

TENDER SPECIFICATION

BHEL: PSSR: SCT: 1575

FOR

**CONSTRUCTION OF CIVIL WORKS FOR
2x660MW AT ENNORE SEZ THERMAL
POWER PROJECT AT ASH DYKE OF NORTH
CHENNAI TPS, CHENNAI, TAMIL NADU**

CORRIGENDUM-3, dt: 24/2/2015

CORRIGENDUM-3 - Consists of

- Time Extension
- BHEL's Clarifications



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

Power Sector – Southern Region

690, Anna Salai, Nandanam, Chennai – 600 035.

CORRIGENDUM-3

BHARAT HEAVY ELECTRICALS LIMITED
(A Government of India Undertaking)
Power Sector, Southern Region
690, Anna Salai, Nandanam, Chennai – 35

Tender Specification No. BHEL: PSSR: SCT: 1575

For

Construction of Civil, Structural and Architectural works including Piling, Ground improvement etc. in entire area, construction of RCC Chimney (twin flue 275M) & Natural Draft Cooling Tower (NDCT) for Unit-1&2 of 2 X 660 MW sets at Ennore SEZ Super Thermal Power Project at Ash dyke of North Chennai TPS, Chennai, TamilNadu

Corrigendum-3 to Tender Specification No. BHEL: PSSR: SCT: 1575- 2 copies

Issued to
M/s

Refer Corrigendum-3 for Last date of bid submission

All other conditions remain unchanged

For and on behalf of
BHARAT HEAVY ELECTRICALS LIMITED

GENERAL MANAGER / HR&CONTRACTS

Place: Chennai -35
Date:

Tender Specification No.: BHEL: PSSR: SCT-1575

BHEL's clarifications are furnished below for information against some of the bidder's query sought vide letters/email in the tender BHEL PSSR SCT 1575,dt:24/2/2015 .

