BHARAT HEAVY ELECTRICALS LIMITED
PROJECT ENGINEERING MANAGEMENT, NOIDA

Date-10-Oct-24

CORRIGENDUM- 02

PROJECT	**:**	**1 X 800 MW HPGCL Yamunanagar STPP I-EPC**
PACKAGE	**:**	**COOLING TOWER - Natural Draft Cooling Towers (NDCT)**
ENQUIRY NO	**:**	**77/23/6116/NIT dated 11.09.2024**
SUBJECT	**:**	**Change in NIT terms, Reply to Pre-bid Queries and Tender due date extension**

Type of Corrigendum			
Technical Corrigendum -	☐	Commercial Corrigendum -	☑

Bidders are requested to note:

1. Sl. No. 38 of NIT is revised as following:

All taxes excluding GST & GST Cess but including, Royalties, fees, license, deposits, commission, any State or Central Levy and other charges whatsoever, if any, shall be borne by bidder and shall not be payable extra. For BOCW refer attached annexure IV.

2. Reply to pre-bid queries are attached as per Annexure-1

3. Due date & time of bid submission has been extended up to 21.10.2024 @ 01.00 PM. Bid opening shall be done at 04:30 PM on the due date.

All the other terms and conditions of the tender enquiry remain unchanged. All the bidders are requested to quote accordingly.

Yours faithfully,

For and on behalf of BHEL

Nitin Kumar
Manager/BOP

PRE-BID CLARIFICATION
[ENQUIRY NO. 77/23/6116/NIT DATED 11-09
-2024]

Annexure-1

BHEL-PEM					**PAHARPUR REF: DT-24E047**
ENQUIRY NO. : 77/23/6116/NIT (TENDER ID: 2024_BHEL_39853_1)					**DATE: 18-09-2024**
NATURAL DRAUGHT COOLING TOWER FOR 1 x 800 MW HPGCL YAMUNANAGAR STPP-I AT KALANAUR, DISTRICT YAMUNANAGAR, HARYANA					
PRE-BID CLARIFICATIONS					
Sl No	**Reference**			**Queries by Paharpur Cooling Towers Ltd dated 18-09-2024**	**Response from BHEL**
	Section	**Chapter / Cl. No**	**Page No.**		
PRE-QUALIFICATION REQUIREMENT (TECHNICAL)					
1	Doc No PE-TS-510-165-W001 & Annexure - 3K	Pre-Qualification Requirement (Technical)	239 to 246 of 246	We have noted that Annexure-3K available as a part of the tender documents stand modified according to Technical PQR mentioned in Page 238 of 246. Based on above, in case Bidder need to furnish duly filled in Annexure-3K, we request BHEL to furnish revised Annexure 3K incorporating the changes in line with final Technical PQR.	**Revised Annexure-3K awaited from customer. Same shall be shared later after receiving from the customer. Bidder may fill the same and submit later on availability. However supporting documents required as per PQR to be submitted along with bids.**
2	Annexure - 3K / Section I.(A)	Pre-Qualification Requirement (Technical) / 18. f	241 of 246	Description in line no. 18(f) need to be modified suitably inserting option for NDCT (instead of ID Cross flow / ID counter flow).	
3	Annexure - 3K / Section I.(B)	Pre-Qualification Requirement (Technical)	242 of 246	This section of form Annexure - 3K is not corresponding to Clause No 4.4.2.2 of Technical PQR and should be deleted.	
4	Annexure - 3K / Section I.(C)	Pre-Qualification Requirement (Technical)	244 of 246	There is no Clause No 4.4.2.3. We understand that this section of form Annexure - 3K corresponds to Clause No 4.4.2.2 of Technical PQR. Kindly confirm.	
COMMERCIAL					
1	Notice Inviting Tender	21	1 of 11	We also expect that comments on our documents / drawings will be be received by us within 7 days of our submission of those documents / drawings.	**Follow NIT**
2	Notice Inviting Tender	24	2 of 11	This clause is not applicable for this tender.	**Follow NIT**
3	Notice Inviting Tender	28 (GCC BOP - GCTC / Clause No 9.2.1)	3 of 11 (7 of 31)	For a project of this dimension we expect 10% interest-free advance on Main Supply contract value. Please confirm. Referring to release of last 10% payment on Main Supply, kindly note that PG test will depend upon the ideal test conditions viz., plant load etc. which is beyond cooling tower contractor's control. Hence we cannot continue to extend the validity of the subject BG till completion of the PG Test, which is not under our control. Therefore, there should be a cut-off period for revalidating the BG. Ideally the PBG should be valid till the warranty period only.	**Follow NIT**
4	Notice Inviting Tender	28 (GCC BOP - GCTC / Clause No 9.3)	3 of 11 (8 of 31)	We expect 10% interest-free advance on E&C contract value. Please confirm. Referring to release of last 10% payment on E&C, kindly note that PG test will depend upon the ideal test conditions viz., plant load etc. which is beyond cooling tower contractor's control. Hence in case PG test / demonstration test of the cooling tower(s) cannot be completed within one year after completion of commissioning of cooling tower(s), for reasons not attributable to the contractor, BHEL shall release payment towards PG Test / demonstration test of the cooling tower(s) against existing performance security, valid till warranty period, that would have been submitted as per NIT Clause No 35 (Page 5 of 11). PLease confirm.	**Follow NIT**
5	Notice Inviting Tender	28 (i-a)	3 of 11	Please confirm that BHEL shall release 5% of the civil work payment against site mobilization and not linking it with installation of the T&P as per Annexure - II.	**Follow NIT**
6	Notice Inviting Tender	28 (ii)	3 of 11	For the last 10% payment against Civil Work, In case PG test / demonstration test of the cooling tower(s) cannot be completed within one year after completion of commissioning of cooling tower(s), for reasons not attributable to the contractor, BHEL shall release payment towards PG Test / demonstration test of the cooling tower(s) against existing performance security that would have been submitted as per NIT Clause 35 (Page 5 of 11. PLease confirm.	**Follow NIT**
7	Notice Inviting Tender	28 (GCC BOP - GCTC / Clause No 9.5)	3 of 11	We understand that payment will be released within 30 days for all contractors in line with Clause No 28 of NIT. Please confirm.	**This is applicable for all bidders.**
8	Notice Inviting Tender	35	5 of 11	This is understood to be applicable in case of a composite contract or for E&C package. Please provide PBG validity terms for Supply, Mandatory Spares and Civil packages.	**Follow NIT**
9	Notice Inviting Tender	38	7 of 11	Based on this stipulation we understand that BOCW Cess will be borne by BHEL. Please confirm.	**BOCW shall be borne by Bidder**
10	Notice Inviting Tender	52	9 of 11	It is not possible for bidder to assess any unprecedented or unforeseen situation which are non existent at the time of site visit, hence cost consideration for such events is not considered. Hence in case of any circumstance or site related information which was non existent at the time of site visit / bidding stages or not shared along with the tender document, suitable compensation (if applicable at the time of execution) has to be paid to the contractor. Please confirm.	**Follow NIT**

PRE-BID CLARIFICATIONS					
Sl No	Reference			Queries by Paharpur Cooling Towers Ltd dated 18-09-2024	Response from BHEL
	Section	Chapter / Cl. No	Page No.		
11	Annexure - I to NIT	1.1	--	Labour colony shall be constructed as per bidder / contractor's standard practice / drawing.	**Follow NIT**
12	Annexure - II to NIT	--	--	T&P shall be deployed by us at site as per requirement to suit overall completion period based on our tried and proven standard for NDCT as offered by us for the subject project. At the time of start of work, joint MOM may be prepared between BHEL and contractor about T&P to be deployed at site along with their individual quantities & deployment period.	**Follow NIT**
13	Annexure - IV to NIT	BOCW Cess Chapter Clause No 8.4	--	This chapter is in contradiction to Clause No 38 of NIT. Please clarify whether BOCW Cess shall be borne by BHEL. Moreover, TCC not avaiable as part of the tender documents. Hence the notes mentioned have to be represented here itself.	**BOCW shall be borne by Bidder. Please note clause no. 8.4.2 is already mentioned in Annexure IV while clause no. 8.2 may be read as GST clause**
14	Special Conditions of Contract	Chapter - VI	--	This document is available from Page No 18 of 34 to Page No 28 of 34. Balance pages are missing in the specification. Please confirm.	**Document is complete as in NIT**
15	Special Conditions of Contract	Clause Nos. 6.4.4.4, 6.4.4.5 & 6.4.4.6	26 of 34	Please confirm whether MS earthing rod, Foundation bolts (if applicable), MS rails and Structural steel (rolled sections and plates, etc.) will be issued free by BHEL in addition to Cement and Reinforcement Steel.	**Only Cement and Reinforcement Steel shall be free issued. No change in NIT terms**
16	Special Conditions of Contract	PVC Chapter	--	In case of delays for reasons not solely attributable to the bidder / contractor, L3 schedule shall be revised and PVC needs to be calculated and paid based on revised L3 schedule. Please confirm.	**Follow NIT**
17	Special Conditions of Contract	PVC Chapter	--	In case of negative price variation, payable amount to be restricted to ZERO. Please confirm.	**Follow NIT**
18	Special Conditions of Contract	PVC Chapter	A	Price Adjustment Formula for Supply and Mandatory Spares should not be limited to Plastic, Steel, Electrical Equipment and Labour components only. Bidder / Contractor should be allowed to furnish the list along with assigned co-efficients for items on which PVC should be applicable.	**Follow NIT**
19	Price Adjustment Annexure	PVC Chapter	3 of 4	It is understood that "If the works are executed in an x month, then indices pertaining to that particular x month shall be considered (subscript 1) for calculation irrespective of the month the work has to be completed as per L3 schedule.	**Follow NIT**
20	Special Conditions of Contract	18	2 of 2	Please furnish the rates at which construction power and construction water shall be provided by BHEL to contractor.	**Construction power will be on chargeable basis. BHEL shall provide power on chargeable basis inside the plant boundary at one point. The power supply shall be metered at the terminal point. The necessary arrangement for metering shall be done by contractor. Charges shall be applicable as per UHBVN / HVPN as per their prevailing rates.** **Construction water will be on chargeable basis. HPGCL / BHEL shall provide water on chargeable basis inside plant boundary at one point. The water supply shall be metered at the terminal point. The necessary arrangement for metering shall be done by contractor.**
21	Special Conditions of Contract	General	--	Following provisions need to be incorporated in SCC / NIT: (a) Timeline for approval of drawing / documents. (b) Provision of Change Order should be incorporated. (c) Provision towards extension of time. (d) Formal Contract Agreement format is required for our review & comments, if any. (e) Order of precedence.	**For order of precendence, please refer Sl. No. 1.6 of ITB of GCC BOP.** **Follow NIT for all terms and conditions.**
22	General Conditions of Contract	GCC BOP - GCTC / Clause No 12.0	12 of 31	The guarantee period shall be 12 months from the date of handing over of cooling tower or 18 months from the date of last major despatch of cooling tower components, whichever is earlier. PG test will depend upon the ideal test conditions viz., plant load etc. which is beyond cooling tower contractor's control, hence guarantee period cannot be linked to PG test of cooling tower.Please confirm.	**Follow NIT**

PRE-BID CLARIFICATIONS					
Sl No	Reference			Queries by Paharpur Cooling Towers Ltd dated 18-09-2024	Response from BHEL
	Section	Chapter / Cl. No	Page No.		
23	General Conditions of Contract	GCC BOP - GCTC / Clause No 33.2	24 of 31	Arbitration should be by joint arbitration procedure as per Arbitration & Conciliation Act, 1996 and as amended thereafter. The arbitration shall be conducted by a tribunal of three arbitrators, each party shall appoint one arbitrator, and the two arbitrators so appointed shall appoint the third arbitrator who shall act as the presiding arbitrator. If the two arbitrators fail to agree on the name of the presiding arbitrator, then appointment shall be made as per the provisions of Section 11 of the Arbitration & Conciliation Act, 1996 read with all its subsequent amendments up-to-date. Please confirm	**Follow NIT**
TECHNICAL					
1	Technical Specification No. PE-TS-510-165-W001	Project Information / Clause No 8	4 of 246	This clause is not acceptable to us. Land for labour colony, area for storage of equipment, fabrication yard or any other construction related activities have to be arranged within the plant premises near the cooling tower location and bidder / contractor should be allowed to make his own arrangement to have these facilities inside plant boundary near the cooling tower site..	**There is no available space within the plant boundary. BHEL will provide land for the labour colony, equipment storage area, and fabrication yard outside the plant boundary at no additional cost (FOC).**
2	Technical Specification No. PE-TS-510-165-W001	General Technical Requirement	7 of 246	Kindly confirm that dismantling of underground as well as over-ground facilities, if any, within our scope limit is in BHEL's scope. Also please confirm cooling tower site will be handed over to bidder / contractor graded to FGL (= RL 270.0 M).	**BHEL will allocate space for the construction of the NDCT following the tree cutting, in accordance with the plot plan. The dismantling of both underground and above-ground facilities, if any, within the NDCT vendor's designated area, will fall under the vendor's scope.**
3	Technical Specification No. PE-TS-510-165-W001	Bid Evaluation Criteria / Clause No 44.4	10 of 246	This clause needs to be suitably modifed in line with Clause No 29 of NIT.	**NIT Clause prevails.**
4	Technical Specification No. PE-TS-510-165-W001	Bid Evaluation Criteria / Clause No 47	10 of 246	We understand that no instruments are to be included in our main supply scope.	**Follow specification**
5	Technical Specification No. PE-TS-510-165-W001	Bid Evaluation Criteria / Clause No 47.4	10 of 216	All instruments required for conducting PG Test of cooling tower shall remain testing agency's property (as applicable) and will be taken back by the testing agency after completion of the performance testing. Please confirm.	**Specification is clear. Refer cl. No. 1.4 of PERFORMANCE GUARANTEES TO BE DEMOSTRATED AT SITE in specification.**
6	Technical Specification No. PE-TS-510-165-W001	Technical Data - Part A (Mechanical) / Sl No 1.10	12 of 246	Since supply of riser isolation valves is in BHEL's scope, flanges / counter flanges for same should be in BHEL's scope only. Please confirm.	**Follow specification**
7	Technical Specification No. PE-TS-510-165-W001	Technical Data - Part A (Mechanical) - Sl No 1.16	12 of 246	Since supply of sludge pumps is outside bidder's scope, handling arrangement for same should be arranged by BHEL only. Please confirm.	**Bidder's understanding is NOT correct. Follow specification.**
8	Technical Specification No. PE-TS-510-165-W001	Technical Data - Part A (Mechanical) - Sl No 1.28	13 of 246	Bidder's scope shall be strictly as per items specified in the technical documents. No additional system / equipment should be part of bidder's scope. Please confirm.	**Follow specification**
9	Technical Specification No. PE-TS-510-165-W001	Technical Data - Part A (Mechanical) - Sl No 5.7	14 of 246	Please confirm whether GI handrails are acceptable.	**Follow specification**
10	Technical Specification No. PE-TS-510-165-W001	Technical Data - Part A (Mechanical) - Sl No 5.15	14 of 246	Based on the water quality, SS-304 fasteners should be acceptable. All miscellaneous steel fittings shall be of MS-HDG.	**Follow specification**
11	Technical Specification No. PE-TS-510-165-W001	Technical Data - Part A (Mechanical) - Sl No 7.16	16 of 246	We have noted the maximum CW pumping head permissible is 16.0 MWC w.r.t. FGL. However, minimum elevation of top of water level in hot water distribution duct w.r.t. FGL should be as per bidder's internal design complying to guranteed pumping head requirement based on specified design conditions. Please confirm.	**Follow specification**
12	Technical Specification No. PE-TS-510-165-W001	Technical Data - Part A (Mechanical) - Sl No 7.26	17 of 246	Please clarify which shall govern out of the following two: (i) Minimum and Maximum Water Levels specified under Sl Nos 7.24 & 7.22 respectively or, (ii) Actual levels based on specified 10 minutes hold-up requirement between Minimum and Maximum Water Levels	**All conditions as per specification to be followed.**

PRE-BID CLARIFICATIONS					
Sl No	Reference			Queries by Paharpur Cooling Towers Ltd dated 18-09-2024	Response from BHEL
	Section	Chapter / Cl. No	Page No.		
13	Technical Specification No. PE-TS-510-165-W001	Technical Data - Part A (Mechanical) - Sl No 7.30	17 of 246	Minimum basin inside diameter should not be limited by Purchaser. Bidder should be allowed to design the same to optimise their cooling tower selection complying to design conditions and guarantee parameters.	**Follow specification**
14	Chapter - 18	18.3.2 (c)	23 of 246	We understand that supply of this complete set of items mentioned in this clause, as applicable for BHEL supplied riser isolation valve, is in BHEL's scope.	**Bidder's understanding is correct for cl. No. 18.3.2 (c)**
15	Chapter - 18	18.3.2 (g)	23 of 246	As mentioned elsewhere is the specification,Bidder has to include stop log gates in scope. Hence sluice gate is not applicable. Please confirm.	**Shall be decided during detailed engineering**
16	Chapter - 18	18.4.2.7	26 of 246	Fixing arrangement for our supplied spray nozzles are of threaded design as per our tried and proven design standard.	**Follow specification**
17	Chapter - 18	18.4.3.5	27 of 246	We understand that there is no need for testing the offered fill for re-validating the thermal characteristics and pressure drop co-relation if the same fill of same height as offered by Bidder has been already tested by an independent reputed laboratory approved by other customers like NTPC Limited.	**Follow specification**
18	Chapter - 18	18.4.8	29 of 246	We are ignoring the total quantity (6 Nos.) of screens mentioned under this clause. In case we have to consider 2 nos. common standby, number of screens should be 4 Nos. Please confirm. Moreover, as per our tried and proven design, we will be considering SS-304 screens (1/2" and 10 mm) of 16 SWG on MS-HDG frame. Please confirm.	**Follow specification**
19	DATA SHEET	2.12	39 of 246	The term "Terrace Level"- needs clarification.	**refer cl. No. 7.25 of TECHNICAL DATA - PART - A (MECHANICAL) for basin curb level.**
20	DATA SHEET	3.3	39 of 246	Please clarify which shall govern out of the following two: (i) Minimum and Maximum Water Levels specified under Sl Nos 7.24 & 7.22 respectively of Technical Data - Part A (Mechanical) and tender drawing (ANNEXURE - B) or, (ii) Actual levels based on specified 10 minutes hold-up requirement between Minimum and Maximum Water Levels	**All conditions as per specification to be followed.**
21	DATA SHEET	4.2	40 of 246	We understand that Fill description mentioned in this clause is not applicable for this tender. As mentioned elsewhere fill type has to be modular splash / trickle grid / turbo-splash or splash type fills like V-bar splash / splash grid. Please confirm.	**Conditions applicable for modular splash/trickle grid/turbo splash or splash type fills like V-bar splash/splash grid to be complied.**
22	STANDARD ELECTRICAL SCOPE BETWEEN BHEL & VENDOR	Sl Nos 8 & 9	45 of 246	Please re-confirm that MS rod material for equipment grounding and lightning protection system shall be issued free by BHEL.	**Follow specification**
23	STANDARD ELECTRICAL SCOPE BETWEEN BHEL & VENDOR	Sl No 10	45 of 246	Since supply of sludge pumps (including motors) are in BHEL's scope, we understand that base plate and foundation hardware	**Follow specification**
24	Technical Specification No. PE-TS-510-165-W001	Technical Data - Part A (C&I)	132 of 246	We understand that no instruments to be supplied by bidder. PG Test instruments shall be brought to site on returnable basis but shall remain testing agency's property. Please confirm.	**Follow specification**
25	--	Water Analysis Report	150 of 246	1. Kindly provide the TSS for the circulating water. 2. Please provide make-up water analysis. 3. For circulating water mentioned pH value is incorrect. Kindly furnish the correct pH figure.	**Revised Water Analysis Report enclosed as Annexure-1**
26	ANNEXURE - III	Site Layout	152 of 246	Kindly furnish the complete plant layout.	**Shall be provided During detailed engineering**
27	Technical Specification No. PE-TS-510-165-W001 / Civil Specification / Chapter - 5	5.1	47 of 336	This stipulation is not acceptable to Bidder. BHEL / Owner should take responsibility for the correctness of the geo-technical investigation report. Nature of soil, type of foundation, soil bearing capacity, sub-soil water, etc. should be considered by Bidder for estimation purpose based on available geo-technical investigation report only. However, any price &/or time implication due to change in the actual soil profile, if encountered by Bidder / Contractor during execution stage, should be borne by BHEL / Owner. Please confirm.	**Bidder to follow technical specifications.**

PRE-BID CLARIFICATIONS					
Sl No	Reference			Queries by Paharpur Cooling Towers Ltd dated 18-09-2024	Response from BHEL
	Section	Chapter / Cl. No	Page No.		
28	Technical Specification No. PE-TS-510-165-W001 / Civil Specification / Chapter - 5	--	54 of 336	Given Geotechnical investigation report is for existing unit. The report does not contain the data / recommendation for existing Cooling Tower area. However, the Geotechnical investigation report for the current project is required. Kindly furnish the same. Also please furnish the NGL for the proposed new NDCT area.	**Geotechnical investigation at site is in progress and Detailed geo-technical Investigation report shall be made available to the suc-cessful bidder during contract engineering stage.** **Topographical survey drawing is attached as Annexure-2 and bore log data already available with technical specification.**
29	Technical Specification No. PE-TS-510-165-W001 / Civil Specification	Chapters 6, 9, 11, 13, 17 & 18	81 of 336 onwards	We could find reference drawn to "PBR dated 27.06.23" against several clauses, as applicable for this tender. However, this PBR related document is not available as a part of the tender document. Kindly furnish the same..	**Owners's reply of pre-bid queries are attached for reference as Annexure-3.**
30	Technical Specification No. PE-TS-510-165-W001 / Civil Specification / Chapter 11	11.1.1	164 of 336	Please clarify the source of water for withdrawal and confim whether boring will be allowed to draw water.	**BHEL will provide water on chargeable basis inside plant boundary at one point. The water shall be metered at the terminal point. The necessary arrangement for metering shall be done by the bidder.**
31	Technical Specification No. PE-TS-510-165-W001 / Civil Specification / Chapter 11	11.1.10	166 of 336	Construction power supply has to be arranged by BHEL at one point near the NDCT & at another point near the batching plant area. Please confirm.	**Construction power will be supplied at a single point within the plant boundary on a chargeable basis. Further distribution shall be arranged by the bidder.**
32	Technical Specification No. PE-TS-510-165-W001 / Civil Specification / Chapter - 13	13.9	235 of 336	As per this clause, "Density of fill to be considered for the design of fill supporting structure shall be 100 kg/m³ minimum". This stipulation is relevant for film type fill only. Since for the subject project type of fill has been specified as splash type fil, in case of PVC V-bar type fill this clause should not be applicable.	**Bidder to follow technical specifications.**
33	Technical Specification No. PE-TS-510-165-W001 / Civil Specification / Chapter - 13	13.11.4	236 of 336	Providing cage ladder at this level is not possible with Jumpform construction. As per our tried and proven standard for NDCT Bidder shall be providing cage ladder outside the shell above throat level. Similar arrangement has been adopted by us in all our earlier BHEL projects. Bidder will be following the same arrangement for this project also.	**Bidder to follow technical specifications.**
34	Technical Specification No. PE-TS-510-165-W001 / Civil Specification / Chapter - 13	13.11.4	237 of 336	We understand that Handrails are required for the following areas only: i.Cooling tower top. ii.internal Walkways / top of H.W Duct iii.CW Outlet / CWC Pease confirm. In this regard please confirm whether GI handrails, which are standard for NDCT, are acceptable However, in case MOC of handrail has to be SS, please clarify the Grade of Stainless steel to be considered. In addition Chapter 18 in Volume III is also not available. Please furnish the same.	**Bidder to follow technical specifications. Chapter 18 is already included in bid document. Refer Book 1 of 2 of specification PE-TS-510-165-W001**
35	Technical Specification No. PE-TS-510-165-W001 / Civil Specification / Chapter - 13	13.12	237 of 336	Detailed Specification for anti corrosive coating is required. Kindly furnish the same.	**Bidder to follow technical specifications.**
36	Technical Specification No. PE-TS-510-165-W001 / Civil Specification / Chapter - 13	13.15	239 of 336	Aviation obstruction lighting system within our scope shall be considered by Bidder as per the basic requirement of the latest ICAO guidelines. Please confirm.	**Bidder to follow technical specifications.**
37	Technical Specification No. PE-TS-510-165-W001 / Civil Specification	ANNEXURE-A / Specific Technical Requirements for NDCT / Clause Nos 3.01.01 & 3.01.02	401 of 416	This stipulation is not acceptable to Bidder. BHEL should furnish detailed geo-technical investigation report for the proposed cooling tower location. Without receipt of detailed soil investigation report for the proposed cooling tower location Bidder will not be in a position to proceed with cooling tower civil design & estimation. Moreover, BHEL / Owner should take responsibility about the accuracy of the geo-technical investigation report furnished with the tender document. Any price &/or time implication due to any variation in the data between the soil report furnished with the tender and that found during execution of the work at site should be borne by BHEL / Owner. Please confirm.	**Bidder to follow technical specifications.**

PRE-BID CLARIFICATIONS					
Sl No	Reference			Queries by Paharpur Cooling Towers Ltd dated 18-09-2024	Response from BHEL
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38	Technical Specification No. PE-TS-510-165-W001 / Civil Specification	ANNEXURE-A / Specific Technical Requirements for NDCT / Clause No 3.02.02 / Table-1	403 of 416	SBC for basin raft (diameter 130 M) is not available. Please furnish the same.	**Bidder to follow technical specifications.**
39	Technical Specification No. PE-TS-510-165-W001 / Civil Specification	Annexure I - Bore Logs of NDCT area	407 thru' 416 of 416	Please confirm the bore hole numbers applicable for final location of the subject NDCT. In addition also kindly furnish the contour map / topographical survey report.	**Bore hole numbers pertaining to NDCT are BH-1, BH-5 & BH-7. Contour map/topographical survey drawing is attached as Annexure-2.**
40	Technical Specification No. PE-TS-510-165-W001 / Civil Specification	--	--	We understand that pile foundation is not mandatory fr this project. Bidder may adopt open type foundation in case same is technically feasible based on the detailed geo-technical investigation report / bore log data / foundation recommendations for the proposed NDCT location to be furnished by BHEL.	**Bidder to follow technical specifications.**
41	Technical Specification No. PE-TS-510-165-W001 / Civil Specification	--	--	We understand that cooling tower site will be handed over to us graded to FGL (RL 270 M) after dismantling & disposal of existing over-ground as well as underground facilities applicable within our scope limit. Please confirm.	**BHEL will allocate space for the construction of the NDCT following the tree cutting, in accordance with the plot plan. The dismantling of both underground and above-ground facilities, if any, within the NDCT vendor's designated area, will fall under the vendor's scope.**

