

निविदा / Enquiry



भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited
पारेषण व्यापार समूह / Transmission Business Group
सामग्री प्रबंधन / Materials Management

Project : PGCIL BANASKANTHA AND SANKHARI

Enquiry No	Enquiry Dt	Rev No	Rev Dt	PI No	Enquiry Type	Inspection by	Due Dt	Commercial Comments	Technical Comments	Signing Authority
365E353	15-Mar-16	0		342250365	Package		08-Apr-16	as per tender documents	as per tender documents & further clarification	

Document Enclosed

- Technical Specifications
- Terms & Conditions for Indigenous Enquiry
- Activity Schedule
- Schedule of Information (checklist) to be furnished
- Schedule of Commercial Deviation
- Schedule of Technical Deviation

SN	Equipment	Phy Unit	Qty	Unit Exworks	% ED	% CST	% VAT	Unit F&I	Plan Dt	Comments
1	7/9 SWG OVERALL DIA. 10.98MM GS EARTH WIRE	KM	7.77							AS PER TECHNICAL SPECIFICATION TB-384-316-126.QUNATITY 7.50KM FOR BANASKANTHA SITE AND .270KM FOR SHANKARI SITE.

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.

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 SO AS TO REACH US POSITIVELY BY 2 PM ON THE TENDER OPENING DATE AND TENDER WILL BE OPENED AT 2:30 PM WITH EFFECT FROM 15-SEP-09.

BHEL RESERVES THE RIGHT TO OPT FOR REVERSE AUCTION FOR OBTAINING BEST PRICES.

OFFERS THROUGH E-MAIL / FAX:

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 .

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.

It is suggested that the bidders are advised to send the files with 'password protection'. procedure for giving a password to a file has been given below:

For saving Excel file with password

Steps to be followed:

1. Click on the FILE option in XP system and Start sign in Vista system then go to SAVE AS option.
2. Select the location to save and Click on the TOOLS box and go to GENERAL OPTION.
3. It will ask for the password, type the password into open or modify box or both as required.
4. Then click on the OK button it will ask for reenter of the password.
5. After reentering the password click on the save box.

For saving Word file with password

Steps to be followed:

1. Click on the FILE option in XP and Start sign in Vista then go to SAVE AS option.
2. Select the location to save and Click on the TOOLS box and go to SECURITY OPTION in XP system and GENERAL OPTION in Vista system.
3. It will ask for the password, type the password into open or modify box or both as required.
4. Then click on the OK button it will ask for reenter of the password.
5. After reentering the password click on the save box.

The vendors who has sent offers with password, the passwords are to be forwarded to another email id: supplierinfo@bhelindustry.com

MSME STATUS

"THOSE INDUSTRIES WHO HAVE FILED A MEMORANDUM WITH THE CONCERNED AUTHORITIES AND REGISTERED AS MICRO & SMALL ENTERPRISE UNDER MICRO, SMALL AND MEDIUM ENTERPRISES DEVELOPMENT ACT 2006, HAVE TO SUBMIT A COPY OF SUCH REGISTRATION CERTIFICATE / MEMORANDUM TO BHEL FOR NECESSARY COMPLIANCES OF THE ABOVE ACT".

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

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

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
Dibyendu Ghosh
Sr Manager
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: 0120-6748458
Fax: 0120-6748581

हस्ताक्षर और निविदाकार की सील / Signature and Seal of Tenderer

Enquiry No : 365E353 **Enquiry Dt** : 15-Mar-16

(TRANSMISSION BUSINESS GROUP)
BHARAT HEAVY ELECTRICALS LTD.
TERMS AND CONDITIONS FOR INDIGENOUS TENDER ENQUIRY

This Format is to be submitted in original duly signed by bidder. Deviation, if any, is to be brought out clearly in Schedule of Commercial deviation giving clause wise deviation. Any condition / clarification / deviation mentioned elsewhere may not be accepted.

Sr. No	Terms & Conditions (GTC)
1.	<p>1. Sealed quotations are invited for the items mentioned in the enquiry. Quotations should be typed and free from over writing and erasures, corrections or additions must be clearly written both in words and figures and attested, otherwise offer may be rejected.</p> <p>2. Bidder must ensure that their quotation is received / dropped in the tender box on or before 10.00 AM of the due date of opening in Material Management Division, 5th Floor, Plot No 7 , Tower A , Advant Navis IT Business Building , Sector 142 ,Noida-Greater Noida Expressway, Noida-201305(U.P.)</p> <p>3. The same shall be opened at 10.30 AM on the same day. Tenders received late may be rejected. Bidders sending tenders by courier or post, to ensure that it is delivered one day before as same day delivery may not reach above office by due time.</p> <p>4. Bids are to be submitted in Two parts: i) Techno-commercial bid (Part I) – To be submitted in duplicate. A copy of price bid (Part II) (without prices) is also to be enclosed in Part I bid. ii) Price bid (Part II) – To be submitted only in one copy in a separate sealed envelope. This should not contain any Technical or Commercial Terms. The rates should be quoted both in figures and words. In case of any difference between figures and words, the quoted rate in words will prevail over figure.</p> <p>Both Part I and Part II bids are to be sealed in separate envelope and both envelopes to be kept in another common envelope. Each envelope should be sealed and super scribed with enquiry no., item / package name, project name and due date of opening.</p> <p>5. For any Technical clarification, please contact Mr. Ved Prakash Meena, Sr. Engineer (TBEM) 5th Floor, Plot No 7 , Tower A , Advant Navis IT Business Building , Sector 142 ,Noida-Greater Noida Expressway, Noida-201305 , Phone No: 0120-6748462 e-mail : ved@bhel.in</p> <p>For any commercial clarification please contact person issuing enquiry.</p>

