



BHARAT HEAVY ELECTRICALS LIMITED
PROJECT ENGINEERING MANAGEMENT, NOIDA

Date-21-Dec-22

CORRIGENDUM- 04

PROJECT	:	2 x 660 MW NTPC TALCHER TPP, STAGE - III
PACKAGE	:	COOLING TOWERS (CT) (NATURAL DRAFT COOLING TOWER)
ENQUIRY NO	:	PE/PG/HER/E-7118/2022 Dated. 26.11.2022
SUBJECT	:	PRE- BID CLARIFICATION

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

Please note the following:

Reply to Pre Bid Query attached with this corrigendum shall be treated as part of NIT.

Yours faithfully,

For and on behalf of BHEL

Sharad Chandra
Manager/BOP

DEVIATION/CLARIFICATION

Client: M/s Bharat Heavy Electricals Ltd. – PEM Division

Work: Tender No. PE/PG/HER/E-7118/2022 date 26.11.2022; "Design and Construction of 2 nos. Natural Draft Cooling Towers on EPC basis for 2 X 660 MW NTPC TALCHER TPP Stage – III, Odisha"

Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
1.	Clause No. 5.04.00 Sub-Section IA, Section I SPECIFIC TECHNICAL REQUIREMENTS	Bidder shall furnish performance characteristic curves for following variations in design parameters 15%, 25%, 60%, 70%, 80%, 90%, 100%. Bidder shall also clearly identify various "Guaranteed Zones" as per the requirement of code.	It may be kindly noted that no guaranteed zones are to be identified as per any of the cooling tower codes. The only parameter to be guaranteed as per codes and also the BHEL specifications is the design "Cold Water Temperature" at the design duty conditions of water flow rate, hot water temperature, cold water temperature, wet bulb temperature, relative humidity and wind speed.	Please follow specification.
2.	Clause No. 6.09.00 Sub-Section IA, Section I SPECIFIC TECHNICAL REQUIREMENTS	Two external cage ladders for approach to top of cooling tower from ground level.	Please revise as: 2 nos. Cage ladders for approach to top of NDCT from hot water distribution level.	Please follow specification.
3.	Clause No. 6.14.00 Sub-Section IA, Section I SPECIFIC TECHNICAL REQUIREMENTS	The buried piping in bidders scope shall be steel pipe. Welding of pipe header with Purchaser's pipe at terminal point shall be in bidder's scope. The thrust block etc. shall also be in bidder scope.	This clause requires 2 nos. welding sockets to be provided at water distribution level. It is presumed that these sockets will be outside the NDCT, one each near the top landing of either of the staircases. This is because no electrical points can be provided inside the NDCT where humid conditions and drift exist.	Please follow specification.

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4.	Clause No. 8.01.00 Sub-Section IA, Section I SPECIFIC TECHNICAL REQUIREMENTS	To ascertain the fulfilment of guarantees after completion of erection and commissioning of the cooling tower, contractor shall carry out performance test at site in presence of employer /purchaser through CTI / NTPC approved/listed testing agency. Under no circumstances, the bidder himself will conduct the test even if approved by CTI. The testing agency shall be independent from the bidder.	Kindly let us know which are the NTPC Approved and/or Listed Testing Agencies so that we can assess costs and associated conflict of interest, if any with any of the agencies. Also, please let us know whether a bidder's design consultant can conduct the PG test?	Please follow specification.

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5.	<p>Clauses 8.03.06 & 07</p> <p>Sub-Section IA, Section I</p> <p>SPECIFIC TECHNICAL REQUIREMENTS</p>	<p>The guaranteed performance of the equipment shall be demonstrated by the bidder after evaluating the P.G. test should the result of the test deviate from the guaranteed values the bidder shall be given an opportunity to modify the equipment as required to enable it to meet the guarantees. In such cases the PG test shall be repeated within one month from the date on which the equipment is ready for retest and cost of modification, including labour, materials and cost of additional testing shall be borne by the Bidder. All the modifications carried out by the bidder in the Cooling Tower to meet the contractual requirements shall be carried out free of cost to the Owner in other towers (if applicable for the package).</p>	<p>The above clauses are contradictory. Clause 8.03.06 states that should the results of the PG test deviate from the guaranteed values the bidder shall be given an opportunity to modify the equipment as required to enable it to meet the guarantees. Clause 8.03.07 states that In case the test cold water temperature as determined from the PG test is higher than the predicted value (based on the performance curves), Owner reserves the right to reject/ accept the tower after assessing the liquidated damages as specified. It may kindly be noted that the guaranteed value is the design cold water temperature as per Clause 11.00.00 and not the test cold water temperature. Hence, whatever are the test results, for the specific test conditions on the day of the test, will have to be converted to the guaranteed values as explained in Appendix-M of CTI code ATC-105 and then the results will have to be assessed for meeting the design guaranteed values. This method is already stipulated at Clause 14.02.00 of the specifications.</p>	<p>Please follow specification.</p>

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6.	<p>Clause No. 3.01.01</p> <p>Sub-Section A15, Section VI, Part B</p> <p>TECHNICAL SPECIFICATION</p>	<p>The cooling tower shall be designed to meet the duty conditions as specified in this tender specification. Employer may get the verification and review of contractor's design done through third party (who can be employer's consultant/reputed designer/ National or International Technological Institute/National or International body on cooling tower & it's components), if required (during detailed engineering). All necessary data/ details/ drawings shall be provided by the contractor to get the same carried out.</p>	<p>An international cooling tower body like CTI or IIT/NIT in India is understandable. But it is not clear as to who can be termed as a reputed designer. Normally, individuals practising cooling tower designs are no consequence in a tender process and hence, cannot be considered for technical evaluation of bids. Only IITs and NITs in India can be considered for such design evaluations to firmly rule out conflict of interest. And not even CTI can be considered for such a role because of the conflict of interest involved between bidders who are members of CTI and those who are not. Hence, it is necessary for BHEL to let the bidders know as to who the probable third party design evaluating agencies will be.</p>	<p>Please follow specification.</p>
7.	<p>Clause No. 8.00.00</p> <p>Sub-Section A15, Section VI, Part B</p> <p>TECHNICAL SPECIFICATION</p>	<p>Inlet Louvers The water loss in the inlet air openings shall be prevented with provision of adequate number of louvers of proper slope, width and spacing or alternatively by over dimensioning the cold-water basin by minimum 1.0 meter all-around. Louvers, if provided, must be properly designed to give uniform distribution of air with minimum pressure drop and must be able to withstand the corrosive atmosphere.</p>	<p>Provision of louvers and/or over dimensioning of basin by 1 m is applicable only to IDCTs and not NDCTs. Hence, BHEL may please confirm that the basin wall can be integral with tower pedestals as per practice.</p>	<p>Please follow specification.</p>

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8.	Clause No. 9.00.00 (2) Sub-Section A15, Section VI, Part B TECHNICAL SPECIFICATION	The non-clogging type fills shall be in modular form. These fills are to be mechanically assembled without any use of adhesives. Assembling by other proven method is also acceptable. The fill shall be freely rested, and bottom supported to prevent any sagging and damage.	It is not clear whether non-clogging type of film fills in modular form are also acceptable, if non-clogging type in modular form is the fill classification and the governing criteria. Kindly clarify.	Please follow specification. For type of fills, please refer Clause No. 9.00.00 (1), Sub-Section A15, Section VI, Part B of specification.
9.	Clause 12.00.00 Sub-Section A15, Section VI, Part B TECHNICAL SPECIFICATION	HOT WATER PIPING, VALVES, ACCESSORIES Main header shall be branched into two (02) nos. for feeding to each section of cooling tower. Two (2) nos. manually operated butterfly valves of suitable size shall be provided in branch pipe of each cooling tower. These valves shall be in the vertical section of hot water piping and shall be overground.	This clause specifies manually operated B/F valves and is in contradiction with Data Sheet-A requirement of Motorized B/F valves. Kindly clarify.	Please refer Clause No. 1.02.01.2.a, Sub-Section IIA-11, Section VI, Part A of specification.
10.	Clause 16.0 Sub-Section B11, Section VI, Part B TECHNICAL SPECIFICATION	Cooling Towers 100%	"Cooling Towers 100%" is mentioned here. Kindly explain as to what this means and whether any lighting other than Aviation Lighting is envisaged for the NDCT package.	Bidder to note that 100% corresponds to normal AC lighting (i.e. no emergency lighting envisaged). Bidder to follow specification.

