



निविदा / Enquiry

भारत हेवी इलेक्ट्रिकल्स लिमिटेड / BHARAT
HEAVY ELECTRICALS LIMITED
परिषण व्यापार समूह / Transmission
Business Group
सामग्री प्रबंधन / Materials Management

Project : PGCIL BHADLA-2

Enquiry No	Enquiry Date	Rev No	Rev Date	PI No	Enquiry Type	Inspection by	Due Dt	Commercial Comments	Technical Comments	Signing Authority
09Q2100084	22-May-20	0		09I2100049	Package		09-Jun-20			RAJEEV KUMAR ROY

Equipment Detail

SN	Equipment	HSN Code	Phy Unit	Qty	Plan Dt	Comments
1	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, TEE CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS TO QUAD CONDUCTOR AS PER TS	0	NO	1.0000		
2	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, TEE CONNECTOR SUITABLE FOR QUAD BULL TO QUAD BULL	0	NO	13.0000		
3	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, TEE CONNECTOR SUITABLE FOR HEX ZEBRA TO QUAD BULL	0	NO	13.0000		
4	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 1000A, PG CLAMP SUITABLE FOR SINGLE BULL TO SINGLE BULL	0	NO	114.0000		
5	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 1000A, PG CLAMP SUITABLE FOR SINGLE BULL TO SINGLE CONDUCTOR AS PER TS	0	NO	26.0000		
6	SUPPLY- CLAMPS & CONNECTORS : 765KV, FLEXIBLE SPACER SUITABLE FOR QUAD BULL	0	NO	103.0000		
7	SUPPLY- CLAMPS & CONNECTORS : 765KV, RIGID SPACER SUITABLE FOR QUAD BULL	0	NO	84.0000		
8	SUPPLY- CLAMPS & CONNECTORS : 765KV, RIGID SPACER SUITABLE FOR TWIN BULL	0	NO	7.0000		
9	SUPPLY- CLAMPS & CONNECTORS : 765KV, CORONA BELL SUITABLE FOR 4.5 INCH IPS AL TUBE	0	NO	15.0000		
10	SUPPLY- CLAMPS & CONNECTORS : STRAIN CLAMP FOR SHIELD WIRE 10.98MM DIA	0	NO	63.0000		
11	CLAMPS & CONNECTORS CLAMP FOR 10.98MM DIA SHIELD WIRE ON LATTICE / PIPE STRUCTURE	0	NO	126.0000		
12	CLAMPS & CONNECTORS PAD CONNECTOR TO SUIT 10.98MM DIA GS WIRE AND 75X12 MM GS FLAT	0	NO	34.0000		
13	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, BPI CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, SLIDING THROUGH TYPE	0	NO	2.0000		

SN	Equipment	HSN Code	Phy Unit	Qty	Plan Dt	Comments
14	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, BPI CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID THROUGH TYPE	0	NO	6.0000		
15	SUPPLY- CLAMPS & CONNECTORS : 765KV, LA CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, SLIDING THROUGH TYPE	0	NO	6.0000		
16	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, WT CONNECTOR SUITABLE FOR QUAD BULL	0	NO	4.0000		
17	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, WT CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	0	NO	4.0000		
18	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, CB CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	0	NO	12.0000		
19	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE	0	NO	12.0000		
20	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE - FOR EXISTING ISOLATOR	0	NO	6.0000		
21	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR QUAD BULL	0	NO	12.0000		
22	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, CT CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	0	NO	6.0000		
23	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, CT CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE	0	NO	6.0000		
24	SUPPLY- CLAMPS & CONNECTORS : 765KV, CVT CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE	0	NO	6.0000		
25	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 2000A, LA CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	0	NO	6.0000		
26	CLAMPS & CONNECTORS PG CLAMP FOR SHIELD WIRES OF DIA 10.98MM	0	NO	59.0000		
27	SUPPLY- CLAMPS & CONNECTORS : 765KV, WELDING SLEEVE SUITABLE FOR 4.5 INCH IPS AL TUBE	0	NO	19.0000		
28	CLAMPS & CONNECTORS CLAMPS FOR 75X12MM EARTHING STRIP ON LATTICE/PIPE STRUCTURE	0	NO	1365.0000		
29	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 2000A, TEE CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS TO TWIN CONDUCTOR AS PER TS	0	NO	7.0000		

Instructions to Bidders

You are requested to submit your most competitive offer so as to reach us positively by the tender opening date & time. THE TENDERS NOT RECEIVED WITHIN SCHEDULED DATE AND TIME ARE LIKELY TO BE IGNORED. BHEL shall not be responsible for any postal delay.

In your own interest, you are advised to carefully read "the instructions to bidders". Incomplete bids and/or bids not complying with tender conditions shall be treated as non-responsive and are likely to be ignored.

Instructions to Bidders

In case Tender Documents are not received within 7 days of this E-mail message, intimate BHEL accordingly. If no intimation is received, it will be considered that you have received tender enquiry and delay in submission offer due to late receipt of tender documents will not be entertained.

You are requested to submit your most competitive offer as stated in Terms & conditions.

BHEL reserves the right to opt for reverse auction for obtaining best prices.

Offers Through E-MAIL / FAX / E-Procurement Portal: WHOSOEVER DESIRES TO SEND OFFERS ON THEIR OWN RISK (COMPLETE IN ALL RESPECTS) VIA E-MAIL or FAX HAVE TO SEND THE OFFERS TO THE COMMON E-MAIL ADDRESS tenderbox@bhel.in or 0120-6748581 FAX or bhel.abc.procure.com as instructed. THE RECEIVED EMAIL OFFERS WILL BE PRINTED BY PURCHASE COORDINATOR AND PUT THEM INTO COVERS AS PER CONVENTIONAL METHOD FOR TENDER OPENING I.E., TECHNO COMMERCIAL & PRICE OFFER SHALL BE PUT INTO TWO SEPARATE COVERS AND BOTH THE COVERS ARE KEPT IN THIRD COVER DULY SUPER SCRIBING ENQY. NO. AND DUE DATE. OFFERS SENT TO ANY OTHER E-MAIL ID or FAX NO AND INCOMPLETE OFFERS SHALL NOT BE CONSIDERED FOR EVALUATION PURPOSE. The venders who has sent offers with password, the passwords are to be forwarded to email id: tenderbox@bhel.in

It is suggested that the bidders are advised to send the files with 'password protection'.

भारत हेवी इलेक्ट्रिकल्स लिमिटेड के लिए / for BHARAT HEAVY ELECTRICALS LTD

21st
22/05/2020

Please acknowledge the receipt of tender enquiry and e-mail/fax back this letter by ticking the appropriate item below.

We acknowledge the receipt of tender.

- (a) The offer against subject enquiry shall be submitted by the scheduled date and time.
- (b) We regret to quote. The item in reference is out of our manufacturing range.
- (c) We regret because of our prior commitments.
- (d) Any other reason.

To
RAJEEV KUMAR ROY
Bharat Heavy Electricals Limited
Transmission Business Group
Tower-A, 5th Floor,
Advant Navis IT Business Park,
Plot No-7, Sector-142, Expressway Noida
Noida-201305
Distt. Gautam BudhNagar, U.P
Ph: 0120-6748137

हस्ताक्षर और निविदाकार की सील / Signature and Seal of Tenderer

Enquiry No : 09Q2100084 Enquiry Date: 22-May-20

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निविदा / Enquiry

भारत हेवी इलेक्ट्रिकल्स लिमिटेड / BHARAT
HEAVY ELECTRICALS LIMITED
पारेषण व्यापार समूह / Transmission
Business Group
सामग्री प्रबंधन / Materials Management

Project : PGCIL FATEHGARH-2

Enquiry No	Enquiry Date	Rev No	Rev Date	PI No	Enquiry Type	Inspection by	Due Dt	Commercial Comments	Technical Comments	Signing Authority
09Q2100085	22-May-20	0		09I2100051	Package		09-Jun-20			RAJEEV KUMAR ROY

Equipment Detail

SN	Equipment	HSN Code	Phy Unit	Qty	Plan Dt	Comments
1	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, CB CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	0	NO	26.0000		
2	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE	0	NO	12.0000		
3	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE - FOR EXISTING ISOLATOR	0	NO	6.0000		
4	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR QUAD BULL	0	NO	12.0000		
5	SUPPLY- CLAMPS & CONNECTORS : 765KV, 2000A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE	0	NO	12.0000		
6	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 2000A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR QUAD BULL	0	NO	18.0000		
7	SUPPLY- CLAMPS & CONNECTORS : 765KV, 2000A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	0	NO	6.0000		
8	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, CT CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	0	NO	6.0000		
9	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, CT CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE	0	NO	6.0000		
10	SUPPLY- CLAMPS & CONNECTORS : 765KV, CVT CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE	0	NO	6.0000		
11	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 2000A, LA CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	0	NO	6.0000		
12	SUPPLY- CLAMPS & CONNECTORS : 765KV, LA CONNECTOR SUITABLE FOR TWIN BULL	0	NO	6.0000		
13	SUPPLY- CLAMPS & CONNECTORS : 765KV, LA CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, SLIDING THROUGH TYPE	0	NO	6.0000		

SN	Equipment	HSN Code	Phy Unit	Qty	Plan Dt	Comments
14	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, WT CONNECTOR SUITABLE FOR QUAD BULL	0	NO	4.0000		
15	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, WT CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	0	NO	4.0000		
16	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, BPI CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, SLIDING THROUGH TYPE	0	NO	3.0000		
17	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, BPI CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID THROUGH TYPE	0	NO	12.0000		
18	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, BPI CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID - EXPANSION TYPE	0	NO	9.0000		
19	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 2000A, REACTOR BUSHING CONNECTOR SUITABLE FOR QUAD BULL	0	NO	6.0000		
20	SUPPLY- CLAMPS & CONNECTORS : 132KV, 31.5KA FOR 1S, 1250A, REACTOR BUSHING CONNECTOR SUITABLE FOR SINGLE BULL	0	NO	6.0000		
21	SUPPLY- CLAMPS & CONNECTORS : 132KV, 31.5KA FOR 1S, 1250A, BPI CONNECTOR SUITABLE FOR AL TUBE 3 INCH IPS, RIGID - EXPANSION TYPE	0	NO	12.0000		
22	SUPPLY- CLAMPS & CONNECTORS : 145KV, BPI CONNECTOR SUITABLE FOR AL TUBE 3 INCH IPS, SLIDING THROUGH TYPE	0	NO	1.0000		
23	SUPPLY- CLAMPS & CONNECTORS : 132KV, 31.5KA FOR 1S, 1250A, CB CONNECTOR SUITABLE FOR SINGLE BULL	0	NO	4.0000		
24	SUPPLY- CLAMPS & CONNECTORS : 132KV, LA CONNECTOR SUITABLE FOR SINGLE BULL	0	NO	2.0000		
25	SUPPLY- CLAMPS & CONNECTORS : 33KV, 31.5KA FOR 1S, 1250A, CT (NEUTRAL) CONNECTOR SUITABLE FOR SINGLE BULL	0	NO	2.0000		
26	SUPPLY- CLAMPS & CONNECTORS : 33KV, 31.5KA FOR 1S, 1250A, CT (NEUTRAL) CONNECTOR SUITABLE FOR 75X12 MS FLAT	0	NO	2.0000		
27	SUPPLY- CLAMPS & CONNECTORS : 145KV, 31.5KA FOR 1S, 1250A, NGR CONNECTOR SUITABLE FOR SINGLE BULL	0	NO	4.0000		
28	SUPPLY- CLAMPS & CONNECTORS : 33KV, 31.5KA FOR 1S, 1250A, CT (NEUTRAL) CONNECTOR SUITABLE FOR AL TUBE 3 INCH IPS, EXPANSION TYPE	0	NO	1.0000		
29	SUPPLY- CLAMPS & CONNECTORS : 145KV, 40KA FOR 1S, 1250A, TEE CONNECTOR SUITABLE FOR AL TUBE 3 INCH IPS TO SINGLE CONDUCTOR AS PER TS	0	NO	9.0000		
30	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, TEE CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS TO QUAD CONDUCTOR AS PER TS	0	NO	13.0000		
31	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, TEE CONNECTOR SUITABLE FOR QUAD BULL TO QUAD BULL	0	NO	19.0000		
32	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, TEE CONNECTOR SUITABLE FOR HEX ZEBRA TO QUAD BULL	0	NO	13.0000		

SN	Equipment	HSN Code	Phy Unit	Qty	Plan Dt	Comments
33	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 1000A, PG CLAMP SUITABLE FOR SINGLE BULL TO SINGLE BULL	0	NO	194.0000		
34	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 1000A, PG CLAMP SUITABLE FOR SINGLE BULL TO SINGLE CONDUCTOR AS PER TS	0	NO	26.0000		
35	SUPPLY- CLAMPS & CONNECTORS : 765KV, FLEXIBLE SPACER SUITABLE FOR QUAD BULL	0	NO	112.0000		
36	SUPPLY- CLAMPS & CONNECTORS : 765KV, RIGID SPACER SUITABLE FOR QUAD BULL	0	NO	141.0000		
37	SUPPLY- CLAMPS & CONNECTORS : 765KV, RIGID SPACER SUITABLE FOR TWIN BULL	0	NO	13.0000		
38	SUPPLY- CLAMPS & CONNECTORS : 765KV, CORONA BELL SUITABLE FOR 4.5 INCH IPS AL TUBE	0	NO	23.0000		
39	SUPPLY- CLAMPS & CONNECTORS : 145KV, CORONA BELL SUITABLE FOR 3 INCH IPS AL TUBE	0	NO	2.0000		
40	SUPPLY- CLAMPS & CONNECTORS : STRAIN CLAMP FOR SHIELD WIRE 10.98MM DIA	0	NO	89.0000		
41	CLAMPS & CONNECTORS PG CLAMP FOR SHIELD WIRES OF DIA 10.98MM	0	NO	93.0000		
42	CLAMPS & CONNECTORS CLAMP FOR 10.98MM DIA SHIELD WIRE ON LATTICE / PIPE STRUCTURE	0	NO	252.0000		
43	CLAMPS & CONNECTORS PAD CONNECTOR TO SUIT 10.98MM DIA GS WIRE AND 75X12 MM GS FLAT	0	NO	47.0000		
44	SUPPLY- CLAMPS & CONNECTORS : 765KV, WELDING SLEEVE SUITABLE FOR 4.5 INCH IPS AL TUBE	0	NO	35.0000		
45	SUPPLY- CLAMPS & CONNECTORS : 145KV, WELDING SLEEVE SUITABLE FOR 3 INCH IPS AL TUBE	0	NO	13.0000		
46	CLAMPS & CONNECTORS CLAMPS FOR 75X12MM EARTHING STRIP ON LATTICE/PIPE STRUCTURE	0	NO	1575.0000		
47	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 2000A, TEE CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS TO TWIN CONDUCTOR AS PER TS	0	NO	13.0000		

Instructions to Bidders

You are requested to submit your most competitive offer so as to reach us positively by the tender opening date & time. THE TENDERS NOT RECEIVED WITHIN SCHEDULED DATE AND TIME ARE LIKELY TO BE IGNORED. BHEL shall not be responsible for any postal delay.

In your own interest, you are advised to carefully read "the instructions to bidders". Incomplete bids and/or bids not complying with tender conditions shall be treated as non-responsive and are likely to be ignored.

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You are requested to submit your most competitive offer as stated in Terms & conditions.

Instructions to Bidders

BHEL reserves the right to opt for reverse auction for obtaining best prices.

Offers Through E-MAIL / FAX / E-Procurement Portal: WHOSOEVER DESIRES TO SEND OFFERS ON THEIR OWN RISK (COMPLETE IN ALL RESPECTS) VIA E-MAIL or FAX HAVE TO SEND THE OFFERS TO THE COMMON E-MAIL ADDRESS tenderbox@bhel.in or 0120-6748581 FAX or bhel.abc.procure.com as instructed. THE RECEIVED EMAIL OFFERS WILL BE PRINTED BY PURCHASE COORDINATOR AND PUT THEM INTO COVERS AS PER CONVENTIONAL METHOD FOR TENDER OPENING I.E., TECHNO COMMERCIAL & PRICE OFFER SHALL BE PUT INTO TWO SEPARATE COVERS AND BOTH THE COVERS ARE KEPT IN THIRD COVER DULY SUPER SCRIBING ENQY. NO. AND DUE DATE. OFFERS SENT TO ANY OTHER E-MAIL ID or FAX NO AND INCOMPLETE OFFERS SHALL NOT BE CONSIDERED FOR EVALUATION PURPOSE. The venders who has sent offers with password, the passwords are to be forwarded to email id: tenderbox@bhel.in

It is suggested that the bidders are advised to send the files with 'password protection'.

भारत हेवी इलेक्ट्रिकल्स लिमिटेड के लिए / for BHARAT HEAVY ELECTRICALS LTD

21-7
22/5/2015

Please acknowledge the receipt of tender enquiry and e-mail/fax back this letter by ticking the appropriate item below.

We acknowledge the receipt of tender.

- (a) The offer against subject enquiry shall be submitted by the scheduled date and time.
- (b) We regret to quote. The item in reference is out of our manufacturing range.
- (c) We regret because of our prior commitments.
- (d) Any other reason.

To
RAJEEV KUMAR ROY
Bharat Heavy Electricals Limited
Transmission Business Group
Tower-A, 5th Floor,
Advant Navis IT Business Park,
Plot No-7, Sector-142, Expressway Noida
Noida-201305
Distt. Gautam BudhNagar, U.P
Ph: 0120-6748137

हस्ताक्षर और निविदाकार की सील / Signature and Seal of Tenderer

Enquiry No : 09Q2100085 Enquiry Date: 22-May-20



SPECIAL TERMS & CONDITIONS
FOR CLAMPS & CONNECTORS FOR POWERGRID FAHTEHGARH-2 & BADLA PROJECT

Enquiry No:, Dated.....

1. In case any discrepancy between the requirements mentioned under special terms & conditions and general terms & conditions, special terms and conditions shall prevail.
2. For any technical clarification, kindly contact **Mr. NISHANT SINGH, SR. ENGINEER/ SH SANJEEV SRIVASTAVA, DGM-TBEM**
BHEL, Transmission Business Group
Tower-A, 5th Floor, Advant Navis IT Business Park
Plot-7, Sector-142, Expressway Noida, Noida-201305, UP, India
Phone: +91 (0) 0120- 6748515/8517
Fax: +91 (0) 0120 – 6748580.
E-mail: nishant.singh@bhel.in/sanjeev.srivastava@bhel.in
3. For any commercial clarification, kindly contact **Rajeev Kumar Roy, Manager (TBMM);**
BHEL, Transmission Business Group
Tower-A, 5th Floor, Advant Navis IT Business Park
Plot-7, Sector-142, Expressway Noida, Noida-201305, UP, India
Phone: +91 (0) 0120- 6748484
Fax: +91 (0) 0120 – 6748580.
Contact No. 0120 6748484; e-mail: rajeevroy@bhel.in.
4. **Bidder to submit offer directly through E-PROCUREMENT MODE ONLY.** Bidder may visit <https://bhel.abcprocure.com>. No other mode for submission of tender is acceptable. Note: Both bids (Techno-commercial Bid & Price Bid) will be opened immediate after receipt of offer.
5. **Proposed delivery plan: IMMEDIATE.** However, vendor has to examine their best possible delivery plan & mention in **ACTIVITY SCHEDULE** to meet the tender delivery requirement. In case, BHEL's delivery requirement is not met by vendor(s), then a chance may be given to all such vendors to review their quoted delivery schedule in line with BHEL's delivery requirement. However, if vendor fails to meet the requisite delivery plan, then BHEL reserves the right not to consider the offer of such vendor(s).
6. **Technical specification No:** BHEL technical specification no: TB-409-316-014,Rev-00 is applicable. No permissible Technical Deviation has been envisaged.
7. **Quantity Variation:** The final quantity may vary at contract stage by +/- 30%, however quantity of individual items may vary up to any extent during detailed engineering stage.
8. **PQR (Pre-qualification requirement):** Bidder must comply with technical PQR (as listed below) otherwise offer is liable for rejection.
Bidder must have successfully designed, manufactured, tested and supplied 715kV or above Clamps and Connectors, as on the date of technical bid opening. Proof of supplies completed, like Customer certificates/POs/CIP/Dispatch Documents/MRC etc, need to submit along with the technical offer.