SL No.	Vol	Chapter/ Section	Title	Page	Clause	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
23	IV	Ch4:	AIS	Sheet | 2 of 30	36.02.00	Basic Requirements:- Augmentation & Modification of existing 220 kV switchyard including ACSR busbars, Bus Coupler Bay, protection & metering system, SCADA system (SAS), extension of shield wires, fencing, earthmat, trenches, roads, drains, shifting of existing Main-Bus I & II EMVT and transfer Bus EVT (from Bay 14 side toward Bay 1) etc. and all other interfacing provisions are in the scope of EPC Bidder.	Kindly confirm whether the Exsisting ACDB and DCDB of 220kV Control room are having sufficient spare feeders to accommodate additional bays auxiliary power requirement.	Following spare feeders are available at site in the existing 220kV switchyard control room: Existing 415V ACDB:- 1. 125A- 02 Nos. 2. 32A- 04 Nos. 3. 20A- 02 Nos. EXISTING 220V DCDB:- 1. 160A- 01 No. 2. 20A- 02 Nos. Bidder shall provide floor mounted sub ACDB/DCDB to cater AC/DC loads of 02 nos. New 220KV ICT bays being supplied by the bidder. ACDB/DCDB shall have dual incommers which shall be fed from feeder of existing ACDB/DCDB. refer revised main SLD attached at attachment -8.
24	II	Ch 9 :	Mandatory Spares	Sheet | 75 of 103		400 KV GAS INSULATED SWITCHYARD	Bidder understand that following items and its sub items are part of GIS: Item no 1.1, 1.4, 1.5, 1.6,1.7, 1.8,1.9 Bidder understand that following items and its sub items are part of AIS: Item no 1.2, 1.3 Kindly confirm.	Noted. However LA (item no. 1.8) shall be part of both GIS and AIS.
25	II	Ch 9 :	Mandatory Spares	Sheet | 79 of 103		AIS (220KV): Isolator arm for 220 kV and 400 kV	Isolator arm for 400 kV AIS not required. Kindly amend the spares requirement suitably.	Noted, spares shall be supplied by the bidder for the applicable equipment only.
26	II	Ch 9 :	Mandatory Spares	Sheet | 79 of 103		AIS (220KV): Disc insulator string 400 kV side	Kindly accept polymer type insulators also for 400 kV side.	Spare insulators shall be same as provided in the switchyard.
27	VII		Volume VII Tender Drawings	Drw no. 112-10-200		400KV GIS SINGLE LINE DIAGRAM	Kindly confirm that SF6 Gas partition as per OEM type tested design shall be acceptable to Owner.	Switchgear shall be suitably sub-divided into individual arc and gas- proof compartments preferably for: a) Bus bars b) Intermediate compartment c) Circuit breakers d) Line disconnectors e) Voltage Transformers f) Current Transformer
28	IV	Ch 5:	Substation Automation System	Sheet | 4 of 37		Bidder shall offer the Bay Controller Unit (BCU) (one HOT and one COLD) for each bay in a diameter (One diameter will consists of three bays) at 400 kV level.	1. Kindly confirm whether the Control Cabling for GIS equipments to BCU shall be separate for HOT & COLD BCU or common. Kindly Provide drawing for conceptualizing the same. 2. Bidder understand that 220 kV does not have Bay Controller Unit (BCU) (one HOT and one COLD) for each bay. Kindly confirm.	Only GT bay shall have 2 BCU (1 working + 1 redundant) for each breaker (main and tie breaker). Cabling for both BCU shall be common. In case of failure of working BCU, redundant BCU shall take over. For other 400 KV bays, single BCU shall be provided with each Breaker. However, 2 Nos. spare BCUs shall be provided by the Bidder as mandatory spares.
29	VI	CHAPTER 2	SCOPE OF CIVIL & STRUCTURAL WORKS	Sheet 1 of 7	2.4	The scope shall also including setting up by the Contractor a complete testing laboratory in the field to carry out all relevant tests as per BIS or other international standards required for the civil works for the project.	Alternatively, the contractor may be permitted to get the testing of the Construction Materials done from the reputed Engineering Colleges approved by M/s HPGCL.	Bid specifications to be followed.

SL No.	Vol	Chapter/ Section	Title	Page	Clause	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
CIVIL & STRUCTURAL								
1	Vol VI & Vol III	Vol VI Civil Works Ch 2 & Vol III Mechanical Works Ch 30	Ch 2 Scope of Works & Ch 30 Flue Gas Desulphurisation System	Sh 4 of 7 & Sh 12 of 93	Clause 2.6 57) & Clause 1.9	Civil Specification: 57. 7 days storage capacity fully covered gypsum storage shed and RCC approach road to gypsum storage shed. Mechanical Specification: Gypsum shed of 15 days storage shall be considered. Shed shall be provided with side protection. Adequate space inside shed for truck movement shall be provided.	There is discrepancy in clauses of Civil specification and Mechanical specification regarding storage capacity of Gypsum storage shed. Please clarify.	Gypsum storage capacity shall be minimum 15 days.
2	Vol VI	Chapter 6	Ch 06: General Requirement of Buildings & Structures	Sheet | 8 of 12	6.12 PAVING Area Paving in Main Plant Block	2.5 m wide paving around periphery of all sumps and underground tanks without metallic hardener shall be provided.	Please clarify whether this requirement is applicable for sumps & tanks in AHP/CHP not located in Main Plant Area.	Bid specifications to be followed.
3	Vol VI	Chapter 6	Ch 06: General Requirement of Buildings & Structures	Sheet | 11 of 12	6.18 MISCELLANEOUS REQUIREMENTS	In case of trestles, minimum 7.0 m head clearance shall be provided for road crossings. In other areas, the clear height shall be 3.0m minimum.	Everywhere else in Mechanical and Civil specifications, clearance at road/rail crossings for all trestles is specified as 8.0m. Please clarify.	Clearance at road/rail crossings for all trestles shall be minimum 8.0 M.
4	Vol VI	Chapter 8	Ch 08: Loading	Sheet | 3 of 5	8.2 IMPOSED LOADS	All buildings of the project shall be designed considering solar panel load at Roof.	Please clarify whether this clause is applicable for CHP, AHP, LHP, GHP structures. Example: Transfer points, Crusher House, Conveyor galleries etc.	Clause is applicable for all buildings except conveyor galleries.
5	Vol VI	Chapter 10	Ch 10: RCC Structures & Foundations	Sheet | 11 of 36	10.11 MINIMUM HEIGHT FOR PEDESTALS/ENCASEMENT OF STEEL COLUMNS/WALL BEAMS	All wall beams shall be provided with gunniting of 50 mm thick all-round with nominal reinforcement and chicken mesh.	Where and on which structures is this clause applicable? Please clarify.	Clause is applicable for wall beams of power house building only.
6	Vol VI	Chapter 11	Ch 11: Buildings Description	Sheet | 16 of 18	11.21.2 Gypsum Storage Shed	Requirement of RC wall	We understand that 4m high RC wall is also required in Gypsum storage shed as per Mechanical specifications Chapter 30, Sheet 75 of 93, Clause 1.2 Please confirm.	2 M high RC wall is required in gypsum storage shed.
7	Vol VI	Chapter 14	Ch 14: CHP	Sheet | 1 of 22	14.1 WAGON TIPPLER, RECLAIM HOPPER AND UNDERGROUND TUNNEL	Details of shotcreting have been given elsewhere in this specification. Guniting should be protected by provoding MS plate in similar pattern as provided in existing hoppers.	Clarity is sought regarding: Whether both Guniting and MS Liners are needed on surfaces of Hoppers?	MS liners shall only be provided.
8	Vol VI	Chapter 14	Ch 14: CHP	Sheet | 6 of 22	CRUSHER HOUSE AND TRANSFER HOUSES	Roof shall be provided with troughed profile permanently colour coated sheet on outside and plain permanently colour coated sheet on inside with 50mm thick mineral wool insulation in between the two sheets. A slope of 1 in 5 shall be provided for quick drainage of rain water.	Chapter 19 of Mechanical specifications mentions Flat RC slabs for Roof in Transfer Houses and Crusher House, whereas in Civil specifications Inclined roof with Double Cladding+Insulation is mentioned. Please clarify which system is to be followed.	Flat RCC roof over deck sheet shall be provided for all Transfer houses and Crusher houses. Deck sheet shall be considered as shuttering material only. Thickness of RCC excluding corrugations shall be 150 mm.

SL No.	Vol	Chapter/ Section	Title	Page	Clause	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
9	Vol VI	Chapter 14	Ch 14: CHP	Sheet | 3 & 5 of 22	OVERHEAD / GROUND CONVEYOR GALLERIES AND TRESTLES & TRANSFER HOUSES	In addition to steel windows, panels of suitable size to suit the architectural treatment and made of translucent sheets of polycarbonate material shall also be provided on the side cladding for natural lighting.	Chapter 19 of Mechanical specifications mentions FRP panels for natural lighting in Transfer Houses & Conveyor Galleries, whereas in Civil specifications Polycarbonate sheets is mentioned. Please clarify which system is to be followed.	Polycarbonate sheets be provided. However, steel windows not required.
10	Vol VI	Chapter 14	Ch 14: CHP	Sheet | 7 of 22	14.6 COAL STOCK YARD	Ground Improvement works in Coal Stockyard	Please confirm if any separate Ground improvement works for Coal Stockyard area, like Geotextiles, Ground improvement columns etc. is envisaged under this project. Any separate ground improvement works for coal stockyard, if required, may please be mentioned at Bid stage, as this leads to Huge Cost implication on Bidder.	Bidder to visit site to collect relevant informaiton.
11	Vol VI	Chapter 14	Ch 14: CHP	Sheet | 1 of 22	14.1 WAGON TIPPLER, RECLAIM HOPPER AND UNDERGROUND TUNNEL	Complete inside surfaces of Wagon tippler & reclaim hopper shall also be provided with 50mm thick guniting.	Please clarify whether this means: Complete Walls, Beams, Counterforts and Slabs of Wagon Tippler & Reclaim Hopper to be provided with Guniting?	Complete inside surface of wagon tippler hopper and reclaim hopper only shall be provided with MS liners.
12	Vol VI	Chapter 14	Ch 14: CHP	Sheet | 12 of 22	14.14 Roof Details	Clause 6.10 Sheet 6 of 12 All upstands and parapet walls on roof shall be of RCC construction, minimum height of parapet walls shall be 750mm and thickness 125 mm. Clause 14.14 Roof Details 900 mm high and minimum 100 mm thick R. C. C. parapet wall shall be provided over roofs.	Please confirm which clause to be followed for Parapet walls in CHP & AHP structures.	Follow clause 6.10 at Sheet 6 of 12 of Chapter-14 in Vol-VI.
13	Vol VI	Chapter 14	Ch 14: CHP	Sheet | 16 of 22	14.18 DESIGN CRITERIA	For all other under ground structructers not in contact with liquid on inside face may be designed as cracked sections with crack width limited to 0.1mm for both faces.	We understand that this clause will be applicable for Wagon Tippler, Underground Tunnel & Reclaim Hopper. Please confirm.	Confirmed.
14	Vol VI	Chapter 14	Ch 14: CHP	Sheet | 3 of 22	OVERHEAD / GROUND CONVEYOR GALLERIES AND TRESTLES	The floor of conveyor gallery all along the gallery length, shall be provided with minimum 12 gauge thick seal plates.	Please clarify the minimum requirement of seal plate thickness as there is discrepancy in Civil and Mechanical specifications. Civil specifications mentions minimum 12 gauge thickness (approx 2.6mm), whereas Mech specifications Ch-19, Sh 9 of 120 mentions minimum 5mm thickness.	Follow civil specifications.
15	Vol VI	Chapter 15	Ch 15: AHP	Sheet | 1 of 2	15.2 Following facilities shall be provided near the silo as per Vol. III of specification.	i) Ash slurry sump with pump house. ii) Ash water sump with pump house. iii) Vaccum Pump house. iv) Complete Ash Water recirculation systems. v) Ash conveying Blower room. vi) MCC Room / Control room. Compressor House Silo Utility Building	Vol III does not specify the material of construction of these buildings. We understand that all these AHP buildings are to be designed/constructed as a RCC building, with brick walls and RC roofs. Please confirm.	Please refer civil spec (Vol VI) for building descriptions. All AHP buildings are to be designed/constructed as a RCC building, with brick walls and RC roofs.

SL No.	Vol	Chapter/ Section	Title	Page	Clause	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
16	Vol VI	Chapter 17	Ch 17: Architectural Works	Sheet | 7 of 21	Metal Cladding for TPs, Galleries & Crusher House	Civil Specifications as per Clause 17.7.3 Permanent colour coated non-insulated metal cladding system: Troughed galvanized M.S sheets having 0.6 mm minimum thickness with minimum rate of galvanization of 275 gms/sqm (or High tensile steel sheet coated with zinc aluminium alloy @ 150 gms/sq.m. of 0.5 mm minimum thickness and having minimum yield strength of 350 MPa) shall be used for the cladding system. Mechanical specifications of metal cladding for TPs, Conveyor Galleries & Crusher House: Ch 19, Sh 9 of 120 Roof and side cladding of permanently color coated zincalume sheet minimum 0.55mm TCT (Total coated thickness), 550 MPa tensile strength IS: 277 & IS: 513 / equal approved.	There is discrepancy in clauses of Civil specification and Mechanical specification regarding thickness/type and coating of non-insulated metal cladding. Please clarify which is to be followed.	Follow civil specifications (Vol-VI)
17	Vol VI	Chapter 11	Ch 11: Buildings Description		Dozer Shed, Loco Shed	Description requirement	Please provide us with Civil and Structural specifications/descriptions for following: 1. Dozer Shed 2. Loco Shed	Steel structure shall be provided. Both the sheds shall be provided with store room for storage of spare parts.
18	Vol VI	Chapter 18	CHAPTER – 18 PILING		Ground Improvement Columns	Description requirement	Attached geotechnical investigation data of 2x300MW plant proposes ground improvement columns for improving safe bearing capacity of isolated foundations. Hence, please provide us with specifications/descriptions for Ground Improvement columns like Minimum spacing, proposed arrangement, depth etc.	Available report has been furnished. Further, bidder to submit the description for ground improvement/column details to HPGCL for approval based on final geo-technical report.
19	Vol VI	Chapter 18	Ch 09: Steel Structure	Sheet | 9 of 28	9.9 PAINTING	Finish paint requirement for Lime Handling and Gypsum Handling structures	We are considering Painting specifications for LHP and GHP structures in line with painting requirements of CHP & AHP structures, as mentioned in clause 9.9 b). Please confirm.	Refer revised table as Attachment-18.
20	Vol VI	Chapter 18	Ch 17: Architectural Works	Sheet | 6 of 21	17.7.1 Plastering	i) Outside plaster on masonary wall: Plastering is required on outside of masonary wall.	Please specify the thickness and cement sand ratio for External/Outside plastering.	20 mm thick plaster in mortar 1:4.
PROVENNESS								
1	Vol-II	4	Provenness - Coal & Ash handling system	14 of 42, 16 of 42, 25 of 42, 31 of 42	4.4.15, 4.4.16, 5.3, 6.0	Ash Handling Plant Coal Handling Plant AUXILIARY OIL FILLED/ DRY TYPE TRANSFORMERS Control & Instrumentation	Refer Annexure I for Provenness modifications required for the referred 4 chapters. Request customer to review & furnish confirmation.	Refer replies in Annexure-28 at S.Nos. 2, 3, 17, 18 & 21
Annexure-18								
CIVIL								

SL No.	Vol	Chapter/ Section	Title	Page	Clause	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
1	VI	2	SCOPE OF CIVIL & STRUCTURAL WORKS	Sheet 2 of 7	2.6 Point no. 18	A raw water pump house to be constructed in one compartment of existing Raw water reservoir to pump the make-up water through MS pipes to Water treatment plant.	Please furnish the Layout and section drawings of existing raw water reservoir.	Bidder to visit site and collect the data.
2	VI	2	SCOPE OF CIVIL & STRUCTURAL WORKS		2.6 Point no. 19	Complete desilting of both compartments of existing Raw water reservoir inside plant boundary is in the scope of bidder.	Please furnish the details of work like quantity of desilting , finished bed level of reservoir etc.	Desilting of existing raw water reservoir stands deleted from the scope of bidder.
3	VI	2	SCOPE OF CIVIL & STRUCTURAL WORKS	Sheet 4 of 7	2.6 Point no. 61	Complete Site grading and leveling is in the scope of bidder. Finish ground level of entire plant area shall be RL (+)270.00 M FFL of all buildings shall be 270.50 M.	Please furnish Topographical survey drawing including spot levels and contours for the proposed plant area in Auto Cad format.	Bidder to visit site and collect the data.
4	VI	2	SCOPE OF CIVIL & STRUCTURAL WORKS	Sheet 4 & 5 of 7	2.6 Point no. 63	Rain water harvesting pond. The Pond shall be located at the lowest contour of the plant as far as feasible so that it can effectively collect all the rain water by gravity. HDPE lining and side stream Boulder pitching is also in the scope of bidder.	By providing HDPE lining and boulder pitching, pond will become water tight and no ground water recharge/harvesting will take place. Please review.	Rain water harvesting pond stands deleted from the scope of bidder. However, suitable storm water drainage network of proposed plant shall be connected to existing drain system of the existing plant to dispose off rain water to existing rain water holding pond. Bidder to ensure that ash laden water from fly ash silo area is not led to storm water drain network. It shall be led to ash slurry sump as indicated in vol.-III of specification. Further, water from rain water holding pond shall be pumped to raw water reservoir with 2x100 percent pumps (1W+1S). Suitable shed for pump and pipe network is also in the scope of bidder. Material of construction (MoC) of pumps shall be similar to raw water pumps.
5	VI	2	SCOPE OF CIVIL & STRUCTURAL WORKS	Sheet 5 of 7	2.6 Point no. 66	Service building-3000m2.(G+3)	Bidder Understands that Total floor area of Service building including ground floor is 3000 Sqm. Please confirm.	The service building area shall be 3000 sqm with (G+4). Operating floor of TG building shall be interconnected with service building.
6	VI	2	SCOPE OF CIVIL & STRUCTURAL WORKS	Sheet 5 of 7	2.6 Point no. 72	Security cum main gate complex.	Bidder undestands that the security cum main gate complex is not in bidder's scope. Please confirm.	New main gate with new RCC security cabin of size 4m X 4m on both sides and toilet of suitable size is in the scope of bidder.
	VI	6	SCOPE OF CIVIL & STRUCTURAL WORKS	Sheet 9 of 12	6.13	SECURITY GATE.		

SL No.	Vol	Chapter/ Section	Title	Page	Clause	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
7	VI	2	SCOPE OF CIVIL & STRUCTURAL WORKS	Sheet 5 of 7	2.6 Point no. 76	Rain Water Harvesting should be implemented as per the scheme / design approved. Central ground water Authority / Board or State ground water authority or MoEF authorized agency shall be consulted for finalization of appropriate rain water harvesting technology. The necessary consultancy charges for the above agency for preparing rain water Harvesting method / scheme for the project to be borne by the Bidder.	Please provide the detailed specification, scheme and requirement of water storage pond/capacity for the rain water harvesting in main plant area and other build-ings/facilities/structures.	Rain water harvesting scheme stands deleted from the scope of bidder. However, suitable storm water drainage network of proposed plant shall be connected to existing drain system of the existing plant to dispose off rain water to existing rain water holding pond. Bidder to ensure that ash laden water from fly ash silo area is not led to storm water drain network. It shall be led to ash slurry sump as indicated in vol.-III of specification. Further, water from rain water holding pond shall be pumped to raw water reservoir with 2x100 percent pumps (1W+1S). Suitable shed for pump and pipe network is also in the scope of bidder. Material of construction (MoC) of pumps shall be similar to raw water pumps.
8	VI	2	SCOPE OF CIVIL & STRUCTURAL WORKS	Sheet 5 of 7	2.6 Point no. 77	Clearing and removing the buried items if any in the whole proposed plant area and the same is to be deposited to the Client. Any infrastructure buried underground shall be demented/relocated by bidder without any additional cost.	Please furnish the details and list of burried items which are to be dismantled or relocated seperately.	No details / list of buried infrastructre is available. Clearing and removing the burried items, if any, in the proposed 800MW plant area shall be in the bidder's scope and the same is to be deposited to the client.
9	VI	2	SCOPE OF CIVIL & STRUCTURAL WORKS	Sheet 6 of 7	2.6 Point no. 83	RCC sump for collecting boiler blow down and ESP area floor washing for existing Units # - 1 & 2 and ash silo area washing is also covered under the scope of bidder and shall be pumped to proposed Ash Handling clarifier.	Please furnish the capacity and location of RCC sump for collecting boiler blow down and ESP area floor washing for existing Units # - 1 & 2 and ash silo area washing.	Bidder to note that only floor wash from existing ESP area and Ash silo area shall be collected in 10 m3 sump and shall be pumped to Ash handling clarifier. Two pumps (1W+1S) of 15 m3/Hr is proposed for pumping collected floor wash in sump to Ash clarifier. Drains from the boiler blow down of the existing units shall be excluded from the bidder scope. Sump location will be decided at the time of detailed engineering.
10	VI	2	SCOPE OF CIVIL & STRUCTURAL WORKS	Sheet 6 of 7	2.6 Point no. 84	Permanent store of 6000 sqm area shall be provided by the bidder. Out of this 3000 sqm shall be covered building.	Please furnish the detailed specification and layout drawings of Permanent store.	Permanent Stores stands deleted from the scope of bidder.
11	VI	2	SCOPE OF CIVIL & STRUCTURAL WORKS	Sheet 6 of 7	2.6 Point no. 85 (x.)	Anti-termite and anti-weed treatment in all areas / buildings as per IS: 6313.	Please furnish list of vulnerable structures, buildings, where anti termite treatment is required.	Anti-termite treatement will be required for entire project building.
	VI	6	General Requirement of Buildings & Structures	Sheet 2 of 12	6.6	Pre-constructional anti termite treatment shall be given to all vulnerable areas and shall include column pits, wall trenches, foundations, filling below the floors etc. as per IS: 6313 and other relevant Indian Standards.		
12	VI	2	SCOPE OF CIVIL & STRUCTURAL WORKS	Sheet 7 of 12	2.6 Point no. 85 (xiv.)	Internal/External compound wall is in the scope of bidder.	Bidder understands that plant boundary wall alongwith patrol road and drain is excluded from bidder's scope. Please confirm.	Patrol road and drain is included in bidder’s scope while plant boundary wall is excluded from bidder’s scope.