S.no	Tender		Stipulation as per tender	Query description	BHEL clarification
	Clause No.	Item			
1	NIT PQR	PQR	Kindly relax the Prequalification criteria for stone columns to 1,00,000 RM of stone columns in place of 4,36,800 RM so that you get more than one deserving parties qualifying to quote for this work. The present criteria will in all likelihood qualify only one party from India for the work.	Relaxation of PQR	PQR as per corrigendum 2
2	Notice Inviting Tender (ref. Sl. No. 29 in Corrigendum -2)	<p>Technical Qualification Criteria: Bidder should have executed the following in India in the last seven years preceding the latest due date of bid submission.</p> <p>1 Bidder should have executed the following in Power/Industrial projects</p> <p>1.1 One (1) civil or civil and structural work of value not less than Rs 1030 crores</p> <p>(OR)</p> <p>1.2 Two (2) civil or civil and structural works each of value not less than Rs 640 crores</p> <p>(OR)</p> <p>1.3 Three (3) civil or civil and structural works each of value not less than Rs 510 crores</p>	<p>Under this clause, jobs executed separately under different work orders for the same work in the same project, can be combined and considered as one work for evaluation purpose. Does it mean that work packages under separate work orders for single client at same project site would also be considered as single project for evaluation purpose? Kindly confirm.</p> <p>As per the Clarification sought against Pre-Bid queries (Please refer sl. no. 29) we presume that various packages in one single project shall be considered with cumulative value satisfying Sl. No. A) 1 of Qualification Criteria (revised). Please confirm.</p> <p><i>(Please refer example for your ready reference)</i></p>	<p>Example-1 : We have executed different packages in a single project (5X800 MW Mundra Ultra Mega Power Project) as under</p> <p>(a) Main Plant foundation including Piling work (Under client Coastal Gujarat Power Limited (CGPL))</p> <p>(b) Station building & Main plant area Civil, Architectural & structural works (Under CGPL)</p> <p>(c) General Civil works (Under CGPL)</p> <p>(d) CW Discharge Channel work (Under CGPL)</p> <p>(e) Retaining wall (Under CGPL)</p> <p>(f) Piling & Foundation work for boiler area (Under Doosan)</p> <p>(g) Civil & architectural works for boiler area (Under Doosan)</p> <p>(h) Road & Paving works for boiler area (Under Doosan)</p> <p>Example-2 : We have executed different packages in a single project (2X525 MW Maithon Right Bank TPP) as under</p> <p>(a) General Civil Works Package</p> <p>(b) Plant Water System-Civil works Package</p> <p>(c) Employee Township Package</p>	PQR as per corrigendum 2
3	Data Sheet A, Sl No 2.1.2., Specification No. PE-TS-412-165-N001	NDCT	The maximum basin diameter is indicated as 130 m. Considering the specified cooling tower rating, the ambient conditions including the humidity clarified in the pre bid clarifications, the specified wind speed and other design parameters we request you to accept a maximum basin diameter of 140 m for the NDCT (sketch attached for reference) This will allow section of optimum size of the cooling tower considering the various limiting factors specified. Referring to Plot plan M001, R0, we observe that a larger diameter can be accommodated without compromising the ' No activity zone ' Favourable consideration of our request may kindly be permitted.		Against S.No. 2.12 of Data sheet-A, Section-D, Vol IIB, Bidders to consider the Basin Diameter as 130 M (Minimum) to 140 M (Maximum).
4			In continuation to the above query, after further analysis, the basin diameter of the NDCT can further be increased by additional 5 m, i.e. upto 145 m which can be easily accommodated in the present plot plan without compromising on other factors. This will further reduce the height of the tower and will vastly increase the safety aspect.		
5	TCC, Cl 1.3.7.5, Pg 52 & TNEB Spec, Cl 7.02.00, Pg 554, Vol-VI:41	Cement	As per the clause no. 1.3.7.5 (TCC), it is specified as structures coming in contact with seawater shall be with OPC with C3A limiting to 5% to 8%, whereas in the client specification indicates that the structure in contact with sea water shall be with sulphate resisting cement with C3A content limited to 5% to 8%. Please confirm whether we need to use sulphate cement or OPC with C3A limiting to 5% to 8%. Also, please note that as per BIS, the C3A content for sulphate resisting cement shall not exceed 5%. We presume that only OPC grade cement with C3A limiting to 5% to 8% will be used for structures which are in contact with sea water.		Ordinary Portland Cement (OPC) shall be used for all structures except for foundations, underground structures & structures coming in contact with sea water where in Ordinary Portland Cement (OPC) with C3A content limited to 5% to 8% shall be used. Grade of Ordinary Portland Cement shall be 43 conforming to IS:8112. However, the cement to be used for entire NDCT shall be OPC with C3A content between 5% to 8%.
6	Vol-II, Price Bid	Soil Investigation	As per the revised BOQ received (Vol-II, Rev-2, Price Bid), the soil investigation works as defined in earlier BOQ is deleted. We presume that the same is not in our scope of work. We shall only be executing DCPT as defined in piling work section of revised BOQ. Please confirm.		Work to be done as per BOQ/specification.
7	Vol-II, Price Bid, Rev-2, Pg 93, Item no. 303	TG super structure shuttering	As per our standard practice we shall be using cribs for TG deck super structure staging instead of props, as the cribs are more reliable than props. Bidder shall submit the staging and shuttering scheme for approval of BHEL. Please confirm.		Bidder to quote as per BOQ
8	Vol-II, Price Bid, Rev-2, Pg 143, Item no. A1843	Rain Water Harvesting	We request you to kindly provide the following information: 1. Whether rainwater harvesting is for the entire plant including AHP & CHP area. 2. Kindly provide the total paved and un-paved area. 3. ACAD drawing of the plot plan which will enable us to measure the tentative area of all buildings, roads, landscape area etc., It will be better if the same is operated under unit rate like excavation, concrete, shuttering, lining, pre-cast tile, recharge pit, pipes etc., instead of operating entire item as lumpsum.		Design of scheme and layout for Rain water Harvesting system is included in the item on Lumpsum basis. The construction of the same is not included in the lumpsum item and shall be operated on unit rate based upon relevant items.
9		NDCT	Request for accepting the polypropylene (PP) splash grid fills		Not accepted, bidder to quote as per spec. Bidders query for different MOC of Fills cannot be accepted and to comply with the Technical Specification.

BHEL's clarifications are furnished below for information against some of the bidder's query sought vide letters/email in the tender BHEL PSSR SCT 1575,dt:24/2/2015 .

