm and issue an amendment suitably.	Suitable number of Ash cliassifier (as per the available capacity) to be provided. Hence, number of classifier may be one or more. However, bidder to refer Amendment Sl MH-27 for revised Single Line diagram for Ash Classifier system, where one number Ash classifier has been shown for indicative purpose.
753	SECTION-VI, PART-A SECTION-VI, PART-A	SUB-SECTION-IIA-16 SUB-SECTION-IIA-16	9 of 18 11 of 18	1.01.06 (E) 1.01.08	(g) ……. The silo shall be provided with Target box and bag filter assembly along with pulse jetting arrangement, fan units etc. and other accessories, **Five (5) nos. Slide plate type isolation valves below the silo**, Required numbers segregation valves for isolation of fly ash transportation lines…….. h. **Six (6) nos. Slide plate type isolation valves** below each fly ash storage silos.	There is contradiction regarding slide plate valves quantity below Main FA silos as per stated clause. Please confirm the number of valves to be provided below the Main FA silos.	Bidder to refer Amendment Sl MH- 37 & 40
754	SECTION-VI, PART-A PART-E1	SUB-SECTION-IIA-16 SINGLE LINE DIAGRAM FOR ASH CLASSIFIER SYSTEM (PRESSURE SYSTEM) DRG. No. (XXXX-001-POM-A-029) Rev. No. A	9 of 18 -	1.01.07 (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. Bidder shall **consider total 3 nos. (2W + 1S) aeration blowers along with heaters**. Please confirm.	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, Bidder shall consider total 3 nos. (2W + 1S) aeration blowers along with heaters. Please confirm.	Bidder to refer Amendment Sl MH- 27 for revised Single Line diagram for Ash Classifier system.
755	SECTION-VI, PART-A PART-E1 SECTION-VI, PART-B	SUB-SECTION-IIA-16 SINGLE LINE FLOW DIAGRAM FOR FLY ASH HANDLING SYSTEM (PRESSURE SYSTEM) DRG. No. (XXXX-001-A)-POM-A-028) Rev. No. A SUB-SECTION: A-21	11 of 18 12 of 18 - 23 of 41	1.01.08 1.01.08 - 2.13.00	d. Pitiless type Weigh Bridge for rail loading below each dry fly ash silos and in-between **two Coarse ash Silos, minimum Four numbers**, complete with all electrical, controls, civil and structural works for weighment of rail Wagons during filling. m. The pitching of ash silo and overall arrangement of hydro-mix conditioner units, telescopic chutes, air slides etc **shall facilitate simultaneous loading of three wagons** (BOXN/BCFC/BCCW/BTAP) from two number of Coarse Fly ash Silos. **Note no. 18:** …….**One (1) No. Weigh Bridge for rail unloading below each mail fly ash silo** complete with all electrical, controls civil and structural work for weightment from silos…….. Weigh bridges capacity : 100 tonnes **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)	There is contradiction regarding the quantity of Weigh Bridge below dry fly ash silos in stated clause (i.e. 4 vs 2). Bidder shall consider total 2 rail weigh bridges i.e. 1 nos. below each main FA silo. Also, platform length of 24m will not be possible with simultaneous loading of 2 wagons. The platform size shall be to suit weighment of various Ash Tankers/Rail wagons. Please confirm and issue an amendment suitably.	Bidder to consider one number Pitless type Weigh Bridge below each Fly Silos i.e. total three numbers Weigh bridge to be considered for Railway Wagon loading.This is in addition of Weigh Bridge specified for weighment of Bulker/Tanker. Further, Bidder to refer Amendment Sl MH- 29, 30
756	PART-E1	GENERAL LAYOUT PLAN (DRG. NO. XXXX-999-POC-F-001)	-	-	Tender General Layout Plan	i) Owner is requested to provide existing railway siding drawing and proposed railway siding drawing for phase-III to develop the fly ash silo area layout and to check the interdistance of rail tracks.	Drawing shall be provided to the successful bidder.
757	SECTION-VI, PART-A PART-E1	SUB-SECTION-IIA-16 SINGLE LINE FLOW DIAGRAM FOR FLY ASH HANDLING SYSTEM (PRESSURE SYSTEM) DRG. No. (XXXX-001(A)-POM-A-028) Rev. No. A	11 of 18 -	1.01.08 -	**(I) 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) Below Fine fly ash Silo No. of Dry Fly Ash Unloader - **2 Nos.** (Shown) (One (2) no. below each silo)	There are contradiction in quantity of Dry fly ash unloaders stated clause and flow diagram for fine fly ash silo. Bidder understands that only two (2) nos. dry FA unloader below fine ash silo shall be provided as per SLFD. Please confirm Bidder's understanding.	Bidder to refer Amendment Sl MH- 27 for revised Single Line diagram for Fly ash handling system.
758	SECTION-VI, PART-A PART-E1	SUB-SECTION-IIA-16 SINGLE LINE FLOW DIAGRAM FOR FLY ASH HANDLING SYSTEM (PRESSURE SYSTEM) DRG. No. (XXXX-001(A)-POM-A-028) Rev. No. A	11 of 18 -	1.01.08 -	(c)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 (Single Line Flow Diagram For Fly Ash Handling system)** **6 Nos. Mass Flow Meter are shown below Fly Ash Storage Silo and 3 Nos. are shown below Fine Fly Ash Storage Silo.**	There is contradiction regarding quantity of mass flow meter below Fly ash Storage silo and fine fly ash storage silo. Bidder understands that mass flow meter shall be provided 5 nos. below Fly ash storage silo and 2 Nos. below fine ash storage silo. Please confirm Bidder's understanding.	Bidder to refer Amendment Sl MH- 27 & MH-45 for revised Single Line diagram for Fly ash handling system.
759	SECTION-VI, PART-B	SUB-SECTION: A-21	36 of 42	7.12.00	(A) ASH WATER PUMP HOUSE v) The ash **water pump house shall be open type.**	Owner requested to confirm there is no ash water pump house building. Only ash water sump (Semi-Overground) to be considered and all the water pump shall be installed on the foundations of RCC grade slab which is open to sky. Also, please clarify the extent of RCC grade slab to be considered for ash water pumps. Whether any maintenance bay to be considered on the grade slab.	Bidder's understanding is correct, there shall not be any ash water pump house building. Fondation for the Water Pumps shall be as per the Technical specification.
760	SECTION-VI, PART-B	SUB-SECTION: A-01	74 of 87	4.01.02	(C) Ash Densities:	Volumetric ash density for coarse ash (Eco hopper, APH, SCR & Duct hopper) is not specified in the tender specification. Bidder has considered density of 0.75 ton/m3 for coarse ash, please confirm.	Bidder to consider 0.65 T/m3 density for Coarse ash from Eco, eco duct hopper and APH ash, for Storage Volume Calculation.
761	SECTION-VI, PART-B SECTION-VI, Part-A	SUB SECTION-A-01 SUB-SECTION-IIA-16	75 of 87 13 of 18	4.01.02(M) 1.01.08	**(M) Ash slurry disposal system** Minimum pumping distance – 1**4.5 Km or as** per actual distance for the farthest disposal point in ash dyke whichever is higher. b) **The length of total combined Ash disposal pipelines shall be** **39,000 m** (excluding fittings and including branch pipes for garlanding of mine void)or the actual distance (excluding fittings) including branch pipes for garlanding of mine void, whichever is higher.	Considering brownfield project, Bidder understands that pipe length based on expected garlanding concept of slurry pipe on existing ash dyke may be different than Bidder's estimation. In view of above and to keep all Bidders at par, request NTPC to fix the supply quantity of combined ash slurry pipes right from Combined ash slurry pump house to dyke including ash dyke slurry pipe garlanding. Accordingly, request to amend the stated tender clause.	For supply quantity of ash slurry disposal piping, Bidder to refer Amendment sl. MH-49.
762	SECTION-VI, PART-B	SUB SECTION-A-01	75 of 87	4.01.02(M)	(i) **Elevation of top of Ash dyke:- RL 310 m**	Owner is requested to confirm, RL 310 m is corresponding to ultimate dyke height or stater dyke height, which shall be considered for combine ash slurry disposal pump head selection.	Specified Elevation of top of Ash Dyke corresponds to ultimate dyke height , which shall be considered for slurry disposal pump head selection.

763	SECTION-VI, PART-A SECTION-VI, PART-A TECHNICAL SPECIFICATIONS SECTION – VI, PART-A	SUB-SECTION-I-B SUB-SECTION-IIA-16 SUB-SECTION-III TERMINAL POINTS & EXCLUSIONS AND OWNER'S INPUT	1 of 19 15 of 18 1 OF 3	5.00.00 1.03.00 1.03.00	**WATER** Water cooled Condenser is envisaged for Sipat Stage-III of 1x800 MW Unit. The consumptive make-up water requirement for this **Project would be about 2300 Cum/Hr with ash water recirculation system in operation.** Decanted water shall be pumped from owners' existing pumping system located at ash dyke. It has been envisaged **that existing pumping system (5 W + 2S, Pumps of 950 M3/Hr capacity, St-I & St-II) and existing AWRS pipeline (two pipeline of St-I & St-II) shall be used for the new Stage.** Hence, pipelines complete with flow control valves, bends, fixtures, couplings, fittings, gaskets, nuts, bolts, clamps, structural steel supports and other accessories **from tapping point (suitable point inside plant) of Stage-II AWRS pipe (700 NB Dia) shall be provided by the bidder.** Tapping point from existing St-II AWRS pipe (located inside plant) shall be at any convenient location decided by the employer during detail engineering.	i) 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 for proposed stage-III TPP. Please confirm Bidder's understanding. Ii) In absence of clarity, Bidder will tap off ash water recovery pipe from existing stage-II ash water recovery pipeline within plant boundary in line with referred terminal points and will considered one no. ash water recovery pipe upto ash water sump from plant boundary. Please confirm Bidder's understanding.	i) Bidder's understanding is not correct. Ash water recovery will be received when only BA, only FA or both BA & FA will be disposed in slurry mode.Further, Bidder to refer Amendment Sl MH-51. ii) Bidder to tap off from both St-I or St-II Ash water recovery pipes. For details, Bidder to refer Amendment Sl MH-51.
764	SECTION-VI, PART-A	SUB-SECTION-VI	2 of 3	4.03.00	Ash Dyke scope is not included in exclusion.	1) In absence of clarity, Bidder understands that Ash dyke and its modification related to civil work shall be under Owner scope. Please confirm Bidder's understanding. 2) Since the combined ash slurry pipes shall be laid into existing ash dyke, request owner to review and clarify following concerns, i) whether ash slurry pipes shall be garlanded in phase-I and phase-II ash dyke both. ii) Scope of energy dissipaters at dyke end slurry disposal points iii) slurry pipes shall be laid at top of dyke bund **or** at NGL outside the ash dyke iv) Provide ash dyke sectional drawings v) L section drawings of existing ash slurry pipe corridor.	1) Bidder's understanding is correct. however, civil works related to garlanding pedestal is in bidder scope. 2) (i) Garlanding of ash slurry pipes in Stage-I & Stage-II Ash dyke both shall be in the scope of the Bidder. (ii) Scope of energy dissipaters at dyke end slurry disposal points shall not be in the scope of the Bidder, (iii) Slurry pipe shall be routed as per actual site condition (Iv) Bidder to refer amendment no..D2-54 (v) Bidder to refer amendment no..D2-55
765	PART-E1 SECTION-VI, Part-A SECTION – VI, PART-A SECTION-VI, PART B	-SCHEME OF GYPSUM DEWATERING SYSTEM DRG. No.: XXXX-001-POM-A-024, REV. NO.: A SUB-SECTION-IIA-16 SUB-SECTION-IIA-04 'SUB-SECTION: A-21	- 3 of 18 2 of 7 '34 of 42	- 1.01.05(C) 2.06.00 '5.01.00	Tender Flow Diagram (Scheme of Gypsum Dewatering System) **Shown FGD waste water to HCSD mixing tank** Common System for Jet Pump/ Scrapper Conveyor system **Bottom ash slurry shall be transported to Dewatering bins normally.** However, in case of non-utilization, Bottom ash slurry shall be disposed to ash dyke through Ash slurry disposal Pumps. .....The water removed from the absorber shall be recycled to the absorber. The **waste water from the system shall be collected and neutralized using lime and shall be pumped to the mixing tanks of HCSD** System or in any other area with suitable treatment so as to suit/ not disturb the destination fluid quality. **HORIZONTAL CENTRIFUGAL PUMPS** 4. Nos. operating - Conditioning Water pumps: 2 Working for **HCSD silo** + 1 standby, if applicable Wash water pumps: 1working +1 standby (For **HCSD silo** area, if applicable)	As per tender specification HCSD system in not applicable. However, tender flow diagram shows that FGD waste water shall be transferred to HCSD tank. In view of this, Owner is requested to specify the FGD waste water disposal scheme during Bottom ash slurry transportation to Dewatering Bin. However, FGD waste shall be transferred to combined ash slurry pump house during Bottom ash slurry disposal to ash dyke through Ash slurry disposal Pumps. Further, Owner to note that FGD waste water contains high chlorides of approx. 20000 ppm. Ash dewatering bin system are closed loop system and continuous addition of chlorides through FGD waste water shall have impact on materiel of construction of ash handling system. Also, tender technical specification specify neutralization of FGD waste water though lime dosing and does not specify FGD waste water chloride removal treatment. In view of above, Owner is requested to mention the final disposal scheme of FGD waste water during Bottom ash slurry transportation to Dewatering Bin to suitable location to keep all the Bidders' at par.	HCSD system is not applicable. Bidder to refer Amendment Sl **SG.45**
766	PART-E1 SECTION-VI, PART-B SECTION-VI, PART-B	SINGLE LINE FLOW DIAGRAM FOR FLY ASH HANDLING SYSTEM (PRESSURE SYSTEM) DRG. No. XXXX-001-POM-A-028 Rev. no. A SUB-SECTION-D-1-8 SUB-SECTION-D-1-5	- 9 of 20 22 of 69	- 8.04.00 5.05.01	Flow diagram Note no. 10 **Necessary Head room (6.8 Min)** to be provided below silo for truck/ Rail wagon movement. B. Vertical clearance: A minimum **vertical clearance of 8.5m** shall be maintained between Rail top level and bottom of structure. However, a minimum **vertical clearance of 6.5m shall be maintained between Rail top level and bottom of structure** in case of FA silo. *Vertical clearance: A minimum vertical clearance of 8.5m shall be maintained between Rail top level and bottom of structure.	There are contradiction amongst various clauses regarding vertical clear headroom below fly ash silo mentioned herewith. Bidder shall provide **6.8 mtr clear head room** below fly ash silo for truck/ Rail wagon movement. Please confirm.	Confirmed. Bidder to provide (Min) 6.8 mtr clear head room below Fly ash Silo.
767	SECTION-VI, PART A SECTION – VI, PART-A SECTION – VI, PART-A	SUB SECTION –IB SUB-SECTION-IV SUB-SECTION-IIA-16	11 of 19 34 of 73 12 of 18	ANNEXURE-IV-2 1.03.09 1.01.08	Coal Analysis: For Range of coal supplies 95%. **Worst Coal : Ash - 45%** **GCV - 3000 Kcal/Kg** Range of coal supplies 5% **Worst Coal : Ash - 46%** **GCV - 2900 Kcal/Kg** **Ash Handling Plant** (i) In case bidder offers interrmittent 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 ..... Combined ash Slurry disposal pumping system a) **Three (03) streams of horizontal combined ash slurry disposal pumps .....out of which one stream 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.	As per the ash handling design criteria and ash cleaning time as specified in tender specification, the capacity of one ash slurry pump will be quite high. In view of above, bidder proposes following combined ash Slurry disposal pumping system, a) **Four (04) 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. Request owner to review above proposal and issue amendment.	Reviewed Bidder's proposal . Bidder to refer Amendment Sl MH- 27 for revised Ash slurry disposal scheme, Further Bidder to refer Amendment Sl MH- 52.

768	SECTION-VI, PART-A PART-E1	SUB-SECTION-IIA-16 'SINGLE LINE FLOW DIAGRAM FOR FLY ASH HANDLING SYSTEM (PRESSURE SYSTEM) DRG. No. XXXX-001-POM-A-028 Rev. no. A	6 of 18 -	1.01.06 (b) -	..... Each intermediate fly ash storage **silo shall have three (3) outlets**, One(1) outlets for unloading ash to closed truck through rotary feeders, One(1) for unloading ash to open truck with rotary feeders and ash conditioners and One(1) blanked outlet for future use. **Single Line Flow Diagram** **No truck out provision is shown below intermediate silo.**	There is contradiction in stated tender clause and flow diagram regarding number of outlet provision provided for truck out below intermediate silos. Bidder understands that only one(1) no outlet shall be provided for silo unloading in case of emergency emptying of intermediate silo. Please confirm Bidder's understanding.	Bidder's understanding is correct. There shall not be any truck loading arrangement from Intermediate Silos. Bidder to refer Amendment MH-38
769	SECTION-VI, PART-A SECTION-VI, PART-B PART-E1	SUB-SECTION-IIA-16 SUB-SECTION: A-01 SINGLE LINE FLOW DIAGRAM FOR FLY ASH HANDLING SYSTEM (PRESSURE SYSTEM) DRG. No. XXXX-001-POM-A-028 Rev. no. A and DRG. No. XXXX-001-POM-A-029 Rev. no. A	9 of 18 10 of 18 77 of 18 -	1.01.07 1.01.08 4.01.02 -	(a) The fly ash coming from ESP hoppers or buffer hoppers of shall be led to a **classifier silo of capacity 200 tonnes**. ..... (e) The fine ash and coarse ash after classification shall be stored in RCC/Structural steel hoppers, separate for fine ash and coarse ash respectively. **The capacity of the fine ash hopper (01 No) and coarse ash hopper (02 No) shall be 250 Tonnes each.** **Three (2) nos. Main fly ash storage silos (RCC Silos) of 1500 MT effective storage capacity each**, for road and rail loading of dry fly ash and **one (1) no. dry fly ash storage silos (RCC Silo) for fine ash of 1000 MT** effective storage capacity complete with an aeration system, dust suppression system and all other accessories as required and as specified. **(K)Ash Storage silos** Storage capacity for Classifier Block Silos/Hoppers are as follows: - **Fine fly ash Hopper-500 (T), Coarse Fly ash Hopper-500 (T)**, **Classifier Silo -200 (T)**. **Main storage for fine Ash Silo shall have minimum 1750 MT** effective storage capacity. ..... Tender Flow Diagram. Shown Capacities are as mentioned below: 1. Fly Ash Storage Silo- 1500 MT 2. Fine Fly Ash Storage Silo- 1000 MT 3. Coarse Fly Ash Hopper - 250 MT 4. Fine Fly Ash Hopper - 250 MT 5. Classifier Silo - 200 MT	There is contradiction in stated tender clause regarding the storage capacity of Fly ash Storage silo, coarse ash hopper and fine ash hopper. Bidder shall consider storage capacity of silo as mention below, inline with Part-A of tender specification: 1. Fly Ash Storage Silo- 1500 MT 2. Fine Fly Ash Storage Silo- 1000 MT 3. Coarse Fly Ash Hopper - 250 MT 4. Fine Fly Ash Hopper - 250 MT 5. Classifier Silo - 200 MT Please confirm.	For Storage Capacity, Bidder to refer Amendment MH-27 for revised Single line diagram.
770	SECTION-VI, PART-A SECTION-VI PART-B	SUB-SECTION-IIA-16 SUB SECTION-A-01	12 of 18 77 of 87	1.01.08 4.01.02	m. The pitching of ash silo and overall arrangement of hydro-mix conditioner units, telescopic chutes, air slides etc shall facilitate simultaneous loading of three wagons (BOXN/BCFC/BCCW/BTAP) **from two number of Coarse Fly ash Silos.** Suitable arrangement for Control of movement of Telescopic spout shall have to be provided in all three X-Y-Z directions to facilitate loading of ash into Wagons. **(K) Ash Storage silos** Two Fly ash Silos of 1500 MT effective capacity each having rail cum road loading facility shall be provided for the unit to receive ash from ESP Hoppers. An additional fine ash silo of capacity **1000 MT shall be provided at a separate location/adjacent to Fly ash Storage Silos having facility for feeding to the ash bagging plant.**	In absence of clarity, Bidder understands that only fine ash below main fine ash silo shall be disposed through bags only and no wagon unloading is envisaged for fine ash silo. Please confirm.	Bidder's understanding is not correct. In addition to the Bagging facility, Wagon loading arrangement is envisaged for fine ash Silo. Further, Bidder to refer Amendment Sl. MH-30.
771	SECTION-VI, PART-A	SUB-SECTION-IIA-16	14 of 18	1.02.00	e) All ash water and seal water piping from **Owner's terminal points** to all the equipment's and sumps complete with fittings, valves, strainers, flanges, askets, 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 are applicable. Please confirm.	Bidder's understanding is correct. Further, Bidder to refer Amendment Sl. MH-28.
772	PART-E1	SINGLE LINE FLOW DIAGRAM FOR BOTTOM ASH HANDLING SYSTEM (PRESSURE SYSTEM) DRG. No. (XXXX-001-POM-A-025) Rev. No. A	-	-	Tender flow diagram At settling tank and surge tank of Bottom Ash Overflow, **connection from other unit is shown.**	There is a typo error in tender flow diagram and it is shown that effluent from other unit is transferred to settling tank and surge tank. Bidder understands that proposed settling tank and surge tank will be used for phase-III BA overflow water clarification only. Please confirm.	Bidder to refer Amendment Sl MH- 27 for revised Single Line diagram for Bottom ash handling system.
773	TECHNICAL SPECIFICATIONS SECTION-VI, PART-A	SUB-SECTION-IIA-16 ASH HANDLING SYSTEM	9 of 18	(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.	1) Particle size distribution of ash shall be the input from bidder being a EPC Pkg. 2) Bidder to refer Amendment MH-32 for Fine ash Particle size.
774	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	13 OF 35	(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)~~ year~~s~~. 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 Amendment Sl. MH-09 for revised Provenness Criteria.

775	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	12 OF 35	(iii)	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) (iii), 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 Amendment Sl. MH-06 for revised Provenness Criteria.
776	SECTION-V I, PART-A	SUB-SECTION-VI CHAPTER - 03 ASH HANDLING PLANT	'3 OF 14	'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. Further, Bidder to refer Amendment Sl. MH-47.
777	SECTION-V I, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	23 OF 73 '23 OF 73	8. 9. 12. 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: 1 Combined ash slurry disposal pumps: 0.875	In view of lean and dry disposal of fly ash, the duty factors mentioned for combined ash slurry pump and transport air compressor after classifier are on higher side as FA will not be evacuated in dry and wet mode parallelly. In view of this, Bidder understands that following referred drives shall be applicable in line with duty factor mentioned in NTPC Singrauli Project: 8. (i) Fly ash conveying air compressors with air drying plant (ADP): 1 12. 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 only applicable in case vacuum- pressure conveying, however, sr. no 12 and 6 shall be applicable in both cases i.e pressure-pressure & vacuum-pressure. Please confirm Bidder's understanding.	Bidder to refer Amendment Sl. MH-53 for revised weightage factors.
778	SECTION-VI, Part-A	SUB-SECTION-IIA-16	13 of 18	1.01.08	b) **The length of total combined Ash disposal pipelines shall be 39,000 m** (excluding fittings and including branch pipes for garlanding of mine void)or the actual distance (excluding fittings) including branch pipes for garlanding of mine void, whichever is higher.	In view of recent tender i.e NTPC Talcher, NTPC Lara & NTPC Singrauli, Bidder understands that Bidder scope of ash slurry disposal piping shall be within plant boundary. Kindly confirm Bidder's understanding.	Bidder's understanding is not correct. Complete ash slurry disposal piping work including outside plant boundary is in Bidder's scope.
779	Single Line Flow Diagram no. - XXXX-001-P0M-A-025					Valve arrangement at inlet line to DWB in this drawing is not in order. Owner is requested to confirm that valve arrangement shall be as per Bidder's requirement to suit layout.	Bidder to refer Amendmen Sl MH- 27 for revised Single Line diagram for Bottom ash handling system..
780	Single Line Flow Diagram no. - XXXX-001-P0M-A-025 TECHNICAL SPECIFICATIONS SECTION-VI, Part-A	SUB-SECTION-IIA-16 ASH HANDLING SYSTEM	6 of 18	1.01.06	 As per flow diagram, at Combined slurry sump, 7 Nos. pipe line is shown for Fly Ash & Coarse Ash slurry pipes. 2 nos. coarse ash slurry line is shown as per SLD no. XXXX-001-P0M-A-025 (i) Eight (8) lengths of Dry fly ash Cast Iron / MS piping from junction points of ESP Hopper outlets onwards up to the Intermediate Silos complete with changeover valves, other valves, specialties, bends, pneumatic actuators, structural steel supports, platforms etc	At Combined slurry sump, 7 Nos. pipe line is shown for Fly Ash & Coarse Ash slurry pipes. However as per specification, 8 Nos. of Fly Ash slurry lines from intermediate Silo and 2 nos. coarse ash slurry line is shown as per SLD no. XXXX-001-P0M-A-025 Owner is requested review & clarify the No. of FA Slurry lines & coarse ash slurry lines to combined slurry sump.	Bidder to refer Amendment Sl MH- 27 for revised Single Line diagram for Bottom ash handling system.
781	Part-A	Sub Section-I-B Project Information	8 of 19	Annexure-IIIA	Raw water analysis	The individual consituents of anion are not matching with total Anion values. Further, the water analysis is not balanced as total cation is not equal to total anion. Owner is requested to revisit the raw water analysis.	Bidder to refer Amendment Sl. No. WS-11 in this regard.
782	Part-A Part-E1	Sub Section- IIA-10 Water Treatment Plant	2 of 12 70 of 91	1.01.03 (d) XXXX-XXX-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. As per clause 1.01.03 (d), One (1) number bypass channel of RCC construction to by pass PT-DM clarifier with required isloation gate & facilities shall be provided.

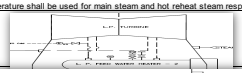
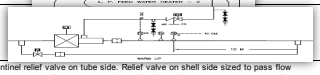
783	Part-A Part-E1	Sub Section- IIA-10 Water Treatment Plant	3 of 12 70 of 91	1.01.04-c & f XXXX-XXX-POM-A-006	c) **Alum Solution** preparation & dosing system consisting of required number of RCC Alum solution preparation tanks, agitators, alum solution dosing pumps complete with all necessary piping, fittings, feed piping, water supply piping, overflow and drain piping, sampling connections etc. f) **PAC dosing** system (for PT-CW & PT-DM OPTION-1 systems) 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. 9586-001-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.	Both Alum & PAC dosing systems to be provided. Details shown in P&ID are minimum requirement. All systems and equipment to be provided in line with technical specifications.
784	Part-A Part-E1	Sub Section- IIA-10 Water Treatment Plant	3 of 12 70 of 91	1.01.04 (g) XXXX-XXX-POM-A-006	g) 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. Please confirm.	Bidder's consideration is not correct. Bidder to note that supply to overhead filtered water storage tank (on top of Chemical house) shall be from discharge of filtered water pumps.
785	Part-A Part-E1	Sub Section- IIA-10 Water Treatment Plant	3 of 12 62 of 91	1.02.01 (b, c) XXXX-XXX-POM-A-005	b) **1x100%** HCl dosing pumps (1W + 1S) for each Chlorine-di-oxide generator c) **1x100%** NaClO2 dosing pumps (1W + 1S) for each Chlorine-di-oxide generator. Total 2 numbers **(2x100%)** HCl dosing pumps are shown for Chlorine-di-oxide generator Total 2 numbers **(2x100%)** NaClO2 dosing pumps are shown for Chlorine-di-oxide generator.	There is a contradiction for quantities of HCL dosing pumps and NaClO2 dosing pumps as mentioned in stated clauses. Bidder shall consider total 2 nos. HCl dozing pumps and 2 nos. NaClO2 dosing pumps (i.e. 1 x 100% for each chlorine dioxide generator) for the PT chlorination system as per 1.02.01, (b),(c). Please confirm.	Bidder's understanding is correct. Bidder to provide 2x100% HCl dosing pumps and 2x100% NaClO2 dosing pumps for PT-CW system.
786	Part-B Part-E1 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 70 of 91 1 of 36 6 of 12	3.06.00, C, (2) (a) XXXX-XXX-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.	Bidder to note that Filter backwash water shall be recycled to stilling chamber of PT-DM clarifier as per specification.
787	Part-B Part-E1	Sub Section A-01, Equipment Sizing Criteria	50 of 87 70 of 91	3.06.00, A, (6) (b) XXXX-XXX-POM-A-006	Alum Solution preparation & dosing system consisting of minimum three (3)nos of Alum solution preparation tanks, agitators, alum solution dosing pumps (2W+1S) for PT-CW Clarifiers, (2x100%) for PT-DM Clarifier, (2x100%) for Lamella clarifier/tube settlers etc. 5 nos of alum dosing pumps are represented in tender SLFD, and total 7 nos of pumps are written.	Bidder understands that in case of Option I - Ion exchange DM plant & ETP, **7 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 **5 nos,** since alum dosing is not envisaged in this option for PT-DM clarifier. Please confirm.	Bidder's understanding is not correct. The alum dosing system with 7 nos of alum dosing pumps is to be provided and bidder to refer part-B, sub-section A-01 clause 3.06.00 A (6)(b)in this regard.
788	Part-B Part-E1	Sub Section A-01, Equipment Sizing Criteria	52 of 87 70 of 91	3.06.00, C, (2) (b) XXXX-XXX-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.	P&ID is indicative. Two(2x100%) (1W+1S)backwash disposal pumps shall be provided by the bidder in line with clause 3.06.00 C (2) (b) of sub section A-01 of Part B of technical specifications.
789	Part-B	Sub Section A-01, Equipment Sizing Criteria	51 of 87	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.	Detail shown in P&ID is indicative & minimum. Bidder to provide complete system/equipment meeting specification requirement (clause no. 3.06.00, A, (6) (h & i)).
790	Part-B Part-E1	Sub Section A-01, Equipment Sizing Criteria	55 of 87 68 of 91	3.06.00, D, 3, B, (c) XXXX-XXX-POM-A-003	Degasser Blowers for Degasser **(2x100%).** 2 no's 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. Bidder shall consider 2 x 100% of blowers for each Degasser towers as per the P&ID. Please confirm.	Bidder's consideration is correct. Bidder to provide 2x100% Degasser blowers for each Degasser tower.
791	Part-B Part-E1 Part-E1	Sub Section A-01, Equipment Sizing Criteria	56 of 87 68 of 91 66 of 91	3.06.00, D, 4, (c) XXXX-XXX-POM-A-003 XXXX-XXX-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 E1, where UF backwash is being sent to Filter backwash pit. Please clarify the scheme to be followed for UF backwash.	Bidder to refer Amendment Sl. No. WS-17 in this regard.
792	Part-B	Sub Section A-01, Equipment Sizing Criteria	56 of 87	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 & not accepted. Bidder to comply technical specification requirements.
793	Part-B	Sub Section A-01, Equipment Sizing Criteria	57 of 87	3.06.00, D, 4, (i)	RO Reject shall be led to Coal handling plant for reuse in dust suppression system.	Since unloading and stacking in not in Bidder's scope of work for CHP package, hence, RO reject can not be use in CHP dust suppression, hence, Bidder understands that RO reject will be taken to N-pit for further disposal in ash slurry handling system. Please confirm Bidder's understanding.	Bidder's understanding is not correct. RO reject shall be led up to coal handling plant for owner's dust suppression system.