SL No.	Vol	Chapter/ Section	Title	Page	Clause	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
13	VI	5	GEO-TECHNICAL INVESTIGATION	Sheet 1 of 7	5.1	Soil investigation report of the existing 2 x 300 MW (Units 1 & 2) adjacent to the proposed site is attached as a reference for the bidders.	Please furnish the soil investigation report for proposed plant area including bore logs, lab test results, electrical resistivity test, chemical test results etc.	Soil investigation for proposed plant area is in the scope of bidder.
14	VI	5	GEO-TECHNICAL INVESTIGATION	Sheet 1 of 7	5.2	As per the attached geotechnical report, It is advised to provide Pile foundation for boiler foundation, chimney foundation, cooling tower, main plant building structures,TG foundation, mill building foundation, mill foundation, conveyor gallery trestle (of height more than 25m) foundation, junction tower foundation, crusher house foundation, fly ash silo foundation including all other major structures in FGD and other areas.	Suitable foundation system (pile or open) shall be as per the approved Geotechnical investigation report during detailed engineering. Please confirm.	Bid specifications to be followed.
15	VI	5	GEO-TECHNICAL INVESTIGATION	Sheet 1 of 7	5.2	For ESP and stacker reclaimer foundation if open foundation is feasible as per Approved Geotechnical report, bearing capacity corresponding to 25mm settlement of foundation shall be considered.	Both the clause are contradictory. Bidder understands that total settlement for open foundations in soil shall be restricted to the following : (i) Foundations (other than raft) for power house, TG, boiler, mill bunker , fans of main plant area - 25 mm (ii) Raft foundation - 100 mm (iii) Other footings of width upto 6m - 50 mm. Please confirm.	Bid specifications to be followed.
16	VI	10	ALLOWABLE SETTLEMENT	Sheet 12 of 36	10.14	The total permissible settlement and differential settlement of the foundations will be governed by IS: 1904, IS: 13063, IS: 3370 and from functional requirements whichever is more stringent.		Bid specifications to be followed.
17	VI	6	General Requirement of Buildings & Structures	Sheet 10 of 12	6.15	Watch Tower shall be constructed with RCC frame work. Floor of tower shall be at least 6m above graded level.	Bidder understands that watch towers are excluded from bidder's scope. Please confirm.	Watch towers are included in bidder's scope. Watch towers shall be provided at spacing not more than 300 m including at all corners and turnings.
18	VI	9	Vertical deflection	Sheet 4 of 28	9.3.1 e)	For gratings and chequered plates : Span / 200 subject to a maximum of 6 mm	The permissible deflection span/200 is conservative for gratings, chequered plates. Please consider span/150 subject to maximum 6 mm.	Bid specifications to be followed.
19	VI	9	Vertical deflection	Sheet 4 of 28	9.3.1 d)	For roofing and cladding components : Span / 325	The permissible deflection span/325 is too conservative for sheeting in roofing and Cladding. Please consider span/250.	Bid specifications to be followed.
20	VI	18	DESIGN CRITERIA	Sheet 1 of 10	18.3 d)	Diameters of pile shall be 450mm, 600 mm and 750mm. The uplift and lateral load capacities shall be restricted to 20% and 5% respectively of the allowable load capacity in vertical compression. However, the pile capacities to be adopted shall be the least of the estimated design values and that obtained from the pile load tests.	a) Different diamter of pile may be allowed other than 450mm, 600mm and 750mm. b) Uplift and lateral capacity is not at all related with the allowable load capacity of pile in vertical compression. This shall be as per approved Geotechnical investigation report during detailed engineering. Please confirm.	Piles diameter other than as mentioned will be decided during detailed engineering. However, for pile capacity, follow tender specification
21	VI	18	DESIGN CRITERIA	Sheet 2 of 10	18.3 f)	Piles shall be designed for a limiting settlement of a single pile under vertical design load of 8 mm at the head and lateral deflection as 5mm.	Settlement consideration in case of pile shall be as per IS2911 part-1 section-2. Please confirm.	Confirmed

SL No.	Vol	Chapter/ Section	Title	Page	Clause	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
22	VI	18	DESIGN CRITERIA	Sheet 2 of 10	18.3 k)	Wherever pile foundations are adopted, a minimum of two pile group shall be provided below every column /foundation	In case of pile foundation, two pile group below every column/foundation may not be required. This shall be provided as per design/analysis. Please confirm	Bid specifications to be followed.
23	VI	18	BORE CAST-IN-SITU PILES	Sheet 6 of 10	18.7 g)	The dynamic cone penetration tests shall be carried out for a depth of at least 2 meters from the termination depth. The number of such tests shall be as follows :	Dynamic cone penetration tests (DCPT) will be conducted during geotechnical investigation. Further, DCPT is not required during installation of pile. Please confirm.	Noted.
24	VI	20	BACK-FILLING	Sheet 3 of 7	20.6 b)	The backfilling shall be carried out at optimum moisture content to achieve density requirements as per standard proctor test as under:- i) Backfilling of foundations and under grade slabs-95% of proctor's maximum dry density.	Degree of compaction for backfilling around foundation and under grade slab shall be 90% of maximum dry density (standard proctor). Please confirm	Bid specifications to be followed.
25	VI	24	Pressure relief valves	Sheet 2 of 3	24.5	Pressure relief valves	Pressure relief valves (PRV) are not required for earthen raw water reservoir. Further, it is to note that there will be huge chances of leakage of water inside the reservoir if PRV is to be placed with HDPE liner. Hence, it is requested to delete the requirement of Pressure relief valves.	Bid specifications to be followed.
26	VI	24	REINFORCED CONCRETE STRUCTURES AND FOUNDATIONS	Sheet 3 of 36	10.7	TG foundation shall be supported on vibration isolation system.The vibration isolation system shall consist of steel helical spring units and viscous dampers supporting the RCC deck which would support the machine. The spring units shall conform to DIN 2089 and DIN 2096.	TG foundation shall be supported on block foundation without vibration isolattion system. Option for the same shall also be provided. Please confirm.	Noted.
27	VI	24	REINFORCED CONCRETE STRUCTURES AND FOUNDATIONS	Sheet 17 of 36	10.17 (f)	TAB L E - I MINIMUM CEMENT CONTENT & MAX. W / C RATIO SPECIFIED FOR DIFFERENT GRADES OF CONCRETE	The cement content shall be as per IS:456. Please confirm.	Bid specifications to be followed.
28	VI	23	Concrete Road & Rigid Pavement	Sheet 1 of 2	23.1	Type III roads shall be of R.C.C & 3.75m wide with 1.0m wide hard shoulders on either side. Type III roads shall be provided along the plant boundary for access for security and maintenance.	Being an existing power station, bidder understands that Boundary wall and patrol road are excluded from bidder's scope. Please confirm.	Patrol road is included in bidder's scope while plant boundary wall is excluded from bidder's scope.
29	VI	17	Architectural Works	Sheet 21 of 21	Table-1 Finishing schedule	Workshop Canteen :General Area Kitchen Fire station building …..	Bidder undestands that following buildings are excluded from bidder's scope: a) Administrative building b) Canteen c) Fire station d) Workshop e) Security cum main gate complex f) Boundary wall g) Patrol road Please confirm.	Security cum main gate complex and Patrol Road are included in the bidder's scope. New main gate with new RCC security cabin of size 4m X 4m on both sides and toilet of suitable size shall be provided by the bidder.
30	VI	17	Architectural Works	Sheet 7 of 21	17.7.2. g)	Wall cladding Inner sheet shall fixed directly to side runner and Z spacers made of at least 2 mm thick galvanized sheet of grade 375 as per IS:277. Inner sheet shall be fixed at the rate not more than 1.50m centre top centre to hold the insulation and external sheeting.	In order to have faster execution and better quality of the Insulated Sandwich Panels, it is proposed to use Pre-Fabricated Sandwich Insulated Panels (both side profiled sheeting) manufactured in factory with insulation specified as per cl. 17.7.2 (e) to be used wherever required. Please confirm.	Noted.

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31	VI	12	RCC Chimney	Sheet 14 of 38	12.8.1	Alternatively the chimney flue liner cladding shall be made of 2 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. Cladding shall be done by explosion bonding or hot rolling to achieve the required quality as per ASTM B 898-11. In case of Titanium as liner, the flue diameter shall be so sized to ensure that the flue gas exit velocity shall not exceed 16.8 meters/second at the normal continuous operating load.	Chimney Flue Can be made up of Super Duplex SS-32760 plate with PREN 42 (min.) as per ASTM-A 240/480 which is also available indeginously and are also technically suitable. Considering the make in India, Atma Nirbar Bharat, and other circulars etc. it is proposed that bidder can provide either borosilicate / Super Duplex SS-32760/ C276/alloy 59/Titanium Clad plate. Please confirm.	Bid specifications to be followed.
32	Volume VI	Ch 06	General Requirement of Buildings & Structures	Sheet | 3 of 12	6.7.3	All stairs shall have maximum riser of 180mm and a minimum tread of 250mm. However, for Public buildings riser shall be limited to 150mm and tread width of 300mm.Minimum width of stairs shall be 1200mm generally.All stairs normally shall have not more than 15 risers in one flight.	Bidder understands that as per NBC and other relevant building codes for Public buildings, Maximum 13 Nos. of riser are recommended for Staircase.	Maximum 12 nos. of riser are reccommended for staircase.
33	Volume VI	Ch 06	General Requirement of Buildings & Structures/MISCELLANEOUS REQUIREMENTS/FURNITURE	Sheet | 12 of 12	6.18	All rooms shall be furnished for their intended use. The Contractor shall provide the Owner with a choice of furniture range.	Bidder understands that suggestion w.r.t furniture are in the scope only.The supply of furniture is not in the scope of bidder.	Supply of furniture for all buildings in the project is in Bidder's scope. Furniture to be supplied shall be of Make-Godrej Interio, Durian, Wooden street or equivalent make as approved by HPGCL.
34	Volume VI	Ch 11:	Buildings Description/ TURBINE GENERATOR BUILDING	Sheet | 4 of 18	11.2	Windows shall be side-hung steel glazed using 6mm thick wired glass generally.	Manufacturing of Wired glass are very limited in the market and not readly available. Bidder suggested for the replacement of wired glass with other type of glass like laminated toughened glass, plain glass etc.	Bid specifications to be followed. However, the issue may be discussed during detailed engineering.
35	Volume VI	Ch 11	Buildings Description/TURBINE GENERATOR BUILDING	Sheet | 4 of 18	11.2	Staircase protected on all sides with fireproof enclosure shall be provided to satisfy TAC regulations. All the doors leading to the inside of the power house from staircase shall be automatically closing fire proof door satisfying TAC regulations.	Bidder undesrtands that TAC regulations are obsolete and no more in use. The staircase shall be in accordance with NBC code and fire door shall comply with latest IS-3614 2021 code. please confirm.	Noted.
36	Volume VI	Ch 11	Buildings Description/TURBINE GENERATOR BUILDING	Sheet | 4 of 18	11.2	A roof shall be provided with roof water proofing treatment using high solid content liquid applied elastomeric water proofing membrane with separate wearing course as per ASTM-C-836 & 898. Thickness of the membrane shall be 1.5mm (min.).	Kindly confirm the high solid content percentage in the elastomeric membrane used for water proofing along with details about two component or single component. Also, Provide thickness of polyscrim cloth /non-woven geotextile also.	Solid content 90% ± 2%, single component and Geo-textile 200 GSM
37	Volume VI	Ch 12	Buildings Description/TURBINE GENERATOR BUILDING	Sheet | 5 of 18	11.2	In control room false ceiling level shall be kept 3500 mm above floor level.	The false ceiling height mention is 3500 and 3600mm in different clause for the same area. Kindly confirm the requirement.	Minimum clear height be kept as per Clause 6.20.02 (iii) at Sheet 16 of 26, Part-B, Ch-6, Vol-V.
38	Volume V-Instrumentation & Control Works	Part B/Ch 6	Supervisory Control Panels, Supervisory control Desks, Equipment Panels	Sheet | 16 of 26	6.20.02	Minimum clear height between finished floor Level & False ceiling shall be 3600 mm for aesthetical purpose.		

SL No.	Vol	Chapter/ Section	Title	Page	Clause	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
6	VI	2	SCOPE OF CIVIL & STRUCTURAL WORKS	2 of 7	18	A raw water pump house to be constructed in one compartment of existing Raw water reservoir to pump the make-up water through MS pipes to Water treatment plant.		
7	VI	23	RAW WATER RESERVOIR (OPTIONAL)	1 of 3	24.1	A new Raw Water Reservoir shall be constructed having the storage capacity of minimum seven days of consumptive water requirement of 800 MW unit.		
8	III	4	RAW WATER INTAKE & PLANT RAW WATER SYSTEM	3 of 8	4.2.3	Each pump shall be located in individual sump, dimension of which shall be decided as per HIS.	Requirement of individual sump shall be decided as per HIS only. Please confirm.	Confirmed.
9	III	2	Turbine Generator & Auxiliaries	40 of 87	1. Condenser Design Parameters	b) Design cold water temperature: 32.5°C h) Temperature rise in circulation water across the condenser Not more than 8.5 Deg C m) Maximum circulating water temperature deg.C (min.): 38°C (max.)	Different clauses are contradictory. Bidder understands that Design cold water temperature (Guarantee) for Cooling tower and Condenser design shall be same i.e, 33 deg C. Please confirm. Further, the temperature range across condenser is to be optimised by bidder considering back pressure not exceeding 70 mmHG. Therefore, please confirm that temperature range across condenser can be from 9.5 to 11 degC.	Cold water temperature shall be considered as 33 deg C. Temperature difference across the condensor shall be limited to 10 deg. C.
10	III	18	NDCT	22 of 23	DATA SHEET	2.4 Cold water temperature (DegC): 33 (guaranteed) 2.5 Cooling range (Deg C): Temperature rise across condenser plus 1 deg. C, keeping hot water temperature at outlet of condenser as base. 2.7 Approach (DegC): 5 2.8. Design Relative Humidity (%): 45%		
11	II	8	FG & LD	8 of 57	3.1 xv)	Cooling Tower: The cold-water temperature of 33 Deg C shall be guaranteed for the design conditions of CW flow, range, ambient WBT and RH as per the performance test procedure of cooling tower elaborated elsewhere in the specification		
12	III	15	CW & ACW System	5 of 37	15.4.3	The temperature at outlet of the Cooling Tower for design purposes shall be 33 Deg C considering cooling tower approach of 50 C (max) at rated conditions and design inlet air Wet Bulb Temperature to be 28 Deg C.		
13	II	2	Project Information	3 of 10	3	Condenser cooling water inlet temperature of 33°C and 9°C temperature rise across the condenser.		
14	III	2	Turbine Generator & Auxiliaries	39 of 87	2.1 (o)	2X100% capacity, fully automatic debris filter shall be installed on each condenser inlet line of suitable mesh size for clarified water application shall be provided with covered shed above ground level at the outside of the TG building at the upstream of COLTS for each CW inlet line. Debris filter shall be supplied with automatic self wash system. The debris filter design has to be suitable for clarified water quality. Debris filter flushing line outlet shall be routed to ash dyke by suitable arrangement.	We understand that Debris filter is to be installed at each inlet supply line to condenser i.e. there shall be total 2 Nos. debris filters (1 for each inlet line to conderser). Please confirm.	Debris filter is deleted.

SL No.	Vol	Chapter/ Section	Title	Page	Clause	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
24	III	16	DMCW System	3 of 12	16.2.2	The required flow in this system shall…….. In computing the design heat load and design DMCW flow in individual DMCW system Bidder shall ensure that the average temperature rise of DMCW is limited to 5.5 deg.C under all circumstances.	Please note the DMCW flow will unnecessarily increase by 30% to 50% more than required flow to limit the temperature rise to 5.5 degC and same cannot be handled by the various Turbine, Turbo Generator, Boiler auxs coolers, BFP auxs and Compressor auxs, which are generally of standard and varying design temperature rise. Also there is no technical requirement to limit the temperature rise. therefore, Bidder understands that temperature rise across PHE on ACW side shall be same as temperature rise across condenser. Please Confirm.	Confirmed.
25	III	16	DMCW System	4 of 12	16.2.3	All piping and equipment coming in contact……..All DMCW piping in the discharge of DMCW pumps shall be sized for a velocity not exceeding 2 m/sec under all circumstances.	This system is low pressure system. Please allow velocity limitation up to 2.5 m/sec.	Noted.
26	III	16	DMCW System	5 of 12	16.3.3.2 a)	Suitable cleaning system complete with all equipment and accessories (viz. pumps, piping, valves etc.) for inside cleaning of the PHE's.	Pressure of Service water provided in TG hall shall be sufficient to clean the PHEs. Hence there is no requirement of separate equipments (viz. pumps, piping, valves etc.) Please confirm.	Noted.
27	VI	11	Buildings Description	8 of 18	11.8	The circulating water system envisaged for the plant is by using clarified water. RCC cooling water channel shall be of rectangular in shape and….	CW channel from cooling tower to CW forebay shall be Open channel or Closed duct? Please Confirm.	CW channel from cooling tower to CW forebay shall be Open channel.
28	III	15	CW & ACW System	5 of 37	15.4.8	Underground CW and ACW piping shall be provided with suitable protective coating/wrapping and shall be suitably stiffened to withstand soil loads and loads due to heavy vehicles at road crossings.	We understand that, underground CW and ACW piping shall be provided with suitable protective coating/wrapping and Buried CW piping under rail/road crossing only shall be encased in 500 mm thk RCC. Please confirm our understanding.	The thickness of pipe shall be selected accordingly. Buried CW piping under rail / road crossing only shall be encased in 500 mm thick RCC/Culverts. The painting / protection of pipes (buried & overground) shall be in line with Clause 27.13, Chapter 27, Volume III of specification. However RCC encasing mentioned in this clause is not applicable.
29	III	27	Low Pressure Piping, Valves & Specialities	7 of 31	27.4.13	Buried CW Pipes shall be encased in 500 mm thick RCC. However this thickness shall be reviewed for live loads at road crossings according to AWWA M11 and adequately revised.		
30	III	27	Low Pressure Piping, Valves & Specialities	11 of 31	27.11	Specific technical requirement of laying buried pipe with anti corrosive treatment		
31	III	27	Low Pressure Piping, Valves & Specialities	14 of 31	27.13.1 (NOTE)	NOTE: CW piping shall be encased in 500 mm thk RCC. Pipes external surface shall be applied with one coatsof coal tar primer before placing the pipes in position for RCC encasing. Thickness of paint shall be minimum 35 microns.		

SL No.	Vol	Chapter/ Section	Title	Page	Clause	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
1	III	18	NDCT	7 of 23	18.4.1 (e)	The hot water distribution shall be by RCC main and …….. through the fill, which shall be film type.	Film type fill as well as splash type fills are specifiied in technical specification. Bidder understands that type of fills shall be considered as " splash/trickle grid/turbo splash or splash type fills like V-bar splash/splash gridper" inline with cl. 18.4.3.1, chapter-18, Vol-III, page 10 of 23. Please confirm.	Confirmed that type of fills shall be in line with Clause 18.4.3.1, Chapter 18, Volume III.
	III	18	NDCT	10 of 23	18.4.3.1	The fill shall be of non-clogging type fills like modular splash/trickle grid/turbo splash or splash type fills like V-bar splash/splash grid and easily installable. The fills shall be adequately supported to prevent sagging and damage. The tower shall be levelled so that water will be uniformly distributed over the fills and does not cause channeling. The splash type fills shall be placed horizontally.		
	VI	13	NDCT	15 of 21	13.9	FILL: PVC splash type bars fill arrangement shall be provided.		
2	III	15	CW & ACW System	3 of 37	15.3	The protection, control and monitoring of the CW & ACW system including the CW & ACW pumps, Butterfly Valves and any other equipment in the system shall be implemented through DCS.	Bidder understands that all the equipment in CW/ACW system viz. CW pumps, ACW pumps, COLTCS, SCS etc. shall be controlled through DCS. One (1) No. Local control panel shall be provided for two sets of SCS and control logic shall be implemented in DCS. Local On/off provision shall be provided in local control panel. PLC panel is not required. Please Confirm. This is as per standard practice followed in all supercritical projects of 660MW/800 MW projects of NTPC/TANGENCO/TSGENCO and other power utilities jobs executed by bidder.	Confirmed.
	III	15	CW & ACW System	28 of 37	15.16.1.6	Instrumentation and Control System: The control system for self-cleaning strainers shall be PLC based with monitoring in DCS.		
	III	15	CW & ACW System	26 of 37	15.16	Self Cleaning Strainer: Each self cleaning strainer shall be complete with following accessories and auxiliaries alongwith common local control panel for both self cleaning strainers.		
3	III	15	CW & ACW System	35 of 37	S. No. 2.7 & 2.8	DATA SHEET FOR AUTOMATIC SELF CLEANING STRAINERS: Free straining area: Four times the diameter of the pipe Screen Opening Area: 6 times of the inlet pipe cross section area	The description mentioned is applicable for manual strainer and not applicable for automatic self cleaning strainers. Further as per standard practice, free flow area of 110 % shall be provided for screen. Kindly review and confirm.	Free flow area of 120 % shall be provided for screen.
4	III	2	Turbine Generator & Auxiliaries	39 of 87	2.3 (o)	2X100% capacity, fully automatic debris filter shall be installed on each condenser inlet line of suitable mesh size for clarified water application.....Debris filter flushing line outlet shall be routed to ash dyke by suitable arrangement.	It is better to discharge debris discharge flushing to CW return header to Cooling tower as the quality of water is clarified water. Ash dyke is far away and there is no sufficient pressure available at debris filter flushing. Please confirm.	Debris filters are not envisaged since filtered water is envisaged.

SL No.	Vol	Chapter/ Section	Title	Page	Clause	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
5	III	15	CW & ACW System	6 of 37	15.4.10 (ii)	The CW/ACW pump house fore bay shall be sized to receive water from cold-water basin of the cooling tower	Bidder propose to provide separate cooling tower (IDCT) for cooling of ACW system. This will provide following advantage: During boiler light-up and steam-blowing milestones, only ACW is required and with this arrangement ACW will be available to complete the project milestones. Further, CW Pump house and main cooling tower are long lead packages and generally not ready for these milestones. Please confirm.	Bid specification to be followed.
6	VII	Tender drg	Composit water scheme, Drg no: 111-12-3100, Rev-0	21 of 120 (pdf)	Zone J-15	Raw water intake channel to existing RW intake pump house	Please provide following details of raw water intake channel to existing RW pump house: 1. Invert level 2. Minimum water level 3. Maximum water level 4. Top of channel	Details handed over to bidder.
7	VII	Tender drg	Composit water scheme, Drg no: 111-12-3100, Rev-0	21 of 120 (pdf)	Zone J-15	Existing RW intake pump house	Please provide following details of existing Raw Water intake pump house: 1. GA drawing of existing raw water intake pump house 2. GA drawing of existing raw water intake pumps	Details handed over to bidder.
ELECTRICAL								
8	II	chapter-4	415V Switchgears & DC Boards	Sh 3 of 43	13.01.16	Motors less than 90 KW shall be provided with MCCB/ MPCB, contactors and intelligent controllers (IMC) with current & voltage sensing module Intelligent controllers shall be numerical type and shall communicate with DCS through any industry standard open protocol (IEC 61850/Modbus TCP/IP).	Bidder would like to clarify that for Electric Crane/Hoist, without VFD operation motors, the motor feeder inside hoist/crane control panel shall be without Intelligent Motor Controller (IMC). Kindly confirm acceptance.	Confirmed.
9	II	chapter-6	Power Transformers	Sh 31 of 105	1.01.00	Two (2) - Station Transformers with all fittings and accessories, three phase, three (3) windings, oil filled, 400/11.5//11.5 kV, 50 Hz, 130/65/65 MVA, ONAN/ONAF, YN0yn0yn0 connected, outdoor type, with On Load Tap Changer in the range of ±10% in steps of 1.25% will be furnished complete with fittings & accessories; auxiliary equipment	Please note that Sation transormer and other power transformer sizing shall be sizzed based on actual loading and design margin as indiacted in spec. In case caluculated vaule is les than rating indicated in spec, same shall be acceptable to custmer. Please confirm.	Bid specifications to be followed.

SL No.	Vol	Chapter/ Section	Title	Page	Clause	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
21	VI	2	SCOPE OF CIVIL & STRUCTURAL WORKS	Sheet 4 & 5 of 7	2.6 Point no. 63	Rain water harvesting pond. The Pond shall be located at the lowest contour of the plant as far as feasible so that it can effectively collect all the rain water by gravity. HDPE lining and side stream Boulder pitching is also in the scope of bidder.	1. As per site visit, there is existing earthen Rain water harvesting pond. Please furnish the drawing of the existing Rain water harvesting pond mentioning the capacity, invert level, area with co-ordinates etc. 2. The proposed Rain water harvesting pond is to be constructed for proposed unit of 1X800MW only. Please confirm. 3. For new proposed Rain harvesting pond, please furnish the detailed specification, area, capacity, dead storage, free board, etc. 4. As per site visit, there is existing storm water drain connetcted to existing Rain water harvesting pond. Bidder understands that the rain water discharge from proposed 1X800MW plant shall be connected to this existing storm water drain. Please confirm. 5. Please furnish the rain fall intensity to be considered for 20 days to calculate the capacity of Rain water harvesting pond or furnish the capacity of Rain water harvesting pond. 6. Bidder understands that boulder pitching and HDPE lining is required for side walls as well as bottom of Rain water harvesting pond. Please confirm. 7. Please provide the size and quantity of boulders lying in existing CHP area for use in proposed Rain water harvesting pond by the bidder free of cost.. 8. Thickness of HDPE lining and boulder pitching may please be specified.	New raw water reservoir alongwith rain water harvesting scheme stands deleted from the scope of bidder. However, suitable storm water drainage network of proposed plant shall be connected to existing drain system of the existing plant to dispose off rain water to existing rain water holding pond. Bidder to ensure that ash laden water from fly ash silo area is not led to storm water drain network. It shall be led to ash slurry sump as indicated in vol.-III of specification. Further, water from rain water holding pond shall be pumped to raw water reservoir with 2x100 percent pumps (1W+1S). Suitable shed for pump and pipe network is also in the scope of bidder. Material of construction (MoC) of pumps shall be similar to raw water pumps. **Rain water harvesting scheme stands deleted from the scope of bidder.**
	VI	2	SCOPE OF CIVIL & STRUCTURAL WORKS	Sheet 5 of 7	2.6 Point no. 76	Rain Water Harvesting should be implemented as per the scheme /design approved. Central ground water Authority / Board or State ground water authority or MoEF authorized agency shall be consulted for finalization of appropriate rain water harvesting technology. The necessary consultancy charges for the above agency for preparing rain water Harvesting method / scheme for the project to be borne by the Bidder.		
	III	13	Mechanical Works	Sheet 2 of 2	13.5	The size of rain water harvesting pond shall be calculated based on the total rain fall runoff (approx. 20 days) and the pond so designed shall be constructed within the existing rain water holding area and shall be provided with HDPE lining. Boulders lying in the existing CHP area shall be explored for side walls and bottom floor pitching. All the storm water drains in the plant boundary shall be led to the rain water harvesting pond.		
22	VI	2	SCOPE OF CIVIL & STRUCTURAL WORKS	1 of 7	2.4	The scope shall also including setting up by the Contractor a complete testing laboratory in the field to carry out all relevant tests as per BIS or other international standards required for the civil works for the project	Please clarify the followings: 1.Testing laboratory is permanent structure or temporary structure. 2.In case of permanent structure, please furnish the detailed specification, finishing schedule etc.	Testing laboratory is temporary structure. But, bidder to handover the same to HPGCL at the end of the project.

Annexure-33

1	I	Sec-II	ITB	19 of 75	10.4 (C)	In case Installation Price (Excluding Civil/Site Fabricated Structural works price) is less than 12.5% of the cumulative total of CIF & Ex-works Price of Main Equipment, the amount by which it is lower shall be retained proportionately from the CIF & Ex-works component of Contract Price while releasing supply payments and no interest shall be payable on the retained amount. The aforesaid retained amount shall be paid on Final Taking Over of the plant.	Keeping such restriction in pricing will impact the bidder's cashflow and the bidder will be forced to change the price breakup w.r.t. actual expenses. Therefore, we request Owner to kindly remove such restriction and allow bidders to specify the breakup based on Bidder's experience/ estimate.	Bid specifications to be followed.