	<p>6. Price bid should not contain any information / description / terms & condition other than given in Part-I of the bid except prices, otherwise bid is liable for rejection.</p> <p>7. Price bid submitted along with the bid shall remain valid up to validity of offer. Unsolicited Supplementary / Revised price bid submitted 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 blacklisting of vendor.</p> <p>8. Enquiry condition for where the scope against this tender includes Installation and Commissioning of the equipment / material There will be separate contract awarded for Supply portion and Site execution portion. For Supply portion General Terms and Conditions mentioned here shall be applicable for Site execution portion, Terms and conditions for Installation services shall be applicable. However, any breach in either of the contract shall be deemed as the breach of other contract also.</p>
<p>2.</p>	<p>PRICES:</p> <p><RELEVANT OPTION TO BE SELECTED BEFORE ISSUE OF ENQUIRY></p> <p>A.1. Unless specifically indicated, all prices shall be FIRM. No enhancement of rate for whatever cause unless and until asked by BHEL will be allowed.</p> <p>A.2. PVC (if indicated) The prices to be quoted are with PVC with following formula.</p> <p><i><Formula></i></p> <p>The base indices in the formula shall be of first notification of ----- of the ----- month. The date of delivery shall be PO delivery date or date of actual despatch, whichever is earlier.</p> <p>B The prices shall be quoted by the vendors considering following.</p> <p>B.1. Unless specifically indicated, the prices shall be on Domestic basis.</p> <p>B.2. Deemed export (if indicated)</p> <p>i) Prices are to be quoted considering following benefits:</p> <ol style="list-style-type: none"> 1. ----- 2. ----- 3. ----- <p>ii) For availing above benefits, BHEL shall provide following documents.</p> <ol style="list-style-type: none"> 1. ----- 2. ----- <p>iii) In case of import benefit in deemed export projects, bidder to indicate import content (CIF value) in the price bid.</p>
	<p>B.3. Physical export (if indicated)</p> <p>i) Prices are to be quoted considering following benefits</p> <ol style="list-style-type: none"> 1. ----- 2. -----
	<p>ii) For availing above benefits BHEL shall provide following documents</p> <ol style="list-style-type: none"> 1.

	<p>2.</p> <p>C. The prices are to be quoted on FOR (Destination) basis. The break-up of price shall be as under:-</p> <p>a) Ex-works Price: Ex- works price including packing & forwarding charges.</p> <p>b) Excise duty: ED as applicable is to be quoted as percentage in both un-price and price bid.</p> <p>c) Sales Tax: ST / VAT /CST (against C-form) to be quoted as percentage in un-price and price bid. In case of interstate sale-in-transit supplier have to provide E1/E2 form.</p> <p>e) Entry tax / Octroi Charges: Any Entry tax / Octroi applicable at destination / destination state shall be paid extra on proof of such payment.</p> <p>f) Freight & Insurance: Freight and Transit Insurance for door delivery up to destination/store is to be quoted.</p> <p>g) Type Test charges: If asked in the technical specification, is to be quoted separately for each Test along with taxes and duties applicable on them.</p> <p>h) Erection / Commissioning supervision charges: If asked in the technical specification, to be quoted separately along with taxes and duties applicable on them.</p> <p>Note : The purchase order shall be placed on Ex-works basis.</p>
3.	<p>TERMS OF PAYMENT :</p> <p><RELEVANT OPTION TO BE SELECTED BEFORE ISSUE OF ENQUIRY></p> <p><u>For BOIs (non package items)</u></p> <p>100% payment along with taxes, duties, Freight & Insurance within 60 days from the date of receipt of invoice. The invoice must contain following documents in 3 sets (Original + 2 copies).</p> <ul style="list-style-type: none">- Receipted LR- Excise invoice (where ED re-imburement is required)- Delivery Challan / Packing list (casewise)- Transit insurance certificate from under writers or Copy of Intimation of Transit Insurance duly endorsed by under writers,- Despatch Clearance given by BHEL,- Guarantee certificate,- All Test reports and inspection reports,- Performance Bank Guarantee copy. <p><u>For BOPs : Air Conditioning & Ventilation, Fire Protection, Illumination, Oil handling system where ETC is in scope of bidder</u></p> <p>a. 90% of Ex-works value along with 100% taxes, duties, Freight & Insurance within 60 days from the date of receipt of invoice. The invoice must contain following documents in 3 sets (Original + 2 copies)</p> <ul style="list-style-type: none">- Receipted LR / RR- Excise invoice (where ED re-imburement is required)- Delivery Challan / Packing list (casewise)

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	<p>- Transit insurance certificate from under writers or Copy of Intimation of Transit Insurance duly endorsed by under writers, - Despatch Clearance given by BHEL, - Guarantee certificate, - All Test reports and inspection reports, - Performance Bank Guarantee copy.</p> <p>b. 5% of Ex-works value on completion of supplies as per billing breakup.</p> <p>c. 5% of Ex-works value on successful completion of Erection, Testing, Commissioning (To be certified by BHEL site) and final documentation (Against proof of submission to Engineering)</p> <p>Note: When ETC is not in scope last 5% as per (c) above shall be paid alongwith (b).</p> <p><u>Terms of payment for Type test charges:</u> 100% payment with taxes and duties on acceptance of test reports by BHEL on certification by BHEL engineering within 60 days from the date of receipt of clear invoice.</p> <p><u>Terms of payment for Supervision charges:</u> 100% payment against completion with taxes and duties on certification by BHEL site within 60 days from the date of receipt of clear invoice.</p>
<p>4.</p>	<p>INTEREST LIABILITY In case of any delay in payment due to any reason, BHEL shall not pay any interest on delayed payment.</p>
<p>5.</p>	<p>GUARANTEE : The equipment / material shall be guaranteed for 18 months from the date of delivery or 12 months from the date of commissioning, which ever is earlier. The defective material / component shall be replaced free of cost at site.</p> <p><FOLLOWING TO BE DELETED IN ALL ENQUIRY OTHER THAN ILLUMINATION PACKAGE></p> <p>However for Illumination system after commissioning Lamps, Tubes, Ballast, Starters, Capacitors, Fuses will not be covered in Guarantee.</p>
<p>6.</p>	<p>PERFORMANCE BANK GUARANTEE : NOT APPLICABLE</p> <p><PBG CLAUSE TO BE REMOVED BEFORE ISSUE OF ENQUIRY FOR ITEMS FOR WHICH PBG IS NOT REQUIRED></p>
	<p>Bidder shall furnish along with first invoice Performance BG / deposit as per one of following 3 options.</p> <p><u>Option A</u> A single rolling Bank Guarantee of Rs 20 lakhs initially valid for one year for all the orders being executed for Transmission Business Group, BHEL.</p>
	<p><u>Option B</u> BG for 10% of the total Ex-works PO value, valid for 24 months from the date of first delivery. PO value at the time of first invoice for the particular order shall be considered for calculation of BG amount.</p> <p><u>Option C</u> Retention of 10% of the total Ex-works PO value by BHEL from the first bill in lieu of</p>

