



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN - 08

Ref: PSER:SCT:NKP-M2081:TCN-08

Date:08-12-2020

Sub	Tender Change Notice (TCN) - 08.	
Job	ERECTION, TESTING, COMMISSIONING, START-UP ,TRIAL OPERATION AND HANDING OVER OF TOTAL FLUE GAS DESULPHURIZATION (FGD) SYSTEM OF 3 X 660 MW NORTH KARANPURA STPP, JHARKHAND.	
Ref	1.0	BHEL's NIT, vide reference no. PSER:SCT:NKP-M2081:8236 Date: 31-10-2020.
	2.0	BHEL's TCN-01, vide reference no. PSER:SCT:NKP-M2081:TCN-01 Date: 02-11-2020
	3.0	BHEL's TCN-02, vide reference no. PSER:SCT:NKP-M2081:TCN-02 Date: 16-11-2020
	4.0	BHEL's TCN-03, vide reference no. PSER:SCT:NKP-M2081:TCN-03 Date: 21-11-2020
	5.0	BHEL's TCN-04, vide reference no. PSER:SCT:NKP-M2081:TCN-04 Date: 27-11-2020
	6.0	BHEL's TCN-05, vide reference no. PSER:SCT:NKP-M2081:TCN-05 Date: 01-12-2020
	7.0	BHEL's TCN-06, vide reference no. PSER:SCT:NKP-M2081:TCN-06 Date: 04-12-2020
	8.0	BHEL's TCN-07, vide reference no. PSER:SCT:NKP-M2081:TCN-07 Date: 05-12-2020
	9.0	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 the offer.

- Clarifications/Modifications attached vide Annexure-A to this TCN-08.
- Revised 'No deviation certificate' is attached. Bidder to submit 'No deviation certificate' as per attached format only.
- All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,
for BHARAT HEAVY ELECTRICALS LTD

Dy. Mgr (SCT)

Encl: As Above.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

फैक्स/Fax : (033) 23211960 फोन/Phone : बोर्ड/EPABX : (033) 2339 8000

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ANNEXURE-A TO TCN-08				
CLARIFICATION/MODIFICATIONS				
SL. NO.	REFERENCE CLAUSE OF TENDER	EXISTING PROVISION	BIDDER'S QUERY	BHEL'S CLARIFICATION/MODIFICATION
1.0	Clause No.3 of Annexure - A:Amendment to GCC/SCC Of NIT	Clause no. 1.10.1 of GCC shall be read as below: The total amount of Security Deposit will be 5% of the contract value. EMD of the successful tenderer shall be converted and adjusted towards the required amount of Deposit.	As per latest Govt. notification same shall be 3% for any contract to be awarded with December 2021 Security	Shall be as per tender provision.
2.0	Clause No.1.10.1 of :SECURITY DEPOSIT of VOLUME-IB GENERAL CONDITIONS OF CONTRACT (SERVICE)	1.10 SECURITY DEPOSIT 1.10.1 Upon acceptance of Tender, the successful Tenderer should deposit the required amount of Security Deposit for satisfactory completion of work, as per the rates given below: SN Contract Value Security Deposit Amount 1 Up to Rs. 10 lakhs 10% of Contract Value 2 Above Rs. 10 lakhs upto Rs.50 lakhs 1 lakh + 7.5% of the Contract Value exceeding Rs. 10 lakhs. 3 Above Rs. 50 lakhs Rs 4 lakhs + 5% of the Contract Value exceeding Rs. 50 lakhs.	In the form of BG? 5% or 3% as per latest notification.	Shall be as per tender provision.
3.0	Clause No.2.24.1 of : PERFORMANCE GUARANTEE FOR WORKMANSHIP of VOLUME-IB GENERAL CONDITIONS OF CONTRACT (SERVICE)	2.24.1 Even though the work..... from the Guarantee money .	Guarantee for workmanship -12 months from the date of commencement of guarantee SCC- Under which SCC clause.	Refer Clause No.26.0 of VOL-IF-TCC-CML(REV-01) TECHNICAL CONDITIONS OF CONTRACT, SCOPE ETC.
4.0	Clause No.3.8.1 to 3.8.6 of Casing panel Installation of ERECTION WORK of VOLUME-IF-TECH:FGD TECHNICAL SPECIFICATION	Casing panel Installation :Splices of bottom plates...laid simultaneously.	Under clause no 3.8.1 to 3.8.6 we understand that casing panel fabrication to be done atsite.Kindly provide us the totaltonnage of casing panel and no of panels for casing enable us to consider fabrication price	Absorber Casing panels will be fabricated at Ranipet , supplied with stiffener. Assembly & Inter panel welding to be done at site .
5.0	Clause No.3.13 of ERECTION WORK of VOLUME-IF-TECH:FGD TECHNICAL SPECIFICATION	Suspensions for ducting will be supplied in running lengths, which shall be cut to size and adjusted as required. Ducts / expansion bellows are dispatched to site in loose walls plates / pieces and these are to be assembled and welded at site along with stiffeners etc., before erection within the final accepted rates. All joints connecting duct expansion piece and dampers shall be seal welded on inside as well as on outside.	In the price bid total weight of Duct is indicated.Please confirm complete ducting fabrication is to be done atsite?We understand that ducting will be supplied by client in running length only. However fabrication involvement is not clear for ducting work as loose wallplates /pieces to be assembled and welded at site with stiffeners only. We feel a drawing will help us to calculate length of welding to be done for ducting. In case we consider total fabrication for duct work as per the tonnage given in price schedule in such case price will be huge. This need a clarity for proper pricing.	Duct segment will be fabricated at Ranipet , supplied with stiffener. Assembly and welding to be done at site .