S.no	Tender		Item	Stipulation as per tender	Query description	BHEL clarification
	Clause No.					
10	NIT - Annexure-3, B-1. CONSORTIUM CONDITIONS		S.No 04	In case consortium bidding is allowed as per pre-qualifying requirement, then the prime bidder and consortium partner(s) shall enter into consortium agreement. Validity period of consortium agreement shall be 6 months from the date of bid submission plus the duration of works indicated in the tender / contract along with the extended period if any. 'Standalone' bidder cannot be a 'prime bidder' or a 'consortium partner' in consortium bidding. Prime bidder shall not be a consortium partner to other prime bidder(s). A prime bidder shall not submit more than one consortium bid. However, consortium partner may enter into consortium agreement with other prime bidders. In case of non-compliance, consortium bids of such prime bidders will be rejected.	We presume that multiple vendors can be chosen as consotium partner for same job . Also EMD shall restricted to only one party. <u>Example : Chimney works :</u> Vendor A for chimney works Vendor B for chimney works , Both vendors are technically qualified. Kindly Conform.	PQR as per corrigendum 2.
11	Package 3 - 275m Height RCC Twin Flue Steel Chimney	RCC Twin Flue Steel Chimney	General		Kindly Provide the following details in order to plan the plate form / machinery etc., 1) Chimney inner Dia at Bottom & Top. 2) Chimney outer Dia at Bottom & Top. 3) Chimney Shell Thickness. 4) No of Plate Forms. 5) Flue opening size.	The approx. details are as follows. However, exact details shall be furnished during detail engg stage:- 1) chimney inner dia at bottom = 31m, at top = 18.5m 2) chimney outer dia at bottom = 33m, at top = 19.6m 3) chimney shell thickness at bottom = 1000 mm, at top = 550 mm
12	Package 3 - 275m Height RCC Twin Flue Steel Chimney	BOQ	37 (a)	Supplying, and placing in position Load bearing insulation assembly including (i) a properly machined mild steel plate with recess at its top for seating PTFE (Poly Tetra Fluoro Ethylene) sheets conforming to BS:5400 (ii) saddle plate (MS) in the middle having stainless steel plate fixed at its bottom surface and lead / elastomeric sheet at top, and (iii) top late formed of two numbers insulation blocks each made of minimum 50 mm thick rigid, non-combustible asbestos fibre reinforced lime-silica board (SINDANYO BLOCKS NATURAL GRADE CS- 51) or equivalent bonded to mild steel plates at top and bottom. For side restraints assembly of insulation blocks of SINDANYO Natural Grade CS-51 or equivalent and stainless steel plate shall be used. All stainless steel in these assemblies shall conform to AISI-316L and mild steel to IS:2062. SINDANYO BLOCKS or equivalent shall be suitable for operation at 320oC and shall primarily satisfy the following physical properties: i) Minimum compressive stress prior to onset of compression yield of not less than 12 N/sq.mm. ii) Minimum shear strength of 30 N/sq.mm when tested in accordance with BS:3497-1979. iii) Thermal conductivity shall not exceed 0.67 W/m Deg.C at a mean temperature of 200oC and its coeff. of linear expansion not to exceed 1.2x10-5 per Deg.C. iv) Adhesive used for bonding purposes shall be of material with equivalent high temperature properties as approved Foundation Engineer. It may be of "Fortafix Kindly provide the Size of Block, thickness for PTFE sheet & SS plate.Hence unit in Nos.		Detail (size, thckness) of block to be furnished by bidder during detail engg stage to meet the specification requirements
13	Package 3 - 275m Height RCC Twin Flue Steel Chimney	BOQ	66	Supplying and erecting after approval by Engineer an Elevator from ground upto top of chimney with landing at various platform level complete as per spec. and drawings.	Kindly provide the No. of landing.	landing details given in specification for stack elevator
14		BOQ	2317	Providing and fixing in position PTFE type sliding bearings of reputed manufacturer, individual bearing suitable for required vertical loads as per the construction drawings and for maximum displacement of ±50 mm including all taxes, duties, transportation, installation, drilling, bolting, erecting, aligning etc all complete for following vertical loads.	Kindly provide the vertical loads and Bearing resting on top & bottom support details (Concrete grade or Steel).	vertical loads given in the item. Supoport detail to be furnished during detail engg stage
15	Volume - VI	106	13.07.00	7m wide paving around NDCT from racker column shall also be provided.	In the same clause, it is also mentioned that, "All around cold water basin, plinth protection in M20, 150mm thick shall be provided for a width of 3000mm" Please clarify which is to be considered.	paving of 7m wide around NDCT tower shall be provided
16	Volume - VI				Please provide us the Mono rail capacity.	Capacity to be decided based upon the lifting weight of the equipment with minimum 25% margin.