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11.	Clause no. 2.8 Sub-Section ID, Section I, DATASHEET - A TECHNICAL SPECIFICATION	Design ambient Relative Humidity: 50 %	Kindly let us know whether the Met data was analysed by NTPC/BHEL to arrive at the design relative humidity of 50%. NDCT sizing is quite sensitive to the RH value considered in design and hence, conservative estimates are recommended. Kindly let us know.	Please follow specification
12.	Clause no. 2.1 & 2.15 Sub-Section ID, Section I, DATASHEET - A TECHNICAL SPECIFICATION	2.1 Actual Cooling water flow: 73,160 m ³ /hr. 2.15 Maximum Cooling tower flow capacity to be considered for design of hot water distribution and cold-water channel: Min 120% of design CW flow.	The actual cooling water flow is 73,160 m ³ /hr whereas the specified water flow for NDCT design is 81,000 m ³ /hr with margin, which is ≈ 11%. Clause 2.15 requires the HW distribution system and the CW channel to be designed considering a water flow rate of 120% of design flow, which is 120% of 81,000. This is actually ≈ 131% of 73,160 m ³ /hr, which is the actual flow rate. Kindly confirm that the above clause are correct.	Specification clauses are in order. Please follow specification
13.	Clause no. 2.14 Sub-Section ID, Section I, DATASHEET - A TECHNICAL SPECIFICATION	Maximum Diameter of Raker Column Centreline: 132 M	The maximum diameter of CL of raker column is specified to be 132 m. Due to this restriction, BIL will not be able to optimize the NDCT site. Please allow maximum diameter of Raker Column Centre line upto maximum 140m and based on the outcome of the thermal design. In that case pavement width around cooling tower can be reduced from 10m to 6m which is sufficient for movement of trailer, etc.. (Clause no. 5.17.00 of Technical Specifications)	The maximum diameter of CL of raker column at FGL may be considered as 135 meters.

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14.	<p>Clauses no. 4.9 to 4.14</p> <p>Sub-Section ID, Section I, DATASHEET - A</p> <p>TECHNICAL SPECIFICATION</p>	<p>4.9 Number of cold water outlet channels: One for each compartment of CW basin. Cold water outlet shall be designed for flow velocity through them within 1.8 M/sec during the rated flow from cooling tower, with the minimum water level in the cold water basin. At T.P Bidder to match same as per GA Drawing (ref Annexure-I).</p> <p>4.10 Depth of CW channel: 3.25 M from FGL (Ref Annexure- I)</p> <p>4.11 Number of screens and gates in outlet channel: As specified elsewhere in specification</p> <p>4.12 Maximum allowable effective velocity through Cold water channel at Min. Water Level: 1.8 M/Sec.</p> <p>4.13 Maximum allowable effective velocity through gates at Min. Water Level: 1.2 M/Sec.</p> <p>4.14 Max. allowable effective velocity through screens at Min. Water Level: 1.2 M/Sec.</p>	<p>Kindly note that the basin will overflow if the CW channel is sized for a flow velocity of 1.8 m/s. Gravity flow design consideration should not exceed 1 m/s.</p> <p>Moreover, the CW channel will have screens obstructing the flow of water and hence, the flow across screens (through free flow area after deducting mesh & frame obstructions) cannot exceed 0.7 to 1 m/s so as not to result in basin overflow.</p> <p>Kindly check and confirm.</p>	<p>Bidder to follow specification.</p> <p>BHEL has specified maximum allowable velocity. Bidder can consider lesser velocity.</p>
15.	<p>Clause no. 1.00.00</p> <p>Sub-Section IID, Section VI, PART - A CIVIL WORKS</p> <p>TECHNICAL SPECIFICATION</p>	<p>SCOPE OF CIVIL, STRUCTURAL & ARCHITECTURAL WORKS OF EPC PACKAGE</p> <p>The scope of civil, structural and architectural works shall include topographical survey, detailed geotechnical investigation, site clearance, dismantling of existing structures/substructures/facilities, site levelling, preparation of design documents and drawings and getting approval of the same from the Employer and construction of all civil, structural and architectural works including supply of all construction materials for all buildings, equipment and facilities for the project.</p>	<p>Are topographical survey, detailed geotech investigation and site clearance (cutting of trees up to 30 cm girth) included in the scope of the bidder?</p> <p>The specifications already include a detailed geotechnical survey and soil test report that presents the safe bearing capacity to be considered at various depths for the NDCT package.</p>	<p>Please refer clause no 3.0 - Geo-technical investigation and foundation system in book 2 of 2 of specification.</p>

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16.	<p>Clauses no. 7.08.00.00 & 08</p> <p>Sub-Section D-1-7, Section VI, PART - B CIVIL WORKS</p> <p>TECHNICAL SPECIFICATIONS</p>	SOIL DATA AND FOUNDATION SYSTEM	Geotechnical data include Net SBC as well as pile capacity, please confirm which data are applicable for NDCT area.	Specification is clear. Please follow specification.
17.	<p>Clause no. 5.17.01.02.03, (A), (a)</p> <p>Sub-Section D-1-5, Section VI, PART - B CIVIL WORKS</p> <p>TECHNICAL SPECIFICATIONS</p>	<p>Openings in shells:</p> <p>Opening through the shells should be avoided as far as possible. They should be of smallest required dimensions and shall be shaped such that stress concentration is minimized at the boundary of the opening. Should thickening of the edges be necessary, it shall be smoothly tempered back to the shell thickness.</p>	<p>Thickening of the shell at the top to guard against possible instability due to gusts is not recommended as there are other considerations, especially thermal performance under windy conditions. A platform at the top not only offers stiffness against gusts but also prevents cold air penetration into the shell during windy conditions. Hence, the diameter of the shell at the top, the design of the platform at the top edge and the resulting air/plume flow area at the exit will all depend on the thermal design considerations to be made by the designer. Kindly confirm.</p>	Please follow specification.