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6.0	Clause No.3.25 of ERECTION WORK of VOLUME-IF-TECH:FGD TECHNICAL SPECIFICATION	Ducts/ expansion bellows (metallic & non-metallic) are normally supplied in loose wall plates/ segments and these are to be assembled and welded at site before erection. Correction of ovalities/ distortion of ducts, expansion bellows etc occurred during transportation/ handling are to be carried before erection as part of work. Erection of mechanical components of non-metallic joints is included in the scope of work. All joints connecting ducts, expansion pieces and dampers shall be seal welded. These welds have to be made leak proof and tested as per technical instruction / requirement.	Understand non-metallic joint through seal weld is contractor's scope. Please confirm whether seal will be provided free. If not please indicate the total length of seal requirement for non-metallic ducting work enable us to consider in our price.	Seal welding requirement is for both Metallic and Non-metallic Expansion Joints .
7.0	Clause No.3.54 of VOLUME-IF-TECH:FGD TECHNICAL SPECIFICATION	The contractor shall prepare as built piping drawing & submit to BHEL Engineer for approval & verification of material used	Preparation of as built drawing for piping is in the scope of vendor?	As per Tender Scope .
8.0	Clause No.3.6 of VOLUME-IF-TECH:FGD TECHNICAL SPECIFICATION	Tanks shall be supplied by thebe in the scope of the rubber lining vendor.	We understand that total tank work fabrication is within the scope of contractor as per the weight given in BOQ.	As per Tender Scope .
9.0	Clause No.3.61 of VOLUME-IF-TECH:FGD TECHNICAL SPECIFICATION	Limestone silos shall be supplied by the units in more than one segment (3 to 4 segment) and height of segment shall be 2500 mm. Contractor shall have to complete the assembly, final welding/NDT/testing as per the approved drawings/documents/FQP.	Understand that complete fabrication of lime stone silo is within the scope of contractor. Please indicate the total tonnage for lime stone silo only.	Limestone silo will be supplied in segments and in rolled conditions along with welded stiffener.
10.0	Clause No.4.15 of WELDING, HEAT-TREATMENT, RADIOGRAPHY AND NDT of VOLUME-IF-TECH:FGD TECHNICAL SPECIFICATION	Contractor shall arrange all necessary stress relieving equipment with automatic recording devices. The contractor arrange at his cost.	Which are the items in the BOQ to be stress relieved? So that necessary provision can be made.	Not required .
11.0	Clause No.4.38 of WELDING, HEAT-TREATMENT, RADIOGRAPHY AND NDT of VOLUME-IF-TECH:FGD TECHNICAL SPECIFICATION	The pressure parts, requirements.	What special care to be taken during erection in accordance with IBR? Please elaborate	Refer to sl.no 11 of TCN-05.
12.0	Clause No.5.7 of VOLUME-IF-TECH:FGD TECHNICAL SPECIFICATION	Aluminum sheet cladding w...same will be issued free of charges to contractor.	Do not understand application of black bituminous paint in the cladding when the cladding is permanently color coated.	The cladding referred is for Flue Duct .
			Whether we need to consider supply of black bituminous paint and seal in our estimate now and how the same will be adjusted if BHEL MUS will issue these items free .	Black Bituminous paint to be supplied .
13.0	Clause No.5.8 of APPLICATION OF INSULATION of VOLUME-IF-TECH:FGD TECHNICAL SPECIFICATION	Aluminum sheet metal ... sheets if required will also be covered within the scope of this contract.	In the price BOQ we have seen that all permanent color coated sheets will be used. Please quantify where aluminium sheet metal cladding will be used and its quantity.	Aluminium sheet will be used for insulation cladding.
14.0	Clause No.5.16.5 of APPLICATION OF INSULATION of VOLUME-IF-TECH:FGD TECHNICAL SPECIFICATION	Alternatively, the anti-corrosive protection shall be 4.0 mm.	Length of buried pipe is required for our estimation	As per Tender .