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	<p>Performance Bank Guarantee, to be released after expiry of 24 months from the date of first delivery.</p> <p>Note : For Shield wire, Earthing material, Cable gland, Cable Trench material, GI/PVC pipe, Hardwares, Al tube, MS Rod, Lable & phase colour disc, HG Fuse, Ferrule, Lug, Marker, Stationary, Office eqpt. and any petty / sundry purchase no Performance bank guarantee is required.</p> <p>The Bank guarantee shall be from State Bank of India / State bank of Hyderabad / State Bank of Travancore / State Bank of Mysore / Canara Bank / Bank of Baroda / Punjab National Bank / Deutsche Bank / HDFC Bank / Standard Chartered Bank / CITI Bank / IICI Bank / IDBI Bank / HSBC / any other Nationalised Bank. The original BG should be sent by issuing Bank directly to AGM(Finance), TBG, BHEL.</p>
7.	<p>FINAL ENGINEERING DOCUMENTATION: Final documentation as called in the specification is to be submitted within 3 months from the date of despatch of material. In case of default, the Performance BG is liable to be en-cashed.</p>
8.	<p>INSPECTION :</p> <p>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 Despatch Clearance from BHEL.</p> <p>Supplier shall send inspection call on prescribed format (web site) only, with an advance notice of 15 days.</p>
9.	<p>DESPATCH DOCUMENTS :</p> <p>Following despatch documents are to be immediately sent to purchaser on despatch.</p> <ul style="list-style-type: none"> - Copy of LR - Copy of delivery challan / packing list - Insurance certificate - Guarantee certificate
10.	<p>DELIVERY PERIOD:</p> <p>Bidder to specify delivery period in weeks from the date of LOI / PO. Time for conduction of type test, if required, is to be separately indicated.</p> <p>Note: LR date or Invoice date whichever is later shall be considered as delivery date.</p>
11.	<p>DELAYED DELIVERY:</p> <p>In case of delay in execution of order beyond the lot wise contractual delivery, an amount of ½ % of total order Value per week or part there-of subject to maximum of 10% of total order value of P.O. will be withheld.</p>
12.	<p>VALIDITY :</p> <p>The offer shall be valid for 120 days from the due date of opening.</p>
13.	<p>ACCEPTANCE / REJECTION OF TENDER :</p> <p>BHEL reserves the right to reject in full or part, any or all tender without assigning any reason thereof.</p> <p>BHEL also reserves right to vary the quantities mentioned in the tender.</p>
14.	<p>EVALUATION :</p> <p>Comparative statement shall be prepared based on overall quantity basis unless otherwise indicated in the enquiry. Evaluation of offers shall be done on the basis of delivered cost to BHEL.</p>
15.	<p>DEVIATION :</p> <p>The bids having deviation(s) w.r.to tender are liable for rejection. However, BHEL, at its discretion, may load the prices for evaluation of offer with prior intimation to bidder.</p>

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16. ARBITRATION :	All cases of disputes emanating from and relating to this contract, the matter shall be referred to the sole arbitration of Unit Head / GM, BHEL or any other person (including an employee of BHEL, even though he had to deal with the matter relating to this contract in any manner) nominated by him to act as sole arbitrator. The arbitration shall be under 'The arbitration and contract act 1996' and the rules there under as amended from time to time. The arbitrator may from time to time with the consent of the parties enlarge the time for making and publishing the award. The venue of arbitration shall be any Indian city as decided by BHEL.
17. LEGAL SETTLEMENT :	All suits/claims in respect of this contract shall be in the courts having jurisdiction at New Delhi
18. SUBCONTRACTING :	In case further subcontracting of BHEL order 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 of the responsibility of fulfilling BHEL purchase order requirements.
19. RISK PURCHASE :	In case the successful bidder fails to supply or fails to comply with the terms & conditions of the purchase order, BHEL reserves the right to source such material/ component / equipment/ system from any other agency at the risk and cost (i.e. cost to BHEL) of the successful bidder.
20. ADJUSTMENT OF RECOVERY:	Any amount payable by the supplier under any of the condition of this contract shall be liable to be adjusted against any amount payable to the supplier under any other works / contract awarded to him by any BHEL unit. This is without prejudice to any other action as may be deemed fit by BHEL.
21. FORCE MAJEURE CONDITION:	If by reason of war, civil commotion, act of god, Government restrictions, strike, lockout which are not in control of supplier the deliveries are delayed, supplier shall not be held responsible.
22.	Suspension of business dealings with suppliers/ contractors:- 'Guidelines for suspension of business dealings with suppliers/ contractors' are available on BHEL website www.bhel.com on "supplier registration page"
23.	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 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. 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.