BHEL's clarifications are furnished below for information against some of the bidder's query sought vide letters/email in the tender BHEL PSSR SCT 1575,dt:24/2/2015 .

S.no	Tender			Query description	BHEL clarification	
	Clause No.	Item	Stipulation as per tender			
17	Volume - VI			we shall use FEM proven software - such as SoFISTIK which is available with us for Analysis and design for Tower foundation, shell, raker column, pond wall, pedestal, etc., Please confirm .	The analysis shall be carried out in a commercial FEM proven software. Bidder shall arrange for review, by BHEL/TANGEDCO, of the analysis carried out in the commercial FEM software in the soft form on the software at BHEL/TANGEDCO office. All designs carried out in commercial/inhouse software shall be verified by providing verification sheets showing all intermediate calculations in detail.	
18	Volume - VI			For uplift, checked as per the Cl.No.2.3.3 of BS - 4485:part 4:1996 shall be made applicable for uniformity.	specification to be followed	
19	Volume - VI			Please mention Temperature variations for analysing the shell structure.	The shell structure shall be analysed for temperature difference between the inside and outside of the shell. The shell structure shall also be analysed for part shell surface under sun and part under shade.	
20	Volume - VI			Please provide us the Finished grade level and Natural ground level for NDCT.	Finished ground level for the plant including NDCT area is RL+9.500m.	
21	Volume - VI	30	5.00.00	Geo Technical Investigation	NDCT area is not covered in this Geo Technical Investigation. Please provide us the pile capacity at NDCT location.	geotechnical investigation for NDCT area provided in the NDCT specification. Pile capacity for NDCT to be decided by bidder during detail engg stage as per specification.
22	Technical Qualification Criteria	Annexure-3,	S.No 2.00	2.1 Ground improvement work by installing at least 4,36,800 RM of stone columns/sand compaction piles within a period of eight months in any one contract or cumulative of two concurrent contracts in any projects.	Request you to consider the following PQ criteria for Stone Column Works: The Bidder should have executed atleast 3,25,000 RM of Stone Column/sand Compaction Piles works within a period of 12 months in not more than five concurrent contracts.	PQR as per corrigendum 2
23		General	Date of Submission	04/03/2015 , Time :15.00 Hrs	We request you to extend the last date submission of our techno commercial bid on 20/03/2015.	Refer the attachment for time extension
24	Vol-IA Part – I, Chapter-VIII, Taxes & Duties, Cl.1.8.1.4	The copy of monthly/quarterly VAT return along with Annexure 2 of the Return containing invoice wise Return filed, duly.....	The return filed by us is, on consolidated basis, considering all divisions . However we shall submit service tax paid Challan or certificate for adjusting the service tax amount against cenvat credit, whichever is applicable for particular transaction to reimburse the Service tax amount as claimed in the invoice. Please confirm.		Acceptable as per cl 1.8.2.4. Copy of Half-yearly Returns to be given proving Service Tax claims.	
25	Vol-I Book-II IB,IC,ID GCC, Pg 77/164, Cl.2.18	BHEL / their customer shall arrange for insuring the materials / properties of BHEL / customer covering the risks during transit, storage, erection and commissioning.	Will BHEL as the EPC contractor be taking the Project Insurance Policy (i.e Marine cum Erection All Risks Policy - EAR/CAR) for the total Project? Will it cover the material supplied as well as the works performed by the Bidder / Contractor at site ? Please confirm.		Refer the attachment	
26	Vol-I Book-II IB,IC,ID GCC, Pg 77/164, Cl. 2.18	BHEL / their customer shall arrange for insuring the materials / properties of BHEL / customer covering the risks during transit, storage, erection and commissioning.	If 'YES' to our above query, then we presume that deductible also will be taken care by BHEL. Please confirm. If 'NOT', please indicate the value of deductible to be considered by the bidder.		Refer the attachment	
27	Vol-I Book-II IB,IC,ID GCC, Pg 61/164, Cl. 1.15.13	Additional security deposit (SD) shall be submitted by the successful bidder with value as follows :.....	Please indicate BHEL Estimate for our reference & records.		Refer the last line SL NO 1 (Clause 1.15.13) VOLUME-IA PART – II CHAPTER –I,Addendum to Tender specification BHEL: PSSR: SCT 1575 that The BHEL's estimated value shall be disclosed to successful bidder (on request) in case 'Additional Security Deposit' is applicable	

BHEL's clarifications are furnished below for information against some of the bidder's query sought vide letters/email in the tender BHEL PSSR SCT 1575,dt:24/2/2015 .