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18.	<p>Clauses no. 5.17.05.07 & 08</p> <p>Sub-Section D-1-5, Section VI, PART - B CIVIL WORKS</p> <p>TECHNICAL SPECIFICATIONS</p>	<p>The tower shall be provided with two numbers external FRP Staircase, leading to a heavy duty door giving access to the distribution system. Staircase shall be minimum 1000 mm wide (clear), with landings of minimum width of 1000 mm at not more than 2500 mm height intervals unless approved otherwise.....</p> <p>A FRP platform of 1500 mm clear width shall be provided around the tower periphery which will be a means of access to next walkways and all end valves.....</p>	<p>Kindly clarify as to whether the staircases and platforms are in FRP or RCC. A live load of 400 kg/m² is too high for a FRP platform but alright for a RCC structure.</p>	<p>Please refer specification clauses indicated at page with heading "Amendment No. 01 to Technical Specifications Section-VI of Bidding Document No.: CS-4540-001A-2".</p>

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19.	Clause no. 12.4 GENERAL CONDITIONS OF CONTRACTS	Decision of Purchaser with regard to Seller/ Contractor's liability and the amount involved, if any, payable by Seller/ Contractor under the guarantee shall be final, conclusive and binding. However, vendor's maximum liability will be limited to the total contract value including taxes, duties and freight except under the condition of Risk purchase including taxes, duties and freight. This shall not be applicable on the recoveries arising out of Risk and Cost, recoveries made by Customer from BHEL on account of Contractor, any other type of recoveries for workmanship, material, T&P etc. due from the contractor.	<p>Please revise the clause as below:</p> <ul style="list-style-type: none"> • Any decision of Purchaser which the Seller/Contractor does not agree with shall be, at the Seller's discretion, submitted to the dispute resolution mechanism, i.e. the Purchaser's decision shall not be final, conclusive and binding • Maximum liability specified herein to be applicable to the whole contract, not just in relation to the Guarantee as per clause 12 • Please insert the following: <i>Neither party shall be liable to the other, under any legal or equitable theory of recovery or otherwise by law, including for liability arising by way of indemnity, in contract or in tort (including negligence) or otherwise, for any special, exemplary, punitive, moral, and/or indirect or consequential loss or damage whatsoever, or for any loss of profit or revenue, loss of production, loss of use of the works (or part thereof), loss of any contract, or any claims for any type of loss or damage of a type referred in this section under any contract with a third party and which arises as a result of the other party's breach of this Contract.</i> 	Bidder to refer GCC-BOP Rev 00

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20.	Clause no. 14.1 GENERAL CONDITIONS OF CONTRACTS	Purchaser's nominated Inspection Agency shall have at all reasonable times access to Seller/ Contractor's premises or works and shall have the power at all reasonable times to inspect drawings of any portion of the work or examine the materials and workmanship of the plant/ equipment/ stores during their manufacture, and if part of the plant/ equipment/ stores is manufactured at other premises, the Seller/ Contractor shall arrange for inspection, examination and testing by the Inspection Agency as if the plant/ equipment/ stores is manufactured on the Seller/ Contractor's premises.	Please add the following wording at the end of the clause: Notwithstanding the above, such inspection shall be subject to the following: (i) the Purchaser shall give the Seller reasonable prior notice of its intention to inspect. (ii) inspection shall only take place during normal business hours. (iii) the Purchaser shall comply with the Seller health and safety guidelines. (iv) the Purchaser shall not delay and/or disrupt the Seller nor issue any instruction to the Seller during any such inspection, and the Purchaser being (v) accompanied by a member of the Seller's personnel at all times during the inspection.	Bidder to refer GCC-BOP Rev 00
21.	Clause no. 16.0 GENERAL CONDITIONS OF CONTRACTS	DELIVERY FAILURE AND TERMINATION / LIQUIDATED DAMAGES	Please add following: These liquidated damages shall be the only damages due from the Seller for delay and shall be the Seller's sole liability and the Purchaser's sole remedy for delay,	Bidder to refer GCC-BOP Rev 00

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22.	Clause no. 30.3 GENERAL CONDITIONS OF CONTRACTS	If it is agreed between the parties that a Force Majeure event has occurred and its effect continues for a period of 36 months, then either party shall be free to cancel the contract. However, if the effect of such event ceases within this period of 36 months, the performance of the obligations put on hold shall be resumed immediately.	36 months is too long – Please revise to 120 days.	Bidder to refer GCC-BOP Rev 00
23.	Clause no 31.0 GENERAL CONDITIONS OF CONTRACTS	Seller/ Contractor shall fully indemnify and keep indemnified the Purchaser against all claims/losses/damages/demands/expenses of any nature of whatsoever nature arising during the course and out of the execution of this Order/ Contract on in connection of this contract.	Please add the following wording to the clause: "to the extent that such claims /losses/damages/demands/expenses arise solely and exclusively our of or by reason of the Seller's performance of its obligations under the contract and is attributable to negligent acts or omissions of the Seller, its personnel, officers, agents or subcontractors."	Bidder to refer GCC-BOP Rev 00
24.	Clause no. 32.3 GENERAL CONDITIONS OF CONTRACTS	Seller/ Contractor shall continue to perform the order/ contract, pending settlement of dispute(s).	Please add the following wording to the clause: "unless the dispute is related to non-payment by the Purchase to the Seller in which case the Seller, at its discretion, shall be entitled to suspend performance of the order/contract"	Bidder to refer GCC-BOP Rev 00

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25.	Clause no. 43.0 GENERAL CONDITIONS OF CONTRACTS	a) If the completion of work as detailed in the scope of work gets delayed beyond the contract/ completion period, the seller/ contractor shall request for an extension of the contract and BHEL at its discretion may extend the contract as per procedure prescribed in clause 43.0 (b), (c) & (d).	Please add the following wording at the end of clause: *Notwithstanding the foregoing, Seller shall be entitled to an extension of the time for completion if and to the extent that it is or will be delayed in the progress and/or completion of the works or of a portion thereof by the dates stated in the schedule and/or the achievement of the time for completion by any of the following causes: (i) as a result of an error or fault found in the information and documentation provided by Purchaser, (ii) any delay, impediment or prevention caused by or attributable to Purchaser, its personnel or representatives or other contractors, if any, performing works at the same site, (iii) any change in law affecting the works, (iv) Force Majeure in accordance with clause 30, or (v) a cause of delay giving an entitlement to extension of time under this Contract.	Bidder to refer GCC-BOP Rev 00
26.	Clause no. 4.2 GENERAL CONDITIONS OF CONTRACTS	OTHER TAXES & LEVIES All taxes/ duties/ Cess / BOCW / <i>seignior age fee</i> other than GST shall be deemed to be included in the Ex-Works prices.	BOCW cess to be provided extra. Please also clarify about new taxes.	Bidder to refer GCC-BOP Rev 00

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27.	Clause no. 22. NIT	Final Payment	Please provide the final payment clause.	Bidder to refer Clause no 9.0 of GCTC of GCC-BOP Rev 00 and Clause No 22 of NIT.
28.	Clause no. 22. (ii) NIT	Ten percent (10%) of contract value of civil works along with taxes (as applicable) shall be released by Site authorities/ Region on successful completion of PG/ Demonstration test(s) and handing over system/package to Customer/BHEL, as applicable.	We request you to release 10% Contract Value on completion of NDCT against submission Equivalent Bank Guarantee.	Bidder to refer NIT.
29.	Clause no. 46 NIT	Clause no 9.5 (excluding notes) of GCTC of GCC BOP Rev. 00 shall be read as- "Vendors shall submit billing documents for payment directly to BHEL. Payment will be released within days as mentioned below after submission of complete documents as per clause no 9.6.2 – 9.6.5: a. 90 days for non MSME as per MSMED Act	We request you to release the payment within 30 days as we are medium enterprises as per MSMED Act.	Bidder to refer NIT.
30.	Clause no. 19 NIT	Taxes & Duties (For Order Directly to Foreign Bidders): In case of foreign vendors, quoted prices & Dispatches shall be on C & F Port-Chennai basis and the Taxes & duties in the country of dispatch shall be borne by foreign vendor. All the Taxes & duties and other charges applicable in India shall be borne by BHEL-PEM for the direct order placed by PEM to the foreign bidder and by BHEL-PSWR for the orders placed by PSWR.	We understand that upcoming project enjoy Mega Power Plant status. Please confirm if custom duties are exempted for import of Cooling Towers fills, etc.. Please also confirm custom duties are exempted for import of construction equipment like tower crane, jumpform, and other equipment.	Bidder to refer NIT and SCC.

