

BHARAT HEAVY ELECTRICALS LTD.**(TRANSMISSION BUSINESS GROUP)****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.	Standard Terms & Conditions	Enquiry No.- 235E237 Dated 24.11.2015 Due On- 11.12.2015
1.	<p>INSTRUCTION TO BIDDERS:</p> <p>a) Quotations are invited for the items mentioned in the enquiry.</p> <p>b) The tenders are invited and evaluated online through e-Procurement System. The bidder shall submit his response through bid submission to the tender on e-Procurement platform at https://bheleps.buyjunction.in.</p> <p>Foreign and indigenous vendors participating through open tenders/limited tender (Through E-procurement system) will necessarily have to buy Class-III digital certificates (DSCs) issued by certifying agencies in India.</p> <p>Procedure of getting obtaining DCSs can be down loaded from Important Links on link http://www.bhel.com/tender/tender_home.php or may be obtain from concern executive through email request.</p> <p>Successful bidder shall be responsible for completion of the contract in all respects. Techno commercial offers shall be opened through the E-Procurement portal. However this tender may be finalized through online Reverse Auction. Bidders are request to quote their most competitive prices through the online e-procurement portal / system.</p> <p>In case of any difficulty in operating the E-Tendering System, please call up our developer's Help Desk m Junction Services Ltd. at 033-6601 1717 or BHEL representative. Please ensure the submission of your most competitive offer before the due date in the E-Tendering Portal to avoid last minute hustle.</p> <p>c) The same shall be opened at 02.30 PM on the same day. Tenders received late may be rejected. Bids shall be submitted as per E-procurement system. Any other mode of submission of offer against aforesaid enquiry will not be entertained</p> <p>d) For any technical clarification please contact :</p> <p>Shri Vivek Kapil, Sr. Manager (TBEM) 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 BUDH NAGAR, UP, INDIA</p>	

<p>Sr. No.</p>	<p>Standard Terms & Conditions</p>	<p>Enquiry No.- 235E237 Dated 24.11.2015 Due On- 11.12.2015</p>
		<p>Phone : 0120 – 6748539 E-mail : vivekk@bhel.in</p> <p><u>For any Commercial clarification, please contact:</u></p> <p>SH. S.C. SHIVHARE, SR. MGR.(TBMM) 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 BUDH NAGAR, UP, INDIA Phone : 0120-6748473 / 0120-6748471 Email: shashirai@bhel.in / scshivhare@bhel.in / a.kumar@bhel.in</p> <p>e) Price bid should contain only rates / prices, otherwise bid shall be liable for rejection.</p> <p>f) 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>g) Enquiry condition for where the scope against this tender includes Installation and Commissioning of the equipment / material:</p> <p>There will be separate contract awarded for Supply portion and Site execution portion. For Supply portion Commercial Terms and Conditions mentioned herein shall be applicable & for Site execution portion Terms and Conditions for Installation services shall be applicable. However, any breach in either of the contracts shall be deemed as the breach of other contract also.</p>
<p>2.</p>	<p>PRICES:</p> <p>A. The prices shall be on FIRM basis.</p> <p>B. The prices shall be on domestic basis.</p> <p>C. The prices are to be quoted on Ex-works basis. The break-up of prices shall be as under : -</p> <p>a) Ex-works Price: Ex-Works price including packing & forwarding Charges.</p> <p>b) Excise Duty: Extra as applicable to be quoted as percentage in both un-price bid and price bid.</p> <p>c) Sales Tax: ST / VAT / CST (against C form) as applicable to be quoted extra as percentage in un-priced and price bid. In case of inter-state sale-in-transit supplier/vendor will have to provide E1/E2 form.</p> <p>d) Entry tax / Octroi Charges: Any Entry tax / Octroi applicable at destination / destination state shall be paid extra on proof of such payment.</p> <p>e) Freight & Insurance: Freight and Transit Insurance for door delivery up to destination/site is to be quoted.</p> <p>Note: The purchase order shall be placed on Ex-works basis.</p>	