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15.0	Clause No.6.1 of VOLUME-IF-TECH:FGD TECHNICAL SPECIFICATION	All exposed metal before painting.	We understand that complete painting both primer and finish paint including supply of paint is in the scope of contractor for the total tonnage tendered for . i. e 38000 MT.	Application of Primer will be required where it got peeled off . All exposed metal parts to be finish painted as per tender specification .
	Clause No.6.2 of VOLUME-IF-TECH:FGD TECHNICAL SPECIFICATION OF PAINTING INCLUDING FINISH PAINTING	After applying the primer paints allstructure /equipment /items, shall be finish painted with one coat of epoxy finish & one coat of aliphatic polyurethane / as specified by BHEL engineer. In case proper finish is not obtained in two coats, the contractor shall apply additional coat (s) till proper finish is achieved. After completion of painting all bright spots shall be cleaned to the satisfaction of Engineer.	Also surface preparation does not required sand blasting method.	
	Clause No.6.4 of VOLUME-IF-TECH:FGD TECHNICAL SPECIFICATION OF PAINTING INCLUDING FINISH PAINTING	Contractor at no extra cost to BHEL shall supply allpaints, primers, tools and other consumables including scaffolding materialsrequired for finish painting. Paint is to be BHEL/NTPC approved make only and painting should be as per colour scheme and quality approved / specified by BHEL/NTPC. Valid Test Certificatefor the paint so supplied shall be made available before use of the same on work. No paint whose shelf lifehas expired should be used for painting.		
16.0	Clause No.7.1 of VOLUME-IF-TECH:FGD TECHNICAL SPECIFICATION OF TESTING, PRE- COMMISSIONING, COMMISSIONING, AND POST-COMMISSIONING	The contractor shall carry out all the required tests,pre-commissioning and commissioning activitiesrequired for the successful and reliableoperation of FGD system as per the approved commissioning procedure /quality plans of BHEL/NTPC. These would include, Air /gas tightness test of ducts, Hydraulic test of piping, Holiday test of underground piping Water fill test/vacuum box test of tanks, Trial run of pumps/blowers/ball mills/feeders/vacuum belt filter/hydro cyclones, Testing of fire protection system etc. as instructed by BHEL using their own consumables, labour and scaffoldings etc. Specific omission of any test which is required for the successfully commissioning of the FGD system does not absolve the contractor of its responsibilities of performing of that test.	A write up needed to ascertain the nature of test to be carried out for our estimation purpose.	Commissioning procedure will be submitted during erection .
17.0	ANNEXURE A of VOLUME-IF-TCC-CML(REV-00) TECHNICAL CONDITIONS OF CONTRACT, SCOPE ETC	TENTATIVE LIST OF T&Ps and MMEs TO BE PROVIDED BY THE CONTRACTOR FOR EACH UNIT AT HIS COST	We presume that listis for one unit only and we need to consider the same list for three units i.e three sets of T&P.	Bidder's understanding is Correct .
18.0	ANNEXURE IV of VOLUME-IF-TCC-CML(REV-00) TECHNICAL CONDITIONS OF CONTRACT, SCOPE ETC	Valve, pipe etc	Need size and qty of valve to be erected, pipe in running meter as the erection rate depends on qty and sizeof valve and Running meter and dia of pipe only	Bidder to go by the data provided in the tender.