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31.	Pre-qualification requirements	b) foreign bidder is to submit a latest report from reputed third-party business rating agency like Dun & Bradstreet, Credit reform etc. in addition to the documents mentioned at point (a) above for review of above criteria.	Please confirm International Bidding is allowed.	Bidder to refer NIT.
32.	ANNEXURE – E SPECIAL CONDITIONS OF CONTRACT (SCC Rev.00)	PRICE ADJUSTMENT – PVC payment terms and conditions The total amount of PVC payable shall not exceed 10% of the BASIC contract value for respective order.	We request you to increase the limit of PVC to 25%.	Bidder to refer NIT.
33.	ANNEXURE – E SPECIAL CONDITIONS OF CONTRACT (SCC Rev.00)	C. PRICE VARIATION COMPENSATION FOR CIVIL WORK PORTION F = Fixed portion of the contract price which will not be subjected to any adjustment under this formula or otherwise which will be 0.20 .	We request you to change the fixed portion to 0.10 .	Bidder to refer NIT.
34.	Clause no. 1.0 Annexure – P SPECIAL CONDITIONS OF CONTRACT (SCC Rev.00)	Construction Power 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.	We request you to provide the construction power point at 3 places within 100 m of NDCT Site, 100m of fabrication yard & 50 m of Batching Plant.	Bidder to refer NIT.

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Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
35.	Clause no. 2.0 Annexure-P SPECIAL CONDITIONS OF CONTRACT (SCC Rev.00)	Construction water Construction water will be provided free of cost at one point within the plant boundary. Bidder has to make arrangement of further distribution of water at his own cost.	We request you to provide the construction water point at 3 places within 100 m of NDCT Site, 100m of fabrication yard & 50 m of Batching Plant.	Bidder to refer NIT.
36.	Annexure-II SPECIAL CONDITIONS OF CONTRACT (SCC Rev.00)	T&Ps TO BE DEPLOYED BY CONTRACTOR Payment towards mobilization and installation for sr no A.8, A.9 A.10, E, F & G shall be made/allotted during detailed BBU approval based on expenditure/cost incurred proof submission by agency with maximum cumulative 5% of Civil contract value.	Please revise: Payment towards mobilization and installation for sr no A.8, A.9 A.10, E, F & G shall be made/allotted during detailed BBU approval based on expenditure/cost incurred proof submission by agency with maximum cumulative 7.5% of Civil contract value.	Bidder to refer NIT.
37.	Clause no. 2.2 ANNEXURE-III SPECIAL CONDITIONS OF CONTRACT (SCC Rev.00)	Cement consumption and Basis of issue & penal recovery: 2. Actual consumption being Limited to one and half percent (+1.5%) of aforesaid theoretical consumption towards allowable wastage: Free	Please revise: Actual consumption being Limited to one and half percent (+3%) of aforesaid theoretical consumption towards allowable wastage: Free	Bidder to refer NIT.
38.	Clause no. 1.8 (2) ANNEXURE-III SPECIAL CONDITIONS OF CONTRACT (SCC Rev.00)	BHEL will provide Tags free of cost for maximum 300 workers, additional tags as required shall be provided by BHEL on chargeable basis @ Rs. 1000/- per tag. In case of damage or missing of issued worker tag, Rs. 1000/- per tag will be charged for issuing new worker tag.	Please provide Tags free of cost for maximum 800 workers.	Bidder to refer NIT.

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Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
39.	Clause no. 3.1 GCC	Total Erection & Commissioning charges (excluding GST) should be minimum 20% (or as specified in NIT) of the total quoted price of main equipment supply (including freight & excluding GST) and erection & commissioning (excluding GST), failing which the break-up of prices shall be adjusted accordingly for ordering. However, while doing adjustments, vendor quoted prices for mandatory spares, PG test charges, O&M spares, O&M charges, etc. will not be changed.	Please confirm whether total quoted price of main equipment supply, and erection & commissioning include the civil work. If it includes the civil work, then erection & commissioning charges should be based on tentative expenses and should not be minimum 20%.	Bidder to refer GCC BOP Rev 00.
40.	Clause no. 4.3.1 GCC	CUSTOM DUTY Applicable Customs Duty/ IGST/ Goods and Services Compensation Cess under Goods and Services Tax (Compensation to States) Act, 2017 element for imported items shall be included in the Ex-Works prices unless specified in the price format of the NIT.	Please confirm if custom duties are applicable on import of component like fills, etc. and this to be included in our price.	Bidder to refer GCC BOP Rev 00.
41.	Clause no. 5.2 GCC	STATUTORY VARIATION No other variations such as on Custom Duty, exchange rate, minimum wages, prices of controlled commodities, any other input etc. shall be payable by the purchaser unless specifically agreed upon.	The revision in minimum wages and price impact due to minimum wages should be compensated.	Bidder to refer GCC BOP Rev 00.
42.	Clause no. 9.2.1 GCC	INDIAN VENDORS 10 % of basic price of materials supplied shall be released against (2.5% against each activity) the completion of: (a) Trial run of the system/ package; (b) Successful completion of the PG test/ demonstration test of the system/ package, as applicable; (c) Submission of final documents, e.g., As built drawings, O&M manual etc. as applicable and (d) Liquidation of Punch Point.	We request you to release 10% of basic price against submission of equivalent Bank Guarantee on completion of work.	Bidder to refer GCC BOP Rev 00.

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Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
43.	Clause no. 9.3 GCC	ERECTION & COMMISSIONING PAYMENT 10 % (Ten percent) of contract E&C price along with taxes (as applicable) shall be released against (2.5% against each activity) (a) Trial run of the system/ package; (b) Successful completion of the PG test/ demonstration test of the system/ package, as applicable; (c) Submission of final documents, e.g. As-built drawings, O&M manual etc. as applicable and (d) Liquidation of Punch Point and handing over.	We request you to release 10% of contract E & C price against submission of equivalent Bank Guarantee on completion of work.	Bidder to refer GCC BOP Rev 00.
44.	Clause no. 10.0 GCC	RECOVERY OF OUTSTANDING AMOUNT ii. Dues payable to Seller against other contracts including SDs, BGs in the same Region/Unit/Division of BHEL. iii. Dues payable to Seller against other contracts including SDs, BGs in the different Region/Unit/Division of BHEL.	Please delete these clauses. This contract has to be treated independent of other contracts.	Bidder to refer GCC BOP Rev 00.
45.	Clause no. 12.4 GCC	This shall not be applicable on the recoveries arising out of Risk and Cost, recoveries made by Customer from BHEL on account of Contractor, any other type of recoveries for workmanship, material, T&P etc. due from the contractor.	Please delete this paragraph. The maximum liability should be limited to total contract value.	Bidder to refer GCC BOP Rev 00.
46.	Clause no. 16.2.1 (a) GCC	DELAYED DELIVERY LD on mandatory spares portion where delivery for mandatory spares is defined separately in the NIT. LD shall be applicable @ ½ percent and applicable GST thereon, of the total mandatory spares portion contract value excluding GST per week or part thereof, limiting to 10% of total contract value of mandatory spares excluding GST.	Please revise clause: LD on mandatory spares portion where delivery for mandatory spares is defined separately in the NIT. LD shall be applicable @ ½ percent and applicable GST thereon, of the total mandatory spares portion contract value excluding GST per week or part thereof, limiting to 5% of total contract value of mandatory spares excluding GST.	Bidder to refer Annexure- VII of GCC BOP Rev 00