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	<p>“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.</p> <p>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.”</p> <p>Further to above clause, please refer attached Annexure II for Terms & Conditions Of Reverse Auction Page 1 & 2)</p>	
3.	<p>TERMS OF PAYMENT:</p> <p>100% payment along with taxes, duties, Freight & Insurance within 60 days (45 days for MSE Vendor) from the date of receipt of complete invoice in TBG, BHEL with following documents in 3 sets (Original + 2 copies).</p> <ul style="list-style-type: none"> • LR duly endorsed in the name of Customer by BHEL-Site • Material Receipt certificate issued by Site as per attached format • Excise invoice (where ED re-imburement is required) • Packing List (Case-wise) • Copy of Performance Bank Guarantee • Transit insurance Certificate from insurance Comp or intimation of Transit Insurance duly endorsed by insurance Comp. • MICC issued by BHEL • Guarantee Certificate 	
4.	<p>INTEREST LIABILITY:</p> <p>In case of any delay in payment due to any reason, BHEL shall not pay any interest on delayed payment.</p>	
5.	<p>GUARANTEE:</p> <p>The equipment / material shall be guaranteed for 18 months from the date of delivery or 12 months from the date of commissioning, whichever is earlier. The defective material / component shall be replaced free of cost at site.</p>	
6.	<p>PERFORMANCE BANK GUARANTEE:</p> <p>Bidder shall furnish along with first invoice Performance BG / deposit as per one of following 2 options:</p>	

Sr. No.	Standard Terms & Conditions	Enquiry No.- 235E237 Dated 24.11.2015 Due On- 11.12.2015
	<p><u>Option A</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 B</u> Retention of 10% of the total Ex-works PO value by BHEL from the first bill in lieu of Performance Bank Guarantee, to be released after expiry of 24 months from the date of first delivery.</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 / ICICI Bank / IDBI Bank / HSBC / any other Nationalized 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 dispatch of material.</p>	
8.	<p>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 Despatch Clearance from BHEL.</p> <p>Supplier shall send inspection call on prescribed format only, with an advance notice of 15 days. Vendor shall forward all inspection and test reports for issue of MICC by BHEL.</p> <p>Road Permit Form request should also be given along with Inspection call.</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 • Packing List (Case-wise) • Insurance Certificate • Guarantee Certificate 	
10.	<p>DELIVERY PERIOD: Bidder to specify the delivery period in weeks from the date of LOI / PO in the Activity Schedule Format enclosed with enquiry.</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 Ex-Works Value of Delayed Lot per week or part there-of subject to maximum of 10% Ex-Works Value of Delayed Lot will be levied.</p>	
12.	<p>VALIDITY: The offer shall be valid for 120 days from the due date of opening.</p>	

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13.	QUANTITY VARIATION: +/- 30 %.	
14.	ACCEPTANCE / REJECTION OF TENDER: BHEL reserves the right to reject in full or part, any or all tender without assigning any reason thereof. BHEL also reserves right to vary the quantities mentioned in the tender.	
15.	EVALUATION: Comparative statement shall be prepared based on total quantity basis unless otherwise indicated in the enquiry. Evaluation of offers shall be done on the basis of delivered cost to BHEL.	
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 as per Loading Criteria for identified deviations mentioned in clause No. 25.	
17.	ARBITRATION: All cases of disputes emanating from and relating to this contract shall be referred to the sole arbitration of Unit Head / GM, BHEL or any other person nominated by him(including an employee of BHEL, even though he had to deal with the matter relating to this contract in any manner) to act as sole arbitrator. The arbitration shall be in accordance with 'The Arbitration and Conciliation Act 1996' and the rules there under as amended from time to time. The arbitrator shall give a reasoned award. The decision of the arbitrator shall be final & binding upon both the parties. The venue of arbitration shall be Delhi.	
18.	LEGAL SETTLEMENT: Subject to clause 17 hereinabove this contract shall be subject to exclusive jurisdiction of courts at Delhi.	
19.	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.	
20.	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 of the successful bidder.	
21.	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.	
22.	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	

