



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

**BHARAT HEAVY ELECTRICALS LIMITED**

(A Govt. of India Undertaking)

**TCN - 02**

Ref: PSER:SCT:KGN-I2402:TCN-02

Date: 01-01-2026

Sub	Tender Change Notice (TCN) - 02.	
Job	Erection, Installation, Testing, Commissioning, Handing over, ETC of Instruments, Junction Boxes, Panels, Cable Trays, Cabling, ETC. of C&I (Control & Instrumentation) for Flue Gas Desulphurisation (FGD) Package of 4X210 MW Stage-I & 3X500 MW Stage-II NTPC Kahalgaon STPS, Bihar.	
Ref	1.0	Tender no. PSER:SCT:KGN-I2402:25
	2.0	BHEL's NIT, vide reference no. PSER:SCT:KGN-I2402:11291 Date: 17-12-2025
	3.0	BHEL's TCN-01, vide reference no. PSER:SCT:KGN-I2402:TCN-01 Date: 29-12-2025.
	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 the offer.

1. Bidders are requested to note that EMD is not applicable for this tender. All relevant clauses shall be read accordingly.
2. The clarifications to bidder's queries are attached as **Annexure-A** to this TCN-02.
3. Revised 'No deviation certificate' is attached. Bidder to submit 'No deviation certificate' as per attached format only.
4. All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,  
for BHARAT HEAVY ELECTRICALS LTD

DGM / (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

ANNEXURE-A of TCN-02				
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S.No.	Reference clause of tender document	Existing provision	Bidder's query	BHEL's clarification
1	BOQ	TCC Annexure-4 S. no. E	The canopy item is not indicated in BOQ; however, it is reflected in the payment breakup under TCC Annexure-4. Kindly clarify the scope applicability.	Fabrication & erection of Canopy shall be operated under sl. No. 8.4(Volume-iii,Price Schedule) wherever applicable.
2	BOQ	S. No. 11.1 and S. No. 18	<b>FO Cables:</b> FO cables are mentioned under S. No. 11.1 as well as S. No. 18. Both entries appear to cover similar items but with different rate factors, which seems contradictory. Kindly clarify the distinction between these two items	FO cables mentioned under Sl. No. 11.1(Volume-iii,Price Schedule) are applicable for the underground cable & this includes minor Civil work like excavation,Brick work & backfilling. Whereas Sl. No. 18(Volume-iii,Price Schedule) is applicable for cable portions laid with or without conduit along normal routes.
3	BOQ	S. No. 17, S. No. 18 & S. No. 8.1	<b>Cable &amp; Conduit Scope:</b> In S. No. 17 and 18, cables are mentioned both with conduit and without conduit, whereas conduit work is separately included under S. No. 8.1. Since all conduit work is already covered under a separate head, it would be appropriate to keep cabling items independent. This seems to be an overlap.	S. No. 8.1(Volume-iii,Price Schedule) is related to GI piping to be used for the Deluge Valve system, Gate valves, Strainers, nozzles, GI pipes, solenoid valves, Pressure switches, QBDs, DVLCP etc.,
4	BOQ	S.NO. 8.1	<b>Usage of Pipes:</b> Kindly specify the application areas where S. No. 8.1 GI pipes are to be used and where impulse pipes are applicable.	S. No. 8.1(Volume-iii,Price Schedule) is related to GI piping to be used for the Deluge Valve system, Gate valves, Strainers, nozzles, GI pipes, solenoid valves, Pressure switches, QBDs, DVLCP etc.,
5	BOQ	S. No. 8.5, 8.6 & 8.7 and S. No. 9	<b>Item References (S. No. 8.5, 8.6 &amp; 8.7):</b> Are these items erection is in scope of work? because it also included under S. No. 9 (Commissioning and testing activities for equipment erected by other agencies). Kindly clarify the scope alignment of these items, as they are generally executed by the mechanical contractor in similar projects.	Item references of (Volume-iii,Price Schedule) S. No. 8.5, 8.6, and 8.7 cover both erection and commissioning activities. Whereas Sl. No. 9(Volume-iii,Price Schedule) is applicable only for C&I testing and commissioning of equipment erected by other agency. Sl. No. 8.6 having item description "Angular Positioning Transmitter for Booster Fan" to be read as " Angular Positioning Transmitter".
6	TCC	Clause No. 3 and 4.4.1	<b>Scope of Work – Watch &amp; Ward and Facility:</b> Are the watch & ward and facility provisions applicable only for the PG test or for the entire project? Please specify the duration for the PG test.	The successful bidder needs to watch and ward of the equipment & issued materials from BHEL until and unless, it has been handed over to Customer.
7	SCC	Chapter-II s.no. 2.5 sub point 11	<b>Round-the-Clock Security Guard:</b> As per the tender documents (SCC), round-the-clock security guards are required. Kindly specify the duration for which the security guard is needed.	Round the clock-As per requirement.