S.no	Tender			Query description	BHEL clarification
	Clause No.	Item	Stipulation as per tender		
28	SCT1575_Corrigendum-2, Pg 15/ 194, Sr. No. 149	Extension of channel from stage 2 of NCTPS located at a distance of approx. 8km from site is included in scope	We presume that extension of channel beyond the Boundary wall of NCTPS (Stage 2) is not in the scope of the bidder. Please confirm.		Works to be done as per BOQ item on unit rate.
29	SCT1575_VOLUME 1A _Part II , Pg 105	As per the 'MONTHLY WHOLE SALE PRICE INDEX' for the respective Commodity and Type, published by Office of Economic Adviser, Ministry of Commerce and Industry, Government of India. (Website: www.eaindustry.nic.in). Revisions in the index or commodity will be re adjusted accordingly.	Please note that High Speed diesel is not available in the individual commodity list. Alternately High Speed diesel oil prices shall be referred / considered from the nearest retail outlet of Indian Oil Corporation to the project site. Please confirm.		High speed diesel is available in the commodity list
30			We presume C Form will be issued by BHEL. Please confirm.		C Form shall not be issued.
31			Can we discharge the Service Tax liability by Rule 2A (ii) which will be reimbursable by BHEL. Please confirm.		Acceptable
32			Sale of bought out items from outside the State :- BHEL will agree to undertake a Sale-in -Transit transaction for bought out items from outside the State and will issue Form C for all items sold in transit. Please confirm.		No . Sale in transit not contemplated
33			WCT TDS :- Will WCT TDS be deducted on the whole contract value including the value of supplies from outside the State?		WCT TDS deduction on the entire contract value proposed.
34			SEZ Notification – Implication of SEZ Unit status post award of the contract :- Is TANGEDCO applied for SEZ status for this project ? Will all benefits under VAT/Service Tax Law for a SEZ Unit will required to be passed on to the customer once it is notified as a SEZ Unit ? – Are BHEL/ TNGENCO considering obtaining SEZ status for this project as developer or through other developer? If yes, who shall be the proposed Developer or Co-developer for obtaining the SEZ status?		This project does not come under SEZ
35			Will there be separate contracts executed for Supplies and Services?		Tender prevails
36			Fabrication of Structural Steel Items :- Can the line item for Structural Steel Item in the BOQ No.2301 be broken up into charges for 1) material, fabrication and 2) erection of the material?		Bidder to quote as per BOQ
37		Boundary wall:	Please confirm If boundary wall can be built using precast construction instead of brick work. This is being requested due to stringent schedule. If YES, please confirm whether payment will be made under "A213" ? Please confirm.		Work to be done as per engg drawing submitted during detail engg stage by BHEL based upon relevant BOQ items on unit rate.
38			We presume that the overall LD Cap 10% indicated in GCC is for both delays as well as for performance of NDCT. Please confirm.		Refer clause 2.7.9 in GCC for delays. And refer clause 11.00.00 in TECHNICAL SPECIFICATION for COOLING TOWERS-SPEC. NO.: PE-TS-412-165-N001, Volume IIB, Section C1, Sheet 9 of 11 attached in the TCC for performance of NDCT
39	TCC, VOL –IIB, Civil & STR. Spec.No PE-TS-412-600-C002, Vol-VI (A), Cl.11.01.04 Page 66	Fabrication yard: Depending on the extent of fabrication.....	We envisage fabrication of all structural steel items at site in open area (BHEL area with suitable weather protection during monsoon. We do not envisage the setting of fabrication shop /covered shed at site. Please confirm.		Refer Clause 1.3.3 of TCC
40			As per requirement to be a "Prime bidder" we need to meet the requirements specified in Clause 2.2, in this context we have completed RCC piles of more than 1,35,000 RM against 1,10,000RM required in the tender document. However we have not done driven cast in situ piles. We request your good office to kindly make this minor change and delete the mandatory requirement of drive cast insitu "		PQR as per corrigendum 2
41		Date of Submission	04/03/2015 , Time :15.00 Hrs	We request you to extend the last date submission of our techno commercial bid on 25/03/2015.	Refer the attachment for time extension

BHEL's clarifications are furnished below for information against some of the bidder's query sought vide letters/email in the tender BHEL PSSR SCT 1575,dt:24/2/2015 .