Sr. No.	Standard Terms & Conditions	Enquiry No.- 235E237 Dated 24.11.2015 Due On- 11.12.2015
	responsible.	
23.	TECHNICAL SPECIFICATION : TB-235-509-125 REV 04	
24.	QUALITY PLAN : The standard QAP of PGCIL would be applicable.	
25	<p>LOADING CRITERIA FOR DEVIATIONS TAKEN BY BIDDER ON:</p> <p><u>25.1.TERMS OF PAYMENT:</u></p> <p>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 sr. No. 3 above, loading to be done as follows:</p> <ul style="list-style-type: none"> 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. b) 60 days - No loading <p><u>25.2. DELAYED DELIVERY / PENALTY DUE TO DELAYED DELIVERY:</u></p> <p>Loading for not accepting this clause / accepting only on un delivered portion shall be the maximum amount specified in this clause.</p>	
26	<p>“MSE suppliers can avail the intended benefit 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 - 1) applicable for the year, certifying quantum of investment in plant and 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 bid at par with other bidders and MSE status of such suppliers shall be shifted to Non MSE supplier till the supplier submits these documents”.</p>	
27	<p>PRE QUALIFYING CRITERIA FOR OPEN TENDER:</p> <ul style="list-style-type: none"> a) The vendor/Manufacturer should have valid MQP approved by POWERGRID as on date of Technical Bid opening. b) New Vendor, which is not registered in POWERGRID, has to get themselves approved from POWERGRID directly on/ before date of Technical Bid opening. c) Vendor has to follow technical specification. <p>Only customer approved vendors shall be considered. Those vendor/Manufacturer which do not have valid MQP approved by POWERGRID as on date of Technical Bid opening, the offers of such vendors shall be rejected.</p>	

ACTIVITY SCHEDULE**(To be filled – up by the supplier)****Enquiry No.-235E237 Dated 24.11.2015****Due On- 11.12.2015**

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.

SL. NO.	ACTIVITY		ACTIVITY TIME IN WEEKS	CUMULATIVE TIME IN WEEKS FROM LOI/PO DATE	REMARKS IF ANY
1.	Submission of P.O Acceptance	Max 1 week			
2.	Submission of documents necessary for getting manufacturing clearance like Drawings, date sheet etc.				
3.	Review and Approval of documents and issue of manufacturing clearance	'BY BHEL'			
4.	Manufacturing Time				
5.	Inspection	'BY BHEL'			
6.	Issue of Dispatch Clearance/ MICC	'BY BHEL'			
7.	Dispatch				

Note : 1) For Sl. No. 4) 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. 5.

- 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.
- 5) Bidders to quote their best Delivery Plan in this schedule.

Signature & Seal of Supplier

Date:

SCHEDULE OF COMMERCIAL DEVIATION

Ref: TBMM/EM / FATEHABAD

ENQUIRY No. - 235E237 Dated- 24.11.2015

This Format is to be submitted in original duly signed by bidder.

The following are the deviations/variations/exceptions from the Terms and Conditions :-

SL. NO.	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:.....

SCHEDULE OF TECHNICAL DEVIATION

Ref: TBMM/EM / FATEHABAD

ENQUIRY No.- 235E237 Dated- 24.11.2015

This Format is to be submitted in original duly signed by bidder.

The following are the deviations/variations/exceptions from the Terms and Conditions :-

SL. NO.	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:.....

SCHEDULE OF PRICE

Enquiry No:- 235E 237 Date:- 24.11.2015
 (BIDDERS TO STRICTLY ENSURE SUBMITTING THE PRICE BIDS IN THIS FORMAT)

Due on- 11.12.2015

PROJECT: PGCIL FATEHABAD (AGRA NEW)

SL. NO.	DESCRIPTION OF ITEM (As per Tech Spec. TB 235 509 125 REV 05)	UNIT	QUANTITY	UNIT PRICE EX. WORKS (Rs.)	TOTAL EX. WORKS (Rs.)	UNIT FREIGHT & INSURANCE UP TO SITE (Rs.)	TOTAL FREIGHT & INSURANCE UP TO SITE (Rs.)	ED @..... % OF TOTAL EX WORKS (Rs.)	CST/VAT/ST @.....% OF (TOTAL EX-WORKS+ TOTAL ED) (Rs.) AGAINST FORM "C"	DESTINATION PRICE (TOTAL EX- WORKS+TOTAL ED+TOTAL CST+ TOTAL F & I) (Rs.)
1	EARTHING MATERIAL- 75 X12 MM GI FLAT	KM	12							
2	EARTHING MATERIAL- 50 X 6 MM GI FLAT	KM	7							
3	EARTHING MATERIAL- 40 MM DIA, 3000 MM LONG GALVANISED IRON PIPE EARTH ELECTRODE	NO	6							
4	EARTHING MATERIAL- 50 X 6 MM MILD STEEL FLAT	KM	4							
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.
- SALES TAX RATE AS APPLICABLE FOR SPECIFIED DESTINATION SHALL BE QUOTED. IN CASE OF CST, RATE AGAINST "C" FORM SHALL BE QUOTED.
- IN CASE OF VARIED ED SLAB RATES, CONFIRM YOUR OPTION FOR "X" OR "Y". (STRIKE OFF WHICH IS NOT APPLICABLE)
IF NO OPTION IS MENTIONED "X" SHALL BE TAKEN.

