



BHARAT HEAVY ELECTRICALS LIMITED
PROJECT ENGINEERING MANAGEMENT, NOIDA

Date-14-Feb-23

CORRIGENDUM- 02

PROJECT	:	2 x 660 MW NTPC TALCHER TPP, STAGE - III
PACKAGE	:	COOLING TOWERS (CT) (NATURAL DRAFT COOLING TOWER)
ENQUIRY NO	:	PE/PG/HER/E-7179/2022 Dated. 01.02.2023
SUBJECT	:	PRE- BID CLARIFICATION

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

Please note the following:

1. Reply to Follow Up Query attached with this corrigendum shall be treated as part of NIT.

Yours faithfully,

For and on behalf of BHEL

Sharad Chandra
Manager/BOP

NATURAL DRAUGHT COOLING TOWERS FOR 2 x 660 MW NTPC TALCHER THERMAL POWER PLANT, STAGE III AT TALCHER TOWN, ANGUL DISTRICT, ODISHA							
PRE-BID CLARIFICATIONS							
Sl No	Reference			Queries dated 08-02-2023	Response from BHEL (Corrigendum-01 dated 10-02-2023)	Response / Follow-Up Queries dated 13-02-2023	Response from BHEL
	Section	Chapter / Cl. No	Page No.				
COMMERCIAL							
1	Notice Inviting Tender	21	1 OF 5	As cement and reinforcement steel are free issue items, BHEL should permit globalization of the cement and reinforcement steel quantities without affecting the sum total of the free issue items.	Bidder to follow tender specification	Noted.	
2	Notice Inviting Tender	16	1 OF 5	Basic drawings / documents viz. General arrangement Drawing of NDCT, Civil Design Basis Report, Cooling Tower Technical Data Sheets, Thermal Sizing & Pumping Head Calculations will be submitted within 08 weeks from the date of receipt of clear LOA. This is in line with Clause No 17.00.00 of Section I / Sub-Section IA of Specification No. PE-TS-497-165-N001. Subsequent submission of drawings / documents shall commence only after these basic drawing / documents are approved by BHEL (Purchaser) & NTPC Limited (Owner).	Bidder to follow the conditions indicated in NIT.	Noted. However, this needs to be discussed during kick-off meeting after order.	Bidder to follow the conditions indicated in NIT.
3	Notice Inviting Tender	22 (i-a)	1 OF 5	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. It is not at all practical to link release of MOB Advance with mobilisation & installation of the T&P as listed in Annexure-II of Tender Specification. T&P listed in Annexure-II are not required to be mobilised and installed at the start of execution of the contract. We confirm that T&P as listed in Annexure-II shall be mobilised / installed by us (as applicable) but same shall be done based on our final approved project schedule to suit completion of the project within stipulated completion period. Hence this clause can be accepted provided payment is released on mobilisation of S/ No A.8, A.9, A.10, E, F and G of T&P list as per Annexure-II subject to incorporation of following changes: (i) A.8 - Can be mobilised but words "along with operator and necessary spares" to be removed. (ii) A.10 - No justification in mobilising initially. So to be removed. (iii) D - Request to remove the provision of Chiller Plant. during initial satge since same will be provided only if necessary and hence no justification in linking the same with payment against mobilization. (iv) F - Acceptable in case minimum 10 sets of shuttering material for grillage column is allowed for mobilising initially. (v) E&G - No justification in mobilising initially. So to be removed.	Bidder to follow tender specification	Noted. However, this needs to be discussed during kick-off meeting after order.	Bidder to follow tender specification
4	Notice Inviting Tender	22 (ii)	2 OF 5	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 submission of BG of equivalent amount and BHEL shall bear all the BG expenses. Note under Clause no 9.2.1 (GCTC) of GCC BOP Rev-00 should be applicable for payment terms towards Civil Work also. Also kindly note that completion of PG Test of cooling tower is not under cooling tower contractor's control. So we are not in a position to accept extension of PBG beyond end of mutually accepted guarantee period. Please confirm.	Bidder to follow Tender Specification.	Noted. However, this needs to be discussed during kick-off meeting after order.	Bidder to follow Tender Specification.
5	Notice Inviting Tender	30	3 OF 6	We request BHEL to delete Reverse auction clause as this is a EPC based contract.	Bidder to follow Tender Specification.	Noted.	
6	Special Conditions of Contract	23	4 of 4	We understand that construction power shall be made available to cooling tower contractor free of cost at one point near the site. Please confirm.	Bidder to follow Tender Specification.	There is an ambiguity in tender Specification. However, as per BHEL's response to SI No 9 under Technical Sestion below, construction power shall be made available to cooling tower contractor free of cost. Please confirm.	Construction Power & Construction water shall be on chargeable basis as per SI No 23 of SCC.
7	Special Conditions of Contract	ANNEXURE-E	--	Price Adjustment Clause / PVC should be applicable for entire duration of contract period. This is standard for all NTPC contracts. Moreover, PVC should not be limited to Plastic, Steel & Electrical Equipment and Labour components only. PVC should be worked out based on NTPC formula and Contractor should be allowed to furnish the list along with assigned co-efficients for items on which PVC should be applicable. NTPC contracts always provides Price Adjustment for entire duration of contract period. So we request BHEL to pass on benefits towards Price Adjustment to cooling tower contractor on back-to-back basis.	Bidder to follow Tender Specification.	We request BHEL once again to accept our requirement, which is in line with standard NTPC contracts.	Bidder to follow Tender Specification.