SPECIAL TERMS & CONDITIONS

FOR CLAMPS & CONNECTORS FOR POWERGRID FAHTEHGARH-2 & BADLA PROJECT

Enquiry No:, Dated.....

9. **Clause No. 2.1 of General Terms & Conditions (GTC) for tender Enquiry / Contract should be as follows:**

PRICES: A. all prices shall be FIRM & Ex-works price including packing & forwarding charges. No enhancement of rate for whatsoever reasons unless and until asked by BHEL shall be allowed.

PROJECT STATUS: Domestic in nature. GST is applicable as per prevalent law.

10. **PERFORMANCE BG (Refer Clause no-7 of General Terms and condition):** Option-B is applicable in case not opt any option as per NIT condition. The validity of PBG will be valid up to Guarantee period (Defect liability period) plus 3-month claim period over and above guarantee period.

11. **DEFECT LIABILITY (GUARANTEE SPECIFIC CLAUSE NO-05 of GTC):** The guarantee period of equipment shall be twelve (12) months from the date of Taking Over plant/ completion of all facilities. **Taking Over/ Completion of Facilities is 05-02-2021.**

12. **LIQUIDATED DAMAGES FOR DELAYED DELIVERY (Clause No:13 of GTC for tender Enquiry / Contract should be as follows:**

In case of delay in execution of Purchase Order beyond the contractual delivery time, an amount of 0.5% of the total PO VALUE for supply (excluding taxes and duties as applicable) per week of delay or part thereof subject to a maximum of 10% of the total Purchase Order VALUE for supply (excluding taxes and duties as applicable) shall be deducted as Liquidated Damages (LD) along with applicable GST (if any) on LD amount. PO VALUE is defined as PO ex-works plus F & I Charges.

13. **Clause No. 33 for Reverse Auction of NIT shall be as follows:**

"BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on www.bhel.com) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the designated service provider) as well as 'Online sealed bid' in the Reverse Auction. Non-submission of 'Process compliance form' or 'Online sealed bid' by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).

The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer.

SPECIAL TERMS & CONDITIONS

FOR CLAMPS & CONNECTORS FOR POWERGRID FAHTEHGARH-2 & BADLA PROJECT

Enquiry No:, Dated.....

The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates.

If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com)."

As a reminder to the bidders, system will flash following message (in RED Color) during the course of 'online sealed bid': "Bidders to submit online sealed bid less than or equal to their envelope sealed bid already submitted to BHEL.

In addition to above RA guidelines, bidder note that

(A) In case where RA is conducted successfully Reverse auction shall be conducted as per existing procedure of BHEL. Ranking of bids shall be based on final price fed by respective bidder (including H1 bidder) in reverse auction process. If L1 bid is from a 'Local Supplier', L-1 bidder may be considered for further award of work. No other Bidder shall be invited to match price of L-1 Bidder

If L1 bid is not from a 'Local Supplier', the lowest evaluated bidder among the 'Local Suppliers' based on the ranking of the price after RA, will be invited to match the L1 price provided 'Local Supplier's price is within the Margin of Purchase Preference i.e. +20% of L1 price. In case such local supplier agrees to match the price of L-1 Bidder, such local supplier may be considered for further award of work. In case such lowest eligible 'Local Supplier' fails to match the L1 price, the eligible 'Local Supplier' with the next higher bid within the Margin of Purchase Preference (i.e. 20% of L-1 Price) as above shall be invited to match the L1 price, and so on, and may be considered for award of work accordingly. In case none of the 'Local Suppliers' within the Margin of Purchase Preference (i.e. 20% of L-1 price) matches the L1 price, then the L1 bidder may be considered for award of work.

(B) In case where RA is failed, Price bid shall be opened as per reverse auction procedure of BHEL and based on the same make in India policy shall be implemented.

Note: RA guideline is updated time to time in BHEL. Bidder may visit www.bhel.com regularly. In case RA guideline will update then new RA guideline will be applicable against this tender enquiry and shall be informed to bidder accordingly.

14. **PRICE BID FORMAT:** Vendor to quote as per specified price format of NIT, otherwise their offer shall be liable to be rejected.

SPECIAL TERMS & CONDITIONS

FOR CLAMPS & CONNECTORS FOR POWERGRID FAHTEHGARH-2 & BADLA PROJECT

Enquiry No:, Dated.....

15. IMPORTANT INSTRUCTION:

- Final acceptance of technical qualified vendor for placement of order is subject to approval of CUSTOMER (POWERGRID).
- Bidder who are not approved by customer, needs to submit complete credential for approval from CUSTOMER & placement of order is subject to qualification of PQR of NIT and approval of CUSTOMER.
- All boxes / Containers are to be distinctly marked with boldly written "TBG" mark on it.
- PO/LOI shall be placed to L1 bidder project wise. However, evaluation shall be done based on overall quantity as per NIT (Refer GTC clause no-17).

16. Promotion of MAKE IN INDIA: For this procurement, Public Procurement (Preference to Make in India), Order 2017 dated 15.06.2017 & 28.05.2018 and subsequent orders issued by the respective nodal ministry shall be applicable even if issued after issue of this NIT but before finalization of contract/PO/VO against this NIT.

In the event of any Nodal Ministry prescribing higher or lower percentage of purchase preference and/ or local content in respect of this procurement, same shall be applicable. Preference to Make in India will be as per the Public Procurement (Preference to Make in India), Order 2017 available in the following link:

http://dipp.nic.in/sites/default/files/publicProcurement_MakeinIndia_15June2017.pdf

http://dipp.nic.in/sites/default/files/Revised-PPP-MII-Order-2017_28052018.pdf

For this procurement, Public Procurement (Preference to Make in India) Order, 2017" dated 15/06/2017 & 28/05/2018 and subsequent orders issued by respective nodal ministry shall be applicable even if issued after issue of this NIT but before finalization of contract /PO/VO against this NIT.

In the event of any nodal ministry prescribing higher and lower percentage of purchase preference and/ or local content in respect of this procurement, same shall be applicable.

Note: Bidder to submit **FORMAT** duly filled & signed and stamped by their authorized persons. It is mandatory against this NIT. Minimum Local content is 50% (belng transmission/sub-station package).

17. Following confirmation to be provided by vendor:

"We confirm that we have quoted as per specified price format provided along with this tender".

NAME & SEAL OF TENDERER

SCHEDULE OF PRICE BID

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(BIDDERS TO STRICTLY ENSURE SUBMITTING THE PRICE BIDS IN THIS FORMAT)

PROJECT: POWERGRID FATEHGARH-2 & BHADLA PROJECT

ENQUIRY NO:

ITEM: CLAMPS & CONNECTORS

SN	ITEM DESCRIPTIONS (AS PER TECHNICAL SPECIFICATION NO: TB-409-318-014)	UNIT	QTY	HSN CODE	UNIT PRICE EX. WORKS (Rs.)	TOTAL EX. WORKS (Rs.)	UNIT FREIGHT & INSURANCE UP TO SITE (Rs.)	TOTAL FREIGHT & INSURANCE UP TO SITE (Rs.)	GST @..... % OF TOTAL EX- WORKS (Rs.)	GST @..... % OF [TOTAL FREIGHT & INSURANCE UP TO SITE]	TOTAL F.O.R. DESTINATION PRICE
POWERGRID FATEHGARH-2 PROJECT											
1	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, CB CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	NO	26								
2	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE	NO	12								
3	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE - FOR EXISTING ISOLATOR	NO	6								
4	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR QUAD BULL	NO	12								
5	SUPPLY- CLAMPS & CONNECTORS : 765KV, 2000A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE	NO	12								
6	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 2000A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR QUAD BULL	NO	18								
7	SUPPLY- CLAMPS & CONNECTORS : 765KV, 2000A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	NO	6								
8	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, CT CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	NO	6								
9	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, CT CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE	NO	6								
10	SUPPLY- CLAMPS & CONNECTORS : 765KV, CVT CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE	NO	6								
11	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 2000A, LA CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	NO	6								
12	SUPPLY- CLAMPS & CONNECTORS : 765KV, LA CONNECTOR SUITABLE FOR TWIN BULL	NO	6								
13	SUPPLY- CLAMPS & CONNECTORS : 765KV, LA CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, SLIDING THROUGH TYPE	NO	6								
14	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, WT CONNECTOR SUITABLE FOR QUAD BULL	NO	4								
15	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, WT CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	NO	4								
16	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, BPI CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, SLIDING THROUGH TYPE	NO	3								
17	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, BPI CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID THROUGH TYPE	NO	12								
18	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, BPI CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID - EXPANSION TYPE	NO	9								
19	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 2000A, REACTOR BUSHING CONNECTOR SUITABLE FOR QUAD BULL	NO	6								
20	SUPPLY- CLAMPS & CONNECTORS : 132KV, 31.5KA FOR 1S, 1250A, REACTOR BUSHING CONNECTOR SUITABLE FOR SINGLE BULL	NO	6								
21	SUPPLY- CLAMPS & CONNECTORS : 132KV, 31.5KA FOR 1S, 1250A, BPI CONNECTOR SUITABLE FOR AL TUBE 3 INCH IPS, RIGID - EXPANSION TYPE	NO	12								
22	SUPPLY- CLAMPS & CONNECTORS : 145KV, BPI CONNECTOR SUITABLE FOR AL TUBE 3 INCH IPS, SLIDING THROUGH TYPE	NO	1								
23	SUPPLY- CLAMPS & CONNECTORS : 132KV, 31.5KA FOR 1S, 1250A, CB CONNECTOR SUITABLE FOR SINGLE BULL	NO	4								
24	SUPPLY- CLAMPS & CONNECTORS : 132KV, LA CONNECTOR SUITABLE FOR SINGLE BULL	NO	2								
25	SUPPLY- CLAMPS & CONNECTORS : 33KV, 31.5KA FOR 1S, 1250A, CT (NEUTRAL) CONNECTOR SUITABLE FOR SINGLE BULL	NO	2								
26	SUPPLY- CLAMPS & CONNECTORS : 33KV, 31.5KA FOR 1S, 1250A, CT (NEUTRAL) CONNECTOR SUITABLE FOR 75X12 MS FLAT	NO	2								
27	SUPPLY- CLAMPS & CONNECTORS : 145KV, 31.5KA FOR 1S, 1250A, NGR CONNECTOR SUITABLE FOR SINGLE BULL	NO	4								
28	SUPPLY- CLAMPS & CONNECTORS : 33KV, 31.5KA FOR 1S, 1250A, CT (NEUTRAL) CONNECTOR SUITABLE FOR AL TUBE 3 INCH IPS, EXPANSION TYPE	NO	1								
29	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 2000A, TEE CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS TO TWIN CONDUCTOR AS PER TS	NO	13								
30	SUPPLY- CLAMPS & CONNECTORS : 145KV, 40KA FOR 1S, 1250A, TEE CONNECTOR SUITABLE FOR AL TUBE 3 INCH IPS TO SINGLE CONDUCTOR AS PER TS	NO	9								
31	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, TEE CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS TO QUAD CONDUCTOR AS PER TS	NO	13								

SCHEDULE OF PRICE BID

(BIDDERS TO STRICTLY ENSURE SUBMITTING THE PRICE BIDS IN THIS FORMAT)

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PROJECT: POWERGRID FATEHGARH-2 & BHADLA PROJECT

ENQUIRY NO:

ITEM: CLAMPS & CONNECTORS

SN	ITEM DESCRIPTIONS (AS PER TECHNICAL SPECIFICATION NO: TB-409-318-014)	UNIT	QTY	HSN CODE	UNIT PRICE EX. WORKS (Rs.)	TOTAL EX. WORKS (Rs.)	UNIT FREIGHT & INSURANCE UP TO SITE (Rs.)	TOTAL FREIGHT & INSURANCE UP TO SITE (Rs.)	GST @..... % OF TOTAL EX- WORKS (Rs.)	GST @.....% OF (TOTAL FREIGHT & INSURANCE UP TO SITE)	TOTAL F.O.R. DESTINATION PRICE
32	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, TEE CONNECTOR SUITABLE FOR QUAD BULL TO QUAD BULL	NO	19								
33	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, TEE CONNECTOR SUITABLE FOR HEX ZEBRA TO QUAD BULL	NO	13								
34	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 1000A, PG CLAMP SUITABLE FOR SINGLE BULL TO SINGLE BULL	NO	194								
35	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 1000A, PG CLAMP SUITABLE FOR SINGLE BULL TO SINGLE CONDUCTOR AS PER TS	NO	26								
36	SUPPLY- CLAMPS & CONNECTORS : 765KV, FLEXIBLE SPACER SUITABLE FOR QUAD BULL	NO	112								
37	SUPPLY- CLAMPS & CONNECTORS : 765KV, RIGID SPACER SUITABLE FOR QUAD BULL	NO	141								
38	SUPPLY- CLAMPS & CONNECTORS : 765KV, RIGID SPACER SUITABLE FOR TWIN BULL	NO	13								
39	SUPPLY- CLAMPS & CONNECTORS : 765KV, CORONA BELL SUITABLE FOR 4.5 INCH IPS AL TUBE	NO	23								
	SUPPLY- CLAMPS & CONNECTORS : 145KV, CORONA BELL SUITABLE FOR 3 INCH IPS AL TUBE	NO	2								
41	SUPPLY- CLAMPS & CONNECTORS : STRAIN CLAMP FOR SHIELD WIRE 10.98MM DIA	NO	86								
42	CLAMPS & CONNECTORS PG CLAMP FOR SHIELD WIRES OF DIA 10.98MM	NO	93								
43	CLAMPS & CONNECTORS CLAMP FOR 10.98MM DIA SHIELD WIRE ON LATTICE / PIPE STRUCTURE	NO	252								
44	CLAMPS & CONNECTORS PAD CONNECTOR TO SUIT 10.98MM DIA GS WIRE AND 75X12 MM GS FLAT	NO	47								
45	SUPPLY- CLAMPS & CONNECTORS : 765KV, WELDING SLEEVE SUITABLE FOR 4.5 INCH IPS AL TUBE	NO	35								
46	SUPPLY- CLAMPS & CONNECTORS : 145KV, WELDING SLEEVE SUITABLE FOR 3 INCH IPS AL TUBE	NO	13								
47	CLAMPS & CONNECTORS CLAMPS FOR 75X12MM EARTHING STRIP ON LATTICE/PIPE STRUCTURE	NO	1575								
POWERGRID BHADLA PROJECT											
1	SUPPLY- CLAMPS & CONNECTORS : 785KV, 40KA FOR 1S, 3150A, CB CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	NO	12								
2	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE	NO	12								
3	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE - FOR EXISTING ISOLATOR	NO	6								
4	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, ISOLATOR (KNEE TYPE) CONNECTOR SUITABLE FOR QUAD BULL	NO	12								
5	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, CT CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	NO	6								
6	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, CT CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE	NO	8								
7	SUPPLY- CLAMPS & CONNECTORS : 765KV, CVT CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID TYPE	NO	6								
8	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 2000A, LA CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	NO	6								
9	SUPPLY- CLAMPS & CONNECTORS : 765KV, LA CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, SLIDING THROUGH TYPE	NO	6								
10	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, WT CONNECTOR SUITABLE FOR QUAD BULL	NO	4								
11	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, WT CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, EXPANSION TYPE	NO	4								
12	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, BPI CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, SLIDING THROUGH TYPE	NO	2								
13	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, BPI CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS, RIGID THROUGH TYPE	NO	6								
14	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 2000A, TEE CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS TO TWIN CONDUCTOR AS PER TS	NO	7								
15	SUPPLY- CLAMPS & CONNECTORS : 785KV, 40KA FOR 1S, 3150A, TEE CONNECTOR SUITABLE FOR AL TUBE 4.5 INCH IPS TO QUAD CONDUCTOR AS PER TS	NO	1								

SCHEDULE OF PRICE BID

(BIDDERS TO STRICTLY ENSURE SUBMITTING THE PRICE BIDS IN THIS FORMAT)

PROJECT: POWERGRID FATEHGARH-2 & BHADLA PROJECT

ENQUIRY NO:

ITEM: CLAMPS & CONNECTORS

SN	ITEM DESCRIPTIONS (AS PER TECHNICAL SPECIFICATION NO: TB-469-316-014)	UNIT	QTY	HSN CODE	UNIT PRICE EX. WORKS (Rs.)	TOTAL EX. WORKS (Rs.)	UNIT FREIGHT & INSURANCE UP TO SITE (Rs.)	TOTAL FREIGHT & INSURANCE UP TO SITE (Rs.)	GST @..... % OF TOTAL EX- WORKS (Rs.)	GST @.....% OF (TOTAL FREIGHT & INSURANCE UP TO SITE)	TOTAL F.O.R. DESTINATION PRICE
16	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, TEE CONNECTOR SUITABLE FOR QUAD BULL TO QUAD BULL	NO	13								
17	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 3150A, TEE CONNECTOR SUITABLE FOR HEX ZEBRA TO QUAD BULL	NO	13								
18	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 1000A, PG CLAMP SUITABLE FOR SINGLE BULL TO SINGLE BULL	NO	114								
19	SUPPLY- CLAMPS & CONNECTORS : 765KV, 40KA FOR 1S, 1000A, PG CLAMP SUITABLE FOR SINGLE BULL TO SINGLE CONDUCTOR AS PER TS	NO	26								
20	SUPPLY- CLAMPS & CONNECTORS : 765KV, FLEXIBLE SPACER SUITABLE FOR QUAD BULL	NO	103								
21	SUPPLY- CLAMPS & CONNECTORS : 765KV, RIGID SPACER SUITABLE FOR QUAD BULL	NO	84								
22	SUPPLY- CLAMPS & CONNECTORS : 765KV, RIGID SPACER SUITABLE FOR TWIN BULL	NO	7								
23	SUPPLY- CLAMPS & CONNECTORS : 765KV, CORONA BELL SUITABLE FOR 4.5 INCH IPS AL TUBE	NO	15								
24	SUPPLY- CLAMPS & CONNECTORS : STRAIN CLAMP FOR SHIELD WIRE 10.98MM DIA	NO	63								
25	CLAMPS & CONNECTORS PG CLAMP FOR SHIELD WIRES OF DIA 10.98MM	NO	59								
26	CLAMPS & CONNECTORS CLAMP FOR 10.98MM DIA SHIELD WIRE ON LATTICE / PIPE STRUCTURE	NO	126								
27	CLAMPS & CONNECTORS PAD CONNECTOR TO SUIT 10.98MM DIA GS WIRE AND 75X12 MM GS FLAT	NO	34								
28	SUPPLY- CLAMPS & CONNECTORS : 765KV, WELDING SLEEVE SUITABLE FOR 4.5 INCH IPS AL TUBE	NO	19								
29	CLAMPS & CONNECTORS CLAMPS FOR 75X12MM EARTHING STRIP ON LATTICE/PIPE STRUCTURE	NO	1365								
			5019								
A	TOTAL DELIVERED COST TO BHEL=										

NOTE:

- PLEASE NOTE THAT UNPRICED COPY OF PRICE BID (i.e. WITH ALL PRICES BLANKED) SHALL BE FURNISHED ALONG WITH TECHNO-COMMERCIAL BID.
- REQUIRED COPIES OF FORMAT BE MADE & DETAILS MAY BE ANNEXED.
- THE PRICES MUST BE QUOTED IN THE PRESCRIBED UNIT ONLY.