- THE VENDORS MUST INDICATE THE APPLICABLE TARIFF NOS. UNDER WHICH ED AND / OR CST WOULD BE PAID BY THEM TO THE TAX AUTHORITIES.
- IF A VENDOR SUBMITS AN OFFER WITH REDUCED ED AND OR CST APPLICABLE THAN NORMALLY PAID ON SUCH ITEMS, THEY SHOULD SUBMIT NECESSARY DOCUMENTARY PROOF FOR THE SAME.
"X" THE MAXIMUM ED SLAB RATE BE CONSIDERED FOR PRICE COMPARISON. IN THE EVENT OF ORDER ED AT ACTUAL BE PAID.
"Y" THE QUOTED ED RATE BE CONSIDERED FOR PRICE COMPARISON. IN THE EVENT OF ORDER ED AT ACTUAL RATE LIMITED TO QUOTED RATE BE PAID.

SIGNATURE & SEAL OF TENDERER



**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)

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
ENGINEERING MANAGEMENT, NEW DELHI

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 The information contained in this document is the property of BHARAT HEAVY ELECTRICALS LIMITED
 This must not be used directly or indirectly, in any manner detrimental to the interest of the company

BHEL Document No.	Rev.	Prepared by	Checked by	Approved by
TB-235-509-125	04	Name		
Type of Document	STANDARD SPECIFICATION	Sign	-sd-	-sd-
Title	GS FLAT & EARTH ELECTRODE FOR EARTHING SYSTEM	Date	17.08.07	17.08.07
		Group	TBEM	
		W.O. No		

Customer / Consultant

Tender

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04	26.11.12	<i>(Signature)</i>	<i>(Signature)</i>	<i>(Signature)</i>	Standard QP included.
03	09.11.12	Sd/-	Sd/	Sd/-	POWERGRID requirement & Cut Lengths included.
02	10.06.09	Sd/-	Sd/	Sd/-	Documents updated
01	14.08.07	Sd/	Sd/-	Sd/	Revised as per TBMM requirement.

Rev No.	Date	Altered	Checked	Approved	REVISION DETAILS					
Distribution				To						
				Copies						

SECTION 1

SCOPE AND SPECIAL TECHNICAL REQUIREMENT

1.0 SCOPE

This technical specification covers the requirements of design, manufacture, testing at works, packing and dispatch of Earthing Strips & Earthing Electrodes, complete with accessories.

This section covers the general technical requirements of Earthing Strips & Earthing Electrodes. In case of any discrepancies between the requirements mentioned in this section and those specified in the following sections of this specification, the specifications given herein shall prevail and shall be treated as binding requirements.

1.1 TECHNICAL REQUIREMENTS:

1.1.1 GALVANIZED MILD STEEL FLAT (Power grid Requirement) ✓

- i) Chemical composition & mechanical properties: Grade -A (Item Designation - Fe410W) of IS: 2062.
- ii) Mass of protective zinc coating: 618 gm/sq.m and minimum thickness of coating shall be 85 microns for items thicker than 6 mm. For less than 6 mm, the thickness shall be as per clause 4.0 of IS 4759, 1984.
- iii) Sizes:

Sl No.	Description	Approx. Weight (kg)
1	Galvanised Steel Flat 75 x 12 mm	7.0663 kg/meter
2	Galvanised Steel Flat 75 x 10 mm	5.8893 kg/meter
3	Galvanised Steel Flat 50 x 6 mm	2.4008 kg/meter
4	Galvanised Steel Flat 25 x 3 mm	0.5894 kg/meter
5	Mild Steel Flat 50 x 6 mm	2.3316 kg/meter

- iv) Length: 4 m to 6 m
- v) Raw Material: Vendor to procure the raw material from Power Grid approved Sources with PG stamp.