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Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
47.	Clause no. 16.2.1 (b) GCC	LD on Supply and E&C- Purchaser reserves the right to recover from the Seller/ Contractor, as agreed liquidated damages and not by way of penalty, a sum equivalent to half ($\frac{1}{2}$) percent and applicable GST thereon, of the total contract price (main supply and E&C) excluding GST per week or part thereof, subject to a maximum of ten (10) percent of the total contract price (main supply and E&C) excluding GST, if E&C completion of the package is delayed beyond the contractual completion date or extension thereof as per the period stipulated in the Order/ Contract.	Please revise clause: Purchaser reserves the right to recover from the Seller/ Contractor, as agreed liquidated damages and not by way of penalty, a sum equivalent to half ($\frac{1}{2}$) percent and applicable GST thereon, of the total contract price (main supply and E&C) excluding GST per week or part thereof, subject to a maximum of five (5) percent of the total contract price (main supply and E&C) excluding GST, if E&C completion of the package is delayed beyond the contractual completion date or extension thereof as per the period stipulated in the Order/ Contract.	Bidder to refer Annexure- VII of GCC BOP Rev 00.
48.	Clause no. 16.2.1 (c) GCC	LD on service portion (PG test, O&M, AMC, etc.) where delivery for services are defined separately in the NIT. LD shall be applicable @ $\frac{1}{2}$ percent and applicable GST thereon, of the total service portion contract value excluding GST per week or part thereof subject to a maximum of ten (10) percent of the total contract value of service portion excluding GST.	Please revise clause: LD on service portion (PG test, O&M, AMC, etc.) where delivery for services are defined separately in the NIT. LD shall be applicable @ $\frac{1}{2}$ percent and applicable GST thereon, of the total service portion contract value excluding GST per week or part thereof subject to a maximum of five (5) percent of the total contract value of service portion excluding GST.	Bidder to refer Annexure- VII of GCC BOP Rev 00
49.	Clause no. 30.1 GCC	Force Majeure event means an event beyond the control of the parties to the contract including but not limited to war, Military operations of any nature, Act of God, earthquakes, floods, fire, quarantine restrictions, acts of public enemy, blockades, civil war, explosion, epidemics, insurgency, change in law or government policy etc.	Please include pandemic and endemic also in Force Majeure event.	Bidder to refer GCC BOP Rev 00.

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Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
50.	Clause no. 30.3 GCC	If it is agreed between the parties that a Force Majeure event has occurred and its effect continues for a period of 36 months, then either party shall be free to cancel the contract. However, if the effect of such event ceases within this period of 36 months, the performance of the obligations put on hold shall be resumed immediately.	Please change the clause to "If it is agreed between the parties that a Force Majeure event has occurred and its effect continues for a period of 3 months, then either party shall be free to cancel the contract. However, if the effect of such event ceases within this period of 3 months, the performance of the obligations put on hold shall be resumed immediately."	Bidder to refer GCC BOP Rev 00.

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Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
51.	Clause no. 33.2 GCC	<p>ARBITRATION Except as provided elsewhere in this Contract, in case amicable settlement is not reached between the Parties, in respect of any dispute or difference; arising out of the formation, breach, termination, validity of execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the contract, then, either Party may, by a notice in terms of Section 21 of Arbitration & Conciliation Act in writing to the other Party commence arbitration. The notice shall as far as possible contain the particulars of all claims to be referred to arbitration. The arbitration shall be conducted by Sole Arbitrator to be appointed mutually by the Competent Authority of BHEL (purchaser) & Seller within the statutory period as applicable. As far as practicable, names of 2 or more persons shall be forwarded to the Seller for seeking consent of the Seller to one of the names proposed for appointment as arbitrator in the case. If the parties fail to agree on the name of Sole Arbitrator, then appointment shall be made as per the provisions of section 11 of the Arbitration & Conciliation Act.....</p>	<p>The number of arbitrators shall be three. Each party shall appoint their Arbitrator and the two appointed Arbitrators shall thereafter appoint the Presiding arbitrator. The work being construction related, it is agreed to appoint construction domain experienced Arbitrator to enable better understanding of the issues and early disposal of the issues.</p> <p>The place of arbitration shall be New Delhi. New Delhi law shall apply.</p> <p style="text-align: center;">OR</p> <p>As per the latest honorable Supreme Court Judgement</p> <p><u>QUOTE:</u> <i>"A Party interested in the outcome of the award loses the right to appoint the Arbitrator"</i></p> <p>In view of the above it is suggested that we may select a neutral Arbitrator though IITArb (Indian Institute of Technical Arbitrators) or ICA (Indian Council of Arbitration) or through court.</p>	Bidder to refer GCC BOP Rev 00.

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Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
52.	Clause no. 39.0 GCC	HOLD ON CONTRACT EXECUTION CASES OTHER THAN FORCE MAJEURE In case of uncertainty regarding lifting of HOLD on contract execution relating to any activity put by Buyer/BHEL (because of any reason other than Force Majeure) or by end customer (cancellation or hold on project), the contract/Purchase Order may be short closed by Buyer/BHEL after 3 years from date of imposition of HOLD without prejudice to any claim of either party with regard to the executed portion of the contract. However, all future obligations of the Buyer and Seller with respect to the contract/Purchase Order shall come to end in case of such short closure.	Please change the clause to "In case of uncertainty regarding lifting of HOLD on contract execution relating to any activity put by Buyer/BHEL (because of any reason other than Force Majeure) or by end customer (cancellation or hold on project), the contract/Purchase Order may be short closed by Buyer/BHEL after 6 (six) months from date of imposition of HOLD without prejudice to any claim of either party with regard to the executed portion of the contract. However, all future obligations of the Buyer and Seller with respect to the contract/Purchase Order shall come to end in case of such short closure."	Bidder to refer GCC BOP Rev 00.
53.	Clause no. 46 (iv) GCC	The rate of interest applicable for the above advances shall be the base rate of State Bank of India prevailing on the date of release of advance plus 6%, and such rate will remain fixed till the total advance amount is recovered.	Please change the clause to "The rate of interest applicable for the above advances shall be the base rate of State Bank of India prevailing on the date of release of advance plus 2% , and such rate will remain fixed till the total advance amount is recovered."	Bidder to refer GCC BOP Rev 00.
54.	ANNEXURE – III	CONTRACT PERFORMANCE BANK GUARANTEE	The Contract Performance Bank Guarantee format will be vetted by our bankers before issue of CPBG.	Bidder to refer GCC BOP Rev 00.

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Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
55.	Clause no. 1 ANNEXURE-V GCC	(RISK AND COST CLAUSE) BHEL reserves the right to terminate the contract or withdraw portion of work and get it done through other agency, at the risk and cost of the contractor after due notice of a period of 14 days' by BHEL in any of the following cases.....	Please change the clause to "BHEL reserves the right to terminate the contract or withdraw portion of work and get it done through other agency, at the risk and cost of the contractor after due notice of a period of 30 days' by BHEL in any of the following cases....."	Bidder to refer GCC BOP Rev 00.
56.	Clause no. 1.1 ANNEXURE-V GCC	Risk & Cost Amount against Balance Work: Risk & Cost Amount against Balance Work shall be calculated as follows: Risk & cost amount = [(A-B) + (A x H/100)] Where, A = Value of Balance scope of work (*) as per rates of new contract B = Value of Balance scope of work (*) as per rates of old contract being paid to the contractor at the time of termination of contract i.e., inclusive of PVC & ORC, if any. H = Overhead Factor to be taken as 5	Please revise: Risk & Cost Amount against Balance Work shall be calculated as follows: Risk & cost amount = [B + H/100] Where, A = Value of Balance scope of work (*) as per rates of new contract B = Value of Balance scope of work (*) as per rates of old contract being paid to the contractor at the time of termination of contract i.e., inclusive of PVC & ORC, if any. H = Overhead Factor to be taken as 5	Bidder to refer GCC BOP Rev 00.