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
89	Volume-VII Flow diagram-Service water distribution system	111-12-3304	23 of 120		Two (2) (1W+1S) HVAC Make up Pumps taking suction from service water tank located on bunker building roof Two (2) (1W+1S) CHP Make up Pumps taking suction from service water tank located on bunker building roof	As per flow diagram it is observed that HVAC makeup is considered from service water system. We propose to eliminate HVAC makeup and CHP makeup pumps, We will select service water pump capacity and head to cater HVAC and CHP requirement. Owner to please give acceptance to our proposal.	Noted.
90	Volume-III	Chapter 7 Service and Potable water system	2 of 7 3 of 7	7.3.1 b) 7.3.2 b)	Service water over head Tank (rectangular, MS construction) of 50 M3 effective capacity on bunker bay roof. Potable water over head Tank (rectangular, MS construction) of 25 M3 effective capacity on bunker bay roof.	Owner to please allow to consider Horizontal Cylindrical or Vertical cylindrical tank instead of rectangular tank.	Noted.
91	Volume-III	Ch 15: CW & ACW System	8 of 37	15.6 (A) (c)	The selected head of CW pump shall provide for adequate margin so that pumps are capable of supplying equipment design flow at 47.5 Hz frequency of power supply	Bidder understands that equipment design flow means condenser design flow and not the pump design/rated flow. In other words, at 47.5 Hz, CW pumps should be capable to meet flow and head requirement corresponding to 100% TMCR condition. Please confirm bidder's understanding.	Last point of clause 15.6 (A) (c) at Sheet 8 of 37 in Chapter 15 of Vol-III be read as: "The selected head of CW pump shall provide for adequate margin so that pumps are capable of supplying equipment flow at 47.5 Hz frequency of power supply at TMCR condition".
92	Volume-III	Ch 15: CW & ACW System	17 of 37	15.10 (B) (a) 15.10 (B) (c)	The model test should have been conducted as per Japanese standard JIS-B- 8327 (latest version) and specific speed of the model tested should lie within ± 5% of the specific speed of the pump offered ...In general these tests shall be conducted as per Japanese standard JIS-B8327 (latest version).	Alternatively, CW pump model test shall be done as per HIS, which is being widely accepted in the industry. Owner is requested to confirm the proposal	Noted.
93	Volume-III Volume VI	Ch 15: CW & ACW System Ch 11: Buildings Description	3 of 37 8 of 18	15.3 11.9	j) Stop log gate and coarse screens at up stream of CW & ACW pumps. Each sump shall be provided with stainless steel (SS 316L) groove for inserting coarse screen, fine screen and stop logs. Grooves for stop log shall be provided before and after the screen.	Discrepancy between referred clauses. Bidder understands that only coarse screen shall be required. Please confirm.	Coarse screen & Stop log gate shall be provided in line with Chapter-15 Volume III
94	Volume-III	Chapter-15 CIRCULATING WATER (CW) & AUXILIARY COOLING WATER (ACW) SYSTEM	11 of 37	C (f) GENERAL DESIGN REQUIREMENT FOR VERTICAL WET PIT PUMPS (CW & ACW PUMPS) point f	The pump suction bell diameter shall be such as to limit the flow velocity at the maximum flow to within 1.5 m/sec.	Owner to please allow bell design as per HIS guidelines, As per HIS recommended velocity is 1.7 m/s.	Bid specifications to be followed.
95	Volume-III	Chapter-15 CIRCULATING WATER (CW) & AUXILIARY COOLING WATER (ACW) SYSTEM	9 of 37	15.6 A(e)	The pump & motor assembly shall be supported by two (2) floor arrangement. The lower floor will be provided below the discharge flange to provide an access to the discharge connections. The discharge head shall have a flanged discharge connection.	Owner is requested to provide following options for CW pump house: A) Open type CW pump house with gantry crane arrangement. B) Single floor arrangement for CW Pumps with accessible platform to CW pump motors for O & M.	A) CW pumps shall be housed inside the building. B) Noted.
96	Volume-III	Chapter-15 CIRCULATING WATER (CW) & AUXILIARY COOLING WATER (ACW) SYSTEM	31 of 37	n.	Thrust bearing cooling system pipes and valves: SS 316	As per Chapter 27 clause 27.4.5 for circulating water carbon steel MOC is acceptable, As CW pumps are lubricating water and CW water quality is same, So owner to please allow to use Carbon steel MOC for pipings and valves for thrust bearing cooling.	Bid specifications to be followed.
97	Volume-III Volume-VI Volume-III	Ch 15: CW & ACW System Ch 15: CW & ACW System Ch 11: Buildings Description Ch 27: LP pipings	3 of 37 5 of 37 9 of 18	15.3 15.4.8 11.10 27.4.13	CW pipe filling line from ACW discharge header to CW pipe with motorized isolating valve. For carrying circulating water from CW pump house to TG-area (near condenser) and from TG-area to cooling tower CW pipes (buried) shall be of MS construction Underground CW and ACW piping shall be provided with suitable protective coating/wrapping and shall be suitably stiffened to withstand soil loads and loads due to heavy vehicles at road crossings Cooling water conduits of adequate size shall be provided from C.W pumps to condenser and hot water conduits from condenser to cooling tower. These conduits shall be formed of structural steel conforming to IS: 2062. Pipe shall be provided with 3 coats of epoxy paint of minimum DFT of 350 microns over two coats of compatible primer after sand blasting. The pipes shall be tested before commissioning of the system Buried CW Pipes shall be encased in 500 mm thick RCC. However this thickness shall be reviewed for live loads at road crossings according to AWWA M11 and adequately revised.	Discrepancy found between stated clauses, As per first clause CW pipes are mentioned as buried pipe with MS construction encasement details are not mentioned. In second and third clause pipe painting and coating details are mentioned. In third clause it is mentioned that CW pipe is RCC encased. Owner to please clarify requirement of RCC encasement. For buried RCC encased pipe mentioned painting and coatings are not envisaged	Buried CW piping under rail/road crossing only shall be encased in 500 mm thick RCC/Culverts. The painting/protection of pipes (burried and overground) shall be in line with clause 27.13, Chapter 27 of Vol-III. However, RCC encasing mentioned in this clause is applicable only for buried CW piping under rail / road crossings. Thickness of pipe shall be selected accordingly.

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
98	Volume III Volume VII	Chapter 17	2 of 20 21 of 120	1.2 (i) (b) 111-12-3100		In chapter 17 Clause 1.2 (i) (b) cooling water ΔT is mentioned as 10 Degree C. Owner to please note ΔT of cooling water is finalized as per condenser inlet and outlet parameters. So kindly indicate "By bidder" in place of 10 degree C.	ΔT of cooling water shall be 10 deg. C.
99	Volume-III Volume-VI	Chapter 18 Chapter 18 Chapter 13	5 of 23 7 of 23 18 of 21	18.3.1 18.4.1 (j) 13.11.4	Staircases with handrails and posts, platforms, FRP access doors with all accessories, internal walkways and walkways at CT top with stainless steel pipe handrails and posts, all necessary stainless steel inserts in the concrete etc., for satisfactory maintenance of the Cooling Tower as detailed in civil tender specification. Access to the hot water distribution system shall be provided with two RCC stair leading to FRP door giving access to distribution system At the throat level a reinforced concrete landing of 1.2m minimum width shall be provided with a hot dip galvanized steel access door for the interchange.	Discrepancy found between stated clauses. One clause indicates FRP access doors and other clause indicates galvanized steel access door. Owner to please check and inform MOC of access door.	FRP access doors shall be provided in line with Clause 18.3.1 and 18.4.1 (j) of Chapter 18 in Volume III.
100	Volume-VI Volume-III	Chapter 13 Chapter 18	18 of 21 5 of 23	13.11.5 18.3.1	Handrailing shall be of hot dip galvanized construction and shall be out of 32 mm NB pipes of medium class conforming to IS: 1239 and provided with etch primer and bituminous painting. Staircases with handrails and posts, platforms, FRP access doors with all accessories, internal walkways and walkways at CT top with stainless steel pipe handrails and posts, all necessary stainless steel inserts in the concrete etc., for satisfactory maintenance of the Cooling Tower as detailed in civil tender specification.	Discrepancy found between stated clauses. One clause indicates galvanized handrails with IS:1239 MOC and other clause indicates stainless steel pipe handrails and post. Owner to please note as per our past project experience handrail MOC shall be IS:1239. So owner to please allow us to use IS:1239 MOC as per stated in clause 13.11.5 of Chapter 13, Volume VI.	Please follow specifications as per Clause 18.3.1 of Ch-18 at Sheet 5 of 23 in Vol-III.
101	Volume-III	Ch 18 : NDCT	7 of 23 10 of 23	18.4.1 (e) 18.4.3.1	The hot water distribution shall be by RCC main and secondary ducts finally through UPVC/HDPE/FRP pipes fitted with nozzles for uniform distribution through the fill, which shall be film type. The fill shall be of non-clogging type fills like modular splash/trickle grid/turbo splash or splash type fills like V-bar splash/splash grid and easily installable. The fills shall be adequately supported to prevent sagging and damage. The tower shall be levelled so that water will be uniformly distributed over the fills and does not cause channeling. The splash type fills shall be placed horizontally.	Discrepancy found between stated clauses. One clause indicates film type fill and other clause indicates splash/ modular/ trickle type fills. Owner to please clarify type of fills.	Please follow specifications as per Clause 18.4.3.1 of Ch-18 at Sheet 10 of 23 in Vol-III.
102	Volume-III	Ch 18 : NDCT Datasheet	22 of 23	3.3	Effective storage Capacity: 10 minutes of cooling tower flow at full load operation of the unit (between Min. & Max. water level)	NDCT basin effective capacity shall be selected by EPC contractor based on their proven experience for 660 MW and 800 MW plants. Please confirm	Bid specifications to be followed.
103	Volume-III	Ch 18 : NDCT Datasheet	23 of 23	3.6	Cold water discharge channel / pipe: Required effective cross-sectional area for 1.0 metres/sec. water velocity	Bidder understands that 1 m/s velocity is required at minimum water level upto cooling tower outlet only. For channel design 1.8 m/s velocity is acceptable as mentioned in Volume VI Chapter 21 clause 21.2 (f) and 21.3 (f) for open channels.	Please follow specifications as given against S.No. 3.6 in the table at sheet 23 of 23 of Chapter-18 in Vol-III.
104	Volume-III	Chapter 18	12 of 23	18.4.8	i) Quantity - 6 Nos. (2 Nos. per Tower + 2 Nos. common standby).	Bidder understands that basin outlet shall have provision to install two screens (one per partition) / Other two common screens will be provided for storage only. Owner to please confirm.	Clause 18.4.8 (i) of Ch-18 at Sheet 12 of 23 in Vol-III be read as "Quantity - 2 Nos. (1 No. per partition)"
105	Volume-III	Chapter 18	19 of 23	18.5.5 e (iii)	For obtaining swirl free and fully developed flow condition the minimum upstream and downstream straight lengths at the measuring cross section shall be 20 pipe diameters and 5 pipe diameters respectively	Owner to please allow to follow CTI guidelines for straight length requirements for flow meter installation.	Noted.

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
106	Volume-III Ch 2: Turbine Generator & Auxiliaries Ch 2: Turbine Generator & Auxiliaries Chapter-15 CW and ACW system Volume II Chapter-18 NDCT Datasheet Volume II Ch 8: FG & LD Ch 2 : Project	Chapter 2: Turbine Generator & Auxiliaries 40 of 87 11 of 87 74 of 87 5 of 37 22 of 23 8 of 57 3 of 10	2.2 (1) (b) 1.1.2.viii Cl. No. 15 15.4.3 2.4. point xv of 3.1 3.0	Design cold water temp. 32.5°C Condenser design pressure : As optimized by bidder at 1% make-up and 32.5°C CW temperature for VWO condition but not exceeding 70 mmHg (abs) Other conditions for computing heat balance diagrams: Design condenser pressure : As optimized by the bidder at 1 % make-up and 32.5 °C CW temperature at VWO condition (not more than 77 mm of Hg (abs)). The temperature at outlet of the Cooling Tower for design purposes shall be 330 C considering cooling tower approach of 50 C (max) at rated conditions and design inlet air Wet Bulb Temperature to be 280 C. Cold water temperature (˚C): 33 Degree C The cold-water temperature of 33°C shall be guaranteed for the design conditions of CW flow, range, ambient WBT and RH as per the performance test procedure of cooling tower elaborated elsewhere in the specification. Condenser cooling water inlet temperature of 33°C and 9°C temperature rise across the condenser.	Discrepancy found between referred clauses. Bidder understands that, Cold water temperature (˚C): 33 Degree C is to be considered for designing of condenser and cooling tower. Please confirm acceptance.	Cold water temperature shall be considered as 33 deg C in line with Chapter 8, Volume II.
107	Volume-III	Chapter 27	2 of 31	27.1.3	WILLIAM & HAZEN formula shall be used for calculating the friction loss in piping systems with the following "C" value. Stainless steel pipe 100	As stainless steel pipes are highly resistant to corrosion, the surface finish of the pipe internal surface is maintained and hence, "C" value of stainless steel pipes shall be considered as 140 instead of 100 as given in specification. This is being followed in other executed projects as well. Request Owner's confirmation in this regard	Bid specifications to be followed.
108	Volume-III	Chapter 27	3 of 31	27.1.6	Corrosion allowance of 1.6 mm will be added to the calculated thickness being considered	Bidder understands corrosion allowance is applicable only for carbon steel pipes. The same is not applicable for stainless steel and alloy piping. This practice is being followed across many executed projects installed across the globe. Please accept our above proposal	Bid specifications to be followed.
109	Volume-VII	111-12-3300 Flow diagram of CW and ACW system	22 of 120			In flow diagram CW blowdown tapping is indicated after condenser (Hot water side), Bidder envisage to take blowdown tapping from cold CW side i.e. CW pump discharge, so that blowdown water reaches to end users of FGD, AHP and CHP area. Similar arrangement have been installed NTPC khargone (2X660 MW) and Buxar TPP (2X660 MW). Request owner to revisit and provide acceptance.	Bid specifications to be followed and CW blowdown may be used for FGD, AHP and CHP.
110	Volume III	Ch 27 : Low Pressure Piping, Valves & Specialities Sheet 2 of 35	2 of 31	27.1.3	Water Velocity in m/sec Pump discharge : 2.5 m/s	In DM/ condensate transfer piping (stainless steel pipe handling clean DM water), higher velocity (upto 6 m/s) shall be considered, as in CEP/BFP discharge piping handling similar quality of water.	Bid specificatons to be followed
111	Volume-III Volume-II	Ch 2: Turbine Generator & Auxiliaries Ch11 : QAP	39 of 87 50 of 103	2.1 (o) 16.0	2X100% capacity, fully automatic debris filter shall be installed on each condenser inlet line of suitable mesh size for clarified water application shall be provided with covered shed above ground level at the outside of the TG building at the upstream of COLTS for each CW inlet line. Debris filter shall be supplied with automatic self wash system. The debris filter design has to be suitable for clarified water quality. Debris filter flushing line outlet shall be routed to ash dyke by suitable arrangement. Condenser on load tube cleaning system/debris filter for main turbine condenser and drive turbine condenser (if offered)	Owner to please note that being river water application, Debris Filter shall not be required. Moreover clarifier water is filtered with six (4W+2S) rapid gravity filters and then it is supplied to CW sump and forebay. As per clause 15.14 coarse screen is also provided in CW pump sump to remove debris. So We request owner to remove debris filter from condenser inlet side.	Requirement of Debris filter is deleted.
ECC							
112	Volume I	Section V: ECC	44 of 62	44.24	I. Chain pulley block shall not be used for loads more than two (2) tonne.	Bidder request owner to allow use of chain pulley blocks for loads upto 10T	Bid specifications to be followed.
113	Volume VI Volume III	Ch 09: Steel Structure Ch 27: Low Pressure Piping, Valves & Specialities	8 of 28 12 of 31	9.8.2 27.11.3	.....Where pipes are not encased wrapping as per IS:10221 shall be provided outside... Coating and wrapping/ Anti corrosive Protection Coal tar tape	Bidder understands that where pipes are not encased wrapping & coating shall be done as per IS:10221 or IS:15337 or equivalent.	Please follow Cl.No.27.11.3, Sheet-12 of 31, Chapter-27, Vol-III.
Electrical							
114	Volume I _____ Volume IV - Electrical Works	Section V: ECC _____ Ch1: Electrical Scope of Work	15 of 62 _____ 6 of 58	27.1 _____ 1.02.36	FACILITIES TO BE PROVIDED BY THE OWNER The Contractor shall make its own arrangement of construction power and further distribution arrangement; and the provision of temporary lighting and other facilities needed shall be provided by the Contractor. _____ The Bidder shall make its own arrangement of construction power and further distribution arrangement; and the provision of temporary lighting and other facilities needed shall be arranged by the Bidder subject to Owner's approval.	Construction power is the basic facility to be provided by Owner for the construction of power plant within the plant area. Hence, Bidder request Owner to provide construction power at 11kV at one point within the 1x800MW expansion project area. Owner may please provide the construction power on free of charge basis.	Bid specifications to be followed.

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
287	VOLUME - VII TENDER DRAWINGS	Drg No 111-13-5210	48	-		As per QFGDM proven practice, Absorber inlet SO2 value (without O2 Correction) is used for control of Limestone Slurry Feed. Absorber outlet SO2 measurement is not required for the same. Absorber outlet Flow measurement is not required for any control purpose in FGD. Hence, we propose the following 1. Absorber outlet SO2 analyser & FT is not envisaged. Absorber outlet SO2 & FT shall be measured from Chimney CEMS analyser & FT. 2. Oxygen analyser for Absorber outlet/outlet SO2 value correction is not envisaged. Please accept Bidder's proposal.	Schemes/drawings provided in the tender are indicative, same shall be finalized during detailed engineering.
288	Volume V Instrumentation & Control Works	Part B/Ch 2: Field & Measuring Instruments	46 of 64	2.19.01	PULL CORD SWITCH .... 4. "One number Trip indicator panel per conveyor, which shall display the exact number of safety switches (pull cord or belt sway switches) operated in a loop of conveyor considering 10% spare switches. ..... Trip Indicator panel shall be separate for PCS & BSS respectively.	Bidder proposes to consider one number combined Trip indicator panel with display for PCS & BSS per conveyor. Please accept Bidder's proposal.	Noted.
289	Volume V, Part B Volume V, Part B Volume V,	Chapter 2 Chapter 2 Chapter 2	46 of 64 47 of 64 47 of 64	2.19.01 2.19.02 2.19.03	PULL CORD SWITCH .... Degree of protection-Flame proof/Explosion proof for NEC class 2, Division 1 area BELT SWAY SWITCH Degree of protection : Flame proof/Explosion proof for NEC class 2, Division 1 area ZERO SPEED SWITCH Degree of protection : Flame proof/Explosion proof for NEC class 2, Division 1 area	Bidder understands that Flame proof/Explosion proof type of switches are not applicable for CHP & FGD area. Please confirm Bidder's understanding.	Bid specifications to be followed.
290	Volume V, Part B	Chapter 2	49 of 64	2.19.06	3 D TYPE ACOUSTIC WAVE LEVEL TRANSMITTER Application: each FGD Silos	Bidder understands that 3D Type acoustic wave level transmitter is not applicable for FGD Silos. Accordingly, Bidder shall consider Radar type LT for FGD Silos as per standard & proven practice Please confirm Bidder's understanding.	Fly ash silos and lime stone silos shall be provided with 3D Radar type level transmitters.
291	Volume III Mechanical Works Volume V, Part B	Ch 1: Steam Generator & Auxiliaries Chapter 2	170 of 186 49 of 64	8.07.00 2.19.06	Each dust hopper shall be provided with a high level and a low level dust level monitor operating on proven Radio frequency measurement principle. 3 D TYPE ACOUSTIC WAVE LEVEL TRANSMITTER Application: each ESP Hopper (First Field),…	Bidder understands that only RF type level switch (low and high level) is to be considered for each ESP dust hopper as per Volume III, Ch 1: Steam Generator & Auxiliaries, Clause 8.07.00. 3D Type acoustic wave level transmitter is not applicable for ESP Hoppers. Please confirm Bidder's understanding.	For all ESP Hoppers, RF type Level switches and indicators shall be provided.
292	Volume IV Electrical Works Volume IV Electrical Works	Ch 30: Electrostatic Precipitator	6 of 13 7 of 13	30.10.01 30.10.01 (ii)	The control system shall be designed for automatic and manual local/ remote operation. ESPs serving one boiler shall be provided with a complete control system consisting of microprocessor based Electrostatic Precipitator Management System (EPMS),... ii) The EPMS shall include, but not be limited to, the following features for each unit : a) The EPMS shall also be of same family DDCMIS	Bidder understands that EPMS shall be microprocessor based system as per Volume IV, Ch 30: Electrostatic Precipitator, Clause 30.10.01 as per our standard & proven practice. However, EPMS shall not be of same family as that of DDCMIS. Please confirm.	EPMS shall be PLC based system. However, EPMS may not be necessarily of same family as that of DDCMIS.
293	Volume V/ Part A Volume V/ Part B Volume V/ Part B	S. No. 1 Chapter 16 Chapter 16	45 of 96 13 of 18 14 of 18	4.00.00 (3) 16.07.01.06 (xiii) 16.07.03 (i)	Operating Stations: Eleven (11) nos. with 32" LED monitors 40" LED Monitors with 1920 x 1080 pixel resolutions & 178 deg V/H viewing angle. Configuration of Operating stations shall be same as specified at Vol. V, Chapter 3 with 40" sized LED monitors	Bidder wish to highlight discrepancy in monitor size for CCTV workstations. Bidder understands that monitor size shall be 32" inline with Cl. No. 4.00.00 (3) of Volume-V/ Part-A Please confirm.	Confirmed.
Civil Structural & Architectural							
294	Volume VI : Civil, Structural & Architectural Works	Chapter-2 (Scope of Work)	5 of 7	Cl. No. 2.6, Item No. 65	Proposed site is having trees all over the site. Cutting and removing the trees and clearing the site from all other obstruction is in the scope of bidder. Necessary permission to cut the trees from relevant department must be obtained by bidder himself at his own cost.	Bidder requests Owner to take mandatory permission from statutory authorities including MOEF, forest department for tree cutting. Bidder requests Owner to cut the trees prior to handover of clear site for execution, levelling and grading.	In the scope of bidder. However HPGCL will facilitate the bidder in this regard.
295	Volume VI : Civil, Structural & Architectural Works	Chapter-05 (Geo Technical Investigation)	7 of 7 1 of 7	Cl. No. 5.0	Attached Geo-tech Report by CENGRS for 2 x 300 MW existing plant Soil investigation report of the existing 2 x 300 MW (Units 1 & 2) adjacent to the proposed site is attached as a reference for the bidders.	a. Geo-technical report provided in the specification is incomplete. Bidder requests Owner to provide a complete Geo-technical report showing the latest sub-surface information. b. Also, Bidder requests owner to provide Soil investigation report and recommendations for the locations within new proposed plant.	Bidder may visit the site to collect further information.