1.1.2 GALVANIZED MILD STEEL FLAT (Other then Power grid Requirement) ✗

- i) Chemical composition & mechanical properties: Grade -A (Item Designation - Fe410W) of IS: 2062.
- ii) Mass of protective zinc coating: 1) 610 gm/sq.m and minimum thickness of coating shall be 85 microns for items thicker than 6 mm. For

less than 6 mm, the thickness shall be as per clause 4.0 of IS 4759, 1984.

ii) Sizes:

Sl. No.	Description	Weight (kg)
1	Galvanised Iron Flat 75 x 12 mm	7.065 kg/meter
2	Galvanised Iron Flat 75 x 10 mm	5.888 kg/meter
3	Galvanised Iron Flat 75 x 8 mm	4.710 kg/meter
4	Galvanised Iron Flat 65 x 10 mm	5.10 kg/meter
5	Galvanised Iron Flat 65 x 8 mm	4.082 kg/meter
6	Galvanised Iron Flat 50 x 8 mm	3.140 kg/meter
7	Galvanised Iron Flat 50 x 6 mm	2.4 kg/meter
8	Galvanised Iron Flat 25 x 3 mm	0.589 kg/meter
9	Mild Steel Flat 75 x 10 mm	5.7843 kg/meter
10	Mild Steel Flat 50 x 6 mm	2.3316 kg/meter

iii) Length: 4 m to 6 m.

1.1.3 EARTH ELECTRODE (Mild Steel iron)

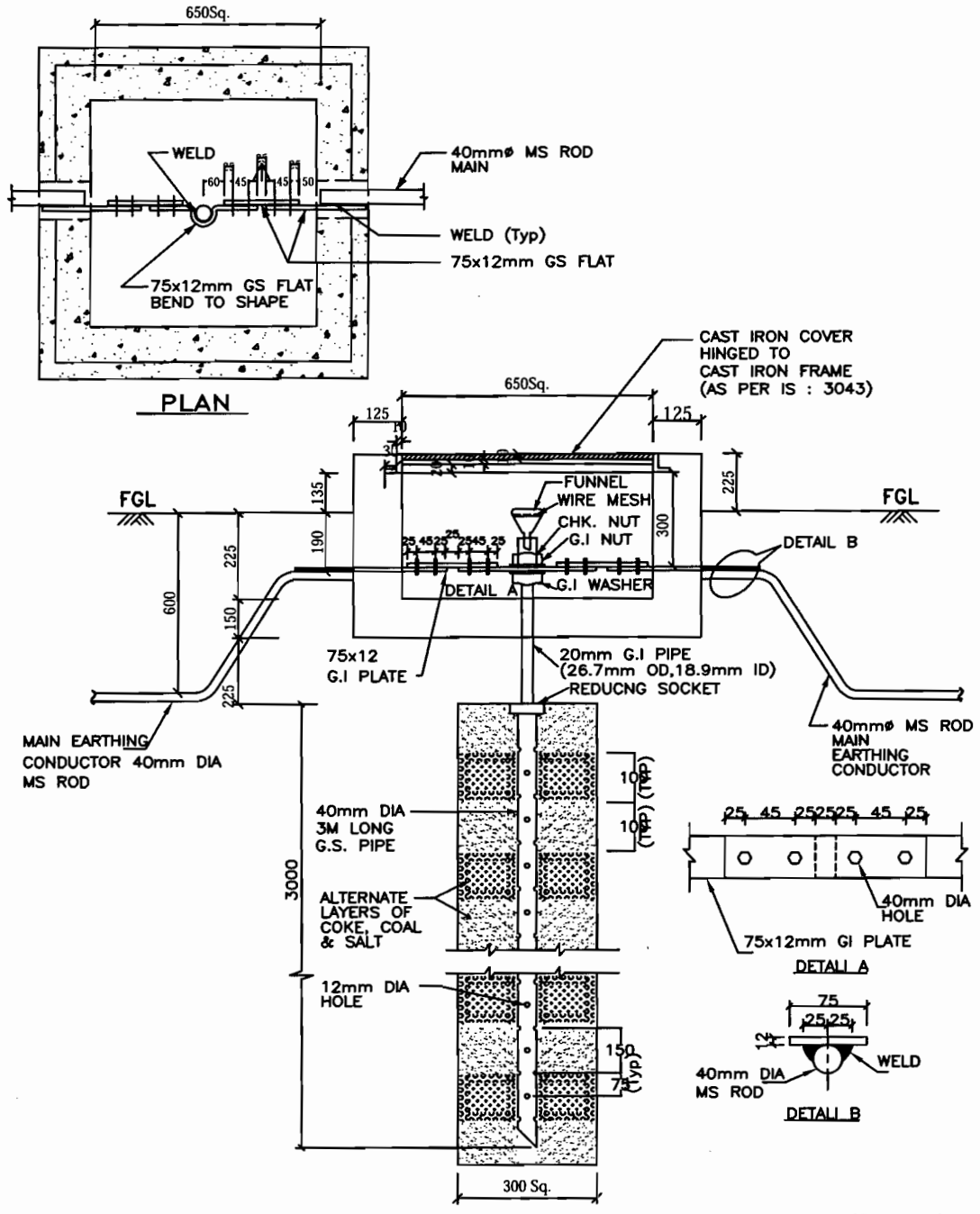
- | | |
|--------------------------------|-----------------------|
| i) Applicable Standard | IS:1239 |
| ii) Sizes of Pipe | 40 NB |
| iii) Grade | Medium |
| iv) Thickness of zinc -coating | 460 gm/sq.m |
| v) Reference Drg. | SKETCH SK-1 (Typical) |