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19.0	ST.NO.A1501 of VOLUME-III PRICE SCHEDULE, REV-00	Designing, providing and fixing permanently color coated galvanised MS troughed metalsheet decking plate of approved colour over roof purlins for....(Payment: Supply = 70 % and erection = 30 %)	Understand supply of metal decking is also within the scope of contractor	Bidders understanding is Correct .
20.0	ST.NO.B1501 of VOLUME-III PRICE SCHEDULE, REV-00	Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour over floor ..(Payment Terms: Supply = 70 % and erection = 30 %)	Understand supply of metal decking is also within the scope of contractor	Providing means scope of Supply included
21.0	ST.NO.A1503 of VOLUME-III PRICE SCHEDULE, REV-00	Providing and fixing shear connectors of mild steelstuds having 16mm dia and minimum 65 mm projected length above purlin passing through metal decking as per relevant IS codes/AWS D1.1/D1.1M/ASTM A29 and specification.	Please clarify supply of shear connectors will be in whose scope?	Providing means scope of Supply included
22.0	ST.NO.B1503 of VOLUME-III PRICE SCHEDULE, REV-00	Providing and fixing shear connectors of mild steelstuds having 19mm dia and minimum 100 mm projected length above purlin passing through metal decking as per relevant IS/AWS D1.1/D1.1M/ASTM A29 codes and specification.	Please clarify supply of shear connectors will be in whose scope?	Providing means scope of Supply included
23.0	ST.NO.A1504 of VOLUME-III PRICE SCHEDULE, REV-00	Designing, providing and fixing External sheet of Permanent colour coated metal cladding.....(Payment Terms:Supply = 70 % and erection = 30 %)	Understand supply of permanent colour coated metalcladding is within the scope of contractor .	Providing means scope of Supply included
24.0	ST.NO.1511 of VOLUME-III PRICE SCHEDULE, REV-00	Providing and fixing insulation of resin bonded mineral wool of 50 mm nominal thickness conforming to IS 8183 recommendations.	Please clarify supply of resin bonded mineral wool will be in whose scope?	Providing means scope of Supply included
25.0	ST.NO.A1514 of VOLUME-III PRICE SCHEDULE, REV-00	Providing and installing under deck insulation with resin bonded mineral wool of 50 mm nominal thickness conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock.....RCC slabs.	Please clarify supply of resin bonded mineral wool will be in whose scope?	Providing means scope of Supply included
26.0	ST.NO.A1519 of VOLUME-III PRICE SCHEDULE, REV-00	Design, supply & erection of permanent colour coated Pre-Fabricated sandwiched insulated metal cladding of approved shade and color(Payment Terms: Supply = 70 % and erection = 30 %)	Please clarify supply of permanent colour coated Pre-Fabricated sandwiched insulated metal cladding will be in whose scope?	Providing means scope of Supply included
27.0	ST.NO.A1520 of VOLUME-III PRICE SCHEDULE, REV-00	Design, supply & erection 2mm thick Polycarbonate sheet as per the detailed specification mentioned in tender document with profile shall be sealed as per manufacturer's recommendations.	Understand supply of 2mm thick Polycarbonate sheet is within the scope of contractor.	Providing means scope of Supply included
28.0	ST.NO.2307 of VOLUME-III PRICE SCHEDULE, REV-00	Supplying, Transportation, fabrication, erection and alignment of factory made electroforged galvanised grating units with mild steel having minimum galvanisation conforming to IS:2062.....sqm.	Understand supply is also in the scope of contractor for electroforged galvanised grating.	Bidder's understanding is correct.