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Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
57.	Clause no. 2 ANNEXURE-V GCC	<p>Recoveries arising out of Risk & Cost and LD or any other recoveries due from Contractor Without prejudice to the other means of recovery of such dues from the seller recoveries from the seller on whom risk & cost has been invoked shall be made from the following:</p> <p>a) Dues payable to the seller against other contracts, SDs, BGs in the same Region/Unit/ Division of BHEL.</p> <p>b) Dues payable to the seller against different contracts, SDs, BGs in the same Region/Unit/ Division of BHEL</p>	Please delete these clauses. This contract has to be treated independent of other contracts.	Bidder to refer GCC BOP Rev 00.
58.	ANNEXURE-VII GCC	<p>A) PAYMENT TERMS Payment will be released generally within 60 days after receipt of material/ services and complete documents as per order/ contract (45 days for vendors qualified and registered as micro or small as per MSMED Act) Loading will be done for vendors seeking earlier payment w.r.t. above, for the value and the period of deviation as per Clause 17.0 of 'Instructions to Bidders'.</p>	We request you to release the payment within 30 days as we are medium enterprises as per MSMED Act.	Bidder to refer GCC BOP Rev 00.
59.	ANNEXURE-VII GCC	<p>C) LIQUIDATED DAMAGES If maximum limit asked for is on Undelivered portion – 10% value of the total quoted ex works price & freight (excluding GST). If maximum limit asked for is less than 10% of contract value loading shall be to the extent to which not agreed by bidder (at offered value).</p>	We request you to change maximum Liquidated damages to be 5% of the contract value.	Bidder to refer GCC BOP Rev 00.

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Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
60.	ANNEXURE-XII GCC	7. COOLING TOWER-NDCT - Final bill shall be paid after successful PG test completion.	Please revise clause: Final bill to be released after successful completion of NDCT. BHEL will be having the Performance Bank Guarantee which can be released after successful PG test or Defect Liability Period.	Bidder to refer GCC BOP Rev 00.
61.	Clause no. 2.00.00 TECHNICAL SPECIFICATIONS	Scope of works includes preparation of design and drawings, obtaining necessary approvals, materials, execution as per codes, specification, best Engineering practices and to the satisfaction of BHEL/ Owner for all mechanical, architectural, civil structural, building electrification, etc. BHEL will not bear any liability for any extra work, which might not have been perceived by the bidder but functionally required.	Please delete the word 'building electrification'.	Please follow specification.
62.	Clause no. 8.03.05 TECHNICAL SPECIFICATIONS	Performance test shall be carried out based on ambient WBT. The performance curves of the towers showing variation in performance with change in ambient wet bulb temperature, cooling range, relative humidity water loading of the tower etc, required to ascertain the performance of the tower shall be furnished along with the bid.	BIL will submit the performance curves after award of order.	Please follow specification.

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Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
63.	Clause no. 16.00.00 TECHNICAL SPECIFICATIONS	If the total quantity of cement & total quantity of reinforcement steel during contract execution are found to be more than the respective quantities quoted at tender stage or base values, whichever is the higher, the additional cost for excess quantity of cement & reinforcement steel shall be deducted from the bidder's payments as per the penal rates specified in the NIT. No benefit will be given to Bidder, in case of reduction in actual quantity of Cement & reinforcement steel with respect to the respective quantities considered in bid evaluation.	Benefit should be given to Bidder, in case of reduction in actual quantity of Cement & reinforcement steel with respect to the respective quantities considered in bid evaluation.	Please follow specification.
64.	Clause no. 3.07.00 TECHNICAL SPECIFICATIONS	Bidder shall ensure that the design parameters of the tower are maintained when both the cooling towers are operating simultaneously.	Please send us the layout drawings for both the cooling towers.	Please refer corrigendum-1 for layout of NDCTs.
65.	Clause no. 3.10.00 TECHNICAL SPECIFICATIONS	Contractor shall submit, performance test reports of similar towers installed by them. Such reports shall include the details of packing arrangement and must have been duly approved by the purchaser. Contractor may note, the calculations specified above must be submitted.	Please change the sentence to "Contractor shall submit, performance test reports of similar towers if installed by them otherwise need not to submit. Such reports shall include the details of packing arrangement and must have been duly approved by the purchaser. Contractor may note, the calculations specified above must be submitted."	Please follow specification.
66.	Clause no. 5.00.00 TECHNICAL SPECIFICATIONS	Constructional Features: 5. Fill supports – RCC/SS-316	Please change to: Fill supports – RCC/SS-316/FRP	Please follow specification.

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Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
67.	Clause no. 9.00.00 TECHNICAL SPECIFICATIONS	5) Type Test of PVC/PP Material 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.	Please change the sentence to "In case where such tests have been conducted for other reputed clients in the past by supplier, the same is also acceptable subject to owner's approval."	Please follow specification.
68.	Clause no. 10.00.00 (5) TECHNICAL SPECIFICATIONS	The water shall be discharged throughout the plan area of the packing. Sufficient head room shall be provided between the water distribution system and packing for inspection and maintenance. Fill cone down spray / up spray water distribution system should be provided so that there is no interference between the nozzle exit and top of fill.	Please specify height of sufficient headroom. As a matter of fact, this headroom is not required otherwise it will increase the height of the NDCT. For inspection and maintenance, we will propose a proper arrangement after award of order.	Please follow specification.
69.	Clause no. 10.00.00 (7) TECHNICAL SPECIFICATIONS	(d) Nozzle connection with hot water distribution pipes shall be preferably by fasteners. Fasteners shall be of stainless steel. Push on fit type connection is not acceptable.	Nozzles will be fixed to hot water distribution pipe by SS-316 or BAND-IT BAND or equivalent. .	Please follow specification.