1.1.4 EARTH ELECTRODE (Cast Iron)


- | | |
|---------------------------|-----------------------|
| i) Cast Iron pipe ID (mm) | 100/150 mm |
| ii) Thickness (mm) | 12/10/13 mm |
| iii) Reference Drg. | SKETCH SK-2 (Typical) |

1.2 Manufacturing quality plan:

- i) Quality plan of GS flat is not required for power grid projects. Therefore, the inspection of GS flat & electrodes for power grid projects will be carried out as per relevant Indian Standards (latest version).
- ii) The QP enclosed with standard specification is to be followed for Non Power Grid projects.



RELEASED FOR CONTRUCTION

POWER GRID CORPORATION OF INDIA LIMITED <small>(A Government of India Enterprise)</small>		 पावरग्रिड		
PROJECT :- STANDARD				
TITLE:- STANDARD EARTHING DETAILS				
<small>CKD BY</small>	<small>PRPD BY</small>	12/11/2007	<small>Drawing No.:</small> C/ENG/STD/EARTHINGS	<small>Rev.</small> 00
		<small>Date</small>	<small>SHEET # 5</small>	

SECTION - 2

STANDARD SPECIFICATION

2.1 APPLICABLE STANDARDS

The materials shall strictly conform to the following Indian Standards, as appropriate:

The materials shall conform to the latest editions of the following Indian Standards:

- IS 2062: 2011 Steel for general structural purposes
- IS 1730: 1998 Dimensions for steel plate, sheets, strips and flats for general engineering Purposes.
- IS 1731: 1971 Dimensions for steel flats for structural and general engineering purposes.
- IS 2629: 1985 Recommended practices for Hot-dip galvanizing on iron & Steel
- IS 2633: 1986 Methods for testing uniformity of coating of zinc- coated articles.
- IS 1852: 1985 Rolling & Cutting Tolerance for hot rolled steel products.
- IS 1239 (Part 1): 1990 Specification for mild steel tubes, tubular and other wrought steel fittings (Mild Steel tubes)
- IS 1239 (Part 2): 1992 Specification for Mild steel tubes, tubular and other wrought steel fittings (Mild Steel Sockets)
- IS 4826 – 1979 Hot-dipped zinc coatings on mild steel tubes
- IS 4759: 1984 Hot Dip Coatings on Structural Steel and other allied Products
- IS 6745: 1972 Determination of mass of Zinc Coating on Zinc Coated Iron and Steel Articles
- IS 1536: 1993 Cast Iron Pressure Pipe -Specification

2.2 CONSTRUCTIONAL FEATURES

2.2.1 MILD STEEL FLATS

All steel required for earthing material shall conform to Grade -A (Item Designation – Fe410W) of IS:2062: 2011.

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2.2.2 EARTH ELECTRODES

- (1) The earth electrodes (Galvanised Iron) shall be perforated and fabricated out mild steel pipes and shall conform strictly to IS 1239 – 2004.
- (2) The earth electrodes (Cast Iron) shall be perforated and fabricated out cast iron pipes and shall conform strictly relevant IS: 3043-2006.

Note: Latest revisions shall be followed for all mentioned standard.

SECTION - 3

GENERAL SPECIFICATIONS

3.1 INSPECTION AND TESTING

All tests and inspection of the equipment specified shall be performed to the extent and in the manner as stipulated in the relevant standards and in this specification. All type test/routine tests/acceptance tests as specified shall be conducted as per the details mentioned in the Purchase order for this equipment.

