



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN - 05

Ref: PSER:SCT:RKL-M1779:TCN-05

Date: 10-11-2016

Sub	TCN-05
Job	DESIGN, ENGINEERING, MANUFACTURING, SUPPLY, ERECTION & COMMISSIONING OF INDUCED DRAFT COOLING TOWER (IDCT) FOR 1X250 MW NSPCL, PP-II EXPANSION, ROURKELA, ODISHA.
Ref	1.0 Tender no PSER:SCT: RKL-M1779:16
	2.0 BHEL's NIT, vide reference no PSER:SCT:RKL-M1779:5264, Dated 17-10-2016.
	3.0 BHEL's TCN-01, vide reference PSER:SCT:RKL-M1779:TCN-01, dated 26-10-2016.
	4.0 BHEL's TCN-02, vide reference PSER:SCT:RKL-M1779:TCN-02, dated 28-10-2016.
	5.0 BHEL's TCN-03, vide reference PSER:SCT:RKL-M1779:TCN-03, dated 04-11-2016.
	6.0 BHEL's TCN-04, vide reference PSER:SCT:RKL-M1779:TCN-04, dated 08-11-2016.
	7.0 All other pertinent issues till date.

With reference to above, following points/ documents, relevant to tender, may please be noted and complied with while submitting offer.

- 1.0 The clarifications to bidders queries are attached at Annexure-A.
- 2.0 Revised 'No deviation certificate' as per enclosed Annexure-2. Bidder shall submit no deviation certificate as per enclosed format only.
- 3.0 All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,
for BHARAT HEAVY ELECTRICALS LTD

SR ENGR (SCT)

Encl : As above.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 23211691, 23211798, 23211796

ANNEXURE-A to TCN- 05

DESIGN, ENGINEERING, MANUFACTURING, SUPPLY, ERECTION & COMMISSIONING OF INDUCED DRAFT COOLING TOWER (IDCT) FOR 1X250 MW
NSPCL, PP-II EXPANSION, ROURKELA, ODISHA.

Tender no PSER:SCT: RKL-M1779:16

S.No.	Reference		SUBJECT	BIDDER'S QUERY	BHEL'S CLARIFICATION
	Section	Cl.no			
1	NIT	2.0	Bidders to note specifically that all pages of tender document, including these NIT pages of this particular tender together with subsequent correspondences shall be submitted by them, duly digitally signed & stamped on each page, as part of offer	Our understanding is that the tender documents submitted as part of our offer need not to be signed, stamped and scanned manually since the documents will have to be digitally signed and uploaded in the e-tender website. Please confirm.	Confirmed.
2	VOL - IC & ID; SPECIAL CONDITIONS OF CONTRACT (COMMON)	Clause 6.2 and Clause 37.12 of SCC - Service	... successful bidder shall also take into account of statutory guidelines regarding The Building and Other Construction Workers (Regulation of Employment & Condition of Service) Act	Since all civil construction work is outside our scope, BOCW cess is not applicable for our scope of work.	BOCW cess provision as per tender.
3	Vol - II; Sub-section IA SPECIFIC TECHNICAL REQUIREMENTS	Clause 1.00.00	The bidder's scope under the specification shall include... Complete embedment inserts, Sleeves, Guides, foundation nuts/bolts, Steel items which are neither Structural Steel nor Reinforcement Steel, any specialized construction/ erection materials, etc. (Bidder may seek clarification on this account if considered necessary).	Please confirm whether steel plates required for hot water pipe fabrication will be free issued by Purchaser..	Specification requirement is clear. Steel plates required for fabrication of hot water piping should be included by bidder in his scope as per cl. no. 5.15.00 of section-IA (page 10 of 425) of technical specification.