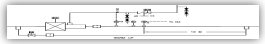
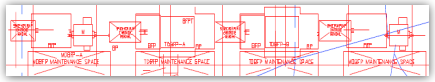
794	Part-B Part-B Part-A	Sub-section A-14 Water Treatment Plant Sub section-A-01 Equipment Sizing Criteria Sub section-IIA-10 Water Treatment Plant	7 of 36 52 of 87 6 of 12	3.10.00 b,2,d 3.06.00, C,3,a 1.03.03, b	d) Oil skimmer (2x100%) **Oil centrifuge (2x100%)** One (1) number RCC waste service water 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. Bidder to refer Amendment Sl. No. WS-14 in this regard.
795	Part-A Part-E1	 Sub section-IIA-10 Water Treatment Plant 	9 of 12 68 of 91	2.00.00 (B) (3) (d) XXXX-XXX-POM-A-003	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.	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's understanding is correct.
796	Part-E1	--	--	--	P&ID for Coal Handling plant run-off water treatment system	Since unloading and staking is not in Bidder's scope, hence, Bidder understands that coal run off water treatment system shall not be in Bidder's scope. Please confirm Bidder's understanding. Further, if the same to be considered for existing CHP area, please furnish the scheme for coal handling plant run-off water treatment system	
797	Part-B	Sub-Section A-14 Water Treatment Plant	22 of 36	12.00.00	CSSP (Stiling chamber) design flow(min):- 2000 m3/hr + 3% for sludge Clarifier Design Flow of each :- 2000 m3/hr clarifier (Net output) (minimum)	Since unloading and staking is not in Bidder's scope, hence, Bidder understands that coal run off water treatment system shall not be in Bidder's scope. Please confirm Bidder's understanding. Further, if the same to be considered for existing CHP area, Bidder understands that CSSP Clarifier design capacity shall be 2000m3/hr to take care coal run off water from phase-II as well as phase-III including storm water. Please confirm Bidder's understanding.	Bidder's understanding is not correct. Bidder to provide clarifer system for existing CSSP. Bidder to also refer clause 1.03.04 of sub section IIA-10 (Page 6 of 12) of Part A of tender specifications.
798	Part-A Part-B	Sub section-IIA-10 Water Treatment Plant 'Sub-section A-14 Water Treatment Plant	8 of 12 32 of 36	2.00.00 (B) (1) (b) 21.00.00 (A) (1)	Ultra-filtration system membranes skid (UF) **(2x100%)** (Pressurized type) along with basket strainers and necessary valves, piping, fittings etc. Number of trains of UF - **2 x 60%**	Discrepancy observed in the configuration of UF system in UF+RO+MB based DM system. Bidder has considered Ultra-filtration system membranes skid (UF) (2x100%) as per cl. No. 2.00.00 (B) (1) (b). Please confirm.	2x100% UF to be provided for RO based DM plant. Further, Biddeer to also refer Amendment Sl.No. WS-6.
799	Part-B Part-E1	Sub-section A-14 Water Treatment Plant --	33 of 36 68 of 91	22.00.00 (C) (2) XXXX-XXX-POM-A-003	Number of HPP - **One(1) per RO train + 1 common standby** **2 Nos** of High pressure pumps are shown	As per datasheet in Part-B, 1 number of high pressure pumps needs to be considered for each RO train (total 2 number of streams) along with a common standby, whereas in tender PID, 2 nos of pumps are shown. Bidder understands that 2 x 100% high pressure pumps shall be considered for 2 x 100% RO trains/streams as per tender P&ID (Part-E1). Please confirm.	Bidder's understanding is correct. 1x100% High pressure pumps for each RO stream is to be provided . Bidder to refer Amendment Sl. No. WS-15 in this regard.
800	Part-A	Sub section-IIA-10 Water Treatment Plant	7 of 12	2.00.00 (A) (g)	Two (2) numbers of UF feed Tanks complete with all accessories, three (3) nos. ultrafiltration. UF feed pumps complete with drive motors and accessories as required, **two (2) nos. Ultrafiltration skids** (Polishing UF) complete with all necessary piping, valves and, instrumentation etc.	Configuration of UF system for Ion Exchange based DM plant is not provided in the datasheet of Part-B. In absence of clarity, Bidder shall consider the same configuration as of the RO based DM system, i.e. 2 x 100%. Please confirm.	Bidder's consideration is not correct. Bidder to provide the system as per scope and comply technical specification requirements.
801	Part-B	Sub-Section A-14 Water Treatment Plant	34 of 36	23.00.00, (2)	Design flow per unit (min) - 75 m3/hr	Since configuration of MB vessel is 3 x 50% (Cl. No. 2.00.00, B, 3, (g)) and net out for DM plant shall be 75 m3/hr, Bidder understands that capacity for each MB unit shall be 75/2 = 37.5 m3/hr. Please confirm	Bidder to provide 2x100% MB vessel. Bidder to refer Amendment Sl. No. WS-16 in this regard.
802	Part-A Part-B Part-E1	Sub section-IIA-10 Water Treatment Plant 'Sub-Section A-14 Water Treatment Plant --	8 of 12 6 of 36 34 of 91	2.00.00, A, (o) 3.07.00 XXXX-001-POM-A-024	Neutralised waste shall be pumped to Ash Slurry Sump/tank. The sludge shall be transferred to the ash slurry tank/sump by means of sludge transfer pumps. As per tender flow diagram, FGD waste is being sent to HCSD Tank.	a. HCSD system is not applicable as per tender. Owner to specify the FGD waste water disposal scheme. b. Bidder understands that N-pit waste and PT plant sludge are transferred to Common ash slurry sump. However, the resultant flow (to be transferred to Ash dyke) will be very less compared to the combined ash slurry pump capacity. Hence, it is not advised to transfer all the above mentioned waste (inclusive of FGD waste) to common ash slurry sump for further disposal to ash dyke. Please specify the scheme for same.	The sludge, neutralised waste, FGD waste shall be transferred to ash slurry sump/tank. Bidder to design the system meeting the tender requirement as minimum.
803	TECHNICAL SPECIFICATIONS SECTION – VI, PART-A TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION-III TERMINAL POINTS & EXCLUSIONS AND OWNER'S INPUT SUB SECTION A-15 CW SYSTEM	2 of 3 29 of 40	1.07.00 2.01.0	Dedicated & new fire water headers/mains (hydrant & spray) tap-off shall be taken from existing discharge headers of hydrant/spray pumps and shall be routed to Stage-III area for connection to fire water pipe network of Stage-III. From the water reservoir in the Plant, raw water shall be drawn to the Raw Water pump house sumps (existing system). Raw water pumps (PT and Ash) shall be provided to supply water up to the Water PT Plant, Ash water tank and fire water tank	In plant water scheme tappings from ash water makeup system and CW blowdown is connected to fire water tank. However as per clause 1.07.00 fire water tank is not in Bidder's scope. Hence, Bidder has not considered separate tappings from CW blowdown and Ash water makeup system to existing fire water tank. Owner is requested to please confirm Bidder's consideration.	Bidder's understanding is correct.
804	Part-A Part-E1	Sub-Section IIA-20 Water Treatment Plant --	1 of 2 63 of 91	2.02.00 XXXX-XXX-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.	Bidder's consideration is not correct. Details shown in P&ID are minimum requirement & indicative, bidder to provide required number of pre-filters in line with specification requirements- Part A, Sub-section IIA-20, clause No. 2.02.00.
805	Part-A Part-E1	Sub-Section IIA-20 Water Treatment Plant --	1 of 2 64 of 91	2.04.00, b) XXXX-XXX-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 Mixed resin storage vessels (1nos). Please confirm.	Bidder's consideration is confirmed. Further, details shown in P&ID is indicative.
806	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.

807	Part-A Part-B Part-E1	Sub-Section IIA-20 Water Treatment Plant Sub Section A-11 Condensate Polishing Unit --	2 of 2 10 OF 15 64 of 91	2.04.00 (j) 5.10.00 XXXX-XXX-POM-A-013 (SH. 2 of 2)	**One (01) number** of DM water Storage tank for CPU regeneration system. Two (2) numbers of DM Tanks of vertical cylindrical type in MS construction internally painted with epoxy shall be provided..... .....Note: If CPU regeneration facility are located in DM plant regeneration area, total DM water storage requirements for CPU plant as mentioned above may be clubbed with total DM water storage requirements of DM plant as specified elsewhere to decide the effective capacity of the DM tanks. Also, minimum two (2) numbers of DM water storage tanks shall be provided. **2 nos** of DM Water storage tank shown in P&ID	There is contradiction between tender clauses and P&ID for DM water storage tank (for CPU) configuration. Please clarify the contradiction in the numbers of DM storage tank for CPU regeneration. However, as per clause no. 5.10.00, Sub-Section A-11, CPU, DM water tank for CPU can be combined with DM water storage tank in DM plant area. Hence, separate DM water tanks will not be envisaged if CPU regeneration facility is near to DM Plant area. Please confirm.	Two (02) no of DM water storage tank for CPU regeneration system is in bidder's scope. Please refer Amendment Sl. No. WS-7. Further, if CPU regeneration facility are located in DM plant regeneration area, total DM water storage requirements for CPU plant as mentioned above may be clubbed with total DM water storage requirements of DM plant as specified elsewhere to decide the effective capacity of the DM tanks. Also, minimum two (2) numbers of DM water storage tanks shall be provided.
808	SECTION-V I, PART-A	SUB-SECTION-VI CHAPTER-02 STEAM TURBINE GENERATOR	28 OF 34	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.
809	SECTION-V I, PART-A	SUB-SECTION-VI CHAPTER-02 STEAM TURBINE GENERATOR	29 OF 34	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.
810	SECTION-V I, PART-A	SUB-SECTION-VI CHAPTER-02 STEAM TURBINE GENERATOR	28 OF 34	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.
811	SECTION-V I, PART-A	SUB-SECTION-VI CHAPTER-02 STEAM TURBINE GENERATOR	31 OF 34	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.
812	Part-B	Sub-Section A-23 LP Dosing And Oxygenated Treatment System	1 of 4	1.03.00	Sodium and Chloride limit in case of both CWT & AVT feed water shall be maintained upto 2 ppb each at Condensate Polishing Plant outlet. It is proposed to install 100% capacity Condensate Polishing Unit for **each of the 2 x 660 MW units.**	There is discrepancy observed in tender clause regarding power plant capacity. Bidder understands that there is 1x800MW unit Kindly confirm Bidder's understanding.	Bidder's understanding is correct.
813	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.	Please refer Amendment Sl. No. WS-8
814	Technical Specification Section - VI, Part A	SUB-SECTION-B – IIA-22 Separation of Plant Drains from storm water drains	3 of 3	1.11.00	The wash water from the FOPH area containing traces of oil shall be pumped to oil water separator RCC pit in the fuel oil unloading area. The decanted water shall be reused/recycled for the washing of fuel oil handling areas. Parallelly, decanted water shall be collected in FOH area RCC pit/ sump(s) and pumped to Employer's waste service water sump (WSWS) located in LET plant.	Bidder understands that wash water from Stage-III forwarding pump house shall be discharged in existing oily water separator pit. Hence, Oily water separator along with decanting pump and dirty oil pump have not been considered by the Bidder. Please confirm Bidder's understanding.	Bidder's underestanding is correct.
815	Technical Specification Section - VI, Part B. Tender Drawings Section - VI, Part E. Technical Specification Section - VI, Part A	SUB-SECTION–A-02 Steam Generator and Auxiliaries including ESP. -- SUB-SECTION-B – IIA-01 Steam Generator and Auxiliaries including ESP	33 of 67 24 of 91 17 of 28	11.03.04 -- 2.18.00	LDO Pumps : (v) No. of pumps :**3** (2 working +1 standby) Flow Scheme of Fuel Oil shows 2 nos. LDO pumps Two (02) rotary positive displacement type LDO pumps with motor, coupling, coupling guards etc.	There is a discrepancy amongst stated tender clauses for no. of LDO pumps. Bidder has considered Two (02) rotary positive displacement type LDO pumps with motor (1 Working + 1 Standby) as per part-A. Please confirm.	Bidder to refer Amendment to technical specification Sl. no. SG.38 in this regard
816	Technical Specification Section - VI, Part B. Tender Drawings Section - VI, Part E	SUB-SECTION–A-02 Steam Generator and Auxiliaries including ESP --	33 of 67 24 of 91	11.03.04 --	Drain Oil Pumps : (v) No. of pumps :3 Flow Scheme of Fuel Oil shows 1 no pump for Drain oil tank at Fuel Oil Pump House & 1 no pump for Drain oil tank at Steam Generator area.	There is a discrepancy amongst stated tender clause & Flow Scheme for no of Drain Oil Pumps. Bidder has considered 1 no. pump for Drain oil tank at Fuel Oil Pump House & 1 no pump for Drain oil tank at Steam Generator area. Please confirm.	Bidder to refer Amendment to technical specification Sl. no. SG.38 in this regard
817	Technical Specification Section - VI, Part A	SUB-SECTION–A-02 Steam Generator and Auxiliaries including ESP	35 of 67	11.05.01	All piping system shall be sized to meet the fuel oil requirements of 02 (two) number Steam Generator(s) operating simultaneously at 30% BMCR load.	Typo error is found as mentioned in stated tender clause. Considering 1x800 MW unit, Bidder has considered fuel oil pipe sizing to meet the fuel oil requirements at 30% BMCR load of 01 (one) number of Steam Generator. Please confirm.	Bidder has incorrectly qouted the specification. Th ereferred clause content includes the following: "All piping system shall be sized to meet the fuel oil requirements of 01 (one) number Steam Generator operating at 30% BMCR load."
818	TECHNICAL SPECIFICATIONS SECTION – VI, PART-A	SUB-SECTION-III TERMINAL POINTS & EXCLUSIONS AND OWNER'S INPUT	1 of 3	1.02.00	Potable water supply line up to Terminal point for interconnection with colony supply line.	Owner to please provide terminal point details (i.e. pressure requirement at terminal point, location, size, elevation etc.) and provide location in General Layout drawing.	Potable water supply to Colony is not in Bidder's scope.
819	PART-E1	Existing Raw water pump house GA drawing	57 of 91		Existing Raw water pump house GA drawing	GA drawing details of stage-1 items i.e. raw water pumps, pipings, crane etc. are not shown in the GA drawing furnished along with tender, which is required to check feasibility of piping interconnection and pump installation.. Bidder understands for stage-III raw water pump shall be handled by existing EOT crane and gates/ screen shall be handled by existing hoist. Owner to confirm. Owner to please provide GA drawing of raw water pump house of stage-1 Raw water pump details , piping, EOT crane and Hoists details.	The GA drawing of existing Raw water pump house indicates the handling arrangement (EOT crane capacity- 5 T, Gate Hoist- 3T, Trash Rack hoist- 2T). Further, bidder to note that the interconnection of header is outside the pump house. Further, in case of requirement of any additional lifting arrangement to complete the scope of work shall be in Bidder's scope.
820	TECHNICAL SPECIFICATION SECTION – VI, PART-A TECHNICAL SPECIFICATIONS SECTION-VI PART-B TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB SECTION IIA-11 CW SYSTEM SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA SUB SECTION A-15 CW SYSTEM	3 of 4 48 of 87 35 of 40	1.05.00 (1) 3.05.00 4.07.01	The Raw water system should be designed with Forced water lubrication. The system shall be designed with Forced water lubrication. The type of lubrication i.e., self-water lubrication or forced water lubrication shall be provided.	Discrepancy found between Clause 1.05.00, 3.05.00 and 4.07.01. Bidder understands self water lubrication is also acceptable as an alternative for Raw water pumps. Owner to please confirm.	Raw water system is to be designed with forced water lubrication.. Further, bidder to note that the clause 4.07.01 (Page 35 of 40) of Annexure-2 of sub section A-15 of Part B is a generic specification for all vertical pumps covered in the scope (whether forced water lubrication or self lubrication).

821	TECHNICAL SPECIFICATION SECTION – VI, PART-A	SUB SECTION IIA-11 CW SYSTEM	3 of 4	1.05.00 XXX-XXX-POM-A-001	Service water system including 2x100% Service water pumps In P&ID and Layout of Liquid effluent treatment system Three (3) nos. of service water pumps are indicated.	Discrepancy found regarding number of service water pumps. Owner to please check and inform requirement of service water pumps.	2x100% service water pumps are to be provided. Shown P&ID is indicative.
822	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-D-1-5 CIVIL WORKS SALIENT FEATURES AND DESIGN CONCEPT	39 of 69	5.18.01	Existing Stage-I Raw Water Pump House 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.	Bidder understand that stoplog and screens are already provided for proposed one no. Raw/AHP water pumps for stage-III as per the Existing raw water pump house GA drawing. Hence, during erection of proposed pump, the associated sump will be isolated. Please confirm bidder's understanding.	Bidder to refer Amendment D1-45.
822	Section - VI, Part A	SUB-SECTION-B – III TERMINAL POINTS & EXCLUSIONS AND OWNER'S INPUT	1 of 3	1.01.01	a) 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.	Request owner to provide location in tender plot plan for auxiliary steam interconnection header with existing stage-II.	TP Location for Auxiliary Steam interconnection for Auxiliary Steam Station Header with existing HT Auxiliary Steam Header of Stage II with motorized isolation valve as indicated in the tender drg. Shall be Dummy Connection with Valve given near Axis No.19 and in BC Bay at 33.350 M elevation floor of Unit # 5 TG Bay in HT Header.
823	Part-E1	-	-	Tender Plot plan	Area allocated for Main ash silo and Fine ash silo on railway line	Considering the area allocated in plot plan, It shall not be feasible to locate 2 Nos. Main fly ash silos along with rail weigh bridges and FA silo approach road with required turning radius. Request owner to revisit the Main FA silo area layout.	Bidder to refer Amendment Sl. D1-27 for revised GLP
824	SECTION – VI, PART-A	SUB-SECTION-IID	1 of 8	1.00.00	SCOPE OF CIVIL, STRUCTURAL & ARCHITECTURAL WORKS OF EPC PACKAGE The scope of civil, structural and architectural works shall include topographical survey, geotechnical investigation, site clearance, dismantling of existing structures/substructures/facilities,.....	In absence of clarity, Bidder understands that dismantling and Re-laying of existing rail lines during stage-III main FA silos construction shall be under owner's scope. Also, necessary statutory/RDSO approvals for rail line works shall be under owner's scope. Please confirm Bidder's understanding.	Bidder undersatnding is correct
825	Section - VI, Part B Section - VI, Part B Section - VI, Part B	SUB-SECTION-D-1-5 CIVIL WORKS SALIENT FEATURES AND DESIGN CONCEPT SUB-SECTION-D-1-5 CIVIL WORKS SALIENT FEATURES AND DESIGN CONCEPT SUB SECTION- G-03 LAYOUT PHILOSOPHY	8 of 69 66 of 69 9 of 15	5.02.08 5.23.27.1 1.03.00 (39) (II)	The level of the bottom chord (bottom of steel) of the gallery shall be at least 3.0m above the finished paving level in general... The bottom of steel in case of cable / pipe galleries and trestles shall be generally 3m above the ground except... In the outlying area, pipe and cables can be routed on trestle with headroom of 2.1m or on pedestals...	Discrepancy found between Clauses, Bidder shall be consider as per Section-VI, Part B, 1.03.00 (39) (II). Owner requested to confirm.	Bidder undersatnding is correct. Clause 5.02.08, 5.23.27.1 are in confirmity . Bidder to follow above mentioned clauses. Headroom clearance of 2.1m shall be maintained as per layout requirements and gallery bottom chord level to be maintained at 3 m .

S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
826	SECTION – VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	5 OF 73	1.01.01	CATEGORY-I GUARANTEES (ix) Unit Auxiliary power consumption (x) Auxiliary Power Consumption for Station Auxiliaries	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.
827	SECTION – VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	2 OF 73	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.	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.	Bidder's proposal is not acceptable. Bidder to comply with the specification requirements.
828	SECTION – VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	50 OF 73	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.	Bidder's query regarding Sipat Specification is not correct. Bidder to comply with the specification requirements.
829	SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	3 OF 35	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 deg.C 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.
830	SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	4 OF 35	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 deg.C 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.
831	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.	It is clarified that in case Mandatory spares are repeated at more than one location, Bidder to consider item/spare indicated with maximum quantity.
832	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES CHAPTER-02 STEAM TURBINE GENERATOR	5 of 34	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.
833	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES CHAPTER-02 STEAM TURBINE GENERATOR	5 of 34	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.
834	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES CHAPTER-02 STEAM TURBINE GENERATOR	6 of 34	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
835	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES CHAPTER-02 STEAM TURBINE GENERATOR	12 of 34	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.
836	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES CHAPTER-02 STEAM TURBINE GENERATOR	13 of 34	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, LP bypass water injection valve : 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.
837	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES CHAPTER-02 STEAM TURBINE GENERATOR	27 of 34	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 .However, Bidder to comply technical specification .
838	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES CHAPTER-02 STEAM TURBINE GENERATOR	6 of 34	26	HP Bypass Valve complete assembly : 1 no.	Bare stem valve excluding complete servomotor assembly 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.
839	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES CHAPTER-02 STEAM TURBINE GENERATOR	25 of 34	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 with links for LPBP d. Positioner for LPBP e. Controller as applicable 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.
840	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES CHAPTER-02 STEAM TURBINE GENERATOR	25 of 34	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.
841	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES CHAPTER-02 STEAM TURBINE GENERATOR	27 of 34	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.
842	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES CHAPTER-02 STEAM TURBINE GENERATOR	8 of 34	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.
843	Section – VI, part-A	SUB SECTION-VI, MANDATORY SPARES CHAPTER-02 STEAM TURBINE GENERATOR	8 of 34	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.
844	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 recent tender of NTPC for Talcher 2x660 MW project. Please confirm acceptance.	This shall be finalised during the detailed engineering.
845	Technical Specification Section - VI, Part B	Sub-Section A-01 Equipment Sizing Criteria	38 of 87	2.03.07	The deaerator shall be designed such that maximum oxygen content shall be 0.005 cc/litre at deaerator outlet measured as per ASTI	All super critical units operated in oxygenated treatment mode and hence guarantee for maximum oxygen content in feed water system is not applic	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.
846	Technical Specification Section - VI, Part A	Sub-Section, IV Functional Guarantees & Liquidated Damages	4 of 73 8 of 73	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.

847	Technical Specification Section - VI, Part B	Sub-Section, G-01 Operating Capability Of Plant Sub-Section, A-01 Equipment Sizing Criteria	1 of 4 44 of 87	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), House load 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 House load power output.	Bidder to refer amendment TG-5 in this regard againt clause no. 2.08.00 (d)/Sub-section-A-01/Part-B/Section-VI.
848	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.
849	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.
850	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.
851	Technical Specification Section - VI, Part B	Sub-Section-A-08 Power Cycle Piping	1 of 19	1.02.00 (a)	BFP-T Exhaust Piping 60- 120 M/sec However, 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 proposal not acceptable. Bidder to comply specification requirement.
852	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.
853	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	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.	The available aux. steam flow and paramters from the Stg.-II have been specified. Any additional flow requirement or steam paramteres shall be in the scope of the Bidder. Bidder to also refer to the amendment to technical specification Sl. no. TG-7 for Drg. No.- XXXX-999-POM-A-006 and Sl. no. SG.26.
854	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.
855	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 trip at separator level high-high shall be retained".	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.
856	Technical Specification Section - VI, Part B_BookQA	Sub-Section-E-12 Boiler Feed Pumps	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.	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 to meet specification requirements.Detailed test requirement shall be discussed during post award MQP finalisation.
857	Technical Specification Section - VI, Part B_BookQA	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 to meet specification requirement.
858	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.
859	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.
860	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	42 of 87 2 of 37	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-6 in this regard against clause no. 1.03.00/Sub-Section-G-05/Part-B/Section-VI.
861	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 24 of 25). Bidder to comply with the specification requirements.
862	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.
863	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.
864	Technical Specification Section - VI, Part B	Sub-Section-A-01 Equipment Sizing Criteria	38 of 87	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 corresponding to VWO condition with 3% make up and 77 mmHg (abs) condenser pressure at 10% accumulation whichever is higher and set to open at heater shell design pressure.	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.
865	Technical Specification Section - VI, Part B	Sub-Section-A-01 Equipment Sizing Criteria	37 of 87	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.

866	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.
867	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 87 2 of 19	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. 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.
868	Technical Specification Section - VI, Part B	Sub-Section A-01 Equipment Sizing Criteria	3 of 87	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 the Employer. Bidder to make necessary modifications to its start-up philosophy/procedure to comply to the technical specification requirement.
869	Technical Specification Section - VI, Part B Technical Specification Section - VI Part E - Tender Drawings	Sub-Section A-01 Equipment Sizing Criteria General Layout Plan	41 of 87 -	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.	Referred Tender drawings do not pertain to Sipat St-III(1X800 MW) EPC package. Requirements of Technical Specification and Tender drawings are correct. Bidder to comply with the specification requirements.
870	Technical Specification Section - VI, Part B	Sub-Section A-07 STEAM TURBINE AND AUXILIARIES SYSTEM	15 of 25	6.05.07	**Codes** 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.