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8	Technical Queries		<b>Impulse Pipe Details:</b> Please provide the approved impulse pipe welding procedure along with the maximum permissible testing pressure.	Welding Procedure Specification enclosed & maximum permissible testing pressure is 80 bar.
9	TCC, SCC	TCC - Clause No. 45 and SCC Clause No. 2.9	<b>Statutory Approvals:</b> As per SCC and TCC, statutory approvals such as electrical inspector approval are included in the contractor's scope. Since our work is instrumentation-related, this may not be applicable	Electrical inspector is not applicable for this contract. However, taking approval of any statutory authorities if required for the scope is to be taken care by the successful bidder for the scope.
10	GCC	Chapter-1 S.NO. 1.10	<b>Security Deposit:</b> As per GCC, 5% of the contract value is retained. We request this be reduced to 3%, as followed by most PSUs and government organizations	Shall be as per tender.
11	TCC	TCC S. No. 12.6	<b>Workmen Shift During Shutdown:</b> As per TCC S. No. 12.6, workmen shifts are to be provided during shutdowns. Kindly clarify if any shutdown is planned and the context of this requirement.	During execution of Contract, Shutdown may be required like for interfacing / hook up with existing plant, punch points clear etc. Successful bidder has to plan workmanship accordingly.
12	TCC	TCC Annexure-4	<p>Please consider our remarks in payment breakup as table given below: A similar condition of 5% payment towards successful completion of facility applies to all items mentioned under the cable tray BOQ.</p> <p>5% payment for all BOQ items is linked to "Successful Completion of Facility", we request clarification on the exact meaning of the same.</p> <p>Kindly specify whether "Successful Completion of Facility" refers to: <b>(Taking Example for cable tray)</b></p> <ol style="list-style-type: none"> <li>1. completion of erection and painting of the respective BOQ item,</li> <li>2. completion of the entire scope of work,</li> <li>3. completion after commissioning, or</li> <li>4. completion after PG test.</li> </ol> <p>As there is no clear definition against individual BOQ items, different interpretations at site may arise, which may impact execution and billing. Hence, your clarification is requested to avoid ambiguity.</p>	It implies completion & handover of all associated C&I system of the respective Units.

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SL. NO.	DESCRIPTION OF WORK	% BREAK-UP	Remarks	
A	<u>CABLE TRAY WITH ACCESSORIES/ TRAY FIXING MATL. &amp; SUPPORTING STRUCTURES, TRAY COVERS, IRREGULAR BENDS ETC</u>			
(i)	Fabrication and erection complete as applicable in all respect.	70%	The 70% amount against tray work is not sufficient to cover running expenses and needs to be increased.	Break-up percentage is as per the tender.
(ii)	Final painting and marking of tray nos.	20%	The 20% provision for final painting and tray marking is higher than usual and need to be considered at 5% instead.	Break-up percentage is as per the tender.
(iii)	Successful completion of Facility	5%	Kindly describe the meaning of successful completion of the facility.	It implies completion & handover of all associated C&I system of the respective Units.
B	<u>CABLE(POWER/CONTROL/SIGNAL) LAYING</u>			
(i)	Laying of cables	40%	40% is too low and does not cover running expenses. Need to be increased	Break-up percentage is as per the tender.
(ii)	Termination of cable	35%	The cable termination percentage is included in the cable item, while termination is also mentioned as a separate item. This is contradictory. Please clarify which percentage breakup should be followed. If termination is a separate item, it should be treated separately.	Break-up percentage is as per the tender. This 35% of Cable Laying items indicated in the percentage break-up shall be released after cable termination of respective cables.
(iv)	Successful completion of Facility	5%	Kindly describe the meaning of successful completion of the facility.	It implies completion & handover of all associated C&I system of the respective Units.
C	<u>CABLE TERMINATION / STRAIGHT THROUGH JOINTING</u>			
(i)	Termination	70%	The cable termination percentage is included in the cable item, while termination is also mentioned as a separate item. This is contradictory. Please clarify which percentage breakup should be followed. If termination is a separate item, it should be treated separately.	Break-up percentage is as per the tender. Applicable for CABLE TERMINATION items.
(iii)	Successful completion of Facility	5%	Kindly describe the meaning of successful completion of the facility.	It implies completion & handover of all associated C&I system of the respective Units.
D	<u>CONDUITS / PIPES/CONDUIT CLAMPING/IMPULSE PIPE/TUBING(SS/CU)</u>			
(v)	Successful completion of Facility	5%	Kindly describe the meaning of successful completion of the facility.	It implies completion & handover of all associated C&I system of the respective Units.