S.no	Tender			Query description	BHEL clarification
	Clause No.	Item	Stipulation as per tender		
42	Section D1; Vol IIB (DATASHEET - A)	2.12 Maximum Basin Diameter = 130 M	For the specified design parameters, we are finding it extremely difficult to design the most optimized cooling tower selection with this restriction in basin diameter. We therefore request you to delete this stipulation. Otherwise, you may please specify the maximum basin diameter as at least 140 M.		Against S.No. 2.12 of Datasheet-A, Section-D, Vol IIB, Bidders to consider the Basin Diameter as 130 M (Minimum) to 140 M (Maximum).
43	BOCW	Add clause 1.10.1.1.5 added			1.10.1.1.5 BHEL shall recover an amount of 1% (one percent) from every RA Bill of the contractor towards BOCW Cess Act 1996 and shall be remitted to the Authority by BHEL by way adjustment of BOCW Cess recovery by TANGEDCO.
44		Specific Technical Specification(Electrical) for NDCT ,Section- C2			Revision -01 is added (enclosed) only for Standard Electrical scope between BHEL and Vendor.
45	Corrigendum-2	NDCT	Pre bid clarification given in corrigendum 2 for Points 13, 122, 133, 159 Relative humidity for NDCT	Reply in Corrigendum: Bidders to consider Design Relative Humidity as 60%.	Revised Reply enclosed:
46	Volume -2 (Price bid, Revision -01)	ST.NO. 1003 & A1003	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls, chambers etc. in thickness 115mm at all heights, places and position above or below plinth/graded level including providing two nos. 8 mm diameter TMT bars at every fourth layer, raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification. (TMT bars to be paid elsewhere) (a) Using fly ash lime/cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm2.	We understand that the description against ST.NO. 1003 & A1003 are same and this item is getting repeated twice. Please clarify which item will be operated.	Description to be read as : Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls, chambers etc. in thickness 115mm at all heights, places and position above or below plinth/graded level including providing two nos. 6 mm diameter TMT bars at every fourth layer, raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification. (TMT bars to be paid elsewhere) (a) Using fly ash lime/cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm2.
All other conditions remain same					

GM/HR&SCT

भारत हेवी इलेक्ट्रिकल्स लिमिटेड
(भारत सरकार का उपक्रम)

Bharat Heavy Electricals Limited

(A Govt. of India Undertaking)
Power Sector - Southern Region
New No.690 (Old No.474), Anna Salai,
Nandanam, Chennai-600 035.
Phone : 2433 0015 (10 Lines)
Grams : BHELPOWER



BHEL PSSR SCT 1575

DATE: 24.02.2015

1. TIME EXTENSION

TENDER SPECIFICATION NO BHEL: PSSR: SCT: 1575, NIT no: 21208

Sub: Construction of Civil, Structural and Architectural works including Piling, Ground improvement etc. in entire area, construction of RCC Chimney (twin flue 275M) & Natural Draft Cooling Tower (NDCT) for Unit-1&2 of 2 X 660 MW sets at **Ennore SEZ Super** Thermal Power Project at Ash dyke of North Chennai TPS, Chennai, TamilNadu

DUE DATE EXTENDED FOR THE SUBJECT TENDER AS BELOW:-

DESCRIPTION	EXISTING IN THE TENDER	REVISED AS
DATE & TIME FOR TENDER SALE CLOSES	03.03.2015,15.00 HRS	18.03.2015,15.00 HRS
DUE DATE & TIME FOR TENDER SUBMISSION	04.03.2015,15.00 HRS	19.03.2015,15.00 HRS
DUE DATE & TIME FOR OPENING OF TECHNICAL BIDS	04.03.2015, 15.30 HRS	19.03.2015, 15.30 HRS

2. BHEL's Clarifications enclosed.

ALL OTHER CONDITIONS REMAIN UNCHANGED.