Following clauses of General Terms and Conditions (BHEL/TBG/GTC/02-07) are to be read as follows:

Clause 1:

2. Bid submission time: upto 02:00 PM of the due date of opening.
3. Bid opening time: 02:30 PM on the same day.

Clause 2: PRICES

- A.1.: **Applicable**
- A.2.: Not applicable
- B.1.: **Applicable**
- B.2. Not Applicable
- B.3. Not applicable

Clause 3: TERMS OF PAYMENT

Terms for BOP is not applicable
Terms for **BOI is applicable**

Documents for payment-

Original Endorsed LR and Material Receipt Certificate instead of Receipted LR
Dispatch clearance by BHEL means BHEL MICC

Clause 11: Delayed Delivery

a) In case of delay in execution of order beyond the lot wise contractual delivery, an amount of ½ % of total order Value per week or part there-of subject to maximum of 10% of total order value of P.O. will be withheld.

Clause 14: EVALUATION

Evaluation will be done on total package cost to BHEL for all project sites.

Clause 16: ARBITRATION

The Arbitration shall be under "The Arbitration and Conciliation Act 1996". Place of Arbitration shall be New Delhi.

All remaining terms which are not mentioned here shall remain unchanged as per General Terms and Conditions (BHEL/TBG/GTC/02-07).

Note:

1. Supplier has to specifically indicate/ tick mark their preference for PBG out of the three options mentioned in clause no. 6 above.
2. In case VAT is applicable, then Vendor has to give VAT invoice (irrespective of VAT benefit available or not).
3. **Delivery requirement:** December'2016, vendor has to quote their best possible delivery plan in activity schedule.
4. Acceptance of offer shall be subject to vendor approval from PGCIL and valid MQP prior to price bid opening.
5. **LOADING CRITERIA:**

Permissible commercial deviation & Loading Criteria:

Annexure to GTC (BHEL/TBG/GTC/02-07) (for Indigenous vendors only)
Enquiry No. 365E353 dated 15.03.2016

TERMS OF PAYMENT:

If a bidder asks for payment within specified no. of days from the date of receipt of invoice with complete documents as per "Terms of Payment" at Clause. No. 3 of Terms & Conditions for Indigenous Tender Enquiry, loading to be done as follows:

- a) Base rate of SBI (as applicable on the date of techno commercial bid opening) + 6 % shall be considered for loading for the period of relaxation sought by the bidder. **Loading shall be done on total cost to BHEL.**
- b) 60 days - No loading

Note- In case, techno commercial bid opening date gets extended due to any reason, then extended bid opening date will be considered for base rate of SBI.

DELAYED DELIVERY:

Loading on this clause shall be to the extent to which it is not agreed by the bidder.

Permissible Technical Deviations: No permissible Technical Deviation envisaged.

INTENDED BENEFITS FOR MSE SUPPLIERS: MSE suppliers can avail the intended benefits only if they submit along with offer, attested copies of either EM II certificate having deemed validity (Two years from the date of issue of acknowledgement in EM-II) or valid NSIC certificate or EM II certificate along with CA certificate (Format enclosed as per Annexure I) applicable for the year, certifying quantum of investment in plant & machinery within the permissible limit as per the act for relevant status (Micro or Small) where the deemed validity of EM II is over. Date to be reckoned for determining the deemed validity will be the last date of technical bid submission. Non submission of such documents will lead to consideration of their bids at par with other bidders and MSE status of such suppliers shall be shifted to Non MSE supplier till the supplier submits these documents.

REVERSE AUCTION:

BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. 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 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.

If RA is done, then it will start around 12:00 Noon (IST).

Pls refer Annexure-1 for Terms & Conditions of Reverse Auction.

OFFER EVALUATION:

Evaluation will be done on total package cost to BHEL for all project sites.

PRE-QUALIFYING REQUIREMENTS:

"Pre-Qualifying Requirement" are as follows:

- 01) Bidder shall be manufacturer of shield wire.
- 02) Bidder must have supplied the shield wire for substation/switchyard/power transmission projects in last five years.

SCHEDULE OF PRICE (INDIAN VENDOR)

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

NOTE: THIS FORMAT IS TO BE SUBMITTED IN ORIGINAL ONLY, DULY FILLED IN. REPRODUCTION OF THIS FORMAT ON BIDDER'S LETTER HEAD OR ON OTHER PAPER IS NOT ACCEPTABLE.

Project: PGCIL Banaskantha & Sankhari

Enquiry No. 365E353 dated 15.03.2016

Site	Sr. No.	Equipment	PHY UNIT	Total Qty	Unit Exworks	Total Exworks%ED	Unit F&I	Total F&I% CST/VAT	Total(INR)
Banaskantha (Gujarat)	1	SHIELD WIRE 7/9 SWG OVERALL DIA. 10.98MM	METER	7500							
Sankhari (Gujarat)	2	SHIELD WIRE 7/9 SWG OVERALL DIA. 10.98MM	METER	270							

Note 1: Kindly mention the rate of all applicable taxes and duties (ED & CST/VAT) in both price and un-priced bid.

Note 2: Kindly refer technical specification for details.

Note 3: F&I Charges quoted by bidders shall be inclusive of taxes and duties (if applicable).

Note 4: {i} Quantity may vary up to +/-30% before placement of order

{ii} Quantity may vary by +/-20% during contract stage

Tenderer

ACTIVITY SCHEDULE
(To be filled – up by the supplier)

SL. NO.	ACTIVITY		ACTIVITY TIME IN WEEKS	CUMULATIVE TIME IN WEEKS FROM LOI/PO DATE	REMARKS IF ANY
1.	Receipt of P.O				
2.	Submission of P.O Acceptance	Max 1 week (7 days)			
3.	Submission of documents necessary for getting manufacturing clearance like Drawings, date sheet etc.				
4.	Review and Approval of documents and issue of manufacturing clearance	‘BY BHEL (3 weeks)’			
5.	Manufacturing Time	A			
6.	Inspection	‘BY BHEL (2 weeks)’			
7.	Issue of MICC and other documents like Road Permits etc.	‘BY BHEL (1 week)’			
8.	Dispatch				
9.	Transit time upto Site.				