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E	Misc. Structural steel support /Canopy			
(v)	Successful completion of Facility	5%	Kindly describe the meaning of successful completion of the facility.	It implies completion & handover of all associated C&I system of the respective Units.
F	VFD PANEL,CONTROL PANELS/DESK, OTHER PANELS, PUSH BUTTON STATIONS, BATTERY, BATTERY CHARGER, POWER DISTRIBUTION BOARD, COMPUTER, PRINTER, JUNCTION BOX, MARSHALLING BOX , STARTER UNIT, MISC EQUIPMENTS ETC.			
(i)	Receipt from store/yard, transportation to place of erection, placement, alignment including fabrication & erection of supporting frame etc	50%	Since 60% is provided for placement, alignment, and erection under the miscellaneous item (Sr. No. E), kindly apply the same here as well for better execution of work.	Break-up percentage is as per the tender.
(ii)	Fixing of loose items/instruments, charging, pre-commissioning check, Testing	25%	This head may be kept at 15%, with an additional 10% increase allocated to the erection portion.	Break-up percentage is as per the tender.
(v)	Successful completion of Facility	5%	Kindly describe the meaning of successful completion of the facility.	It implies completion & handover of all associated C&I system of the respective Units.
G	Panels/Cubicles/Desks/Racks/Enclosures/Monitors/Computers/Computer peripherals/PLCs/UPS/Batteries			
(v)	Successful completion of Facility	5%	Kindly describe the meaning of successful completion of the facility.	It implies completion & handover of all associated C&I system of the respective Units.
H	Instruments/Devices/Analyzers including Sensors/Cells/Probes etc.			
(i)	Calibration/Testing/Pre-erection checks	20%	The 20% allocation for calibration is too low, as the calibration cost exceeds % of the X value. Please increase this percentage.	Break-up percentage is as per the tender.
(v)	Successful completion of Facility	5%	Kindly describe the meaning of successful completion of the facility.	It implies completion & handover of all associated C&I system of the respective Units.

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I	Commissioning and Testing activities for Equipment erected by other agencies, like control valves, on/off valves, electrical/pneumatic valves, actuators, solenoid valves, valves, limit switches, power cylinders, Pressure & Temperature Gauges/Transmitters, etc.			
(ii)	Calibration/Local testing - commissioning readiness	30%	These two heads cover similar work and should be measured together.	It implies the calibration of instruments in isolated condition.
(iii)	Local Commissioning & Loop Testing as required	20%		It implies the commissioning of instruments with system.
(v)	Successful completion of Facility	5%	Kindly describe the meaning of successful completion of the facility.	It implies completion & handover of all associated C&I system of the respective Units.
J	Miscellaneous items (items not covered under above heads)			
(iv)	Successful completion of Facility	5%	Kindly describe the meaning of successful completion of the facility.	It implies completion & handover of all associated C&I system of the respective Units.



### WELDING PROCEDURE SPECIFICATION

WPS No. : **1105** Date : 08/11/1993 Supporting PQR No. : 010, 548 & 1057  
Rev No. : **03** Date : 30/06/2014

Welding Process : SMAW Type : Manual  
(Auto/Semi-Auto/Manual/Machine)

Application : Attachment Welding of Carbon Steel Tube / Pipe with Carbon Steel (P1 Gr.1 or 2) /  
1½Cr.½Mo Steel (P4 Gr.1) / 2½Cr 1Mo Steel (P5A Gr.1) material without PWHT.