GM/HR&SCT



Sl. No.	Specification Reference and Page Number	Subject	Clarification Required Dated 29-1-2015	Remark	REV 01 dated 23/02/2015	REV 02 dated 24/02/2015
	Data sheet A for cooling tower, BHEL spec PE-TS-412-165-N001	RH for cooling tower design	As per the Customer specification (Vol-II:2) the design relative humidity is 75%. This will be adopted for the NDCT design.	Bidders to consider Design Relative Humidity as 60%.	Bidder to note that our end customer M/S TANGEDCO has clarified that design relative humidity shall be based on metrological data of Chennai for last 50 years. The design relative humidity as furnished previously as 60 % may be considered tentative & minimum and subject to customer (TANGEDCO) approval during detailed engineering stage. Any variation in Design RH during approval of design / documents, nothing extra will be payable on this account and shall not constitute a valid reason in affecting the terms and conditions of the bid.	Bidder to note that our end customer M/S TANGEDCO has clarified that design relative humidity shall be based on metrological data of Chennai for last 50 years. The design relative humidity as furnished previously as 60 % may be considered tentative & <u>maximum</u> and subject to customer (TANGEDCO) approval during detailed engineering stage. Any variation in Design RH during approval of design / documents, nothing extra will be payable on this account and shall not constitute a valid reason in affecting the terms and conditions of the bid.

1.	Will BHEL as the EPC contractor be taking the Project Insurance Policy (i.e Marine cum Erection All Risks Policy - EAR/CAR) for the total Project? Will it cover the material supplied as well as the works performed by the Bidder / Contractor at site ? Please confirm.	BHEL shall arrange the Marine cum Erection All Risks Policy - EAR/CAR for the total project value as per the requirements specified in the TANGEDCO contract documents. This insurance policy shall cover the works performed and permanent materials supplied by the sub-contractors for the project.
2.	If 'YES' to our above query, then we presume that deductible also will be taken care by BHEL. Please confirm. If 'NOT", please indicate the value of deductible to be considered by the bidder.	<p>This MCE policy shall not cover the materials, equipments, T & Ps, etc. brought by the sub- contractor which are required for executing the works but do not go permanently into the Project. Arrangement of insurance for the same and workmen compensation insurance, vehicle insurance and any other insurance requirements are in the scope of sub-contractor.</p> <p>For lodging and settling claims by BHEL, the sub-contractor has to furnish all the documents as required by the underwriter. The difference (including deductibles) between the claimed amount and the settled amount has to be borne by the sub-contractors.</p> <p>The deductibles for which the policy shall be arranged by BHEL is given below:</p>

Deductibles: For Marine: Rs. 20,000/- (Rupees Twenty Thousand Only).

10 DEDUCTIBLES

1. For Storage /Erection and Testing Cover: 5% of the claim amount subject to minimum as below

Equipment	Normal perils	Testing, AOG*, Fire & Explosion
a) Major equipment i.e. Turbine, Generator, Unit Transformer,	Rs. 15 lacs	Rs. 50 lacs
b) Other equipments	Rs 5 lakhs	Rs 15 lakhs

* Deductible for AOG perils is 5% of the claim amount subject to a maximum of Rs. 5 crores per event and minimum as above.
 Fire & Explosion excess - 20% of claim amount subject to minimum of testing period mentioned above.

STANDARD ELECTRICAL SCOPE BETWEEN BHEL AND VENDOR

PACKAGE : COOLING TOWER (NATURAL DRAFT)