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4	Customer specification; Annexure-A to SPECIFIC TECHNICAL REQUIREMENTS	Clause 9.3; G; Fans	Fan motor and Fan gear box shall be designed considering total fan efficiency not exceeding 82%	As specified elsewhere the design fan efficiency shall be limited to 82.5% which is in cotradiction with the referred clause. Please clarify and confirm the capping / limit on fan efficiency to be considered in our design.	Specification requirement is clear. Bidder to follow specification requirement as per tender.
5	Customer specification; Annexure-A to SPECIFIC TECHNICAL REQUIREMENTS	Clause 9.5; B Fans; Sr no. e	Fan hub and fan shaft shall be dynamically balanced.	Fan assembly will be statically balanced to ensure vibration free operation. Drive shafts will be dynamically balanced. These are as per standard industrial practice.	Specification requirement is clear. Bidder to follow specification requirement as per tender.
6	Customer specification; Annexure-A to SPECIFIC TECHNICAL REQUIREMENTS	TECHNICAL DATA SHEETS	No. of cooling towers: Nos. Working cell + Two (2) standby by per unit.	As specified elsewhere the no. of stand-by cell has been specified as 1 (one) no. for the required cooling tower which is in cotradiction with the referred clause. Please clarify and confirm the no. of stand-by cell(s) to be considered in our design.	Number of spare cell shall be one (1) no. for IDCT.
7	Customer specification; Annexure-A to SPECIFIC TECHNICAL REQUIREMENTS	Clause 9.3; J; Stoplog gate and handling facility	The structural design of the stop log gate shall generally conform to IS: 5620. The gate shall be painted with two (2) coats of red oxide primer and two (2) coats of final synthetic enamel painting in approved colour.	As per clause no. 10.01 of this specification the design standard has been specified as IS: 3042-1965 for sluice gates. Further as per Datasheet - A the MOC of Stop log gate has been specified as Heavily galvanized MS. Please furnish the exact requirement i.e. stop log gate or sluice gate.	Specification requirement is clear. Bidder to provide stop log gate as per cl. no. 9.3 (J), section-IA (page 23 of 425) of specification stipulated in tender.

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S.No.	Reference		SUBJECT	BIDDER'S QUERY	BHEL'S CLARIFICATION
	Section	Cl.no			
8	8.1-SCT-RKL-M1779-VOLUME-II-TS-1-R-0 (Page No. 5/ Clause No. 1.00.00)	and 8.1-SCT-RKL-M1779-VOLUME-II-TS-1-R-0 (Page No. 14/ Clause No. 13.04.00)	<p><u>Exclusions from bidder's scope:</u> Site Civil works (Civil construction at site by BHEL based on bidder's design/drawings and under bidder's supervision).</p> <p><u>Terminal Points:</u> Cold Water Outlet Channel: 10 Meter from edge of the respective CT basin as shown in the Plot Plan.</p>	As Civil works is excluded from bidder's scope, 10 Meter from edge of the respective CT basin as shown in the Plot Plan is not applicable.	Civil construction work for cooling tower is excluded from bidder's scope, 10 meter from edge of the respective CT basin as shown in the Plot plan. However, Complete Civil design (both sub and super structure) of Cooling Towers & CT basin including Architectural works, etc. within terminal points is in BIDDER'S scope.
9	8.1-SCT-RKL-M1779-VOLUME-II-TS-1-R-0 (Page No. 8/ Clause No. 4.03.00)		Thermal design criteria for Counter Flow Cooling Tower .	<p>Fill zone KaV/L can be enhanced @ 2% per 1 M air inlet subject to maximum limit of 10% to account for contribution of rain zone KaV/L.</p> <p>(Reference of other BHEL tender as enclosed) Please confirm?</p>	Specification requirement is clear. Bidder to follow specification requirement as per tender.
10	8.1-SCT-RKL-M1779-VOLUME-II-TS-1-R-0 (Page No. 122/ Clause No. 7.12)		<u>Hot water distribution pipes:</u> FRP or A.C pressure pipes conforming to IS:1592 for counterflow tower	As PVC pipes for distribution is acceptable by NTPC, we offer FRP /PVC pipe for distribution. Please confirm?	This shall be subjected to customer approval during detailed engineering.

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Tender no PSER:SCT: RKL-M1779:16