S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
871	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION- E-00 INTRODUCTION TO QUALITY ASSURANCE SPECIFICATION	PAGE 1 OF 1	-	Various standards referred in this document shall be the latest revisions.	Bidder request to follow clause "PART-C 5.00.00 CODES & STANDARDS of GENERAL TECHNICAL REQUIREMENTS 5.02.00 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; 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.
872	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.
873	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
874	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	The requirements of NDT is clearly specified. Bidder to comply technical specification requirement. This may be discussed during detailed engineering
875	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.
876	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.
877	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.
878	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.
879	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-6 POWER CYCLE PIPING	Page 2 of 5	1.02.00	Fittings: Raw material of all forged/formed fitting shall be ultrasonically tested. All mother pipes used for fitting shall be ultrasonically tested or hydraulic tested.	All the pipes used for formed fittings shall be UT or Hydrotested as per pipe material specification. (There is a contradictory statement in the first and second sentence.)	Bidder proposal is not acceptable. Hydrotest is carried out to validate the design & strength of the component. Bidder to follow the technical specification
880	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-8 STEAM TURBINE & INTEGRAL AUXILIARIES	Page 23 of 26	1.07.03	1.07.03 Butterfly valves: (h) After assembly, one valve of each size with respective actuator shall be shop operated over the full range of movement in both the directions, with the body subjected to the full hydrostatic pressure conditions, to demonstrate that the unit is in working order without any leakage through the joints and torque switches/clutches, limit switches are operating satisfactorily. During the test, hand wheel operation, opening/closing time and current drawn shall also be checked.	As per all the Butterfly valve manufacturer practice, after assembly of valve, the valve functional test will be done with respective actuator operated over the full range of movement in both the directions without subjecting the body hydrostatic pressure conditions. Please note that the body is already hydrotested in assembled condition.	Bidder proposal is not acceptable.The detailed test requirements shall be discussed & finalised during post award MQP finalisation.
881	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 proposal is not acceptable.The detailed test requirements shall be discussed & finalised during post award MQP finalisation.
882	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-8 STEAM TURBINE & INTEGRAL AUXILIARIES	Page 13 of 26	1.03.01	(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 proposal is not acceptable.The detailed test requirements shall be discussed & finalised during post award MQP finalisation.
883	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-8 STEAM TURBINE & INTEGRAL AUXILIARIES	Page 16 of 26	1.04.02	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 proposal is not acceptable.The detailed test requirements shall be discussed & finalised during post award MQP finalisation.
884	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-8 STEAM TURBINE & INTEGRAL AUXILIARIES	Page 18 of 26	1.06.02	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 proposal is not acceptable.The detailed test requirements shall be discussed & finalised during post award MQP finalisation.
885	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-8 STEAM TURBINE & INTEGRAL AUXILIARIES	Page 20 of 26	1.06.03	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 proposal is not acceptable.The detailed test requirements shall be discussed & finalised during post award MQP finalisation.
886	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
887	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 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 proposal is not acceptable.The detailed test requirements shall be discussed & finalised during post award MQP finalisation.
888	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.
889	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB SECTION-E-13 RAW WATER SYSTEM (MECHANICAL)	Page 1 & 2 of 12 Page 7 of 12 Page 10 of 12	3) x xo vii ix	.Followings are the testing requirements for fabrication of pipes at site..... Following checks shall be carried out during joining of MS pipes at site by welding	Bidder request to perform RT/UT/ PAUT/TOFD in lieu of Hydraulic Test	Hydraulic 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 .

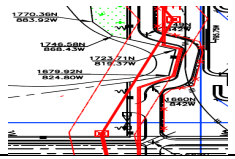
890	TECHNICAL SPECIFICATION SECTION-VI, PART-B	SUB-SECTION-E-17 AC AND VENTILATION SYSTEM(MECH	Page 1 of 3	3.04.00	3.00.00 CENTRIFUGAL PUMP: 3.04.00 Standard Running Test i) All pumps shall be tested in the manufacturer's works preferably with contract motor (or as specified in Engg Tech spec) for capacity, 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.
891	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 plates/liners of lower thickness, the defects may not be identified by UT. Hence RT needs to be done. Bidder is requested to follow technicalm specifications
892	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.	For factory fabricated pipes with Spiral weld joints DPT on root run shall not be applicable. The same is already incorporated in TS.
893	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/P91 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.
894	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.
895	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.
896		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.
897	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.
898	GENERAL TECHNICAL REQUIREMENTS SECTION - VI	QACP (QA Coordination Procedure)	Page 3 of 7	13	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, 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.
899	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 10.04.02	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.
900	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	Bidder understanding is not right : Government Circulars are to be followed along with GCC Clasue.
901	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.
902	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.
903	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 D1-68
904	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 an as per IS: 1077 shall be allowed for use. Owner is requested to confirm acceptance.	Bidder's proposal is not acceptable.
905	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.
906	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 handguided 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.
907	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.
908	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.

909	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
910	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.
911	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.
912	SECTION VI, PART- B	SUB-SECTION B-04 TRANSFORMERS AND ASSOCIATED MAINTENANCE, MONITORING & TESTING EQUIPMENTS	PAGE 19 OF 36	1.11.02	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:…	Bidder would like to clarify that for similarity conditions IEC 600076-5, annexure B will be considered	Bidder understanding is not correct.Specification cl.no. 1.01.02 Sub -Section B-04 Section-VI, Part-B to be followed.
913	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.
914	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.

Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
915	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION-B-17 SWITCHYARD	21 of 98	3.03.05	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 765kV and 600kg for 132kV.	The clause no. 08.00.00 of SUB-SECTION-B-17 SWITCHYARD corresponds to the REQUIREMENT OF AUXILIARY ITEMS. Bidder understands that the correct clause to be referred is 6.04.00 of SUB-SECTION-B-17 SWITCHYARD. Owner may please confirm.	Bidder understadning is correct . The Bidder refer to clause no: 6.04.00 and also 08.10.00 of B-17 is applicable for post insulator
916	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 20 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.
917	TECHNICAL SPECIFICATION SECTION – VI, PART-A	SUB-SECTION-IIB ELECTRICAL SYSTEM / EQUIPMENTS	15 of 20 6 of 20	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, if required for Employer's requirement (indicated under clause 1.19.00), 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 regarding the scope of supply of cable & associated cabling for clause no:1.19.00 . Also Bidder refer Amendment No-01 ,Sl. no : EE-68 for clause no: 1.19.00(3)
918	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION B-0 GENERAL ELECTRICAL SPECIFCIATION	8 of 15 9 of 15	3.06.00 (h) (d) 3.06.00 (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 Sl. No. EE-73
919	TECHNICAL SPECIFICATION SECTION – VI, PART-B	SUB-SECTION B-0 GENERAL ELECTRICAL SPECIFCIATION	10 of 15	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.
920	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.
921	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.
922	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
923	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUB-SECTION-B-17 SWITCHYARD	50 of 98	11.03.03	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 refer to Amendment , sl. No: EE-27
924	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUB-SECTION-B-17 SWITCHYARD	58 of 98	12.02.03	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 12.01.03 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. Owner may please confirm.	Bidder refer to Amendment , Sl. no : EE-30
925	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B	SUB-SECTION-B-17 SWITCHYARD	82 of 98	14.05.07	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 understadning is correct . Bidder refer to Amendment , Sl. No: EE-34.
926	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	26 of 35	5.14.1	765 KV SWITCHYARD A.The Bidder/Sub Vendor should have designed, constructed / erected, tested and commissioned at least one no (1) of Air Insulated substation/switchyard of 715kV or above voltage class having at least two (2) bays 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. Therefore, Bidder proposes the clause to be read as: The Bidder/Sub Vendor should have designed, constructed / erected, tested and commissioned at least one no (1) of Air Insulated substation/switchyard of 715kV or above voltage class having at least two (2) bays 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.	Bidder Proposal Not accepted. Bidder refer to Amendment , Sl. No: EE-69
927	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	26 of 35	5.14.1	765 KV SWITCHYARD B.i) The Bidder/Sub Vendor should have designed, constructed / erected, tested and commissioned at least one no (1) of Air Insulated substation/switchyard of 400kV or above voltage class having at least Six (6) bays, 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 . i) The Bidder/Sub Vendor should have designed, constructed / erected, tested and commissioned at least one no (1) of Air Insulated substation/switchyard of 400kV or above voltage class having at least Six (6) bays, 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.	Bidder Proposal Not accepted. Bidder refer to Amendment , Sl. No: EE-69

928	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	27 of 35	5.14.1	B.II) The Bidder / sub vendor associates with an organisation who meet the requirement indicated at 5.14.1.A above. The associate will be fully responsible for design, erection, testing and commissioning of the complete switchyard. In such and event the Bidder / sub vendor shall arrange a deed of undertaking to this effect jointly executed by the bidder / sub vendor and its associate as per the format enclosed in the bid document. This Deed of joint Undertaking should be submitted along with the Techno - commercial bid. In case of award the Associate will be required to furnish an on demand bank guarantee for 2% (two percent) of the total contract price in additional to the contract performance security to be provided by the bidder	Bidder understands that there is no relevance of the bank guarantee with provenness criteria as per industry standard. Therefore, Bidder proposes the clause to be read as: B.II) The Bidder / sub vendor associates with an organisation who meet the requirement indicated at 5.14.1.A above. The associate will be fully responsible for design, erection, testing and commissioning of the complete switchyard. In such and event the Bidder / sub vendor shall arrange a deed of undertaking to this effect jointly executed by the bidder / sub vendor and its associate as per the format enclosed in the bid document. This Deed of joint Undertaking should be submitted along with the Techno -commercial bid. ~~In case of award the Associate will be required to furnish an on demand bank guarantee for 2% (two percent) of the total contract price in additional to the contract performance security to be provided by the bidder~~	Bidder Proposal Not accepted.
929	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	27 of 35	5.14.1	(I) 765KV CIRCUIT BREAKERS : a) The Bidder / Sub-vendor should have Manufactured and supplied minimum five(5) nos. of three phase circuit breakers suitable for Air Insulated Substation/ Switchyard of 715 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. Therefore, Bidder proposes the clause to be read as: a) The Bidder / Sub-vendor should have Manufactured and supplied minimum five(5) nos. of three phase circuit breakers suitable for Air Insulated Substation/ Switchyard of 715 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.	Bidder Proposal Not accepted. Bidder refer to Amendment , Sl. No: EE-69
930	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	27 of 35	5.14.1	b) Indian Manufacturers, who have Manufactured and supplied at least five (05) nos, of three phase Circuit Breakers 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 and have manufactured and supplied 715kV or above class Circuit Breakers prior to the date of Techno-Commercial bid opening can also supply 765kV Circuit Breakers provided their collaborator meet the requirement stipulated under 5.14.2.A.I(a) above.	Bidder understands that there is no relevance of the date of Techno-Commercial bid opening with provenness criteria as per industry standard. Therefore, Bidder proposes the clause to be read as: b) Indian Manufacturers, who have Manufactured and supplied at least five (05) nos, of three phase Circuit Breakers 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~~ and have manufactured and supplied 715kV or above class Circuit Breakers prior to the date of Techno-Commercial bid opening can also supply 765kV Circuit Breakers provided their collaborator meet the requirement stipulated under 5.14.2.A.I(a) above. Owner may please accept.	Bidder Proposal Not accepted. Bidder refer to Amendment , Sl. No: EE-69
931	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	27 of 35	5.14.1	II. 765kV INSTRUMENT TRANSFORMERS (Current Transformers / Capacitor Voltage Transformers as Applicable): a) The Bidder / Sub-vendor should have Manufactured and supplied minimum fifteen(15) nos. of single phase Instrument Transformers suitable for Air Insulated Substation/ Switchyard of 715kV 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. Therefore, Bidder proposes the clause to be read as: a) The Bidder / Sub-vendor should have Manufactured and supplied minimum fifteen(15) nos. of single phase Instrument Transformers suitable for Air Insulated Substation/ Switchyard of 715kV 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.	Bidder Proposal Not accepted. Bidder refer to Amendment , Sl. No: EE-69
932	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	28 of 35	5.14.1	b) Indian Manufacturers, who have Manufactured and supplied at least fifteen (15) nos, of Single phase Instrument Transformers 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 and have manufactured and supplied 715kV or above class Instrument Transformers prior to the date of Techno-Commercial bid opening can also supply 765kV instrument Transformers provided their collaborator meet the requirement stipulated under 5.14.2.A.II(a) above.	Bidder understands that there is no relevance of the date of Techno-Commercial bid opening with provenness criteria as per industry standard. Therefore, Bidder proposes the clause to be read as: b) Indian Manufacturers, who have Manufactured and supplied at least fifteen (15) nos, of Single phase Instrument Transformers 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~~ and have manufactured and supplied 715kV or above class Instrument Transformers prior to the date of Techno-Commercial bid opening can also supply 765kV instrument Transformers provided their collaborator meet the requirement stipulated under 5.14.2.A.II(a) above. Owner may please accept.	Bidder Proposal Not accepted. Bidder refer to Amendment , Sl. No: EE-69
933	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	28 of 35	5.14.2	III. 765 kV DISCONNECTORS : (a) The Bidder / Sub-vendor should have Manufactured and supplied minimum five(05) nos. of three phase Disconnectors suitable for Air Insulated Substation/Switchyard of 715kV 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. Therefore, Bidder proposes the clause to be read as: (a) The Bidder / Sub-vendor should have Manufactured and supplied minimum five(05) nos. of three phase Disconnectors suitable for Air Insulated Substation/Switchyard of 715kV 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.	Bidder Proposal Not accepted. Bidder refer to Amendment , Sl. No: EE-69
934	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	28 of 35	5.14.2	b) Indian Manufacturers, who have Manufactured and supplied at least Five (05) 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 and have manufactured and supplied 715kV or above class Disconnectors prior to the date of Techno-Commercial bid opening can also supply 765kV Disconnectors provided their collaborator meet the requirement stipulated under 5.14.2.A. III(a) above.	Bidder understands that there is no relevance of the date of Techno-Commercial bid opening with provenness criteria as per industry standard. Therefore, Bidder proposes the clause to be read as: b) Indian Manufacturers, who have Manufactured and supplied at least Five (05) 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~~ and have manufactured and supplied 715kV or above class Disconnectors prior to the date of Techno-Commercial bid opening can also supply 765kV Disconnectors provided their collaborator meet the requirement stipulated under 5.14.2.A. III(a) above. Owner may please accept.	Bidder Proposal Not accepted. Bidder refer to Amendment , Sl. No: EE-69
935	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	28 of 35	5.14.2	IV. 765kV SURGE ARRESTER: a) The Bidder / Sub-vendor should have Manufactured and supplied minimum fifteen(15) nos. of single phase Surge Arresters suitable for Air Insulated Substation/ Switchyard of 715kV or above class which should 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. Therefore, Bidder proposes the clause to be read as: a) The Bidder / Sub-vendor should have Manufactured and supplied minimum fifteen(15) nos. of single phase Surge Arresters suitable for Air Insulated Substation/ Switchyard of 715kV or above class which should 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.	Bidder Proposal Not accepted. Bidder refer to Amendment , Sl. No: EE-69
936	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	28 of 35	5.14.2	b) Indian Manufacturers, who have Manufactured and supplied at least Fifteen (15) nos, of Single phase Instrument Transformers 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 and have manufactured and supplied 715kV or above class Surge Arrestors prior to the date of Techno-Commercial bid opening can also supply 765kV instrument Transformers provided their collaborator meet the requirement stipulated under 5.14.2.A.IV(a) above.	Bidder understands that there is no relevance of the date of Techno-Commercial bid opening with provenness criteria as per industry standard. Therefore, Bidder proposes the clause to be read as: b) Indian Manufacturers, who have Manufactured and supplied at least Fifteen (15) nos, of Single phase Instrument Transformers 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~~ and have manufactured and supplied 715kV or above class Surge Arrestors prior to the date of Techno-Commercial bid opening can also supply 765kV instrument Transformers provided their collaborator meet the requirement stipulated under 5.14.2.A.IV(a) above. Owner may please accept.	Bidder Proposal Not accepted. Bidder refer to Amendment No:1 , Sl. No: EE-69
937	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	29 of 35	5.14.2	(I)132KV CIRCUIT BREAKERS: The Bidder / Sub-vendor should have Manufactured and supplied minimum five(5) nos. of three phase circuit breakers suitable for Air Insulated Substation/ Switchyard of 132kV 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. Therefore, Bidder proposes the clause to be read as: The Bidder / Sub-vendor should have Manufactured and supplied minimum five(5) nos. of three phase circuit breakers suitable for Air Insulated Substation/ Switchyard of 132kV 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.	Bidder Proposal Not accepted. Bidder refer to Amendment , Sl. No: EE-69

938	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	29 of 35	5.14.2	II.132kV INSTRUMENT TRANSFORMERS (Current Transformers / Capacitor Voltage Transformers as Applicable): The Bidder / Sub-vendor should have Manufactured and supplied minimum fifteen(15) nos of single phase Instrument Transformers suitable for Air Insulated Substation/ Switchyard of 132kV 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. 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 Instrument Transformers suitable for Air Insulated Substation/ Switchyard of 132kV 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.	Bidder Proposal Not accepted. Bidder refer to Amendment No:1 , Sl. No: EE-69
939	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	29 of 35	5.14.2	III.132 kV DISCONNECTORS: The Bidder / Sub-vendor should have Manufactured and supplied minimum five(05)nos of three phase Disconnectors suitable for Air Insulated Substation/Switchyard of 132kV 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. Therefore, Bidder proposes the clause to be read as: The Bidder / Sub-vendor should have Manufactured and supplied minimum five(05)nos of three phase Disconnectors suitable for Air Insulated Substation/Switchyard of 132kV 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.	Bidder Proposal Not accepted. Bidder refer to Amendment , Sl. No: EE-69
940	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	29 of 35	5.14.2	IV. 132kV SURGE ARRESTER: The Bidder/Sub-vendor should have manufactured and supplied minimum fifteen (15) nos. of single phase Surge Arrestors of 132kV 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. 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 Surge Arrestors of 132kV 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.	Bidder Proposal Not accepted. Bidder refer to Amendment , Sl. No: EE-69
941	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	29 of 35	5.16	SUBSTATION AUTOMATION SYSTEM & PROTECTIVE RELAYS: The Substation Automation System offered with distributed architecture should have been in successful operation in at least one (1) Substation/Switchyard of not less than 220 kV class for minimum one (1) year prior to the date of Techno-Commercial bid opening. The Generator Protection Relays, the Bay Protection Units including the Busbar protection and the energy metering System offered should be from manufacturer(s) who have manufactured and supplied the offered type of devices for respective equipment, which must have been in successful operation in a 100 MW or above unit / 220 kV class or above Substation/Switchyard for a minimum period of one (1) year 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. Therefore, Bidder proposes the clause to be read as: The Substation Automation System offered with distributed architecture should have been in successful operation in at least one (1) Substation/Switchyard of not less than 220 kV class for minimum one (1) year ~~prior to the date of Techno Commercial bid opening~~. The Generator Protection Relays, the Bay Protection Units including the Busbar protection and the energy metering System offered should be from manufacturer(s) who have manufactured and supplied the offered type of devices for respective equipment, which must have been in successful operation in a 100 MW or above unit / 220 kV class or above Substation/Switchyard for a minimum period of one (1) year ~~prior to the date of Techno Commercial bid opening~~. Owner may please accept.	Bidder Proposal Not accepted. Bidder refer to Amendment , Sl. No: EE-69
942	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	30 of 35	5.17	132 EHV POWER CABLES & Cable Accessories: a) The bidder/Sub-vendor should have manufactured and supplied following cables: Atleast 1kms of XLPE insulated power cables of 132kV or higher voltage grade, executed in one or more orders 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. Therefore, Bidder proposes the clause to be read as: a) The bidder/Sub-vendor should have manufactured and supplied following cables: At least 1kms of XLPE insulated power cables of 132kV or higher voltage grade, executed in one or more orders 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.	Bidder Proposal Not accepted. Bidder refer to Amendment , Sl. No: EE-69
943	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-I-A PROVENNESS	30 of 35	5.17	b) Sub-Qualifying Requirements for 132 kV Cable Accessories The Bidder/Sub-vendor should have manufactured and supplied minimum fifteen (15) nos. of cable Accessories supplied of 132kV grade cable s or above, 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. Therefore, Bidder proposes the clause to be read as: b) Sub-Qualifying Requirements for 132 kV Cable Accessories The Bidder/Sub-vendor should have manufactured and supplied minimum fifteen (15) nos. of cable Accessories supplied of 132kV grade cable s or above, 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.	Bidder Proposal Not accepted. Bidder refer to Amendment , Sl. No: EE-69
944	SECTION – VI, PART-B	B-0	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.
945	SECTION – VI, PART-B	B-0	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.
946	SECTION – VI, PART-B	B-02	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 the water cooled motor class-Y with 90°C insulation is required	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.

947	SECTION – VI, PART-B	B-03	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.
948	SECTION – VI, PART-B	B-15	5 of 5	7.06.0, c)	Transformer	Control transformer (Rating & Qty) in elevator EOT / Hoist system shall be as per OEM proven design of NTPC approved vendor.	Bidder proposal is acceptable.
949	SECTION – VI, PART-B	B-10	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 Kindly confirm.	Bidder proposal is acceptable.
950	SECTION – VI, PART-B	B-02	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. HT motors shall have minimum design efficiency of 95 %. However, tolerance on this efficiency value shall be applicable as per IEC 60034	Bidder proposes to consider IE3 Motors instead of IE4 Motors. Owner may please update clause as below: "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.
951	SECTION – VI, PART-E	General Layout Plan Drg.No.XXXX-999-POC-F-001 Rev.A	-	-	 	Bidder observed that one transmission tower is shown outside plant boundary and the route for its connecting conductors are fouling on encroachment area which is outside plant boundary. Owner may please revise the route for 765kV Interconnection line by elimination encroachment area. Also, please provide route survey report for 765kV Interconnection line.	Bidder Refer to Amendment no, sl. No: Sl. no:47 Annexure-E2(Preliminary Route survey of S/C Line)

Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
952	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	7 of 87	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.
953	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	5 of 87	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.
954	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.
955	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 at least 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.
956	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 to Amendment ot technical specification sl. no. SG.22 in this regard
957	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 propose to offer motor operated valve at down stream of the control valve instead of upstream as per tender P&ID. Please confirm acceptance.	Detailed aspects w.r.t. the valve location shall be reviewed during detail engineering based on the selected specific equipment/sub-system.
958	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 airflow is acceptable as per standard & proven practice of OEM. 2.Bidder's proposal for inlet flow measurement for fD/ID/PA fans is acceptable. Further,bidder shall comply to the requirements of Tender drawing.
959	SECTION-VI, PART-A	SUB SECITON IB PROJECT INFORMATION Annexure-IV-7(B)		-	HGI of Biomass	HGI of Biomass is not provided, request Owner to provide the same.	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.
960	SECTION-VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	5 of 73 7 of 73	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)	Owner 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 Owner 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.
961	SECTION-VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	6 of 73	1.01.02 (vi)	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.
962	SECTION-VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	2 of 73	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.
963	SECTION- VI, PART - B	SUB SECTION- G-04 STANDARD PG TEST PROCEDURE	227 of 227	-	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).	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. Please confirm.	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.
964	SECTION- VI, PART - B	SUB SECTION- G-04 STANDARD PG TEST PROCEDURE	227 of 227	-	2) 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. Owner is requested to further clarify.	The requirement is intended to complete the PG test as per the scheduled time.

965	SECTION- VI, PART - B	SUB SECTION- G-04 STANDARD PG TEST PROCEDURE	227 of 227	-	Penthouse maximum & minimum MTM temperature difference should be within 40 deg.C. Necessary combustion tuning shall be done to ensure the same.	Owner 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.
966	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.	Owner 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 Owner to accept structural type hange support also.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
967	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.
968	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 comply Technical specification requirement.
969	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. Bidder to comply Technical specification requirement.
970	SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	11 of 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. Owner 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.
971	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.
972	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.
973	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.
974	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's understanding is correct. Bidder to comply the specification requirement.
975	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.
976	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 deg.C& 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 continues operation. Owner to confirm.	Bidder to refer Amemdment to technical specification Sl. no. SG.23 in this regard
977	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's request has been reviewed and is not acceptable . Bidder to follow specification requirement .
978	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 NTPC 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 Customer. This is inline with Bidder practice in recently executing projects.	Bidder's request has been reviewed and is not acceptable . Bidder to follow specification requirement .
979	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.**	Proposal shall be reviewed during detailed engineering based on the layout. In case of pit, bidder to provide sump pumps in the pit.

980	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's understanding is correct.
981	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.
982	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 back pass. 3) Boiler Scaffolding door floor covering both first pass and back pass 4) Top wall blower tier floor covering both first pass and back pass 5) Top burner top floor covering both first pass and back pass 6) Burner bottom floor covering both first pass and back pass 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.
983	SECTION – VI, PART-A	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.** Also Material from pyrite hoppers shall be removed by **Main Mechanical conveyor** and further fed to a bucket elevator which in turn will feed to main storage silo. Please confirm acceptance.	Technical specifications are clear, bidder to comply.
984	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.	Specification requirement is clear in this regard. Bidder to follow specification requirement .
985	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.
986	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 modelling, 2-phase flow model shall be developed for analysing 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.
987	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.
988	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.
989	SECTION – VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	Page 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.
990	SECTION – VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	Page 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.

991	SECTION – VI, PART-A	SUB-SECTION-VI CHAPTER -01 SG & AUXILIARIES	Page 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 to technical specification Sl. no. SG.20 in this regard.
992	SECTION – VI, PART-B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	Page 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 to technical specification Sl.no. SG.25 in this regard.
993	SECTION – VI, PART-A	SUB-SECTION-I-B	Page 11 of 19	ANNEXURE-IV-2	DOMESTIC COAL CHARACTERISTICS	Ash content in Proximity and Ultimate analysis is not matching in Design Coal. NTPC is requested to provide the corrected values for the same.	Bidder to refer Amendment to technical specification Sl.no. SG.03 in this regard.
994	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.
995	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.	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	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.		
	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.		
996	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.
997	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.
998	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.
999	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.
1000	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.
1001	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's 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	Bidder's proposal is not acceptable. Specification requirement is clear & bidder to comply the technical specification requirements.
	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.		
1002	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	bidders proposal of providing duplex RTD is Noted
1003	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.

1004	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 Bidder. 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's OEM does 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	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.
	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 deg.C& 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.		
1005	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's OEM 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.
1006	SECTION - VI/ Part B	E - 01	Page 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.
1007	SECTION - VI/ Part B	E - 01	Page 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)	Bidder proposal is not acceptable. The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
1008	SECTION - VI/ Part B	E - 1	Page 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).	Bidder proposal is not acceptable. The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
1009	SECTION - VI/ Part B	E - 1	Page 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. The requirements of NDT is clearly specified. Bidder to comply technical specification requirement.
1010	SECTION - VI/ Part B	E - 1	Page 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. This may be discussed during detailed engineering.
1011	SECTION - VI/ Part B	E - 01	Page 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.
1012	SECTION - VI/ Part B	E - 1	Page 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.
1013	SECTION - VI/ Part B	E - 1	Page 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.
1014	Quantum of RT or U+A32:F32T on shop and field weld butt joints	E - 1	Page 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 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 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.
1015	SECTION - VI/ Part B	E - 1	Page 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. Bidder 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.
1016	SECTION - VI/ Part B	E - 1	Page 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.

1017	SECTION - VI/ Part B	E - 1	Page 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.
1018	SECTION - VI/ Part B	E - 1	Page 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.
1019	SECTION - VI/ Part B	E - 1	Page 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.
1020	SECTION-VI, PART-B	SUB-SECTION-E-1	Page 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.
1021	SECTION-VI, PART-B	SUB-SECTION-E-1	Page 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.
1022	SECTION-VI, PART-B	SUB-SECTION-E-1	Page 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.
1023	SECTION-VI, PART-B	SUB-SECTION-E-1	Page 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 (approved by Bidder). 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
1024	SECTION-VI, PART-B	SUB-SECTION-E-1	Page 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.
1025	SECTION-VI, PART-B	SUB-SECTION-E-1	Page 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.
1026	SECTION - VI/ Part B	E - 1	Page 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.
1027	SECTION - VI/ Part B	E - 1	Page 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.
1028	SECTION - VI/ Part B	E - 1	Page 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.
1029	SECTION - VI/ Part B	E - 1	Page 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.
1030	SECTION - VI/ Part B	E - 1	Page 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.
1031	SECTION - VI/ Part B	E - 6	Page 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.
1032	SECTION - VI/ Part B	E - 6	Page 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. Bidder 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.
1033	SECTION - VI/ Part B	E - 6	Page 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 its OEM procedure.. Bidder does not envisaged PT/MT for Cold bends of pipes. As per OEM 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 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.
1034	SECTION - VI/ Part B	E - 6	Page 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
1035	SECTION - VI/ Part B	E - 6	Page 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.

1036	SECTION - VI/ Part B	E - 6	Page 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.
1037	SECTION - VI/ Part B	E - 6	Page 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.
1038	SECTION - VI/ Part B	E – 37	Page 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.
1039	SECTION - VI/ Part B	E – 40	Page 3of 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.
1040	SECTION - VI/ Part B	E – 42	Page 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.
1041	-	-	-	-	Wherever MPI is mentioned and option for PT due to inaccessible areas is not mentioned	Bidder proposes for PT for inaccessible areas. Please confirm acceptance.	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.
1042	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.
1043	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.
1044	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.
1045	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.
1046	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.
1047	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.
1048	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.
1049	SECTION – VI, PART-B	II-B-03 VFD	215/586	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 12 Pulse 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.
1050	SECTION – VI, PART-A	IIB ELECTRICAL SYSTEM / EQUIPMENTS	604/953	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.
1051	SECTION – VI, PART-A	IIC CONTROL & INSTRUMENTATION SYSTEM	609/953	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
1052	SECTION – VI, PART-B	II-B-02 MOTORS	208/586	3.01.00	Continuous duty LT motors up to 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.	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.
1053	SECTION – VI, PART-B	II-B-03 VFD	216/586	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.
1054	SECTION – VI, PART-B	II-B-03 VFD	217/586	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.
1055	SECTION – VI, PART-F	VI - Chapter I SG and Auxiliaries Mandatory spares	767/953	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.