SCOPE OF VENDOR: SUPPLY, CIVIL WORKS, ERECTION & COMMISSIONING OF VENDOR'S EQUIPMENT

PROJECT : 2X660 MW ENNORE TPS

REV 01

DT 18.12.14

S.NO	DETAILS	SCOPE SUPPLY	SCOPE E&C	REMARKS
1	415V ACDB	Vendor	Vendor	415 V AC, 3 phase, 4 wire supply/ 240 V AC, 1 phase supply shall be provided by BHEL based on load data provided by vendor at contract stage for all equipment supplied by vendor. Refer SLD. Makes shall be subject to customer/ BHEL approval at contract stage.
2	Local starter panel/ Push Button Station (for motors)	Vendor	Vendor	Located near the motor . Makes shall be subject to customer/ BHEL approval at contract stage.
3	Power cables, control cables and screened control cables for a) both end equipment in BHEL's scope b) both end equipment in vendor's scope c) one end equipment in vendor's scope	BHEL Vendor Vendor	BHEL Vendor Vendor	1. Termination at BHEL equipment terminals by BHEL. 2 Termination at Vendor equipment terminals by Vendor.
4	Junction box for control & instrumentation cable	Vendor	Vendor	
5	Any special type of cable like compensating, co-axial, prefab, MICC, fibre Optic cables etc.	Vendor	Vendor	Refer scope/ C&I portion of specification for scope of fibre Optic cables if used between PLC/ micro processor & DCS.
6	Cabling material (Cable trays, accessories & cable tray supporting system,conduits)	Vendor	Vendor	1. Layout details between vendors supplied equipment & installation drawing by vendor. 2. BHEL will provide cable trench along with cabling material up to the terminal point approx. 10 m away from cooling tower. Further cabling (supply and E&C) shall be in vendor's scope.
7	Cable glands ,lugs, and bimetallic strip for equipment supplied by Vendor	Vendor	Vendor	1. Double compression Ni-Cr plated brass cable glands 2. Solder less crimping type heavy duty tinned copper lugs for power and control cables.
8	Equipment grounding & lightning protection	Vendor	Vendor	Material and sizes shall be as per specification and subject to BHEL approval during detailed engineering stage.
9	Below grade grounding	BHEL	Vendor	MS rod material shall be provided by BHEL. All other materials/ consumables are in vendor's scope.

STANDARD ELECTRICAL SCOPE BETWEEN BHEL AND VENDOR

PACKAGE : COOLING TOWER (NATURAL DRAFT)

SCOPE OF VENDOR: SUPPLY, CIVIL WORKS, ERECTION & COMMISSIONING OF VENDOR'S EQUIPMENT

S.NO	DETAILS	SCOPE SUPPLY	SCOPE E&C	REMARKS
10	LV Motors with base plate and foundation hardware (in case applicable for NDCT)	Vendor	Vendor	Makes shall be subject to customer/ BHEL approval at contract stage.
11	Lighting System	Vendor	Vendor	In addition to other lighting system items, vendor shall consider aviation lights & their control as per statutory requirement and Lighting panels (LP) & timer control as per requirement. Further wires, any other material required for lighting system shall also be considered by vendor in their scope. BHEL will provide the power supply for LP, from LDB at one location near Cooling Tower. Further, distribution from LP including material is in vendor scope.
12	Aviation Lighting	Vendor	Vendor	Make shall be subject to customer/BHEL approval at contract stage
13	Receptacles/Industrial switch-sockets	Vendor	Vendor	Make shall be subject to customer/BHEL approval at contract stage
14	Any other equipment/ material/ service required for completeness of system based on system offered by the vendor (to ensure trouble free and efficient operation of the system).	Vendor	Vendor	
15	Engineering activities during detailed engineering stage, including those listed below: a. Electrical load data submission in PEM format b. Electrical equipment GA drawings and layout drawings c. Cable trench/ tray layout drawings d. Control cable schedules showing routing details [including cables supplied by PEM for CT equipment]. e. Grounding and lightning protection system layouts f. Cable termination/ interconnection details (diagram)/ Cable block diagram	Vendor	--	1. Documentation shall be submitted as per project schedule for BHEL/ customer approval. 2. Vendor shall be responsible for necessary coordination with BHEL for required engineering interfacing during contract stage. 3. Any approval required from electrical inspection authority for electrical equipment shall be arranged by vendor.

NOTES:

1. Make of all electrical equipment/ items supplied shall be reputed make & shall be subject to approval of BHEL/customer after award of contract without any commercial implication.
2. All QPs shall be subject to approval of BHEL/customer after award of contract without any commercial implication.

STANDARD ELECTRICAL SCOPE BETWEEN BHEL AND VENDOR

PACKAGE : COOLING TOWER (NATURAL DRAFT)

SCOPE OF VENDOR: SUPPLY, CIVIL WORKS, ERECTION & COMMISSIONING OF VENDOR'S EQUIPMENT

3. In case the requirement of Junction Box arises on account of Power Cable size mis-match due to vendor engineering at later stage, vendor shall supply the Junction Box for suitable termination.
4. Wherever BHEL is indicated above, if the scope of supply and E&C of any of the above listed items is in BHEL's Customer scope, then the respective items shall be supplied, erected and commissioned by BHEL's Customer. For such items, BHEL as indicated in SUPPLY and E&C column above shall be read as "BHEL's CUSTOMER".