S.No.	Reference		SUBJECT	BIDDER'S QUERY	BHEL'S CLARIFICATION
	Section	Cl.no			
11	Data sheet A page 4 Of 4 Tech spec PE-TS-427-165-N001		Terminal Point of HW header	<p>1. Please confirm whether the hot water return pipe at terminal point is underground.</p> <p>2. If it is under ground, please specify the depth of centre line of pipe below FGL</p> <p>3. If it is above ground please , specify the center line of hot water return pipe wrt to FGL</p> <p>4. Please confirm whether the pump head mentioned as 13.5 M (at terminal point of header) is with respect to FGL or at the pipe centreline.</p>	<p>1. Specification requirement is clear. Please refer cl. No. 11 of data sheet A (page 4 of 4).</p> <p>2. Specification requirement is clear. Please refer cl. No. 5.15.00 of sub section IA (page 10 of 425).</p> <p>3. –</p> <p>4. Specification requirement is clear. Please refer cl. No. 2.10 of data sheet A (page 1 of 4).</p>
12	Data sheet A PE-TS-427-165-N001		Pump	The type of pump indicated is vertical submersible type. Please confirm the type of pump required.. please confirm the Head, discharge and MOC of pump	<p>Specification requirement is clear. For MOC of pump, please refer cl. No. 7.33 of data sheet A (page 3 of 4). For capacity of pump, please refer cl. No. 4.8 of data sheet A (page 2 of 4). Head of pump shall be decided during detail engineering.</p>
13	Annexure 1 of section C "Electrical scope" Sr. No.4			junction box to be provided in field to minimize local cabling max 10-15 mtrs. – This is feasible only if one cell tower is to be provided. For multicell tower max local cable length of 10-15 mtrs is not feasible.	<p>Specification requirement is clear. Bidder to follow specification requirement as per tender.</p>
14	Annexure 1 of section C "Electrical scope" Sr. No.11 &12			asks for aviation warning lights. As the tower height is not above 13 mts and would be lower than the perfieral buildings, do we have to consider the supply and erection of the same in our scope.	<p>AOL are only applicable for 50 meter & above height structures. For 13 meter high structure, AOL are not applicable.</p>

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15	Annexure 1 of section C "Electrical scope" Note 3			says we need to provide power junction box to cater to cable size mismatch during installation stage due to engineering. We would provide the maximum cable size possible on the motor. Cable engineering and selection is in BHEL scope. we cannot be held responsible for provision of JB if the cable selection goes above the maximum size feasible for connection.	Provision for JB shall be provided by Bidder. Actual size & other details will be finalized during detailed engineering.
16	Section C clause 1.11 page 5 of 122			says actuators to be provided for all on/off valves and inching valves. Do we need to consider actuators for riser valves also.	Specification requirement is clear. Valves on hot water risers are manual valves as per cl. No. 1.01.01 (c) of section-IA of technical specification (page 6 of 425).
17	Section C clause 1.22 page 7 of 122			asks for triple redundancy for all analog and binary inputs required for protection of drive. As temp. transmitter and oil level switch are used for protection of the fan motor and gear box do we need to consider triple redundancy for the project and double redundancy for instrument installed on header pipe.	Specification requirement is clear. Bidder to follow specification requirement as per tender.
18	clause 1.25 page 7 of 122			VMS for the project is considered in BHEL scope as per clause 1.25 page 7 of 122. Require confirmation.	Specification requirement is clear. Bidder to follow specification requirement. Vibration Monitoring System is envisaged for Cooling Tower Fan/Motor which is in BHEL scope. However, for mounting of vibration sensors/probe, vendor to provide vibration pad (of dimension of 80 mm*80mm*10mm each) for mounting of sensors and a notch/slot for mounting of key phasor.

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19	As per annexure 1 of section C" Electrical scope"			MCC and LPBS are in BHEL scope. clause 1.26 says about LCS and its IP protection. The same is part of BHEL scope as per the electrical scope and we need not supply the same.	1) Noted. This part is applicable for electrical systems. 2) Clause no 1.26 regarding LCS and its IP protection shall be supplied in line with C&I specification requirement.
20	Clause 04.04.00 of page 12 of 122			says "Hart calibrator to be provided" please confirm the scope.	Specification requirement is clear. Bidder to follow specification requirement as per tender.
21	Colour code			Color shade for JB asked is 7305. Looks to be typographical error. It should be 7035. If 7305 please confirm the shade as it does not appears in the shade card.	Specification requirement is clear. Bidder to follow specification requirement as per tender. Please refer Cl. 2.02.04. (running page no. 245 of 425)
22	Data sheet A page 3 of 4		Distribution	Hot water distribution pipes shall be PVC pipes	This shall be subjected to customer approval during detailed engineering.
23	Data sheet A page 3 of 4		Louver	Louvers are not applicable for counter flow towers.	Noted.
24	Data sheet page 3 of 4 and cooling tower layout.		Basin partition	Please confirm weather the Basin needs to have partition for each cell or no partition in between cells in basin. As per the cooling tower layout provided by you, the basin is not having partitions and shows one out let channel to pump house. Please confirm. Please confirm whether sluice gate is required or stop log gate is required.	Specification requirement is clear. Bidder to follow specification requirement as per tender.