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
296	Volume VI : Civil, Structural & Architectural Works	Chapter-17(Architectural Works)	5 of 21	Cl. No. 17.6.4.1	Trees of different category and height shall be planted as per prior approval from Owner. In addition to above, Bidder has to develop Green belt by planting around 80,000 of trees in approximate 32 hectares of land ,location as approved by Engineer in charge. Green belt area as mentioned above is approximate. Actual area to be decided as/MoEF&CC guidelines.	Based upon MOEF Guidelines, Bidder request owner to confirm the followings: a. Bidder requests Owner to specify the exact requirement of Greenbelt area in hecatres and demarcate the same in plot plan drawing. b. Bidder requests Owner to specify the exact requirement of trees to be planted for Green Belt.	Green belt development as per tender specifications is in the scope of bidder. Maintenance of green belt till commissioning of plant or minimum 1 year after completion of Green belt development whichever is later is also in the scope of bidder. Green belt development shall be done by specialized contractor approved by forest department and HPGCL.
297	Volume VI : Civil, Structural & Architectural Works	Chapter-02(Scope of Work)	5 of 7	Cl. No. 2.6, Point 77	Clearing and removing the buried items if any in the whole proposed plant area and the same is to be deposited to the Client. Any infrastructure buried underground shall be demented/relocated by bidder without any additional cost.	Bidder requests Owner to make available Underground existing utilities survey report/As-built drawings to the bidder.	No list is available. Clearing and removing the buried items if any in the proposed 800 MW plant area shall be in bidder scope and the same is to be deposited to the Client.
298	Volume VI : Civil, Structural & Architectural Works	Ch 02 Scope of Work	1 of 2	15.1	Ash handling system shall comprise of bottom ash, coarse ash, fly ash handling systems, ash slurry pump house and ash compressor house, ash water pump house, **ash pipe supports including culverts, coarse ash tank, ash water sump bridges etc. upto the existing Ash Dyke.**	Bidder requests HPGCL to provide corridor survey report and drawing of Ash disposal piping route from plant to ash disposal area. Corridor route survey is required in order to understand the requirement of crossover, culvert, bridges, etc. for Ash disposal piping route.	No corridor survey report is available to collect required information. Bidder shall visit site and collect the data.
299	Volume VI : Civil, Structural & Architectural Works	Ch 02 Scope of Work	1 of 3	24.1	Free board of 1000mm minimum shall be maintained. The maximum level of Reservoir shall 250mm below the invert level of raw water **intake channel (leading to existing raw water reservoir).**	Bidder requests HPGCL to provide Raw Water Intake Channel/System drawings and Intake corridor survey drawing.	Bidder shall visit site and collect the data
300	Volume VI : Civil, Structural & Architectural Works	Chapter-5 (Geo-technical Investigation)	5 of 7	Cl. No. 5.5	Bore holes shall be located to cover the entire area. All bore holes shall be sunk up to a depth of 20.0 to 40.0 m as indicated in table below.	Bidder understands that Bore hole depth and Nos. shall be decided during detail engineering. Please confirm	Bid specifications to be followed.
301	Volume VI : Civil, Structural & Architectural Works	Chapter-5 (Geo-technical Investigation)	1 of 7	Cl. No. 5.2	As per the attached geotechnical report, It is advised to provide Pile foundation for boiler foundation, chimney foundation, cooling tower, main plant building structures,TG foundation, mill building foundation, mill foundation, conveyor gallery trestle (of height more than 25m) foundation, junction tower foundation, crusher house foundation, fly ash silo foundation including all other major structures in FGD and other areas. For conveyor gallery (of height less than or equal to 25m) foundation, type of foundation (pile/open foundation) shall be decided based on findings of final geotechnical report. For ESP and stacker reclaimer foundation if open foundation is feasible as per Approved Geotechnical report, bearing capacity corresponding to 25mm settlement of foundation shall be considered.	Bidder understands that the Type of Foundations for respective Structures may be decided by the bidder by detailed Geo-technical Investigation during detailed engineering stage. Please confirm.	Bid specifications to be followed.
302	Volume VI : Civil, Structural & Architectural Works	Chapter-10 (RCC Structures & Foundations)	1 of 46	Cl. No. 10.3	All RCC liquid retaining structures shall be designed as uncracked section for water face and cracked section with crack width limited to 0.1 mm for earth face in accordance with IS:3370 (Part 1 to 4) by working stress method, using limited steel stress. For all other underground structures such as conveying structures / slurry pump house/ pump houses / underground structures such as tunnels, reclaim hopper pit, not in contact with liquid on inside face may be designed as cracked sections with crack width limited to 0.1mm for both faces. Only CW Forebay & CW Channel may be designed for crack width as 0.2mm for earth face in accordance with IS:3370 (Part 1 to 4) by working stress method, using limited steel stress. However water face to be designed as uncracked section.	Bidder highlights that there is ambiguity in the Clause regarding Design Of Liquid Retaining Structures by Limit State Method for Cracked Section with Crack width 0.1 to 0.2 mm limits / by working stress method considering uncracked section using limited steel stress. Owner to confirm the same.	Bid specifications to be followed. Structure shall be designed with working stress method as already mentioned in tender document.
303	Volume VI : Civil, Structural & Architectural Works	Chapter-21 (Water Supply, Drainage & Sanitation)	1 of 13	Cl. No. 21.2 e)	The rectangular drains shall be minimum 450 mm wide of RCC construction. The pipes for water drainage system shall be of RCC class NP2 conforming to IS:458 with minimum size of 150 mm NB. However, for road crossings etc., pipe of class NP3 SHALL BE PROVIDED. For rail crossings, pipes conforming to railway loading standards shall be provided. If sufficient clearance cannot be provided between the top of the pipe and road top, the pipes shall be encased in RCC. Minimum clear width of drain shall be 300 mm.	Bidder shall consider 300 mm as minimum clear width of storm water drain (rectangular) as per clause 21.3 b). Please confirm.	Minimum clear width shall be kept 450 mm.
304	Volume VI : Civil, Structural & Architectural Works	Chapter-23 (Concrete Road & Rigid Pavement)	1 of 2	Cl. No. 23.1	The main plant access road and a portion of the main plant complex circumferential road shall be Type I.	For "portion of main plant circumferential road shall be Type-I" Bidder understands that the extent shown in Plot Plan is to be followed. For " main plant access road" Bidder requests Owner to clarify extent & location.	Main plant access road shall be type-I road and shall be as per layout to be finalized during detailed engineering. The main plant area shall encompass boiler, turbine, ESP up to chimney.
305	Volume VI : Civil, Structural & Architectural Works	Chapter-23 (Concrete Road & Rigid Pavement)	1 of 2	Cl. No. 23.1	Type II roads shall consist of one 4.5 metre wide RCC paved carriageway with 1.5m wide hard shoulders with drains on either side. A turning area at blind ends shall be provided. Plant areas where infrequent access is needed shall be served by Type II roads. Examples of Type II roads are the lay-down area roads.	Bidder understands that the extent shown in Plot Plan is to be followed.	Roads shall be provided as per layout finalized during detailed engineering. Shoulders shall be provided with 60 mm thick pre cast concrete pavers over 100 mm thick sand laid over 80 mm thick PCC M20 grade.
306	Volume VI : Civil, Structural & Architectural Works	Chapter-23 (Concrete Road & Rigid Pavement)	1 of 2	Cl. No. 23.1	Type III roads shall be of R.C.C & 3.75m wide with 1.0m wide hard shoulders on either side. Type III roads shall be provided along the plant boundary for access for security and maintenance.	Bidder understands that the extent shown in Plot Plan is to be followed.	Roads shall be provided as per layout finalized during detailed engineering. Shoulders shall be provided with 60 mm thick pre cast concrete pavers over 100 mm thick sand laid over 80 mm thick PCC M20 grade.
307						Bidder requests Owner to provide the Civil, Mechanical & relevant GA Drawings of Existing Raw Water Reservoir & RW Pump House	Bidder shall visit site and collect the data

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
308						Bidder requests Owner to provide the Civil, Mechanical & relevant GA Drawings of Intake Pump House & Raw Water Intake Corridor	Bidder shall visit site and collect the data
309						Bidder requests Owner to provide the Civil, Mechanical & relevant GA Drawings of existing Ash Dyke & Ash Disposal Pipe Corridor	Bidder shall visit site and collect the data
310	Volume VI : Civil, Structural & Architectural Works	Chapter-22 (SWITCHYARD CIVIL WORKS)	2 of 5	Cl. No. 22.2.2	The distance between terminal and dead end gantry shall be taken as 200 meters.	Bidder request the Owner to provide the exact location of TERMINAL.	out going gantry of the switchyard.
311	Volume VI : Civil, Structural & Architectural Works	Chapter-23 (CONCRETE ROAD AND RIGID PAVEMENT)	1 of 2	Cl. No. 23.1	Road leading to main gate of power house shall be double lane road with suitable berm. Minimum thickness of road shall be 25 cm and width of 7.5m each.	Power house building vicinity shall be paved with RCC paving whereas the referred spec clause is indicating the bidder to construct 19.5 m wide road including central berm from main gate of power house up to main gate. {Total width of road including Carriageway Width of 7.5 m (2 Nos), 1.5 m wide hard shoulders and central berm of 1.5m width(min) will be around 19.5m}. Bidder is unable to understand exact extent of this 19.5 m wide double lane road. Hence, Owner is requested to provide the mark-up for double lane road in the plot plan so that all bidders are at par.	19.5 M wide road stands deleted. Road from main gate to power house shall be provided as per layout to be finalized during detailed engineering.
312	Volume VI : Civil, Structural & Architectural Works	Ch-11 (Buildings Description)	5 of 18	Cl. No. 11.2	Main entrance to control room shall be provided with air locked lobby with automatic closing sliding glass doors. Lobby shall be formed of anodized aluminium framing with toughened sheet glass 6 mm thick. Partition between control room and adjoining rooms shall be of glazed aluminium partition with 300 mm high brick wall at bottom for toe protection. All the doors shall be single leaf glazed aluminium doors for all cabins. For movements of panels suitably sized double leaf aluminium glazed doors shall be provided. Control room wall upto the false ceiling level shall be of aluminium glazed partition on either side of air lock.	Based on Bidder's experience 2 Hour Fire-rated Glass would be required in CCR floor as per Fire zone requirement. Owner to please confirm so that every bidder are at par on this consideration.	Noted
313	Volume VI : Civil, Structural & Architectural Works	Ch-11 (Buildings Description)	5	Cl. No. 11.2	Battery room shall be provided with PVC doors in PVC framing.	As per standard practice doors for battery rooms are steel doors. Owner to please check and confirm.	Noted. Battery room shall be provided with steel doors.
314	Volume VI : Civil, Structural & Architectural Works	21 - Water Supply, Drainage & Sanitation	10	21.9	All other buildings shall have minimum one toilet block each.	Bidder understands that toilets shall be provided for manned buildings only. Owner to please confirm/review.	Bid specifications to be followed.
315	Volume VI : Civil, Structural & Architectural Works	Ch-11 (Buildings Description)	16	11.2.3	**Electrical & control Building** Main door to switchgear room shall be steel sliding door having adequate area to admit switchgear.	Bidder understands that Door could be swing type or rolling shutter type. The adequate size of door shall be provided as per requirement. Owner to please confirm	To be decided during detailed engineering.
316	Volume VI : Civil, Structural & Architectural Works	Ch-11 (Buildings Description)	16	11.2.3	Roof shall be given access by means of staircase.	Bidder propose staircase till roof to be provided in case of any equipment on roof which needs maintenance, else cage ladder will be provided till roof. Owner to please confirm.	Bid specifications to be followed.
317	Volume VI : Civil, Structural & Architectural Works	Ch-11 (Buildings Description)	11	11.12.a	Service Bldg For the accommodation of all Executives permanent brick wall not to be provided, **instead wooden partition wall of cubicle type is to be provided**	Bidder proposes Aluminium glass partition instead of wooden partition, this is as per current industrial practice and less maintenance compare to wood for end user. Owner to please confirm.	For accommodation of all executives, rooms shall be of brick wall only. For full height rooms, no wooden partition shall be considered. However, big size glazing/glass work shall be provided in all rooms on inner/outer wall of buildings. Further, all low height partitions shall be of wooden only. Quality of wood/ finishes to be used for partition work shall be approved by HPGCL.
318	Volume VI : Civil, Structural & Architectural Works	Ch-11 (Buildings Description)	11	11.12	Service Bldg Specially designed long RCC porch shall be given in front at the main entrance for receiving cars of VIP"s. Length of the porch shall be at least 15 m	Bidder to bring to Owner's notice that Entrance porch shall be good enough to accommodate a single lane road of 3.5 mt width. 15mt length of RCC porch will be too large and may not look proportionally great from aesthetic point of view. Owner may please review.	Length of the porch shall be at least 8 m.
319	Volume VI : Civil, Structural & Architectural Works	Ch-11 (Buildings Description)	11	11.12	The bidder has to furnish the three dimensional architectural plans along with the colour codes for the above buildings for approval of the Purchaser for adopting one among the alternatives proposed	Bidder understands that 3d Perspective Views shall be provided for Service building with external colour options. Owner to please confirm.	The bidder has to furnish the three dimensional architectural plans/ 3d perspective views along with the colour codes for TG building and service building for approval of the Purchaser for adopting one among the alternatives proposed.
320	Volume VI : Civil, Structural & Architectural Works	CH-17 (Architectural Works)	9	17.7.5.a	False flooring	This clause is conflicting with Clause 6.17, Owner to clarify which clause should be considered for False flooring / raised access floor.	Follow clause 6.17
321	Volume VI : Civil, Structural & Architectural Works	CH-6- (General Requirement of Buildings & Structures)	12	6.19	Statutory Requirements All masonry firewalls shall be minimum 345 thick and RCC firewall shall be minimum 200 mm thick	Bidder understands that as per industry practice only fire wall adjacent / facing transformer shall be 345 mm thick brick wall. Owner to confirm.	Noted

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
322	Volume VI : Civil, Structural & Architectural Works	CH-21- (Water Supply, Drainage & Sanitation)	2 of 13	Cl. No. 21.3 a) & Cl. No. 23.1	The drainage system shall be designed for a precipitation intensity equal to hourly rainfall for a return period of 1 in 50 years. However, storm frequency of 100 years return period shall be applied for Coal Storage area. These values shall be based on the recommendations of Indian metrological department (IMD). The drainage system shall be designed for precipitation intensity of 80mm per hour.	Bidder understands that precipitation intensity will be considered as 80 mm /hr. Please confirm.	Noted
323	Volume VI : Civil, Structural & Architectural Works	CH-21- (Water Supply, Drainage & Sanitation)	2 of 13	Cl. No. 21.3 i)	Invert of drainage pipe / drain shall be decided in such a way that the water can easily be discharged above the high water level in to **storm water holding pond**.	Bidder requests Owner to provide location of existing Storm Water holding pond with High Water level & Invert Level clearly indicated. Bidder request the Owner to provide OUTFALL location & details with Invert Level for Main Plant Area Storm Water Drains & CHP area Drains OUTFALL location & details with Invert Level separately considering the nature of the Plot Plan.	Bidder may visit the site to collect further information.
324	Volume VI : Civil, Structural & Architectural Works	CH-21- (Water Supply, Drainage & Sanitation)	5 of 13	Cl. No. 21.5.1	Sanitary sewers shall be designed for a minimum self cleansing velocity of 0.75 m/sec. and the maximum velocity shall not exceed 2.5m/sec.	Bidder noticed that as per CPHEEO Manual Clause No. 3.15.1, Table 3.9, consideration of Minimum Self Cleansing Velocity be taken as 0.6 m/sec at Initial Peak Flow. Please confirm.	To be decided during detailed engineering
325	Volume VI : Civil, Structural & Architectural Works	CH-21- (Water Supply, Drainage & Sanitation)	6 of 13	Cl. No. 21.5.1	All underground piping below concrete slab shall be cast iron of minimum 100mm dia and for outdoors it shall be reinforced concrete pipe of minimum 200mm diameter	Bidder requests that provision of 100mm diameter pipe for connecting SIP (Sewage inspection pit) to manhole be allowed and minimum diameter of pipe shall be 150mm (for population less than 1 lakh) as per CPHEEO manual. Please confirm.	To be decided during detailed engineering
326	Volume VI : Civil, Structural & Architectural Works	Ch 02 & Ch 11	5	2.6.66	Service building 3000 sqmts (G+3)	Please provide detailed requirement (for e.g., Size of rooms, No. of Rooms, Occupancy, etc.,) of service building.	The service building total area shall be 3000 sqm with (G+4). Operating floor of TG building shall be interconnected with service building. Detailed requirement shall be discussed during detailed engineering.
327	Volume VI : Civil, Structural & Architectural Works	Ch 02	6	2.6.84	Permanent store of 6000 sqm area shall be provided by the bidder. Out of this 3000 sqm shall be covered building	Bidder understands that 3000 sqmt of covered store and rest 3000 sqmts will be open store area.	Permanent store stands deleted from the scope of bidder.
328	Volume VI : Civil, Structural & Architectural Works	Ch 06	2	6.5	Vertical Head room Above False ceiling - 1000 mm	Space above false ceiling shall be as per requirement to accommodate services. Generally head room is not required above False ceiling. Please reconsider this clause.	Bid specifications to be followed.
329	Volume VI : Civil, Structural & Architectural Works	Ch 06	3	6.7.3	All stairs normally shall have not more than 15 risers in one flight. Aluminium angle nosing with minimum 50x25x3 angle or PVC nosing shall be provided for edge protection of RCC stairs	As per latest NBC, maximum number of riser shall be 12nos in one flight. Please confirm.	Noted
330	Volume VI : Civil, Structural & Architectural Works	Ch 06	3	6.8	For RCC stairs, handrails with 20 mm square MS bar balustrade with suitable MS flat & aluminium / Teakwood handrail shall be provided, unless specifically mentioned otherwise.	Bidder understands that teakwood or aluminium Top hand rail shall be provided for Service building only. As such handrail would not be compatible for other plant buildings. For other buildings bidder propose for 32 mm nominal bore MS pipes as per Clause No 6.8. Please confirm.	Teakwood top handrail shall be provided for service building. All other building shall be provided with 32 mm nominal bore MS pipes hand rails.
331	Volume VI : Civil, Structural & Architectural Works	Ch 06	12	6.18	Furniture All rooms shall be furnished for their intended use. The Contractor shall provide the Owner with a choice of furniture range	As per Clause 17.3 of chapter 3, furniture is to be supplied only for MPH control room complex be as specified under C&I specification.	Supply of furniture for all buildings in the project is in Bidder's scope. Furniture to be supplied shall be of Make-Godrej Interio, Durian, Wooden street or equivalent make as approved by HPGCL.CL.
332	Volume VI : Civil, Structural & Architectural Works	Ch 17	2	17.2.iv.	The consultant shall evolve the design philosophy based on Employer's guidelines and shall present it in the form of presentation drawings, Prospective views, 3-D Models & detail drawings	Bidders understands only digital 3D Perspective views shall be provided that too only for Service building and not physical 3D models. Digital 3D Perspective views are required for Central Control Room only. Owner to please confirm.	Bid specifications to be followed. Physical 3D models of the whole projects is also required to be provided by the bidder.
333	Volume VI : Civil, Structural & Architectural Works	Ch 17	3	17.4	Multiple drains (minimum 2) shall be provided for all roof areas. Any roof more than 8 m above grade shall have access from within the building for cleaning of roof drains	For cleaning Roof drains cage ladder outside building for roof access shall suffice requirement. Access within the building is not envisaged. Owner to please revisit this clause.	Bid specifications to be followed.
334	Volume VI : Civil, Structural & Architectural Works	Ch 17	4	17.6	**Landscaping**	Bidder understands that landscaping shall be provided for and around Service building only. Owner to please confirm.	Bid specifications to be followed.
335	Volume VI : Civil, Structural & Architectural Works	Ch 17	5	17.7.1	Plastering	Please provide external wall plaster thickness.	20mm thick plaster in mortar 1:4.

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
336	Volume VI : Civil, Structural & Architectural Works	Ch 11	4	11.2	A roof shall be provided with roof water proofing treatment using high solid content liquid applied elastomeric water proofing membrane with separate wearing course as per ASTM-C-836 & 898. Thickness of the membrane shall be 1.5mm (min.). This treatment shall include application of polymerized mastic over the roof to achieve smooth surface and primer coat. Wearing course on the top of membrane shall consist of 25 mm thick PCC (1:2:4) cast in panels of maximum 1.2x1.2m size and reinforced with 0.56mm dia galvanized chicken wire mesh and sealing of joints using sealing compound/ elastomeric water proofing membrane. However, chequered concrete tile flooring 22mm (min.) thick of approved colour and shade conforming to IS:13801 shall be provided for path way of 1m width for access of personnel	Owner to confirm which water proofing detail to follow for TG building. The one specified in this section or in clause 17.4. The major variation is in wearing coarse thickness here it is mentioned 25 mm and in clause 17.4 is 40 mm.	Thickness of wearing coat shall be 40mm as mentioned in Cl.17.4 of specification.
337	Volume VI : Civil, Structural & Architectural Works	Ch 11	5	11.2	**TG Building** Portion of the structural steel column projecting into the room shall be encased with brick masonry to shield it from fire hazards.	Bidder understands that this is applicable only for CCR level floor plan up to Beam Column connection bottom level only.	Noted.
338	Volume VI : Civil, Structural & Architectural Works	Ch 11	5	11.2	**TG Building** Battery room shall be provided with PVC doors in PVC framing.	Please provide specification of PVC doors and PVC frames. Also owner to please check, as per industrial practice steel doors are provided for battery room.	Battery room shall be provided with steel doors.
339	Volume VI : Civil, Structural & Architectural Works	Ch 11	10	11.12	**Service Building** The building shall generally not exceed four storeys and shall be directly connected to the main plant building at operating floor. The floor area shall not be less than 1000 sqm for each floor.	Bidder understands that this clause is contradicting with Clause No. 2.6.66 of Chapter 2 where it is mentioned that Service Bldg. Area shall be 3000 sqmts with (G+3). In this Clause it is mentioned as 1000 sqmt per floor minimum with 4 storey building. **Owner to confirm.**	The service building total area shall be 3000 sqm with (G+4). Operating floor of TG building shall be interconnected with service building.
340	Volume VI : Civil, Structural & Architectural Works	Ch 11	11	11.12	**Service building** Seating accommodation for senior O&M executive along with supporting staff including furniture of latest style	Furniture arrangement is just to confirm the occupancy and space allocation. However furniture supply is not in scope of contractor. As per Clause 17.3 furniture is to be supplied only for Central Control room. Owner to confirm the same.	Supply of furniture for all buildings in the project is in Bidder's scope. Furniture to be supplied shall be of Make-Godrej Interio, Durian, Wooden street or equivalent make as approved by HPGCL.
341	Volume VI : Civil, Structural & Architectural Works	Ch 11	10	11.12	**Service building**	Please provide the sizes and number of rooms required, capacity for rooms like meeting room / conference room or provide occupancy for service building.	To be decided during detail engineering
342	Volume VI : Civil, Structural & Architectural Works	Ch 11	12	11.13	**Storage yard** The covered sheds shall be connected with bituminous roads in side storage yards	Please provide number of covered sheds and area, for storage yard.	Storage yard/ Permanent store stands deleted from the scope of bidder.
343	Volume VI : Civil, Structural & Architectural Works	Ch 11	12	11.14	Parking sheds shall be provided at service building, security complex, at CW pump house area etc., at all locations for operating staff. The parking sheds shall be of steel framed construction	Please provide number of cars for covered parking area for particularly each building /area.	Parking shed to accommodate 100 Nos. two wheelers vehicles and 50 Nos. four wheelers vehicles.
344	Volume VI : Civil, Structural & Architectural Works	Ch 17	9	17.7.5.i	**Cast-in-situ Terrazzo** Cast in situ terrazzo flooring shall be laid as per IS:2114, using white cement or cement with colouring pigment. Chequered finish shall be provided for treads. Total thickness of the finish shall be 25mm	Owner to please reconsider floor finish of staircase. As Cast in situ Terrazzo is not used on a days for floor finish.	Good quality granite flooring (color/quality as approved by HPGCL) shall be provided for staircase.
345	Volume VI : Civil, Structural & Architectural Works	Ch 17	12	17.7.7.e	Staircase wall shall be given dado of cast in situ terrazzo to a height of 2100mm. If Entrance lobby and lift area in Service building and Admin building shall be provided with granite tile dado to a height upto false ceiling level	Owner to please reconsider dado of staircase. As cast in situ terrazzo is not used on a days and aesthetically shall be some other materials that is widely used. Bidder proposes Ceramic glazed tile. Please confirm.	Noted.
346	Volume VI : Civil, Structural & Architectural Works	Ch 17	13	17.7.8	All inaccessible (where regular maintenance is not feasible) ventilators or windows of all buildings shall be provided with 6 mm thick Multiwall Polycarbonate plain or tinted sheet for preventing solar radiations.	Bidder request to reconsider this clause and 4 mm thick glass as per clause 17.7.10 shall be used instead of polycarbonate sheet. Aesthetically Polycarbonate may not be appealing over period of time.	Noted with slight amendment. 5mm thick glass shall be used.
347	Volume VI : Civil, Structural & Architectural Works	Ch 17	15	17.7.9	**Wall panelling** All the exposed structural steel i.e. wall, columns, bracings in STG control room and air-conditioning areas shall be provided with wooden wall panelling. The wall panel shall consist of teak wood batten grid of size 600x600 mm or as per site requirement. The size of batten shall be 2 inch x 1 inch. BWP grade plywood conforming to IS:710 shall be fixed on this grid. The Veneer of approved quality and shade shall be fixed on the plywood as exterior finish with suitable adhesive. The entire work shall be carried out to the satisfaction of engineer	Bidder understands that this Clause is contradicting with clause 17.7.7 where ceramic tiles are asked as dado till false ceiling. Bidder suggest to keep Ceramic tiles instead of wood cladding. Please confirm.	Noted

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
348	Volume VI : Civil, Structural & Architectural Works	Ch 17	15	17.7.11	Aluminium false ceiling system shall comprise of 84 mm wide 12.5 mm deep closed type plain panels of approved colour, roll formed out of 0.5 mm thick corrosion resistant aluminium alloy AA 5050	Bidder understands that the same type of false ceiling would be used in all the AC rooms for all Buildings.	Bid specifications to be followed.
349	Volume VI : Civil, Structural & Architectural Works	Ch 17	18	17.7.14.b	The tiles used for flooring & walls shall be 20 mm thick conforming to IS 4457. Tiles of approved quality and shade shall be used	Tile thickness is contradicting with clause 17.7.5.g where it is asked to use 25 mm thick tile. Owner to please clarify.	20mm thick tiles shall be used.
350	Volume VI : Civil, Structural & Architectural Works		15	17.7.10	For single glazed aluminium partitions and doors, Float glass or flat transparent sheet glass of minimum 6 mm thickness shall be used	Please confirm clear float glass or Toughened glass for partition and doors. As toughened glass is recommended for doors and partitions.	Toughened glass for partitions and doors to be used.
351	Volume VI : Civil, Structural & Architectural Works		21	17.7.15 Table 1	Service Building External wall Granular Finish Paint External	Granular Finish Specification in the tender document is missing. Owner is requested to furnish the same.	Bidder to submit the specification for owner's approval during detail engineering.
352	Volume II : General & Schedules Volume II : General & Schedules Volume II : General & Schedules Volume II : General & Schedules Volume VI : Civil, Structural & Architectural Works	Ch 1: Intent of Specification Ch 1: Intent of Specification Ch 1: Intent of Specification Ch 02: Scope of Work Ch 11: Buildings Description Ch 14: CHP	1 of 10 1 of 10 2 of 10 5 of 7 17 of 18 1 of 22	1.1 1.1 1.1 2.6 11.22 Ch 14 CHP	.....all electrical systems including switchyard, complete control and instrumentation and complete Civil, structural and Architectural works specified including Railways Siding/Tracks) e).....Coal Handling System including railway siding & railway tracks including track electrification, signaling etc., as per requirements of the Indian Railways, f).....railway siding and railway tracks, bridges and culverts for crossing of railways track inside plant area, landscaping and other miscellaneous buildings and structures. 64. Railway siding system and locomotive shed. RAILWAY SIDING SYSTEM Necessary statutory clearances/approval from Railways/Highway Authority / PWD shall be obtained by Contractor at his own cost.	Bidder understands that extent of railway siding and associated work is mainly governed by the requirement of respective zonal railway authority. Additionally, Feasibility report, Detail project report (DPR) and Engineering Scale Plan (ESP) of the proposed plant are not yet finalised from Indian Railway/RITES/RDSO. Those information's are not available in Tender documents also. In addition, some part of Railway track work is outside plant boundary. Hence, it is not possible to understand scope of Railway siding and associated works. Bidder requests owner to exclude overall railway siding and associated work from EPC bidder's scope of work. Owner to confirm the bidder understanding	Bid specifications to be followed..
353	Volume II	Ch 01 INTENT OF SPECIFICATION	3 of 10	1.1	Scope of the proposal Land for labour colony, **laydown area** for storage of equipment, fabrication yard or any other construction related activities is not available within the plant boundary. Bidder has to make his own arrangement to have these facilities outside plant boundary.	a. Bidder requests Owner to allow use of existing Greenbelt area within plant boundary for laydown purpose. Necessary permission from statutory authority (if required) to be taken by Owner prior to handover of land to contractor for project execution. b. In case requirement enlisted under "point-a" is not possible, Bidder requests Owner to allocated any nearby demarcated outside land for laydown purpose. c. Bidder requests Owner to indicate laydown area in plot plan.	Bid specifications to be followed.
STEAM TURBINE							
354	Volume III	Ch.2 : Steam Turbine and its Auxiliaries/ Section-1: Scope of Works	9 of 87	12.0 Other Miscellaneous Items	6) Chemical cleaning of all equipment and systems after their erection shall be in Bidder's scope.	Chemical cleaning for turbine and its components is done at shop before sending to site for assembly, hence any chemical cleaning is not envisaged after erection. Please confirm acceptance.	Noted
355	Volume III	Ch2: Steam Turbine and its Auxiliaries/ Section-2: Design Basis	29 of 87	1.18 d) Oil piping and fittings	(4) All the piping, fittings, valves, Main Oil Tank and complete strainer including body & element shall be of stainless steel. Further all the parts of lube oil coolers (tubular or plate type) which are coming in contact with lube oil shall be of stainless steel.	Material of Lube oil tank is carbon steel meeting the system requirement and is as per proven practice of the Bidder. Please confirm acceptance.	Clause 1.18 (d) (4) of Ch-2 at Sheet 29 of 87, Vol-III be read as under:- "Main Oil Tank shall be of Carbon Steel/Stainless steel and All the other piping, fittings, valves and complete strainer including body & element shall be of stainless steel".

