



**BHARAT HEAVY ELECTRICALS LIMITED**  
**PROJECT ENGINEERING MANAGEMENT, NOIDA**

Date-14-Nov-24

**CORRIGENDUM- 05**

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

Type of Corrigendum			
Technical Corrigendum -	<input checked="" type="checkbox"/>	Commercial Corrigendum -	<input checked="" type="checkbox"/>

Bidders are requested to note:

1. Reply to pre-bid queries is attached.
2. Due date & time of bid submission has been extended up to 26.11.2024 @ 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**

BH&L-PEM ENQUIRY NO. : 77/23/6116/NIT (TENDER ID: 2024_BHEL_38853_1)					PANAHMUR REF: DT-24E041 DATE: 30-10-2024				
NATURAL DRAUGHT COOLING TOWER FOR 1 x 800 MW HPGL YAMUNANAGAR STPP-I AT KALANAGAR, DISTRICT YAMUNANAGAR, HARYANA									
PRE-BID FOLLOW-UP QUERIES (TECHNICAL)									
Sl No.	Sl No & Page Ref.	Reference Chapter / Cl. No.	Para No.	Clause reference	Queries (by Paharpur Cooling Towers Ltd & Others) dated 25-09-2024	Response By BHEL dtd. 10.10.2024 (Corrigendum-2)	Follow-up query by Paharpur, 30.10.2024	Response By BHEL	
1	1 / Pg 4 of 45	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).	Noted for labour colony. However, space for equipment storage area and fabrication yard must be provided within the plant boundary near cooling tower site. Also please mention the distance of proposed land for labour colony from the plant premises.	Same as previous reply.
2	2 / Pg 4 of 45	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 NDCCT following the tree cutting, in accordance with the plot plan. The dismantling of both underground and above ground facilities, if any, within the NDCCT vendor's designated area, will fall under the vendor's scope.	At this stage, it is not feasible to visualize the underground obstructions at site & also there is no drawing/map/underground scanning report showing the same. Hence Bidder cannot consider dismantling/removal of underground obstacles in their scope. Dismantling / removal of overground obstacles, as available during our site visit prior to bid submission within our scope limit, however, shall be under Bidder's scope.	Same as previous reply.
3	24/ Pg 5 of 45	Technical Specification No. PE-TS-510-165-W001	Technical Data - Part A (C&U)	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	There is no clarity about this requirement in the specification. Kindly clarify Bidder's scope of instruments for the subject project. Also kindly note, as per standard practice, all test instruments shall remain property of testing agency and shall be deployed at site on returnable basis only, for performing PG test as required. Please confirm the same for this project.	Specification is clear. Refer cl. No. 1.4 of PERFORMANCE GUARANTEES TO BE DEMONSTRATED AT SITE in specification.
4	27 / Pg 5 of 45	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.	Response is not clear. Nature of soil, type of foundation, soil bearing capacity, sub-soil water, etc., should be considered by Bidder for estimation purpose based on geo-technical investigation report available in the specification 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.	Response furnished by BHEL dated 10.10.2024 is very much clear. Bidder to follow technical specifications.
5	30 / Pg 6 of 45	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 confirm 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.	Construction water on chargeable basis may be accepted. However, the point of supply of same has to be nearer to cooling tower & the distance of point of supply from cooling tower site should be mentioned by BHEL.	Same as previous reply.
6	31 / Pg 6 of 45	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 NDCCT & 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.	Construction power on chargeable basis may be accepted. However the point of supply of same has to be nearer to Cooling tower & the distance of point of supply from cooling tower site should be mentioned by BHEL.	Same as previous reply.
7	32 / Pg 6 of 45	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/m <sup>3</sup> minimum". This stipulation is relevant for fill type fill only. Since for the subject project type of fill has been specified as splash type fill, in case of PVC-V-bar type fill this clause should not be applicable.	Bidder to follow technical specifications.	Response is not acceptable to Bidder. Fill Density 100 kg/m <sup>3</sup> is not applicable for V-Bar fills which is proposed for this project. Therefore for the specified fill, this requirement should be deleted. Please confirm.	Bidder to follow stipulations as given in Cl. No.13.9 of Technical Specification PE-TS-510-165-W001, Book 2 of 2.
8	33 / Pg 6 of 45	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 NDCCT 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.	Following technical specification is not practical for an NDCCT. We should reconsider keeping provision of cage ladder outside the shell above throat level also. This has been provided in various past projects including that of BHEL/HPGL. Kindly confirm.	Bidder to follow stipulations as given in Cl. No.13.11.4 of Technical Specification PE-TS-510-165-W001, Book 2 of 2.
9	40 / Pg 7 of 45	Technical Specification No. PE-TS-510-165-W001 / Civil Specification	--	--	--	We understand that pile foundation is not mandatory for 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 NDCCT location to be furnished by BHEL.	Bidder to follow technical specifications.	Based on available soil report adopting open type foundation should be allowed for an NDCCT. Moreover for NDCCT piling should not be applicable for grillage & basin areas. Requesting BHEL / HPGL once again to review and reconsider and confirm that open type foundation can be adopted by Bidder based on available soil report / geo technical investigation report.	Bidder to follow technical specifications.
10	41 / Pg 7 of 45	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 NDCCT following the tree cutting, in accordance with the plot plan. The dismantling of both underground and above ground facilities, if any, within the NDCCT vendor's designated area, will fall under the vendor's scope.	At this stage, it is not feasible to visualize the underground obstructions at site & also there is no drawing/map/underground scanning report showing the same. Hence Bidder cannot consider dismantling/removal of underground obstacles in their scope. Dismantling / removal of overground obstacles, as available during our site visit prior to bid submission within our scope limit, however, shall be under Bidder's scope.	Same as previous reply.
11	14 / Pg 14 of 45	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 trisole (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.	We request BHEL / HPGL to reconsider our requirement and confirm that suitable foundation system (pile or open) can be adopted based on soil report enclosed with the bid specification / approved Geotechnical investigation report during detailed engineering stage. confirm.	For type of foundation, specification is clear. Bidder is requested to follow the same.
12	22 / Pg 15 of 45	DESIGN CRITERIA	Sheet 2 of 10	18.3.4)	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.	Suitable foundation system (pile or open) shall be as per soil report enclosed with the bid specification / approved Geotechnical investigation report during detailed engineering. Please confirm. Also please note that in case of Common Raft foundations like grillage area of NDCCT, Grouping is not required. Hence one pile per column shall be sufficient & may be accepted.	For type of foundation, specification is clear. Bidder is requested to follow the same.
13	10 / Pg 17 of 45	Volume III / Chapter 18 / NDCCT	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 (N): 45%	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 condenser shall be limited to 10 deg. C	We request BHEL to review HPGL's requirement and re-confirm the final cooling range to be considered for designing the cooling tower.	Please note that this query is raised for the first time by the bidder. It was not part of bidder's previous query. We are failed to understand about the BHEL response dt. 10.10.24 mentioned. It was never clarified by BHEL. Regarding parameters, the specification is clear. Refer TECHNICAL DATA - PART - A. Bidder to comply.
14	98 / Pg 23 of 45	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 AT is mentioned as 10 Degree C. Owner to please note AT of cooling water is finalised as per condenser inlet and outlet parameters. So kindly indicate "by bidder" in place of 10 degree C.	AT of cooling water shall be 10 deg. C.	Requesting BHEL to re-visit the requirement and re-confirm the final cooling range to be considered by Bidder for designing the cooling tower.	Please note that this query is raised for the first time by the bidder. It was not part of bidder's previous query. We are failed to understand about the BHEL response dt. 10.10.24 mentioned. It was never clarified by BHEL. The query seems irrelevant as the referred clause are not part of this specification.
15	--	Tender notice_2, Volume-II, Technical Specification No. PE-TS-510-165-W001, Technical Data Part-A(Mechanical) Chapter-5	1.14	12 of 246	Submersible Type Sludge Pump	--	--	Flow & Head of Submersible type Pump is required .	Flow and Head of submersible pump shall be confirmed during detailed engineering. Supply of submersible pumps is not in Bidder's scope. Erection of submersible pumps is in Bidder's scope.
16	--	Tender notice_2, Volume-II, Technical Specification No. PE-TS-510-165-W001, Technical Data Part-A(Mechanical) Chapter-5	3.1 (a)	13 of 246	Hot water Supply Header Terminal Point Location: a) Refer Annex-III (20m away from NDCCT Basin edge)	--	--	No grid marking is available in Annex -III. This is required for estimation of Piping length.	Grid marked copy of Annexure-III is enclosed for reference.