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25	Data sheet A page 3 of 4	clause 7.25	Valve	<p>For counter flow towers, riser isolation and cell isolation are same.</p> <p>Hence we have considered one Manually operated Butterfly valve for each cell/ Riser isolation.</p> <p>Please confirm if any other valve is required in the main hot water feeder pipe (below ground)</p>	<p>Specification requirement is clear. Bidder to follow specification requirement as per tender.</p>
26	Section I sub section 1A	clause 4.03	Fulkerson	<p>Fulkerson calculations are applicable for Counter tower with film type rills only. Since we using splash type fill, Fulkerson calculations are not applicable. Pls confirm</p>	<p>Specification requirement is clear. Bidder to follow specification requirement as per tender.</p>
27	SCC – supply – page 16 of 18		PVC clause	<p>Since the project is more than 10 months, we request you to incorporate PVC clause .</p> <p>Moreover, the end user is NTPC, the PVC clause is applicable for all NTPC tenders.</p>	<p>As per tender.</p>

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28	SCC- supply – page 17 of 18		warranty	<p>Warranty is to be given for 12 months from the date of trial operation as per tender. Please indicate the maximum time limit for trial operation from the date of mechanical completion.</p> <p>Generally it should be 12 months from the date of commissioning or 18 months from the date of last major supply whichever is earlier.</p> <p>Please confirm.</p>	<p>Clause no. 39.1.1. of Vol-1C shall be read as: “The successful bidder shall warrant that the equipment will be new and in accordance with the contract documents and free from defects arising due to deficiencies in design and engineering and from defects in material and workmanship for a period of twelve (12) calendar months commencing immediately upon the satisfactory completion of trial operations and handing over. The equipment shall operate satisfactorily and reliably and the performance and efficiency of the equipment (s) shall not be less than the respective guaranteed values”.</p> <p>Clause no. 39.1.1. of Vol-1D shall be read as: You shall warrant that the execution is in accordance with contract document and free from defects arising due to deficiencies in engineering and from defects workmanship for a period of 12 (twelve) calendar months commencing immediately upon the satisfactory completion of trial operations and handing over. The equipment shall operate satisfactorily & reliably and the performance and efficiency of the equipment (s) shall not be less than the respective guaranteed values.</p>

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29	SCC- supply page 10 of 18			<p>A) We propose the following : The despatches of the cooling tower components shall be directly from: a) our Umbergaon factory, Gujarat, India b) our sub vendor's works within India Kindly confirm whether this is acceptable ? B) We propose to supply the material on inter state basis under E1–E2 transactions. CST extra as applicable against form 'C'. Kindly confirm whether this is acceptable ? We request you to confirm the following : 1) Whether the reimbursement of excise duty paid by us for our factory components will be paid by NTPC or not ? 2) Whether the reimbursement of excise duty paid by our sub-vendors for the bought out components directly dispatched by them to NTPC will be paid by NTPC or not? 3) Whether concessional (such as C form) forms will be issued by NTPC or not ? Whether entry tax is applicable and if so what is the % to be considered and whether this is reimbursable by NTPC or not?</p>	As per tender.
30	Price bid – schedule 2, clause 2.1		Supervision of civil works	<p>As per the tender, the civil construction is excluded from our scope.</p> <p>However, please confirm weather “stage wise supervision” is required or “full time civil supervision” is required.</p>	Specification requirement is clear. Bidder to follow specification requirement.

FORMAT FOR NO DEVIATION CERTIFICATE
(To be submitted in the bidder's letter head)

BHARAT HEAVY ELECTRICALS LIMITED,
Power Sector - Eastern Region,
Plot no 9/1, DJ Block, Sector – II, Salt Lake City,
Kolkata – 700 091

Sub	No Deviation Certificate.	
Job	DESIGN, ENGINEERING, MANUFACTURING, SUPPLY, ERECTION & COMMISSIONING OF INDUCED DRAFT COOLING TOWER (IDCT) FOR 1X250 MW NSPCL, PP-II EXPANSION, ROURKELA, ODISHA.	
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	7.0	BHEL's TCN-05, vide reference PSER:SCT:RKL-M1779:TCN-05, dated 10-11-2016.
	8.0	All other pertinent issues till date.

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ issued by you and in case of such observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact (if applicable) and acceptance to reverse auctioning process.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized representative of the bidder)

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION DJ-9/1, SECTOR-II, SALTLAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960

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