1056	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB SECTION-VMANDATORY SPARES	1 of 3	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. Further, NTPC to kindly note that the quantities mentioned in the specification are similar to two Boiler requirement. Bidder requests NTPC to have a relook at quantities to optimize 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. Further bidder may also refer respective replies against such listed queries.
1057	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	1 of 38	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.
1058	TECHNICAL SPECIFICATION SECTION-VI, PART-A	-	1 of 38	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.
1059	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	2 of 38	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.
1060	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	2 of 38	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.
1061	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	2 of 38	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.
1062	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	3 of 38	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.
1063	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	3 of 38.	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.
1064	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	3 of 38	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.
1065	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	3 of 38	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.
1066	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	4 of 38	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.
1067	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	4 of 38	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.
1068	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	4 of 38	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.
1069	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 38	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.
1070	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 38	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.
1071	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 38	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.
1072	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 38	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.
1073	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 38	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.
1074	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 38	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.
1075	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 38	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.
1076	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 38	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.
1077	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 38	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.

1078	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 38	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.
1079	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 38	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.
1080	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	5 Of 38	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.
1081	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 38	1.05.00 B . FD Fan	1. Fan rotor assembly (excluding servo motor,blade & Couplings)	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.
1082	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 38	1.05.00 B . FD Fan	2.1 Fan bearings including bearing housing	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.
1083	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 38	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.
1084	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 38	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.
1085	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 38	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.
1086	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 38	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.
1087	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 38	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.
1088	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 38		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.
1089	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 38	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.
1090	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 38	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.
1091	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 38	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.
1092	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 38	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.
1093	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 38	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.
1094	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 38	1.05.00 C . PA 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.
1095	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	6 Of 38	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.
1096	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 38	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.
1097	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 38	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.

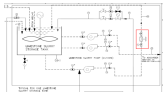
1098	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 38	1.05.00 C . PA Fan	6.4 Filters	4 Nos. Filter Elements shall be provided.	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
1099	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 38	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.
1100	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 38	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.
1101	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 Of 38	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.
1102	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 of 38	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.
1103	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 of 38	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.
1104	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 of 38	1.06.00 (7)	7. Liners with brackets & fasteners	Ceramic tiles for classifier, Middle housing, deflector plates considered against this clause	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.
1105	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 of 38	1.06.00 (9)	9. Multiport outlet & liners	Bidder has considered Outlet port with Ceramic tiles against this clause.	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.
1106	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 of 38	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.
1107	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	7 of 38	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.
1108	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 38	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.
1109	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 38	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.
1110	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 38	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.
1111	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 38	1.06.00 (23)	23. Mill lube oil motor	Motor for 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.
1112	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 38	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.
1113	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 38	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.
1114	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 38	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.
1115	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 38	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. We have 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.
1116	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 38	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.
1117	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 38	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.
1118	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 38	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.

1119	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	8 of 38	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.
1120	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	9 of 38	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.
1121	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	9 of 38	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.
1122	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	9 of 38	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.
1123	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	11 Of 38	1.10.00 B. Trisector RAPH	1. Support Bearing	Bottom bearing only offered against this clause	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.
1124	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	11 Of 38	1.10.00 B. Trisector RAPH	2. Guide Bearing	Top bearing only offered against this clause	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.
1125	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	11 Of 38	1.10.00 B. Trisector RAPH	10 Fluid coupling (if NA then other applicable coupling)	Normal coupling shall be supplied against this clause.	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.
1126	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	11 Of 38	1.10.00 B. Trisector RAPH	11 Other couplings with inserts & fasteners	Shrink Disc coupling between shaft and gear box offered against this clause	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.
1127	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	11 Of 38	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.
1128	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	11 Of 38	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.
1129	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	12 Of 38	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.
1130	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	12 Of 38	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.
1131	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	12 Of 38	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.
1132	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	12 Of 38	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.
1133	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	12 Of 38	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.
1134	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	13 Of 38	1.12.00 HEA Ignitors	2. HEA spark rod (including special cables from exciter)	HEA spark rod without spark tip. Please confirm.	Bidder understanding is correct
1135	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	13 Of 38	1.13.00Soot Blowers	1a Motor for water wall deslagger	Motor already covered in Sl. No. 1, hence deslagger motor not considered separately.	Bidder's understanding is not correct, bidder to comply technical specification requirements
1136	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	13 Of 38	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.	Bidder's understanding is not correct, bidder to comply technical specification requirements
1137	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	13 Of 38	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.
1138	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	13 Of 38	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.
1139	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	14 Of 38	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.
1140	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	14 Of 38	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.
1141	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	14 Of 38	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.
1142	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	14 Of 38	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.

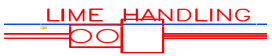
1143	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	14 Of 38	B. Spares for SH Safety Valves	4. Locking pin set	Bidder shall supply these spares if applicable as per OEM design	This is part of detail engineering. Bidder is requested to supply the mandatory spares as specified. Further Bidder to please also refer provisions specified in Mandatory spare chapter sub-section-VI, Part-A/section-VI.
1144	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	14 Of 38	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.
1145	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	14 Of 38	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.
1146	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	15 Of 38	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.
1147	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	15 Of 38	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.
1148	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	15 Of 38	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.
1149	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	15 Of 38	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.
1150	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	15 Of 38	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.
1151	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	15 Of 38	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.
1152	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	15 Of 38	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.
1153	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	16 Of 38	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.
1154	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES		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.
1155	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	17 Of 38	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.
1156	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	24 of 38	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.
1157	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	24 of 38	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.	Electronic modules indicated in referred clause pertains to Furnace Flame Viewing system. Bidder shall comply to specification requirements.
1158	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	25 of 38	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.
1159	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	25 of 38	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.
1160	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	25 of 38	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.
1161	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	25 of 38	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.
1162	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	26 of 38	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.
1163	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	26 of 38	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.

1164	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	28 of 38	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.
1165	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	28 of 38	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.
1166	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	28 of 38	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.
1167	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	28 of 38	8	Auxilary 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.
1168	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	28 of 38	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.
1169	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	28 of 38	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.
1170	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	28 of 38	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.
1171	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	29 of 38	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.
1172	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	29 of 38	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.
1173	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	29 of 38	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.
1174	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	29 of 38	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.
1175	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	29 of 38	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.
1176	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	29 of 38	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.
1177	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -1 SG & AUXILIARIES	30 of 38	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.
1178	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	1 of 4	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.
1179	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	2 of 4	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.
1180	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	1 of 4	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.
1181	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	1 of 4	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.
1182	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	PAGE 03 of 04	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.
1183	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	PAGE 03 of 04	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.
1184	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	PAGE 03 of 04	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.
1185	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	PAGE 03 of 04	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.
1186	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	PAGE 03 of 04	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.
1187	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	PAGE 03 of 04	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.
1188	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB-SECTION-VI CHAPTER -6 Piping	PAGE 04 of 04	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.
1189	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.
1190	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.	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.

1191	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.	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.

S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
1192	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 damper. However, seal material shall be of C276.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
1193	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.		
1194	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.		
1195	SECTION-VI, PART-A	SUB-SECTION-IIA-04	2 OF 7	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 DVC projects, Bidder proposes pneumatic actuated On/Off valves for the re-circulation line.	Bidder to refer Amendment to technical specification Sl. no. SG.42 in this regard
	SECTION – VI, Part-E	-Scheme of FGD Milling System	-	XXXX-001-POM-A-023			
1196	SECTION-VI, PART-B	SUB-SECTION-A-05 (FGD)	1 of 29	1.02.00	The Steam Generators which are designed to burn pulverised coal will use LDO during startup and at low loads for warm up and flame stabilization. Further, the frequency and duration for startup 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.
1197	SECTION-VI, PART-B	SUB-SECTION-A-05 (FGD)	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 & 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.
1198	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.
1199	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.
1200	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.
1201	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
1202	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.
1203	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.
1204	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.
1205	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.
1206	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
1207	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.
1208	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.		
1209	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.

1210	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.	For JBR, 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 for agitator 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.
1211	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
1212	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.
1213	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		
1214	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 maintain 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
1215	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.
1216	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
1217	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. Liners were not provided for all our earlier projects of NTPC (Khargone, Lara, Darlipalli and Vindhyachal) and all other state utilities.	Bidder's proposal is not acceptable. Specification requirement is clear in this regard. Bidder to comply technical specification requirement.
1218	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.
1219	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.
1220	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.
1221	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.	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.
1222	SECTION – VI, Part-E	SCHEME OF FGD - ABSORBER SYSTEM	-	XXXX-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.		
1223	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.
1224	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.
1225	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.
1226	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
1227	TECHNICAL SPECIFICATIONS SECTION – VI, PART-A	SUB-SECTION-IIA-14 LIMESTONE AND GYPSUM HANDLING PLANT	1 of 5	2.01.01	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 all available models of Trucks ranging from 4 to 16 wheels for receipt of Limestone inside Plant.
1228	- TECHNICAL SPECIFICATIONS SECTION – VI, PART-A - SECTION – VI, PART-E -TECHNICAL SPECIFICATIONS SECTION-VI, PART-B	- SUB-SECTION-II A-14 LIMESTONE AND GYPSUM HANDLING PLANT - Drg no : XXXX-001-POM-A-039 (SH-1) -SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	1 of 5 50 of 91 84 of 87	2.01.01 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's understanding is not correct. Limestone conveying system shall be single stream , with 100% stand-by for (Crusher + Belt Feeder) series. Bidder to comply Specification requirement. Bidder may provide additonal Belt Feeder at discharge of LBF-1 & LBF-2, if required.
1229	- TECHNICAL SPECIFICATIONS SECTION – VI, PART-A - SECTION – VI, PART-E	- SUB-SECTION-IIA-14 LIMESTONE AND GYPSUM HANDLING PLANT - Drg no : XXXX-001-POM-A-039 (SH-1)	1 of 5, 50 of 91	2.01.03	- 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's understanding is correct for Flap Gate arrangement at Limestone Ctusher House. Further, Bidder to refer Amendment MH-22 for revised Limestone Flow Duagram.
1230	- TECHNICAL SPECIFICATIONS SECTION – VI, PART-A	- SUB-SECTION-IIA-14 LIMESTONE AND GYPSUM HANDLING PLANT	4 of 5	3.07.0	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 all available models of Trucks ranging from 4 to 16 wheels for dispatch of Gypsum from Plant.
1231	- TECHNICAL SPECIFICATIONS SECTION – VI, PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES	59 of 73	2.03.07	Output coal/ Limestone size to be sieve analyzed 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 (-) 250 mm for incoming limestone. Occasionally 1-2% of 400mm may also to be considered.
1232	TECHNICAL SPECIFICATIONS SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	87 of 87	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 for Limestone & Gypsum Handling.

1233	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	5 of 79	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 25 m with travel of 4% of the total belt length.
1234	TECHNICAL SPECIFICATIONS SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	7 of 79	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.
1235	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 proposal is not acceptable. Requirement of specifications is clear, bidder to comply.
1236	---	---	---	---	General	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 NTPC to confirm.	Bidder's proposal shall be reviewed during detail engineering.
1237	---	---	---	---	General	Bidder understands that, bidder can optimize the overall FGD layout along with LHP/ GHP as per their system design complying to the technical specification requirements . Bidder shall maintain the functionality of the entire system as per the specifications. This shall include addition/deletion of TPs/ conveyors etc. from the tender flow diagram/ layout (if not applicable as per bidder's layout design).	Bidder's proposal shall be reviewed during detail engineering.
1238	---	---	---	---	General	No any bull dozer, pay loader or trucks are considered in the scope of bidder.	Bidder's understanding is correct.
1239	---	---	---	---	General	Angle of repose to be considered for limestone & gypsum. Kindly provide the same.	Bidder to consider angle of repose as 25 deg and 35 deg for limestone and gysum respectively.
1240	---	---	---	---	General	Please provide maximum surface moisture content for incoming limestone.	Bidder to consider 20% max moisture content.
1241	---	---	---	---	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.
1242	---	---	---	---	General	Bidder would like to combine different buildings complying with all functional & operational requirement stipulated in NIT document . Bidder requests Owner to accept	Bidder's proposal shall be reviewed during detail engineering.
1243	- SECTION – VI, PART-E	Drg no : XXXX-001-POM-A-039 (SH-2)	51 of 91	---	- As per flow diagram for gypsum conveyor rated capacity is 150TPH.	For 1x800 MW project, generally gypsum generation is ~20 to 25 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 vaccum belt capacity. Please confirm	Bidder's proposal is not accepted. However, rated caapcity for Gypsum conveying system has been revised. Bidder to refer Amendment SI MH-22 for revised Gypsum Flow diagram.
1244	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 proposal is not acceptable. Requirement of specifications is clear, bidder to comply.
1245	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	13 of 79 4 of 5	4.10.1 3.06.0	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. NTPC to confirm.	Bidder's understanding is not correct. Bidder to consider Energy chain arrangement for Travelling Tripper for both Coal & Gypsum handling.
1246	TECHNICAL SPECIFICATIONS SECTION-VI, Part-A	SUB SECTION-IIA-04 LIMESTONE AND GYPSUM HANDLING PLANT	1 of 7	1.02.00	The scope of supply identified for FGD system here are minimum requirements and unless specifically excluded from the contractor's scope in sub-section-V (Terminal Points and Exclusions), any equipment/system not included in this specification but integral to the system offered by the contractor to meet the intent of this specification, shall also be included in the scope of the contractor.	Bidder understands that the scope of work not explicitly mentioned in the specification to be considered additional. NTPC to confirm.	Technical specification is Clear.Bidder to comply stipulations of Technical Specification.
1247	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 81 of 87	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. NTPC to confirm.	The requirement are specified for different equipment/system. Bidder to follow the specified requirements in the two referred clauses for the respective equipment/system.
1248	SECTION – VI, PART-E	- Drg no - XXXX-999-POC-F-001 (SH-1) - - Drg no : XXXX-001-POM-A-039 (SH-1)	90 of 91 50 of 91			Flow diagram and Layout are contradictory, As per plant layout arrangement drawing-XXXX-999-POC-F-001, to fit limestone handling system, pit type bucker elevator is shown in between CRH & Bulk silo Hence, bidder understand to consider either pit type or pitless bucket elevator arrangement as per layout requirements. Kindly confirm.	Bidder's understanding is not correct. Bidder to consider pitless Bucket Elevator.
1249	SECTION – VI, PART-E	- Drg no : XXXX-001-POM-A-039 (SH-1)	50 of 91		The entire Bulk Receiving Unit/ Surface feeder is shown inside the BRU station building	Bidder understands that only discharge portion of BRU station will be covered inside the BRU station, However the equipment will be of a closed type, even though it will be operated in an open area.	Bidder's understanding is correct.
1250	SECTION – VI, PART-A	SUB-SECTION-A-14 LIMESTONE AND GYPSUM HANDLING PLANT	PAGE 4 OF 5	3.03.00	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-16 of 79, 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.	i) Bidder's understanding is correct.
	SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	Page 16 of 79	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.	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.	ii) Bidder's understanding is not correct. Bidder to provide Sump Pumps in Gypsum Storage area, as specifed.
1251	SECTION-VI, PART B	SUB-SECTION-A-20 Coal & Biomass and Limestone & Gypsum Handling Plant	Page 62 of 79	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.	Alternate Sprinkler spraying arrangement having superior effectiveness shall be accepted after review during detail engineering.
1252	SECTION-VI, PART E(1)	Gypsum Flow Diagram Drg. No.-XXXX-001-POM-A-039 (SH-2)	Page 51 of 91	Gypsum Flow Diagram Drg. No.-XXXX-001-POM-A-039 (SH-2)		Bidder understands that wet type gypsum shall be fed to GC-1 from Vacume 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 understanding is correct.Bidder to provide DS system in Gypsum Storage shed. Bidder to refer Amendment SI MH-22 for revised Gypsum Flow Diagram.

1253	SECTION – VI, PART-A	SUB-SECTION-A-14 LIMESTONE AND GYPSUM HANDLING PLANT	PAGE 3 OF 5	2.01.18	Complete dust extraction system for control of fugitive dust in limestone Silos, junction towers, 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 , has considered dry type DE system in line with standard engineering practice & ACGIH guideline. Please confirm.	Technical Specification is clear for Dust Extraction system in Limestone handling plant. Bidder to refer Clause 2.01.02, (c), (ii), Part B, A-20, VI/B.
1254	TECHNICAL SPECIFICATIONS SECTION-VI, PART-B	SUB SECTION-A-01 EQUIPMENT SIZING CRITERIA	PAGE 87 & 87	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's understanding is correct. In this regard, Bidder to refer Amendment Sl. MH 55.
	TECHNICAL SPECIFICATION SECTION – VI, PART-A	SUB-SECTION-A-14 LIMESTONE AND GYPSUM HANDLING PLANT	PAGE 4 OF 5	3.04.00	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.		
1255	SECTION-VI, PART-B SECTION-VI, PART-B	SUB SECTION-A-01 SUB SECTION-A-01	28 / 87 28 / 87	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.
	SECTION-VI, PART-B	SUB SECTION-A-01	28 / 87	1.05.22.01	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.)		
1256	SECTION-VI, PART-B	SUB SECTION-A-01	28 / 87	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.
1257	SECTION-VI, PART-B	SUB SECTION-A-01	29 / 87	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.	
1258	SECTION-VI, PART-B	SUB-SECTION-D-1-5	19 / 69	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 analyzed 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
1259	SECTION – VI, PART-B	SUB-SECTION-B-17	75 / 98	13.05.02	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.	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.
	SECTION-VI, PART-B	SUB-SECTION-D-1-5	20 / 69	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,		
1260	SECTION-VI, PART-B	SUB-SECTION-E-4	05 / 05	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 / data sheet for borosilicate lining over the steel flue.	Borosilicate block shall conform to NTPC approved data sheet and to be tested as per Relevant applicable standard .

Sr. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
1261	SECTION – VI, PART-A	SUB-SECTION-I INTENT OF SPECIFICATION	5 OF 8	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 Fuel Oil: 11200 kL Coal: 2.7 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 Sipat 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 & Sipat projects, request NTPC to provide the following corrected values of coal & Fuel oil quantities free of cost to the successfull bidder for Sipat project. Fuel oil : **15,300 kL** per unit (Same as NTPC Lara values) Coal : **3.58 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.

S. No.	Section / Part	Sub-Section	Page no.	Clause No.	Bid Specification Stipulation	Statement of Prebid Queries & Clarification	NTPC's Clarification
1262	Part-E1	-	-	Tender Drawings	Tender drawings	Request owner to provide existing plant Yard pipig layout drawing to check and estimate the proposed unit interface.	Available drawings will be shared with the successful bidder after award as mentioned in technical specification.
1263	Part-E1	-	-	Tender Drawings	Tender drawings	Request owner to provide existing plant Composite trestle layout for pipe and cables, Trestle in Transformer yard area, Gable end of main power house area, C-Row cantilever of main power house (CD- bay pipe rack), Trestle GA from C-Row to ESP control room, Trestle GA from FOPH/Aux boiler to C-Row of power house drawing to check and estimate the proposed unit interface.	Available drawings will be shared with the successful bidder after award as mentioned in technical specification.
1264	Part-E1	-	-	Tender Drawings	Tender drawings	Request owner to provide existing plant DM water tank and transfer pump house GA drawing for interconnection and interface with Stage III.	Bidder to refer Amendment SN WS-12
1265	Part-E1	-	-	Tender Drawings	Tender drawings	Request owner to provide existing plant Piping composite layout for auxiliary steam piping inside TG building/Dearator Floor drawing for interconnection and interface with Stage III.	Available drawings shall be shared with the successful bidder after award.
1266	Part-E1	-	-	Tender Drawings	Tender drawings	Request owner to provide existing plant Railway siding / Line layout drawing to check Fly ash silo placement/feasibilty and its bagging plant for Stage III.	Drawing shall be provided to the successful bidder.
1267	Part-E1	-	-	Tender Drawings	Tender drawings	Request owner to provide existing plant Fire water tank and fire water pump house GA alongwith its piping drawing for interconnection and interface with Stage III.	Details (Nos. & Capacity) of existing fire water pumps have been indicated at Annexure-III to Sub-Section-A-18 (FDPS), Part-B of Technical Specification (Section-VI). GA and P&ID of fire water pump house shall be shared during detailed engineering.
1268	Part-E1	-	-	Tender Drawings	Tender drawings	Request owner to provide existing plant CSSP area layout and GA & its piping drawing to check and estimate the proposed unit interface with Stage III.	Bidder to refer Amendment SN WS-9
1269	Part-E1	-	-	Tender Drawings	Tender drawings	Request owner to provide existing plant Fuel Oil Piping composite layout to check and estimate the proposed Fuel Oil unit interface with Stage III..	Bidder to refer GLP and further the required drawing shall be shared during detailed engineering.
1270	Part-E1	-	-	Tender Drawings	Tender drawings	Request owner to provide location of existing Oily water separator Pit & GA drawing of the same. The same is required to route the discharge line from Stage-III Fuel oil pump house sump pit.	Bidder to refer GLP and further the required drawing shall be shared during detailed engineering.
1271	Technical Specification SECTION-VI, PART E(Tender Drawings).	Part-E, Tender Drawings (Civil)	84 of 91	--	Maintenance Building: Monorail shown in Sec-X-X of Maintenance Building-Typical Architectural Details	Bidder understand that Hoist is to be considered for the Maintenance Building. Owner is requested to provide Hoist Type (Electrical Hoist /Manual Hoist), Capacity of the Hoist and Travel length of the Hoist.	Maintainance building is not in scope of bidder. Tender drawing no. XXXX-001-POC-A-009 Rev A to be ignored.
1272	SECTION – VI, PART-A	SUB SECTION- IIA-10 WATER TREATMENT PLANT	10 of 12	3.06.00 (4)	C) Interconnection with existing Stage-I (3x660 MW) DM Plant:	Since dedicated DM plant is provided for Stage-III facilities, any interconnection with existing DM water tanks/piping of Stage-I is not envisaged. Owner to confirm Bidder's understanding.	Bidder's understanding is not correct. Interconnection with existing Stage-I DM plant is in Bidder's scope
1273					Material Approach for stage-III facilities. 	Bidder understands that, limited approach road is available for Stage-III facilities. Approach road through Underpass is feasible only for cars and tractor trollies movement. For Material movement only one approach road is feasible i.e. by crossing existing multiple railway lines which may lead to frequent stoppages and causes hindering the project progress. Therefore in addition to this approach, Owner is requested to provide another approach road which can be utilized for material movement. Also bidder understands that necessary shutdown for overhead electrical lines shall be taken by owner to facilitate crossing of ODC consignments.	Bidder may plan the material movement considering the coal rake movement, any major blockage is not apprehended. The clearances for the necessary shutdown of OHE line inside plant will be provided by the Owner.

SL. NO	ENQUIRY SPECIFICATION				SPECIFICATION REQUIREMENT	COMMENTS / CLARIFICATIONS	NTPC Reply
	SEC/ PART	SUBSEC.	PAGE NO.	CLAUSE NO.			
1274	VI/B	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 proprietor in nature and cannot be shared. NTPC is requested to delete the clause.	40% technical minimum load operation to be ensured in line with latest CEA gazette. Bidder to please note that this is mandatory requirement and is to be ensured by owner. Bidder to comply technical specifications requirements.
1275	VI/B	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.
1276	VI/B	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 with tender requirement.
1277	VI/B	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 stops are not practical. 7850 starts in 25 yrs means 314 starts in a year i.e. One startup in every 1.16 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.
1278	VI/B	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 tender requirement.
1279	VI/A	IV	2 of 73	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.	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.
1280	VI/A	IV	50/73	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 tender requirement.
1281	VI/A	IV	51/73	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.
1282	VI/B	G-04	9/227	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 tender requirement.

1283	VI A	I-A	12 OF 35	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) 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/ 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.	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 the following conveying capacities 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.~~	Refer Amendment Sl. No. MH-06
1284	VI A	I-A	13 OF 35	4.19 Ash Handling System	(b) Pneumatic fly ash handling system for conveying fly ash from ESPs of a single pulverized coal fired boiler unit by either: (i) Pressure conveying system designed for 30 TPH or more conveying capacity. OR (ii) Vacuum conveying system designed for 30 TPH or more conveying capacity per vacuum extractor. The reference fly ash handling systems should be of the same type i.e. pressure system or vacuum system, as is being offered by the Bidder/ its Sub-vendor. An individual boiler unit having its own independent fly ash handling system up to wetting units/ dry dust collection buffer hoppers/intermediate Silos which includes, among others, independent fly ash handling equipment below ESP hoppers, independent ash conveying piping up to wetting units/ dry dust collection buffer hoppers can be considered as a plant for meeting the requirement above. And (c) Pneumatic Fly Ash Transportation System for transporting fly ash from pulverized coal fired boiler unit having capacity of not less than 20 TPH for a conveying distance of not less than 500 meter including fly ash storage silo. Further, a transportation system provided for an individual boiler unit having dedicated transportation vessels below dry dust collection buffer hoppers and dedicated piping from dry dust collection buffer hoppers/ intermediate Silos to storage silos, including storage silos can be considered as a plant for meeting the requirement above.	(b) Pneumatic fly ash handling system for conveying fly ash from ESPs of a single pulverized coal fired boiler unit by either: (i) Pressure conveying system designed for 30 TPH or more conveying capacity. OR (ii) Vacuum conveying system designed for 30 TPH or more conveying capacity per vacuum extractor. The reference fly ash handling systems should be of the same type i.e. pressure system or vacuum system, as is being offered by the Bidder/ its Sub-vendor. An individual boiler unit having its own independent fly ash handling system up to wetting units/ dry dust collection buffer hoppers/intermediate Silos which includes, among others, independent fly ash handling equipment below ESP hoppers, independent ash conveying piping up to wetting units/ dry dust collection buffer hoppers can be considered as a plant for meeting the requirement above. And (c) Pneumatic Fly Ash Transportation System for transporting fly ash from pulverized coal fired boiler unit having capacity of not less than 20 TPH for a conveying distance of not less than 500 meter ~~including fly ash storage silo.~~ Further, a transportation system provided for an individual boiler unit having dedicated transportation vessels below dry dust collection buffer hoppers and dedicated piping from dry dust collection buffer hoppers/ intermediate Silos to storage silos, ~~including storage silos~~ can be considered as a plant for meeting the requirement above.	Refer Amendment Sl. No. MH-07
1285	VI A	I-A	13 OF 35	4.19 Ash Handling System	(d) Complete ash slurry disposal system for handling not less than 40 tons of ash per hour for pulverized coal fired power stations which includes, among others, ash slurry pumps & piping system with associated controls	(d) Complete ash slurry disposal system for handling not less than 40 tons of ash per hour for ~~pulverized~~ coal/lignite fired power stations which includes, among others, ash slurry pumps & piping system with associated controls	For slurry system coal/lignite fired power station to be allowed.	Refer amendment Sl. No. MH-08
1286	VI A	I-A	13 OF 35	4.19 Ash Handling System	Notes to Clause No. 4.19.1	Additional Note (v) to be added. (v) In case bidder is not meeting requirement of water impounded bottom ash hopper referred under clause 4.19.1 (a), then bidder shall engage the design agency for vetting/review/ carrying out the design and Engineering activity of water impounded bottom ash hopper referred under para 4.19.1 (a). Design agency for water impounded bottom ash hopper can be either bottom ash system supplier meeting the qualification of clause 4.19.1 (a) or reputed/renowned Indian Technical Institution (like IIT/IISc).		Refer amendment Sl. No. MH-06
1287	VI A	I-A	13 OF 35	4.19 Ash Handling System	Notes to Clause No. 4.19.1	Additional Note (vi) to be added. (vi) De-packaging can be done by engaging separate sub-vendors for the sub-systems of AHP i.e. Bottom Ash system (4.19.1 (a)) can be ordered to vendor A, fly ash system (4.19.1 (b) & (c)) can be ordered to vendor B & Ash slurry disposal system (4.19.1 (d)) can be ordered to Vendor C.		Refer amendment Sl. No. MH-10
1288	VI A	I-A	13 OF 35	4.19 Ash Handling System	Notes to Clause No. 4.19.1	Additional Note (vii) to be added. (vii) In case the system offered is "Vacuum conveying system" for 1st stage, but the sub-vendor has experience only in "Pressure conveying system", then the sub-vendor shall be qualified, provided the following condition is satisfied: During detail engineering, the design and engineering of vacuum conveying system offered by sub-vendor is to be vetted by reputed institutes (IIT/NIT) / any design agency who has the requisite experience (i.e. 4.19.1 b) for Vacuum conveying system.		Bidder's proposal not accepted, bidder to comply tender specifications'
1289	VI A	I-A	14 OF 35	4.19 Ash Handling System	4.19.2 The Bidder/ its Sub- vendor who is a supplier of ash handling systems but does not meet the requirements under clause 4.19.1 in part or in full can also participate provided it has executed at least the following systems of ash handling plant involving design, engineering, manufacturing/got manufactured, supply, erection/supervised erection and commissioning/ supervised commissioning: a) Bottom ash handling system comprising either a jet pump system in conjunction with water impounded Bottom Ash Hopper or submerged scrapper chain conveyor system. b) Fly Ash Handling System for conveying fly ash from ESPs in dry form involving pneumatic conveying systems of vacuum or pressure type. The systems mentioned at 4.19.2 (a) and 4.19.2 (b) above should have been in successful operation in at least one (1) plant for two (2) years and should have been installed for pulverized coal fired boiler units generating not less than 40 TPH of ash per boiler. And collaborates/ associates with party(ies) who meet(s) either the total requirement or the balance part under 4.19.1 (a), (b), (c) & (d) above which the Bidder/ its Sub- vendor itself is not able to meet. In such a case, the Bidder/its sub-vendor shall be required to furnish a 'letter of support' from Collaborator/Associates for successful performance of the relevant system valid for a period of seven (7) years or up to the end of defect liability period of the contract whichever is later, as per the format enclosed with the bidding documents. The 'letter of support' should be submitted at the time of placement of order on the approved sub-vendor.	4.19.2 The Bidder/ its Sub- vendor who has executed ash handling systems but does not meet the requirements under clause 4.19.1 in part or in full can also participate provided it has executed at least the following systems of ash handling plant involving design, engineering, manufacturing/got manufactured, supply, erection/supervised erection and commissioning/ supervised commissioning: a) Bottom ash handling system comprising either a jet pump system in conjunction with water impounded Bottom Ash Hopper or submerged scrapper chain conveyor system. b) Fly Ash Handling System for conveying fly ash from ESPs in dry form involving pneumatic conveying systems of vacuum or pressure type. The systems mentioned at 4.19.2 (a) and 4.19.2 (b) above should have been in successful operation in at least one (1) plant for two (2) years and should have been installed for pulverized coal fired boiler units generating not less than 40 TPH of ash per boiler. And collaborates/ associates with party(ies) who meet(s) either the total requirement or the balance part under 4.19.1 (a), (b), (c) & (d) above which the Bidder/ its Sub-vendor itself is not able to meet. In such a case, the Bidder/its sub-vendor shall be required to furnish a 'letter of support' from Collaborator/Associates for successful performance of the relevant system valid for a period of seven (7) years or up to the end of defect liability period of the contract whichever is later, as per the format enclosed with the bidding documents. The 'letter of support' should be submitted at the time of placement of order on the approved sub-vendor.		Bidder's proposal not accepted, bidder to comply tender specifications'

