



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN – 02

Ref: PSER:SCT:NKP-M1673:TCN-02

Date: 09-06-2015

Sub	Tender change notice (TCN) 02	
Job	Design, engineering, manufacturing, supply, erection & commissioning, etc of one (1) No. IDCT cooling tower Pkg for 3x660 MW units at North Karanpura Super Thermal Power Project, Jharkhand.	
Ref	1.0	Tender No. PSER:SCT:NKP-M1673:15
	2.0	BHEL's NIT, vide reference no PSER:SCT:NKP-M1673:4470, dated 20-05-2015
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:NKP-M1673:TCN-01, dated 09-06-2015.
	4.0	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 Bidders are requested to visit BHEL-PEM, Noida for attending pre-bid meeting on **12-06-2015 (10:00 Hrs)** where all pre-bid queries will be addressed. The contact details for this pre-bid meeting is furnished below :

BHEL, PEM ADDRESS:

**SRI NISHANT SEKHAR
MECHANICAL SYSTEM ENGINEERING DEPTT
POWER SECTOR ENGINEERING INSTITUTE, PPEI BUILDING,
HRDI & ESI COMPLEX, PLOT 25, SECTOR-16A
NOIDA-201 301.
PHONE NO.: 0120-4368993**

- 2.0 Clarification to bidders query as per attached Annexure-A.
- 3.0 Standard electrical scope between BHEL & Vendor as per attached Annexure-I.
- 4.0 Revised 'No deviation certificate' as per enclosed Annexure-2. Bidder shall submit no deviation certificate as per enclosed format only.
- 5.0 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

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, etc of one (1) No. IDCT cooling tower Pkg for 3x660 MW units at North Karanpura Super Thermal Power Project, Jharkhand.	
Ref	1.0	Tender No. PSER:SCT:NKP-M1673:15
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	3.0	BHEL's TCN-01, vide reference no PSER:SCT:NKP-M1673:TCN-01, dated 09-06-2015.
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:NKP-M1673:TCN-02, dated 09-06-2015.
	5.0	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, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960

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

STANDARD ELECTRICAL SCOPE BETWEEN BHEL AND VENDOR (FOR EPC PROJECTS) REV-01, DATE: 09.06.2015

PACKAGE : COOLING TOWER (INDUCED DRAFT)

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

ANNEXURE-I TO TCN-02
TENDER NO-PSER:SCT:NKP-M1673:15

PROJECT : 3 x 660 MW North Karanpura STPP

S.NO	DETAILS	SCOPE SUPPLY	SCOPE E&C	REMARKS
1	415V MCC	BHEL	BHEL	240 V AC (supply feeder)/415 V AC (3 PHASE 4 WIRE) supply shall be provided by BHEL based on load data provided by vendor at contract stage for all equipment supplied by vendor as part of contract. Any other voltage level (AC/DC) required will be derived by the vendor.
2	Local Push Button Station (for motors)	BHEL	BHEL	Located near the motor.
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 BHEL BHEL	BHEL Vendor BHEL	<ol style="list-style-type: none"> 1. For 3.b) & c): Sizes of cables required shall be informed by vendor at contract stage (based on inputs provided by BHEL) in the form of cable listing. Finalisation of cable sizes shall be done by BHEL. Vendor shall provide lugs & glands accordingly. 2. Termination at BHEL equipment terminals by BHEL. 3. Termination at Vendor equipment terminals by Vendor.
4	Junction box for control & instrumentation cable	Vendor	Vendor	Number of Junction Boxes shall be sufficient and positioned in the field to minimize local cabling (max 10-12 mtrs) and trunk cable.
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)	Vendor	Vendor	<ol style="list-style-type: none"> 1. Layout details between vendors supplied equipment & installation dwgs by vendor. 2. BHEL will provide cable trench/cable racks/cable pedestals 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	<ol style="list-style-type: none"> 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 (including electronic earthing) & lightning protection	Vendor	Vendor	Material and sizes shall be as per specification and subject to BHEL approval during detailed engineering stage. Refer note no. 4 for electronic earthing.
9	Below grade grounding	BHEL	Vendor	MS Rod material shall be provided by BHEL. All other materials/ consumables are in vendor's scope.