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
770	Volume VI Civil, Structural & Architectural Works	Ch 07: Material	Sheet | 1 of 2	7.1	Complete hopper including vertical and conical portion of bunker in mill building shall be provided with lining of atleast 6mm thick SS plate grade SS 316L .	Bidder proposes to consider Lining to be provided in only conical portion of bunker in mill building. And Lining will be of 4 mm thickness of SS plate grade SS304. Customer is requested to kindly confirm acceptance to our request.	Bid specifications to be followed. Thickness of plate be considered is 5 mm.
771	Volume VI Civil, Structural & Architectural Works	Ch 09: Steel Structure	8 of 28	9.9	**PAINTING** Finish paint shall be as follows:- a. All steel structures shall receive two primer coats and two finish coats of painting. First coat of primer shall be given in shop after fabrication before dispatch to erection site after surface preparation as described below. The second coat of primer shall be applied after erection and final alignment of the erected structures. Two finish coats shall also be applied after erection.	There is discrepancy in information given for structural painting scheme, Customer is requested to kindly confirm which one to follow for structural items.	Refer attached table for painting as Attachent-18.
772	Volume VI Civil, Structural & Architectural Works	Ch 11: Buildings Description	Sheet | 7 of 18	11.3	Stainless steel liners of thickness 5.14mm shall be provided in bunkers for the conical / hyperbolic as well as vertical portion of Bunker. The grade of SS liner shall be SS316L.	Bidder proposes to consider lining to be provided in only conical portion of bunker in mill building. Lining will be of 4 mm thickness of SS plate grade SS304. Customer is requested to kindly confirm acceptance to our request.	Bid specifications to be followed. However, the liner thickness shall be read as 5 mm.
Steam Generator & Associate Auxiliaries - Quality							
773	Volume II / Section-M1	Chapter 11	02 of 103	M1-2.0 (I) b	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 would like to clarify that Bidder usually use forged material as per pressure part schedule and design instead of plate material for water separator. Customer is requested to kindly confirm acceptance to our request.	Bid specification to be followed, however the issue may be discussed during detailed Engineering.
774	Volume II / Section-M1	Chapter 11	02 of 103	M1-2.0 (I) g	All butt welds shall be subjected to 100% radiographic examination before stress relief.	Bidder proposes to use radiography/ PAUT/TOFD/Recordable UT Method for volumetric examination in line with Bidder's latest examination specification . TOFD/ PAUT also accepted by IBR. &ASME code case. Customer is requested to kindly confirm acceptance to our request.	Bid specification to be followed, however the issue may be discussed during detailed Engineering.
775	Volume II / Section-M1	Chapter 11	02 of 103	M1-2.0 (I) k	After stress relieving (SR) all welds, all butt welds shall be subjected to 100% radiography.	Bidder proposes to use radiography/ PAUT/TOFD/Recordable UT Method for volumetric examination in line with Bidder's latest examination specification . TOFD/ PAUT also accepted by IBR. &ASME code case. Customer is requested to kindly confirm acceptance to our request.	Bid specification to be followed, however the issue may be discussed during detailed Engineering.
776	Volume II / Section-M1	Chapter 11	03 of 103	M1-2.0 (II) b	All butt welds shall be subjected to RT examination. Also MPI after SR.	Bidder proposes to use radiography/ PAUT/TOFD/Recordable UT Method for volumetric examination in line with Bidder's latest examination specification . TOFD/ PAUT also accepted by IBR. &ASME code case. Customer is requested to kindly confirm acceptance to our request.	Bid specification to be followed, however the issue may be discussed during detailed Engineering.
777	Volume II / Section-M1	Chapter 11	03 of 103	M1-2.0 (II) 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. 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. Customer is requested to kindly confirm acceptance to our request.	Bid specification to be followed, however the issue may be discussed during detailed Engineering.
778	Volume II / Section-M1	Chapter 11	03 of 103	M1-2.0 (II) d & e	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 Non-load bearing welds shall be examined by MPI techniques after the toes of the welds have been ground smooth and stress relieved.	Bidder proposes to use MT or PT. Wherever MPI (MT) is not feasible / practically impossible due to size limitation, location and joint configuration to conduct MPI(MT), PT shall be performed. Customer is requested to kindly confirm acceptance to our request.	Bid specification to be followed, however the issue may be discussed during detailed Engineering.
779	Volume II / Section-M1	Chapter 11	03 of 103	M1-2.0 (III) c	All tubes/stubs/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's standard practice. Customer is requested to kindly confirm acceptance to our request.	Bid specification to be followed, however the issue may be discussed during detailed Engineering.

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
1020	Volume II General & Schedules	Ch11 : QAP (Civil)	Sheet | 7 of 80	7.01.00	7.01.00 All materials/components and equipment covered under the scope of work, shall be procured by the contractor for the purpose of the contract, after obtaining the written approval of the OWNER, which are to be manufactured at shop/ factory of the vendor/sub vendor shah be covered under a comprehensive quality assurance programme	Approval of QAPs shall be as per QA Programme i.e. only category I items QAPs shall be submitted to client for approval , Category II items shall be approved by Contractor & shall be submitted to client for information, For Category III items COC shall be submitted, For Category IBR QAP shall be approved by Contractor & submitted for clients information. IBR items will be accepted based on IBR certification. Witness of material based on approved QAP	Please follow Vol II, Ch-II Distribution Schedule
1021	Volume II General & Schedules	Ch11 : QAP (Civil)	Sheet | 7 of 80	7.01.00	The quality, plans shall be submitted on electronic form e.g. CD or E-.mail in addition to hard copy for review and approval of OWNER.	QAP will be submitted in soft copy electronic form instead of hard copies for easy handling at customer end and to save green environment.	Bid specifications to be followed.
1022	Volume II General & Schedules	Ch11 : QAP (Civil)	Sheet | 7 of 80	7.02.00	7.02.00 The contractor shall furnish copies of the reference documents/ plant standards/ acceptance norms/ tests and inspection procedure etc., as referred in quality plans. These quality plans and reference document/standards etc. will be subject to OWNER approval without which manufacturer shall not proceed. These approved documents shall form a part of the contract.	Approval of QAPs shall be as per QA Programme i.e. only category I items QAPs shall be submitted to client for approval , Category II items shall be approved by Contractor & shall be submitted to client for information, For Category III items COC shall be submitted, For Category IBR QAP shall be approved by Contractor & submitted for clients information. IBR items will be accepted based on IBR certification. Witness of material based on approved QAP	Bid specifications to be followed.
1023	Volume II General & Schedules	Ch11 : QAP (Civil)	Sheet | 7 of 80	7.02.00	7.04.00 Well before the start of the work, the contractor shall prepare and submit the Field Quality Plans (FQP) on the format No. QS-01-QAI-P-09/F2-R1, and obtain approval' of OWNER	Approval of FQAPs shall be as per QA Programme i.e. only category I items FQAPs shall be submitted to client for approval , Category II items shall be approved by Contractor & shall be submitted to client for information, For Category III items COC shall be submitted, For Category IBR FQAP shall be approved by Contractor & submitted for clients information. IBR items will be accepted based on IBR certification. Witness of material based on approved QAP	Bid specifications to be followed.
1024	Volume II General & Schedules		Sheet | 9 of 80	Sheet | 16 of 80	100% RT on Butt welds of tension flange (bottom flange) of crane girders. 10% RT weld length of each welder on butt welds, except for crane girders and coal bunker. 5% sopt RT on butt welds/at inaccessible locations UT on butt welds for coal bunker bins.	100% UT on web to flange joint of crane girder and 10% UT on other load bearing full penetration joint. 100% root PT will be performed on all full penetration butt welds. 25% of weld length of tension member of crane girder and 5 % of weld length with minimum 300 mm length at each location shall be subjected to PT	Bid specifications to be followed.
1025	Volume II General & Schedules	Ch11 : QAP (Civil)	Sheet | 16 of 80	Table . S.no. 4, S.No. ii	**Fillet Weld:** Macro-etch examination on production test coupons for main fillet welds Minimum one joint per built up beams, columns and crane girder etc.	Bidder would like to perform testing on material tube meeting referred material standard (Ex. ASME/ASTM). As per previous bidder experience referred standard has no requirement of Microscopic testing intern will not be able to accept the material based on any acceptance norm.	Noted.
1026	Volume II General & Schedules	Ch11 : QAP (Civil)	Sheet | 16 & 72 of 80	Table . S.no. 9, S.No. iv	Butt Weld: 100% RT on Butt welds of tension flange (bottom flange) of crane girders.	100% UT on web to flange joint of crane girder and 10% UT on other load bearing full penetration joint. 100% root PT will be performed on all full penetration butt welds. 25% of weld length of tension member of crane girder and 5 % of weld length with minimum 300 mm length at each location shall be subjected to PT	Bid specifications to be followed.
1027	Volume II General & Schedules	Ch11 : QAP (Civil)	Sheet | 16 & 72 of 80	Table . S.no. 8, S.No. iii	Mechanical testing of production test coupons	Qualified WPS and PQR with Welder Qualification (WPQ) performed as per reference standard. Qualified WPS/PQR/WPQ will be used in lieu of performing PTC As Qualified WPS/PQR/WPQ along with NDT will provide integrity and strength of the material	Noted.
1028	Volume II General & Schedules	Ch11 : QAP (Civil)	Sheet | 17 of 80	Table . S.no. 17, 18, 24, 25	S.No. 17, 24, : UT : Not Recommended S.No. 18, 25: RT - 5%	Bidder proposes to carryout UT/ PAUT/TOFD in lieu of RT	Bid specifications to be followed.

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
1085	Volume III Mechanical Works Volume VI CIVIL, STRUCTURAL & ARCHITECTUR	Ch: 19 Coal Handling System Ch 14: CHP	Sheet 16 of 120 Sheet 9 of 22	1.5.13 14.11	For underground / semi ground Junction Towers minimum **1200mm** wide RCC stair shall be provided. RCC staircase[**1200mm** wide] shall be provided for approach to Tail/ portion of Conveyor/ other equipment etc which are located in pit/ underground portion of Wagon tippler Complex/ Junction Towers with landings facility on all floors. The minimum width of stairs for MCC/Control room shall be **1200mm** wide and for reclaim hopper/underground TP's shall be **1000mm**.	Width of RCC staircase in case of reclaim hopper/underground TP's are contradictory in mentioned clauses. Bidder proposes to consider 1000mm wide staircase for reclaim hopper/underground TP's. Please confirm.	Consider 1200 mm wide staircase
1086	Volume VI CIVIL, STRUCTURAL & ARCHITECTUR	Ch 09:Steel Structures	Sheet 5 of 28	9.4	MINIMUM THICKNESS OF STRUCTURAL STEEL ELEMENTS a)Trusses, purlins, girts and bracing: 6mm b)Column & beams: 8mm	Bidder understands that specified limit of minimum thickness is applicable only for flange thickness in case of purlin, girts, columns & beam having I-section or Channel sections irrespective of web thickness. Please confirm.	Noted. (For rolled sections only)
1087	Volume II General & Schedules Volume VI CIVIL, STRUCTURAL & ARCHITECTUR	Ch 7: Painting Ch 9: Steel Structures	Sheet 12 of 15 Sheet 9 of 18	Table 9.9	PAINTING SCHEME FOR C2 AMD C3 ENVIRONMENT sl. No. 5: Coal Handling Plant - Total DFT 260µ Painting : **Coal handling** and ash handling structures : Total Dft (Micron) 225	Mentioned clauses are contradictory regarding **Coal handling Plant/Structure** painting DFT. Bidder request owner to confirm painting DFT as 260 or 225 micron for **Coal handling Plant/Structure**.	275 microns shall be considered (refer attached revised painting schedule attached as Attachment 18).
1088	Volume VI CIVIL, STRUCTURAL & ARCHITECTUR AL WORKS	Ch 14: CHP	Sheet 3 of 22	14.2	OVERHEAD / GROUND CONVEYOR GALLERIES AND TRESTLES Overhead conveyors shall be located in a suitably enclosed gallery of structural steel. The overhead gallery shall consist of two vertical latticed girders having rigid jointed portal frame at both ends. Cross beams at floor level supporting conveyor stringer beams shall be made of single rolled steel beam or single channel section (ISMB or ISMC) or plate girder.	Bidder proposes owner to allow use of hollow section in conveyor gallery roof truss & bracings.	Bid specifications to be followed.
1089	Volume VI CIVIL, STRUCTURAL & ARCHITECTUR AL WORKS	Ch 21: Water Supply, Drainage & Sanitation Ch 14: CHP	Sheet 4 of 13 Sheet 8 of 22	5.07.00 14.1	The sewerage system of foul water from toilet shall include layout and laying of sewers up to a sewage treatment plant together with all fittings and fixture and inclusive of ancillary works such as connections, installation of man-hole and inspection chambers. Toilet with potable water line facilities shall be provided in each of the following locations: Crusher House (Ground Floor) In all M. C. C./ Control Room building	Stage II CHP facilities are remotely located and scattered in overall plant layout. It is difficult to provide and connect sewerage network for all CHP facilities with common STP. Bidder proposes to provide separate package type STP for mentioned CHP facilities. Please confirm.	Shall be discussed during detailed engineering
1090	Volume VI CIVIL, STRUCTURAL & ARCHITECTUR AL WORKS	Ch 14: CHP	Sheet 10 of 22	14.13.1	For Conveyors in Main plant area 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 R.C.C drain, which will lead the discharge finally into trunk drain routed alongside the nearby road. For TP's in Main plant area, each down comer shall lead the water / coal slurry into the peripheral drains (Brick drains with steel gratings provided around the building) which will lead the water / coal slurry to RCC drain and finally into trunk drain routed alongside the nearby road.	Bidder understands that 3JT-4, 3JT-5, 3JT-6, 3JT-7, 3JT-8, 3JT-9, 3JT-10 and connecting conveyors (from 3JT to 4 to 3JT-10) coal slurry water shall be connected to nearby road side storm water drain/trunk drain. Same is not required to be routed to coal settling pond. Kindly confirm.	Shall be discussed during detailed engineering
1091	Volume VI CIVIL, STRUCTURAL & ARCHITECTUR AL WORKS	Ch 14: CHP Ch 10:RCC structures &	Sheet 13 of 22 Sheet 10 of	14.15 10.9	The grade slab shall consists of 230 mm thick rubble soling (63 mm downgraded hard stone aggregate as per IRC specification, watering and compaction to minimum of 95% Standard Proctor density, including filling the interstices of stone aggregates with sand), over well compacted earth, overlaid by 75 mm thick P. C. C. M-7.5 and **100 mm thick** R. C. C. of grade M-20 with minimum 8 mm dia bars placed at 200 mm C / C in either direction respectively. The paving construction shall be as per specifications for the grade slab at ground level. MINIMUM THICKNESS OF STRUCTURAL ELEMENTS Ground floor slab (non-suspended) : **150 mm** Paving : **150 mm**	Mentioned clauses are contradictory regarding thickness of grade slab and paving. Bidder proposes to follow clause 14.15 for thickness of grade slab and paving.	Follow Clause 14.15 with RCC thickness of 150 mm.

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
1092	Volume VI CIVIL, STRUCTURAL & ARCHITECTURAL WORKS	Ch 14:CHP Ch 07:Material Ch 09:Steel Structure	Sheet 13 of 22 Sheet 3 of 22 Sheet 1 of 2 Sheet 5 of 28	14.15 14.2 7.1 9.4	Chequered plates (used for platforms, walkways etc.) shall be minimum **6 mm** thick o/p or as indicated on drawings. The walkways shall be chequered plate construction of minimum 8mm thick with anti - skid arrangement. Chequered plate shall conform to IS: 3502 (latest) and minimum thickness of chequered plate for floorings, covers etc shall be **8 mm** O/P. MINIMUM THICKNESS OF STRUCTURAL STEEL ELEMENTS e) Chequered plates **8 mm** o/p & above	Mentioned clauses are contradictory regarding minimum thickness of chequered plate for CHP facilities. Bidder proposes to use minimum 6mm thk. o/p chequered plate as per cl. 14.15 for CHP facilities. Please confirm.	Follow Clause 14.15
1093	Volume VI CIVIL, STRUCTURAL & ARCHITECTURAL WORKS	Ch 14: CHP	Sh 11 of 22	14.13.2	All open drains shall have removable steel grating designed for loads as specified under loading clause. Minimum size of main bar of grating (Galvanised to 610 gm/m2) shall be 12 mm x 3mm and cross bars 6mm.	Bidder understands that removable grating on drains shall be provided only for coal slurry drains. Road side storm water drains is not required to be covered with grating. Please confirm.	Confirmed
1094	Volume VI CIVIL, STRUCTURAL & ARCHITECTURAL WORKS	Ch 14: CHP	Sheet 10 of 22	14.13.1	The drainage arrangements shall be so planned so as to ensure quick disposal of drainage water without stagnation and / or overflow.	Bidder requests Owner to provide Stage I road and storm water drain drawings.	Bidder to visit the site and collect the information.
1095	Volume VI CIVIL, STRUCTURAL & ARCHITECTURAL WORKS	Ch 10: RCC Structures & Foundations	Sheet 1 of 36	14.18 DESIGN CRITERIA	For all other under ground structurers not in contact with liquid on inside face may be designed as cracked sections with crack width limited to 0.1mm for both faces.	Bidder proposes to consider 0.1mm crack width of CHP underground structures (Wagon Tippler, Tunnel, TP, ERH) for exposed earth face only. Inside face shall be designed for 0.2mm crack width as per clause 35.3.2 IS 456:2000. Kindly confirm.	Bid specifications to be followed.
1096	Volume VI CIVIL, STRUCTURAL & ARCHITECTURAL WORKS	Ch 14: CHP	Sheet 5 of 22	14.2	Ground conveyor portals shall be provided at a maximum spacing of 3 m	Bidder propose Owner that spacing of ground conveyor portal shall be finalised based on design requirement which may greater than specified spacing limit of 3m. Please confirm.	Shall be discussed during detailed engineering
1097	Volume VII TENDER DRAWINGS	Drawing No.111-29-0200		Plot plan		Reclaim hopper 3RHC (underground structure) is located in close vicinity of existing Stage-I tunnel. Bidder request Owner to provide existing tunnel GA drawing.	Bidder to visit the site and collect the information.
1098	Volume VII TENDER DRAWINGS	Drawing No.111-29-0200		Plot plan		Conveyors between Stage-II transfer points 3JT-2, 3JT-3, 3JT-4 are crossing existing Stage I facilities. Bidder requests Owner to provide superstructure and substructure drawings of Stage-I crusher house, Coal conveyor BC3A, Coal conveyor BC4A/4B, Coal conveyor BC5A/5B, Transfer point JT3, JT4.	Bidder to visit the site and collect the information.
1099	Volume VII TENDER DRAWINGS	Drawing No.111-29-0200		Plot plan		Stage II CHP transfer point 3JT-6 & 3JT-7 are located adjacent to existing Silo pipe rack. Bidder requests Owner to provide superstructure and substructure drawing of existing Silo pipe rack.	Bidder to visit the site and collect the information.

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
1100	Volume VI CIVIL, STRUCTURAL & ARCHITECTURAL WORKS	Ch 14: CHP	Sheet 1 of 22 Sheet 7 of 22 Sheet 14 of 22	14.1 WAGON TIPPLER, RECLAIM HOPPER AND UNDERGROUND TUNNEL 14.5 STACKER RECLAIMER FOUNDATION 14.17 LOADING	The vertical and inclined portion of coal hopper, the beams in the wagon tippler hopper structure as shown in the **tender drawing** shall be provided with 50 mm thick guniting (shotcreting). Drains shall be routed on both sides of the foundation along the rail as shown in **Tender Drawing**. Roof-truss members are to be checked for supporting fire fighting pipes/ Service water pipes. Tentative locations and diameter for pipes are shown in **Tender Drawing**.	Mentioned Tender drawings in specified clauses are not available in Tender documents. Bidder request Owner to furnish mentioned Tender drawings e.g. Wagon tippler (including expansion joint details), stacker reclaimer and conveyor tender drawings	Shall be discussed during detailed engineering
1101	Vol-VI	Chapter-10(RCC Structures & Foundations)	3 of 36	Cl. No. 10.7	TG foundation shall be supported on vibration isolation system. The vibration isolation system shall consist of steel helical spring units and viscous dampers supporting the RCC deck which would support the machine. The spring units shall conform to DIN 2089 and DIN 2096. GERB or equivalent manufacturer's vibration isolation system shall be supplied for supporting TG foundation. Isolation efficiency of at least 90% shall be provided for the Turbo generator.	As per our OEM practice, Bidder proposes to support the Steam Turbine Equipment Top Deck on RC rigid frame foundation without any Vibration Isolation System and in compliance with the manufacturer's performance criterion. Bidder have supplied many machines in India & outside India without any VIS and the plants are in operation. Bidder have extensive experience of designing the Turbo-generator Foundations (Dynamic Analysis) for NTPC projects also without any VIS. Please confirm acceptance.	Confirmed.
1102	Vol-VI	Chapter-6 (General Requirement of Buildings & Structures)	12 of 12	Cl. No. 6.19	These shall include provision of continuous walkway (minimum 750 mm wide) along crane-girder at crane girder level on both sides of the building, comfortable approach to EOT crane.	Bidder requests Owner that the Minimum width of Walkway may be reduced suitably at Column Locations	Bid specifications to be followed.
1103	Vol-VI	Chapter-9 (Steel Structures)	2 of 28	Cl. No. 9.2	**The design of steel structures shall be done by Limit state method. Design shall be as per provision of IS:800 (latest) and other relevant IS standards.** Permissible stresses for different members shall be allowed to exceed up to 33.33% only under normal loads along with wind and seismic conditions. The members which are designed primarily to resist wind load such as bracing members ,no increase in permissible stress will be permitted. However, permissible stresses in bolts and welds shall be allowed to exceed up to 25 % only under wind and seismic conditions.	Bidder understands that the Design of Steel Structures shall be as per IS 800 : 2007 using Limit State Method of Design. All other clauses of Working Stress Method including increase in permissible stresses shall be superseded by this. **Owner to confirm the same.**	Bid specifications to be followed.
1104	Vol-VI	Chapter-19 (Surveying Works)	2 of 2	Cl. No. 19.3	**HYDROGRAPHIC SURVEY** Hydrographic survey need to be carried out when intake well / pump house or any other structure is located inside or close to a water body like river, lake etc. This is essentially to find out the topography of the river bed / lake bed through soundings taken from surface of water body usually by employing boats. The hydrographic survey should be carried with proper datum so that topographic details on land outside the water body and the area submerged are linked appropriately. For locating and finalising the details of drawal scheme, in addition to the topography of river bed / lake bed, data on maximum water level / minimum water level will be required. For drawal from river or streams, cross section of the river / stream at a few locations will be needed. For establishing the availability of required quantum of water throughout the year gauge discharge data / flow data for the river / stream has to collect. In case the stream / river is not gauged, the discharge availability has to be established by correlating the data available elsewhere or by correlating with rainfall data. A report on the studies conducted shall be submitted to the OWNER for his reference.	Hydrographic survey is not required since intake well/pump house is not included in Bidder's scope. Please confirm.	Confirmed.
1105	Vol-VI	Chapter-23 (CONCRETE ROAD AND RIGID PAVEMENT) Chapter-21 (Water Supply, Drainage &	2 of 2 1 of 13	Cl. No. 23.1 Cl. No. 21.2 e)	On either side of type I and type II roads and on one side of type III roads, open drains shall be provided. **Minimum clear width of drains shall be 600mm**. The drains shall be designed and built using RCC. However, for road crossings etc., pipe of class NP3 SHALL BE PROVIDED. For rail crossings, pipes conforming to railway loading standards shall be provided. If sufficient clearance cannot be provided between the top of the pipe and road top, the pipes shall be encased in RCC. **Minimum clear width of drain shall be 300 mm.**	There are discrepancies among the clauses. Bidder shall consider 300mm as minimum clear width of storm water drain as per Cl No. 21.2.e. Please confirm.	Minimum clear width shall be kept 450 mm.
1106	Vol-VI	Chapter-21(Water Supply, Drainage & Sanitation)	4 of 13	Cl. No. 21.4	RCC sump for collecting boiler blow down and ESP area floor washing for unit-I & II and ash silo washing is also covered under the scope of bidder.	Bidder understands the effluent waste to be handled is from existing unit. Bidder requests Owner to provide all the relevant information like type of waste, quality, Volume of water to be considered, Location of Pit & Discharge Point, etc.	To be decided during detailed engineering.