SIGNATURE & SEAL OF TENDERER

ACTIVITY SCHEDULE FOR CLAMPS & CONNECTORS

ENQUIRY NO:....., Dated.....

SN	ACTIVITY	TIME ALLOTTED [in weeks]	CUMULATIVE TIME FROM RECEIPT OF INPUTS FROM BHEL [in weeks]	SCOPE
1.	Inputs to vendor [Last inputs date being single order/package]	4	4	IN BHEL SCOPE
2.	Submission of Documents necessary for getting manufacturing clearance like drawings, Data sheet.	4	8	BY SUPPLIER
3.	Review and Approval of documents from BHEL/Customer and issue of manufacturing clearance.	4	12	IN BHEL SCOPE
4.	Manufacturing Time	8	20	BY SUPPLIER
5.	Inspection call	1	21	BY SUPPLIER
6.	Inspection by BHEL/Customer	1	22	IN BHEL SCOPE
7.	Issue of Dispatch clearance	1	23	IN BHEL SCOPE
8.	Dispatch	2	25	BY SUPPLIER

1. Inspection call to be issued 2 weeks in advance.
2. Supplier must ensure the completeness and correctness of the requisite documents before submission for approval. Delay in approval on account of incomplete / inadequate information shall be the responsibility of supplier.
3. Inspection call should be given in the prescribed format only. Inspection calls not in the prescribed format shall not be entertained.
4. Qty to be offered for inspection should be in accordance within Delivery-schedule – lot. BHEL reserves the right not to entertain multiple inspection calls for a Delivery – lot and delay on this account shall be the responsibility of Supplier.

Signature & Seal of
Supplier
Date:

(66)

SCHEDULE OF COMMERCIAL DEVIATION

This Format is to be submitted in original duly signed by bidder.
The following are the deviations/variations/exceptions from the Terms and Conditions :-

S N	CLAUSE NO. OF TERMS AND CONDITIONS	STATEMENT OF DEVIATION

In case, this schedule is not submitted, it will be presumed that the equipment /material to be supplied under this contract is deemed to be in compliance with the Terms and Conditions.

If there is NIL deviation,even then the format to be filled as NIL DEVIATION.

Note : Continuation Sheets of like size and format may be used as per the Bidder's Requirement and shall be annexed to this schedule.

Place :
Date :

Signature of the authorised representative of

Bidder's name :.....
Designation:.....
Company Seal:.....

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SCHEDULE OF TECHNICAL DEVIATION

This Format is to be submitted in original duly signed by bidder.
The following are the deviations/variations/exceptions from the Terms and Conditions :-

S N	CLAUSE NO. OF TERMS AND CONDITIONS	STATEMENT OF DEVIATION

In case, this schedule is not submitted, it will be presumed that the equipment /material to be supplied under this contract is deemed to be in compliance with the Terms and Conditions.

If there is NIL deviation,even then the format to be filled as NIL DEVIATION.

Note : Continuation Sheets of like size and format may be used as per the Bidder's Requirement and shall be annexed to this schedule.

Place :
Date :

Signature of the authorised representative of

Bidder's name :
Designation:.....
Company Seal:.....

Item Name :	CLAMPS & CONNECTROS
Enquiry No. :	
Project:	POWERGRID FATEHGARH-2 & BADLA PROJECT
Type of project	Transmission / Thermal (Coal or Gas) / Hydro
Applicable percentage of Local Content	50 % (Minimum)

Format for Affidavit of Self certification regarding Minimum Local Content in line with PPP-MII order, 2017 if applicable, to be provided on a non-judicial stamp paper of Rs. 100/-.

Date: / /2020

I _____ S/o, _____ D/o, _____ W/o, _____ Resident of _____ hereby solemnly affirm and declare as under:

That I will agree to abide by the terms and conditions of the Public Procurement (Preference to Make in India) Order, 2017 (*hereinafter PPP-MII order*) of Government of India issued vide Notification No:P-45021/2/2017 -BE-II dated 15/06/2017, its revision dated 28/05/2018 and any subsequent modifications/ Amendments, if any and

That the information furnished hereinafter is correct to the best of my knowledge and belief and I undertake to produce relevant records before the procuring entity/BHEL or any other Government authority for the purpose of assessing the local content of goods/services/works supplied by me for (*Enter the name of the Equipment/Item for Project*).

That the local content for all inputs which constitute the said goods/services/works has been verified by me and I am responsible for the correctness of the claims made therein.

That the goods/services/works supplied by me for (*Enter the name of the Equipment/Item for Project*) meets the 'Minimum Local Content' as defined in the PPP-MII order.

That the value addition for the purpose of meeting the 'Minimum Local Content' has been made by me at (*Enter the details of the location(s) at which value addition is made*).

That in the event of the local content of the goods/services/works mentioned herein is found to be incorrect and not meeting the prescribed Minimum Local Content criteria, based on the assessment of procuring agency (ies)/BHEL/Government Authorities for the purpose of assessing the local content, action shall be taken against me in line with the PPP-MII order and provisions of the Integrity pact/ Bidding Documents.

I agree to maintain the following information in the Company's record for a period of 8 years and shall make this available for verification to any statutory authority.

- i. Name and details of the Local Supplier
(Registered Office, Manufacturing unit location, nature of legal entity)
- ii. Date on which this certificate is issued
- iii. Goods/services/works for which the certificate is produced
- iv. Procuring entity to whom the certificate is furnished
- v. Percentage of local content claimed and whether it meets the Minimum Local Content prescribed
- vi. Name and contact details of the unit of the Local Supplier (s)
- vii. Sale Price of the product
- viii. Ex-Factory Price of the product
- ix. Freight, insurance and handling
- x. Total Bill of Material
- xi. List and total cost value of input used to manufacture the Goods/to provide services/in construction of works
- xii. List and total cost of input which are domestically sourced. Value addition certificates from suppliers, if the input is not in-house to be attached
- xiii. List and cost of inputs which are imported, directly or indirectly

For and on behalf of..... (Name of firm/entity)

Authorized signatory (To be duly authorized by the Board of Directors)
<Insert Name, Designation and Contact No.>

**BHARAT HEAVY ELECTRICALS LTD.
(TRANSMISSION BUSINESS GROUP)**

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GENERAL TERMS AND CONDITIONS FOR TENDER ENQUIRY / CONTRACT

This is to be submitted duly signed by bidder in original (In case of tender through E-procurement mode then there is no need for submission of GTC). Clause-wise deviations and / or additional conditions / clarifications, if any, are to be brought out clearly in "Schedule of Commercial Deviation". Deviations and / or additional conditions / clarifications, if any, mentioned elsewhere in the bid / offer, shall not be considered.

Sr. No.	
1.	INSTRUCTION TO BIDDERS: 1.1 Sealed bids are invited for the items mentioned in the tender enquiry conforming to the NIT including Technical Specifications. Bids should be typed and free from overwriting and erasures. Corrections or additions / deletions, if any, must be clearly written and attested, otherwise offer may be rejected. 1.2 Bidder must ensure that their bid is submitted / dropped in the tender box on or before 14-00 Hrs. IST on the due date of opening, unless otherwise specified in the NIT, at the address as follows: Tender Box, Materials Management, Transmission Business Group, Bharat Heavy Electricals Limited, 5th Floor, Tower-A, Advant Navis IT Business Park, Plot-7, Sector-142, Noida Expressway, Noida, Dist. G. B. Nagar, U. P. – 201305 1.3 In case tender enquiry is floated though the e-procurement system, offer / bid has to be submitted through the e-procurement system ONLY as per instructions given in the e-procurement portal (https://bhel.abcprocure.com). 1.4 The bids shall be opened at 14:30 Hrs. IST on the due date of opening, in the presence of participating bidders who may like to be present, unless otherwise specified in the NIT. Bids received late are liable for rejection. Bidders sending bids by courier or post will have to ensure that it is timely delivered at the above address. 1.5 Bids are to be submitted duly signed with seal in two parts: a) Techno-commercial Bid (Part-I) – To be submitted in 2 sets (original + copy). A copy of Price Bid (Part-II) clearly mentioning all the necessary information as per format without prices "Un-Priced Bid" is also to be enclosed in Part-I Bid. b) Price Bid (Part-II) – To be submitted only in one set in a separate sealed envelope. This should not contain any Technical and / or Commercial Terms and Conditions. The rates should be quoted both in figures and words.

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	1.6 The Part-I and Part-II Bids are to be sealed in separate envelopes and marked as "Techno-commercial Bid (Part-I)" and "Price Bid (Part-II)" respectively. Both the envelopes are to be kept in another common envelope and marked as "BID". Each envelope should be sealed and superscribed with tender enquiry no., item / package name, project name and due date of opening. Bidder's name and address shall also be mentioned on each envelope. 1.7 For any technical clarification, please contact official mentioned in the tender enquiry / NIT. 1.8 For any commercial clarification please contact official issuing tender enquiry / NIT. 1.9 Price bid (Part-II) should not contain any additional information / description other than given in "Un-Priced Bid" submitted with "Techno-commercial Bid (Part-I)" except prices, otherwise bid is liable for rejection. 1.10 Price Bid submitted along with the bid shall remain valid up to validity of offer. Any discount / revised offer submitted by the bidder on its own shall be accepted provided it is received before the due date and time of offer submission (i.e. Part-I Bid). The discount shall be applied on pro-rata basis to all items including optional items, if any, unless specified otherwise by the bidder. Discount offered shall be valid for full duration of validity of the offer including extension of validity, if any. Unsolicited Supplementary / Revised Price Bid submitted after the due date and time of offer submission (i.e. Part-I Bid), during validity period of offer, unless asked by BHEL, shall not be considered. Withdrawal of quotation by the bidder, at any stage after its opening, may entail suitable action against such bidder by BHEL. 1.11 The consultants / firm (and any of its affiliates) shall not be eligible to participate against tender enquiry for the related goods or works or services for the same project, if they were engaged by BHEL-TBG for the consultancy services. 1.12 In case any Foreign OEM / Foreign Principal insists on engaging the services of an agent, such agent shall not be allowed to represent more than one manufacturer / supplier in the same tender. Moreover, either the agent could bid on behalf of the manufacturer / supplier or the manufacturer / supplier could bid directly but not both. In case bids are received from the manufacturer / supplier and the agent, bid received from the agent shall be ignored. 1.13 Non-conformities / errors / discrepancies in quoted prices in price bids shall be dealt as follows: a) If, in the price structure quoted for the required goods / services / works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless in the opinion of

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	BHEL there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly. b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected. c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above. d) If there is such discrepancy in an offer as mentioned in (a), (b) & (c) above, the same shall be conveyed to the bidder with target date upto which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the BHEL, the bid is liable to be ignored. 1.14 In case the scope of the successful bidder / supplier against this tender enquiry includes Erection, Testing and Commissioning (ETC) of the equipment / material at site in addition to Supply, Purchase Order shall be placed for Supply Portion and Contract shall be separately awarded for ETC at Site Portion. General Terms and Conditions for Tender Enquiry / Contract mentioned herein shall be applicable for both Supply & ETC at Site. Additional Terms and Conditions for Tender Enquiry / Contract for Erection, Testing and Commissioning at Site "BHEL/TBG/GTC-ETC/2016 REV01" shall be applicable for ETC at Site only which is to be read in conjunction with General Terms and Conditions for Tender Enquiry / Contract mentioned herein. However, any breach of either the Purchase Order or the Contract shall be deemed to be breach of the other. 1.15 Taxes and Duties payable extra as per Clause No. 2.3 in NIT, if not specified/quoted clearly as extra shall be considered as included in Ex-works Price and therefore shall not be reimbursed. Taxes and duties not payable extra as per NIT shall be deemed to be included in Ex-works Price. 1.16 If the rates for taxes and duties in respect of the quoted materials and / or services assumed by the Supplier are less than the tariff prevailing at the time of tendering, Supplier will be responsible for such under quotations. However if the rates assumed are higher than the correct rates prevailing at the time tendering, the difference will be to the credit of BHEL. Note: Representative / official deputed by the bidder to witness tender opening must produce authorization letter for the same.

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2.	PRICES: 2.1 Unless specifically indicated in the NIT, all prices shall be FIRM. No enhancement of rate for whatsoever reasons unless and until asked by BHEL shall be allowed. 2.2 Unless specifically indicated in the NIT, the prices shall be on INR basis. 2.3 Unless specifically indicated in the NIT, the prices are to be quoted on FOR (Site / Destination) basis excluding GST. The break-up of prices shall be as under: a) Ex-works Price: Ex-works price including packing & forwarding charges. b) Freight: Freight for door delivery up to destination / site / store are to be quoted separately. c) Insurance: Insurance for door delivery up to destination / site / store are to be quoted separately. d) Type Test Charges: If asked in the technical specification, it is to be quoted separately for each test. e) Charges for Supervision of Erection, Testing & Commissioning (ETC) at Site: To be quoted separately if specified in NIT/Price Schedule. f) Charges for Testing & Commissioning at Site: To be quoted separately if specified in NIT/Price Schedule. g) Charges for Erection, Testing & Commissioning at Site: To be quoted separately if specified in NIT/Price Schedule. h) Training Charges: To be quoted separately if specified in NIT/Price Schedule. 2.4 GST rates along with HSN/SAC code as applicable on Sr No (a) to (h) above is to be mentioned separately in percentage in both un-priced bid and price bid. Note: i) Unless otherwise specified in the NIT, the purchase order shall be placed on Ex-works basis for Indian bidders. ii) Prices quoted by Indian bidders shall be in Indian Rupees only. iii) In case Supervision of Erection, Testing & Commissioning (ETC) at Site or Testing & Commissioning at Site or Erection, Testing & Commissioning at Site is also in scope of the bidder along with supply, bidder has to ensure that prices quoted for such services also are in line with special terms & conditions of the NIT, if any. iv) Unless otherwise specified in the NIT, Unloading at Site / Destination shall not be in the scope of the supplier. v) Prices in respect of Sr No (a) to Sr No (h) of Clause 2.3 above are to be quoted inclusive of all taxes & Duties, charges. Levies, royalty etc if any, excluding GST.
3.	TERMS OF PAYMENT: 3.1 For supply only in scope of the supplier. 100% of payment within 60 days from the date of receipt of complete invoice along with documents in 3 sets (original + 2 copies) as follows:

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	· LR / GR duly endorsed by BHEL Site Official. · Material Receipt Certificate issued by BHEL Site Official. · GST Compliant Tax Invoice · Packing List (Case-wise) · Copy of Transit Insurance Certificate from underwriters. · Material Inspection Clearance Certificate (MICC) issued by BHEL Quality Management · Guarantee Certificate · Copy of Performance Bank Guarantee (PBG) · Certificate of acceptance of Type Test Reports issued by BHEL Engineering Management wherever specifically mentioned in the Purchase Order. 3.2 For Supply where Supervision of Erection, Testing & Commissioning (ETC) at Site is in scope of the supplier or Supply where Testing & Commissioning at Site is in scope of the supplier. a) 95% of payment within 60 days from the date of receipt of complete invoice along with documents in 3 sets (original + 2 copies) as follows: · LR / GR duly endorsed by BHEL Site Official. · Material Receipt Certificate issued by BHEL Site Official. · GST Compliant Tax Invoice · Packing List (Case-wise) · Copy of Transit Insurance Certificate from underwriters. · Material Inspection Clearance Certificate (MICC) issued by BHEL Quality Management · Guarantee Certificate · Copy of Performance Bank Guarantee (PBG) · Certificate of acceptance of Type Test Reports issued by BHEL Engineering Management wherever specifically mentioned in the Purchase Order. b) 5% of payment within 60 days from the date of receipt of complete invoice along with documents in 3 sets (original + 2 copies) as follows: · Certificate of successful completion of Supervision of Erection, Testing & Commissioning at Site if it is in the scope of the supplier or Certificate of successful completion of Testing & Commissioning at Site if it is in the scope of the supplier. · Certificate of completion of final documentation as per Purchase Order / Technical Specification issued by BHEL Engineering Management 3.3 For Supply where Erection, Testing & Commissioning (ETC) at Site is in scope of the supplier. a) 90% of payment within 60 days from the date of receipt of complete invoice along with documents in 3 sets (original + 2 copies) as follows: · LR / GR duly endorsed by BHEL Site Official. · Material Receipt Certificate issued by BHEL Site Official. · GST Compliant Tax Invoice

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	• Packing List (Case-wise) • Copy of Transit Insurance Certificate from underwriters. • Material Inspection Clearance Certificate (MICC) issued by BHEL Quality Management • Guarantee Certificate • Copy of Performance Bank Guarantee (PBG) • Certificate of acceptance of Type Test Reports issued by BHEL Engineering Management wherever specifically mentioned in the Purchase Order b) 10% of payment within 60 days from the date of receipt of complete invoice along with documents in 3 sets (original + 2 copies) as follows: • Certificate of successful completion of Erection, Testing & Commissioning at Site issued by BHEL Site Official / Construction Management • Certificate of completion of final documentation as per Purchase Order / Technical Specification issued by BHEL Engineering Management 3.4 For Type Test Charges 100% payment along with applicable GST within 60 days from the date of receipt of complete GST compliant Tax invoice along with copy of Certificate of acceptance of Type Test Reports issued by BHEL Engineering Management in 3 sets (original + 2 copies) on completion of delivery (at site, if F&I is in scope of supplier) of main supplies (excluding spares) for which Type Tests are applicable. List of main supplies (excluding spares) for which Type Tests are applicable shall be certified by BHEL Engineering Management. 3.5 For Charges for Supervision of Erection, Testing & Commissioning at Site 100% payment along with applicable GST within 60 days from the date of receipt of complete GST compliant Tax invoice along with certificate of successful completion of Supervision of Erection, Testing & Commissioning at Site issued by BHEL Site Official / Construction Management in 3 sets (Original + 2 copies). 3.6 For Charges for Testing & Commissioning at Site 100% payment along with applicable GST within 60 days from the date of receipt of complete GST compliant Tax invoice along with certificate of successful completion of Testing & Commissioning at Site issued by BHEL Site Official / Construction Management in 3 sets (Original + 2 copies). 3.7 For Training Charges 100% payment along with applicable GST within 60 days from the date of receipt of complete GST compliant Tax invoice along with certificate of completion of training issued by BHEL Engineering Management in 3 sets (original + 2 copies). Note: i) Supplier has to submit invoice(s) as per PO or approved billing break-up of prices (if applicable as per NIT).