1290	VI A	I-A	14 OF 35	4.19 Ash Handling System	**4.19.3 EPC organization in Collaboration with QAHPM** EPC organization in Collaboration with QAHPM (Qualified Ash Handling Plant Manufacturer): The Bidder/Bidder's sub-vendor should be an Engineering, Procurement and Construction (EPC) organization and should have executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of Power, Steel, Oil & Gas, Petro-chemical, Fertilizer, Flue Gas Desulphurization and/or any other process industry with the total value of such projects being INR 4,000 million or more. At least one of such projects should have a contract value of INR 1,600 million or more. These projects shall be in successful operation for a period of not less than one (1) year. (a) The Bidder/Bidder's sub-vendor should also have a valid ongoing collaboration and technology transfer/Licensing agreement with a QAHPM meeting requirements of clause 4.19.1 on its own, valid minimum up to the end of the defect liability period of the contract. In such a case, Bidder/Bidder's sub-vendor can either source the AHP System from such manufacturer or manufacture/get manufactured the AHP System as per the design and manufacturing drawings released by such QAHPM. (b) Bidder shall be required to furnish a letter of support (Refer Annexure- LETTER OF SUPPORT4.19.3) from Collaborator/ Licensor/Technology provider for successful performance of the AHP system 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. Notes for Clause 4.19.3 i. QAHPM (Qualified Ash Handling Plant Manufacturer) means a manufacture meeting requirement stipulated at 4.19.1 ii. Technology Transfer/Licensing agreement The Technology transfer/Licensing agreement between the Bidder, Bidder's sub vendor & QAHPM shall necessarily cover transfer/licensing of technological knowhow for AHP system in the form of transfer/licensing of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Bidder/Bidder's sub vendor.	**4.19.3 EPC organization in Collaboration with QAHPM(s)** EPC organization in Collaboration with QAHPM (Qualified Ash Handling Plant Manufacturer(s)): (Alternate route for Bidder/ its Sub- vendor who does not meet the requirements under clause 4.19.1 or 4.19.2) The Bidder/Bidder's sub-vendor should be an Engineering, Procurement and Construction (EPC) organization and should have executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of Power, Steel, Oil & Gas, Petro-chemical, Fertilizer, Flue Gas Desulphurization and/or any other process industry with the total value of such projects being INR 4,000 million or more. At least one of such projects should have a contract value of INR ~~1,600~~ 800 million or more. These projects shall be in successful operation for a period of not less than one (1) year. (a) The Bidder/Bidder's sub-vendor should also have a valid ongoing collaboration ~~and~~/ technology transfer/ Licensing agreement with QAHPM(s) meeting requirements of clause 4.19.1 (a) and/or 4.19.1 (b), (c) and/or 4.19.1 (d) on its own, valid minimum up to the end of the defect liability period of the contract. In such a case, Bidder/Bidder's sub-vendor can either source the AHP System from such manufacturer(s) or manufacture/get manufactured the AHP System as per the design and manufacturing drawings released by such QAHPM(s). (b) Bidder shall be required to furnish a letter of support (Refer Annexure- LETTER OF SUPPORT4.19.3) from Collaborator(s)/Licensor(s)/ Technology provider(s) for successful performance of the AHP system 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. Notes for Clause 4.19.3 i. QAHPM(s) (Qualified Ash Handling Plant Manufacturers) means a manufacturer meeting requirement stipulated at 4.19.1 (a) and/or 4.19.1 (b), (c) and/or 4.19.1 (d) ii. Technology Transfer/Licensing agreement The Technology transfer/Licensing agreement between the Bidder/ Bidder's sub vendor & QAHPM(s) shall necessarily cover transfer/licensing of technological knowhow for AHP system in the form of transfer/licensing of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Bidder/Bidder's sub vendor.	Bidder's proposal not accepted, bidder to comply tender specifications'
1291	VI A	I-A	15 OF 35	4.20 COAL HANDLING PLANT	4.20.1 The Bidder/ its Sub-vendor should have designed, engineered / got engineered, manufactured/ got manufactured, erected/supervised erection and commissioned/ supervised commissioning at least one (1) number integrated bulk material handling plant (essentially comprising of conveying) including all associated structural steel works and electrical works of 1000 Metric tonnes per hour rated capacity or above for coal or other minerals of equivalent volumetric capacity which should have been in successful operation for at least one (1) year. Note:- In case the Bidder/its Sub-vendor has not carried out the engineering activity by himself in respect of the System of the reference installation(s) (against which the bidder is seeking qualification), then the engineering of the package shall be carried out by an engineering firm, meeting the following stipulations: Engineering firm should be an organization who has engineered at least one (1) number integrated bulk material handling plant (essentially comprising of conveying by Trough Conveyors) including all associated structural steel works and electrical works of 1000 Metric Tonnes per hour rated capacity or above for coal or other minerals of equivalent volumetric capacity, involving activities which include preparation of Flow diagrams, Layout & General arrangement drawings, Design & sizing Calculations document, Fabrication (as applicable) and Erection drawings, etc. and such systems must be in successful operation prior to the date of Techno-commercial bid opening.	4.20.1 The Bidder/ its Sub-vendor should have designed, ~~engineered / got engineered~~, manufactured/ got manufactured, erected/supervised erection and commissioned/ supervised commissioning at least one (1) number integrated bulk material handling plant (essentially comprising of conveying) including all associated structural steel works and electrical works of 1000 Metric tonnes per hour rated capacity or above for coal or other minerals of equivalent volumetric capacity which should have been in successful operation for at least one (1) year. ~~Note:- In case the Bidder/its Sub-vendor has not carried out the engineering activity by himself in respect of the System of the reference installation(s) (against which the bidder is seeking qualification), then the engineering of the package shall be carried out by an engineering firm, meeting the following stipulations:~~ ~~Engineering firm should be an organization who has engineered at least one (1) number integrated bulk material handling plant (essentially comprising of conveying by Trough Conveyors) including all associated structural steel works and electrical works of 1000 Metric Tonnes per hour rated capacity or above for coal or other minerals of equivalent volumetric capacity, involving activities which include preparation of Flow diagrams, Layout & General arrangement drawings, Design & sizing Calculations document, Fabrication (as applicable) and Erection drawings, etc. and such systems must be in successful operation prior to the date of Techno-commercial bid opening.~~	Refer Amendment Sl. No. MH-13
1292	VI A	I-A	16 of 35	4.25.1	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 23,00,000 Nm3/hr, with desulphurisation efficiency of at least 90 %, operating in a pulverised coal fired power plant.	We kindly request that the customer consider relaxing the QR (Qualification Requirement) criteria as outlined below: " 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 22,00,000 Nm3/hr, with desulphurisation efficiency of at least 90 %, operating in a pulverised coal fired power plant."	Bidder's proposal not accepted, bidder to comply tender specifications'
1293	VI A	I-A	29 of 35	5.15	The Bidder/ sub vendor should have designed, fabricated, erected and commissioned at least 30 Km transmission line of 400 kV or above voltage class on towers.	The scope of transmission line is limited to approximately 1KM only. Also the actual scope is interconnection of 765kV GT Bay with Generator Transformer. Hence It is requested to remove the PQR scope. or we request the Owner to please remove 765kV Transmission line from the SCOPE of the Bidder.	Bidder's proposal not accepted, bidder to comply tender specifications'
1294	VI A	I-A			As per the tender, for qualification of agitator supplier, experience specified is in "Wet limestone based FGD application in coal fired power plant".	Request NTPC to revise the PQR as "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) Further, the specs should allow Bidder either meet PQR based on its own credentials or through collaboration / licensing agreement with qualified equipment manufacturer.	Bidder's proposal not accepted, bidder to comply tender specifications'

ERRATA
TO
SECTION VI
TECHNICAL SPECIFICATIONS

FOR

EPC PACKAGE FOR

SIPAT -III(1X800 MW)

BIDDING DOCUMENT NO.: CS-8003-001-2

(AMENDMENTS 1 TO 11)

Section VI (Parts A, B, C, D & E) shall be read along with these Errata (Amendments 1 to 11)

Amendment 01 to Technical Specifications (Section VI)

SN	Amendment Details	Page No
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Amendment 01 to Technical Specifications (Section VI)

SN	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No	Clause No		
WS-1	B	A-15	18/40	4.08.00	Main header…Two (02) nos **manually operated butterfly valves** of suitable size shall be provided in branch pipe…	Main header shall be branched into two (02) nos for feeding to each section of cooling tower. Two (02) **nos motor operated inching type butterfly valves** of suitable size shall be provided in branch pipe of each cooling tower. These valves shall be in the **horizontal** section of hot water piping and shall be overground. **After branch header isolation valves, the hot water pipe running along the air inlet side of CT shall be underground with suitable wrapping & coating.**
WS-2	B	A-15	12/40	3.17.00	For design of Cooling tower, CT outlet temperature shall be considered as 32 deg C.	**Deleted**
WS-3	B	A-15	13/40	4.00.00 Table - SL No (18)	Any other hardware...in direct contact with water - Stainless steel conforming to AISI:304 or equivalent	Any other hardware...in direct contact with water – **SS 316**
WS-4	B	A-15	39/40	5.00.00 (b)	Pumps shall be able to pass through solids up to 100 mm and capable of handling wastewater which may contain, sludge, plastic solids etc.	Pumps shall be able to pass through solids up to **60 mm** and capable of handling wastewater which may contain, sludge, plastic solids etc.
WS-5	B	A-15	4/40	2.02.01	Constructional features (a) Suction bell/Casing - 2% Ni Cast Iron, IS:210 Grade FG 260; S-0.1% max. P-0.15% max.	Constructional features (a) Suction bell/Casing - **CF8M**
WS-6	B	A-14	32/36	21.00.00 (A)	(1) No of UF trains - 2x60%	(1) No of UF trains - **2x100%**
WS-7	A	IIA-20	2/2	2.04.00 (j)	**One (01)** number of DM water storage tank for CPU regenerations system.	**Two (02)** number of DM water storage tank for CPU regenerations system.
WS-8	A	VI	27/29	3.00.00 ClO2 system	ClO2 system- Mandatory Spares for Blowers Mandatory Spares for Agitators	ClO2 system- **Deleted**
WS-9	E	Tender drawing		New	-	Existing CSSP Layout drawing

Amendment 01 to Technical Specifications (Section VI)

SN	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No	Clause No		
WS-10	VI/A	IIA-22	2/3	1.00.00	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.	d) To meet that above requirement, RCC Area pit(s) / sump(s) and associated submersible pumps **/ Centrifugal pumps (Horizontal or vertical)**, 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.
WS-11	VI/A	I-B	8/19	Annexure-IIIA	Raw water analysis	Updated Raw water analysis

Amendment 01 to Technical Specifications (Section VI)

S. No.	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No.	Clause No.		
TG-1.	VI/A	IIA-06	10 of 10	16.00.00 /New Clause added	-	**16.00.00:** **Steam Turbine Generator & Auxiliaries and associated systems shall be designed for 40% Technical Minimum Load (TML); for meeting this mandatory requirement and ensuring the design life of Turbine including its auxiliaries, necessary changes in design to be made. Design changes to be considered shall include but not limited to the following.** **1. Changes required in LP Turbine last stage and second last stage blades (as applicable) to take care of increased flow separation at 40% TML.** **2. Bidder shall consider state of art design with respect to blade metallurgy and effective moisture separation methodology to avoid blade erosion & failures at 40% load continuous operation of Turbine. Bidder shall submit thermal stress analysis report of Turbine components at 40% TML operation.** **3. Increased thermal stress in Turbine stages: To enable continuous operation of turbine at 40% load, Bidder shall take care of the increased stresses (due to ventilation) in turbine design and ensure that design life of turbine and its components is not reduced.** **Further, turbine and auxiliaries shall also be designed for complying the requirements related to flexibilization as mentioned in CEA (Flexible Operation of Coal based Thermal Power Generating Units) Regulations, 2023 in addition to the requirements specified elsewhere in the technical specifications.**
TG-2.	VI/A	IV	9 of 73	1.01.03	UNIT HEAT RATE Following tests…… ……independently: (i)…… (ii)…….. (iii) Turbine Cycle Heat rate in kcal/kWhr under turbine throttle main steam pressure of 150 Kg/cm^2 (abs) and turbine throttle main steam temperature / reheat steam temp. at turbine inlet of 600 deg C / 600 to 610 deg C at 77 mmHg(abs)	UNIT HEAT RATE Following tests…… ……independently: (i)…… (ii)…….. (iii) Turbine Cycle Heat rate in kcal/kWhr under turbine throttle main steam pressure of 150 Kg/cm^2 (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

Amendment 01 to Technical Specifications (Section VI)

S. No.	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No.	Clause No.		
					Condenser pressure with zero make up at 440 MW unit load (i.e. 55 % of rated load) with one TDBFP in operation. (iv) Efficiency of the Steam Generator at 440 MW unit load (i.e. 55 % of rated load) …… …….(i.e. 100% of rated load): = THR (100%)/ SG_EFF (100%) Unit Heat rate in kcal/kWhr under turbine throttle main steam pressure of 150 Kg/cm^2 (abs) and turbine throttle main steam temperature / reheat steam temp. at turbine inlet of 600 deg. C /610 deg. C at 77 mmHg(abs) Condenser pressure with zero make up at 440 MW unit load (i.e. 55 % of rated load): = THR (55%)/ SG_EFF (55%) Where, THR(100%)…… …… SG_EFF(100%)…… …… THR (55%): Turbine Cycle Heat rate in kcal/kWhr under turbine throttle main steam pressure of 150 Kg/cm^2 (abs) and turbine throttle main steam temperature / reheat steam temp. at turbine inlet of 600 deg C / 600 to 610 deg C at 77 mmHg(abs) Condenser pressure with zero make up at 440 MW unit load (i.e. 55 % of rated load). (To be calculated as per clause 1.01.03.01 of this sub-section) SG_EFF(55%)…… ……	make up at 440 MW unit load (i.e. 55 % of rated load) with one TDBFP in operation. (iv) Efficiency of the Steam Generator at 440 MW unit load (i.e. 55 % of rated load) ……..(i.e. 100% of rated load): = THR (100%)/ SG_EFF (100%) Unit Heat rate in kcal/kWhr under turbine throttle main steam pressure of 150 Kg/cm^2 (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): = THR (55%)/ SG_EFF (55%) Where, THR(100%)…… …… SG_EFF(100%)…… THR (55%): Turbine Cycle Heat rate in kcal/kWhr under turbine throttle main steam pressure of 150 Kg/cm^2 (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). (To be calculated as per clause 1.01.03.01 of this sub-section) SG_EFF(55%)……
TG-3.	VI/A	VI/Chapter-02 Mandatory Spares	34 of 34	General Note	---	**11. Wherever servomotor is mentioned, it means servomotor/complete actuator along with yoke & its control.**

Amendment 01 to Technical Specifications (Section VI)

S. No.	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No.	Clause No.		
TG-4.	VI/B	G-02	5 of 5	11.0	---	**In case when both the CEP's are running, the other CEP will be in Stand-by mode. In case when one CEP trips, runback shall be initiated to the operating load at that point or 75% Load (Adjustable) whichever is lower.** **Simultaneously command to stand by CEP shall be issued in Auto. If CEP ON feedback is not received within 10 sec (adjustable) then runback set point shall be changed to 60% Load. In this case one CEP will cater the demand. However, if Stand-by CEP comes in service then run back command will be stopped and two CEP will cater the load demand at that point.**
TG-5.	B	SUB-SECTION A-01, EQUIPMENT SIZING CRITERIA	44 of 87	2.08.00 (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).	HP-LP bypass operation under rated steam conditions with bypass valve open to full capacity and turbine on house load ~~(5% of rated load)~~ **(50 MW)**.
TG-6.	B	SUB SECTION G-05, STANDARD TYPE TEST PROCEDURE	2 of 37	1.03.00	NPSH(R) Test 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.	NPSH(R) Test 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~~ **10000** US unit and 9500 US unit for main pump and booster pump respectively calculated with the flow of Design point with Inter-stage closed.
TG-7.	E	XXXX-999-POM-A-006			XXXX-999-POM-A-006, Rev.-A	XXXX-999-POM-A-006, **Rev.-B** **Refer Annexure-TG-1 to the Amendment-01**
TG-8.	A	SUB-SECTION-IIA-06 TURBINE GENERATOR	2-3 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	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/Filters **(as per standard practice)**, accumulator, control fluid coolers, waste fluid tank **(If required)**, purification equipment including fluid circulation pumps with drive motors…….

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S. No.	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No.	Clause No.		
		AND AUXI-LARIES			equipment including fluid circulation pumps with drive motors…….	
TG-9.	A	SUB-SEC-TIONVI/ MAN SPARES, CHAPTER-02 STEAM TUR-BINE GENERATOR	2 of 34	A/6	Aux oil pump/startup oil complete assembly for Main Turbine along with complete coupling (Mounted on oil tank)	Aux oil pump**/Main oil pump**/startup oil (**as applicable**) complete assembly for Main Turbine along with complete coupling (Mounted on oil tank)
TG-10.	B	SUB-SECTION A-07 STEAM TUR-BINE AND AUXILIA-RIES	8 of 25	2.01.00/ New clause (h) & (i) added	Condenser: (a) Easily… (b) …. (c) … …… (g)…. from LP bypass alongwith all accessories and instrumentation.	Condenser: (a) Easily… (b) …. (c) … …… (g)…. from LP bypass alongwith all accessories and instrumentation. **(h) Shell material carbon steel as per ASTMA-285 Gr.C or IS 2062 E250BR, welded construction and 16mm minimum wall thickness. Hot well of material same as shell material, shall be longitudinally divided with proper drainage provision.** **(i) 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.**
TG-11.	A	SUB-SECTION-VI/MAN SPARES, CHAP-TER-02 STEAM TURBINE GEN-ERATOR	8 of 34	V/ (7)	DRIVE TURBINE OF BFP 7. One set of Journal bearings and Thrust bearing (complete assembly) with carrier, Collar and pads	DRIVE TURBINE OF BFP 7. One set of Journal bearings and Thrust bearing (complete assembly) with carrier, Collar **(If applicable)** and pads

Amendment 01 to Technical Specifications (Section VI)

S. No.	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No.	Clause No.		
TG-12.	B	SUB-SECTION A-07 STEAM TURBINE AND AUXILIARIES	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. ……	Provide separate oil system with 100% redundant pumps, motors, accumulators and **control** ~~cubicles~~ **System** etc. for both HP and LP bypass systems. ……
TG-13.	A	SUB-SECTION-VI/MAN SPARES, CHAPTER-02 STEAM TURBINE GENERATOR	15 of 34	11a/(vi)	Set of filter elements / cartridges, O-rings, gaskets for Duplex Lube oil filter for both MDBFP & TDBFP	Set of filter elements / cartridges, O-rings, gaskets for Duplex Lube oil filter for ~~both MDBFP &~~ **TDBFP**
TG-14.	A	SUB-SECTION-VI/MAN SPARES, CHAPTER-02 STEAM TURBINE GENERATOR	16 of 34	12/(vi)	Set of filter elements / cartridges, O-rings, gaskets for Duplex Lube oil filter for both MDBFP & TDBFP	Set of filter elements / cartridges, O-rings, gaskets for Duplex Lube oil filter for ~~both~~ **MDBFP** ~~& TDBFP~~
TG-15.	A	SUB-SECTION A-22 SEPARATION OF PLANT 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.	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.~~

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SL. NO.	SPECIFICATION REFERENCE				Existing	Read as
	SEC/ PART	SUB SEC.	PAGE NO.	CLAUSE NO.		
MH-01	VI/A	IA	11 of 35	4.13	**Mill Reject Handling System** Mill reject handling system offered by the Bidder/its Sub-Vendor shall be only from such manufacturer/supplier who has previous experience of manufacturing/got manufactured and supplying metallic belt conveyor type or chain flight conveyor type handling systems of capacity 1.5 MTPH or higher for any industrial installations which are in successful operation in at least one (1) plant for a period not less than one (1) year. The reference **mill reject** handling systems should be of the same type i.e. metallic belt conveyor system or chain flight conveyor system as is being offered by the Bidder/ its Sub-vendor.	**Mill Reject Handling System** Mill reject handling system offered by the Bidder/its Sub-Vendor shall be only from such manufacturer/supplier who has previous experience of manufacturing/got manufactured and supplying metallic belt conveyor type or chain flight conveyor type handling systems of capacity 1.5 MTPH or higher for any industrial installations which are in successful operation in at least one (1) plant for a period not less than one (1) year. The reference handling systems should be of the same type i.e. metallic belt conveyor system or chain flight conveyor system as is being offered by the Bidder/ its Sub- vendor.
MH-02	VI/A	IIA-14	4 of 5	5.00.01	All electrical actuators used in this package like for Flap gates, Scoop coupling, Pump house, Dust extraction etc. shall be non- intrusive, fieldbus based integral actuators meeting requirements specified in Electrical actuators, Part-B, Section-VI.	All electrical actuators used in this package shall necessarily be of non-intrusive field bus based integral actuators like Flap Gates, RPG, Dampers, Valves meeting requirements specified in Electrical Actuator referred in C&I section Part – B, section-VI of the specification, except for skid mounted / operated through only PLC / local control panel systems like scoop coupling, tripper, paddle feeder, LSU where it is not possible to have above non-intrusive type actuators, the Contractor shall provide Electrical Actuators as per Standard practice.
MH-03	VI/B	A-20	64 of 79	4.01.00	**Existing Coal Handling Plant Main Control Room** Overall, operation of the following equipment of Coal Conveying plant, Biomass Handling plant shall be controlled from the main CHP control room. Overall, operation of the following equipment of **Limestone &** Gypsum handling plant shall be controlled from the main FGD control room. ……..	**Existing Coal Handling Plant Main Control Room** Overall, operation of the following equipment of Coal Conveying plant, **Limestone handling plant,** Biomass Handling plant shall be controlled from the main CHP control room. Overall, operation of the following equipment of Gypsum handling plant shall be controlled from the main FGD control room. …….

Amendment 01 to Technical Specifications (Section VI)

MH-04	VI/B	A-20	33/79	2.7.4	**Chute bock switches**….. …….. 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.	**Chute bock switches**….. One number trip indicator 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. **Maximum 31 switches can be wired to a trip indicator. However, If any conveyor length requires more than 31 switches(including 10% spares) the additional trip indicator shall be provided. These trip indicators shall be suitably mounted in a panel (IP-55) located in nearest /respective MCC**. 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 shall display the operated switch number. The same indication shall also be available in DDCMIS SR PLC. **Trip indicator system** shall have Modbus/TCP IP/OPC redundant interfacing with concerned DDCMIS/PLC for monitoring and diagnostic purpose only. Trip Indicator 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.
MH-05	VI/B	A-20	65 of 79	4.02.00	…..(i) Hydraulic scoop coupling. All the above local control panels shall be accessible and located near their respective equipment and shall be complete with all the required controls, interlocks, annunciation's etc. However, for items (h) and (i) above, controls shall be through Employer's DDCMIS/ **contractor's** PLC as applicable. Further, necessary controls, indications and annunciations for all the above equipment shall also be provided at main CHP Control Room as described under relevant clause.	…..(i) Hydraulic scoop coupling. All the above local control panels shall be accessible and located near their respective equipment and shall be complete with all the required controls, interlocks, annunciation's etc. However, for items (h) and (i) above, controls shall be through Employer's DDCMIS / PLC as applicable. Further, necessary controls, indications and annunciations for all the above equipment shall also be provided at main CHP Control Room as described under relevant clause.

Amendment 01 to Technical Specifications (Section VI)

S. No.	SPECIFICATION REFERENCE				Instead of	Read as
	Sec/ Part	Sub Sec-tion	Clause No.	Page No.		
PU 1.0	VI/A	A-12	4.00.00 c)	5 of 11	2) Various transformers of rating 10 MVA and above or in case of oil filled transformers with oil capacity of more than 2000 liters within plant boundary.	2) Various transformers of 10 MVA or reactors of 10 MVAR and above rating within plant boundary.
PU 2.0	VI/A	A-12	5.00.00	11 of 11	…… NIL…….	Following has been added: viii. Suitable acoustic enclosures (if required for equipment like diesel engines, etc.) shall be provided to meet noise level as per specification.
PU 3.0	VI/A	VI Mand. Spares Ch.-07	1.03.00	2 of 16	…… NIL…….	Following has been added: **8.** Desiccant for Air Dryer: one complete fill for both towers of one dryer
PU 4.0	VI/A	VI Mand. Spares Ch.-07	1.08.00	3 of 16	…… NIL…….	Following has been added: Desiccant for Air Dryer: one complete fill of one dryer
PU 5.0	VI/A	VI Mand. Spares Ch.-07	1.00.00, 4.0	4 of 16	…… NIL…….	Following has been added: **4.5** Fills: 20% of total population
PU 6.0	VI/B	A-17	4.01.01	2 of 30	Each chilling unit ……..valves, instrumentation, microprocessor / PLC based Control panel, etc. Chilling unit shall have stepless capacity control. The screw/centrifugal compressor based chilling unit …….. certified (if applicable).	Each chilling unit ……..valves, instrumentation, microprocessor / PLC based Control panel, etc. Chilling unit shall have stepless capacity control. The screw compressor based chilling unit …….. certified (if applicable).
PU 7.0	VI/B	A-17	6.05.04 c)	13 of 30	The ducts routed inside the buildings with larger side greater than 2250 mm shall be supported by 16mm MS rods and 50x50x3 mm MS double Angles while those below 2250 mm shall be supported by 10mm MS Rods and 40x40x3 MS angles. The duct supports shall be at a distance of not more than 2000 mm for A/C system. The MS rods for these …….. provided by the bidder.	The ducts routed inside the buildings with larger side greater than 2250 mm shall be supported by 16mm MS rods and 50x50x3 mm MS double Angles while those below 2250 mm shall be supported by 10mm MS Rods and 40x40x3 MS angles. The duct supports shall be at a distance of not more than 2000 mm for A/C & Ventilation system. The MS rods for these …….. provided by the bidder.