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
1107	Volume VI : Civil, Structural & Architectural Works Volume I Conditions of Contract: Commercial & General	Chapter-02(Scope of Work) Section V: ECC	7 of 7 24 of 62	Cl. No. 2.6, Point 85 (xiv.) 32.0	Successful bidder to erect a temporary curtain wall of approximately **10 M high** using structural steel members and sheet to isolate proposed construction site from existing plant. Length of curtain wall is approximately 400m. Although exact length to be verified by bidder during site visit before bidding. CONTRACTOR'S AREA LIMITS Necessary barricading of the existing facilities from the construction area, to avoid any interference. Necessary barricading of the existing facilities from the construction area, to avoid any interference. The height of barricading shall not be less than **30 feet.** For the construction, material handling and labour movement for the packages which are interlinked with the existing plant facilities, necessary permission be taken by the Contractor in order to avoid infringement with the operation/ Generation of the existing Units.	a. Bidder requests owner to specify location of temporary curtain wall. b. Bidder understands that owner would allow temporary low height (approx. 2.5m) curtain wall instead of 10 M high curtain wall (or 30 feet height barricading) using structural steel/other materials. Please confirm. c. Bidder understands that this temporary curtain walls/alternative partition can be taken away/dismantled by Bidder after completion of construction work. Please confirm.	Follow Specification Volume VI.
1108	Volume VI : Civil, Structural & Architectural Works	Chapter-2 (Scope of Work)	2 of 7	Cl. No. 2.6	19. Complete desilting of both compartments of existing Raw water reservoir inside plant boundary is in the scope of bidder.	Reservoir - De-siltation activity is part of regular O&M scope and should not be clubbed with EPC scope of work. Owner is requested to de-scope desilting activity from EPC Scope of work. Owner to kindly amend the existing clause accordingly.	Desilting of existing raw water reservoir stands deleted from the scope of bidder.
1109	Volume VI : Civil, Structural & Architectural Works	Chapter-2 (Scope of Work)	2 of 7	Cl. No. 2.6	19. Complete desilting of both compartments of existing Raw water reservoir inside plant boundary is in the scope of bidder.	a) Bidder understands that repairing of reservoir lining (Precast tiles, concrete slab, HDPE liner, etc.) or embankment after completion of de-siltation work, is not included in Bidder's scope. Please confirm. b) In case after de-siltation work, Owner insist EPC contractor to repair the reservoir lining (Precast tiles, concrete slab, HDPE liner, etc.) or embankment then the same will be considered as Change Order and its financial implication shall be mutually discussed and finalized. Please confirm.	Desilting including repairing of existing raw water reservoir stands deleted from the scope of bidder.
1110	Volume III Volume III	CHAPTER – 33 CHAPTER – 3	2 of 11 6 of 19	33.1.2 e) 3.4.21	e) Fuel storage tanks, hydrogen storage complex, etc., shall be designed in accordance with statutory agency guidelines. i) 200 Hydrogen gas cylinders iii)100 Carbon Dioxide Cylinders	Owner to note that requirement of storage shed for H2 and CO2 cylinder is not mentioned in Tender Specification and Plot Plan. Owner to confirm whether storage shed for the envisaged H2 and CO2 cylinders has to be provided by Bidder. If storage shed for H2 and CO2 cylinders has to be provided by bidder, Owner to please furnish the following to keep all bidders at par : 1. Minimum dimensions of such storage shed 2. Type of storage shed (Open/Semi covered/Covered) 3. Location of storage shed 4. Type of shed (RCC/Structure)	Storage shed is required. The shed shall be suitable to store all the cylinders specified in the tender. Type of storage shed shall be semi covered in steel construction. Location of the shed shall be decided during detailed engineering
1111	Volume VI Civil, Structural & Architectural Works	CHAPTER – 2 SCOPE OF WORK	7 of 7	2.6	85. (xiv.) All existing roads of the plants to be used by successful bidder for transportation of material during construction period shall be rebuild after finish of construction activities at site.	a. Bidder requests Owner to specify separate approach road which can be used exclusively for new plant construction activities. b. Bidder understands that existing roads of the plants shall not to be used extensively during proposed plant construction activities. Hence, rebuilding of existing road shall be excluded from EPC Bidder's scope of work. Please confirm.	Bid specifications to be followed.
1112	Volume I Conditions of Contract: Commercial & General	Section V: ECC	16 of 62	27.5	SPACE The clearance required from Forest Department/any other department shall be to Contractor's account. The Owner shall provide the necessary assistance, if required.	There are discrepancies among the clauses. As per ANNEXURE- G (GCC) , taking Statutory approvals for Forest Clearance is Owner's Responsibility. Hence, Bidder understands that taking clearance Forest Department/any other department shall **not** be to Contractor's account. Please confirm.	Taking statutory approvals from Forest department shall be in Bidder's scope. HPGCL shall facilitate to obtain the clearance for tree cutting
1113	Volume VI Civil, Structural & Architectural Works	Ch 07: Material	1 of 2	7.2	**CEMENT** Ordinary Portland cement 43/53 grade conforming to IS: 8112 and, IS: 12269 shall be used for all structural work and special structure and for foundation. Portland pozzolana cement conforming to (IS: 1489, part-1) shall be used for plastering work, fill concrete and PCC. Sulphate resistant cement, conforming to IS-12330, shall be used in concrete mixes when concrete is exposed to aggressive soil/water conditions. Cement manufacturer shall be approved by the Owner.	Bidder requests Owner to allow use of Fly Ash Cement except for machine foundation, chimney and NDCT. This is inline with specifications followed in NTPC projects. Please confirm	Bid specifications to be followed.

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
1150	Volume -III / Section - 1	Chapter 30	12 of 93	1.9	Gypsum shed of 15 days storage shall be considered. Shed shall be provided with side protection. Adequate space inside shed for truck movement shall be provided.	Bidder understands that the functional requirement of side protection is to provide shelter to Gypsum heap inside the gypsum storage shed from wind & dust from outside of the storage shed. Kindly confirm.	Follow specification.
1151	Volume -III / Section - 9	Chapter 30	75 of 93	1.2	Vehicle crush barrier shall be provided for all the structural columns inside the storage shed.	With regards to crash barrier for structural columns inside the storage shed kindly confirm the following; (1) Bidder understands the crash barriers are column protectors meant to safe-guard the structural column in case of any accidental oversight by vehicle operator. (2) Height upto which the crash barriers / column protectors are required. (3) Type (including material of construction) of column protector / crash barriers required for gypsum storage shed considering the columns along with its crash barriers / column protector will be covered inside the gypsum heap.	1) Crash Barriers are for protection of columns in the shed to protect them during movement of dozers/ pay loaders. 2) 2 M high crash barriers shall be provided. 3) Crash barriers of standard desiegn shall be provided.
1152	Volume -III / Section - 9	Chapter 30	75 of 93	1.2	4.0 M high RCC wall for stacking gypsum considering 15 days gypsum storage shall be provided.	There is a contradiction with regards to the number of days of storage capacity for gypsum. Clause 2.6 (sr no. 57) in Volume VI/ Chapter 02 on sheet 4 of 7 states that "**7 days storage capacity fully covered gypsum storage shed and RCC approach road to gypsum storage shed.**" Kindly confirm the storage capacity (in days) for Gypsum.	15 days gypsum storage shall be considered
1153	Volume -VI	Chapter 11	14 of 18	11.19.6	**Limestone unloading shed** Limestone storage shed shall be framed structure of structural steel work with permanently colour coated profiled steel sheet side cladding. The foundation & grade slab shall be RCC. Plinth protection shall be given with necessary garland drain. Adequate open paved area shall be provided for parking of 20 (Twenty) number of limestone trucks.	Bidder understands limestone unloading shed is not applicable to the scope of the work. As mentioned in the FLOW DIAGRAM - LIMESTONE HANDLING SYSTEM (Drawing 111-13-5213), only Limestone storage shed shall be considered by bidder. The structural configuration of limestone storage shed shall be as per clause 11.9.1 of Volume-VI/Chapter-11 on page 14 of 18. Clause 11.9.6 shall be omitted however, Adequate open paved area for parking of 20 (Twenty) number of limestone trucks shall be provided. Kindly confirm.	Confirmed. However Limestone storage shed shall be considered by bidder. The structural configuration of limestone storage shed shall be as per clause 11.9.6 of Volume-VI/Chapter-11 on page 14 of 18.
1154	Volume -VI	Chapter 11	15 of 18	11.21.1	**Gypsum Processing Building** The Gypsum Processing building shall be twin storied RCC building. The ground floor shall comprise of gypsum dumping space and shall be open on sides. The upper floor shall house the gypsum belt conveyor. The building shall be covered with brick cladding on the sides to match the existing buildings in the plant.	In order to explore the optimization of layout for limestone and gypsum handling area for FGD, Bidder request to consider combining limestone mill building with Gypsum dewatering building. The combined building shall meet all the functional requirements as described for individual buildings in the technical specification. Kindly Confirm.	Noted.
1155	Volume -VI	Chapter 11	15 of 18	11.21.2	**Gypsum storage shed** The storage shed shall be of composite construction with structural steel roof truss supported on RC columns. The shed shall be provided with permanently	As represented in the Plot Plan (drawing 111-29-0200) the gypsum storage shed and limestone storage shed are combined with common column between the two sheds. Bidder shall consider the same combined shed philosophy for limestone and gypsum storage shed. There will be internal wall between the limestone storage shed and gypsum storage shed.	Confirmed
1156	Volume VI	Chapter 05	2 of 7	5.3 (b)	Field investigation shall be done in detail. **At least 4 boreholes at each structure/building location like TG bay, Boiler house, ESP, A-row, B-row, C&D - row columns**, **minimum 5 nos each in Switchyard Area**, **Transformer yard area and fuel oil handling area**, **minimum 3 nos each in Chimney area and Ash silos area** and **minimum 2 nos each at all other building/area other than those mentioned above**, at least 1 borehole at every 400 m c/c along pipe corridors, ash water re-circulation pipe corridor..... and one borehole at each pair of ID, FD and PA fan locations and one bore hole at each TP, ...Main plant etc shall be carried out. One borehole shall be carried out at every crossing and bends. Minimum one no cyclic plate load test or seismic refraction test .....test under geo-technical investigation scheme. Adequate number .....sub-strata conditions as approved by the Owner before the execution of work. The depth of boreholes in main plant area shall generally be atleast 20-25 m or 5m in rock with RQD> 50%. Depth of borehole shall be atleast 5 m along pipe corridor and 20m at crossing location.	There is a discrepancy in the number of boreholes and depth of boreholes in the two specified clauses. As can be seen from the description of strata encountered at this location in the geotechnical report provided with tender, there is no rock encountered, so drilling in rock is out of question. Bidder shall follow the table provided in clause 5.5 to follow number of boreholes and depth of boreholes, please confirm.	Confirmed
1157	Volume VI	Chapter 05	5 of 7	5.5			
1158	Volume VI	Chapter 05	2 of 7	5.3 (c)	Incase, rock is met at the proposed founding level, bore hole shall be extended up to 10m depth in the rock.	As can be seen from the description of strata encountered at this location in the geotechnical report provided with tender, there is no rock encountered, so drilling in rock is out of question. Hence, this clause is not applicable, please confirm.	Bid specifications to be followed.
1159	Volume VI	Chapter 18	1 of 10	18.3 (d)	The uplift and lateral load capacities shall be restricted to 20% and 5% respectively of the allowable load capacity in vertical compression.	Bidder requests the following : The uplift and lateral load capacities shall be restricted to 35% and 5% respectively of the allowable load capacity in vertical compression.	Bid specifications to be followed.

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1160	Volume VI	Chapter 18	1 of 10	18.3 (f)	Piles shall be designed for a limiting settlement of a single pile under vertical design load of 8 mm at the head and lateral deflection as 5mm.	Bidder requests the following with reference to IS 2911 - Part 4 : Piles shall be designed for a limiting settlement of a single pile under vertical design load of 12 mm (For piles up to 600 mm dia) and 18 mm or 2% of pile diameter whichever is less (For Piles of more than 600 mm dia) as per IS:2911 (Part IV) and lateral deflection as 5mm. Kindly Confirm.	Confirmed
1161	Volume VI	Chapter 18	5 of 10	18.7 (b)	i. The liquid limit of bentonite when tested in accordance with IS:2720 (Part V) shall be more than 300 percent and less than 450 percent.	As per latest code IS : 2911 Part 1 - Section 2, The liquid limit of bentonite when tested in accordance with IS 2720 (Part 5) shall be 400% or more, Please confirm.	Confirmed
1162	Volume VI	Chapter 18	5 of 10	18.7 (b)	ii. The sand content of the bentonite powder shall not be greater than 7 percent.	As per latest code IS : 2911 Part 1 - Section 2, This requirement is not there, Please confirm.	Confirmed
1163	Volume VI	Chapter 18	5 of 10	18.7 (b)	iv. The marsh velocity when tested by a Marsh cone should be about 37 seconds.	As per latest code IS : 2911 Part 1 - Section 2, The marsh viscosity of bentonite suspension when tested by a marsh cone shall be between 30 to 60 stoke; in special cases it may be allowed up to 90 s, please confirm.	Confirmed
1164	Volume VI	Chapter 18	5 of 10	18.7 (b)	v. The differential free swell shall be more than 540 percent.	As per latest code IS : 2911 Part 1 - Section 2, This requirement is not there, Please confirm.	Confirmed
1165	Volume VI	Chapter 18	5 of 10	18.7 (c)	The minimum diameter of links and helical reinforcement shall be 6 mm spaced at 150 mm and not more than 300 mm.	As per latest code IS : 2911 Part 1 - Section 2, The minimum diameter of the links or spirals shall be 8 mm and the spacing of the links or spirals shall be not less than 150 mm, please confirm.	Confirmed
1166	Volume VI	Chapter 18	5 of 10	18.7 (c)	Minimum cover to main reinforcement in the pile shall be 75mm.	As per latest code IS : 2911 Part 1 - Section 2, Clear cover to all main reinforcement in pile shaft shall be not less than 50 mm, please confirm.	Confirmed
1167	Volume VI	Chapter 18	6 of 10	18.7 (d)	Concrete in piles shall be of design- mix with minimum grade M25 with minimum cement of 400 kg/cum water cement ratio within 0.45 to 0.55 using super plasticized Sikament 170 or equivalent. Generally the slump of the concrete shall be within the range 100 to 150 mm.	Latest IS code 2911 : Part 1 - section 2 shall be followed, please confirm.	Bid specifications to be followed.
1168	Volume VI	Chapter 18	7 of 10	18.8 (a)	**a) SOIL** Standard penetration test(SPT) in Pile Bore The contractor shall carry out SPT in pile bore. The depth of SPT shall be at 1 meter interval, starting from 3.0mt prior to termination levels, in the piles selected by the engineer. SPT rods shall be lowered through 100mm dia casing pipes. Casing pipes shall extend upto 150mm above SPT Depth.For conducting the test, the bottom of bore hole shall be cleaned properly, and the the spoon shall be properly and centrally seated in position in bore hole.it is necessary to ensure that drive hammer is of specified weight and has a specified free fall as/IS-2131. It shall be ensured that energy of falling weight is not reduced by friction between drive weight and guides or between rope and winch drum. Only BIS recommended standard connecting rods shall be used for the test. The pile shall be terminated if three consecutive SPT values are equivalent or higher than designed SPT values.	a) SOIL The termination of pile shall be decided based on the SPT values and theoretical design capacity with reference to the soil properties in the nearest borehole. In addition to the above, the design pile capacity for working piles shall be ensured by conducting routine vertical load tests on selected piles as per technical specification. Kindly confirm.	Bid specifications to be followed.
1169	Volume VI	Chapter 18	7 of 10	18.9 (a)	9 number of trial piles shall be tested for each dia and rated capacity of the pile. Out of the nine (9) nos. of piles to be tested for three (3) nos. of each dia and rated capacity shall be tested for vertical load, three (3) nos. for lateral load and three (3) nos. for uplift load.	**6** number of trial piles shall be tested for each dia and rated capacity of the pile. Out of the **six (6)** nos. of piles to be tested, **two (2)** nos. of each dia and rated capacity shall be tested for vertical load, **two (2)** nos. for lateral load and **two (2)** nos. for uplift load. Please confirm.	Bid specifications to be followed.
1170	Volume VI	Chapter 18	8 of 10	18.9 (c)	The safe load on pile shall be the least of the following : i Two third of the final load at which the total settlement attains the value of 12 mm. ii Two third of the final load at which the net settlement attains a value of 6 mm. iii 50 per cent of the final load at which the total settlement equals onetenth of the pile diameter.	The latest revision of IS 2911 - Part 4 shall be followed to estimate the safe load from load test, please confirm.	Confirmed

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
1171	Volume VI	Chapter 18	8 of 10	18.9 (f)	These tests shall be carried out on working piles upto one and half times the design load and the maximum settlement of test loading in position being not exceeding 12 mm as per IS:2911 (Part IV).	These tests shall be carried out on working piles upto one and half times the design load and the maximum settlement of test loading in position being not exceeding 12 mm (For piles up to 600 mm dia) and 18 mm or 2% of pile diameter whichever is less (For Piles of more than 600 mm dia) as per IS:2911 (Part IV). Please confirm.	Confirmed
1172	Volume VI	Chapter 18	7 of 10	18.9 (a)	Number of routine tests to be conducted on work piles for each diameter and rated capacity shall be equal to one and half (1.5) percent of the total number of piles used in the work for vertical load tests as well as lateral load tests subject to the minimum of one.	Number of routine tests to be conducted on work piles for each diameter and rated capacity shall be equal to **zero point five (0.5)** percent of the total number of piles used in the work for vertical load tests as well as lateral load tests subject to the minimum of one. Kindly confirm.	Confirmed
1173	Volume VI	Chapter 18	9 of 10	18.9 (f)	The routine test on piles shall be conducted by direct loading method. The test load on initial test piles shall be applied by means of reaction from anchor piles / rock anchors alone or combination of anchor piles / rock anchors and kentledge.	High strain dynamic load test shall be carried out for routine load testing of working piles. However, at least two numbers of static routine vertical load tests shall be carried out on pile on which high strain dynamic load test has already been carried out for establishing the correlation between the two method of tests. Kindly confirm.	Bid specifications to be followed.
1174	---	---	---	---	General Query	Bidder requests to provide the foundation drawings of existing structures of 2x300 MW plant and already constructed CHP area for reference.	Not available.
NDCT							
1175	Volume III - Mechanical Works	CH 18: NDCT	3 of 23	18.2.8	For arriving at the air properties such as enthalpy, density etc., no correction for altitude shall be considered. All properties shall be taken from the data provided on CTI or BS code corresponding to sea level	If the tower is designed with 0 MSL, design of tower shall be different & may have effect on performance of tower. Therefore, Bidder recommends that actual MSL as specified in tender shall be used to arrive the properties of air.	Bid specifications to be followed.
1176	Volume III - Mechanical Works	CH 18: NDCT	3 of 23	18.2.8	Justification for the outlet air temperature. This could be in the form of operating experience on existing tower or laboratory test on actual fill shape, material and configuration as offered. In the case of laboratory test, Bidder shall indicate correction / scaling factor applied to predict performance of full size tower under field conditions.	Outlet temperature of air shall be determined by General Heat Balance equation used for cooling tower design. L x Cp x R + Ev x CWT = G x (H2 – H1)	Bid specifications to be followed.
1177	Volume III - Mechanical Works	CH 18: NDCT	5 of 23 11 of 23	18.3.1 18.4.5.3	- Staircases with handrails and posts, platforms, FRP access doors with all accessories, internal walkways and walkways at CT top with stainless steel pipe handrails and posts, all necessary stainless steel inserts in the concrete etc., for satisfactory maintenance of the Cooling Tower as detailed in civil tender specification. - Whether specifically mentioned in the Data Sheet or not, steel components and fittings used in walkways, handrails shall be hot dip galvanized after fabrication followed by one coat of etching primer and two coats of bituminous paint.	Request to kindly clarify the handrail material (Stainless steel or CS with galvanizing)	Handrails in cooling tower shall be stainless steel in line with Clause 18.3.1 of Chapter-18 at Sheet 5 of 23, Volume III.
1178	Volume III - Mechanical Works	CH 18: NDCT	5 of 23	18.3.1	The drift eliminators shall limit the drift loss to 0.05% of total water in circulation. The air pressure drop across the drift eliminators shall be kept to a minimum by suitable design. The water collected in the drift eliminators shall be returned to the Tower basin and it shall not mix with the discharge air system. The bidder shall demonstrate the efficiency of the drift eliminators by means of tests as per BS 4485 Part 2.	Kindly confirm whether certification of drift eliminator for drift loss by CTI approved laboratory / supplier is acceptable.	Bid specifications to be followed.
1179	Volume III - Mechanical Works	CH 18: NDCT	8 of 23	18.4.2.2	The hot water distribution shall be suitable for handling an additional 20% flow over the design circulating water flow. The hot water distribution shall be done by two headers, each covering half of cooling tower area so that it can be operated at 50% capacity	Please note that hydraulic design of cooling tower shall be designed with 20% margin & thermal design of cooling tower will be as per design flow for the tower.	Noted.
1180	Volume III - Mechanical Works	CH 18: NDCT	10 of 23	18.4.3.5	Type Test of PVC/PP Material In addition to the routine tests specified in this Technical specifications, ultra-violet exposure for 500 hours on the PVC/PP material shall be carried out for this contract once as per ASTM-G155, Test Method 3 and Impact resistance test before and after UV exposure shall be conducted as per ASTM D-256. The above type test shall be carried out by the Contractor at reputed third-party laboratory. Offered fills shall be tested by an independent reputed laboratory approved by Owner to validate thermal characteristic and pressure drop correlation of the offered fill. In case the bidder has their own established test facility where such tests have been conducted for other reputed clients in the past, the same is also acceptable subject to owner's approval. Test bed shall have fill height same as the offered fill height. During testing water and air loading as well as the air velocities shall be maintained same as the duty conditions and in the range of performance guarantee conditions for which tower is designed.	Bidder understands that travel, lodging and boarding expenses for Employer/Employer's representative for witnessing fill test in India or abroad shall not be borne by bidder. Please confirm.	Shall be dealt as relevant applicable Clauses of the contract.
1181	Volume III - Mechanical Works	CH 18: NDCT	11 of 23	18.4.6.1	The hot water distribution system, basin and cold water outlet channel of the cooling tower shall be designed by considering a minimum of 20% margin over the design cooling tower flow.	Please note that hydraulic design of cooling tower shall be designed with 20% margin & thermal design of cooling tower will be as per design flow for the tower.	Noted

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
1182	Volume III - Mechanical Works	CH 18: NDCT	12 of 23	18.4.8	Screens Quantity - 6 Nos. (2 Nos. per Tower + 2 Nos. common standby).	Screens shall be as per below: 2 No. per tower + 1 Stand by = Total 3 Nos.	Clause 18.4.8 (i) of Ch-18 at Sheet 12 of 23 in Vol-III be read as "Quantity - 2 Nos. (1 No. per partition)"
1183	Volume III - Mechanical Works	CH 18: NDCT	15 of 23	18.5.3.4(d) - iv	Calibration of instruments to be used in the test shall be carried out by an approved independent agency. Calibration of instruments shall be carried out previous to, but not more than six months before the test. The calibration certificate of the instruments shall be valid for the period of test.	As per CTI ATC-105, calibration of instruments shall be as follow:- Temperature sensors - 3 months prior to use Water flow measurement device - 3 years Electric power and wind measuring devices - Yearly. Kindly consider calibration as per CTI ATC-105.	Bid specifications to be followed.
1184	Volume III - Mechanical Works	CH 18: NDCT	20 of 23	18.7	If the cold water temperature is less than or equal to predicted cold water temperature as described above, the Tower is deemed to have met the guarantee	Since the test will be conducted as per CTI ATC-105, the acceptance criteria shall be the tower capability calculated as given in CTI. If the tower capability is found to be equal to or more than 100% then the tower is acceptable. Please Confirm.	Noted.
Railway Siding							
1185					Plot Plan	Bidder requests Owner to furnish revised location of wagon tippler as the present location is not feasible considering shorter length available at outhaul.	Bidder to propose the location in their proposal as per latest railway authorities/RDSO guidelines
1186	Volume VI CIVIL, STRUCTURAL & ARCHITECTURAL WORKS	Ch 11: Buildings Description	17 of 18	11.23.4	Rail size - As approved by Indian Railway	a) New railway marshalling yard needs to be fitted with R-260 rails as per latest RDSO guidelines. Bidder understands that new marshalling yard to be constructed with R-260 rails even though 52 kg rails have been installed for existing railway marshalling yard. Please confirm. b) The existing yard is fitted with 52 kg rails which are obsolete as per Railway board policy. Bidder understands that replacement of 52 kg rails with R-260 rails for existing railway marshalling yard shall be Owner's scope. Please confirm.	a) New railway marshalling yard must be fitted with rails as per latest railway authorities/RDSO guidelines b) Confirmed **Complete electrification of marshalling yard as per latest RDSO is also in bidder's scope**
1187	Volume VI CIVIL, STRUCTURAL & ARCHITECTURAL WORKS	Ch 11: Buildings Description	18 of 18	11.24	Comprehensive study for the marshalling yard shall be done by the EPC contractor through approved agencies like RITES….....	Existing railway yard is manual operated system. Bidder understands that no work is envisaged in existing Railway yard with respect to modification from manual operated system to Signal interlocking and electrified operated system. Please confirm.	Confirmed
1188	Volume VI CIVIL, STRUCTURAL & ARCHITECTURAL WORKS	Ch 11: Buildings Description	18 of 18	11.24	Comprehensive study for the marshalling yard shall be done by the EPC contractor through approved agencies like RITES….....	It is not specified in Tender document, that whether the new yard is to be interlocked or kept manual operation system. Railway authorities may not approve manual operating system and therefore signal interlocking should be included in Railway siding scope of work. In order to keep all Bidders at par, Owner to furnish suitable amendment for the same.	Marshalling yard including interlocking system as per latest railway authorities/RDSO guidelines shall be in the scope of bidder.
1189	Volume VI CIVIL, STRUCTURAL & ARCHITECTURAL WORKS	Ch 11: Buildings Description	18 of 18	11.24	Comprehensive study for the marshalling yard shall be done by the EPC contractor through approved agencies like RITES….....	As on date, Indian railway routes are totally electrified as per Railway Board guidelines and therefore all the new Railway yards should be electrified. Hence Bidder proposes that **existing railway marshalling yard shall also be electrified.** Owner to furnish suitable amendment for the same.	New marshalling yard system shall be completely electrified. Further, bidder to note that bye-pass railway line shall be provided for each wagon tippler. Electrification of existing railway marshalling yard is not in the scope of bidder.
1190	Volume VI CIVIL, STRUCTURAL & ARCHITECTURAL WORKS Volume III Mechanical Works	Ch 11: Buildings Description Ch:19 Coal Handling System	18 of 18 8 of 120	11.24 1.1.8	Comprehensive study for the marshalling yard shall be done by the EPC contractor through approved agencies like RITES…..... 56. Diesel Locomotives Lot-4 For movement of coal railway wagons	a) As per latest Railway board policy, the new proposal or modification, approvals are being granted as EOL (Engine on load) policy, where engine enters in the complex and keep the rack attached with engine for 6 hours for un-loading/ loading. Therefore no private engine is required. b) Also as the plant will be electrified, only electric locomotives will be required. Other type of locomotives will not be applicable. Please confirm	To be decided during detailed engineering.
1191					Railway siding work	If plant area is to be signal interlocked, then Owner is requested to provide location of S&T room, Goomties etc. as per Railways requirements.	Bidder to provide as per latest railway authorities/RDSO guidelines