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	ii) In case of supplies for overseas project, Material Receipt Certificate issued by BHEL Authorized Representative shall also be acceptable. iii) In case of Transit Insurance under Open Insurance Policy, Intimation / Declaration of Transit Insurance as per terms of the relevant Open Insurance Policy along with copy of Open Insurance Policy from underwriters shall also be acceptable. iv) Supplier has to ensure commencement of transit insurance from the date not later than LR / GR date. v) Supplier has to submit Tax Invoice(s). Supplier should ensure that Tax Invoice should comply all statutory requirements under GST Law to enable BHEL to avail input credit vi) MSMED Act, 2006 and the rules made thereunder as amended from time to time shall be applicable for release of payment to suppliers qualified & registered as Micro & Small Enterprises based on documents mentioned in the NIT for MSME. vii) Supplier has to submit PBG (as per BHEL format) & Guarantee Certificate as per PO terms. viii) In case any shortages and / or damages in supplies, an amount calculated based on comments against Material Receipt Certificate issued by the BHEL Site Official shall be withheld from the supply payment against 3.1(a) or 3.2(a) above to be deemed fit by BHEL subject to a minimum of 10% of the total ex-works value of the invoice corresponding to the LR / GR against which any shortages and / or damages are reported. The withheld amount shall be released after the shortages and / or damages in supplies are supplied / replenished against Certification by BHEL Site Official. ix) Payment of GST component shall be made only if vendor has deposited the Tax and credit for the same is reflected in GSTN (GST Network). In case credit of the same is not reflected in GSTN , vendor may alternatively furnish BG of GST Amount for a period valid for not less than 1 month .In case of disallowance of credit /non reflection of credit in GSTN , amount will be recovered from supplier along with applicable Interest , penalty etc from any of his dues. x) If GST is payable by BHEL on reverse Charge Mechanism basis, vendor should ensure the submission of GST compliant Tax invoice immediately on dispatch/ performance of service. In case of non-compliance any additional charges towards interest, penalty etc , will be to vendors account. xi) TDS under GST Act, if applicable, shall be deducted unless Exemption Certificate If applicable, from the appropriate authority is furnished to BHEL along with Invoice.
4.	INTEREST LIABILITY: In case of any delay in payment due to any reason, BHEL shall not pay any interest on delayed payment. Also, no interest shall be payable by BHEL on the bank guarantee / deposit amount or balance payment or any other money which may become due owing to difference or misunderstanding or any dispute before any quasi judicial authority between BHEL and the Supplier / Contractor.
5.	GUARANTEE: The equipment / material supplied and services rendered (if applicable) shall be guaranteed to be free from all defects and faults in design & engineering, material,

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	workmanship & manufacture and in full conformity with the Purchase Order / Contract, Technical Specifications & approved drawings / data sheets, if any, for 18 months from the date of last delivery or 12 months from the date of commissioning, whichever is earlier. Wherever Erection, Testing & Commissioning at Site are also in the scope of the Supplier, the guarantee period shall be 18 months from the date of last delivery or 12 months from the date of commissioning, whichever is later. The defective equipment / material / component shall be replaced free of cost at site. Freight & Insurance during transit shall also be in the scope of the supplier / contractor. Any expenditure for dismantling and re-erection of the replaced equipment / material / component shall be to supplier's / contractor's account. All replacements during the guarantee period shall be delivered at site promptly and satisfactorily within a period not more than 45 days from the date of reporting the defect / rejection etc. In the event of the supplier / contractor failing to replace the defective equipment / material / component within the time period mentioned above, BHEL may proceed to undertake the replacement of such defective equipment / material / component at the risk and cost of the supplier / contractor without prejudice to any other rights under the contract and recover the same from PBG / other dues of this Purchase Order / Contract or any other Purchase Order / Contract executed by the supplier / contractor. Note: i) In case of Illumination System, items viz. Lamps, Tubes, Ballast, Starters, Capacitors & Fuses will not be under Guarantee after commissioning. ii) In addition to the above guarantee period, Extended Guarantee / Warranty, if any, shall be as per NIT / Technical Specifications. iii) In case offer of agent of Foreign OEM / Foreign Principal is considered, as per Clause No. 1.12 above, Guarantee as mentioned above has to be provided by the Foreign OEM / Foreign Principal also.
6.	LATENT DEFECT: Liability for latent defects shall be for defects inherently lying within material or arising out of design deficiency which does not manifest itself during guarantee period but later and shall be limited to five years from the expiry of the guarantee period.
7.	PERFORMANCE BANK GUARANTEE (PBG): Supplier shall arrange to submit Performance BG / deposit on a non-judicial stamp paper of appropriate value along with first invoice or within 60 days from placement of Purchase Order (PO) whichever is earlier, in line with one of the applicable options as follows: <u>Option "A"</u> A single rolling PBG for Rs. 50 Lakhs initially valid for 18 months with claim period of 3 months extra over and above 18 months for all the Purchase Orders being

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	executed for Transmission Business Group, BHEL. However, validity of the PBG shall be extended till 18 months from the date of last delivery with 3 months claim period extra over and above 18 months. Single Rolling PBG option shall not be applicable in case Ex-works value of the PO at the time of placement of PO exceeds Rs. One Crore. <u>Option "B"</u> PBG for 10% of the total Ex-works PO value, valid for 18 months from the date of last delivery with claim period of 3 months extra over and above 18 months. Ex-works PO value at the time of placement of PO shall be considered for calculation of the PBG amount. <u>Option "C"</u> In case the total Ex-works PO value at the time of placement of PO does not exceed Rs. Ten Lakhs, interest free Deposit of 10% of the total Ex-works PO value at the time of placement of PO in form of Demand Draft favouring "Bharat Heavy Electricals Limited" and payable at New Delhi / Delhi / Noida shall also be acceptable to BHEL in lieu of PBG, which shall be released after expiry of 21 months from the date of last delivery after deduction, if any, within 60 days from receipt of invoice in 3 sets (original + 2 copies) to be submitted by the supplier. Note: i) The Bank Guarantee shall be from any bank as per Annexure for List of Banks (32 Nos.). The original PBG should be sent by issuing Bank directly to AGM (Finance), TBG, BHEL, Noida. ii) Extension of validity of the PBG in original, as per above clause, should be sent by issuing Bank directly to AGM (Finance), TBG, BHEL, Noida at least 45 days before expiry of validity of the PBG. iii) Unless otherwise specified in the NIT, deviation taken for non-submission of PBG / Deposit, as applicable, shall not be accepted. iv) Supplier has to confirm one of the applicable options for submission of PBG / Deposit before placement of PO. v) In case of non-submission PBG / Deposit, as applicable, BHEL reserve the right for Risk Purchase as per terms of the NIT and impose Suspension of Business Dealings with the Supplier / Contractor. vi) BHEL reserve the right to encash the Bank Guarantee and forfeit the amount in the event of any default, failure or neglect on part of the Supplier in fulfilment of performance of the Purchase Order. vii) Value of the Bank Guarantee (at the time of submission) shall remain unchanged for any subsequent variations in Purchase Order value up to $\pm 20\%$. Beyond this variation of $\pm 20\%$, the Supplier shall arrange to enhance or may reduce the value of the Bank Guarantee accordingly for the total variation promptly. viii) Vendor to ensure submission of Certificate of Final Documentation / Confirmation regarding Non applicability of Final Documentation, as the case may be, as referred in clause No 9 regarding Final Documentation. BG shall be released only after submission of the same to BHEL TBMM.
8.	SUBMISSION OF DRAWINGS / DOCUMENTS FOR APPROVAL: Supplier shall submit the master document list within 7 days from date of Purchase

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	Order / Contract, unless otherwise specified in the NIT, with planned dates for submission which shall be in line with activity schedule as per Purchase Order / Contract and shall be finalized with BHEL Engineering Management. Date of first submission of drawings / documents shall be certified by BHEL Engineering Management after the receipt of applicable drawings / documents (e.g. project specific cover sheet, GTP, OGA drawings, schemes, type test reports etc.) by BHEL. During detailed engineering stage, necessary hard copies of the engineering drawings / documents shall also be submitted by the supplier as per the Purchase Order / Contract requirement. The supplier shall also submit the packing drawings as per technical specifications. In case item(s) offered require any interface details of other item (not in the scope of supplier & required for operating the equipment), the supplier has to submit interfaces schedule along with submission of engineering drawings / documents. It shall be responsibility of the supplier to get the details of the interfaced item from BHEL before manufacturing to avoid any mismatch at site.
9.	FINAL DOCUMENTATION: Final documentation as called in the Technical /contract specification is to be submitted within 3 months from the date of first delivery of respective equipment, item/material. After submission of Final Documentation, BHEL Engineering Management (TBEM) will issue a Certificate of Completion of Final Documentation. Wherever Final Documentation is not applicable, BHEL Engineering Management (TBEM) will issue confirmation regarding the same, Vendor to submit the Certificate of Final Documentation /Confirmation regarding Non applicability of Final Documentation, as the case may be, to BHEL TBMM. In case of non-submission of Certificate of Final Documentation /Confirmation regarding Non applicability of Final Documentation, BG will be liable for encashment.
10.	INSPECTION: BHEL / customer / third party shall inspect equipment / material before despatch. Stage inspection during manufacturing may also be carried out. Material to be despatched only after getting Material Despatch Clearance Certificate (MDCC) / MICC issued by BHEL. Supplier shall send inspection call on prescribed format / web site only, with an advance notice of 15 days. Supplier to ensure submission of all routine / acceptance test reports, inspection reports and all other documents related to inspection, immediately to BHEL. BHEL representative is authorised to carry out audits along with Third Party Inspection Agency at vendor's / supplier's works before clearing the items for despatch.
11.	DESPATCH DOCUMENTS: Despatch documents to be immediately sent to BHEL on despatch are as follows: • Copy of Invoice • Copy of LR / GR in case of Indian suppliers or BL / AWB in case of foreign suppliers • Copy of Packing List (Case-wise)

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	• Copy of Transit Insurance Certificate from underwriters • Copy of Guarantee Certificate
12.	DELIVERY PERIOD: Delivery / Completion requirement shall be mentioned in the NIT. Bidder to specify best delivery / completion period possible in weeks from the date of LOI / PO as per activity schedule for consideration by BHEL. Time required for type test, if applicable, is to be separately indicated. Note: LR / GR date or invoice date (whichever is later) for indigenous supplies and BL / AWB date for FOB / CIF (if applicable) contracts shall be considered as delivery date.
13.	LIQUIDATED DAMAGES FOR DELAYED DELIVERY: In case of delay in execution of Purchase Order beyond the contractual delivery time, an amount of 0.5% of the total Purchase Order value for supply (incl. taxes and duties, freight & insurance as applicable) per week of delay or part thereof subject to a maximum of 10% of the total Purchase Order value for supply (incl. taxes and duties, freight & insurance as applicable) shall be deducted as Liquidated Damages (LD) along with applicable GST (if any) on LD. However, in case of staggered (lot-wise) contractual delivery schedule, an amount of 0.5% of the total delayed lot value for supply (incl. taxes, duties, freight & insurance as applicable) per week of delay or part thereof subject to maximum of 10% of the total delayed lot value (Incl taxes, duties, Freight & Insurance as applicable) shall be deducted as Liquidated Damages (LD) along with applicable GST (if any) on LD. Note: i) In case of any amendment / revision in P.O./WO, the LD shall be linked to the amended / revised Purchase Order / Contract value and delivery / completion time / schedule, if applicable. ii) LR / GR date or invoice date (whichever is later) for indigenous supplies and BL / AWB date for FOB / CIF (if applicable) for imported supplies shall be treated as the date of dispatch for levying LD as above. iv) However, for indigenous supply, if time period between date of receipt of material at site / destination by Site Official & the date of LR / GR or invoice (whichever is later) is more than 30 days, where distance from place of despatch as per LR / GR is upto 1000 Kms or if time period between date of receipt of material at site / destination by Site Official & the date of LR / GR or invoice (whichever is later) is more than 45 days, where distance from place of despatch as per LR / GR is more than 1000 Kms, such excess period shall also be considered for LD purpose. iv) If, as per supplier, delay is not attributable to the supplier, delay analysis with documentary evidence may be submitted by the supplier at the earliest but not later than six months from the end of the financial year in which the payment is withheld. Based on the above details / documents submitted by the supplier, BHEL shall take final decision and if considered appropriate by BHEL, withheld amount (full or part as the case may be) shall be released, otherwise, full or

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	balance withheld amount shall be treated as deduction of Liquidated Damages (LD) towards delayed delivery.
14.	VALIDITY OF OFFER: The offer shall be valid for 120 days from the due date of opening of tender (i.e. techno-commercial bid unless otherwise specified in the NIT). Prices of Spares, wherever they optional items, shall be valid till two years from the date of placement of PO.
15.	ACCEPTANCE / REJECTION OF TENDER: BHEL reserve the right to reject in full or part, any or all tender without assigning any reason thereof. BHEL also reserve right to vary the quantities as mentioned in the NIT. Acceptance of offer is subject to vendor approval by customer before opening of price bid. BHEL shall not be bound by any power of attorney granted by tenderer or by changes in composition of the firm made subsequent to award of order / contract. BHEL may however recognize such power of attorney and changes after obtaining proper legal advice, cost of which will be chargeable to the seller / contractor concerned. If the tenderer deliberately gives wrong information, BHEL reserves the right to reject such an offer at any stage or cancel the order / contract, if awarded, and forfeit the security deposit and bank guarantee.
16.	DEVIATION: The bids having deviation(s) w.r.t. tender are liable for rejection. However, BHEL, at its discretion, may load the prices for evaluation of offer with prior intimation to bidder.
17.	TENDER EVALUATION: Comparative statement shall be prepared and evaluated on total cost basis at destination/site (as per terms of NIT) considering overall quantity indicated in NIT unless contrary to same is specifically mentioned in the tender enquiry / NIT. Total cost for this purpose shall include cost of scope of work as mentioned in NIT along with applicable taxes & duties, and other services etc. (if applicable). GST input credit available to BHEL shall be reduced from prices while determining L1 status. In case all bidders are foreign & Port of Import (destination port) is same for all the bidders, evaluation of offers shall be done on CIF (Port of Import) basis. Otherwise, evaluation of offers shall be done on the basis of delivered cost at site /destination to BHEL. Further, in case of foreign bidders, marine freight & insurance are to be quoted separately & the purchase order may be placed on FOB basis with an option for delivery on CIF / CFR basis, if required, later. In case of foreign bidders, Exchange Rate (TT selling rate of State Bank of India) as on date of tender opening (Part-I Bid in case of two-part bid) shall be considered. If the relevant day happens to be a bank holiday, then the forex rate as on the previous bank (SBI) working day shall be taken for tender evaluation.
18.	LOADING CRITERIA: List of permissible deviations & loading criteria thereof are as follows: a) Payment Terms Base rate of SBI (as applicable on the date of bid opening / techno-commercial bid opening in case of two-part bids) + 6% shall be considered for loading for the

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	period of relaxation sought by bidder(s) against terms of payment in the NIT. b) Liquidated Damages (LD) for Delayed Delivery Loading on LD clause shall be to the extent to which it is not agreed to by the bidder (at offered value). c) In case of foreign bidders, if the quoted prices is on CIF basis only, it shall be loaded to arrive at total FOR (Site / Destination) price, as applicable, by factors as follows :- i) Port handling / clearing charges: @ 1% of CIF value to arrive at Customs Assessable Value. ii) Custom Duty (including CVD & SAD) as per NIT prevailing on date of price bid opening. iii) Inland Freight & Transit Insurance: @ 5% of CIF value where distance between site / destination and Port of Discharge is upto 1000 Kms or @ 7% of CIF value where distance between site / destination and Port of Discharge is more than 1000 Kms. Note : Additional deviations (if considered acceptable by BHEL) & the loading criteria shall be communicated to all the qualified bidders before price bid opening.
19.	ARBITRATION: In the event of any dispute emanating from and relating to this contract, the matter shall be referred to the sole arbitration of the person appointed by the competent authority of BHEL. Subject to aforesaid, the provisions of "The Arbitration and Conciliation Act, 1996" and the rules made thereunder as amended from time to time in India shall apply to the arbitration proceedings. The venue of arbitration shall be in New Delhi. Further there shall be no claim for any pre-reference or pendente-lite interest on the claims and any claim for such interest made shall be void. However, in case of contract with Public Sector Enterprise / Undertaking (PSE/PSU) or Govt. Dept., the extant guidelines of Govt. of India shall be followed.
20.	LEGAL SETTLEMENT: Indian Courts at New Delhi / Delhi shall have exclusive jurisdiction to decide the dispute, if any, arising out of or in respect of the contract(s) to which these conditions are applicable. Contract, including all matters connected with contract, shall be governed by the Indian Law, both substantive and procedural, for the time being in force including modification thereto.
21.	SUB-CONTRACTING: In case further subcontracting of BHEL Purchase Order / Contract or part thereof is envisaged by supplier, the same can be done after written permission is obtained from BHEL. However, it shall not absolve the Supplier / Contractor of the responsibility of fulfilling BHEL Purchase Order / Contract requirements. In case of subcontracting of Purchase Order / Contract awarded by BHEL or part thereof without such permission, BHEL reserve the right to cancel the Purchase Order / Contract and source such material / component / equipment / system from any other agency at the risk and cost of the Supplier / Contractor. If Supplier / Contractor is an individual or proprietary concern and the individual or the proprietor dies or the partnership is dissolved or substantially affected, then