#### JOINTS (QW-402)

Joint Design : As per Production drawing  
Backing (Yes/No) : Yes  
Backing Material (Type) : Metal  
(Metal/Non fusing metal/Non metallic/Other)  
Retainers : Nil

#### BASE METAL (QW-403)

P. No. : 1 Group No : 1 or 2 TO P. No. : 1 Group No : 1 or 2  
4 Group No : 1  
OR 5A Group No : 1  
Specification and type / grade or UNS Number : NA  
to Specification and type / grade or UNS Number : NA  
OR  
Chem. Analysis & Mech. Prop : N.A. to Chem. Analysis & Mech. Prop : NA

#### Thickness Range

Base Metal Groove : Nil Fillet : Unlimited  
Max.Pass thickness ≤ 13.0 mm (Yes/No) : Yes  
Other : Nil

#### FILLER METALS (QW-404)

AWS No. (Class) : E7018  
Specn. No. (SFA) : 5.1  
F. No. : 4  
A. No. : 1

Filler Metal Product Form: NA  
Size of Filler Metal : Refer Table  
Flux Trade Name : NA  
Electrode-Flux (Class) : NA  
Consumable Insert : NA  
Supplemental Filler Metal : NA  
Alloy Elements : Nil

#### Weld Metal Thickness Range:

Groove : Nil  
Fillet : Max.13.0mm  
Other : Nil

#### POSITION (QW-405)

Position(s) of Groove : NA  
Position(s) of Fillet : All  
Weld Progression : Up hill  
Other : Nil

#### PREHEAT (QW-406)

Preheat Temp. (Min): P1+ P1 : 100 °C when "T" >19.0mm  
P1 + P4 /P5A : 150 °C  
Interpass Temp. (Max) : 300 °C  
Preheat Maintenance : Nil  
Other : Nil

**PWHT (QW-407)**

Temp. Range : Nil

Time Range : Nil

Other : Nil

**GAS (QW - 408)****Percent Composition**

	<u>Gas(es)</u>	<u>(Mixture)</u>	<u>Flow Rate</u>
Shielding	NA	---	----
Trailing	NA	---	----
Backing	NA	---	----

**ELECTRICAL CHARACTERISTICS (QW – 409)**

Current (AC/DC) : Refer Table

Polarity : Refer Table

Amps (Range) : Refer Table

Volts : Refer Table

Tungsten Electrode type and size : NA

Mode of Metal transfer for GMAW : NA

Electrode wire feed speed range : NA

Pulsing current (GTAW) : Nil

Heat input (Max) : NA

**TECHNIQUES (QW-410)**String or Weave Bead : String or Weave (Max. 2 times  $\phi$  of the electrode)

Oscillation / Weaving : NA

Initial and Interpass Cleaning : Brushing / Chipping / Grinding

Method of Back Gouging : NA

Orifice or Gas cup size : NA

Contact tube to work distance : NA

Multiple or Single Pass (Per Side) : Single or Multiple

Multiple or Single Electrode : Single

Electrode Spacing : NA

Travel Speed Range : NA

Peening : Nil

Use of thermal process : Nil

Closed to out chamber : NA

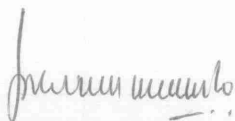
Manual or Automatic : Manual

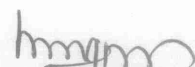
Other : Nil

Weld Layer(s)	Process	Filler Metal		Current		Volt (Range)	Travel speed (Range)	Other
		Classification	Dia. (mm)	Type & Polarity	Amps. (Range)			
Root Further	SMAW	E7018	2.5	DCEP	70 – 100	18-22	NA	Nil
	SMAW	E7018	3.15	DCEP	100-140	22-24	NA	Nil

Prepared By:

Approved By:

  
( L.Praveen Kumar)  
Sr.Welding Engineer /WTC

  
(S.Singaravelu)  
SDGM / WTC



**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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	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/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)