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8	Special Conditions of Contract	General	--	Following provisions need to be incorporated in SCC / NIT: (a) There is no mention about timeline for approval of drawing / documents in the Tender Specification. Kindly furnish the same. Timeline for approval of drawing / documents should be available. (b) There is no provision of Change Order in the Tender Specification. Provision of Change Order should be incorporated. (c) We understand that Clause No 43 (GCTC) of GCC BOP Rev-00 has to be referred for provision towards extension of time. (d) Formal Contract Agreement format is not available in the Tender Specification. Kindly furnish the same for our review & comments, if any.	a) Bidder to follow Tender Specification. b) Bidder to follow Tender Specification. c) Bidder to refer clause no 43 (GCTC) of GCC BOP Rev-00. d) Bidder to follow Tender Specification.	a) thru' c) Noted. b) We once again request BHEL to furnish the Formal Contract Agreement format, since same is not available in the Tender Specification.	Bidder to follow Tender Specification.
9	General Conditions of Contract	11.0	9 of 31	Kindly note that completion of PG Test of cooling tower is not under cooling tower contractor's control. So we are not in a position to accept extension of PBG beyond end of mutually accepted guarantee period. For the last 10% payment against Supply and Erection & commissioning. 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, payment towards PG Test / demonstration test of the cooling tower(s) should be released on submission of BG of equivalent amount, valid initially for 6 months & to be revalidated till completion of PG test / demonstration test of the cooling towers or till the end of the guarantee period, whichever is earlier. Kindly confirm.	Bidder to follow Tender Specification.	Noted. However, this needs to be discussed during kick-off meeting after order.	Bidder to follow Tender Specification.
10	General Conditions of Contract	11.0	11 of 31	We request BHEL to reduce the Contract Performance Bank Guarantee amount to 3% of the total contract price (excluding taxes, duties & freight) instead of 5%.	Bidder to follow Tender Specification.	Noted.	
11	General Conditions of Contract	12.0	12 of 31	Guarantee period cannot be open-ended. The guarantee period shall be 12 months from the date of handing over or 18 months from the date of last major despatch whichever is earlier. Please confirm.	Bidder to follow Tender Specification.	Noted. However, this needs to be discussed during kick-off meeting after order.	Bidder to follow Tender Specification.
12	General Conditions of Contract	17.0	17 of 31	We understand that all insurance (transit, unloading, storage, handling, erection and commissioning, etc.) are in BHEL's scope. Kindly confirm.	Bidder to refer NIT and GCC BOP Rev-00	Noted.	
TECHNICAL							
1	Technical Specification No. PE-TS-497-165-N001	Section I / Sub-Section IA - Clause No 8.03.08	7 of 10	Requirement of "Drift loss test" shall be deleted.	Please follow specification	Noted.	
2	Technical Specification No. PE-TS-497-165-N001	Section I / Sub-Section IA - Clause No 11.00.00 b & c	8 of 10	As as per these clauses and also Clause No 2.10 of DATASHEET-A, static pump head above FGL up to the centre line elevation of the hot water distribution lateral pipes inside each Cooling Tower has to be guaranteed by Bidder. Please confirm. We have also noted that dynamic head, which shall be minimum 2.0 MWC, will be considered by BHEL. Please note that we will be furnishing the actual dynamic head during detailed engineering stage after order.	Bid specification is clear. Please follow specification. Regarding dynamic head, Point is not understood. However, please note that friction head shall be finalized during detail engg. with successful bidder.	We need a confirmation from BHEL that the static pumping head of 13.8 MWC above FGL, which needs to be guaranteed by the Bidder, is up to the centre line elevation of the hot water distribution lateral pipes at Cooling Tower.	Bidder's understanding is correct
3	Technical Specification No. PE-TS-497-165-N001	Clarification No 01 / SI No 1327	--	Flushing arrangement should be arranged by BHEL. This is a part of process requirement and flushing line need to be designed / sized and executed by BHEL only. Kindly confirm.	Please follow specification	Noted.	
4	Technical Specification No. PE-TS-497-165-N001	Section I / Sub-Section ID DATASHEET-A / Clause No 8.9	4 of 6	In case bidder opts for V-bar type splash fill, the fill bars shall be supported on SS-316L grids which in turn will be supported from RCC beams. Please confirm.	Please follow specification	Noted.	
5	Technical Specification No. PE-TS-497-165-N001	Section I / Sub-Section ID DATASHEET-A / Clause No 8.0	4 of 6	Because of a few ambiguities in the specification, kindly confirm the following MOC: (a) Staircase - RCC (b) Handrail on staircase - Mild Steel, Galvanised (c) Internal Walkway - RCC (d) External Walkway Platform - RCC	Please follow specification	Noted.	
6	Technical Specification No. PE-TS-497-165-N001	Section VI / Part B of Bid Doc No CS-4540-001A-2 / Sub Section IID / Clause No 1.00.02	11 of 13	As per this Clause, "The plant lies in the corrosive category C3 as per ISO 12944. Protection measures shall be provided as specified in Part-B of Technical Specifications". Kindly confirm whether this clause is referring to ANNEXURE-M available in specification.	Please follow specification	Noted.	