- Note :
- 1) For item at Sl. No. 4) Vendor to reply to all queries within 3 days.
 - 2) For Sl. No. 5) Inspection call for entire lot to be issued 2 weeks in advance. Date given in call for inspection should be within the period indicated in "A" for completion of activity at Sl. No. 6.
 - 3) 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.
 - 4) Inspection call should be given in the prescribed format only. Inspection calls not in the prescribed format shall not be entertained.
 - 5) 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:

SCHEDULE OF COMMERCIAL DEVIATION

Enquiry No. 365E353 dated 15.03.2016

The following are the deviations/ variations exception from the General Terms and Conditions:

SL.NO.	CLAUSE NO. OF GENERAL 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 General Terms and Conditions.

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

Note : 1. Continuation Sheets of like size and format may be used as per the Bidder's Requirement and shall be annexed to this schedule.

2 Deviation mentioned in this schedule shall only be considered.

**This Format is to be submitted in original duly signed by bidder.
Reproduction of the same in any sort is not acceptable.**

Place:
Date :

Signature of the authorised representative of

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

SCHEDULE OF TECHNICAL DEVIATION

Enquiry No. 365E353 dated 15.03.2016

The following are the deviations/ variations exception from the Technical Specifications:

SL.NO.	CLAUSE NO. OF GENERAL TERMS AND CONDITIONS	STATEMENT OF DEVIATION
1		

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 Technical Specifications,

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

Note : 1. Continuation Sheets of like size and format may be used as per the Bidder's Requirement and shall be annexed to this schedule.

2 Devition mentioned in this schedule shall only be considered.

**This Format is to be submitted in original duly signed by bidder.
Reproduction of the same in any sort is not acceptable.**

Place:
Date :

Signature of the authorised representative of

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

CHECKLIST**SCHEDULE OF INFORMATION TO BE FURNISHED WITH THE OFFER**

NOTE: This format is to be submitted in original only, duly filled in. Reproduction of this format on bidder's letter head or on other paper is not acceptable.

Put a tick mark on "YES" if the information is enclosed with the offer or put a tick mark on "NO" if the information is not enclosed or write "NOT APPLICABLE" if the information is not applicable.

1.	Technical offer with detailed schedule of equipment / material and spares enclosed.	YES / NO
2.	Guaranteed Technical Particulars as per Section – 4 enclosed.	YES / NO
3.	Schedule of deviation, if any, clause wise with respect to Technical Specification enclosed.	YES / NO
4.	Standard Manufacturing Quality Plan enclosed.	YES / NO
5.	GA Drawings with dimensions and weights & foundation / fixing details enclosed.	YES / NO
6.	Drawing and Data submission schedule enclosed.	YES / NO
7.	Type Test Reports enclosed.	YES / NO
8.	Bar Chart showing the schedule indicating time required for design, manufacture, test and inspection, transport, erection, site testing and commissioning enclosed.	YES / NO
9.	Makes of all components as per technical Specification enclosed.	YES / NO

The above checklist is verified for:-

Offer Ref. :
 Equipment :
 Submitted by :
 Project Reference. :

Signed with Seal

Date

Terms & Conditions of Reverse Auction

Against this enquiry for the subject item/ system with detailed scope of supply as per enquiry specifications, BHEL may resort to “REVERSE AUCTION PROCEDURE” i.e., ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit ‘online sealed bid’ in the Reverse Auction. Non-submission of ‘online sealed bid’ by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
3. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
4. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
5. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
6. Bidders have to fax the Compliance form (annexure IV) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
7. In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at “Total Cost to BHEL” like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
8. Reverse auction will be conducted on scheduled date & time.
9. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.

10. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (Annexure VII) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL's standard practice.
12. Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the 'Business Rules of Reverse Auction', which will be communicated before the Reverse Auction.
13. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action *as per extant BHEL guidelines*, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
15. In case BHEL decides to go for reverse auction, the H1 bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.

Certificate by Chartered Accountant on letter head

This is to Certify that M/S
(hereinafter referred to as 'company') having its registered office at
..... is registered under MSMED Act 2006, (Entrepreneur
Memorandum No (Part-II) dtd:.....,
Category: (Micro/Small)). (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as on
date..... as per MSMED Act 2006 is as follows:

1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost
excluding land and building and the items specified by the Ministry of Small Scale Industries vide its
notification No.S.O.1722(E) dated October 5, 2006 :
Rs.....Lacs
2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and
furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED
Act, 2006:
Rs.....Lacs

The above investment of Rs.....Lacs is within permissible limit of
Rs.....Lacs forMicro / Small (~~Strike off which is not applicable~~)
Category under MSMED Act 2006.

Date:

(Signature)

Name -

Membership number -

Seal of Chartered Accountant





BHARAT HEAVY ELECTRICALS LIMITED
TRANSMISSION BUSINESS GROUP
MATERIAL RECEIPT CERTIFICATE

- a) Site:
- b) LR No. with date:
- c) Vehicle no.:
- d) Date of receipt of material at site:
- e) Material details (as mentioned below):

S.no.	Item Description	Type of Packages	Unit (MT/KM/NO.)	Qty as per packing list	Qty Received	Remarks

Other Remarks:

Signature with date: _____

Name & Designation: _____
(With Seal)

Important Remarks:

1. LR endorsement Format-

“LR no./ Date: _____ Endorsed in favour of (Customer Name) and the transporter is instructed to deliver the goods to (Site name)”.

For Example-

LR no./ Date: 22126/ dt. 30/04/15

Endorsed in favour of TANTRANSCO and the transporter is instructed to deliver the goods to TANTRANSCO, Anikadavu substation.