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	unless BHEL is satisfied that legal representative of individual Supplier / Contractor or proprietor of proprietary concern and surviving partners of partnership firm are capable of carrying out and completing the Purchase Order / Contract, BHEL shall be entitled to cancel the Purchase Order / Contract as to its incomplete portion and without being in any way liable to payment of any compensation to legal representative of Supplier / Contractor and / or to surviving partners of Supplier's / Contractor's firm on account of cancellation of the Purchase Order / Contract. Decision of BHEL that legal representatives of deceased Supplier / Contractor or surviving partners of the Supplier's / Contractor's firm cannot carry out and complete the Purchase Order / Contract shall be final and binding on the parties hereto. Terms and Conditions shall not get affected in case of de-merger / amalgamation / taking-over / re-constitution etc.
22.	RISK PURCHASE: In case the Supplier / Contractor fails to supply or fails to comply with terms & conditions of the Purchase Order / Contract or delivers equipment / material not of the contracted quality or fails to adhere to the contract specifications or fails to perform as per the activity schedule and there are sufficient reasons even before expiry of the delivery / completion period to justify that supplies shall be inordinately delayed beyond contractual delivery / completion period, BHEL reserve the right to cancel the Purchase Order / Contract either in whole or in part thereof without compensation to Supplier / Contractor and if BHEL so desires, may procure such equipment / material / items not delivered or others of similar description where equipment / material / items exactly complying with particulars are not readily procurable in the opinion of BHEL which is final and in such manner as deemed appropriate, at the risk and cost of the Supplier / Contractor and the Supplier / Contractor shall be liable to BHEL for any excess cost to BHEL. However, the Supplier / Contractor shall continue execution of the Purchase Order / Contract to the extent not cancelled under the provisions of this clause. Recovery amount on account of purchases made by BHEL at the risk and cost of Supplier / Contractor shall be the difference of total value of new Purchase Order (PO) value and total value of old Purchase Order for applicable items, where the total value of new PO is more than total value of old PO for applicable items, plus additional 15% of the total ex-works value of new PO as overheads. The Supplier / Contractor shall on no account be entitled to any gain on such risk & cost purchase. In case the purchase order (PO) value of the new PO is less than the PO value of the old PO, 15% of the total ex-works value of the new PO shall be recovered as overheads and the difference between the PO value of the old PO and the new PO shall not be considered for calculation of the recovery amount.
23.	ADJUSTMENT OF RECOVERY: Any amount payable by the Supplier / Contractor under any of the condition of this contract shall be liable to be adjusted against any amount payable to the Supplier / Contractor under any other Purchase Order / Contract awarded to him by any BHEL unit. This is without prejudice to any other action, as may be deemed fit, by BHEL.
24.	FORCE MAJEURE CONDITION: If by reason of war, civil commotion, act of god, Government restrictions, strike,

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	lockout which are not in control of Supplier / Contractor the deliveries / services are delayed, Supplier / Contractor shall not be held responsible. If at any time during the continuance of the Purchase Order / Contract, the performance in whole or in part by either party of any obligations under the Purchase Order / Contract is prevented or delayed by reason of any war hostilities, acts of the public enemy, restrictions by Govt. of India, civil commotion, sabotage, fires, floods, explosion, epidemics, quarantine restrictions, strike, lock-outs or acts of God (hereinafter referred to as "event"), which are not in control of Supplier / Contractor or BHEL, then provided notice of the happening of such event is given by either party to the other within fifteen (15) days from the date of occurrence thereof, neither party shall by reason of such event be entitled to terminate the Purchase Order / Contract nor shall have any claim for damages against each other in respect of such non-performance and delay in performance. Performance under the Purchase Order / Contract shall be resumed immediately after such event has come to an end or ceased to exist and decision of BHEL as to whether the deliveries have to be resumed or not shall be final, conclusive and binding on the parties hereto. In the event of the parties hereto not able to agree that a force majeure event has occurred, the parties shall submit the disputes for resolution pursuant to the provisions hereunder, provided that the burden of proof as to whether a force majeure event has occurred shall be upon the party claiming such an event. Notwithstanding above provisions, BHEL shall reserve the right to cancel the Purchase Order / Contract, wholly or partly, in order to meet the overall project schedule and make alternative arrangements for completion of delivery and other schedules.
25.	MANUFACTURING QUALITY PLAN (MQP): Supplier to submit approved MQP in line with requirement of BHEL/customer.
26.	SUPPLIER PERFORMANCE MONITORING AND RATING SYSTEM: BHEL reserve the right for evaluation of Supplier Performance Rating as per Supplier Performance Monitoring and Rating System of BHEL for necessary action. Details are available at BHEL Website www.bhel.com for reference.
27.	DEALING WITH BANNED SUPPLIERS / CONTRACTORS IN BHEL: Offers of the bidders, who are on the banned list, as also the offers of the bidders who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL website www.bhel.com for reference.
28.	ORDER OF PRECEDENCE: The order of precedence shall be as follows: a) Special Terms & Conditions (STC) for Tender Enquiry / Contract, if any b) General Terms & Conditions (GTC) for Tender Enquiry / Contract & Additional General Terms & Conditions (GTC) for Tender Enquiry / Contract for Erection Testing & Commissioning (ETC) at Site, if applicable Provisions in (a) above shall prevail over (b). In case of conflict, between Technical Specifications and STC / GTC, bidder to seek necessary clarifications from BHEL concerned official as specified in NIT.
29.	PACKING: Packing shall be in conformity with specifications and shall be such as to ensure prevention of damages, corrosion, deterioration, shortages, pilferage and loss in

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	transit or storage. In case of shipment by sea or air, the packing shall be sea-worthy or air-worthy respectively and of international standards. Different types of spares i.e. start-up / commissioning spares and initial spares (mandatory spares and recommended O&M spares) are to be packed separately. Packing List shall be submitted as per standard format along with advance set of documents for claiming payment which shall also indicate: - Case / Packing size (as applicable). - Gross weight and net weight of each package. - Detailed contents of the package with quantity of each item separately. Project, Item / Package Description, BHEL's PO No. with date & Case / Packing Mark should also be clearly mentioned on the Case / Packing and Packing List for identification. Also, Packing List must be duly signed & should include respective Invoice No. & LR No. Note: Foreign suppliers to furnish details to arrange inland transportation by BHEL, if applicable, as follows: - No. of Packages - Size with Weight (Gross & Net) of each Package - No. of Containers with type & size required for inland transportation - Type of Cargo (Break Bulk / LCL / FCL) - Customs Tariff No.
30.	COLOUR CODING: Aluminium stickers are required to be attached to large components but plastic sheet tags should be tied with small components, giving details like purchase order, description of the component, quantity etc. Tags should be of the colour as follows :- - Main equipment : Yellow or White tag - Start-up / Commissioning spares : Blue tag - Mandatory spares : Pink or Red tag - Recommended / O&M spares : Green tag
31.	MICRO, SMALL & MEDIUM ENTERPRISES (MSME): MSMED Act 2006 as amended from time to time & extant regulations of Govt. of India for MSME will be applicable. Micro & Small Enterprises (MSE) can avail the intended benefits only if they submit along with the offer / bid, attested copies of either Acknowledgement of Entrepreneur Memorandum Part-II (EM-II certificate) having deemed validity (five years from the date of issue of acknowledgement in EM-II) or valid NSIC certificate or EM-II certificate along with attested copy of a CA certificate (As per BHEL format where deemed validity of EM-II certificate of five years have expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of opening (for Techno-commercial Bid : Part-I in case of two part bid). Non-submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the

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	portal. Documents should be notarized or attested (in original) by a Gazetted officer. Copy of Udyog Aadhaar Memorandum with Acknowledgement of Ministry of Micro, Small & Medium Enterprises should also be furnished.
32.	BUSINESS ETHICS / SUSPENSION OF BUSINESS DEALINGS WITH SUPPLIERS / CONTRACTORS: If any bidder / supplier / contractor during pre-tendering / tendering / post tendering / award / execution / post-execution, indulges in malpractices cheating, bribery, fraud or other misconduct or formation of cartel so as to influence the bidding process or influences the price or fails to perform or is in default without any reasonable cause etc or performs any act considered objectionable as per extant guidelines, action may be taken against such bidders/supplier/contractor as per extant "Guidelines for Suspension of Business Dealings with Suppliers/Contractors". Abridged version of same is available at BHEL website (www.bhel.com) on "Supplier Registration" Page.
33.	REVERSE AUCTION: BHEL reserve the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder or price bid submitted by the bidder through e-procurement system. This will be decided after techno-commercial evaluation. All bidders to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA. In case BHEL decides to go for Reverse Auction, only those bidders who have given their unconditional acceptance to participate in RA will be allowed to participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit "online sealed bid" in the Reverse Auction. Non-submission of "online sealed bid" by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue. General Terms and Conditions of RA are available at Annexure. Business Rules for RA shall be sent to the bidders before conducting RA. Abridged Version of "Common Guidelines for Conducting Reverse Auction" may also be seen at BHEL website (www.bhel.com) on "Supplier Registration" Page & "Tender Notifications" Page.
34.	INTEGRITY PACT: NOT APPLICABLE Bidders shall have to enter into Integrity Pact with BHEL, duly signed with seal in original, if specified in NIT / RFQ failing which bidder's offer shall be liable for rejection.
35.	TERMINATION OF CONTRACT: BHEL shall have the right to cancel the Purchase Order / Contract without any financial implication to BHEL if vendor approval by end user / customer is withdrawn or in case of Suspension of Business Dealings with the Suppliers / Contractors by BHEL. BHEL shall have the right to cancel Purchase Order / Contract, wholly or in part, in case they are obliged to do so on account of any decline, diminution, curtailment or stoppage of their business and in that event, the Supplier's / Contractor'

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	compensation claim shall be settled mutually. In case of cancellation of Purchase Order / Contract for main supply, all other associated Purchase Orders / Contracts like those for Mandatory Spares / Recommended Spares / Erection, Testing & Commissioning (ETC) / Supervision of ETC, if any, would also get cancelled.
36.	SHELF LIFE: NOT APPLICABLE Supplier has to inform the list of the items / sub-items which have limited shelf life like consumables or those required for the first fill and shall indicate the corresponding shelf life period in the offer. Such items / sub-items shall be manufactured / despatched only after getting formal clearance from BHEL.
37.	LIMITATION OF LIABILITY: Notwithstanding any other provisions, except in cases of wilful misconduct and / or criminal negligence / acts, a) Neither the Supplier / Contractor nor BHEL shall be liable to the other, whether in Purchase Order / Contract, tort, or otherwise, for any consequential loss or damage, loss of use, loss of production or loss of profits or interest costs, provided however that this exclusion shall not apply to any obligation of the Supplier / Contractor to pay Liquidated Damages to the BHEL and b) Notwithstanding any other provisions incorporated elsewhere in the contract, the aggregate liability of the Contractor in respect of this contract, whether under the Contract, in tort or otherwise, shall not exceed total Contract Price, provided however that this limitation shall not apply to any obligation of the Vendor to indemnify BHEL with respect to Patent Infringement or Intellectual Property Rights.
38.	SHORTAGES / DAMAGES: a) Against Supply only or Supply where Supervision of Erection, Testing & Commissioning (ETC) at Site or Supply where Testing & Commissioning at Site is in scope of the supplier: Any shortages and / or damages in supplies shall be supplied / replenished free of cost by the supplier as early as possible but not later than 30 days from the date of intimation by BHEL to the supplier. b) Against Supply where Erection, Testing & Commissioning (ETC) at Site is in scope of the supplier: Any shortages and / or damages in supplies and during handling / storage, erection, testing and commissioning at site shall be supplied / replenished free of cost by the Supplier / Contractor, as early as possible, to meet the contractual completion time / schedule. Note: There shall not be any extension in the contractual delivery time / schedule due to any shortages and / or damages in supplies.
39.	VARIATION OF CONTRACT VALUE / QUANTITY VARIATION: BHEL shall have the right to variation in quantities of items within $\pm 30\%$ of the total Purchase Order / Contract value at the time of placement of PO or award of Contract on overall basis for all amendments together within two years from the date of original Purchase Order / Contract or completion of execution of the Purchase Order

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	/ Contract whichever is earlier but quantities of individual items may vary to any extent or may get deleted unless otherwise specified in the technical specifications. No compensation is payable due to variation in the quantities and the Supplier / Contractor shall be bound to accept the same the contracted prices / rates without any escalation. However, if the Purchase Order / Contract is on "Lumpsum" basis, no variation of Purchase Order / Contract value shall be admissible to the Supplier / Contractor within the scope of Purchase Order / Contract, as long as the inputs remain unchanged.
40.	STATUTORY VARIATION: GST rates prevailing at the time of dispatch of goods/ completion of services shall be payable by BHEL. All other taxes, duties, charges, royalty, cess, other levies shall be deemed to be included in the Ex Works Prices / Charges quoted by bidders and no variations shall be payable in respect thereof. No other variations such as on customs duty, exchange rate, minimum wages, prices of controlled commodities, any other input etc. shall be payable by the BHEL. Notwithstanding anything above, where the actual completion of the supply / services occurs beyond the period stipulated in the Purchase Order / Contract or any extension thereof, variations referred to above, will be limited to the rates prevailing on the dates of such agreed completion periods only. For variations after the agreed completion periods, the Supplier / Contractor alone shall bear the impact for the upward revisions and for downward revisions BHEL shall be given the benefit of reduction in applicable taxes / GST. This will be without prejudice to the levy of liquidated damages for delay in delivery / completion. If new tax is introduced by Central/ State Govt/ Municipality becomes directly applicable on items specified in Bill of Quantities/Purchase Order/Contract, full reimbursements shall be made provided it becomes applicable on items specified in Bill of Quantities. However, any additional tax implication due to delay in delivery, beyond the Contractual Delivery, attributable to supplier shall be borne by supplier.
41.	MODE OF PAYMENT: Payment shall be made directly to the Supplier / Contractor by BHEL through NEFT / RTGS.
42.	CONFIDENTIALITY: Supplier / Contractor shall, at all times, undertake to maintain complete confidentiality of all data, information, software, drawings & documents etc. belonging to BHEL and also of systems, procedures, reports, input documents, manuals, results and any other BHEL documents discussed and / or finalized during the course of execution of Purchase Order / Contract.
43.	INDEMNIFICATION: The Supplier / Contractor shall indemnify and keep indemnified and hold harmless BHEL and its employees and officers from and against any and all claims, suits, actions or administrative proceedings, demands, losses, damages, costs and expenses and any other claim of whatsoever nature in respect of the death or injury of any person or loss of or damage to any property arising during the course and out of the execution of the Purchase Order / Contract.
44.	TITLE OF GOODS: a) Ownership of the equipment / material procured in India, shall be transferred to

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	BHEL upon loading on to the mode of transport to be used for transportation of the said equipment / material from the works to the site / destination and upon endorsement of the dispatch documents in favour of BHEL. b) Ownership of the equipment / material to be imported into the country where the site is located, if not procured in India, shall be transferred to BHEL upon loading on the mode of transport to be used for transportation of the equipment / material from the country of origin to that country / destination and upon endorsement of despatch document in favour of BHEL. c) Notwithstanding the transfer of ownership of the equipment / material, the responsibility for care and safe custody thereof together with the risk of loss or damage thereto for whatsoever reason shall remain with the Supplier.
45.	COMPLIANCE OF STATUTORY REQUIREMENTS: The vendor shall comply with all State and Central Laws / Acts, Statutory Rules, Regulations etc., as may be enacted by the Government during the tenure of the Purchase Order / Contract and having in force and applicable to the Purchase Order / Contract and nothing shall be done by the Supplier / Contractor in contravention of any Law / Act and / or Rules / Regulations, thereunder or any amendment thereof. The Supplier / Contractor shall pay all taxes, fees, licence charges / deposits, duties, tolls, royalty, commissions or other charges which may be levied on account of any of his operations connected with the Purchase Order / Contract. In case BHEL is constrained to make any of such payments, BHEL shall recover the same from the Supplier / Contractor either from moneys due to him or otherwise as deemed fit.
46.	ACCEPTANCE OF ORDER: Supplier should acknowledge and accept the Letter of Award / Purchase Order issued by BHEL within 7 days of the issue of Letter of Award / Purchase Order. In case of any discrepancy / typographical error in issue of Purchase Order / Contract, the agreed terms & conditions, scope of work, rates / prices for placement of PO / award of contract shall be applicable and BHEL reserves the right to issue amendment(s) to PO / Contract for correction of discrepancies / typographical errors in the PO / Contract at a later date.
47.	FRAUD PREVENTION POLICY: The Bidder along with its associate / collaborators / sub-contractors / sub-vendors / consultants / service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website http://www.bhel.com and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.

Signature of Bidder (Authorized Signatory) with Date & Seal

 BHEL	BHARAT HEAVY ELECTRICALS LIMITED TRANSMISSION BUSINESS HVDC ENGINEERING & SYSTEMS									
	DOCUMENT No.	TB-409-316-014			Rev. No.	00		Prepared	Checked	Approved
	TYPE OF DOC.	TECHNICAL SPECIFICATION			SIGN					
	TITLE				NAME	NS		SKS	AG	
	CLAMPS AND CONNECTORS				DATE	14/05/20		14/05/20	14/05/20	
					GROUP	HVDC		W.O. Nd	Awaited	
	CUSTOMER	POWERGRID FATEHGARH TRANSMISSION LIMITED- A 100% wholly owned subsidiary of Power Grid Corporation of India Limited								
	PROJECT	Substation Package - SS02 for (i) 765kV Fatehgarh-2 (PG) S/S Extension and (ii) 765kV Bhadla-2 (PG) S/s Extension under Transmission System Associated With LTA applications from Rajasthan SEZ Part-B (Rajasthan SEZ Part-B Project) through Tariff Based Competitive Bidding (TBCB) Route								
	NOA NO.	FTL/765kV/SS02/NOAI/2(I) For Supply of Goods Contract Dated 05-11-19 & FTL/765kV/SS02/NOAII/2(II) For Supply of Service Contract Dated 05-11-2019								
	Station	Fatehgarh-2, Rajasthan and Bhadla-2, Rajasthan								
	CONTENTS									
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	1	Scope, Bill of Quantity, Specific Technical Requirement								5+2+2
	2	General Specification								7
	3	Project Details and General Technical Requirements								23+2+3
4	Guaranteed Technical Particulars - To be submitted during contract execution stage as per TS requirement.								1	
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	Rev No.	Date	Altered	Checked	Approved	REVISION DETAILS				
	Distribution				To	HVDC	TBMM	TBQM	Vendor	
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Substation Package - SS02 for (i) 765kV Fatehgarh-2 (PG) S/S Extension and (ii) 765kV Bhadla-2 (PG) S/s Extension under Transmission System Associated With LTA applications from Rajasthan SEZ Part-B (Rajasthan SEZ Part-B Project) through Tariff Based Competitive Bidding (TBCB) Route.
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SECTION-1

Scope, Bill of Quantity, Specific Technical Requirements

1.1 Scope

This technical specification covers the requirements of design, manufacture, testing at works, packing and dispatch of Clamps & Connectors to site.

This section covers the scope, quantities, Specific Technical Requirements for Clamps & Connectors as specified by the customer (POWERGRID). The offered equipment shall also comply with the General Technical Requirements for the project as detailed under section-3 of this specification.

In case of any conflict between the technical details mentioned in this section and the remaining sections of this document, then Section-1 shall prevail and is to be considered as binding requirement. The order of precedence in case of any conflict shall be section 1, section 2 & section 3 in that order.

Note: The terms used in this specification namely, "Employer/Purchaser" refers to Powergrid, "Contractor" refers to BHEL & "Sub-contractor" refers to successful bidder.

The equipment is required for the following project:

Name of the customer : **POWERGRID FATEHGARH TRANSMISSION LIMITED- A 100% wholly owned subsidiary of Power Grid Corporation of India Limited**

Name of the project : **Substation Package - SS02 for (i) 765kV Fatehgarh-2 (PG) S/S Extension and (ii) 765kV Bhadla-2 (PG) S/s Extension under Transmission System Associated With LTA applications from Rajasthan SEZ Part-B (Rajasthan SEZ Part-B Project) through Tariff Based Competitive Bidding (TBCB) Route**

Site : **Fatehgarh-II, Rajasthan & Bhadla-II, Rajasthan**

Refer Section - III for Project Details and General Specifications.