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7	Technical Specification No. PE-TS-497-165-N001	Section VI / Part B of Bid Doc No CS-4540-001A-2 / Sub Section IID / Clause No 2.01.00	11 of 13	As per this clause, for "Development of Bidders temporary staff colony" and labour colony along with toilets & fencing etc. Bidder may use Area-A for Labour Colony". Kindly furnish detailed information about this "Area-A".	Area will be allotted by BHEL/Customer during actual mobilisation within 2.5 km from plant boundary.	Noted.	
8	Technical Specification No. PE-TS-497-165-N001	Section VI / Part B of Bid Doc No CS-4540-001A-2 / Sub Section IID / Clause No 2.02.00	11 of 13	As per this clause construction water may be provided by Owner at one point near existing Stage-II reservoir. We understand that construction water point shall be approximately 500 meter from the proposed cooling tower working area. Kindly confirm.	Construction water point shall be approximately 500 meter from working area.	Noted.	
9	Technical Specification No. PE-TS-497-165-N001	Section VI / Part B of Bid Doc No CS-4540-001A-2 / Sub Section IID / Clause No 2.02.00	12 of 13	We understand that " Construction power (three phase, 415 V/ 440 V) will be provided free of cost at one point near the site at a distance of approx. 500M". This is acceptable if the Batching Plant is allowed near the Cooling Tower. However, if batching plant is located elsewhere / in laydown area, separate Construction power connection (three phase, 415 V/ 440 V) will be provided by BHEL free of cost at one point near the batching plant at a distance of approx. 500M". Please confirm.	If Batching plant is located elsewhere / in laydown area, separate Construction power connection (three phase, 415 V/ 440 V) will be provided free of cost at one point near the batching plant at a distance of approx. 500M"	Noted.	Bidder to note that location of construction power as given against referred clause shall stand (Issued as part of corrigendum -1 dated 10.02.2023). However, Construction power shall be on chargeable basis as per SCC and response against Sl.no 6 of commercial point above.
10	Technical Specification No. PE-TS-497-165-N001	Section VI / Part B of Bid Doc No CS-4540-001A-2 / Sub Section D-1-7 / Clause No 5.17.01.01 (B)	49 of 120	For design consideration for wind pressure reference of "Criteria for structural design of Reinforced concrete Natural Draft Cooling Tower " IS 11504 and wind pressure co-efficient (p1) as 1.43 is mentioned in this clause. But as per latest code IS 11504-2020 , there is no such factor as 1.43. Hence kindly furnish the wind pressure co-efficient to be considered in our design.	Bidder to follow design criteria mentioned in technical specification.	Noted.	
11	Technical Specification No. PE-TS-497-165-N001	Section VI / Part B of Bid Doc No CS-4540-001A-2 / Sub Section D-1-7 / Clause No 5.17.01.02.03 (F - a)	55 of 120	Minimum thickness of NDCT shell has been specified as 350 mm. As per standard industrial practice, minimum NDCT shell thickness of 250 mm should be sufficient. In case above is not acceptable, minimum thickness of shell of 250 mm should be accepted in case meridional ribs are provided in the cooling tower shell. Please confirm.	Bidder to refer technical specification clause no. 5.17.01.02.03 "D" & "F"(section-VI,PART-B,SUB-SECTION-D-1-5).	Noted.	
12	Technical Specification No. PE-TS-497-165-N001	Section VI / Part B of Bid Doc No CS-4540-001A-2 / Sub Section D-1-7 / Clause No 5.17.01.02.03 (F - b)	55 of 120	Co-efficient of Pr. Distribution around the cooling tower circumference including suction may be taken as VGB-BTR KUCHLTURMEN GERMAN SPECIFICATIONS (latest). Please confirm if we can use IS: 11504 -2020 in place of VGB-BTR KUCHLTURMEN GERMAN SPECIFICATIONS (latest) for co-efficient calculation. We request BHEL to review our query and confirm to enable us suitably optimise our NDCT design.	Bidder to comply the specification requirement.	Noted.	
13	Technical Specification No. PE-TS-497-165-N001	Section VI / Part B of Bid Doc No CS-4540-001A-2 / Sub Section IID / Clause No 5.17.03.01	59 of 120	As per this clause "Automatic Climform scaffolding system or Jumpforms shall be used for tower shell construction". Kindly note that we shall be using electro-mechanically operated jumpform system only as per our well-proven and universally accepted standatd.	Bidder to comply the specification requirement.	Noted. This needs to be further discussed during kick-off meeting after order .	Bidder to comply the specification requirement.
14	Technical Specification No. PE-TS-497-165-N001	Section VI / Part B of Bid Doc No CS-4540-001A-2 / Sub Section IID / Clause No 5.18.03.02	83 of 120	Kindly furnish the distance of the disposal area from the excavation point. We understand that disposal area should be located inside the plant boundary only and at a distance of maximum 4 Km from the proposed cooling tower location.	Disposal area from excavation point shall be approximate 4 km.	Noted.	