(sign and stamp with name & designation)

2. LR will only be endorsed as per the given Format and strictly not be receipted.

3. Material receiving will only be given through the MRC (Format attached).



**BHARAT HEAVY ELECTRICALS LIMITED
TRANSMISSION BUSINESS ENGINEERING MANAGEMENT
NEW DELHI**

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DOCUME NT No.	TB-384-316-126	Rev	00		Pre par ed	Checked	Appro ved
CUSTOME R Doc. No.		NAME	JS	SK	AS		
TYPE OF DOC.	TECHNICAL SPECIFICATION	SIGN	<i>[Signature]</i>				
TITLE	7/9 SWG (10.98mm O.D) GS EARTH WIRE	DATE	<i>10-03-16</i>				
		GROUP	TBEM				
		W.O. No					
CUSTOMER	POWER GRID CORPORATION OF INDIA LIMITED						
PROJECT	Substation Package – SS02 for Construction of 765/400/220kV Banaskantha S/S and Extension of 400kV Sankhari (GETCO) S/S including 400kV Transformer and Reactor associated with Green Energy Corridors: Inter-State Transmission Scheme (ISTS) – Part B						
NOA Ref:							
<u>List of Contents</u>		<u>No. of Pages</u>					
Cover Sheet		01					
Section 1 Scope & Quantities		02					
Section 2 Standard Specification (Specific Technical Requirements)		07					
Section 3 Project Details and General Specification		02					
Section 4 Check list		01					
<u>Enclosures:</u>							
Annexure – 1 (NO DEVIATION Certificate)		01					
00					First Issue		
Re v.	Date	Altered	Checked	Approved	REVISION DETAILS		
Distribution				CUSTOME R	TBMM	O/C	
				-			

Substation Package – SS02 for Construction of 765/400/220kV Banaskantha S/S and Extension of 400kV Sankhari (GETCO) S/S including 400kV Transformer and Reactor associated with Green Energy Corridors: Inter-State Transmission Scheme (ISTS) – Part B

Bharat Heavy Electricals Ltd.

7/9 SWG (10.98mm O.D) GS earth wire

Doc. No. TB-384-316-126 Section- 1

SECTION – I

SCOPE, SPECIFIC TECHNICAL REQUIREMENT AND QUANTITIES

1.0 SCOPE

This technical specification covers the requirements of design, manufacture, testing at works, packing and dispatch of 7/9 SWG (10.98mm OD) GS earth wire.

The equipment is required for the following project.

Name of Customer : Power Grid Corporation of India Ltd.

Name of the Project : Substation Package – SS02 for Construction of 765/400/220kV Banaskantha S/S and Extension of 400kV Sankhari (GETCO) S/S including 400kV Transformer and Reactor associated with Green Energy Corridors: Inter-State Transmission Scheme (ISTS) – Part B

1.1 BILL OF QUANTITY

Sl. No	Description	Banaskantha	Sankhari
1.	7/9 SWG (10.98mm OD) GS earth wire	7500 m	270 m

Note:

- a. The Qty may vary upto $\pm 30\%$ before placement of order.
- b. The Qty. May vary by $\pm 20\%$ during contract stage.

1.2 TYPE TESTING

Bidder shall submit valid type test reports (as per relevant IEC/IS Standard) for approval. The type test reports submitted shall be of tests conducted within last 10 years prior to the date of bid opening i.e. **24.02.2015**. The bidder should have conducted type test on identical or similar equipment/ components to those offered. In case type test reports are found to be technically unacceptable to BHEL/PGCIL, the type test shall be conducted without cost and delivery implication to BHEL.

Substation Package – SS02 for Construction of 765/400/220kV Banaskantha S/S and Extension of 400kV Sankhari (GETCO) S/S including 400kV Transformer and Reactor associated with Green Energy Corridors: Inter-State Transmission Scheme (ISTS) – Part B

Bharat Heavy Electricals Ltd.

7/9 SWG (10.98mm O.D) GS earth wire

Doc. No. TB-384-316-126 Section- 1

1.3 QUALITY PLAN

Bidder to follow valid PGCIL approved Quality Plan as per PGCIL procedure. In case the bidder don't have PGCIL approved QP, it will be the bidder's responsibility to get its QP approved directly from the ultimate customer.

1.4 DRAWING/DOCUMENTS APPROVAL:

Standardized GTP of POWERGRID is enclosed as Annexure-E, no approval on GTP is required and inspection shall be carried out as per standardized GTP.

SECTION - (SE)
SWITCHYARD ERECTION

Substation Package - SS02 for Construction of 765/400/220kV Banaskantha S/S and Extension of 400kV Sankhari (GETCO) S/S including 400kV Transformer and Reactor associated with Green Energy Corridors: Inter-State Transmission Scheme (ISTS) - Part B

Bharat Heavy Electricals Ltd.

7/9 SWG (10.98mm O.D) GS earth wire

Doc. No. TB-384-316-126 Section- 2

4.0 Galvanised Steel Earth wire

4.1 Details of Earth wire

- 4.1.1 The galvanised steel earth wire shall generally conform to the specification of ACSR core wire as mentioned in IEC:60888/IS: 398 (Part-II)-1976 except where otherwise specified herein.

The contractor shall supply the earthwire as per the standard guaranteed technical particulars enclosed in Annexure-E of the technical specification, Section – Switchyard Erection and separate approval **for guaranteed technical particulars** is not required during detailed engineering.

4.2 Workmanship

SECTION - (SE)
SWITCHYARD ERECTION

- 4.2.1 All steel strands shall be smooth, uniform and free from all imperfections, such as spills and splits, die marks, scratches, abrasions and kinks after drawing and also after stranding.
- 4.2.2 The finished material shall have minimum brittleness as it will be subjected to appreciable vibration while in use.
- 4.2.3 The steel strands shall be hot dip galvanized and shall have minimum Zinc coating after stranding, as stipulated in guaranteed technical particulars attached with. The zinc coating shall be smooth, continuous, of uniform thickness, free from imperfections. The steel wire rod shall be of such quality and purity that, when drawn to the size of the strands specified and coated with zinc, the finished strands shall be of uniform quality and have the same properties and characteristics as prescribed in ASTM designation B498-74.
- 4.2.4 The steel strands shall be preformed and post formed in order to prevent spreading of strands while cutting of composite earth wire. Care shall be taken to avoid damage to galvanisation during preforming and postforming operation.
- 4.2.5 To avoid susceptibility towards wet storage stains (white rust), the finished material shall be provided with a protective coating of boiled linseed oil.