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29.0	ST.NO.2308 of VOLUME-III PRICE SCHEDULE, REV-00	Supplying, Transportion, fabrication, erection and alignment of factory made galvanisedall complete.	Understand supply is also in the scope of contractor for galvanised welded grating.	Bidder's understanding is correct.
30.0	ST.NO.A2311 & A2312 of VOLUME-III PRICE SCHEDULE, REV-00	A2311 :Providing,Transportation from site store, fixing in positing of high strength structural bolts (of property class8.8 and product grade 'C' as per IS: 1367) incharge. A2312: Dismantling of steel structure, all complete.	Clarify the scope of supply for MS bolt , washer and nuts. Free or within contractor's scope.	Providing means scope of Supply included
31.0	ST.NO.2318 of VOLUME-III PRICE SCHEDULE, REV-00	Supplying, Transportion and fixing in position PTFE type sliding bearings suitable for required vertical loads as per the construction drawings and for maximum displacement of ± 50 mm including installation, drilling, bolting, erecting, aligning etc all complete for following vertical loads.	Understand supply of PTFE bearings are within contractor's scope	Bidder's understanding is correct .
32.0	ST.NO.2320 of VOLUME-III PRICE SCHEDULE, REV-00	Supplying, Transportion from site store, fabrication and fixing of stainless steel pipe hand railing conforming to SS409 of 32 mm /40 mm dia all complete.	Understand supply of SS hand railings are within contractor's scope	Bidder's understanding is correct .
33.0	ST.NO.A2322 of VOLUME-III PRICE SCHEDULE, REV-00	Supply,Transportation, fabrication and fixing of galvanised MS pipe hand railing (minimum 1000 mm high) of 32 mm / 40 mm /50 mm dia (Medium Grade) as per IS:1161, galvanised at the rate of 610 gms/sqm as per IS:4736, including painting etc. all complete.	Understand supply of galvanised MS hand railings are within contractor's scope	Bidder's understanding is correct .
34.0	ST.NO.A2335 of VOLUME-III PRICE SCHEDULE, REV-00	Design, Supply, fabrication and fixing of Hopper gratings made of min 200mm X28mm thick flats in Main direction and min 100 mm X 20 mm thick flats in secondary direction including application 2 coats of Red oxide primer all complete as per specification and approved drawing	Understand supply of MS gratings are within contractor's scope	Bidder's understanding is correct .
35.0	ST.NO.A2336 of VOLUME-III PRICE SCHEDULE, REV-00	Supply & welding of 10mm Sq bar to the chequered plate walk way at all conveyor galleries in CHP including all consumables as per the directions of engineer in charge.	Understand supply of Sq Bar are within contractor's scope	Bidder's understanding is correct .
36.0	ST.NO.A2337 of VOLUME-III PRICE SCHEDULE, REV-00	Supply & Transportation and erection/Fixing, welding of MS Flat Toe guard of size 100mm x 6mm and shall be provided along the railing for all steel platforms/landings and RCC staircases as per drawings and specifications.	Understand supply of MS Flat toe guard are within contractor's scope	Bidder's understanding is correct .
37.0	SI.No.12 of ANNEXURE-A TO TCN-05, CLARIFICATION/MODIFICATION	Bidder's Query : What will be the percentage NDT test like LPI, MPI, HT, RT, UT etc BHEL Reply: As per the tender. Percentage of NDT test not mentioned in tender doc	Percentage of NDT test not mentioned in tender documents. Please confirm the percentage of NDT test.	Annexure-B to TCN-08 .

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38.0	Sl.No.14 of ANNEXURE-A TO TCN-05, CLARIFICATION/MODIFICATION	Bidder's Query : Please reconfirm that all type of paints for touchup and final painting in brief for painting in brief is required since quality and grade available in market differ much and this affect cost of paint. Understand that Epoxy & PU are not applicable. May provide painting scheme to understand quality of applicable paints. BHEL Reply: Paints under Bidders Scope. FQP for painting to be provided before start of work.		Epoxy Paint will be as per ISI4209 PU Paint will be as per IS13213
39.0	Sl. No. 27 of ANNEXURE-A TO TCN-05, CLARIFICATION/MODIFICATION	Bidder's Query : 21. Oil cooled transformers are used static fabrication. BHEL Reply: T&P list given in TCC to be provided by the L1 Bidder for each Unit.	Agreed to T&P list in TCC bit oil cooled transformers are not safe & efficient for any reason	Tender Specification .

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ANNEXURE-B TO TCN-08

	Following are the NDT requirement for Absorber & Steel Structures:	
SL.NO.	CHARACTERISTICS / ITEM	QUANTUM/ FREQUENCY OF CHECK
i.	Review of qualification of NDT inspectors	Once before engagement of each inspector
ii.	Visual Inspection of all weldments (field weld)	100%
iii.	LPI on back gouged / ground grooves prior to welding from second side.	100%
iv.	LPI on finished groove welds for $t < 25$ mm.	10% of weld length at random
v.	LPI on finished groove welds for $t > 25$ mm < 32 mm.	100%
vi.	RT on finished groove welds for $t \geq 32$ mm.	100%
vii.	Where RT is not possible due to practical difficulties, UT may be performed.	
viii.	LPI on finished fillet welds	<p>-100% LPI on field welds joining web to tension flanges of Girder</p> <p>- LPI on other fillet weld : 5% of weld length</p>
ix.	LPI of nozzle welds & all finished welds	Random 10%
NOTE:		
a.	For Tanks, the NDT requirement & frequency shall be as per IS 803	
b.	For piping, NDT requirement shall be as per ASME B31.1	
c.	The above is based on NTPC-Dadri FGD FQPs and being shared for getting preliminary ideas related to tendering purpose only.	

ANNEXURE - 2

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.	
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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 and integrity pact (if applicable).

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/uploaded offer/documents in accordance with tender instructions with acceptance of the terms & conditions of the tender by us 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 फोन/Phone : बोर्ड/EPABX : 033-2339 8000/ 2339 8236