PRE-BID FOLLOW-UP QUERIES (TECHNICAL)									
Sl No	Sl No & Page Ref.	Section	Reference Chapter / Cl. No	Page No.	Clause reference	Queries (by Paharpur Cooling Towers Ltd & Others) dated 25-09-2024	Response By BH&L dtd. 10.10.2024 (Corrigendum-2)	Follow-up query by Paharpur_30.10.2024	Response By BH&L
17	--	Tendernotice_2, Volume-II, Technical Specification No .PE-TS-510-165-W001, Technical Data Part-A (Mechanical) Chapter-5	48		Bidder shall submit 3D parametric review model of the cooling tower area within terminal points.	--	--	Is there any preference for 3D model software. Kindly specify.	Refer complete clause no. 48 in this regard. Bidder to follow specification.
18	--	Tendernotice_2, Volume-II, Technical Specification No .PE-TS-510-165-W001	47	10 of 246	CONTROL AND INSTRUMENTATION:  47.1 Complete field instrumentation for monitoring and operation of NDCCT package be provided by bidder.  47.2.The quantity of instruments for the system indicated in "General Technical Requirement" shall be considered as minimum requirement by the bidder. Any other instrument/item required for completeness of the system shall be in bidder's scope of supply.	--	--	Generally for NDCCT no instruments are included as part of cooling tower bidder / contractor's scope. Please confirm or kindly furnish Bidder's scope of instruments.  Also please provide the referred general technical requirement along with relevant contract specs and approved sub vendor list for the field instruments to be included in Bidder's scope.	Follow Specification. Refer TECHNICAL DATA - PART - A (C&I)
19	--	Tendernotice_2, Volume-II, Technical Specification No .PE-TS-510-165-W001	2	132 of 246	DESIGN /SYSTEM PARAMETERS	--	--	We understand that no instruments to be included in cooling tower bidder's scope. Please confirm. Or else, please inform us which are the C&I items (along with quantities) to be considered as part of Bidder's scope.	Refer TECHNICAL DATA - PART - A (C&I)
20	--	Tendernotice_2, Volume-II, Technical Specification No .PE-TS-510-165-W001	D)	149 of 246	COMPLIANCE DRAWING D) C&I DRAWINGS (ANNEXURE IV)	--	--	We understand that no instruments to be included in cooling tower bidder's scope. Please confirm. Or else, please furnish us the referred document.	Refer TECHNICAL DATA - PART - A (C&I)

ANNEXURE – III