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
1353	Volume III Mechanical Works	CHAPTER - 25 / AIR CONDITIONING & VENTILATION SYSTEM Ch 25 : Air Conditioning & Ventilation System	35 of 36 15 of 36	Cl. No. 25.8 25.7.3	e) D-X Air Conditioning System - The control and interlocks described above for water chilling plants are applicable for this system also. - Further the compressor starting/ running shall be interlocked with the flow switches in condenser water circuit as well as with AHU motors. - The standby condenser water pumps, fresh air fan & standby AHU shall be started automatically when the working equipment are stopped/ tripped. Auto/ Manual selector switches and working/ standby selector switches for the pumps, fresh air fans and AHU shall be provided in the panel Condensing Unit (Water cooled D-X Type): Note: up to 50 TR capacity chilling/ condensing unit can be of air/water cooled type. However beyond this capacity unit shall be water cooled type only.	As per referred clause 25.7.3, Bidder understands that air cooled condensing units are also acceptable with DX-AHU upto 50TR capacity. Thus, the referred clause 25.8 is applicable only when water cooled condensing units are provided as per capacity. Hence, Bidder understands that the referred cluse 25.8 is not applicable for air cooled condensing units. Please confirm Bidder's understanding.	Confirmed
1354	Volume III Mechanical Works	CHAPTER - 25 / AIR CONDITIONING & VENTILATION SYSTEM	09 of 36	Cl. No. 25.5.2.1	The areas to be ventilated by Evaporative Cooling system are as follows: a) All floors and area of turbine hall (TG building) other than the areas which are air conditioned. b) Switchgear rooms and cable gallery areas of turbine building. c) Any other evaporative area where equipment heat load is high and requires ventilation of evaporative cooling spaces.	Battery Rooms, toilets, AC chiller plant room, H2 and CO2 cylinder rooms, etc coming in TG building are area which are provided with mechanical dry ventilation system in line with clause 25.5.2.3 and all past project references. Please confirm.	Confirmed.
1355	Volume III Mechanical Works	CHAPTER - 25 / AIR CONDITIONING & VENTILATION SYSTEM	09 of 36	Cl. No. 25.5.2.1	The areas to be ventilated by Evaporative Cooling system are as follows: a) All floors and area of turbine hall (TG building) other than the areas which are air conditioned. b) Switchgear rooms and cable gallery areas of turbine building. c) Any other evaporative area where equipment heat load is high and requires ventilation of evaporative cooling spaces.	Bidder understands that Effective height of operating floor at 17.0mt in Turbine building is considered upto 4.5mt only from FFL for sizing Air washer unit capacity as followed in all other projects. Please confirm Bidder's understanding.	Effective height of operating floor at 17.0mt in Turbine building shall be 06 mtr. From FFL.
Hydrogen generation Plant							
1356	Volume III Volume III	CHAPTER – 33 CHAPTER – 3	2 of 11 6 of 19	33.1.2 e) 3.4.21	e) Fuel storage tanks, hydrogen storage complex, etc., shall be designed in accordance with statutory agency guidelines. i) 200 Hydrogen gas cylinders iii)100 Carbon Dioxide Cylinders	Owner to note that requirement of storage shed for H2 and CO2 cylinder is not mentioned in Tender Specification and Plot Plan. Owner to confirm whether storage shed for the envisaged H2 and CO2 cylinders has to be provided by Bidder. If storage shed for H2 and CO2 cylinders has to be provided by bidder, Owner to please furnish the following to keep all Bidders at par : 1. Minimum dimensions of such storage shed 2. Type of storage shed (Open/Semi covered/Covered) 3. Location of storage shed 4. Type of shed (RCC/Structure)	Hydrogen Generation Plant indicated in Chapter-3, Vol-III stands deleted. Associated activities like H2 Generation plant building, Air-conditioning for H2 Generation control room etc. also stands deleted. However H2 and CO2 cylinders storage shed shall be in bidders scope as described else where.
Civil & Structural							
1357	Volume VI Civil, Structural & Architectural Works	Ch 20: Excavation & Filling	4 of 7	Clause 20.6 (e)	Filling in disposal area: Surplus material from excavation which is not required for backfilling shall be disposed of in designated disposal areas within the lead for disposal as 5 km crow fly distance from the site. The spoils shall not be dumped haphazardly but should be spread in layers approximately 250 mm thick when loose and compacted with the help of compacting equipment. In wide areas, rollers shall be employed and compaction done to the satisfaction of the Engineer at the optimum moisture content which shall be checked and controlled by the contractor.	Bidder requests owner to suggest suitable land for disposal of surplus earth as shall be excavated from various facilities e.g. - Rain water harvesting pond - Raw water reservoir (Optional) - Other excavated surplus earth	Shall be decided during detailed engineering.
1358	Volume VI : Civil, Structural & Architectural Works	Chapter-17(Architectural Works)	5 of 21	Cl. No. 17.6.4.1	Trees of different category and height shall be planted as per prior approval from Owner. In addition to above, Bidder has to develop Green belt by planting around 80,000 of trees in approximate 32 hectares of land ,location as approved by Engineer in charge. Green belt area as mentioned above is approximate. Actual area to be decided as/MoEF&CC guidelines.	Greenbelt development are usually in Owner's scope as extensive Plantation and its periodic maintenance can be taken up after completion of facilities. Also, there are specialized contractors approved by Forest department who can directly take up green belt development work. This is a practice followed in all EPC tenders floated by central and state utilities. In view of the above, Bidder requests Owner to exclude overall green belt development work from EPC bidder's scope of work. Please confirm.	Green belt development as per tender specifications is in the scope of bidder. Maintenance of green belt till commissioning of plant or minimum 1 year after completion of Green belt development whichever is later is also in the scope of bidder. Green belt development shall be done by specialized contractor approved by forest department and HPGCL.

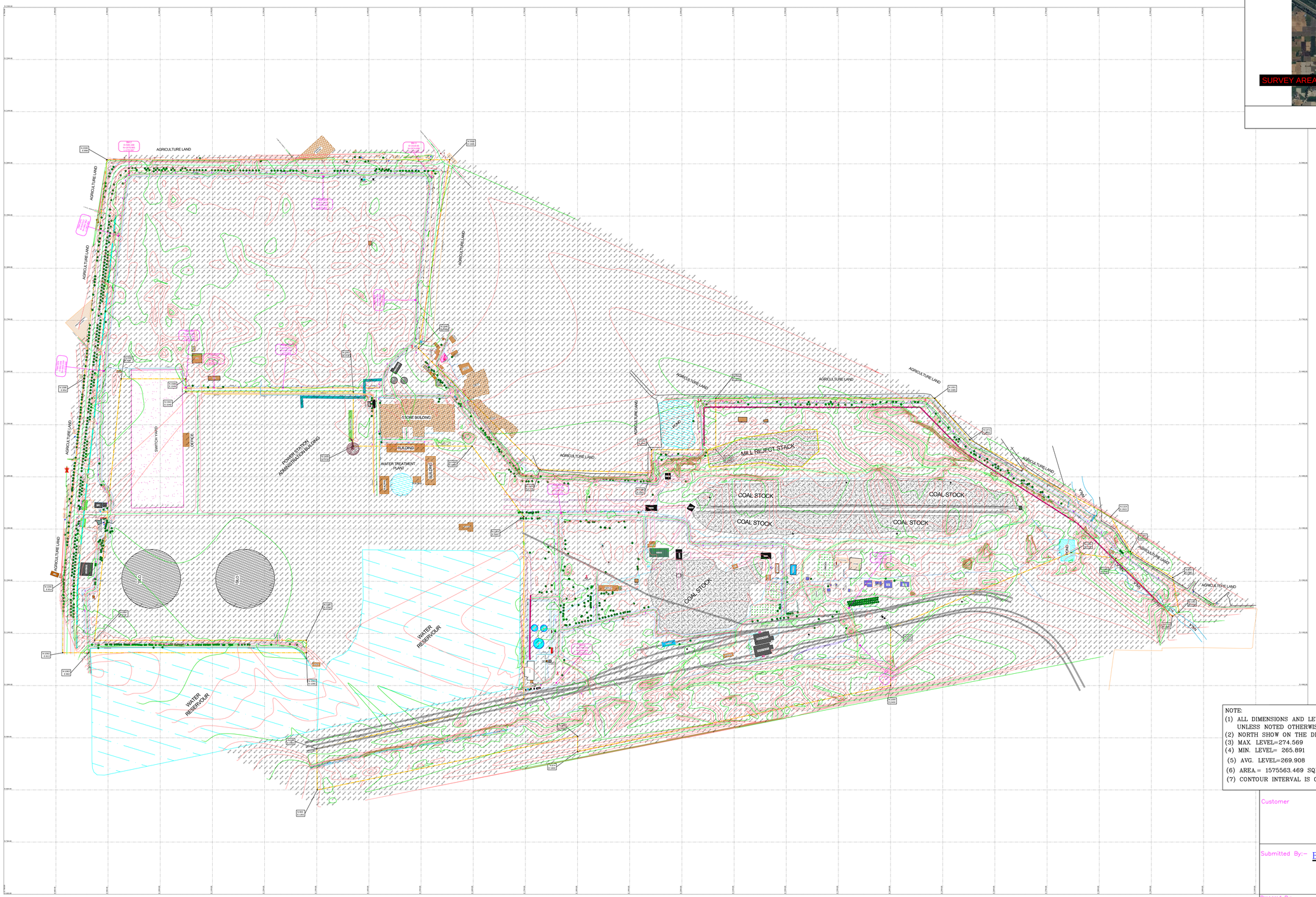
Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
1359	Volume VI Civil, Structural & Architectural Works	Ch 03: Instruction to Bidders	1 of 5	CHAPTER – 3	CHAPTER – 3 INSTRUCTION TO BIDDERS 3.1 DATA TO BE FURNISHED BY BIDDER AT THE TIME OF BID	Many data and informations as mentioned under clause 3.1 are approximately considered during bid proposal stage and required to be finalized during detail engineering stage. Hence, Bidder understands that every information mentioned under clause 3.1 are not relevant during proposal and not applicable during submission of bid. Only, relevant data to be furnished by Bidder at the time of Bid. Please confirm.	Noted. The same shall be subject to HPGCL approval.
1360	Volume VI Civil, Structural & Architectural Works	Ch 11: Buildings Description	2 of 18	Cl. No. 11.1.5	Temporary Workshop and Garage The CONTRACTOR shall provide for a temporary workshop and garage to attend to routine maintenance and repair of the construction equipments as well as his fleet of vehicles used for construction activities. Land to develop Temporary Workshop and Garage shall be arranged by contractor at his own cost outside plant boundary	Bidder understands that Temporary Workshop and Garage is temporary structure may be constructed by Contractor as per their requirements. If constructed, these may be taken away after completion of work. Please confirm.	Confirmed.
1361	Volume VI Civil, Structural & Architectural Works	Ch 02: Scope of Work	5 of 7	Cl. No. 2.6	77 Clearing and removing the buried items if any in the whole proposed plant area and the same is to be deposited to the Client. Any infrastructure buried underground shall be demented/relocated by bidder without any additional cost.	Bidder requests Owner to provide drawings of infrastructure/utilities buried underground so that Bidder can asses quantum of work.	Bidder to visit the site and collect the information.
1362	Volume VI Civil, Structural & Architectural Works	Ch 23: Concrete Road & Rigid Pavement	2 of 2	Cl. No. 23.1	The Cross section for road shall be as follows: i) The Sub-grade shall be 250 mm thick Granulated Sub-base compacted to 95% dry density. ii) **250 mm thick metal finish.** iii) 100mm thick dry lean concrete iv) A separation membrane shall be used between concrete slab and the sub base. Membrane shall be impermeable plastic sheeting of 125 microns thick laid flat without creases v) Pavement 250 mm thick M30 mix, with single mat reinforcement of 12 dia @ 300 c/c both ways.	Bidder understands that, **250 mm thick metal finish** means additional granulated subbase. Owner to confirm. Bidder requests Owner to provide road cross section drawing.	Confirmed.
Electrical							
1363	Vol-IV	Ch 16: AC & DC Motors	8 of 22	Cl. No. 16.15.02	Pull out torque at rated voltage shall not be less than 205% of full load torque. It shall be 275% for crane duty Motors.	Bidder proposes that Motor Pull out torque will be offered based on the Application requirement and it will be subjected to tolerance as per IEC60034-1. Owner may please accept Bidder's proposition	Cl.No. 16.15.02, Sheet 8 of 22, Chapter-16, Vol-IV be followed.
1364	Vol-IV	Ch 16: AC & DC Motors	9 of 22	Cl. No. 16.20.01	Outdoor Motors…….. IP 55 (Additional canopy to be provided by Bidder).	Bidder proposes that canopy requirement shall be based on OEM requirement/design and not be mandatory for all outdoor motors. Owner may please accept Bidder's proposition	Bid specifications to be followed.
1365	Vol-IV	Ch 16: AC & DC Motors	16 of 22	Cl. No. 16.40.00	HV & MV motors shall be provided with dial type two (2) bearing temperature indicators and shall have two (2) sets of contacts, each set having 2 NO + 2 NC contacts rated for 5A at 240V AC and 0.5A at 220V DC.	Bidder proposes that DTT for air is not required, as any increase in air temperature will lead to rise in motor winding temp & bearing temp, for which necessary protections shall have to be given. (Winding RTD & Bearing RTD as per tender requirement shall be provided). Owner may please accept Bidder's proposition	Noted.
1366	Vol-IV	Ch 16: AC & DC Motors	10 of 22	Cl. No. 16.24.01	Noise level for all the motors shall be limited to 85dB(A) except for BFP motor for which the maximum limit shall be 90dB(A). at 1m from operating motor measured in accordance with IS: 10265.	Bidder understands that, noise requirement of 85 dB(A) as per IEC60034-1 Edition 14 - 2022 (Rotating Electrical Machines - Rating & Performance). Owner may please confirm.	Bid specifications to be followed.
1367	Vol-IV	Ch 16: AC & DC Motors	10 of 22	Cl. No. 16.23.00	Vibration shall be limited within the limits prescribed in IS: 12075 / IEC 60034-14. Motors shall withstand vibrations produced by driven equipment. HV & MV motor bearing housings shall have flat surfaces, in both X and Y directions, suitable for mounting 80mmX80mm vibration pads. Vibration pads with screwed holes along with vibration probes shall be provided at both DE and NDE.	Bidder understands that, Vibration shall be limited within the limits prescribed in IS: 12075 / IEC 60034-14 and shall be as per Grade-A in line with above standard. Owner may please confirm.	Bid specifications to be followed.
1368	Vol-IV	Ch 16: AC & DC Motors	16 of 22	Cl. No. 16.39.00	HV & MV motor shall be provided with four (4) Nos. simplex or two (2) Nos. duplex platinum resistance temperature detectors (RTDs) in each phase embedded in stator winding at locations where high temperatures are expected. In addition, one (1) duplex type RTD shall be provided in each bearing. However, for air compressor, being high speed drive, each motor bearing shall be provided with minimum two numbers of duplex RTDs connected to two numbers of dual input transmitters with display unit. The RTDs shall be 3 wire duplex platinum resistance type having a value of 100 ohms at 0 Deg C.	Bidder proposes to provide two (2) bearing RTDs Owner may please accept Bidder's proposition	Noted.
1369	Volume IV Electrical Works _____ Volume IV Electrical Works _____ Volume IV Electrical Works	Ch 4 : GIS _____ Ch 4 : GIS _____ Ch 4 : GIS	19 of 88 _____ 19 of 88 _____ 79 of 88	4.07.05 (a) _____ 4.07.06 _____ Annexure-A (17)	Type spring charged with Anti-pumping and trip free features. _____ Spring Operated Mechanism _____ Driving mechanism of circuit-breaker: Stored energy spring	Bidder propose to consider the operating mechanism of Circuit breaker as pneumatic mechanism or electrically spring charged mechanism or electro-hydraulic mechanism or a combination of these. Owner may please accept.	Bid specifications to be followed.

Sr. No.	Volume/ Section	Chapter / Drawing No.	Page no.	Clause No.	Bid Specification Stipulation	Statement of clarification sought	HPGCL Response
1382	Volume III	Ch 2: Turbine Generator & Auxiliaries	56 of 87	6.2	(m) Minimum feed water storage tank capacity shall be based on 6 (six) minutes of BMCR flow (approx.) between normal operating level and low-low level with a filling factor of 0.66.	Bidder request owner to consider below modifications based on it's past executed projects and has been accepted in supercritical projects including NTPC & other state electricity board projects. (m) Minimum feed water storage tank capacity shall be based on 6 (six) minutes of TMCR ~~BMCR~~ flow (approx.) between normal operating level and low-low level with a filling factor of 0.66.	Bid specifications to be followed.
1383	Vol-II Volume III Volume II	Ch 8: FG & LD Ch 8: FG & LD Ch 2: Turbine Generator & Auxiliaries Ch 2: Turbine Generator & Auxiliaries Ch 2: Turbine Generator & Auxiliaries Ch 18 : NDCT	5 of 57 ~~5 of 57~~ 8 of 57 11 of 87 ~~37 of 87~~ 40 of 87 74 of 87 74 of 87 22 of 23 3 of 10	Cl. No. 3.1 (iv.) ~~Cl. No. 12.2~~ Cl. No. 3.1 xv Cl. No. 1.1.2.viii ~~Cl. No. 2.viii~~ Cl. No. 2.2 1 (b) Cl. No. 2.2 1 (f) Cl. No. 15 (5) Cl. No. 15 (6)	Condenser Pressure in mm Hg (abs) measured at 300mm above the top row of condenser tubes at 800 MW unit Load, 1% make up, design CW inlet temperature and design CW flow. The cold-water temperature of 33°C shall be guaranteed for the design conditions of CW flow, range, ambient WBT and RH as per the performance test procedure of cooling tower elaborated elsewhere in the specification. Condenser design pressure : As optimized by bidder at 1% make-up and 32.5°C CW temperature for VWO condition but not exceeding 70 mmHg (abs) Condenser Design Parameters : Design cold water temp.= 32.5°C As optimized by the bidder at 1 % make-up and 32.5 deg C CW temperature at VWO Condition but not exceeding 70 mmHg (abs). Other conditions for computing heat balance diagrams: Design condenser pressure : As optimized by the bidder at 1 % make-up and 32.5 °C CW temperature at VWO condition (not more than 77 mm of Hg (abs)). Make up water (as applicable) % throttle flow: 1 % of throttle steam Cooling Tower Datasheet : Cold water temperature (°C) = 33 (guaranteed) Condenser cooling water inlet temperature of 33°C and 9°C temperature rise across the condenser.	There is discrepancy in the CW temperature. Bidder requests owner to provide following final values: 1. Design CW inlet temperature 2. Design Cold Water Temperature Also request Owner to fix the guaranteed condenser pressure inline with recent tenders of NTPC (i.e 65 mmHg.) in order to bring all bidders at par.	CW temperature of 32.5 deg C for condenser design pressure wherever mentioned in the bid specifications, be read as 33.0 deg C.
1384	Volume II Volume III	Sch. B : Technical Particulars (STG) Ch 2: Turbine Generator & Auxiliaries Ch 15: CW & ACW System Ch 16: DMCW System	49 of 64 51 of 64 12 of 87 5 of 37 36 of 87 11 of 12	1.1.3 1.1.4 1.1.4 15.4.3 1.23.1 y) DATASHEET FOR PLATE HEAT EXCHANGERS	Performance data with 0% Make up, all Heaters in Service, 85% Tube Cleanliness with 33 deg C CW temperature and all tubes Working Performance data with 3% Make-up, all Heaters in service, 85% Tube Cleanliness with 33°C C.W. temperature & all tubes working This means 800 MW electric power output at generator terminal under 0% cycle make up at 33°C design cooling water inlet temperature. The temperature at outlet of the Cooling Tower for design purposes shall be 33 deg C considering cooling tower approach of 5 deg C (max) at rated conditions and design inlet air Wet Bulb Temperature to be 28 deg C. y) 840 MW output at 1 % make-up design CW temperature and CW flow. (CONDNESER PRESSURE GUARANTEE CONDITION) Inlet Temperature of water: Secondary (ACW): Inlet – 33 deg C		
1385	Volume III	Ch 1: Steam Generator & Auxiliaries Ch 2: Turbine Generator & Auxiliaries	42 of 186 30 of 87 35 of 87	1.12.1 1.20 a) 1.23.1 r)	HP turbine bypass system shall be sized for 65% BMCR (minimum) steam flow (at Super Heater Outlet) with rated mainsteam parameters at the upstream of valve and CRH steam parameters corresponding to 60% TMCR on the downstream. Ensure HP bypass aggregate capacity not less than 65% of the main steam flow at BMCR condition considering rated main steam parameters at the upstream of valves & CRH steam parameters (pressure and temperature) corresponding to 60% TMCR condition on the downstream. HP-LP bypass operation under rated steam conditions with steam generator output of 60% of BMCR.	Bidder understand that HP-LP bypass operation under rated steam conditions with steam generator output of 65% ~~60%~~ of BMCR. Please confirm our understanding.	Specifications be followed as per Clause 1.20 (a) of Chapter-2 at Sheet 30 of 87 in Vol-III.

Megnetic North

NORTH

KEY PLAN



LEGEND

1	100/300/600 mm dia Pipes	
2	Barrier	
3	BED LEVEL	269.594
4	BORE HOLE/BORE WELL	
5	BUILDING/ SHOP/ STRUCTURE	
6	BOUNDARY WALL	
7	BATTERY BOX/JUNCTION BOX	
8	BRICKS ROAD	
9	CONCRETE ROAD	
10	CART TRACK	
11	BT ROAD	
12	CHEMNEY	
13	CONTAINER	
14	CULVERT	
15	DRAIN WITH INVERT LEVEL	269.594
16	DIVIDER	
17	PIPE LINE	
18	FIRE WATER PIPE LINE	
19	ELECTRIC POLE/DOUBLE POLE	
20	OIL TANK, FIRE WATER TANK	
21	PUMP HOUSE	
22	FENCING WIRE	
23	FOOTPATH	
24	FIRE PIPE LINE	WP
25	PARK/GARDEN/TREE AREA	
26	GROUND LEVEL	269.594
27	GATE	
28	HAND PUMP	
29	HIGH TENSION ELECTRIC POLE	
30	BOUNDARY PILLAR	
31	WEIGHBRIGTH	
32	LIGHT POLE/JUNCTION LIGHT POLE	
33	MAINTAINCE ROOM	
34	MAN HOLE	
35	OFC PILLAR LINE	
36	OIL TANK	
37	PARKING	
38	PIPE LINE	
39	SILO	
40	ROAD LEVELS	270.575
41	NETWORK TOWER	
42	SIGN BOARD	S.B
43	COAL STOCK	
44	SUB STATION	
44	TBM WITH DETAIL	
44	BENCH MARK PILLAR	
45	TELEPHONE TOWER	
46	TAP OF WATER PIPELINE	
47	TREE	
48	TEMPLE	
49	TRANSFORMER	
50	ABANDON BUILDING	
51	TOILET BUILDING	
52	TIN SHED	
53	WATER TANK	
54	WATCH TOWER	

NOTE:
(1) ALL DIMENSIONS AND LEVELS ARE IN METER UNLESS NOTED OTHERWISE.
(2) NORTH SHOW ON THE DRAWING IS ACTUAL.
(3) MAX. LEVEL=274.569
(4) MIN. LEVEL= 265.891
(5) AVG. LEVEL=269.908
(6) AREA.= 1575563.469 SQM.=389.330 ACRES
(7) CONTOUR INTERVAL IS 0.25M.

Customer

Bharat Heavy Electricals Ltd.
(A GOVERNMENT OF INDIA ENTERPRISE)
(Yamuna Nagar, Haryana)

Submitted By:- BHASKRAM JYOTISH ANUSANDHAN KENDRA Pvt. Ltd.
OFFICE NO.03, BUILDING NO.02, GOKULDHAM CHS LTD, SUKAPUR, NEW PANVEL, DISTRICT–RAIGAD, MAHARASHTRA–410206
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Prepared By: AKG	Project: TOPOGRAPHICAL SURVEY PLAN OF DEEN BANDHU CHOTTU RAM THERMAL POWER PLANT YAMUNA NAGAR, HARYANA				Paper size: A0
Checked By: SD					
Approved By: PG	Title: TOPOGRAPHY & CONTOUR SURVEY DRAWING.				Scale: NTS
Resp. (div./dept) BHEL	Drawing No. BJAK/TS/BHEL–21/2024	Page 02/02	Date AUG 2024	Rev. A	Lang. EN

	Description	**Raw Water Conc as ion (ppm)**	**Clarified water Analysis(As Ion) ppm or mg/l as ion**	**Circulating water Analysis (Considering 5 COC) ppm or mg/l as ion**
Cation	Calcium	105	118.5	592.5
	Magnesium	40	40	200.0
	sodium	21.8	21.8	109.0
	Potassium	7	7	35.0
	Iron	2	2	10.0
	SUM=	175.8	189.3	
Anion				
	M-alkalinity (As CaCO3)	128	139.5	697.4
	Chloride	15	16.3	81.4
	Sulphate	26	47.6	238.2
	Nitrate	6.8	6.8	34.0
	SUM=	175.8	210.2	
	P- alkalinity	3.9	3.9	19.5
	Dissolved silica	6.4	6.4	32.0
	Colloidal silica	4.2	4.2	21.0
	Organic Matter	4.8	4.8	24.0
	Total Hardness	145	160.0	800.0
	pH	8.45	8.5	approx. 8.5
	TDS	220	240.0	1200.0
	Conductivity (micro mhos/cm)	300	328.0	1640.0
	Total Suspended Solids (TSS)		2	10