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1.2 Bill of Quantities

- 1.2.1 The quantities for Fatehgarh II shall be as per the enclosed Annexure-1.
1.2.2 The quantities for Bhadla II shall be as per the enclosed Annexure-2.

The scope of supply shall also include:

- i) All connector hardware along with bimetallic washers / strip/liners/end caps/provision for binding wires etc. as required.
- ii) All hardware required for connecting to the respective equipment terminals.
- iii) Minimum 5 % extra hardware and bimetallic washers/strips/liners of each type.

Notes:

- 1. Quantity Variation: Total PO value may vary by $\pm 30\%$, however individual items can vary to any extent.
- 2. Clamps and Connectors shall be bolt-able type.
- 3. The exact terminal details will be furnished after placement of order.

1.3 Specific Technical Requirements

All power clamps and connectors shall conform to IS:5561 or other equivalent international standard. Spacers shall conform to IS: 10162.

1.3.1 Technical Particulars for Clamps-Connectors & Spacers

Sl. No.	Technical Particulars	Unit	System Ratings	
			765kV	132kV
1	Nominal system voltage	kV	765	132
2	Highest system voltage	kV	800	145
3	Current Rating	A	3150/2000	1250
4	Short circuit current (for 1 sec)	kA	40	31.5
5	Frequency		50 Hz + 5%	
6	Dry lightning impulse withstand voltage (for 1.2/50 μ sec.)	kVp	2100	650
7	One-minute power frequency dry withstand voltage (rms)	kVrms	830	275 (Dry and Wet)
8	Minimum Visual Corona Extinction Voltage	kV	508	105



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Sl. No.	Technical Particulars	Unit	System Ratings	
			765kV	132kV
			2500 at 508kVrms	500 at 92 kVrms
9	Maximum RIV Voltage	μV		
10	Material			
a	For connecting ACSR conductors/AAC conductors/ Aluminium tube	Aluminum alloy casting, conforming to designation A6 of IS:617 and all test shall conform to IS:617		
b	For connecting equipment terminals mad of copper with ACSR conductors/AAC conductors/ Aluminium tube	Bimetallic connectors made from aluminum alloy casting, conforming to designation A6 of IS:617 with 2mm thick bimetallic liner/strip and all test shall conform to IS:617.		
c	For connecting G.I	Galvanised mild steel shield wire		
d	Bolts, nuts & plain washers	Electro-galvanised for sizes below M12, for others hot dip galvanised		
e	Spring washers	Electro-galvanised mild steel suitable for atleast service condition-3 as per IS:1573		

1.4 Technical Pre-Qualifying Requirement for Clamps and Connectors

Bidder must have successfully designed, manufactured, tested and supplied 715kV or above Clamps and Connectors, as on the date of technical bid opening. Proof of supplies completed, like Customer certificates/POs/CIP/Dispatch Documents/MRC etc, need to submitted along with the technical offer.

1.5 Type Tests

- All equipment being supplied shall conform to type tests as per technical specification and shall be subject to routine tests in accordance with requirements stipulated under respective sections.
- The reports for all type tests as per technical specification shall be furnished by the Bidder along with equipment / material drawings. However, type test reports of similar equipments/ material already accepted in POWERGRID shall be applicable for all projects with similar requirement. The type tests conducted earlier should have either been conducted in accredited laboratory (accredited based on ISO / IEC Guide



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Part-B (Rajasthan SEZ Part-B Project) through Tariff
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25 / 17025 or EN 45001 by the national accreditation body of the country where laboratory is located) or witnessed by POWERGRID or representative authorized by POWERGRID or Utility or representative of accredited test lab.

Unless otherwise specified elsewhere, the type test reports submitted shall be of the tests conducted on or after 05-Nov-2009. In case the test reports are of the test conducted earlier than 05-Nov-2009, the bidder shall repeat these test(s) at no extra cost to the BHEL/Employer.

Further, in the event of any discrepancy in the test reports i.e. any test report not acceptable due to any design/manufacturing changes or due to non-compliance with the requirement stipulated in the Technical Specification or any/all type tests not carried out, same shall be carried out without any additional cost implication to the BHEL/Employer.

The Bidder shall intimate the Employer/BHEL the detailed program about the type tests atleast two (2) weeks in advance in case of domestic supplies & six (6) weeks in advance in case of foreign supplies.

- iii. The Employer reserves the right to witness any or all the type tests. The Employer shall bear all expenses for deputation of Employer's representative(s) for witnessing the type tests.
- iv. The list of makes of various items, for which Type test reports are not required to be submitted are specified in Compendium of Vendors (COV).

1.6 Drawings & Engineering Documents

The successful bidder shall have to extend all possible support like timely submission/resubmission of drawings, visits to end customer to facilitate documents approval without any commercial implications to BHEL. Acceptance of bidder's documents shall be subject to end customer approval.

Date of Submission of first lot of drawings will be counted only from the date of submission of reasonably correct drawings. List of drawings required for technical clearance of manufacturing are as follows:

1. Approved Drawings/GTP.
2. Approved Type Test Reports.



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1.7 Quality Plan

Bidder should have POWERGRID approved and valid SMQP by the date of technical bid opening.

1.8 Deviations

The bidder shall list all the deviation from the specification separately. Offers without specific deviation will be deemed to be totally in compliance with the specification and NO DEVIATION on any account will be entertained at a later date.



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SECTION-2

GENERAL SPECIFICATION

2.1 GENERAL

This section covers the general technical requirements of spacers and clamps & connectors.

2.1.1 Technical Particulars for spacers and Clamp & Connectors

Nominal system voltage	765 kV	132 kV
Highest system voltage	800 kV	145kV
Current Rating	3150A /2000 A	1250 A
Short circuit current for	40kA for 1sec	31.5 kA for 1sec
Frequency	50 Hz $\pm$ 5%	50 Hz $\pm$ 5%
System Earthing	Effectively earthed	Effectively earthed
Spacing between sub-conductors of the bus	450mm (for Bull AAC) and 457mm (Hexa Zebra)	250mm
Corona extinction Voltage	508kV	105kV
Max. Radio interference voltage for frequency between 0.5MHz and 2 MHz	2500 micro-volt at 508kVrms	500 micro –volt at 92kVrms

2.2 Applicable Standards

The spacers and clamps & connectors shall strictly conform to the following Indian and International standards as appropriate:

List of Standards:

IS 617:1994	Aluminium and aluminium alloy ingots and castings for general engineering purposes.
IS 1363 (All Parts):2002	Hexagon head bolts, screws and nuts of product grade C
IS 1364 (All Parts):2002	Hexagon head bolts, screws and nuts of product grades A and B
IS 1367 (Part I):2002	Technical Supply Conditions for threaded fasteners.
IS 1367 (Part 2):2002	Technical Supply Conditions for



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	threaded fasteners.
IS 1367 (Part 3):2002	Technical Supply Conditions for Threaded fasteners.
IS 1367 (Part 13):1983	Technical Supply Conditions for threaded fasteners.
IS 2121:1981 (Part -1 & 2)	Specification for conductors and earthwire accessories for overhead power lines
IS 2121:1992 (Part -3)	Specification for conductors and earthwire accessories for overhead power lines.
IS 2121:1991 (Part -4)	Specification for conductors and earthwire accessories for overhead power lines
IS 5561:1970	Electric power connectors.
IS 2633:1986	Methods for testing uniformity of coating of zinc coated articles.
IS 1573:1986	Electroplated coating of Zinc on Iron and Steel
IS 3138:1966	Hexagonal Bolts & Nuts (M42 to M150)
IS 4218 (Parts 1,2 & 4) 2001	Metric Screw Threads
IS 4218:(Part 3):1999	Metric Screw Threads
IS 4218:(Part 6):1978	Metric Screw Threads
IS 10162:1982	Spacers & spacer dampers for twin horizontal bundle conductors
ISO 272	Fasteners: Hexagonal Products - Width across Flats.



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ISO 898	Fasteners, Screws & Studs
NEMA CC1	Electric power connectors for sub-station
NEMA CC3	Connectors for use between Aluminium or Aluminium-Copper Overhead Conductors.
IS 816:1969	Code of practice for use of metal arc welding for general construction in mild steel.
IS 4759:1996	Hot dip zinc coatings on structural steel and other allied products.
IS 2633:1986	Methods for testing uniformity of coating of zinc coated articles.
IS 2629:1985	Recommended practice for hot dip galvanising of iron and steel.

2.3 Clamps and Connectors

All the current carrying parts shall be designed and manufactured to have minimum resistance. Clamps and fittings shall be so designed that the equipment shall not be subject to any abnormal stresses due to thermal changes in conductor. All the clamps and fittings shall enable the connection to be as short as possible. Wherever possible they shall be in two separate halves. No U bolts shall be used. Corona control ring shall be of such design and shape that they will prevent visual discharge forming on the hardware assemblies. They shall have minimum thickness of 2.5mm. All similar parts, particularly the removable one shall be interchangeable with one another.

- 2.3.1 All power clamps and connectors shall conform to IS:5561 & NEMA CC1 and shall be made of materials listed below:
- | | |
|--|---|
| a) For connecting ACSR conductors/Aluminium tube | Aluminum alloy casting, conforming to designation A6 of IS:617 and all test shall conform to IS:617 |
|--|---|



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- | | | |
|----|---|---|
| b) | For connecting equipment terminals made of copper with ACSR conductors/Aluminium tube | Bimetallic connectors made from aluminum alloy casting, conforming to designation A6 of IS:617 with 2mm thick bimetallic liner/strip and all test shall conform to IS:617 |
| c) | For connecting G.I | Galvanised mild steel shield wire |
| d) | i) Bolts, nuts & Plain, washers

ii) Spring washers for items 'a' to 'c' | i) Electrogalvanised for sizes below M12, for others hot dip galvanised.
ii) Electro-galvanised mild steel suitable for atleast service condition-3 as per IS:1573 |

2.3.2 Necessary clamps and connectors shall be supplied for all equipment and connections. The requirement regarding external corona and RIV as specified for any equipment shall include its terminal fittings. If corona rings are required to meet these requirements they shall be considered as part of that equipment and included in the scope of work.

2.3.3 Where copper to aluminum connections are required, bi-metallic clamps shall be used, which shall be properly designed to ensure that any deterioration of the connection is kept to a minimum and restricted to parts which are not current carrying or subjected to stress.

2.3.4 Low voltage connectors, grounding connectors and accessories for grounding all equipment as specified in each particular case, are also included in the scope of Work.

2.3.5 No current carrying part of any clamp shall be less than 10 mm thick. All ferrous parts shall be hot dip galvanised. Copper alloy liner of minimum 2 mm thickness shall be cast integral with aluminum body or 2 mm thick bi-metallic strips shall be provided for Bi-metallic clamps.

2.3.6 All casting shall be free from blow holes, surface blisters, cracks and cavities. All sharp edges and corners shall be blurred and rounded off.

2.3.7 Flexible connectors, braids or laminated straps made for the terminal clamps for bus posts shall be suitable for both expansion or through (fixed/sliding) type connection of 4" IPS AL. tube as required. In both the cases the clamp height (top of the mounting pad to centre line of the tube) should be same.

2.3.8 Current carrying parts (500A and above) of the clamp/connector shall be provided with minimum four numbers of bolts preferably for 132kV & above.

2.3.9 Clamp shall be designed to carry the same current as the conductor and the temperature rise shall be equal or less than that of the conductor at the specified ambient temperature. The rated current for which the clamp/connector is designed with respect to the specified reference ambient temperature, shall also be indelibly marked on each component of the



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clamp/connector, except on the hardware.

- 2.3.10 All current carrying parts shall be designed and manufactured to have minimum contact resistance.
- 2.3.11 Clamps and connectors shall be designed to be corona controlled.
- 2.3.12 Bolts and nuts shall have hexagonal heads and threads as per Indian standard. Rated torque of the nuts shall be indicated on drawing.
- 2.3.13 For flexible connectors, braids or laminated straps shall be made from tinned copper strips or aluminium laminates depending upon the clamp. All Aluminium conductors of adequate current, mechanical stability & flexibility can also be provided.
- 2.3.14 **Designs:**
Responsibility of satisfactory design of the clamps/connectors to safely withstand the specified mechanical stresses and carry the rated current without exceeding the temperature rise specified, shall solely rest with the bidder.
- 2.3.15 **Clamps and Connectors-Tests**

Clamps and connectors should be type tested as per IS:5561 and shall also be subjected to routine tests as per IS:5561. Following type test reports shall be submitted for approval as per clause 1.4, Section-1 except for sl. no.(ii) & (iii) for which type test once conducted shall be applicable (i.e. the requirement of test conducted within last ten years shall not be applicable).

1. Temperature rise test (maximum temperature rise allowed is 35°C over 50°C ambient)
2. Short time current test
3. Corona (dry) [for 400kV and above] and RIV (dry) test [for 132kV and above voltage level clamps]
4. Resistance test and tensile test

2.4 SPACERS

2.4.1 General:

Spacer shall conform to IS: 10162. The spacers are to be located at a suitable spacing to limit the short circuit forces as per IEC -60865. For strung buses, flexible type spacers shall be used whereas for jumpers and other connections rigid type spacers shall be used.

2.4.2 Constructional Features

- a) No magnetic material shall be used in the fabrication of spacers except for GI bolts and Nuts.
- b) Spacer design shall be made to take care of fixing and removing during installation and maintenance



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- c) The design of the spacers shall be such that the conductor does not come in contact with any sharp edge.

2.4.3 Tests

Each type of spacer shall be subjected to at least the following type tests, acceptance tests and routine tests in addition to all other tests specified in IS 10162:

A. Type Tests: Following type test reports shall be submitted for approval as per clause 1.5 of Section-1.

a. Clamp slip tests

The sample shall be installed on test span of twin conductor bundle string or quadruple conductor bundle string (as applicable) at a tension of 44.2kN. One of the clamps of the sample when subjected to a longitudinal pull of 2.5kN parallel to the axis of the conductor shall not slip on the conductor. The permanent displacement between the conductor and the clamp of sample measured after removal of the load shall not exceed 1.0 mm. Similar tests be performed on the other clamps of the same sample.

- b. Fault current test as per CI 5.14.2 of IS: 10162. Alternatively, the same can be carried by simulated short circuit method for which compressive forces shall be based on IEC-60865.

c. Corona Extinction Voltage test (Dry)

This test shall be performed as per procedure mentioned at Annexure-A section -3. Minimum corona extinction voltage shall be 508kV (rms) line to ground for 765 kV, 105kV (rms) line to ground for 132kV spacers respectively.

d. RIV Test (Dry)

This test shall be performed as per procedure mentioned at Annexure-A, Section-3. Maximum RIV level shall be as per cl. No. 2.1.1 of section -2.

e. Resilience test (if applicable)

f. Tension Test

g. Log decrement test (if applicable)

h. Compression test.

i. Galvanising test.



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B. Acceptance Test (As per IS : 10162 (Latest Version))

- a) Visual examination
- b) Dimensional verification
- c) Movement test
- d) Clamp slip test
- e) Clamp bolt torque test (if applicable)
- f) Assembly torque test
- g) Compression test
- h) Tension test
- i) Galvanising test
- j) Hardness test for neoprene (if applicable)

The shore hardness of different points on the elastometer surface of cushion grip clamp shall be measured by shore hardness meter. It shall be between 65 to 80.

- k) Ultimate Tensile Strength Test

The UTS of the retaining rods shall be measured. It shall not be less than 35 kg/Sq. Mm.

C. Routine test

- a) Visual examination
- b) Dimensional verification



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SECTION-3 **GENERAL TECHNICAL REQUIREMENTS-SECTION 3** **Site Information**

S.No.	Particular	Details
a)	Owner	Fatehgarh-II Transco Limited- a 100% wholly owned subsidiary of Power Grid Corporation of India Limited
b)	Customer	Fatehgarh-II Transco Limited- a 100% wholly owned subsidiary of Power Grid Corporation of India Limited
c)	Project Title	Substation Package - SS02 for (i) 765kV Fatehgarh-2 (PG) S/S Extension and (ii) 765kV Bhadla-2 (PG) S/s Extension under Transmission System Associated With LTA applications from Rajasthan SEZ Part-B (Rajasthan SEZ Part-B Project) through Tariff Based Competitive Bidding (TBCB) Route
d)	Location	Fatehgarh-2, Rajasthan Bhadla-2, Rajasthan
e)	Transport Facilities	Road/Train Nearest Rail Head For Fatehgarh-2: Fatehgarh Nearest Rail Head For Bhadla-2: Nokha
SITE CONDITIONS		
a)	Max. ambient air temp.	50°C
b)	Min. ambient air temp.	0°C
c)	Max. design ambient temp.	50°C
d)	Design reference temp.	50°C
e)	Average Humidity	Max. 100%
f)	Special corrosion conditions	No
g)	Solar Radiation	1.2kW/sqmtr
h)	Atmospheric UV radiation	High
i)	Altitude above sea level	Less than 1000 meter above mean sea level (MSL)
j)	Pollution Severity	High Pollution level
k)	Seismic Zone	As per IS 1893 but not less than 0.3g horizontal
WIND DATA		
	Wind velocity	As per IS-875
	Average No. of thunderstorm days per annum	As per IS
Main Electrical Parameters:		
	Fault Levels:	765kV: 40kA for 1 sec
	Creepage Distance	25mm/kV for All Equipment i.e BPI/Bushings, CB, Isolator, CT, CVT, LA, WT, NCT etc. 31mm/kV for string insulators



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GENERAL TECHNICAL REQUIREMENTS-SECTION 3

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10.0	Deleted.
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13.0	Deleted
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15.0	Deleted
16.0	Deleted
17.0	Clamps and Connectors including Terminal Connectors
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21.0	Deleted
22.0	Deleted
23.0	Deleted
Annexure-A	Corona and Radio Interference Voltage (RIV) Test
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GENERAL TECHNICAL REQUIREMENTS-SECTION 3

1.0 FOREWORD

The provisions under this section are intended to supplement requirements for the materials, equipments and services covered under other sections of tender documents and are not exclusive.

The Supplier shall note that the standards mentioned herein are not mutually exclusive or complete in themselves, but are intended to complement each other, with minimum repetition, to define the requirements of the Specification. In the event of a conflict between requirements of any two clauses of the Specification/ documents or requirements of different codes/ standards specified, the more stringent requirement as per the interpretation of the owner shall apply, unless confirmed otherwise by the owner in writing based on a written request from the Supplier.

In case of conflicting requirements between this document (General Technical Requirement Section 3) and equipment specification (Section 1 & Section 2), equipment specification shall prevail.

When specific requirements stipulated in the Specification exceed or change those required by the applicable standards, the stipulations of the Specification shall take precedence.

Unless specifically agreed to by the Purchaser prior to Award of Contract, the Work shall be in accordance with the standards indicated and the requirements of the Specification. The Supplier shall be held responsible for any deviation.

In case of conflict between the various standards, the decision of owner shall be binding & final.