4.3 Joints in Wires

There shall be no joints of any kind in the finished steel wire strand entering into the manufacture of the earth wire. There shall be no strand joints or strand splices in any length of the completed stranded earth wire.

4.4 Tolerances

The manufacturing tolerance to the extent of the limits as stipulated in guaranteed Technical Particulars attached with this specification shall only be permitted in the diameter of the individual steel strands and lay length of the earth wire.

4.5 Materials

4.5.1 Steel

The steel wire strands shall be drawn from high carbon steel rods and the chemical composition shall conform to the requirements as stipulated in Guaranteed Technical Particulars attached with.

4.5.2 Zinc

The zinc used for galvanising shall be electrolytic High Grade Zinc. It shall conform to and satisfy all the requirements of IS: 209 -1979.

4.6 Standard Length

- 4.6.1 The standard length of the earth wire shall be as stipulated in Guaranteed Technical Particulars attached with, with the specified tolerance on standard length.

4.8 TESTS

- 4.8.1 The following type, routine & acceptance tests and tests during manufacturing shall be carried out on the earthwire.

4.8.2 TYPE TESTS

SECTION - (SE)
SWITCHYARD ERECTION

In accordance with the stipulation of specification, the following type tests reports of the earthwire shall be submitted for approval as per clause 9.2 of Section - GTR.

- a) UTS test)
 - b) DC resistance test)
- As per Annexure - B

4.8.3 ACCEPTANCE TESTS

- a) Visual check for joints, scratches etc. and length of Earthwire)
 - b) Dimensional check)
 - c) Galvanising test)
 - d) Lay length check)
 - e) Torsion test)
 - f) Elongation test)
 - g) Wrap test)
 - h) DC resistance test)
 - i) Breaking load test)
 - j) Chemical Analysis of steel)
- As per Annexure - B
IS:398 (Part-III) - 1976

4.8.4 ROUTINE TESTS

- a) Check that there are no cuts, fins etc. on the strands.
- b) Check for correctness of stranding.

4.8.5 TESTS DURING MANUFACTURE

- a) Chemical analysis of zinc used for galvanising)
 - b) Chemical analysis of steel)
- As per Annexure - B

**SECTION - (SE)
SWTCHYARD ERECTION**

ANNEXURE "B"

(Testing procedure for Galvanised Steel Earthwire)

1. UTS TEST

Circles perpendicular to the axis of the earthwire shall be marked at two places on a sample of earthwire of minimum 5m length suitably compressed with dead end clamps at either end. The load shall be increased at steady rate upto 50% of UTS and held for one minute. The circles drawn shall not be distorted due to relative movement of strands. Thereafter, the load shall be increased at a steady rate to 100% of UTS and held for one minute. The earthwire sample shall not fail during this period. The applied load shall then be increased until the failing load is reached and value recorded.

2. D.C. RESISTANCE TEST

On an earthwire sample of minimum 5m length, two contact clamps shall be fixed with a predetermined Bolt torque. The resistance shall be measured by a Kelvin double-bridge by placing the clamps initially zero meter and subsequently one meter apart. The test shall be repeated at least five times and the average value recorded. The value obtained shall be corrected to the value at 20°C shall conform to the requirements of this specification.

3. Visual check for joints, scratches etc. and length of earthwire

Earthwire drums shall be rewound in the presence of the inspector. The inspector shall visually check for joints, scratches etc. and see that the earthwire generally conforms to the requirements of this specification. The length of earthwire wound on the drum shall be measured with the help of counter meter during rewinding.

4. TORSION TEST

The minimum number of twists which a single steel strand shall withstand during torsion test shall be eighteen for a length equal to 100 times the standard diameter of the strand. In case the test sample length is less or more than 100 times the standard diameter of the strand, the minimum number of twists will be proportionate to the length and if number comes in the fraction then it will be rounded off to next higher whole number.

5. DIMENSIONAL CHECK

The individual strands shall be dimensionally checked to ensure that they conform to the requirements of this specification.

6. LAY LENGTH CHECK

The lay length shall be checked to ensure that they conform to the requirements of this specification.

7. GALVANISING TEST

SECTION - (SE)
SWITCHYARD ERECTION

The test procedure shall as specified in IS:4826-1968. The material shall conform to the requirements of this specification. The adherence of zinc shall be checked by wrapping around a mandrel four times the diameter of steel wire.

8. **CHEMICAL ANALYSIS OF ZINC USED FOR GALVANIZING**

Samples taken from zinc ingots shall be chemically/spectrographically analysed. The same shall be in conformity to the requirements stated in this specification.

9. **CHEMICAL ANALYSIS OF STEEL**

Samples taken from steel ingots/coils/strands shall be chemically/spectrographically analysed. The same shall be in conformity to the requirements stated in this specification.

**SECTION - (SE)
SWITCHYARD ERECTION**

ANNEXURE-E

Sl.	Description	Unit	ACSR ZEBRA	ACSR PANTHER
		km		
c)	Maximum	kg/ km	1653	993
5.13	Modulus of Elasticity	Kg/sq. mm		8158
5.14	Co-efficient of Linear Expansion	Per Deg. C	19.3×10^{-5}	17.8×10^{-6}
5.15	Minimum Corona Extinction Voltage	KV (rms)	154	92
5.16	RIV at 1 Mhz	Micro volts	Less than 1000 at 154 kV (rms)	Less than 500 at 92 kV (rms)
6.0	Drum Dimensions		Generally conforms to IS:1778	
a)	Flange Diameter	mm	1850	1850
b)	Traverse width	mm	925	925
c)	Barrel Diameter	mm	650	650
d)	Flange thickness	mm	50x50	50x50