PACKAGE : COOLING TOWER (INDUCED DRAFT)

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

ANNEXURE-I TO TCN-02
TENDER NO-PSER:SCT:NKP-M1673:15

S.NO	DETAILS	SCOPE SUPPLY	SCOPE E&C	REMARKS
10	LV Motors with base plate and foundation hardware	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 alongwith LDB at one location near Cooling Tower for feeding cooling tower vendor LPs/other lighting loads. Further distribution including material is in vendor scope.
12	Aviation Lighting	Vendor	Vendor	
13	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	
14	<u>Engineering activities</u> 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 & Instrumentation cable schedules showing routing details [including electronic earthing cable & 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.

STANDARD ELECTRICAL SCOPE BETWEEN BHEL AND VENDOR (FOR EPC PROJECTS) REV-01, DATE: 09.06.2015

PACKAGE : COOLING TOWER (INDUCED DRAFT)

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

2. All QPs shall be subject to approval of BHEL/customer after award of contract without any commercial implication.
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. Vendor shall indicate location of Electronic Earth pit in their civil assignment drawing.

ANNEXURE-A TO TCN-02					
Design, engineering, manufacturing, supply, erection & commissioning, etc of one (1) No. IDCT cooling tower Pkg for 3x660 MW units at North Karanpura Super Thermal Power Project, Jharkhand.					
Tender No. PSER:SCT:NKP-M1673:15					
S.No.	Reference		Description	Query	BHEL Clarification
	Section	Cl.no			
1	Vol- IIB; Section C1	Datasheet-A; Clause 2.16	Maximum permissible Cooling Tower Plan Dimension at 'FGL' = 70 M x 22 M	Our understanding is that the specified dimensions indicate the basin plan area / foot print area in case of a cross-flow type cooling tower also.	The Maximum Plan of CT basin shall not exceed 70Mx22M.
2	Vol- IIB; Section C1	Datasheet-A; Clause 4.10 / Annexure - 1 to Datasheet A	A.C.W. Outlet Header	Please furnish the No., Size & Thickness of Purchaser's Pipe Header at TP. Also specify the MOC of the ACW outlet header(s) to be included in our scope.	The size of ACW Header at TP is 1400 NB(OD-1422 mm X 12.5 mm Thk). The MOC of pipe shall be carbonSteel (IS 2062) rolled and welded conforming to IS:3589.
3	Vol- IIB; Section C1	Datasheet-A; Clause 6.6 / Annexure - 1 to Datasheet A	Butterfly valves on hot water distribution risers	Please confirm that in case of a cross flow cooling tower, only flow control valves - butterfly type with flow directioners (2 nos per cell) will have to be supplied. No additional butterfly valves on hot water risers (2 nos per tower) will be required.	Isolation Butterfly valves on hot water risers to be provided along with Butterfly valves to the distribution Header of each cell.
4	Vol- IIB; Section C1	Datasheet-A; Clause 6.12	Suitable lifting, monorail.....for lowering from there to ground level = Min 3 nos.	We understand the quantity specified (i.e. Minm. 3 Nos) is applicable for CP block only.	Pls refer Cl.no- 3.04.15 of NTPC Technical specification, for detail of Maintenance Facility.
5	Vol- IIB; Section C1	Datasheet-A; Clause 6.12	Fan Stack - RCC / Pultruded FRP	We request you to amend the MOC of fan stack from 'Pultruded FRP' to FRP (moulded).	Pls comply Technical specification cl no-7.5 (Data sheet- A, section-C1)
6	Vol- IIB; Section C1	Datasheet-A; Clause 9.13	All testing instruments by supplier : Yes	Instruments required for performance testing of cooling tower will remain testing agency's own property. Same will be taken back by the testing agency after successful completion of performance test at site.	Yes.
7	Vol- IIB; Section C1	Annexure - 2 to Datasheet A	Terminal Point of HW header	Please furnish the co-ordinates for the HW header terminal point as well as for the edge (nearest to the HW header TP) of the cooling tower to enable us estimate the pipe route length accurately. Also please furnish the level of the centreline of the HW header w.r.t FGL at the terminal point.	The coordinate shall be provided during detail engineering. The TP is well defined in the technical specification which is 10 M from edge of Cooling Tower.
8	Vol- IIB; Section C2	Annexure - 1; Sr. no. 10	Scope of lighting cable	Please clarify whether cabling from LDB to Lighting Panel is in Bidder's scope or not.	Scope of cabling for lighting shall be as per cl. No. 3,5 & 6 of the revised " Electrical scope between BHEL and Vendor".
9	Vol- IIB; Section C3			Please furnish detailed layout drawing to enable us ascertain our actual scope of control and instrumentation	Refer Section - C2 & C3 for Scope of Electrical and C&I portion in technical specification. Pls refer Annexure-I