2.0 GENERAL REQUIREMENT

The following words and expressions shall have the meanings hereby assigned to them throughout this document

"Employer/Owner" means Power Grid Corporation of India Ltd.



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"Purchaser" means Bharat Heavy Electricals Limited

"Supplier/Manufacturer/Bidder" means the person or persons, firm or company assigned to execute the works as defined by the scope of supply, described here.

"Specification" refers to this document.

The supplier should be approved by Power Grid. If not, it is the responsibility of the vendor to be assessed and approved by Power Grid, before placement of order by BHEL. Any cost involved in vendor assessment/approval must be borne by the vendor himself.

- 2.1 The Supplier/Manufacturer shall furnish catalogues, engineering data, technical information, design documents, drawings etc., fully in conformity with the technical specification during detailed engineering.
- 2.2 It is recognised that the Bidder may have standardised on the use of certain components, materials, processes or procedures different from those specified herein. Alternate proposals offering similar equipment based on the manufacturer's standard practice will also be considered provided such proposals meet the specified designs, standard and performance requirements and are acceptable to Employer.
- 2.3 Wherever a material or article is specified or defined by the name of a particular brand, Manufacturer or Vendor, the specific name mentioned shall be understood as establishing type, function and quality and not as limiting competition.
- 2.4 Equipment furnished shall be complete in every respect with all mountings, fittings, fixtures and standard accessories normally provided with such equipment and/or needed for erection, completion and safe operation of the equipment as required by applicable codes though they may not have been specifically detailed in the Technical Specifications unless included in the list of exclusions. Materials and components which are minor in nature and incidental to the requirement but not specifically stated in the specification, which are necessary for commissioning and satisfactory operation of the switchyard/ substation unless specifically excluded shall be deemed to be included in the scope of the specification and shall be supplied without any extra cost. All similar standard components/parts of similar standard equipment provided, shall be interchangeable with one another.



3.0 STANDARDS

- 3.1 The works covered by the specification shall be designed, engineered, manufactured, built, tested and commissioned in accordance with the Acts, Rules, Laws and Regulations of India.
- 3.2 The equipment to be furnished under this specification shall conform to latest issue with all amendments (as on the originally scheduled date of bid opening) of standard specified under section 2, unless specifically mentioned in the specification.
- 3.3 The Bidder shall note that standards mentioned in the specification are not mutually exclusive or complete in themselves, but intended to compliment each other.
- 3.4 The Bidder shall also note that list of standards presented in this specification is not complete. Whenever necessary the list of standards shall be considered in conjunction with specific IS/IEC.
- 3.5 When the specific requirements stipulated in the specifications exceed or differ than those required by the applicable standards, the stipulation of the specification shall take precedence.

4.0 SERVICES TO BE PERFORMED BY THE EQUIPMENT BEING FURNISHED

- 4.1 The 800kV system is being designed to limit the switching surge over voltage of 1.9 p.u. and the power frequency over voltage of 1.4 p.u. The equipment furnished under this specification shall perform all its functions and operate satisfactorily without showing undue strain, restriking etc under such over voltage conditions.
- 4.2 All equipments shall also perform satisfactorily under various other electrical, electromechanical and meteorological conditions of the site of installation.
- 4.3 All equipment shall be able to withstand all external and internal mechanical, thermal and electromechanical forces due to various factors like wind load, temperature variation, ice & snow, (wherever applicable) short circuit etc for the equipment.
- 4.4 The bidder shall design terminal connectors of the equipment taking into account various forces that are required to withstand.
- 4.5 The equipment shall also comply to the following:
 - a) To facilitate erection of equipment, all items to be assembled at site shall be "match



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marked".

b) All piping, if any between equipment control cabinet/operating mechanism to marshalling box of the equipment, shall bear proper identification to facilitate the connection at site.

4.6 System Parameter

765kV System

SL No	Description of parameters	765kV System
1.	System operating voltage	765kV
2.	Maximum operating voltage of the system (rms)	800kV
3.	Rated frequency	50HZ
4.	No. of phase	3
5.	Rated Insulation levels	
i)	Full wave impulse withstand voltage (1.2/50 microsec.)	2100kVp
ii)	Switching impulse withstand voltage (250/2500 micro sec.) dry and wet	1550kVp
iii)	One minute power frequency dry withstand voltage (rms)	830kV
SL No	Description of parameters	765kV System
iv)	One minute power frequency dry and wet withstand voltage (rms)	-
6.	Corona extinction voltage	508 kV
7.	Max. radio interference voltage for frequency between 0.5 MHz and 2 MHz	2500 μ V at 508 kV rms
8.	Minimum creepage distance - for Equipment other than Insulator string	20000 mm
	Minimum creepage distance - for Insulator String	24800 mm
9	Min. clearances	
i.	Phase to phase	7600mm (for conductor configuration) 9400mm



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		(for rod-conductor configuration)
ii.	Phase to earth	4900mm (for conductor structure) 6400mm (for rod- structure)
iii.	Sectional clearances	10300 mm
10.	Rated short circuit current for 1 sec. duration	40kA
11.	System neutral earthing	Effectively earthed

Notes:

1. The above parameters are applicable for installations up to an altitude of 1000m above mean sea level. For altitude exceeding 1000m, necessary altitude correction factor shall be applicable as per relevant IEC.
2. The insulation and RIV levels of the equipments shall be as per values given in the Technical Specification of respective equipment.
3. Corona and radio interference voltage test and seismic withstand test procedures for equipments shall be in line with the procedure given at **Annexure-A** and **Annexure-B** respectively.

5.0 ENGINEERING DATA AND DRAWINGS

- 5.1 The Bidder shall submit 4 (four) sets of drawings/ design documents /data / detailed bill of quantity and 1 (one) set of test reports for the approval of the Employer. The bidder shall also submit the softcopy of the above documents in addition to hardcopy.

5.2 Drawings

- 5.2.1 All drawings submitted by the Bidder shall be in sufficient detail to indicate the type, size, arrangement, material description, Bill of Materials, weight of each component, break-up for packing and shipment, dimensions, internal & the external connections, fixing arrangement required and any other information specifically requested in the specifications.



(15)

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- 5.2.2 Drawings submitted by the Bidder shall be clearly marked with the name of the Employer, the unit designation, the specifications title, the specification number and the name of the Project. POWERGRID has standardized a large number of drawings/documents of various make including type test reports which can be used for all projects having similar requirements and in such cases no project specific approval (except for list of applicable drawings along with type test reports) is required. However, distribution copies of standard drawings/documents shall be submitted as per provision of the contract. All titles, noting, markings and writings on the drawing shall be in English. All the dimensions should be in SI units.
- 5.2.3 The review of these data by the Employer will cover only general conformance of the data to the specifications and documents, interfaces with the equipment provided under the specifications, external connections and of the dimensions which might affect substation layout. This review by the Employer may not indicate a thorough review of all dimensions, quantities and details of the equipment, materials, any devices or items indicated or the accuracy of the information submitted. This review and/or approval by the Employer shall not be considered by the Bidder, as limiting any of his responsibilities and liabilities for mistakes and deviations from the requirements, specified under these specifications and documents.
- 5.3 All manufacturing and fabrication work in connection with the equipment prior to the approval of the drawings shall be at the Bidder's risk. The Bidder may make any changes in the design which are necessary to make the equipment conform to the provisions and intent of the Contract and such changes will again be subject to approval by the Employer. Approval of Bidder's drawing or work by the Employer shall not relieve the bidder of any of his responsibilities and liabilities under the Contract.
- 5.4 All engineering data submitted by the Bidder after final process including review and approval by the Employer shall form part of the Contract Document and the entire works performed under these specifications shall be performed in strict conformity, unless otherwise expressly requested by the Employer in Writing.

5.5 Approval Procedure

The following schedule shall be followed generally for approval and for providing final documentation.

i) Approval/comments/

by Employer on initial submission

As per schedule



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- | | |
|--|--|
| ii) Resubmission

(whenever

required) | As per contract |
| iii) Approval or comments | As per contract |
| iv) Furnishing of distribution
copies (2 hard copies to each
substation and one scanned
copy (pdf format) | 2 weeks from the date
of approval |
| v) Furnishing of distribution
copies of test reports
(a) Type test reports

(one scanned softcopy in
pdf format to each substation
plus one for corporate centre
& one hardcopy per substation) | 2 weeks from the date
of final approval |
| (b) Routine Test Reports

(one copy for each
substation) | -do- |
| vi) Furnishing of instruction/
operation manuals (2 copies
per substation and one softcopy
(pdf format) for corporate centre
& per substation) | On completion of Engineering |
| (vii) As built drawings (two sets of
hardcopy per substation & one
softcopy (pdf format) for corporate centre & per substation) | On completion of entire works |

NOTE :

(1) The bidder may please note that all resubmissions must incorporate all comments given in the earlier submission by the Employer or adequate justification for not incorporating the same must be submitted failing which the submission of documents



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is likely to be returned.

(2) All drawings should be submitted in softcopy form, however substation design drawings like SLD, GA, all layouts etc. shall also be submitted in AutoCAD Version. SLD, GA & layout drawings shall be submitted for the entire substation in case of substation extension also.

(3) The instruction Manuals shall contain full details of drawings of all equipment being supplied under this contract, their exploded diagrams with complete instructions for storage, handling, erection, commissioning, testing, operation, trouble shooting, servicing and overhauling procedures.

(4) If after the commissioning and initial operation of the substation, the instruction manuals require any modifications/additions/changes, the same shall be incorporated and the updated final instruction manuals shall be submitted by the Bidder to the Employer.

(5) The Bidder shall furnish to the Employer catalogues of spare parts.

(6) All As-built drawings/documents shall be certified by site indicating the changes before final submission.

6.0 MATERIAL/ WORKMANSHIP

6.1 General Requirement

6.1.1 Where the specification does not contain references to workmanship, equipment, materials and components of the covered equipment, it is essential that the same must be new, of highest grade of the best quality of their kind, conforming to best engineering practice and suitable for the purpose for which they are intended.

6.1.2 In case where the equipment, materials or components are indicated in the specification as "similar" to any special standard, the Employer shall decide upon the question of similarity. When required by the specification or when required by the Employer the Bidder shall submit, for approval, all the information concerning the materials or components to be used in manufacture. Machinery, equipment, materials and components supplied, installed or used without such approval shall run the risk of subsequent rejection, it is to be understood that the cost as well as the time delay associated with the rejection shall be borne by the Bidder.

6.1.3 The design of the Works shall be such that installation, future expansions, replacements and general maintenance may be undertaken with a minimum of time and expenses.



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Each component shall be designed to be consistent with its duty and suitable factors of safety, subject to mutual agreements. All joints and fastenings shall be devised, constructed and documented so that the component parts shall be accurately positioned and restrained to fulfil their required function. In general, screw threads shall be standard metric threads. The use of other thread forms will only be permitted when prior approval has been obtained from the Employer.

- 6.1.4 Whenever possible, all similar part of the Works shall be made to gauge and shall also be made interchangeable with similar parts. All spare parts shall also be interchangeable and shall be made of the same materials and workmanship as the corresponding parts of the Equipment supplied under the Specification. Where feasible, common component units shall be employed in different pieces of equipment in order to minimize spare parts stocking requirements. All equipment of the same type and rating shall be physically and electrically interchangeable.
- 6.1.5 Deleted.
- 6.1.6 The Bidder shall apply oil and grease of the proper specification to suit the machinery, as is necessary for the installation of the equipment. Lubricants used for installation purposes shall be drained out and the system flushed through where necessary for applying the lubricant required for operation. The Bidder shall apply all operational lubricants to the equipment installed by him.
- 6.1.7 All oil, grease and other consumables used in the Works/Equipment shall be purchased in India unless the Bidder has any special requirement for the specific application of a type of oil or grease not available in India. If such is the case, he shall declare in the proposal, where such oil or grease is available. He shall help Employer in establishing equivalent Indian make and Indian Bidder. The same shall be applicable to other consumables too.

7.0 DESIGN IMPROVEMENTS / COORDINATION

- 7.1 Deleted.
- 7.2 Deleted.
- 7.3 The Bidder shall be responsible for the selection and design of appropriate equipment to provide the best co-ordinated performance of the entire system. The basic design requirements are detailed out in this Specification. The design of various components, sub-assemblies and assemblies shall be so done that it facilitates easy field assembly and maintenance.



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- 7.4 The Bidder has to coordinate designs and terminations with the agencies (if any) who are Consultants/Bidder for the Employer. The names of agencies shall be intimated to the successful bidders.
- 7.5 The Bidder will be called upon to attend design co-ordination meetings with the Engineer, other Bidder's and the Consultants of the Employer (if any) during the period of Contract. The Bidder shall attend such meetings at his own cost at POWERGRID Corporate Centre, Gurgaon (Haryana) or at mutually agreed venue as and when required and fully cooperate with such persons and agencies involved during those discussions.

8.0 QUALITY ASSURANCE PROGRAMME

- 8.1 To ensure that the equipment and services under the scope of this Contract, whether manufactured or performed within the Bidder's Works or at his Sub-Bidder's premises or at the Employer's site or at any other place of Work as applicable, are in accordance with the specifications, the Bidder shall ensure suitable quality assurance programme to control such activities at all points necessary. A quality assurance programme of the Bidder shall be in line with ISO requirements & shall generally cover the following:
- a) The organisation structure for the management and implementation of the proposed quality assurance programme.
 - b) System for Document and Data Control.
 - c) Qualification and Experience data of Bidder's key personnel.
 - d) The procedure for purchases of materials, parts, components and selection of sub-Bidder's services including vendor analysis, source inspection, incoming raw material inspection, verification of material purchases etc.
 - e) System for shop manufacturing and site erection controls including process controls, fabrication and assembly control.
 - f) System for Control of non-conforming products including deviation dispositioning, if any and system for corrective and preventive actions based on the feedback received from the Customers and also internally documented system for Customer complaints.
 - g) Inspection and test procedure both for manufacture and field activities.
 - h) System for Control of calibration of testing and measuring equipment and the indication of calibration status on the instruments.



- i) System for indication and appraisal of inspection status.
- j) System of Internal Quality Audits, Management review and initiation of corrective and Preventive actions based on the above.
- k) System for authorising release of manufactured product to the Employer.
- l) System for maintenance of records.
- m) System for handling, storage and delivery.
- n) A quality plan detailing out the specific quality control measures and procedure adopted for controlling the quality characteristics relevant to each item of equipment furnished and /or service rendered.
- o) System for various field activities i.e. unloading, receipt at site, proper storage, erection, testing and commissioning of various equipment and maintenance of records. In this regard, the Employer has already prepared Standard Field Quality Plan for transmission line/substation equipments as applicable, Civil/erection Works which is required to be followed for associated works.

The Employer or his duly authorised representative reserves the right to carry out quality audit and quality surveillance of the system and procedure of the Bidder/his vendor's quality management and control activities.

8.2 Quality Assurance Documents

The Bidder shall ensure availability of the following Quality Assurance Documents:

- i) All Non-Destructive Examination procedures, stress relief and weld repair procedure actually used during fabrication, and reports including radiography interpretation reports.
- ii) Welder and welding operator qualification certificates.
- iii) Welder's identification list, welding operator's qualification procedure and welding identification symbols.
- iv) Raw Material test reports on components as specified by the specification and in the quality plan.
- v) The Manufacturing Quality Plan (MQP) indicating Customer Inspection Points (CIPs)



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at various stages of manufacturing and methods used to verify that the inspection and testing points in the quality plan were performed satisfactorily.

vi) Factory test results for testing required as per applicable quality plan/technical specifications/GTP/Drawings etc.

vii) Stress relief time temperature charts/oil impregnation time temperature charts, wherever applicable.

8.3 INSPECTION, TESTING & INSPECTION CERTIFICATE

- 8.3.1 Bidder shall procure bought out items from sub-vendors as per the list in "Compendium of Vendors" available on POWERGRID web-site www.powergridindia.com after ensuring compliance to the requirements/conditions mentioned therein. Bidder shall explore first the possibilities of procuring the bought out items from POWERGRID approved existing vendors. In case of their unavailability / non-response, Bidder may approach POWERGRID for additional sub-vendor approval. In that case, the assessment report of proposed sub vendor by Bidder along with the enclosures as per Annexure-F shall be submitted within 60 days of the award. The proposal shall be reviewed and approval will be accorded based on the verification of the document submitted and/or after the physical assessment of the works as the case may be. The physical assessment conducted by POWERGRID, if required, shall be on chargeable basis. Charges shall be as per the POWERGRID norms prevailing at that time, which shall be intimated by POWERGRID separately. If proposal for sub-vendor is submitted after 60 days, the Bidder's proposal normally will not be considered for current LOA. However, POWERGRID may process the case for developing more vendors for referred items, if found relevant. In all cases, It is the responsibility of the Bidder that Project activities do not suffer on account of delay in approval/non approval of a new sub-vendor.

The responsibility and the basis of inspection for various items & equipment is placed at Annexure-G along with the requirement of MQP (Manufacturing Quality Plan), ITP (Inspection & Test Plan), FAT (Factory Acceptance Test) which should be valid & POWERGRID approved and Level of inspection envisaged against each item.

Bidder shall ensure that order for items where MQP/ITP/FAT is required will be placed only on vendors having valid MQP/ITP/FAT and where the supplier's MQP/ITP/FAT is either not valid or has not been approved by POWERGRID, MQP shall be generally submitted as per POWERGRID format before placing order.

Items not covered under MQP/ITP/FAT shall be offered for inspection as per POWERGRID LOA/technical Specifications/POWERGRID approved data sheets/POWERGRID approved drawings and relevant Indian/International standards.



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Inspection Levels: For implementation of projects in a time bound manner and to avoid any delay in deputation of POWERGRID or its authorized representative, involvement of POWERGRID for inspection of various items / equipment will be based on the level below:

Level – I: Bidder to raise all inspection calls and review the report of tests carried out by the manufacturer, on his own, as per applicable standards/ POWERGRID specification, and submit to concerned POWERGRID inspection office/Inspection Engineer. CIP/MICC will be issued by POWERGRID based on review of test reports/certificates of manufacturers.

Level – II: Bidder to raise all inspection calls and carry out the inspection on behalf of POWERGRID on the proposed date of inspection as per applicable standards/specification. However, in case POWERGRID wishes to associate itself during inspection, the same would be intimated to Bidder and CIP/MICC will be issued by POWERGRID. Else, Bidder would submit their test reports/certificates to POWERGRID. CIP/MICC will be issued by POWERGRID based on review of test reports/certificates.

Level - III: Bidder to raise inspection calls for both, stage (as applicable) & final inspection and carry out the stage inspections (if applicable) on behalf of POWERGRID on the proposed date of inspection as per applicable standards/specification. However, in case POWERGRID wishes to associate itself during stage inspection, the same would be intimated to Bidder and CIP will be issued by POWERGRID. Else, Bidder would submit the test reports / certificates of stage inspection after their own review and CIP will be issued by POWERGRID based on review of test reports / certificates. Final inspection will be carried out by POWERGRID and CIP/MICC will be issued by POWERGRID.

Level – IV: Bidder to raise inspection calls for both, stage (as applicable) & final inspections. POWERGRID will carry out the inspection for both stage & final inspection as per applicable standards/specification and CIP/MICC will be issued by POWERGRID.