Amendment 01 to Technical Specifications (Section VI)

S. No.	SPECIFICATION REFERENCE				Instead of	Read as
	Sec/ Part	Sub Sec-tion	Clause No.	Page No.		
PU 8.0	VI/B	A-17	7.04.00 a)	21 of 30	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 control rooms A/C system.	Inside room temperature and humidity shall be maintained by controlling the chilled water flow by means of motor operated three way modulating valve which shall get its signal from the Control system for main plant A/C system and ESP/FGD control rooms A/C system.
PU 9.0	VI/B	A-18	8.01.00	11 of 14	i) Mild steel as per IS:1239 (Part-I) **medium** grade (up to 150 NB) & as per IS:3589 Gr 410 (above 200 NB) or Equivalent for pipes normally filled with water. ii) Mild steel as per IS:1239 (Part-I) **medium** grade (up to 150 NB) & as per IS:3589 Gr.410 (above 200 NB) or Equivalent and galvanized as per IS:4736 for pipes normally empty and periodically charged with water and foam system application. iv) Pipe thickness: a) For Pipe sizes up to 150 NB: As per IS:1239 Part-I **medium** grade.	i) Mild steel as per IS:1239 (Part-I) **heavy** grade (up to 150 NB) & as per IS:3589 Gr 410 (above 200 NB) or Equivalent for pipes normally filled with water. ii) Mild steel as per IS:1239 (Part-I) **heavy** grade (up to 150 NB) & as per IS:3589 Gr.410 (above 200 NB) or Equivalent and galvanized as per IS:4736 for pipes normally empty and periodically charged with water and foam system application. iv) Pipe thickness: a) For Pipe sizes up to 150 NB: As per IS:1239 Part-I **heavy** grade.

Amendment 01 to Technical Specifications (Section VI)

SN	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No	Clause No		
LA-1	Part B	G-03	10 of 15	39(VII)	A walkway of 600mm (minimum width) with hand-rails & toe guards shall be provided all along length of the gallery of pipe & cable trestle for maintenance of cables where the height of trestle is more than 3 m, ladders for approach to these platforms shall be provided near roads, passage ways and turning points. In the tier of trestle, wherever fly ash handling pipes are routed, grating platform all along the length and for full width of the gallery and trestle of that tier shall be provided. Further, one walkway of 600mm clear width shall also be ensured on the tier meant for routing the fly ash handling pipes.	A walkway of 600mm (minimum width) with handrails & toe guards shall be provided all along length of the gallery of pipe & cable trestle for maintenance of cables where the height of trestle is more than 3 m, ladders for approach to these platforms shall be provided near roads, passage ways and turning points. In the tier of trestle, wherever ash handling pipes are routed, grating platform all along the length and for full width of the gallery and trestle of that tier shall be pro-vided. Further, one walkway of 600mm clear width shall also be ensured on the tier meant for routing the ash handling pipes.

Amendment 01 to Technical Specifications (Section VI)

	Specification Reference				Existing	Read as
	Part	**Sub Sec**	**Page No**	**Clause No**		
C-01	VI/A	IIC Annexure C to IIC Contract quantity	5 of 21	2.04.07	**Air Compressor Block** This block shall include Air compressors (IAC/PAC), **Air compressor for Mill reject system.** If the controller …....., overall control and monitoring shall be through Stand Alone DDCMIS.	**Air Compressor Block** This block shall include Air compressors (IAC/PAC). If the controller …..... , overall control and monitoring shall be through Stand Alone DDCMIS.
C-02	VI/A	IIC Annexure C to IIC Contract quantity	17 of 21	1.22	Portable Testing and Commissioning tool-Ref Clause no. **15.00.00**, Sub-section IIIC-02, Part-B, Section VI for technical specification.	Portable Testing and Commissioning tool-Ref Clause no. **32.00.00**, Sub-section IIIC-02, Part-B, Section VI for technical specification.
C-03	VI/A	VI Chapter-8 WATER SYSTEM	11 of 29		18) C&I :MEASURING INSTRUMENTS**(As Applicable)**	18) C&I :MEASURING INSTRUMENTS(**CW, ACW, ECW, RAW WATER, CT , WTP AREA)**
C-04	VI/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)	DELETED
C-05	VI/A	IIC CONTROL & INSTRUMENTATION SYSTEM	3 of 18	1.06.02	**Notes:** A. The control system and devices (Actuators, instruments) shall be conventional for following areas/ application: I. MFT II. TG Integral : a. STG Integral Control and Protection System.	**Notes:** A The control system and devices (Actuators, instruments) shall be conventional for following areas/ application: I. MFT / BPS / BMS comprising of MFT block, Boiler common function block. (detailed out in clause no 2.01.01, Annexure C to IIC Contract quantity, Part-A) II. TG Integral : a. Steam Turbine and Generator (STG) C&I system comprising of Turbine Protection System Function (TPS), Turbine Electro-hydraulic Governing system, Turbine Stress Evaluation / Control System (TSCS), Gland steam pressure control, Turbine oil system for Main Turbine, Automatic online Turbine Testing (ATT), Automatic Turbine Run up/Shut down System (ATRS),

Amendment 01 to Technical Specifications (Section VI)

					b. Protection and governing controls of BFP Turbine. c. HP/LP Bypass system controls and protection. III. Instruments used for PG test .	Vacuum system, Turbine -Generator control system for Seal oil, primary water, Generator gas temperature control, Turbine Extraction NRV control, Miscellaneous turbine related start Up Drain and vents control. b. Protection, governing controls, OLCS and CLCS of Complete TDBFP and its auxiliaries. c. HP/LP Bypass system controls and protection III. Instruments used for PG test .
C-06	VI/B	SUB SECTION-A-02 STEAM GENERATOR & AUXILIARIES INCLUDING ESP	64 of 67	8.07.00	Each dust hopper (**except first field** ESP hoppers) shall be provided with a high level and a low level dust level monitor …… …….. for each ESP Hopper in the First Three Fields shall be provided complying with requirements indicated in Sub-Section-IIIC-03 Main Equipment Related Control and Instrumentation System, Part-B, Section-VI of Technical Specifications.	Each dust hopper (**except first three fields** ESP hoppers) shall be provided with a high level and a low level dust level monitor …… …… for each ESP Hopper in the First Three Fields shall be provided complying with requirements indicated in Sub-Section-IIIC-03 Main Equipment Related Control and Instrumentation System, Part-B, Section-VI of Technical Specifications
C-07	VI/A	SUB-SECTION-VI CHAPTER -01 SG & AUXILIARIES: MANDATORY SPARES	25 of 39	2.01.00	9. level monitoring system for Coal bunker, fly ash silo and ESP hopper **(first field)**	9. level monitoring system for Coal bunker, fly ash silo and ESP hopper.
C-08	VI/B	SUB-SECTION-IIIC-02 DDCMIS	6 of 17	21.00.00	Modulating Controls / Closed Loop Control System (CLCS) Functions 1. CLCS shall continuously act on valves, dampers or other mechanical modulating devices such as hydraulic couplings etc. The system shall be designed to give stable control action in steady state condition and for load changes in step/ramp over the load range of **60% to 100% MCR**	Modulating Controls / Closed Loop Control System (CLCS) Functions 1. CLCS shall continuously act on valves, dampers or other mechanical modulating devices such as hydraulic couplings etc. The system shall be designed to give stable control action in steady state condition and for load changes in step/ramp over the load range of **40% to 100% MCR.**
C-09	VI/A	Annexure C to IIC Contract quantity	16 of 21	H 1.02.00	**LIST OF OTHER FLUE GAS ANALYSERS FOR BOILER SYSTEM:** 1. O2 ANALYSER AT PLATTEN SH OUTLET (L) 2. O2 ANALYSER AT PLATTEN SH OUTLET (R)	**LIST OF OTHER FLUE GAS ANALYSERS FOR BOILER SYSTEM:** 1. O2 ANALYSER AT PLATTEN SH OUTLET 2. O2 ANALYSER AT PLATTEN SH OUTLET 3. O2 ANALYSER AT ECO OUTLET (L)

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					3. O2 ANALYSER AT ECO OUTLET (L) 4. O2 ANALYSER AT ECO OUTLET (L) 5. O2 ANALYSER AT ECO OUTLET (R) 6. O2 ANALYSER AT ECO OUTLET (R) 7. CO ANALYSER AT ECO OUTLET- ECO-3 O/L 8. CO ANALYSER AT ECO OUTLET- ECO-3 O/L NOTES: 1. These are per unit quantities. 2. The O2 Analyzer quantities (except for CEMS system) shall be as per mentioned above and same shall prevail as mentioned here irrespective of indicated elsewhere in the specification including tender drawings.	4. O2 ANALYSER AT ECO OUTLET (L) 5. O2 ANALYSER AT ECO OUTLET (R) 6. O2 ANALYSER AT ECO OUTLET (R) 7. PAH-A GAS O/L O2 * 8. PAH-A GAS O/L O2 * 9. SAH-A GAS O/L O2 * 10. SAH-A GAS O/L O2 * 11. PAH-B GAS O/L O2 * 12. PAH-B GAS O/L O2 * 13. SAH-B GAS O/L O2 * 14. SAH-B GAS O/L O2 * 15. CO ANALYSER AT ECO OUTLET- ECO-3 O/L 16. CO ANALYSER AT ECO OUTLET- ECO-3 O/L NOTES: 1. These are per unit quantities. 2. 2 * These O2 Analyzer quantities are w.r.to Bi-sector RAPH. However, for total quantity of O2 Analysers for Tri-sector type RAPH outlet refer tender Drawing 9585-001-POM-A-018b.
C-10	VI/B	SUB-SECTION-IIIC-04	2 of 36	2.01.00	Transmitter shall have weatherproof IP-67 metallic housing with durable corrosion resistant coating, integral digital display with self-indicating diagnostics, Plug and socket type electrical connection for HART and ½ "NPT (F) for Fieldbus type Transmitter, calibration using HART/Fieldbus calibrator, 2/3/5 Valve non integral manifold and rack with canopy. For HART transmitter SIL 2 certification is required.	Transmitter shall have weatherproof IP-67 metallic housing with durable corrosion resistant coating, integral digital display with self-indicating diagnostics, Plug and socket type electrical connection for HART and ½ "NPT (F) for Fieldbus type Transmitter, calibration using HART/Fieldbus calibrator, 2/3/5 Valve non integral manifold and rack with canopy. For HART transmitter SIL 2 certification is required. **Overpressure shall be 150% of max. operating pressure.**
C-11	VI/A	VI Chapter-8 WATER SYSTEM	25 of 29		CONTROL & INSTRUMENTATION- RO SYSTEM	CONTROL & INSTRUMENTATION- **(Chemical Storage, dosing &** RO SYSTEM)

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<table>
<tr>
<td>C-12</td>
<td>VI/A</td>
<td>VI
Chapter-04
COAL HANDLING PLANT</td>
<td>9 of 13</td>
<td></td>
<td>B) CONVEYORS
1. Belt sway switch assy.
2. Pull cord switch assy.
3
4
5
6
7
8. Motor terminal block with studs for all motors</td>
<td>B) CONVEYORS
1. Belt sway switch assy.
2. Pull cord switch assy.
3
4
5
6
7
8. Motor terminal block with studs for all motors
9. Belt watch Trip indicators: 20% (min 01 no.) of each type</td>
</tr>
<tr>
<td>C-13</td>
<td>VI/A</td>
<td>Annexure C to IIC Contract quantity</td>
<td>13 of 21</td>
<td>2.05.00</td>
<td>New clause added.</td>
<td>Additional cameras (PTZ) to be provided for the following areas (location to be decided during detailed engg)
1. Unit area: 50 nos. per unit
2. Common Plant Areas -Other than Coal Handling plant/LHP/GHP and distant plants: 30 nos.
Common Plant Areas - Coal Handling Plant/Lime Stone Handling Plant/Gypsum Handling Plant: 30 nos.</td>
</tr>
<tr>
<td>C-14</td>
<td>VI/A</td>
<td>Annexure C to IIC Contract quantity</td>
<td>14 of 21</td>
<td>3.00.00</td>
<td>Fixed Cameras (High Definition-HD) along with housings:
<table>
<tr><th>SN</th><th>Locations</th><th>No. of Cam-eras</th></tr>
<tr><td>1</td><td>Outside furnace (one each on left and right side water-wall) at about 12 M eleva-tion (Refer Note-1)</td><td>02</td></tr>
<tr><td>2</td><td>Outside bottom ash hopper at about 2 M elevation (Re-fer Note-2)</td><td>04</td></tr>
</table></td>
<td>Fixed Cameras (High Definition-HD) along with housings:
<table>
<tr><th>SN</th><th>Locations</th><th>No. of Cam-eras</th></tr>
<tr><td>1</td><td>Outside furnace (one each on left and right side waterwall) at about 12 M ele-vation (Refer Note-1)</td><td>02</td></tr>
<tr><td>2</td><td>Outside bottom ash hopper at about 2 M elevation (Refer Note-2)</td><td>06</td></tr>
</table></td>
</tr>
</table>

Amendment 01 to Technical Specifications (Section VI)

C-15	VI/B	SUB-SECTION-IIIC-04	11 of 36	6.01.00	9. **Compliance to standards** **USEPA, TUV, MCERTS or equivalent standards**	9. **Certification** **As per EN15267and EN14181 by reputed international agencies like TUV/MCERTS or as per Indian Certification Scheme for CEMS inline with CPCB guidelines**
C-16	VI/B	SUB-SECTION-IIIC-04	22 of 35	12.00.00	**SPECIFICATION FOR CORIOLIS FLOW TRANSMITTER** Material of Wetted Parts 316 SS **Process** Temperature range 0-200 degree Celsius	**SPECIFICATION FOR CORIOLIS FLOW TRANSMITTER** Material of Wetted Parts 316 SS or better **Hastelloy C-276 or better for slurry application** **Instrument** Temperature range 0-200 degree Celsius **0-150 degree Celsius for applications having process temperature upto 100 degree Celsius**
C-17	VI/B	IIIC-07 INSTRUMENTA-TION CABLES	1-6/6	1.01.00	**DETAIL SPECIFICATION OF INSTRUMENTATION AND POWER SUPPLY CABLES**	**DETAIL SPECIFICATION OF INSTRUMENTATION AND POWER SUPPLY CABLES** **Chapter Revised**

Amendment 01 to Technical Specifications (Section VI)

<table>
<tr><th rowspan="2">Sl. No.</th><th colspan="4">Specification Reference</th><th rowspan="2">Existing</th><th rowspan="2">Read as</th></tr>
<tr><th>Part</th><th>Sub Sec</th><th>Page No</th><th>Clause No</th></tr>
<tr><td>C-18</td><td>VI/A</td><td>VI
Chapter-12
Control & Instrumentation</td><td>9 of 10</td><td></td><td>New clause 9.00.00 added

Note: 1. Refer……
2. In case the main population of any item is only one no., then the spare quantity shall also be one no., overriding requirements indicated in clause 1.00.00 to 8.00.00 above.
3. Wherever the quantity …….shall be treated as 1 only.
4. C&I mandatory spares ……. required to be repeated.</td><td>9.00.00 In addition to the mandatory spares of electric actuators indicated in all the chapters of sub section VI, Part-A of technical specification the below clause is also applicable (also refer Note-4 below)
<table><tr><td>Sl. No.</td><td>ITEM</td><td>QUANTITY</td></tr><tr><td>(i)</td><td>Electronic PCB of all types</td><td>10% of each type & model</td></tr><tr><td>(ii)</td><td>Absolute Encoder (replaceable part)</td><td>5% of each type & model</td></tr><tr><td>(iii)</td><td>Electronic Torque sensor</td><td>5% of each type & model</td></tr><tr><td>(iv)</td><td>Electrical Actuator</td><td>1 no. of each type, class, size and model</td></tr></table>
Note: 1. Refer……
2. In case the main population of any item is only one no., then the spare quantity shall also be one no., overriding requirements indicated in clause 1.00.00 to 9.00.00 above.
3. Wherever the quantity …….shall be treated as 1 only.
4. C&I mandatory spares ……. required to be repeated.</td></tr>
<tr><td>C-19</td><td>VI/A</td><td>VI
Chapter-8
WATER SYSTEM</td><td>28 of 29</td><td>3.00.00</td><td>Table for Control & Instrumentation (CLO2 System)</td><td><table><tr><td colspan="3">CONTROL & INSTRUMENTATION- (CLO2 SYSTEM)</td></tr><tr><td>Sl. No.</td><td>ITEM</td><td>QUANTITY</td></tr><tr><td>1.00.00</td><td>MEASURING INSTRUMENTS</td><td></td></tr><tr><td>1)</td><td>Electronic Transmitters</td><td></td></tr><tr><td>(i)</td><td>Transmitters of all types and model. (for the measurement of</td><td>2 Nos. of each type and model</td></tr></table></td></tr>
</table>

								Pressure, differential pressure, flow, level, etc.) including local indication (if applicable)		
							2)	Temperature elements		
							(i)	Temperature Transmitter	2 Nos. of each type and model	
							(ii)	RTD's*	1 no. of each type	
							(iii)	Thermo well	1 no. of each type	
								* (With head assembly, terminal block and nipple)	** (to be divided into various insertion lengths in proportion to main population)	
							3)	Local Indicators (Non-Electrical type) -As applicable for the package as per the following items		
							(i)	Temperature gauges	1 no. of each range and type	
							(ii)	Pressure gauges	1 no. of each range and type	
							(iii)	Differential Pressure Gauges,	1 no. of each range and type	
							(iv)	Level gauges	1 no. of each range and type	
							(v)	Flow gauges excluding Rota meters	1 no. of each range and type	
							(vi)	All types of Rota meters	1 no. of each range and type.	
							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)	Differential Pressure switches	1 no. of each range and type
							(iv)	level switches	1 no. of each range and type
							(v)	Flow switches	1 no. of each range and type
							5)	Solenoid Valves	2 Nos. of each type and model
							6)	Limit Switches (for Pneumatic Valves and Manual valves)	2 no. of each type
							7)	ANALYSERS	
							1)	Complete PH Analyzer (including Flow Through type cell and Electrode, Electronic Transmitter unit, Pre-fabricated cable with connector as mini-mum)	1 Set of each type
							2)	Complete Residual Chlorine Analyzer (in-cluding sensing unit, Electronic Transmitter unit, Pre-fabricated ca-ble with connector as minimum)	1 Set of each type
							3)	Leak detector	2 set of each type
C-20	NOT USED								

Amendment 01 to Technical Specifications (Section VI)

S.No	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No	Clause No		
EE-1	VI/B	B-0	7 of 15	3.06.00 (a)	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. 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.	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. 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. Soot blower MCC/switchboard (with IP 55 protection) on the boiler platform shall be acceptable.
EE-2	VI/B	B-09	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 with terminal voltage drop being restricted to 15%. Generator loading before starting of this motor shall be considered as 50% of generator rating.	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 with terminal voltage drop being restricted to 15%. Generator loading before starting of this motor shall be considered as 50% of generator rating. However, actual motor parameters may be used if available.
EE-3	VI/B	B-0	2 of 15	1.11.00	Transformer voltage ratios, taps, impedances and tolerances thereon, shall be optimized so that the auxiliary system voltages under various grid and loading conditions are always within permissible limits and equipment are not subjected to unacceptable voltages during operation and starting of motors such as MDBFP, ID fans etc. The vector groups of the transformers shall be so selected that all the buses of particular voltage level shall have same vector within the plant. Locked rotor MVA of ID Fan and MDBFP motors shall be restricted to 75 MVA.	Transformer voltage ratios, taps, impedances and tolerances thereon, shall be optimized so that the auxiliary system voltages under various grid and loading conditions are always within permissible limits and equipment are not subjected to unacceptable voltages during operation and starting of motors such as MDBFP, ID fans etc. The vector groups of the transformers shall be so selected that all the buses of particular voltage level shall have same vector within the plant. Locked rotor MVA of ID Fan and MDBFP motors shall be restricted to 90 MVA.

Amendment 01 to Technical Specifications (Section VI)

S.No	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No	Clause No		
EE-4	VI/B	B-10	10 of 21	4.04.15	... No of cores in cable cores — No of spare 2C,3C — NIL 5C — 1 7C-10C — 2 14C and above — 3	... No of cores in cable — No of spare cores 2C,3C,5C — 1 7C-10C — 2 14C and above — 3
EE-5	VI/B	B-05(B)	10 of 10	-	Drg.no. 0000-205-POE-A-001	Updated drawing no 0000-205-POE-A-001
EE-6	VI/A	IIB	8 of 20	1.15.00(iv)	The Bidder shall extend supply from these 11 kV Construction power feeders to meet the construction power requirements by employing suitable number of 11/0.415KV Packaged sub-station (PSS) / pole mounted / Pad mounted transformers with proper fencing arrangements and associated switch-gears (if required) (meeting the safety requirements as per IE Rules) at the required location for meeting the construction power requirements of **stage-II** at the various locations in-cluded in the bidder's scope.	The Bidder shall extend supply from these 11 kV Construction power feeders to meet the construction power requirements by employing suitable number of 11/0.415KV Packaged substation (PSS) / pole mounted / Pad mounted transformers with proper fencing arrangements and associated switchgears (if required) (meeting the safety requirements as per IE Rules) at the required location for meeting the construction power requirements of **stage-III** at the various locations included in the bidder's scope.
EE-7	VI/B	IIB	14 of 20	1.19.00	3. Two Number 11kV feeders in 11 kV station switchgear, suitable for connection of 1MVA service transformer, for future owners use.	3) i) Four Number of 11kV feeders in 11 kV station switchgear, suitable for connection of 1MVA service transformer, for future owners use. ii) Two Number of 11kV feeders in 11 kV Unit switchgear, suitable for connection of 1MVA service transformer, for future owners use
EE-8	VI/A				Tender Drawing no : 9500-999-POE-J-002 AT Station swtichgear 6SA : - @ ADDITIONAL INCOMER 1250Amp SUITABLE FOR CABLE TERMINATION FOR OWNER'S USE. - # FEEDER FOR EXCITATION TESTING IF APPLICABLE iii)AT Station swtichgear 6SB : - @ ADDITIONAL INCOMER 1250Amp SUITABLE FOR CABLE TERMINATION FOR OWNER'S USE	At station switchgear 6SA & 6SB : i) @ ADDITIONAL INCOMER 1250 Amp SUITABLE FOR CABLE TERMINATION FOR OWNER'S USE. - # owner use 1MVA service Transformer, for future use ii)Bidder to Provide 11KV feeders as per Clause no:1.19.00 (3)

Amendment 01 to Technical Specifications (Section VI)

S.No	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No	Clause No		
					- # FEEDER FOR EXCITATION TESTING IF APPLICABLE	
EE-9	VI/B	B-0	6 of 15	3.05.00 (e)	DAF- Motor Feeder with Differential Protection : MV Motor Feeder >2MW	DAF-Motor Feeder with Differential Protection : Motor Feeder :>=2MW
EE-10	VI/B	B-0	7 of 15	3.05.00 (e)	DBF- Transformer feeder with Differential Protection : Transformer Feeder >5MW	DBF- Transformer feeder with Differential Protection : Transformer Feeder >=5MW
EE-11	VI/B	B-0	9 of 15	3.06.00.m	f. At least one spare core shall be made available in each of the control cable	f. The spare cores shall be made available in each of the control cable as specified in clause no: 4.04.15 of chapter B-10.
EE-12	VI/B	B-0	10 of 15	3.07.00	The earthing system for plant shall be designed for a life expectancy of at least forty (40) years, for a system fault current of 63 kA for 1.0 sec	The earthing system for plant shall be designed for a life expectancy of at least forty (40) years, for a system fault current of 50 kA for 1.0 sec
EE-13	VI/B	B-17	E-1 of 98	1.01.05	All equipment shall be supplied with suitable terminal connectors.. The terminal connectors shall be well coordinated with type/size of conductor and equipment to be connected. The conductor terminations for equipment shall be either rigid or expansion type suitable for horizontal or vertical take off suitable for tube/quadruple/twin/single moose conductor. For Jack Bus Line side Quad ACSR Moose and rest Twin ACSR Moose shall be used. The sub conductor spacing for quadruple and twin moose ACSR conductor / AAC Bull conductor shall be 450 mm for 765kV and 250mm for twin AAC Bull conductor for 132kV. The terminal pads shall preferably be capable of taking the required conductor span under normal, short circuit and meteorological conditions, without effecting the performance of the equipment.	All equipment shall be supplied with suitable terminal connectors.. The terminal con-nectors shall be well coordinated with type/size of conductor and equipment to be connected .The conductor terminations for equipment shall be either rigid or expansion type suitable for horizontal or vertical take off suitable for IPS tube/twin / Quad AAC Bull.. For Jack Bus Line side Quad AAC Bull shall be used. The sub conductor spacing for quadruple and twin moose ACSR conductor / AAC Bull conductor shall be 450 mm for 765kV and 250mm for twin AAC Bull conductor for 132kV. The terminal pads shall preferably be capable of taking the required conductor span under normal, short circuit and meteorological conditions, without effecting the performance of the equipment.
EE-14	VI/B	B-17	E-2 of 98	1.01.14	i)_The towers and gantries shall be suitable for a normal conductor tension of minimum 2T/conductor in case of **twin moose** and 1.5T/conductor in case of **quad moose** conductor. 0.8T/conductor in case of ground wire. The foundations and structures etc. shall be designed accordingly.	The towers and gantries shall be suitable for a normal conductor tension of minimum 2T/conductor in case of **AAC Bull** and 1.5T/conductor in case of **quad AAC Bull** conductor. 0.8T/conductor in case of ground wire. The foundations and structures etc. shall be designed accordingly.

Amendment 01 to Technical Specifications (Section VI)

S.No	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No	Clause No		
EE-15	VI/B	B-17	E-2 of 98	1.01.14	Minimum height of 765KV AIS equipment level shall be 14Mt from the plinth level. The gantry width for 765kV AIS shall be min. 54mt or as required to meet the specified clearances	Minimum height of 765KV AIS equipment level shall be 14Mt from the plinth level. The **Bay** width for 765kV AIS shall be min. 54mt or as required to meet the specified clearances
EE-16	VI/B	B-17	E-4 of 98	1.01.27	Complete Direct Stroke Lightning Protection using Lightning Mast and/or shield wire and its connection to earth mat as required of 400kV switchyard of resent scope of Bays ,Transformer yard.	Complete Direct Stroke Lightning Protection using Lightning Mast and/or shield wire and its connection to earth mat as required of **765kV & 132kV** switchyard of present scope of Bays ,Transformer yard.
EE-17	VI/B	B-17	E-4 of 98	1.02.00	**CLEARANCES :** The minimum clearances for 765kV AIS shall be as given below: 765kV / 132kV Phase to earth clearance(Conductor to conductor) 4900mm 1300mm Phase to earth clearance (rod to structure) 6400mm Phase to Phase clearance (Conductor to conductor) 7600mm 1300mm Phase to Phase clearance (rod to structure) 9400mm	i)Phase to earth clearance (Conductor -Structure): 4900mm ii)Phase to phase clearance :Rod to conductor :9400mm
EE-18	VI/B	B-17	E-9 of 98	2.02.02	The circuit breaker shall be capable for breaking the steady & transient magnetizing current corresponding to 765/132 kV transformers up to 1000 MVA	The circuit breaker shall be capable for breaking the steady & transient magnetizing current corresponding to 765kV transformers up to 1000 MVA
EE-19	VI/B	B-17	E-16 of 98	2.12.01.a	Minimum: 3150A/2000A at rated ambient temperature current capacity as per the SLD.	Min.3150A at rated ambient temperature .
EE-20	VI/B	B-17			New clause : 2.12.01.B	132kV Class Circuit Breakers (AIS) a) Rated continuous current Minimum: /2000A at rated ambient temperature b Rated out-of-phase breaking :7.8kA rms c) Rated line charging breaking current (voltage factor of 1.4) : As per IEC d) First pole to clear factor 1.5 f) Rated break time As per IEC g) Short time current carrying capability : 31.5kA rms @ 1sec.