ANNEXURE-A TO TCN-02					
Design, engineering, manufacturing, supply, erection & commissioning, etc of one (1) No. IDCT cooling tower Pkg for 3x660 MW units at North Karanpura Super Thermal Power Project, Jharkhand.					
Tender No. PSER:SCT:NKP-M1673:15					
S.No.	Reference		Description	Query	BHEL Clarification
	Section	Cl.no			
10				Please confirm that our scope of instrument cables will terminate at a common field junction box located at the ground level at the base of the cooling tower and all cables beyond junction box to Purchaser's control system is outside our scope limit.	scope of the cables shall be as per cl. No. 3 & 5 of revised "Electrical scope between BHEL and Vendor".Pls refer Annexure-I
11				Please confirm that butterfly type cell / riser isolation valves will be manually operated.	BFV for Cell isolation shall be manual but for Riser isolation shall be Motorised.
12	Vol- IIB; Section C4	Clause 3.01.01	The sub-strata details encountered at bore hole (BH-V) in the cooling tower area are enclosed as Annexure-1.....	Sub-strata details of BH-V are not available in the referred Annexure-1. In Annexure-1, sub-strata details of bore hole no. 88 and 90 are available. Please confirm which data to be considered relevant to the cooling tower area.	BH-V may be read as Bore Hole No. 88 & 90.
13	Vol- IIB; Section C4	Clause 3.01.01	BHEL/owner does not take any responsibility about the accuracy and applicability of the geo-technical data furnished herewith.	Geotechnical investigation report and foundation system has been furnished by BHEL for the cooling tower area along with the technical specification. We are sure that BHEL must have taken full care to get a reliable geo-technical investigation carried out. It is expected that BHEL will take full responsibility for the correctness of the geo-technical investigation report.	Please follow tender specification.
14	Vol- IIB; Section C4	Clause 3.02.02	Net allowable bearing pressure	Soil bearing capacities are furnished in Table-1 of clause 3.02.02 and also in Annexure-1. Please clarify which data to be considered.	BHEL has carried out preliminary geotechnical investigation at site. Based on preliminary geotech investigations, suggestive founding level & bearing capacity are shown in Annexure-1. These values are tentative and for guidance only. In case, successful bidder chooses to carry out his own geotechnical investigation at site (refer clause 3.01.02), Net allowable bearing pressure and founding level shall be limited to the values shown in Table-1 of clause 3.02.02.

ANNEXURE-A TO TCN-02**Design, engineering, manufacturing, supply, erection & commissioning, etc of one (1) No. IDCT cooling tower Pkg for 3x660 MW units at North Karanpura Super Thermal Power Project, Jharkhand.****Tender No. PSER:SCT:NKP-M1673:15**

S.No.	Reference		Description	Query	BHEL Clarification
	Section	Cl.no			
15	Vol- IIB; Section "C"	Clause 5.03.01.01; Sr. no. d	...32 NB medium class, GI handrailing	As per clause no. 5.03.01.01; sr. no. d (page 8 of 63), MOC of handrailing for staircase is specified as GI whereas in clause 9.02.0; sr. no. a (page 34 of 63) MOC of handrails for staircase, passage and artinus is specified 32 NB SS pipe. Plesae clarify the correct MOC of handrailing to be considered in our scope.	Clause 9.02.0 is applicable to buildings whereas clause 5.03.01.01 d) is applicable to cooling tower.
16	Vol- IIB; Section "C"	Clause 5.03.01.02; Sr. no. c	design of Transformer and tresle foundation, storm water drain...	Please confirm that design and construction of RIO room, transformer and trestle foundation, storm water drain is outside our scope.	Design & construction of RIO room, transformer & trestle foundations are not included in bidder's scope. However, perepheral storm water drain and its connection to nearest plant drain is included in bidder's scope.