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70.	<p>Clause no. 13</p> <p>Annexure - A</p> <p>SECTION – ID DATASHEET – A</p> <p>TECHNICAL SPECIFICATIONS</p>	<table border="1"> <tr> <td style="width: 5%;">13)</td> <td style="width: 45%;">Cooling Tower</td> <td style="width: 50%;"></td> </tr> <tr> <td>i)</td> <td>Butterfly valve complete assembly (Header Isolation)</td> <td style="text-align: center;">01 nos.</td> </tr> <tr> <td>ii)</td> <td>Spare for Butterfly valves for each size:</td> <td></td> </tr> <tr> <td>a)</td> <td>Valve discs,</td> <td style="text-align: center;">1 no.</td> </tr> <tr> <td>b)</td> <td>Shaft</td> <td style="text-align: center;">1 no.</td> </tr> <tr> <td>c)</td> <td>Bearing bushes</td> <td style="text-align: center;">1 set</td> </tr> <tr> <td>d)</td> <td>Seals</td> <td style="text-align: center;">1 set</td> </tr> <tr> <td>e)</td> <td>Gear box units for valve</td> <td style="text-align: center;">1 set</td> </tr> <tr> <td>f)</td> <td>Gear box internals with shaft</td> <td style="text-align: center;">1 set</td> </tr> <tr> <td>g)</td> <td>Bearing for gear box unit of Valves</td> <td style="text-align: center;">1 set</td> </tr> <tr> <td>iii)</td> <td>Tower Internals:</td> <td></td> </tr> <tr> <td>a)</td> <td>Water spray nozzle</td> <td style="text-align: center;">2000 nos</td> </tr> <tr> <td>b)</td> <td>Fills (other than concrete fills)</td> <td style="text-align: center;">10% of total population tower</td> </tr> <tr> <td>c)</td> <td>Drift eliminator</td> <td style="text-align: center;">10% of total population tower</td> </tr> <tr> <td>d)</td> <td>Internal distribution pipes (along with end caps & couplings to join mandatory spare pipeline quantity in line with design of CT)</td> <td> If running length is more than 25000 M- 2000 M of each type & size If running length is less than 25000 M- 1500 M of each type & size If running length is less than 10000 M (more than 5000 M) - 500 M of each type & size For rest- 100 M </td> </tr> </table>	13)	Cooling Tower		i)	Butterfly valve complete assembly (Header Isolation)	01 nos.	ii)	Spare for Butterfly valves for each size:		a)	Valve discs,	1 no.	b)	Shaft	1 no.	c)	Bearing bushes	1 set	d)	Seals	1 set	e)	Gear box units for valve	1 set	f)	Gear box internals with shaft	1 set	g)	Bearing for gear box unit of Valves	1 set	iii)	Tower Internals:		a)	Water spray nozzle	2000 nos	b)	Fills (other than concrete fills)	10% of total population tower	c)	Drift eliminator	10% of total population tower	d)	Internal distribution pipes (along with end caps & couplings to join mandatory spare pipeline quantity in line with design of CT)	If running length is more than 25000 M- 2000 M of each type & size If running length is less than 25000 M- 1500 M of each type & size If running length is less than 10000 M (more than 5000 M) - 500 M of each type & size For rest- 100 M	<p>Please confirm these spare parts are for complete package that is for 2 Nos. NDCT.</p>	<p>Bidders understanding is correct.</p>
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DEVIATION/CLARIFICATION

Client: M/s Bharat Heavy Electricals Ltd. – PEM Division

Work: Tender No. PE/PG/HER/E-7118/2022 date 26.11.2022; "Design and Construction of 2 nos. Natural Draft Cooling Towers on EPC basis for 2 X 660 MW NTPC TALCHER TPP Stage – III, Odisha"

Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies																
71.	Annexure - A SECTION – ID DATASHEET – A TECHNICAL SPECIFICATIONS	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">PARTICULARS</th> <th style="width: 40%;">QUANTITY</th> </tr> </thead> <tbody> <tr> <td>PROCESS CONNECTION PIPING (FOR IMPULSE PIPING/TUBING, SAMPLING PIPING/TUBING AND AIR SUPPLY PIPING AS APPLICABLE)</td> <td></td> </tr> <tr> <td>Valves of all types</td> <td>20 Nos. of each type and model</td> </tr> <tr> <td>2 way, 3 way, 5 way valve manifolds</td> <td>10 Nos. of each type, class, size and model</td> </tr> <tr> <td>Fittings</td> <td>100 Nos. of each type</td> </tr> <tr> <td>Purge meters</td> <td>20 Nos. of each type and model</td> </tr> <tr> <td>Filter regulators</td> <td>20 Nos. of each type and model</td> </tr> <tr> <td>Electrical Actuators</td> <td></td> </tr> </tbody> </table>	PARTICULARS	QUANTITY	PROCESS CONNECTION PIPING (FOR IMPULSE PIPING/TUBING, SAMPLING PIPING/TUBING AND AIR SUPPLY PIPING AS APPLICABLE)		Valves of all types	20 Nos. of each type and model	2 way, 3 way, 5 way valve manifolds	10 Nos. of each type, class, size and model	Fittings	100 Nos. of each type	Purge meters	20 Nos. of each type and model	Filter regulators	20 Nos. of each type and model	Electrical Actuators		These are very high quantity & are not required. Please decrease.	Please follow specification.
PARTICULARS	QUANTITY																			
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72.	Clause No. 4.5.2 STANDARD TECHNICAL SPECIFICATIONS	The eliminator frame shall be of rugged construction and shall be firmly secured to the structural frame to arrest vibration. Suitable access to the eliminator frame work from the basin should be provided for any maintenance or physical replacement of eliminator blades etc., when the particular cell is taken out for maintenance.	Access to the eliminator frame work will be provided from the hot water distribution level.	Noted.																
73.	Clause No. 7.6.1 STANDARD TECHNICAL SPECIFICATIONS	In case the cold water temperature exceeds the acceptable limits of purchaser, the whole plant will be rejected and the vendor shall refund the entire money paid to him together with any penalty levied otherwise.	In case the cold water temperature exceeds the acceptable limits, the bidder should be allowed to do the modification so that cold water temperature is as per acceptable limit.	Please follow specification.																

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Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
74.	Clauses a-b & 1-11 STANDARD TECHNICAL SPECIFICATIONS	QUALITY ASSURANCE	All the Quality Assurance plans are indicative & for reference purpose only. After award of order, BIL will prepare quality plans for BHEL/NTPC approval. Work will be carried out as per approved FQP/QOP.	Please follow specification.
75.	Clause no. (h) TECHNICAL SPECIFICATIONS	COMPLIANCE CERTIFICATE The Performance guarantees stand valid until at least eighteen (18) months after full load commissioning of CT or as per commercial terms and conditions, whichever is later.	Please change the clause to "The Performance guarantees stand valid until at least twelve (12) months after full load commissioning of CT or as per commercial terms and conditions, whichever is later."	Please follow specification.
76.	TECHNICAL SPECIFICATIONS	TECHNICAL SPECIFICATION FOR COOLING TOWERS	General comment from BIL – These technical specifications of NTPC include various other equipment and work which are not included in the NDCT scope. BIL will follow only clauses applicable to NDCT.	Please follow specification.

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Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
77.	Clause no. 4.09.00 TECHNICAL SPECIFICATIONS	<p>The Contractor shall be responsible to undertake some activities related to its Corporate Social Responsibility (CSR) in the immediate vicinity of the project. The Contractor shall undertake such activities after prior consultations with the Employer to ensure that the efforts of the Employer and Contractor are complemented.</p> <p>The vendor / contractor is expected to carry out the CSR activities as per the provision (Rules) under section 135 of the companies Act 2013 relating to CSR and other circulars / instructions of various government departments viz MoEF etc.</p> <p>The share of CSR expenditure to be incurred by the vendor / contractor for this project in the total CSR expenditure incurred by the vendor/contractor as a company will be in the same proportion as the turnover of the project concerned to the total company turnover. This will be certified by the chartered accountant once every fiscal year.</p>	Please specify what CSR activities to be undertaken by BIL at site and how much amount to be spent on CSR activity at site.	May please be ignored.
78.	Clause no. 1.00.00 (4) TECHNICAL SPECIFICATIONS	<p>SCOPE OF CIVIL, STRUCTURAL & ARCHITECTURAL WORKS OF EPC PACKAGE</p> <p>4. Dismantling, removal, and disposal of identified facilities/ structures/ substructures/ foundations of dismantled quarters/buildings/structures, reinforcement, pavement/paving, pipes and any underground structure/materials, debris etc. all complete.</p>	We request you to delete this work from the scope of work of the NDCT contractor.	Bidders understanding is correct.