3.2 DOCUMENTATION SCHEDULE AT CONTRACT STAGE: (DOCUMENTATION REQUIREMENT SHALL BE SPECIFIED BY PROJECT PPE AT CONTRACT STAGE AND SHALL VARY FROM PROJECT TO PROJECT).

A (No. of Copies)	For Approval
	Copies of GA drawings with projects details, dimension, equipment weight, fixing details, tolerances and terminal details etc.
	Copies of GTP
	<i>Copies of type test reports</i>
	Copies of manufacturing quality plan.
B (No. of Copies)	After Approval and For Information/Distribution.
	Copies of GA drawings
	Copies of GTP
	Copies of type, Routine & Acceptances tests.
	Copies of manufacturing quality plan.
	Copies of shipping list detailing the description & quantities of all items being dispatched separately, with shipping weights, number of cases and dimensions.

3.3 Material shall not be dispatched without the approval of test certificates by purchasers.

3.4 MATERIALS AND WORKMANSHIP

Equipment materials and components shall be new, of high grade and good quality and be to the latest engineering practice. The material and workmanship throughout shall be in accordance with the purpose for which they are intended. Each component shall be designed to be consistent with its duty.

In general, screw threads shall be standard metric threads. The use of other thread from will be used only after prior approval. The supplier shall furnish locking devices for threaded fasteners, which will lock them in such a manner so as to prevent them from coming loose in transport and in service.

All joints and fastening shall be so designed, constructed and registered that the component part may be accurately positioned and restrained to fulfill their required function. The heads of all bolts shall register flush on the surface, which they fasten.

All the information concerning materials or components to be used in manufacturing, machinery, equipment, materials and components supplied, installed or used shall be submitted for approval. Without such approval the supplier shall run risk of subsequent rejection. The cost as well as time delay associated with such rejection shall be borne by the supplier.

Whenever possible, all similar parts of the works shall be made to gauge and shall also be made interchangeable with similar parts. All spare parts shall be interchangeable with, 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.

The supplier shall apply all lubricants used for installation and operation of the equipment. All consumable required for one-year operation shall be in the scope of supplier.

All components exposed to rain shall be designed with sloped upper surface to avoid water pools.

3.5 SURFACE TREATMENT

3.5.1 All metal surfaces shall be treated to provide anti-corrosion protection. All ferrous surfaces for external use shall be hot-dip galvanized after fabrication. High Tensile steel nuts and bolts and spring washers shall be electro-galvanized to service condition .

36 WELDING

All welding shall be done by a qualified welder.

3.7 PACKING AND MARKING

3.7.1 PACKING

GI Flat may be supplied in open condition. However, while stacking the materials for transportation it should be ensured that, similar items are grouped and tied with steel wires /

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strips for convenient handling and shall be done in such away to avoid damage during transits.

3.7.2 MARKINGS

The following details shall be marked on the packing:

- i) Name and address of the consignee
- ii) Purchase Order No:
- iii) Name of supplier
- iv) Description of material
- v) Tare weight
- vi) Gross weight

SECTION - 4

GUARANTEED TECHNICAL PARTICULARS for ELECTRODES

1.0 EARTH ELECTRODE (Galvanized iron)

- 2.1 Mild Steel pipe OD (mm)
- 2.2 Mild Steel ID (mm)
- 2.3 Thickness of zinc -coating
- 2.4 Weight of zinc coating
- 2.5 Applicable standards

2.0 EARTH ELECTRODE (Cast Iron)

- 3.1 Cast Iron Pipe OD (mm)
- 3.2 Cast Iron Pipe ID (mm)
- 3.3 Applicable standards

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:

(1) S.No.	(2) Parameter	(3) Requirement	(4) Yes / No	(5) Remarks in case reply in Col (4) is <i>NO</i>
1.0	Weight of Zinc coating	Weight of zinc coating shall be as per clause 2.4 of Section-2		
2.0	Tolerance in the flat size	Tolerance in the flat size shall be as per IS:1852-1985		
3.0	Chemical composition of flat/CI Pipe/GI Pipe	Certified copy of the chemical composition of the material as per the relevant standards shall be supplied before the dispatch of the material.		
4.0	Earth electrode	Electrode arrangement shall be provided as per sketch no. SKTECH SK-1 / SKETCH SK-2		
5.0	PG stamp	Raw material shall be inspected at source by Powergrid/BHEL.		
6.0	Length	4 to 6 mtrs		
7.0	Conformance	With enclosed QP		

Date:

Signature of the authorized representative of Bidder

Company Seal