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S.No	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No	Clause No		
EE-21	VI/B	B-17	E-17 of 98	2.13.00	Mandatory Maintenance equipments : 1.SF6 Gas handling plant 2.SF6 Gas leak detector	Deleted
EE-22	VI/B	B-17	E-23 of 98	3.07.01.a	Minimum: 3150A/2000A at rated ambient temperature current capacity as per the SLD.	Min.3150A at rated ambient temperature
EE-23	VI/B	B-17	E-23 of 98	3.07.01.1	132KV isolator Minimum 2000/1250 A at rated ambient temperature as per the Single line diagram	Min.2000A at rated ambient temperature
EE-24	VI/B	B-17	E34 of 98	8.04.03	Insulator String: 765KV f) Electro mechanical strength : 120KN	Insulator String: 765KV f) Electro mechanical strength : 210KN
EE-25	VI/B	B-17	E37 of 98 & E41 of 98	8.16.02 & 09.09.02	Rigid conduits shall be flow-coat metal conduits of Nagarjuna Coated Tubes or equivalent make. The outer surface of the conduits shall be coated with hot-dip zinc and chromate conversion coatings. The inner surface shall have silicone epoxy ester coating for easy cable pulling. Mild steel pipes shall be hot-dip galvanised. All rigid conduits/ pipes shall be of a reputed make	Rigid conduits shall be flow-coat metal conduits Tubes or equivalent make. The outer surface of the conduits shall be coated with hot-dip zinc and chromate conversion coat-ings. The inner surface shall have silicone epoxy ester coating for easy cable pulling. Mild steel pipes shall be hot-dip galvanised. All rigid con-duits/ pipes shall be of a reputed make
EE-26	VI/B	B-17	E-49 of 98	11.02.01	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:	To evaluate and tabulate the trees and bushes coming within **35** 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:
EE-27	VI/B	B-17	E-50 of 98	11.03.03	Profile Plotting & Tower Spotting: From the field book entries the route plan with route details and level profile shall be plotted and prepared as per approved procedure-------	Profile Plotting & Tower Spotting: From the field book entries the route plan with route details and level profile shall be plotted and prepared -------

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<table>
<tr><th rowspan="2">S.No</th><th colspan="4">Specification Reference</th><th rowspan="2">Existing</th><th rowspan="2">Read as</th></tr>
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<tr><td>EE-28</td><td>VI/B</td><td>B-17</td><td>E-52 of 98</td><td>11.06.00</td><td>Electrical System Data</td><td>a)Nominal Volage: 765KV,
b)Highest system Voltage: 800KV
c)Lightning impulse :+-2400kVp
d)Switching impulse :+-1550kVp
e)Power frequency with stand Voltage:830kV rms</td></tr>
<tr><td>EE-29</td><td>VI/B</td><td>B-17</td><td>E-57 of 98</td><td>12.02.01</td><td>The normal ruling span of the line shall be 400 meters for 400 KV towers.</td><td>The normal ruling span / Design of the line shall be 400 meters for 765 KV towers</td></tr>
<tr><td>EE-30</td><td>VI/B</td><td>B-17</td><td>E-58 of 98</td><td>12.02.03</td><td>The Weight Span :
<table><tr><td>Tower type</td><td colspan="2">Normal Condition</td><td colspan="2">Broken wire condition</td></tr><tr><td></td><td>Min (m)</td><td>Max (m)</td><td>Min (m)</td><td>Max (m)</td></tr><tr><td>A</td><td>600</td><td>-200</td><td>360</td><td>-100</td></tr><tr><td>B,C</td><td>600</td><td>0</td><td>360</td><td>-200</td></tr><tr><td>D</td><td>600</td><td>0</td><td>360</td><td>-300</td></tr></table></td><td><table><tr><td>Tower type</td><td colspan="2">Normal Condition</td><td colspan="2">Broken wire condition</td></tr><tr><td></td><td>Min (m)</td><td>Max (m)</td><td>Min (m)</td><td>Max (m)</td></tr><tr><td>A</td><td>600</td><td>200</td><td>360</td><td>100</td></tr><tr><td>B,C</td><td>600</td><td>0</td><td>360</td><td>-200</td></tr><tr><td>D</td><td>600</td><td>0</td><td>360</td><td>-300</td></tr></table>Bidder to refer CBIP Manual-323 for ruling span, wind span , weight span etc</td></tr>
<tr><td>EE-31</td><td>VI/B</td><td>B-17</td><td>E-60 of 98</td><td>12.04.02</td><td>Design Temperature :

c)Max.Temperature of conductor : 75Deg.cen</td><td>c)Max.Temperature of conductor : 85Deg.cen</td></tr>
<tr><td>EE-32</td><td>VI/B</td><td>B-17</td><td>E-74 of 98</td><td>13.05.02 .C</td><td>The chimney portion of the foundation shall be designed as per limit load method described at clause 38.6 of IS-456-1978, or as per any other international standard, considering the chimney as a column subjected to axial loads (down thrust loads) and biaxial bending moments resulting from side thrust forces. The passive earth pressure (as per Rankine's formula) shall be considered for the design of chimney against side thrust. If uplift and down thrust are computed in</td><td>The chimney portion of the foundation shall be designed as per limit load method described at clause 38.6 of IS-456 of latest addition or as per any other international standard, considering the chimney as a column subjected to axial loads (down thrust loads) and biaxial bending moments resulting from side thrust forces. The passive earth pressure (as per Rankine's formula) shall be considered for the design of chimney against side thrust. If uplift and down thrust are computed in vertical direction for the foundation design, full resultant horizontal shear shall be taken at footing tip for design of the footing to resist side thrust.</td></tr>
</table>

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S.No	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No	Clause No		
					vertical direction for the foundation design, full resultant horizontal shear shall be taken at footing tip for design of the footing to resist side thrust.	
EE-33	VI/B	B-17	E-75 of 98	13.06.02	All the properties of concrete regarding its strength under compression tension, shear, punching and bend etc. as well as workmanship will conform to IS:456-1978	All the properties of concrete regarding its strength under compression tension, shear, punching and bend etc. as well as workmanship will conform to IS:456 of latest addition
EE-34	VI/B	B-17	E-82 of 98	14.05.07	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.	Deleted
EE-35	VI/B	B-17	E-85 of 98	15.01.01	All the equipment shall be of the latest design and conform to the best modern practice adopted in the extra high voltage field. The Bidder shall offer only such equipment as guaranteed by him to be satisfactory and suitable for 400 kV AC Double circuit transmission with quad moose conductor and will give continued good performance.	All the equipment shall be of the latest design and conform to the best modern practice adopted in the extra high voltage field. The Bidder shall offer only such equipment as guaranteed by him to be satisfactory and suitable for 765 kV AC Single circuit transmission line with Quad AAC Bull conductor or equivalent and will give continued good performance.
EE-36	VI/B	B-17	E-86 of 98	15.02.02	a) Size (strands & wire diameter) : 7/3.15 mm (b) Overall diameter :9.45 mm (c) Stranded weight :428 Kg/km (d) Minimum ultimate tensile strength : 56 kN	a) Size (strands & wire diameter) : 7/3.66 mm (b) Overall diameter :10.98 mm (c) Stranded weight :583 Kg/km (d) Minimum ultimate tensile strength : 68 kN
EE-37	VI/B	B-17	E-86 of 98	15.03.02	Parameters of the conductor: a) Code and standard: IS 398 b) Name :MOOSE ACSR c) Overall diameter 31.77 mm d) Weight 2.004 kg/m e) Ultimate tensile strength 161.2 kN minimum f) Strands and wire diameter of - Aluminium 54 / 3.53 mm - Steel 7 / 3.53 mm	Typical Parameters of the conductor: a) Code and standard: IS 398 b) Name : Quad “Bull” AAC or equivalent c) Overall diameter :38.25 mm d) Weight :2.4 kg/m e) Ultimate tensile strength :139 kN minimum f) Strands and wire diameter of - Aluminium 61 /4.25 mm

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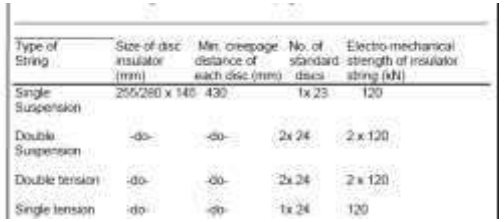
S.No	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No	Clause No		
EE-38	VI/ B	B-17	E-88 of 98	15.05.02	**Vibration Damper For Earthwire** Refer Clause 16.04.04 detailed above	**Vibration Damper For Earthwire** Refer Clause 15.04.04 detailed above
EE-39	VI/B	B-17	E-89 of 98	15.07.01	 Type of String / Size of disc insulator (mm) / Min. creepage distance of each disc (mm) / No. of standard discs / Electro-mechanical strength of insulator string (kN) Single Suspension: 255/280 x 146 / 430 / 1x 23 / 120 Double Suspension: -do- / -do- / 2x 24 / 2 x 120 Double tension: -do- / -do- / 2x 24 / 2 x 120 Single tension: -do- / -do- / 1x 24 / 120	Size of Disc Insulator :280X170mm Electro-Mechanical strength : 210KN No of Standard discs : 47nos Min.Creepage distance of : 430mm
EE-40	VI/B	B-23	6 of 10	2.02.00	The design ambient air temperature for cable shall be 50 deg C, when laid in air. The design ambient ground temperature for cables shall be 40 deg C. Cables shall be installed in air, in built up concrete trenches and/or directly buried in soil	The design ambient air temperature for cable shall be 50 deg C, when laid in air. The design ambient ground temperature for cables shall be 40 deg C. Cables shall be installed in air, in built up concrete trenches .
EE-41	VI/B	B-23	7 of 10	7.07.00	Construction of buried cable trench shall include excavation, preparation of sieved sand bedding, riddled soil cover, supply and installation of concrete protective covers, back filling and compacting,supply and installation of route markers. Bidder shall furnish the details for burying the cable in groun	Deleted
EE-42	VI/B	B-13	3 of 49	1.17.00	Bidder shall offer the Bay Level Units for the EHV system (each circuit breaker with associated dis-connector, Earth switches and instrument transformer shall comprise one bay) complete with Bay Control Units (BCUs) and Bay Protection Units (BPUs). Bay Level Units, common panels like bus bar protection, PLCC panels/communication panels of transmission lines, RTCC panels of transformers etc. shall be housed in existing Switchyard Control Room in Switchyard. Network Controllers,	Bidder shall offer the Bay Level Units for the EHV system (each circuit breaker with associated dis-connector, Earth switches and instrument transformer shall comprise one bay) complete with Bay Control Units (BCUs) and Bay Protection Units (BPUs). Bay Level Units, common panels like bus bar protection, PLCC panels/communication panels of transmission lines, etc. shall be housed in existing Switchyard Control Room in Switchyard.

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S.No	Specification Reference				Existing	Read as
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EE-43	VI/B	B-13	21 of 49	09.02.03(iv)	Individual group of protection systems shall be connected to independent set of SCUs.	Individual group of protection systems shall be connected to independent set of hand reset trip relays.
EE-44	VI/E	-	-	-	-	System Architecture for existing SAS - **Annexure-I**
EE-45	VI/E	-	7,9 of 127	-	Protection SLD for GT bay (xxxx-999-POE-J-005) Protection SLD for TIE bay (xxxx-999-POE-J-009)	Updated Protection SLD for GT bay (xxxx-999-POE-J-005) Updated Protection SLD for TIE bay (xxxx-999-POE-J-009)
EE-46	VI/E	-	11 of 127	-	Typical section of cable tray arrangement in trestle 9500-999-POE-J-004	Updated Typical section of cable tray arrangement in trestle 9500-999-POE-J-004
EE-47	VI/A	IIB	-	-	-	Annexure E2 (Preliminary route survey of 765KV SC line to bidder) added.
EE-48	VI/B	B-04	4 of 33	1.03.01(g)	… Outdoor oil filled transformers shall have ratings as indicated in tender SLD,2500kVA rating is not acceptable. For indoor DTT, 2500 kVA rating is acceptable. ….	… Outdoor oil filled transformers shall have ratings as indicated in tender SLD. ….

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<tr><td>EE-49</td><td>VI/B</td><td>B-0</td><td>13 of 15</td><td>6.00.00</td><td>….<table><tr><td></td><td colspan="2">WINDING</td><td colspan="2">BUSHING</td></tr><tr><td>High-est Sys-tem Volt-age</td><td>Rated Power Freq.with-stand Volt-age(K Vrms)</td><td>Rated light-ning im-pulse with-stand volt-age)K Vp)</td><td>Rated Power Freq.with-stand Volt-age(K Vrms</td><td>Rated light-ning im-pulse with-stand volt-age)K Vp)</td></tr><tr><td>…… 800 KV</td><td>…… 830/38 *</td><td>…… 1950**</td><td>…… 880</td><td>…… 2100** *</td></tr></table>….</td><td>….<table><tr><td></td><td colspan="2">WINDING</td><td colspan="2">BUSHING</td></tr><tr><td>High-est Sys-tem Volt-age</td><td>Rated Power Freq.with-stand Volt-age(K Vrms)</td><td>Rated light-ning im-pulse with-stand volt-age)K Vp)</td><td>Rated Power Freq.with-stand Volt-age(K Vrms</td><td>Rated light-ning im-pulse with-stand volt-age)K Vp)</td></tr><tr><td>…… 800 KV</td><td>…… 830/38 *</td><td>…… 2050/2255**</td><td>…… 970</td><td>…… 2100</td></tr></table>….</td></tr>
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<tr><td>EE-50</td><td>VI/B</td><td>B-04</td><td>1 of 33</td><td>1.01.00 (ix)</td><td>….
<table><tr><td>Sr. No.</td><td>TRANS-FORMER</td><td>Genera-tor Trans-former(GT)</td><td>….</td></tr><tr><td>….</td><td>….</td><td>….</td><td>….</td></tr><tr><td>ix)</td><td>Permissible Temperature rise over an am-bient of 50 deg C (irrespective of tap)</td><td></td><td></td></tr><tr><td></td><td>a) Top Oil by thermometer</td><td>40 deg.C</td><td>….</td></tr><tr><td></td><td>b) Winding by resistance</td><td>45 deg.C</td><td>…..</td></tr></table>….</td><td>….
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<tr><td>EE-51</td><td>VI/B</td><td>B-04</td><td>2 of 33</td><td>1.01.00 (x)</td><td>….
<table><tr><td>Insulation level</td><td>As per chapter B-0, Part-B</td></tr></table>….</td><td>….
<table><tr><td>Insulation level</td><td>As per chapter B-0, B-04 Part-B</td></tr></table>….</td></tr>
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S.No	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No	Clause No		
EE-52	VI/B	B-04	2 of 33	1.03.01 (b)(i)	…. Generator Transformers:- GT (including Spare GT) cooling shall be effected by use of a number of detachable type unit coolers. Capacity of each unit cooler shall be limited to maximum of 33 % of the total cooling requirements. At least one standby cooler of rating equal to that of Main cooler shall be provided. The coolers shall be tank mounted. There shall not be flow of directed air towards tank body. The orientation of coolers shall be subject to Employer's approval. Total capacity of unit coolers furnished for each transformer shall be minimum 132% of actual requirements. All oil pumps (cooler) shall be located at the cooler outlet pipe connected at the bottom of the tank. ….	…. Generator Transformers:- GT (including Spare GT) cooling shall be effected by use of a number of detachable type unit coolers. Capacity of each unit cooler shall be limited to maximum of 20 % of the total cooling requirements. At least one standby cooler of rating equal to that of Main cooler shall be provided. The coolers shall be tank mounted. There shall not be flow of directed air towards tank body. The orientation of coolers shall be subject to Employer's approval. Total capacity of unit coolers furnished for each transformer shall be minimum 120% of actual requirements. All oil pumps (cooler) shall be located at the cooler outlet pipe connected at the bottom of the tank. ….
EE-53	VI/B	B-04	3 of 33	1.03.01 (c)	….	…. iii) Phase to Earth clearances (765 KV): 5800 mm. ….
EE-54	VI/B	B-04	7 of 33	1.04.07	….	…. l.) Bushings above 420 kV class shall be oil filled condenser (OIP) / RIP (Resin Impregnated Paper). ….

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<table>
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<td>EE-55</td>
<td>VI/B</td>
<td>B-04</td>
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<td>1.04.07 (2)</td>
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2. STATION TRANSFORMER
<table>
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<tr><th>S.No.</th><th>Parameter</th><th>Unit</th><th>HV</th><th>HVN</th><th>LV1 & LV2</th><th>LV1N & LV2N</th></tr>
<tr><td>1.</td><td>Lightning impulse withstand voltage</td><td>kVp</td><td>145</td><td>-</td><td>12</td><td>-</td></tr>
<tr><td>2.</td><td>CW Lightning impulse withstand voltage</td><td>kVp</td><td>650</td><td>95</td><td>75</td><td>75</td></tr>
<tr><td>3.</td><td>One min power frequency with</td><td>kV</td><td>275</td><td>38</td><td>28</td><td>28</td></tr>
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<tr><td>2.</td><td>CW Lightning impulse withstand voltage</td><td>kVp</td><td>715</td><td>105</td><td>82.5</td><td>82.5</td></tr>
<tr><td>3.</td><td>One min power frequency with</td><td>kV</td><td>275 /38*</td><td>38</td><td>28</td><td>28</td></tr>
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<tr><td></td><td>stand voltage</td><td></td><td></td><td></td><td></td><td></td></tr>
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….
* In case of non-uniformly insulated.
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<tr><td>EE-56</td><td>VI/B</td><td>B-04</td><td>14 of 33</td><td>1.09.01</td><td>….</td><td>….
(d.) Tank Vacuum and Pressure test (For UT and Auxiliary Transformers)
….</td></tr>
<tr><td>EE-57</td><td>VI/B</td><td>B-04</td><td>16 of 33</td><td>1.09.03(I)(18)</td><td>….
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….
<table>
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<tr><td>18.</td><td>LTAC test as IEC 60076-3 (also refer Table given below)</td><td>….</td><td>X</td><td>….</td></tr>
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<tr><td>10.</td><td>Meas-ure-ment of trans-ferred surge on tertiary due to HV light-ning</td><td>X</td><td>….</td></tr>
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….
I) TYPE TEST (#)
….
<table>
<tr><td>S.N.</td><td>Trans-former Type</td><td>GT(1-PH)</td><td>….</td></tr>
<tr><td>10.</td><td>Meas-ure-ment of trans-ferred surge on LV due to HV light-ning im-pulse</td><td>√</td><td>….</td></tr>
</table>
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Amendment 01 to Technical Specifications (Section VI)

<table>
<tr><th rowspan="2">S.No</th><th colspan="4">Specification Reference</th><th rowspan="2">Existing</th><th rowspan="2">Read as</th></tr>
<tr><th>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>
<table>
<tr><td></td><td>im-pulse and IV light-ning im-pulse</td><td></td><td></td></tr>
<tr><td>11.</td><td>Meas-ure-ment of trans-ferred surge on tertiary due to HV Switch ing im-pulse and IV Switch ing im-pulse</td><td>X</td><td>….</td></tr>
</table>
….
</td><td>
<table>
<tr><td>11.</td><td>Meas-ure-ment of trans-ferred surge on LV due to HV Switch ing im-pulse</td><td>√</td><td>….</td></tr>
</table>
….
</td></tr>
<tr><td>EE-60</td><td>VI/B</td><td>B-04</td><td>20 of 33</td><td>1.09.03 NOTE</td><td>….</td><td>….
Table-2
(Test Voltage for LTAC)</td></tr>
</table>

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<table>
<tr><th rowspan="2">S.No</th><th colspan="4">Specification Reference</th><th rowspan="2">Existing</th><th rowspan="2">Read as</th></tr>
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<table>
<tr><td>Highest System Voltage (Um) for 765 kv class</td><td>800 KV</td></tr>
<tr><td>U1(LTAC Voltage level)</td><td>830 KV</td></tr>
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….
</td></tr>
<tr><td>EE-61</td><td>VI/B</td><td>B-04</td><td>22 of 33</td><td>2.00.00 (i)</td><td>….
<table>
<tr><td>Sr.No.</td><td>PARAME-TERS</td><td>INDOOR TRANS-FORMER</td></tr>
<tr><td>I)</td><td>Type</td><td>Epoxy cast resin/resin encapsulated</td></tr>
</table>
….</td><td>….
<table>
<tr><td>Sr.No.</td><td>PARAME-TERS</td><td>INDOOR TRANS-FORMER</td></tr>
<tr><td>I)</td><td>Type</td><td>Epoxy cast resin.
All windings shall be epoxy Resin Casted.</td></tr>
</table>
….</td></tr>
<tr><td>EE-62</td><td>VI/B</td><td>B-04</td><td>25 of 33</td><td>2.05.02</td><td>….
All routine tests in accordance with IS: 11171 shall be carried out on each
transformer.
….</td><td>….
All routine tests in accordance with IS: 2026 part-11 shall be carried out on each
transformer.
….</td></tr>
<tr><td>EE-63</td><td>VI/B</td><td>B-04</td><td>25,26 of 33</td><td>3.00.00(1,11)</td><td>….
<table>
<tr><td>1.</td><td>On Line DGA</td><td>Online monitor-ing sys-tem of</td><td>7 Nos.</td></tr>
</table>
</td><td>….
<table>
<tr><td>1.</td><td>On Line DGA</td><td>Online monitor-ing sys-tem of</td><td>4 Nos.</td></tr>
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<table>
<tr><th rowspan="2">S.No</th><th colspan="4">Specification Reference</th><th rowspan="2">Existing</th><th rowspan="2">Read as</th></tr>
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<tr><td></td><td></td><td></td><td></td><td></td><td>
<table>
<tr><td></td><td></td><td>dissolved gases for GTs</td><td></td></tr>
<tr><td>11.</td><td>On Line Moisture Removal System</td><td>(One for each 3 phase GT Bank)</td><td>2 Sets</td></tr>
</table>
….
</td><td>
<table>
<tr><td></td><td></td><td>dissolved gases for GTs</td><td></td></tr>
<tr><td>11.</td><td>On Line Moisture Removal System</td><td>(One for each 3 phase GT Bank)</td><td>1 Sets</td></tr>
</table>
….
</td></tr>
<tr><td>EE-64</td><td>VI/A</td><td>IIB</td><td>2 of 20</td><td>1.04.00(1)(vi)</td><td>
….
<table>
<tr><td>S.No</td><td>Equip-ment Name</td><td>Rat-ing/Pa-rameters</td><td>Quantity</td></tr>
<tr><td>vi)</td><td>INDOOR Trans-formers (Epoxy cast resin/ resin encapsu-lated)</td><td colspan="2">as per SLD & System Requirement</td></tr>
</table>
….
</td><td>
….
<table>
<tr><td>S.No</td><td>Equip-ment Name</td><td>Rat-ing/Pa-rameters</td><td>Quantity</td></tr>
<tr><td>vi)</td><td>INDOOR Trans-formers (Epoxy cast resin)</td><td colspan="2">As per SLD & Sys-tem Requirement</td></tr>
</table>
….
</td></tr>
<tr><td>EE-65</td><td>VI/A</td><td>VI CHAP TER-11</td><td>7 of 14</td><td>2.</td><td>
….
LIST OF MANDATORY SPARES for oil filled transform-ers/reactor
<table>
<tr><td>S.No</td><td>ITEMS DE-SCRIP TION</td><td>GT</td><td>ST</td><td>UT</td><td>Aux. Trans. (for each</td><td>RE-AC-TOR</td></tr>
</table>
</td><td>
….
LIST OF MANDATORY SPARES for oil filled transformers.
<table>
<tr><td>S.No</td><td>ITEMS DE-SCRIP TION</td><td>GT</td><td>ST</td><td>UT</td><td>Aux. Trans. (for each</td></tr>
</table>
</td></tr>
</table>

Amendment 01 to Technical Specifications (Section VI)

S.No	Specification Reference				Existing	Read as
	Part	Sub Sec	Page No	Clause No		
					rat-ing) ….	rat-ing) ….
EE-66	VI/E				…. Drawing no.0000-501-POE-A-002 ….	…. Drawing no.0000-501-POE-A-002 updated. ….
EE-67	VI/E				-	…. Drawing no. 0000-501-POE-A-006 is attached. ….

Amendment 01 to Technical Specifications (Section VI)

S. No.	SPECIFICATION REFERENCE				Instead of	Read as
	Section / Part	Sub-Section	Clause No.	Page No.		
D1-1	VI/A	IID				**1.00.04** The scope of work of the successful bidder includes: - (a) To interact, discuss with Owner / Proof Checking (PC) agency for the modalities, schedule, and design parameters, loading to be considered in line with the Owner's specifications. (b) To submit the drawings and design calculations as per the project schedule sequentially as per the sequence below. (c) Incorporate all the comments/observations/suggestions furnished by the PC on the drawings and design documents. (d) After review of the drawings and design documents by PC the same shall be submitted to the Owner for consent. In case of further observation by Owner the same is also to be incorporated. Sequence of submission of documents: - 1) Design basis which will include all design philosophy, seismic and wind criteria as per specification, foundation type along with bearing capacity as per Geotechnical Report, materials of construction, loading details, finishing schedule etc. 2) Architectural details/General Arrangement drawings for buildings, facilities, equipment including the elevations and cross sections. 3) Design calculation along with the STAAD/ANSYS/SAP 2000 models and/or computer work sheets or any other software model as mutually agreed with Owner. 4) Foundation drawings.

						5) Superstructure drawings sequentially as per construction sequence or material projection, as applicable.
D1-2	**VI/B**	D-1-5	5.17.00.02	36 & 37 of 69	(a) The design of all liquid retaining/conveying structures of cooling tower like C.W. basin, sump, hot water distribution channel/basin, sludge drain and pits shall be designed **by working stress method as outlined in Clause 4.5 of IS 3370 (Part 2) : 2009**. These structures shall be designed for following conditions 1. Water filled inside upto the designed level and no earth outside. 2. Earth pressure plus 2.0 T / M2 surcharge (Vertical direction) plus ground water table at Finished Graded ground Level (FGL) outside and no water inside.	(a) The design of all liquid retaining/conveying structures of cooling tower like C.W. basin, sump, hot water distribution channel/basin, sludge drain and pits shall be designed **as per IS 3370 with limiting crack width to 0.1mm**. These structures shall be designed for following conditions 1. Water filled inside upto the designed level and no earth outside. 2. Earth pressure plus 2.0 T / M2 surcharge (Vertical direction) plus ground water table at Finished Graded ground Level (FGL) outside and no water inside.
D1-3	VI/B	D-1-5	5.17.00.02	37 of 69	(b) The design of all structures other than liquid retaining/conveying structures of cooling tower above CW basin slab such as columns, beams, fins, walkways, slabs, cladding/partition wall, fan stack, precast beams etc. as applicable shall be carried out **by limit state method as outlined in Clause 4.4 of IS: 3370 (Part 2): 2009.** Further, for limiting the crack width, the stress for the reinforcement steel shall be limited to 130 MPa (on all faces) as per clause 4.4.3.1 of **IS: 3370 (Part 2): 2009** using the partial safety factor for serviceability condition as per clause 4.4.1.3. Wherever, the foundation raft of cooling tower is same as CW basin slab, the foundation shall be designed by working stress method as **outlined in Clause 4.5 of IS 3370 (Part 2): 2009** (all faces). However, if the cooling tower foundation is not the same as the CW basin slab and a separate foundation for the cooling tower is provided below the CW basin slab due to founding level requirements, the basin slab shall be designed as a structural slab resting on grid of beams taking support	(b) The design of all structures other than liquid retaining/conveying structures of cooling tower above CW basin slab such as columns, beams, fins, walkways, slabs, cladding/partition wall, fan stack, precast beams etc. as applicable shall be carried out **as per IS 3370 with limiting crack width to 0.2mm**. Further, for limiting the crack width, the stress for the reinforcement steel shall be limited to 130 MPa (on all faces) as per clause 4.4.3.1 of **IS: 3370** using the partial safety factor for serviceability condition as per clause 4.4.1.3. Wherever, the foundation raft of cooling tower is same as CW basin slab, the foundation shall be designed by working stress method as **per IS 3370 with limiting crack width to 0.1mm** (all faces)**.** However, if the cooling tower foundation is not the same as the CW basin slab and a separate foundation for the cooling tower is provided below the CW basin slab due to founding level requirements, the basin slab shall be designed as a structural slab resting on grid of beams taking support from columns or as a flat slab taking support from columns. Arrangement with providing walls between the columns and the periphery to support the structural basin slab is not permitted. The CW basin slab (both faces, including beams at CW basin slab level) shall be designed as structural slab **as per IS 3370 with limiting crack width to 0.1** and the structures below CW basin slab shall be designed as per IS:456 (2000).

					from columns or as a flat slab taking support from columns. Arrangement with providing walls between the columns and the periphery to support the structural basin slab is not permitted. The CW basin slab (both faces, including beams at CW basin slab level) shall be designed as structural slab **by working stress method as outlined in Clause 4.5 of IS 3370 (Part 2): 2009** and the structures below CW basin slab shall be designed as per IS:456 (2000). However, the size of the column below CW basin slab upto foundation shall be maintained same as the size of the columns just above CW basin slab.	However, the size of the column below CW basin slab upto foundation shall be maintained same as the size of the columns just above CW basin slab
D1-4	VI/B	D-1-5	5.17.00.01	35 & 36 of 69	**k) Coating** All concrete surfaces in direct contact with water/ water spray/moist air shall be applied with Moisture Compatible Corrosion Resistant Coating System or its equivalent as specified in Annexure-G. All concrete surfaces subject to water/ water spray/moist air upto and including Fan Deck slab level including basin slab, inner faces of peripheral walls, all faces of cell partition wall, all faces of columns, all faces of beams (both cast in situ and precast), bottom surface of fandeck slab for counter flow tower and both surface of fandeck slab for cross flow tower, inner face of fanstack, all faces of hot water basin (for cross flow tower), etc as applicable shall receive the said coating after cleaning and drying of the concrete surface. The detailed specification of the coating system on concrete surfaces is given in Annexure- G. External surfaces of Cooling tower peripheral walls and fanstack shall be painted with two	**k) Coating** All concrete surfaces subject to water/ water spray/moist air including cold water basin, inner faces of peripheral walls, all faces of cell partition wall, all faces of columns, all faces of beams (both cast in situ and precast), bottom surface of fandeck slab for counter flow tower and both surface of fandeck slab for cross flow tower, inner face of fanstack, all faces of hot water basin (for cross flow tower), etc. **except exterior surface** shall be applied with High build heavy duty polyurethane coating having formulation of 100 % solids, solvent free over proper cleaned and complete dried concrete surface. Thickness of polyurethane coating shall be 2.0 mm. Suitable primer as per standard Practice/manufacturers' recommendation shall be used. The detailed specification of polyurethane coating is given in **ANNEXURE-III**. **Exterior surfaces** of cooling tower shall be coated with one coat of High Performance Moisture Compatible Corrosion Resistant Coating System of minimum 150 micron as per **Annexure-G** followed by finish coat of two pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT.