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15	Technical Specification No. PE-TS-497-165-N001	Section VI / Part B of Bid Doc No CS-4540-001A-2 / SubSection D-1-7 / Clause No 7.01.00	1 of 12	As per this clause, NGL is varying between RL (+) 64.9 M and RL (+) 67.0 M. But as per enclosed Bore Hole details for (BH-10 to BH-18) & (BH-149-157), NGL is varying from RL 71.425 M to RL 68.122 M. Please clarify why there is so much difference in the levels.	Please note that the variation of NGL mentioned in clause no 7.01.00 is for proposed Admin building, fire station, permanent store, Workshop building and gate complex area. Bidder is requested to refer bore logs of NDCT area for actual variation in NGL.	Noted.	
16	Technical Specification No. PE-TS-497-165-N001	Annexure - II	--	T&P shall be mobilized and installed by us as per our design and based on overall completion schedule and not necessarily as per the T&P list furnished in Annexure - II. Some of our comments on the T&P list furnished in Annexure - II are: (a) SI No F – Minimum twenty (20) Sets to be replaced with Minimum Ten (10) sets (b) SI No G – We understand that this is applicable against ring beam / raft below GL. Kindly confirm.	a) Bidder to follow tender specifications. b) Vendor understanding correct Vendor to follow minimum requirement mentioned in listed T&P. For balance requirement mutually agreed PLAN to be made during mobilisation.	Noted. This can be further discussed during kick-off meeting after order.	a) Bidder to follow tender specifications. b) Vendor understanding correct Vendor to follow minimum requirement mentioned in listed T&P. For balance requirement mutually agreed PLAN to be made during mobilisation.
17	Technical Specification No. PE-TS-497-165-N001	Annexure - III	--	Kindly confirm whether " One ash silo" need to be included in Cooling Tower contractor's scope.	One ash silo to be included in cooling tower contractor scope.	Noted.	
18	Technical Specification No. PE-TS-497-165-N001	Annexure - IV	--	Point 3 suggests "BHEL is planning to supply TMT in coil form. Vendor to deploy D Coiling machine". Please note D coiling machine is required for TME of smaller diameter. Generally usage of such small diameter TMT is very rare in NDCT projects. Hence we request BHEL to take suitable action and supply straightened bar. Hence this point needs to be modified suitable based on project requirement. We also request BHEL to issue each re-bar in cutting pieces as per approved billing break-up schedule.	Bidder to follow tender specification.	Noted.	
19	Technical Specification No. PE-TS-497-165-N001	Section VI / Part B of Bid Doc No CS-4540-001A-2 / Sub Section D-1-12 (F) / Clause No 1.4.0	2 of 4	Kindly confirm that the soil data provided elsewhere (Volume IIB / Section C & Annexure-I) in the specification is for cooling towers' location only. Also confirm that there will no possibility of shifting of cooling tower location in future. For bidding purpose we will be following the available soil investigation report only and any price / time implication due to change in our bid consideration due to any variation between actual soil condition and available soil report should be borne by Purchaser.	It is confirmed that soil data provided in Annexure-1 is for NDCT area. Please refer clause no 3.00.00 of Volume IIB / Section C, sheet 1 to 8 for clarity. Regarding cooling tower location the tower centre line may shift by 10 to 15 meters depending on size provided by successful bidder.	Noted.	
20	Technical Specification No. PE-TS-497-165-N001	Annexure - Q	--	The proposed cooling towers will be handling clarified water. Hence kindly confirm whether this specification mentioned as applicable for concrete surfaces in sea water application will be applicable or not for this project.	Bidder to follow this specifications for painting/coating.	Noted.	
21	Technical Specification No. PE-TS-497-165-N001	Section C / Sub-Section C&I	--	1. Please provide detailed technical specification, P&ID, relevant piping drawings and approved sub vendor list for each item listed under SI No 1.1 thru' 1.4 listed under Specific Technical Requirements (C&I). 2. Also please provide C&I Cable, JB scope terminal point information for the MOV Signals.	1. Detailed technical specification for items listed under SI no 1.1 to 1.4 are already covered in specification (Section - IC). Sub vendor list is also annexed with Section - IC. 2. C&I cable is in BHEL scope of supply. Special cable, if any shall be supplied by bidder. Further, cable engineering i.e. cable schedules and interconnections to be provided by bidder.	Noted.	
22	Technical Specification No. PE-TS-497-165-N001	Section VI / Part B of Bid Doc No CS-4540-001A-2 / Sub Section IIIC-17	3 OF 4	We understand that supply and laying of C&I cable is in BHEL's scope. Kindly confirm.	Kindly refer Electrical scope matrix for Cable (Section - IB).	Noted.	