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Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
79.	Clause no. 1.00.00 (8) TECHNICAL SPECIFICATIONS	8. All Civil, Structural, Architectural works including underground facilities like drainage, sewerage, trenches, earthing mat/ grounding for entire Plant area covering the following: a. Boiler and ESP supporting structures and foundations. b. Elevator pit & Civil Works for Machine Room for Boiler Elevator. c. Mill Bunker building supporting structures and foundations, floors, roof & side cladding. d. ESP control room building. e. Mill reject silo and associated trenches. f. Compressor house. g. Coal mill foundations & PA/FD/ID Fan foundations. h. Seal air fan foundation and all other equipment foundations. i. Coarse ash hopper tower foundations & FEA tower	Only relevant items for NDCT will be applicable for this contract. Please delete clause no. 8 as these are not related to NDCT.	Bidder understanding is correct.
80.	Clause no. 1.00.00 (13) TECHNICAL SPECIFICATIONS	13. CW system Civil, Structural and Architectural works a) CW pump house with steel superstructure and metal sheeting at roof including pump foundations, maintenance area, forebay and Transition zone b) CW Switchgear/MCC & control room building including transformer foundation. c) CW ducts including PCC/RCC encasement from CWPH to TG Hall and from TG Hall up to Cooling Towers. d) CW Channel from Cooling Towers up to CWPH forebay.	Please delete clause no. 13 as these are not related to NDCT.	Only 13.c and 13.d (with in battery limit for NDCT bidder scope) are applicable.

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Sl. No.	Reference clause of Tender Document	Existing provision	Bidder's query/Deviations requested	BHEL Replies
81.	Clause no. 1.00.01 TECHNICAL SPECIFICATIONS	All steel structures shall be fabricated in factory, transported and erected at site. All factory-fabricated structures shall have bolted field connections. Coal bunkers with hoppers, lime storage silos, Chimney flue liners, CW duct liners can either be fabricated at factory in segments, transported and welded at site before erection or fabricated at site. For coal bunkers, hoppers and chimney flue liners, to prevent coal dust/flue gas leakages, the applicable field joints shall necessarily be welded. Note: Steel structures shall mean plant and non-plant building structures, boiler & ESP support structures, Coal, Limestone and Gypsum handling structures, AHP structures, chimney flue liners support platforms & stairs, pipe and cable support structures.	Please delete this clause as not related to NDCT.	Please follow specification for relevant items related to NDCT.
82.	Clause no. 1.01.00 TECHNICAL SPECIFICATIONS	All construction materials including cement, reinforcement steel, coarse & fine aggregate, structural steel and construction water etc., shall be arranged by the Bidder.	Please delete as cement and reinforcement steel is provided by BHEL on free of charge basis.	Cement and reinforcement steel are free issue by BHEL.
83.	Clause no. 1.00.01 g) TECHNICAL SPECIFICATIONS	PG test equipment being supplied, installed and commissioned for each unit, shall be retained by employer after completion of PG test.	PG test equipment will be property of bidder and will be taken back by bidder after successful completion of PG test.	Please follow specification.

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84.	ANNEXURE-I HEALTH, SAFETY AND ENVIRONMENT PLAN	5. Safety PPEs (Industrial Safety helmet & Industrial Safety Shoes) Industrial Safety Helmet (IS:2925-1984 marked): 1575 nos. Industrial Safety/Electrical Shoes (IS:15298-2002 marked): 1575 nos. Full body Safety Harness (conforming IS:3521): 395 nos.	Please revise the clause: Safety equipment & safety PPE shall be provided as per approved procedure. Quantity mentioned are only for reference and guidance purpose and are not minimum requirement.	Bidder to refer HSE Plan
85.	ANNEXURE-9 HEALTH, SAFETY AND ENVIRONMENT PLAN	HSE Penalty	These penalties are very stiff. Please decrease the amount by 50%.	Bidder to refer HSE Plan

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<p>86.</p>	<p>Clause no. 5.17.01.02.06</p> <p>TECHNICAL SPECIFICATIONS</p>	<p>The design of all structures other than liquid retaining/conveying structures of cooling tower above Cold Water basin slab such as Raker Columns, Shell structure, fill/drift eliminator support columns, beams, walkways, slabs, partition wall, precast beams etc. shall be carried out by limit state method as outlined in Clause 4.4 of IS: 3370 (Part 2). Further, for limiting the crack width, the stress for the reinforcement steel shall be limited to 130 MPa (on all faces) as per clause 4.4.3.1 of IS: 3370 (Part 2): 2009 using the partial safety factor for serviceability condition as per clause 4.4.1.3</p>	<p>It is not clear from the above description as to whether the 130 MPa stress limitation applies to raker columns and shell structure as well.</p> <p>It may be noted that a crack width of 0.1 mm for shell is rarely considered. Engineering practice all over the world is to limit the crack width to 0.3 mm for shell. And in rare cases where sea water is involved, 0.2 mm crack width has been considered for shell. However, in cases where 0.1 mm crack width has been considered for shell design in the past, the resulting reinforcement quantity was so large that the plant owner/consultant permitted certain design changes to bring down the reinforcement within practical limits.</p> <p>Now as per the above clause, if the stress limit is 130 MPa even for shell design, it will be a case where the design is for a crack width much less than 0.1 mm (0.05 or less!!). This is impractical as the resulting reinforcement will be unacceptably large and take the overall quantity well beyond 10,000 MT.</p> <p>Similar is the case with raker column design with stresses limited to 130 MPa. In a NPCIL project the rake column design with 0.1 mm crack width resulted in such large rebar quantity that the contractor found inserting the vibrator difficult; subsequently NPCIL permitted certain design changes to bring</p>	<p>Please follow specification.</p>
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			<p>down the rebar quantity within practical limits.</p> <p>In light of the above, the raker column and shell must be permitted to be designed for a crack width of 0.2 mm (0.3 mm is the standard practice) so that the resulting quantities are within practical limits of constructability and costs. In case BHEL insists on retaining the above clause in its current form, it is necessary to revise the base quantities of cement (20,000 MT) and steel (7500 MT) published in the tender because it is obvious that BHEL has not considered the impact of this stipulation.</p>	
87.	<p>Clauses 10.01.00</p> <p>SUB-SECTION D-1-10, SECTION – VI, Part - B</p> <p>TECHNICAL SPECIFICATIONS</p>	<p>Cement Fly ash based portland pozzolana cement conforming to IS: 1489 (Part-1) shall be used for all areas other than for the critical structures identified below. Other properties shall be as per IS code. Ordinary Portland Cement (OPC) shall necessarily be used for the following structures.</p> <p>a) Ordinary Portland Cement (OPC) shall necessarily be used for RCC for Chimney shell. b) TG foundation top deck/ Substructure c) Spring supported decks of all machine foundations such as TDBFP/MDBFP</p>	<p>It is stated that fly ash based PPC or OPC can be used in the project. Please let us know whether BHEL will supply blended cement or is the contractor expected to blend the free issue cement with fly ash on his own.</p>	<p>Specification is clear. Please follow specification.</p>

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88.	TECHNICAL SPECIFICTIONS		<p>1. General</p> <p>a) The latest IS: 11504 code that has been published recently has some changes incorporated that are not specified in the tender documents. Hence, please clarify whether the latest IS: 11504 code is applicable to this NDCT package or not.</p> <p>b) The NDCT layout sketch included with the civil specs does not have the CL co-ordinates to compare with the bore log data. Hence, it is difficult to correlate the NGL given in bore log data with the FGL in the NDCT area.</p> <p>Kindly provide either the CL coordinates or the relevant bore logs of the NDCTs</p>	<p>a) Please follow specification.</p> <p>b) Please refer corrigendum-1 of the tender for the same.</p>