					or more coats of waterproof cement paint of approved shade, make and color.	
D1-5	VI/B	D-1-12	-	-	**-**	**ANNEXURE-I** "SPECIFICATIONS FOR 100% SOLIDS, HIGH BUILD, ELASTOMERIC POLYURETHANE COATING FOR CONCRETE" added
D1-6	VI/B	D-1-5	5.19.01.05	47 of 69	All liquid retaining and conveying structures shall be designed by working stress method as **given in clause 4.5 of IS 3370(Part2):2009**.	All liquid retaining and conveying structures shall be designed by working stress method as **per IS 3370 with limiting crack width to 0.1.**
D1-7	**VI/B**	**G-07**				**3.00.00** All civil, structural, RCC and architectural drawings will be in approval category irrespective of them being categorised as 'AA'/ 'A' in MDL. Category (AA/A) of any new drawing added in the MDL at later stage shall be decided during addition of drawing in MDL. In accordance with IS: 18299 all Good For Construction (GFC) drawings have to be Proof Checked. NTPC has the discretion to carry out the Proof Checking itself or by appointing Proof Checker (PC). It would be the responsibility of the successful bidder to get the drawings and designs proof checked, within the stipulated time frame.
D1-8	**VI/A**	**IID**	**1.00.00**		2. Geo-technical Investigation.	2. Geo-technical Investigation. (additional data wherever required beyond details as provided)
D1-9	**VI/A**	**IID**	**1.00.00**		3. Site clearance including cutting of trees of girth less than 30 centimeters. Cutting of trees of girth more than 30cm shall be done by the Owner, however, removal and disposal of roots, trees of girth less than 30cm and other vegetation is in Bidder's scope.	3. Site clearance including cutting of trees of girth less than 30 centimeters. Cutting of trees of girth more than 30cm shall be done by the Owner after finalization of GLP. However, removal and disposal of roots of trees of all girths (including trees of girth less than 30cm or more) and other vegetation is in Bidder's scope.
D1-10	**VI/A**	**IID**	**1.00.00**		7. k. Area Paving and miscellaneous foundations in entire area enclosed within the peripheral roads of the entire plant area from edge of drain along peripheral road beyond transformer yard upto road beyond **Ash handling facilities area** bound by peripheral	7. k. Area Paving and miscellaneous foundations in entire area enclosed within the peripheral roads of the entire main-plant area from edge of drain along peripheral road beyond transformer yard upto road beyond **chimney** bound by peripheral roads in orthogonal directions, including heavy duty passages, sump pits, drains, culverts, cable slits, fire water

					roads in orthogonal directions, including heavy duty passages, sump pits, drains, culverts, cable slits, fire water trench, including, rail/ road/ drain crossing of fire water trench & pipes etc. (as shown in tender drawing).	trench, including, rail/ road/ drain crossing of fire water trench & pipes etc. (as shown in tender drawing).
D1-11	**VI/A**	**IID**	**1.00.00**		8. Civil, structural, architectural works of all facilities associated with complete Flue gas desulfurization (FGD) including Gypsum and limestone handling system **and DeNOx system**.	8. Civil, structural, architectural works of all facilities associated with complete Flue gas desulfurization (FGD) including Gypsum and limestone handling system.
D1-12	**VI/A**	**IID**	**1.00.00**		26. Sheds for O&M/Workers, including food serving kiosk and bio Toilet Blocks for ladies and gents, in adequate numbers to cater to the workers working in each work area. The sheds should be easily accessible to workers by foot. Minimum 06 numbers of shed in different areas shall be provided. Drinking water facility and maintenance of toilet and shed shall be the responsibility of the bidder till COD of all the units.	26. **Sheds for Construction workers and O&M Workers,** including food serving kiosk and bio Toilet Blocks for ladies and gents to cater to the workers working in each work area. The sheds should be easily accessible to workers by foot. Minimum 06 numbers of shed in different areas shall be provided. Drinking water facility and maintenance of toilet and shed shall be the responsibility of the bidder till COD of all the units**. The sheds shall be constructed at start of the project construction**
D1-13	**VI/A**	**IID**	**1.00.00**		10. Use of ash and ash based products. In line with Gazette Notification on Ash Utilization issued by Ministry of Environment & Forest and its amendments, Bidder shall use ash and ash based products in all construction. He shall furnish a compliance report along with all details of use of ash and ash based products along with each bill. The above requirements shall be applicable to his sub-vendors also and Contractor shall be responsible for enforcing the same on his sub-vendors Fly ash is available within plant boundary. Bidder to procure Fly ash. Bidder to collect and transport the same meeting environmental norms/ local regulations at his own cost as per operation schedule for fly ash collection. A **nominal** amount of shall be charged.	10. Use of ash and ash based products. In line with Gazette Notification on Ash Utilization issued by Ministry of Environment & Forest and its amendments, Bidder shall use ash and ash based products in all construction. He shall furnish a compliance report along with all details of use of ash and ash based products along with each bill. The above requirements shall be applicable to his sub-vendors also and Contractor shall be responsible for enforcing the same on his sub-vendors Fly ash is available within plant boundary. Bidder to procure Fly ash. Bidder to collect and transport the same meeting environmental norms/ local regulations at his own cost as per operation schedule for fly ash collection. **A nominal amount of Re 1 per metric tonne shall be charged.**
D1-14	**VI/A**	**IID**	**2.03.01**		a. Site clearance including cutting of trees **of girth less than 30 centimeters.**	a. Site clearance including cutting of trees **as specified elsewhere in this specification.**

Amendment 01 to Technical Specifications (Section VI)

D1-15	**VI/B**	**D-1-1**	**1.01.00**		This specification is to cover, survey works,…… **Preliminary** geotechnical investigation in the proposed area has been carried out by the Owner and the bore-log data is furnished in Annexure 'C' …… …… The Bidder shall make the layout and levels of all structures from the general grid of the plot and the nearest GSI benchmark or other acceptable benchmark of Government de-part- ment…… …….	This specification is to cover, survey works,…… **Detailed** geotechnical investigation in the proposed area has been carried out by the Owner and the bore-log data is furnished in Annexure 'C'. …… The Bidder shall make the layout and levels of all structures from the general grid of the plot and the nearest GSI benchmark or other acceptable benchmark of Government department **/ NTPC Ltd**……..
D1-16	**VI/B**	**D-1-3**	**3.07.00**		"As-built" drawings in AutoCad & PDF format shall be prepared and submitted to owner by the Contractor after completion of construction / erection, incorporating changes, if any.	"As-built" drawings in AutoCad & PDF format shall be prepared and submitted to owner by the Contractor after completion of construction / erection, incorporating changes, if any. **Final executed quantities of RCC and structural Steel shall be incorporated in the As-Built drawing.**
D1-17	**VI/B**	**D-1-4**	**4.03.10**		Filling upto the specified formation level shall extend at least 2.0 m beyond the outside face of boundary wall/fence. Thereafter, it shall be finished at a suitable slope (not steeper than 1 Vertical: 2 Horizontal).	Filling upto the specified formation level shall extend at least 2.0 m beyond the outside face of boundary wall/fence. Thereafter, it shall be finished at a suitable slope (not steeper than 1 Vertical: 2 Horizontal) **with Rip-Rap**. **For slope steeper than 1:2 encountered anywhere, slope protection shall be provided at slope with gabion wall/RCC retaining wall as per the requirement.**
D1-18	**VI/B**	**D-1-5**	5.23.18		The scope for pota- ble…… …… Minimum size of main bar of steel grating (Galvanised to 610 gm/m^2) shall be **25 mm** x 5mm and cross bars 6mm**……** Galvanizing shall be as per IS: 4736. The minimum mass of zinc coating shall not be less than 360 gms/sq.m. as per IS:6745. The zinc coating shall be smooth and shall be subjected to testing as per IS: 2633, for uniformity of coating. The zinc coating shall be free from all defects as per IS: 2629.	The scope for pota- ble……. Minimum size of main bar of steel grating (Galvanised to 610 gm/m^2) shall be 40mm x 5mm and cross bars 6mm…… ~~**Galvanizing shall be as per IS: 4736. The minimum mass of zinc coating shall not be less than 360 gms/sq.m. as per IS:6745. The zinc coating shall be smooth and shall be subjected to testing as per IS: 2633, for uniformity of coating. The zinc coating shall be free from all defects as per IS: 2629.**~~ All rain water down…… …….

Amendment 01 to Technical Specifications (Section VI)

					All rain water down…..…… …… ….	
D1-19	**VI/B**	**D-1-8**	**8.02.01**		c) The minimum grades of concrete….	c) The minimum grades of concrete…. Refer Annexure AC-1
D1-20	**VI/B**	**D-1-9**	**9.17.00**	**19 of 36**	Table A Interior finishing Schedule Table B Exterior finishing schedule	Revised Table A B attached as annexure sl no AC-2 'D-1-9 - Table A and Table B'
D1-21	**VI/B**	**D-1-5**	**5.06.01**		The civil works for fgd system shall comprise of civil, structural and architectural works below and above ground level of ball mill building, ball mill foundations, fgd control room building, slurry re-circulating pumps & oxidation blowers building, tank foundations, absorber tower foundation, mcc building, gypsum dewatering building, transformer foundation, equipment foundations, pipe & cable gallery/ trestles, drainage, sanitation, water supply (from terminal points to various buildings/facilities) and all other civil, structural and architectural works associated with the complete fgd system specified elsewhere in this specification. Bidder may also refer terminal points & exclusions in this regard.	The civil works for FGD system shall comprise of civil, structural and architectural works below and above ground level of ball mill building, ball mill foundations, FGD control room building, slurry re-circulating pumps & oxidation blowers shed, tank foundations, absorber tower foundation, mcc building, gypsum dewatering building, transformer foundation, equipment foundations, pipe & cable gallery/ trestles, drainage, sanitation, water supply (from terminal points to various buildings/facilities) and all other civil, structural and architectural works associated with the complete FGD system specified elsewhere in this specification. Bidder may also refer terminal points & exclusions in this regard.
D1-22	**VI/A**	**IID**	**1.00.00**		4(c) Packaged type Sewerage treatment plant (3 nos. as indicated in tender drawing General Layout Plan) 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.**	4(c) Packaged type Sewerage treatment plant (3 nos. as indicated in tender drawing General Layout Plan) and sewage pumping station including sewage pump, sump & house and connection up to sewage treatment plants**. Storage or handling of effluent after tertiary treatment is excluded from bidder's scope of work.**

Amendment 01 to Technical Specifications (Section VI)

D1-23	**VI/B**	**D-1-9**	9.07.04	**7 of 33**	For ESP Control Room Building, wall shall be of Autoclaved Aerated Concrete Block. Autoclaved Aerated Concrete (AAC) block masonry shall be with blocks having dimensions of 625 mm x 250 mm. thickness ranging from 100 mm to 300 mm conforming to I.S. :2185(part III).The jointing cement sand mortar in the composition of 1: 6 (Cement: sand) shall be used with suitable plasticizer(optional). Sand having modulus of fineness 1.1 shall be used. The horizontal and vertical joint thickness shall be approximately 10 mm. In case of partition walls (100 mm /125 mm thk.) the joint reinforcement i.e. 1 number of 6-8 mm diameter bars shall be placed at every alternate course to be anchored properly with the main structure. All other structural requirements like stiffening of masonry, joint reinforcement etc. in the AAC masonry work strictly be carried out as per instructions laid down in IS 6041 – 1985, IS - 1905. For control room , control equipment room in MPH Building , walls shall be of factory made composite modular light weight aerated concrete panels,(minimum 2 hours of fire rating) consisting of 2 fiber reinforced cement sheets (minimum 4 mm thick) on either side of light weight concrete core, having minimum compressive strength of 35 Kg / Cm2 and the density in the range of 700-900 Kg. / cu.m. of the thickness and fire rating as specified below, to provide external wall and internal partition at all levels, capable of sustaining wind pressure of 3.00 M height (H) within limiting deflection of span/250, fixed in position in tongue and groove jointing system by screwing the panels to top and bottom U channels, (channels minimum 1.25 mm thick and galvanised to grade 180 (minimum) as per IS : 277), fixing U profiled top and bottom channels to concrete / primary steel members which are placed at the maximum vertical	For ESP Control Room Building, wall shall be of Autoclaved Aerated Concrete Block. Autoclaved Aerated Concrete (AAC) block masonry shall be with blocks having dimensions of 625 mm x 250 mm. thickness ranging from 100 mm to 300 mm conforming to I.S. :2185(part III).The jointing cement sand mortar in the composition of 1: 6 (Cement: sand) shall be used with suitable plasticizer(optional). Sand having modulus of fineness 1.1 shall be used. The horizontal and vertical joint thickness shall be approximately 10 mm. In case of partition walls (100 mm /125 mm thk.) the joint reinforcement i.e. 1 number of 6-8 mm diameter bars shall be placed at every alternate course to be anchored properly with the main structure. All other structural requirements like stiffening of masonry, joint reinforcement etc. in the AAC masonry work strictly be carried out as per instructions laid down in IS 6041 – 1985, IS - 1905. For control room , control equipment room in MPH Building, **where dry wall construction is envisaged,** the walls shall be constructed of factory made composite modular light weight aerated concrete panels,(minimum 2 hours of fire rating) consisting of 2 fiber reinforced cement sheets (minimum 4 mm thick) on either side of light weight concrete core, having minimum compressive strength of 35 Kg / Cm2 and the density in the range of 700-900 Kg. / cu.m. of the thickness and fire rating as specified below, to provide external wall and internal partition at all levels, capable of sustaining wind pressure of 3.00 M height (H) within limiting deflection of span/250, fixed in position in tongue and groove jointing system by screwing the panels to top and bottom U channels, (channels minimum 1.25 mm thick and galvanised to grade 180 (minimum) as per IS : 277), fixing U profiled top and bottom channels to concrete / primary steel members which are placed at the maximum vertical spacing of 4.5m with the help of galvanised steel expansion fasteners, filling the joints from both faces with silicon acrylic paste and making the same water tight by covering with fibre glass tape (minimum 50 mm wide and minimum 0.5 mm thick) or by any other suitable material, so as to ensure that the entire construction done with the light weight aerated concrete panels are weather proof and panel surfaces are flush for painting, creating opening for doors / windows /ventilators / ducts / pipes/fans/AC etc. and finishing the opening face with the same U profiled galvanized steel

					spacing of 4.5m with the help of galvanised steel expansion fasteners, filling the joints from both faces with silicon acrylic paste and making the same water tight by covering with fibre glass tape (minimum 50 mm wide and minimum 0.5 mm thick) or by any other suitable material, so as to ensure that the entire construction done with the light weight aerated concrete panels are weather proof and panel surfaces are flush for painting, creating opening for doors / windows /ventilators / ducts / pipes/fans/AC etc. and finishing the opening face with the same U profiled galvanized steel channel which is used at the top and bottom.	channel which is used at the top and bottom. **The Outer wall of control room, control equipment room in MPH Building shall be made of aerated concrete panels over that 50 mm thick mineral wool insulation and metal sheeting on outside.**
D1-24	**VI/E**			**Tender Drawing**	XXXX-999-POC-A-020 WORKER'S RESTROOM	XXXX-999-POC-A-020 **Sheds for Construction workers and O&M Workers**
D1-25	**VI/B**	**D-1-9**	9.10.09	**12 of 33**	All internal paints shall be of low VOC (Less than 50 g /L) content conforming to GRIHA rating for reduction of VOC content	**All internal paints shall be of low VOC (Less than 50 g /L) content.**
D1-26	**VI/B**	**D-1-8**				**8.10.00 Controlled Low Strength Material (CLSM)** Bidder to refer Annexure-AC-3
D1-27	**VI/E**	**Tender drawing**	**1**		GENERAL LAYOUT PLAN XXXX-999-POC-F-001	GENERAL LAYOUT PLAN XXXX-999-POC-F-001 Rev B
D1-28	**VI/B**	**D-1-9**	**9.03.02**	**2 of 33**	Each Toilet block shall have the following minimum facilities. Unless specified all the fittings shall be of Chromium plated brass (fancy decorative type) (Jaquar / Hindware/ equivalent) . a) One number wall mounted coloured glazed vitreous China European water closet and dual flushing valve system, water faucet, health Faucet (Jaquar / Hindware/ equivalent) toilet paper holder as per IS:2556	Each Toilet block shall have the following minimum facilities. Unless specified all the fittings shall be of Chromium plated brass (decorativetype).(Jaquar / Hindware/ equivalent) a) One number wall mounted coloured glazed vitreous China European water closet and flushing valve system, water faucet, toilet paper holder as per IS:2556. (Jaquar / Hindware/ equivalent) b) One number colour glazed ceramic oval shaped wash basin 450x 550 mm (pprox..) mounted under the counter with18mm thick granite beveled edge counter fitted with photo-voltaic control system for water controls, bottle trap as

					b) One number colour glazed ceramic oval shaped wash basin 450x 550 mm (approx.) mounted over under the counter with 18mm thick granite beveled edge counter fitted with photo-voltaic control system for water controls, bottle trap as per IS:2556. For common toilets, number of washbasins shall be as per requirement. However, for Pump Houses the same shall be provided without photo voltaic control system for water control. c) For Male Toilets Urinal as per requirements, with all fittings with photovoltaic control flushing system as per IS: 2556. d) One number looking mirror 600 x 900 x 6 mm (jaquar / Hindware / Asahi) , edge mounted with teak beading / SS studs and minimum 12 mm thick plywood backing, one number stainless towel rail 600 x 20 mm, one number liquid soap dispenser per wash basin. e) One toilet with required facilities shall be provided for physically challenged persons as per National Building Code requirements f) Janitor Space & space for drinking water cooler. g) Electric operated hand dryer with photo voltaic control. h) The pantry shall consist of one number stainless steel pantry sink, as per IS : 13983, of size 610 x 510 mm, bowl depth 200 mm with drain board of at least 450 mm length with coupling , CP bottle trap, hot and cold water mixer, one number geyser of 25 liters capacity, with inlet and outlet connections, one number over head water storage tank, as per IS : 12701 and of minimum 500 liters capacity, complete with float valve, overflow drainage pipe arrangement, 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	per IS:2556. For common toilets, number of washbasins shall be as per requirement. However, for Pump Houses the same shall be provided without photo voltaic control system for water control. c) For Male Toilets Urinal as per requirements, with all fittings with photovoltaic control flushing system as per IS: 2556. d) One number looking mirror 600 x 900 x 6 mm, edge mounted with teak beading and minimum 12 mm thick plywood backing or mounted with SS Studs, one number stainless towel rail 600 x 20 mm, one number liquid soap dispenser. (Jaquar / Hindware/ Asai/ Saingobain /equivalent) **e) One toilet with required facilities shall be provided for physically challenged persons on Ground floor of Main Power House Building,** **f)** Janitor Space & space for drinking water cooler. g) Electric operated hand dryer with photo voltaic control. **h) The pantry shall consist of one number stainless steel pantry sink, as per IS : 13983, of size 610 x 510 mm, bowl depth 200 mm with drain board of at least 450 mm length withcoupling , CP bottle trap, hot and cold water mixer, one number geyser of 25 liters capacity, with inlet and outlet connections, one number over head water storage tank, as per IS : 12701 and of minimum 500 liters capacity, complete with float valve, overflow drainage pipe arrangement, CPVC concealed water supply pipe of minimum 12 mm diameter, CPVC sanitary pipe (with lead joints) of minimum 75 mm diameter, floor trap with Stainless Steel grating, inlet and outlet connections for supply and drainage, with all bends, tees, junctions, sockets, etc., as are necessary for the commissioning and efficient functioning of the pantry (all sanitary fittings shall be heavy duty chrome plated brass, unless noted otherwise)** One number of pantry shall be provided on Control Room floor of ESP control room building and One number of pantry shall be provided in Buildings having Control Room .. i) Laboratory sink shall be of white vitreous china of size 600x400x200 mm conforming to IS: 2556 (Part-5)with single 15 mm C.P. brass pillar taps with elbow operated levers ISI Marked.

					Steel grating, inlet and outlet connections for supply and drainage, with all bends, tees, junctions, sockets, etc., as are necessary for the commissioning and efficient functioning of the pantry (all sanitary fittings shall be heavy duty chrome plated brass, unless noted otherwise) One number of pantry shall be provided on Control Room floor of ESP control room building and One number of pantry shall be provided in Buildings having Control Room . i) Laboratory sink shall be of white vitreous china of size 600x400x200 mm conforming to IS: 2556 (Part-5) with single 15 mm C.P. brass pillar taps with elbow operated levers ISI Marked. j) In addition, adequate number of portable toilet units with adequate plumbing and sanitary arrangement, shall be provided during construction stage for workers. k) Adequate number of toilet units with adequate necessary plumbing and sanitary arrangement, shall be provided for workers (O&M workers).	j) In addition, adequate number of portable toilet units with adequate plumbing and sanitary arrangement, shall be provided during construction stage for workers. k) Adequate number of toilet units with adequate plumbing and sanitary arrangement, shall be provided for workers (O&M workers).
D1-29	**VI/B**	**D-1-9**	**9.02.01**	**1 of 33**	a) Minimum 1000 mm high (from floor/ roof level) hand railing shall be provided around all floor/roof openings, projections/balconies, walkways, platforms, steel stairs, etc., wherever the height of the building is more than 12m, railing height shall be 1.2m. All handrails and ladder pipes (except at operating floors) shall be 32 mm nominal bore MS pipes (medium class) conforming to IS: 1161 and shall be galvanised as per IS: 4736 and finished with suitable paint. All rungs and ladders shall also be galvanised. Minimum weight of galvanising shall be 610 g/sqm. The spacing of vertical posts shall be maximum 1500mm. Two number of horizontal rails shall be provided including the top member. In addition, toe guard/ kick plate of min size 100x6th shall be provided	a) Minimum 1000 mm high (from floor/ roof level) hand railing shall be provided around all floor/roof openings, projections/balconies, walkways, platforms, steel stairs, etc., wherever the height of the building is more than 12m, railing height shall be 1.2m. All handrails and ladder pipes (except at operating floors) shall be 32 mm nominal bore MS pipes (medium class) conforming to IS: 1161 and **shall finished with suitable paint**. All rungs and ladders shall also be **finished with suitable paint**. The spacing of vertical posts shall be maximum 1500mm. Two number of horizontal rails shall be provided including the top member. In addition, toe guard/ kick plate of min size 100x6th shall be provided above the floor level.

					above the floor level. For handrailing at operating floors of Main Power House including RCC stairs (for one flight above and below operating floor level), passages, around all floor openings shall be Stainless Steel (SS) pipes shall be used. For SS handrail 32NB/50NB/60NB (polished) stainless steel pipe shall be provided. The spacing of vertical posts shall not be more than 1500mm. Two number of horizontal rails shall be provided including the top member. SS Toe guard, knee guard and kick plate shall be provided above the floor level. b) All stairs shall have a maximum riser height of 175mm and a minimum tread width of 275 mm. Minimum clear width of stair shall be 1200 mm unless specified otherwise.	For handrailing at operating floors of Main Power House including RCC stairs (for one flight above and below operating floor level), passages, around all floor openings shall be Stainless Steel (SS) pipes shall be used. For SS handrail 32NB/50NB/60NB (polished) stainless steel **pipe with wall thickness 1.65 mm (minimum)** shall be provided. The spacing of vertical posts shall not be more than 1500mm. Two number of horizontal rails shall be provided including the top member. SS Toe guard, and knee guard **(100 mm wide and 6 mm thick)** shall be provided above the floor level. **b) All stairs shall have a maximum riser height of 150mm and a minimum tread width of 300 mm. Minimum clear width of stair shall be 1500 mm unless specified otherwise. The width of staircase shall meet the National Building Code requirements.**
D1-30	**VI/B**	**D-1-9**	**9.10.13**	**12 of 33**	**Exterior Painting on Wall (Premium Acrylic Smooth Exterior Paint with Silicone Additives)** The paint shall be (premium acrylic smooth exterior paint with silicone additives) of approved brand and manufacture. This paint shall be brought to the site of work by the contractor in its original containers in sealed condition. The material shall be brought in at a time in adequate quantities to suffice for the whole work or at least a fortnight's work. The materials shall be kept in the joint custody of the contractor and the Engineer-in-Charge. The empty containers shall not be removed from the site of work till the relevant item of work has been completed and permission obtained from the Engineer-in-Charge. Preparation of Surface	**Exterior Painting on Wall (Premium Acrylic SmoothExterior Paint with Silicone Additives)** The paint shall be (premium acrylic smooth exterior paint with silicone additives) of approved brand and manufacture. This paint shall be brought to the site of work by the contractor in its original containers in sealed condition. The material shall be brought in at a time in adequate quantities to suffice for the whole work or at least a fortnight's work. The materials shall be kept in the joint custody of the contractor and the Engineer-in-Charge. The empty containers shall not be removed from the site of work till the relevant item of work has been completed and permission obtained from the Engineer-in-Charge. Preparation of Surface For new work, the surface shall be thoroughly cleaned off all mortar dropping, dirt dust, algae, fungus or moth, grease and other foreign matter of brushing and washing, pitting in plaster shall make good, surface imperfections such as cracks, holes etc. should be repaired using white cement. The pre-

					For new work, the surface shall be thoroughly cleaned off all mortar dropping, dirt dust, algae, fungus or moth, grease and other foreign matter of brushing and washing, pitting in plaster shall make good, surface imperfections such as cracks, holes etc. should be repaired using white cement. The prepared surface shall have received the approval of the Engineer in charge after inspection before painting is commenced. Application of Base Coat Base coat shall be of water proofing cement paint. Preparation of Mix for Base Coat Cement Paint shall be mixed in such quantities as can be used up within an hour of its mixing as otherwise the mixture will set and thicken, affecting flow and finish. Cement Paint shall be mixed with water in two stages. The first stage shall comprise of 2 parts of cement Paint and one part of water stirred thoroughly and allowed to stand for 5 minutes. Care shall be taken to add the cement Paint gradually to the water and not vice versa. The second stage shall comprise of adding further one part of water to the mix and stirring thoroughly to obtain a liquid of workable and uniform consistency. In all cases the manufacturer's instructions shall be followed meticulously. The lids of cement Paint drums shall be kept tightly closed when not in use, as by exposure to atmosphere the cement Paint rapidly becomes air set due to its hygroscopic qualities. In case of cement Paint brought in gunny bags, once the bag is opened, the contents should be consumed in full on the day of its opening. If the same is not likely to	pared surface shall have received the approval of the Engineer in charge after inspection before painting is commenced. **Textured base coat** **Exterior wall Texture-New work (Two or more coats applied @ 6.5kg/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm). High Quality Exterior Acrylic Modified resin and special quality Silica Quartz with Trowel Texture (Asian / Dulux/ Nerolac/ Berger/ Equivalent) as per selection…….**

					be consumed in full, the balance quantity should be transferred and preserved in an airtight container to avoid its exposure to atmosphere. Application of Base Coat The solution shall be applied on the clean and wetted surface with brushes or spraying machine. The solution shall be kept well stirred during the period of application. It shall be applied on the surface which is on the shady side of the building so that the direct heat of the sun on the surface is avoided. The method of application of cement Paint shall be as per manufacturer's specification. The completed surface shall be watered after the day's work. The second coat shall be applied after the first coat has been set for at least 24 hours. Before application of the second or subsequent coats, the surface of the previous coat shall not be wetted. For new work, the surface shall be treated with three or more coats of water proof cement Paint as found necessary to get a uniform shade. Precaution Water proof cement Paint shall not be applied on surfaces already treated with white wash, colour wash, distemper dry or oil bound, varnishes, Paints etc. It shall not be applied on gypsums, wood and metal surfaces. If water proofing cement is required to be applied on existing surface, previously treated with white wash, colour wash etc., the surface shall be thoroughly cleaned by scrapping off all the white wash, colour wash etc. completely. Thereafter, a coat of cement primer shall be applied followed by two or	