1.2 Guaranteed technical particulars of Galvanised Steel Earthwire

	Description	Unit	Standard Values
1.0	Raw Materials		
1.1	Steel wires / rods		
a)	Carbon	%	Not more than 0.55
b)	Manganese	%	0.40 to 0.90
c)	Phosphorous	%	Not more than 0.04
d)	Sulphur	%	Not more than 0.04
e)	Silicon	%	0.15 to 0.35
1.2	Zinc		
a)	Minimum purity of Zinc	%	99.95
2.0	Steel strands		
2.1	Diameter		
a)	Nominal	mm	3.66
b)	Maximum	mm	3.74
c)	Minimum	mm	3.58
2.2.	Minimum breaking load of strand		
a)	After stranding	KN	10.58
2.3	Galvanising		
a)	Minimum weight of zinc coating per sq.m. after stranding	gms.	275
b)	Minimum number of dips that the galvanized strand can withstand	Nos.	3 dips of 1 minute and

**SECTION - (SE)
SWITCHYARD ERECTION**

ANNEXURE-E

	in the standard preece test		one dip of ½ minute
c)	Minimum number of twists in a gauge length equal to 100 times diameter of wire which the strand can withstand in the torsion test, after stranding	Nos.	18
3.0	Stranded Earth wire		
3.1	UTS of Earth wire	KN	68.4 (min.)
3.2	Lay length of outer steel layer		
a)	Standard	mm	181
b)	Maximum	mm	198
c)	Minimum	mm	165
3.3	Maximum DC resistance of earth wire at 20° C	Ohm/km	3.375
3.4	Standard length of earth wire	M	2000 or actual quantity whichever is less.
3.5	Tolerance on standard length	%	±5
3.6	Direction of lay for outside layer		Right hand
3.7	Linear mass		
a)	Standard	Kg/km	583
b)	Maximum	Kg/km	552
c)	Minimum	Kg/km	600
3.8	Overall diameter	mm	10.98

1.3

Guaranteed Technical Parameters of Aluminum Tube

A. GTP for 3" IPS & 4" IPS AL. TUBE

Sl. No.	Description	3" AL. TUBE	4" AL. TUBE
1.	Size	3" IPS (EH Type)	4" IPS (EH Type)
2.	Material	Aluminium Alloy 6101 T6 conforms to 63401 WP (range 2) of IS 5082 : 1998	
3.	Chemical Composition		
i)	Cu		0.05 Max
ii)	Mg		0.4 to 0.9
iii)	Si		0.3 to 0.7
iv)	Fe		0.5 Max
v)	Mn		0.03 Max
vi)	Al		Remainder
4.	Outer diameter	88.90 mm	114.2 mm
5.	Tolerance on outer diameter	+2.2 mm, - 0.0 mm	+2.2 mm, - 0.0 mm
6.	Thickness	7.62 mm	8.51 mm
7.	Tolerance on thickness	+2.2 mm, - 0.0 mm	+2.2 mm, - 0.0 mm
8.	Cross-sectional area	1945.76 sq.mm	2825.61 sq.mm
9.	Weight	5.25 kg/m	7.7 kg/m
10.	Moment of Inertia	621589.99 mm ⁴	3972577.97 mm ⁴
11.	Section Modulus	86481.21 mm ³	69572.29 mm ³

SECTION-3

PROJECT DETAILS & GENERAL SPECIFICATION

SITE INFORMATION

	Particular	Details
a)	Owner	POWERGRID
b)	Customer	POWERGRID
c)	Project Title	765kV/400kV/220kV Banaskantha (New) Substation and Extn. of 400kV Sankhari (GETCO) Substation
d)	Location for Banaskantha site.	Village – MUDETHA , Near BHILDI - 385530 Taluka – Deesa, Dist. Banaskantha (Gujarat)
e)	Location for Sankhari site	Village – VELODA, Near Melusan Dist. Patan (Gujarat)
f)	Transport Facilities	RAOD/TRAIN, For both Site Nearest Rail Head: Palanpur
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 1000meter
j)	Pollution Severity	High Polution (25mm/kV)
k)	Seismic Zone	As per the seismic zone defined in the relevant BIS but not less than 0.3g horizontal
WIND DATA		
	Wind velocity	As per IS
	Average No. of thunderstorm days per annum	As per IS

Main Electrical Parameters:		
	Fault Levels:	For Banaskantha 765kV: 50kA for 1 sec 400kV: 63kA for 1 sec 220kV: 40kA for 1 sec For Sankhari 400kV: 40kA for 3 sec
	Creepage Distance	25mm/kV

Substation Package - SS02 for Construction of 765/400/220kV Banaskantha S/S and Extension of 400kV Sankhari (GETCO) S/S including 400kV Transformer and Reactor associated with Green Energy Corridors: Inter-State Transmission Scheme (ISTS) - Part B

Bharat Heavy Electricals Ltd.
7/9 SWG (10.98mm O.D) GS earth wire

Doc. No. TB-384-316-126 Section- 4

TECHNICAL CHECK LIST

(INFORMATION TO BE FURNISHED WITH OFFER)

RETURN THIS CHECKLIST AS THE PART OF THE OFFER DULY SIGNED BY THEM.

S.No.		Confirmation Yes/No	Remarks
1.	Compliance to Power grid GTP enclosed(Refer Annexure-E) with specification		
2.	Powergrid approved valid Manufacturing Plan (pls mention date till it is valid)		
3.	Powergrid approved type test report (pls check the date of validity wrt to 24.02.15)		

Date:

Place:

Phone:

Fax:

E-mail:

Mobile:

Website:

ANNEXURE - 1

SCHEDULE OF TECHNICAL DEVIATIONS

Bidder shall list below all technical deviation clause wise w.r.t. tender specifications:

<u>S.No.</u>	<u>Page No.</u>	<u>Clause No.</u>	<u>Deviation</u>	<u>Reason / Justification</u>
--------------	-----------------	-------------------	------------------	-------------------------------

Any deviation not specifically brought out in this section shall not be admissible for any commercial implication at later stage. Except to the technical deviations listed in this schedule, bidder's offer shall be considered in full compliance to the tender specifications irrespective of any such deviation indicated / taken elsewhere in the submitted offer.

Date:

Tenderer's Stamp & Signature