8.3.2 Bidder shall ensure that to implement the above inspection levels, particularly for the quality control and inspection at sub-vendor's works, they would depute sufficient qualified & experienced manpower in their Quality Control and Inspection department. Further, to assure quality of construction, Bidder shall have a separate workforce having appropriate qualification & experience and deploy suitable tools and plant for maintaining quality requirement during construction in line with applicable Field Quality Plan (FQP).

8.3.3 The Employer, his duly authorised representative and/or outside inspection agency acting on behalf of the Employer shall have at all reasonable times access to the



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Bidder's premises or Works and shall have the power at all reasonable times to ensure that proper Quality Management practices / norms are adhered to, inspect and examine the materials & workmanship of the Works, to carry out Quality/Surveillance Audit during manufacture or erection and if part of the Works is being manufactured or assembled at other premises or works. The Bidder shall obtain for the Employer and for his duly authorised representative permission to inspect as if the works were manufactured or assembled on the Bidder's own premises or works. The item/equipment, if found unsatisfactory with respect to workmanship or material is liable to be rejected. The observations for improvements during product/ process inspection by POWERGRID shall be recorded in Quality Improvement Register (available & maintained at works) for review & timely compliance of observations.

- 8.3.4 Bidder shall submit inspection calls over internet through POWERGRID website. The required vendor code and password to enable raising inspection call will be furnished to the main Bidder within 30 days of award of contract on submission of documents by Bidder. After raising the inspection calls, Bidder shall then proceed as per the message of that particular call which is available on the message board.
- 8.3.5 The Employer reserves the right to witness any or all type, acceptance and routine tests specified for which the Bidder shall give the Employer/Inspector Twenty one (21) days written notice of any material being ready for testing for each stage of testing as identified in the approved quality plan as customer inspection point(CIP) for indigenous inspections. All inspection calls for overseas material shall be given at least forty five (45) days in advance. Such tests shall be to the Bidder's account except for the expenses of the Inspection Engineer. The Employer/inspector, unless witnessing of the tests is waived by Employer, will attend such tests within Twenty one (21) days of the date of which the equipment is notified as being ready for test/inspection, failing which the Bidder may proceed with the test which shall be deemed to have been made in the Inspector's presence and he shall forthwith forward to the Inspector three copies of tests, duly certified. Bidder shall ensure, before giving notice for type test, that all drawings and quality plans have been got approved. The equipment shall be dispatched to site only after approval of Routine and Acceptance test results and Issuance of Dispatch Clearance in writing by the Employer. CIP/Material Inspection clearance certificate (MICC) shall be issued by the Employer after inspection of the equipment or review of test reports as applicable. Employer may waive off the presence of Employer's inspecting engineer. In that case test will be carried out as per approved QP and test certificate will be furnished by the supplier for approval. CIP/MICC will be issued only after review and approval of the test reports.
- 8.3.6 Bidder shall generally offer material for inspection as per supply bar chart approved by POWERGRID and not before 30 days from schedule indicated in the bar chart. In case Bidder offers material(s) for inspection prior to 30 days from the scheduled date with



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necessary approval of POWERGRID, POWERGRID shall inspect the material and issue CIP only. However, in such an exceptional case, MICC shall be issued only as per provision of original / revised approved supply schedule.

- 8.3.7 Bidder shall minimize the number of inspection calls by offering optimum quantities in each inspection call at the respective manufacturer's works.
- 8.3.8 Bidder shall inspect the material themselves and only after they are fully convinced about the Quality, they shall offer the material for POWERGRID inspection and shall also ensure that relevant portion of LOA/NOA, approved drawing and data sheets along with applicable Quality Plans are available at the works of Bidder or their Sub-vendor before the material is offered for inspection.
- 8.3.9 Bidder shall ensure that material which has been cleared for dispatch after inspection will be dispatched within 30 days in case of domestic supplies and within 60 days in case of Off-shore supplies from the date of issuance of CIP. Material which is not dispatched within stipulated time as above will be reoffered for POWERGRID inspection or specific approval of POWERGRID QA&I shall be obtained for delayed dispatch.
- 8.3.10 The Employer or IE shall give notice in writing to the Bidder, of any objection either to conformance to any drawings or to any equipment and workmanship which in his opinion is not in accordance with the Contract. The Bidder shall give due consideration to such objections and shall either make the modifications that may be necessary to meet the said objections or shall confirm in writing to the Employer/Inspection Engineer giving reasons therein, that no modifications are necessary to comply with the Contract.
- 8.3.11 All Test Reports and documents to be submitted in English during final inspection of equipment by POWERGRID or as and when required for submission.
- 8.3.12 When the factory tests have been completed at the Bidder's or Sub-Bidder's works, the Employer/Inspection Engineer (IE) shall issue a certificate to this effect within fifteen (15) days after completion of tests & submission of documents by Bidder/manufacturer but if the tests are not witnessed by the Employer/IE, the certificate shall be issued within fifteen (15) days of receipt of the Bidder's Test certificate by the Employer/IE. Bidder shall, on completion of all tests, submit test reports within Ten (10) days to POWERGRID IE. Failure of the Employer/IE to issue such a certificate shall not prevent the Bidder from proceeding with the Works. The completion of these tests or the issue of the certificate shall not bind the Employer to accept the equipment should, it, on further tests after erection, be found not to comply with the Contract.



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- 8.3.13 In all cases, where the Contract provides for tests whether at the premises or works of the Bidder or of any Sub- Bidder, the Bidder, except where otherwise specified, shall provide free of charge such items as labour, materials, electricity, fuel, water, stores, apparatus and instruments as may be reasonably demanded by the Employer/Inspector or his authorised representative to carry out effectively such tests of the equipment in accordance with the Contract and shall give facilities to the Employer/Inspection Engineer or to his authorised representative to accomplish testing.
- 8.3.14 The inspection and acceptance by Employer and issue of Inspection Certificate thereon shall in no way limit the liabilities and responsibilities of the Bidder in respect of the agreed quality assurance programme forming a part of the Contract, or if such equipment is found to be defective at a later stage.
- 8.3.15 The Employer will have the right of having at his own expenses any other test(s) of reasonable nature carried out at Bidder's premises or at site or in any other place in addition of aforesaid type and routine tests, to satisfy that the material comply with the specification.
- 8.3.16 The Employer reserves the right for getting any additional field tests conducted on the completely assembled equipment at site to satisfy that material complies with specifications.
- 8.3.17 Rework/ Re-engineering, if any, on any item/equipment shall be carried out only after mutual discussions and in accordance with mutually agreed procedure. Bidder shall submit Joint Inspection Report of equipments under Re-Work/Re-Engineering alongwith procedure for the same to POWERGRID for approval, before taking up the Re-Work/Re-Engineering, failing which POWERGRID reserves the right to reject the equipment.
- 8.3.19 Bidder shall ensure that all possible steps are taken to avoid damages to the equipment during transport, storage and erection.
- 8.3.23 The Employer reserves the right to increase or decrease their involvement in inspections at Bidder's Works or at his Sub-Bidder's premises or at the Employer's site or at any other place of Work based on performance of Bidder/sub-Bidder.

9.0 TYPE TESTING & CLEARANCE CERTIFICATE

- 9.1 All equipment being supplied shall conform to type tests as per technical specification and shall be subject to routine tests in accordance with requirements stipulated under



respective sections.

- 9.2 The reports for all type tests as per technical specification shall be furnished by the Bidder alongwith equipment / material drawings. However, type test reports of similar equipments/ material already accepted in POWERGRID shall be applicable for all projects with similar requirement. The type tests conducted earlier should have either been conducted in accredited laboratory (accredited based on ISO / IEC Guide 25 / 17025 or EN 45001 by the national accreditation body of the country where laboratory is located) or witnessed by POWERGRID or representative authorized by POWERGRID or Utility or representative of accredited test lab.

Unless otherwise specified elsewhere, the type test reports submitted shall be of the tests conducted on or after 05-Nov-2009. In case the test reports are of the test conducted earlier than 05-Nov-2009, the bidder shall repeat these test(s) at no extra cost to the BHEL/Employer.

Further, in the event of any discrepancy in the test reports i.e. any test report not acceptable due to any design/manufacturing changes or due to non-compliance with the requirement stipulated in the Technical Specification or any/all type tests not carried out, same shall be carried out without any additional cost implication to the BHEL/Employer.

The Bidder shall intimate the Employer the detailed program about the type tests atleast two (2) weeks in advance in case of domestic supplies & six (6) weeks in advance in case of foreign supplies.

- 9.3 The Employer intends to repeat those type tests which are indicated in the price schedule and the same shall be payable as per provision of contract. The price of conducting type tests shall be included in Bid price and break up of these shall be given in the relevant schedule of Bid Proposal Sheets. These Type test charges would be considered in bid evaluation. In case Bidder does not indicate charges for any of the type tests or does not mention the name of any test in the price schedules, it will be presumed that the particular test has been offered free of charge. Further, in case any Bidder indicates that he shall not carry out a particular test, his offer shall be considered incomplete and shall be liable to be rejected. The Employer reserves the right to waive the repeating of type tests partly or fully and in case of waiver, test charges for the same shall not be payable.
- 9.4 The Employer reserves the right to witness any or all the type tests. The Employer shall bear all expenses for deputation of Employer's representative(s) for witnessing the type tests.



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- 9.5 The list of makes of various items, for which Type test reports are not required to be submitted are specified in Compendium of Vendors (COV).

11.0 PACKAGING & PROTECTION

- 11.1 All the equipments shall be suitably protected, coated, covered or boxed and crated to prevent damage or deterioration during transit, handling and storage at Site till the time of erection. On request of the Employer, the Bidder shall also submit packing details/associated drawing for any equipment/material under his scope of supply, to facilitate the Employer to repack any equipment/material at a later date, in case the need arises. While packing all the materials, the limitation from the point of view of availability of Railway wagon sizes in India should be taken into account. The Bidder shall be responsible for any loss or damage during transportation, handling and storage due to improper packing. Any demurrage, wharfage and other such charges claimed by the transporters, railways etc. shall be to the account of the Bidder. Employer takes no responsibility of the availability of the wagons.
- 11.2 All coated surfaces shall be protected against abrasion, impact, discolouration and any other damages. All exposed threaded portions shall be suitably protected with either a metallic or a non-metallic protecting device. All ends of all valves and pipings and conduit equipment connections shall be properly sealed with suitable devices to protect them from damage.

12.0 FINISHING OF METAL SURFACES

- 12.1 All metal surfaces shall be subjected to treatment for anti-corrosion protection. All ferrous surfaces for external use unless otherwise stated elsewhere in the specification or specifically agreed, shall be hot-dip galvanized after fabrication. All steel conductors including those used for earthing/grounding (above ground level) shall also be galvanized according to IS: 2629.

12.2 HOT DIP GALVANISING

- 12.2.1 The minimum weight of the zinc coating shall be 610 gm/sq.m and minimum average thickness of coating shall be 86 microns for all items having thickness 6mm and above. For items lower than 6mm thickness requirement of coating thickness shall be as per relevant ASTM. For surface which shall be embedded in concrete, the zinc coating shall be 610 gm/sq.m minimum.
- 12.2.2 The galvanized surfaces shall consist of a continuous and uniform thick coating of zinc, firmly adhering to the surface of steel. The finished surface shall be clean and smooth and shall be free from defects like discoloured patches, bare spots, unevenness of



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coating, spelter which is loosely attached to the steel globules, spiky deposits, blistered surface, flaking or peeling off, etc. The presence of any of these defects noticed on visual or microscopic inspection shall render the material liable to rejection.

12.2.3 After galvanizing, no drilling or welding shall be performed on the galvanized parts of the equipment excepting that nuts may be threaded after galvanizing. Sodium dichromate or alternate approved treatment shall be provided to avoid formation of white rust after hot dip galvanization.

12.2.4 The galvanized steel shall be subjected to four numbers of one minute dips in copper sulphate solution as per IS-2633.

12.2.5 Sharp edges with radii less than 2.5 mm shall be able to withstand four immersions of the Standard Preece test. All other coatings shall withstand six immersions. The following galvanizing tests should essentially be performed as per relevant Indian Standards.

- Coating thickness
- Uniformity of zinc
- Adhesion test
- Mass of zinc coating

12.2.6 Galvanised material must be transported properly to ensure that galvanised surfaces are not damaged during transit. Application of touch-up zinc rich paint at site shall be allowed with approval of Engineer Incharge.

17.0 CLAMPS AND CONNECTORS INCLUDING TERMINAL CONNECTORS

17.1 All power clamps and connectors shall conform to IS: 5561 or other equivalent international standard and shall be made of materials listed below:

S.No.	Description	Materials
a)	For connecting ACSR conductors/AAC conductors/ Aluminium tube	Aluminum alloy casting, conforming to designation A6 of IS:617 and all test shall conform to IS:617
b)	For connecting equipment terminals mad of copper with ACSR conductors/AAC conductors/ Aluminium tube	Bimetallic connectors made from aluminum alloy casting, conforming to designation A6 of IS:617 with 2mm thick bimetallic liner/strip and all test shall conform to IS:617
c)	For connecting G.I	Galvanised mild steel shield wire
d)	Bolts, nuts & plain washers	Electro-galvanised for sizes below



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		M12, for others hot dip galvanised.
e)	Spring washers	Electro-galvanised mild steel suitable for atleast service condition-3 as per IS:1573

- 17.2 Necessary clamps and connectors shall be supplied for all equipment and connections. If corona rings are required to meet these requirements they shall be considered as part of that equipment and included in the scope of work.
- 17.3 Where copper to aluminum connections are required, bi-metallic clamps shall be used, which shall be properly designed to ensure that any deterioration of the connection is kept to a minimum and restricted to parts which are not current carrying or subjected to stress.
- 17.4 Low voltage connectors, grounding connectors and accessories for grounding all equipment as specified in each particular case, are also included in the scope of Work.
- 17.5 No current carrying part of any clamp shall be less than 10 mm thick. All ferrous parts shall be hot dip galvanised. Copper alloy liner/strip of minimum 2 mm thickness shall be cast integral with aluminum body or 2 mm thick bi-metallic liner/strips shall be provided for Bi-metallic clamps.
- 17.6 All casting shall be free from blow holes, surface blisters, cracks and cavities. All sharp edges and corners shall be blurred and rounded off.
- 17.7 Flexible connectors, braids or laminated straps made for the terminal clamps for bus posts shall be suitable for both expansion or through (fixed/sliding) type connection of IPS AL tube as required. In both the cases the clamp height (top of the mounting pad to centre line of the tube) should be same.
- 17.8 Current carrying parts (500A and above) of the clamp/connector shall be provided with minimum four numbers of bolts preferably for 132kV & above.
- 17.9 All current carrying parts shall be designed and manufactured to have minimum contact resistance.
- 17.10 Power Clamps and connectors shall be designed to control corona as per requirement.



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17.11 Tests

Clamps and connectors should be type tested as per IS: 5561 and shall also be subjected to routine tests as per IS: 5561. Following type test reports shall be submitted for approval. Type test once conducted shall hold good. The requirement of test conducted within last ten years, shall not be applicable.

- i) Temperature rise test (maximum temperature rise allowed is 35°C over 50°C ambient)
- ii) Short time current test
- iii) Corona (dry) [for 400kV and above] and RIV (dry) test [for 132kV and above voltage level clamps]
- iv) Resistance test and tensile test

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Substation Package - SS02 for (i) 765kV Fatehgarh-2 (PG) S/S Extension and (ii) 765kV Bhadla-2 (PG) S/s Extension under Transmission System Associated With LTA applications from Rajasthan SEZ Part-B (Rajasthan SEZ Part-B Project) through Tariff Based Competitive Bidding (TBCB) Route.
Clamps and Connectors
Doc. No.: TB-409-316-014 Rev 00

SECTION-4

GUARANTEED TECHNICAL PARTICULARS

To be submitted during contract execution stage as per TS requirement.



Substation Package - SS02 for (i) 765kV Fatehgarh-2 (PG) S/S Extension and (ii) 765kV Bhadla-2 (PG) S/s Extension under Transmission System Associated With LTA applications from Rajasthan SEZ Part-B (Rajasthan SEZ Part-B Project) through Tariff Based Competitive Bidding (TBCB) Route.
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SECTION-5

CHECKLIST

CHECK LIST FOR INFORMATION TO BE FURNISHED WITH OFFER RETURN THIS CHECKLIST AS PART OF THE OFFER DULY SIGNED

The offer may not be considered if the following information and this Checklist are not enclosed with the Offer.

BHEL ENQUIRY. NO:

BIDDER OFFER REFERENCE:

1A. TECHNICAL REQUIREMENTS (FOR CLAMPS & CONNECTORS)

(1) S.No.	(2)/(3) Parameter/ Requirement	(4) Yes / No	(5) Remarks in case reply in Col (4) is NO
1.	Material of Clamps/Fittings		
a)	For connecting ACSR conductors/AAC conductors/ Aluminium tube - Aluminum alloy casting, conforming to designation A6 of IS:617 and all test shall conform to IS:617	YES/NO	
b)	For connecting equipment terminals made of copper with ACSR conductors/AAC conductors/ Aluminium tube - Bimetallic connectors made from aluminum alloy casting, conforming to designation A6 of IS:617 with 2mm thick bimetallic liner/strip and all test shall conform to IS:617.	YES/NO	
c)	For connecting G.I - Galvanised mild steel shield wire	YES/NO	
d)	Bolts, nuts and plain washers (Electro galvanised for sizes below M12, for others hot dip galvanised.)	YES/NO	
e)	Spring washers (Spring steel -E.G)	YES/NO	
2.	Continuous current rating of the clamps/fittings (Is it compatible with the conductor rating/ equipment rating as per BOQ)	YES/NO	



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3.	Maximum temperature rise (35°C) of the clamps/fittings over ambient temperature (50°C) when carrying estimated fault current of 40 kA for 1 sec for 765kV and 31.5kA for 1 sec. for 132kV	YES/NO	
4.	Minimum thickness of any part is 10 mm	YES/NO	
5.	Min Corona extinction voltage (kV)		
a)	508 kVrms for 765 kV Voltage Class	YES/NO	
b)	105 kVrms for 132 kV Voltage Class	YES/NO	
6.	All hardware required for connecting to the respective equipment terminals included in supplier scope	YES/NO	

1B. TECHNICAL REQUIREMENTS (FOR SPACERS)

(1)	(2)/(3)	(4)	(5)
S.No.	Parameter/ Requirement	Yes / No	Remarks in case reply in Col (4) is NO
1.	Spacing between sub-conductors 450mm for Bull AAC and 457mm for Hexa Zebra	YES/NO	
2.	Min Corona extinction voltage (kV)		
a)	508 kVrms for 765 kV Voltage Class	YES/NO	
b)	105 kVrms for 132 kV Voltage Class	YES/NO	

2. TYPE TESTS

Whether Type test reports of the tests conducted earlier (on or after 05-Nov-2009) on similar material submitted. YES/NO

If type test report submitted, indicate report number.

If the valid type test reports are not available with the bidder then type test shall be conducted by the bidder free of cost YES/NO