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23	Technical Specification No. PE-TS-497-165-N001	Section C / Sub-Section C&I	--	We understand that there is a requirement to consider Averaging Type Pitot Tube or Annubar. We also understand that DP Flow transmitter shall be of Profibus type . Kindly furnish the approved sub vendor list and detailed technical specification for DP Flow transmitter.	Please follow specification.	Noted.	
24	Technical Specification No. PE-TS-497-165-N001	Section VI / Part B of Bid Doc No CS-4540-001A-2 / Sub Section IIIC-04	20 of 34	Instruments required for performance guarantee test will be only loaned for the duration of tests. These will be taken back by the testing agency on completion of testing. However, we have included in our scope C&I Instruments / PG Test Instruments as listed under SI No 1.1 of Specific Technical Requirement (C&I), which shall be supplied as loose items.	Please follow specification.	Our clarification is in line with specification / standard industrial practice.	Please comply the specification requirement (Refer Note indicated in page 20 of 34 of Section VI / Part B of Bid Doc No CS-4540-001A-2 / Sub Section IIIC-04)
25	Technical Specification No. PE-TS-497-165-N001	List of Mandatory Spares for C&I for NDCT Package	1 of 1	Kindly note that following C&I spares are not applicable within our scope limit: (a) SI No A (iv) – Purge meters (b) SI No A (v) – Filter regulators (c) SI No E – Process Actuated Switch Devices (d) SI No F – Limit Switches Also note that spares for Electrical Actuator mentioned under SI Nos B / 2 to 10 shall be supplied as applicable based on our finally selected valve manufacturer's design requirement only.	Please follow specification. Further, please refer notes regarding mandatory spares as indicated in the price schedule.	We have referred to specification and also notes regarding mandatory spares as indicated in the price schedule. Kindly note that the mentioned spares in our earlier query are not applicable for our scope as per tender specification and hence cannot be quoted.	Please follow specification. Further, please refer notes regarding mandatory spares as indicated in the price schedule.
26	Technical Specification No. PE-TS-497-165-N001	HSEP: 14 / Clause No 11.44 / SI No 10	82 of 190	Clause Suggest "Tie up with fire brigade shall be done in case customer is not having fire station". We understand that this is outside bidder's scope. Kindly confirm.	FIRE tender arrangement is not in vendor scope. Vendor to follow FIRE extinguisher requirement as mentioned in HSE chapter.	Noted.	