



भारत भारी बिजली सीमांत सप्लाई लिमिटेड  
(भारत भारी बिजली सीमांत सप्लाई लिमिटेड)

**Bharat Heavy Electricals Limited**  
**Industry Sector, Transmission Business Group**

Integrated Office Complex  
Lodhi Road, New Delhi-110 003  
Phones: 011-41793381, Fax: 011-24369509

**AMENDMENT NO- 1 TO NIT**

**DATE: 05.06.07**

**SUB : AMENDMENT - 01 To NIT 2870 For Civil Works**

**REF: TENDER SPEC. No. – TBSM/AGRA/BHIWADI/MOGA/CIVIL/TENDER, Dtd: 24.05.07.**

With reference to above tender for Civil Works for 400kV substation extensions at Agra in U.P., Bhiwadi in Rajasthan & Moga in Punjab, following amendments/addendums may be noted.

1. Underground Earthing & Electrode (Annexure-V, VI &VII) BOQ's are being added to our civil works BOQ's provided in the subject tender. BOQ's for underground earthing and electrodes are enclosed.
- All other terms & conditions of the tender specification shall remain unchanged.
  - Bidders are required to quote as per BOQ's (Annexure-V, VI, & VII) along with the other BOQ's (Annexure-I, II & III) provided in tender document.
  - Bidders are required to fill enclosed Price proposal summary.
  - Please enclose a copy of this amendment-01 alongwith your Technical Bid duly signed by your authorised signatory and stamped.

(R.LODWAL)  
DGM/TBSM

## ANNEXURE-V

**BILL OF QUANTITIES FOR UNDER GROUND EARTHING AND ELECTRODES REV.00**

Name of Project

Extension of 400 kV Substation at Agra

Name of Work

Bill of Quantity for Under Ground Earthing and Electrodes

S. No	Description	Unit	Qty	Unit Rate (Rs.)	Amount (Rs.)
1	Unloading, storing and laying of 40 mm dia MS Rods at a depth of ---- -600----- mm measured from the top of FGL (either top of gravel or top of land as the case may be) for bringing out risers just below gravel level near the equipment foundations as per requirement including following works: - excavation of trenches - laying of MS rod - welding of rods (refer Drg No. TB-STD-316-Rod Welding Rev 00 for Welding details of rods) - backfilling of soil for bringing out pig tail risers of 40 dia MS rod (approximately 2000) for equipments. Risers shall be raised from the earthmat (at 600 mm depth) to 150 mm above ground level to the nearest point of the equipment. This shall include all cutting, bending, welding, fixing, application of zinc rich paint on cutting surface, etc to the main earthmesh. - any other work necessary to complete the laying of earthmat (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- -----40-----% at contract stage.)	KM	2.1		
2	Fabrication & laying of Auxiliary Mat of 40 mm Dia MS Rods at a depth of 300 mm from top of FGL including excavation & backfilling as per Drg No. TB-STD-316-Auxiliary mat Rev 00. - any other work necessary to complete the laying of earthmat (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- -----40-----% at contract stage.)	Nos.	42		
3	Installing of Pipe Electrode(to be driven - 3.0 Mtr) as per Drg. No. TB- STD-316-Pipe Electrode Rev 00 including following works: - excavation - installing the pipe electrode with alternate layers of Coke & charcoal, salt - backfilling and compaction - Casting the Test Pit with Cast Iron covers - any other work necessary to complete the work (GI Pipe, Nuts, Bolts & Washers and funnel with wire mesh will be supplies by BHEL. Quantity may vary by +/- -----40-----% at contract stage).	Nos.	0		
4	Installing of 40 mm diameter Rod Electrode with test pit as per Drg. No. TB-STD-316-Rod Electrode Rev 00 including following works for reactors and transformers: - excavation - installing the rod electrode - backfilling and compaction - Casting the Test Pit with Cast Iron covers - any other work necessary to complete the work (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- -----40-----% at contract stage)	Nos.	7		
5	Installing of 40 mm diameter Rod Electrode without test pit including following works: - excavation/hammering of rod in earth - installing the rode electrode - backfilling and compaction - any other work necessary to complete the work  (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- -----40-----% at contract stage)	Nos.	19		
<b>TOTAL AMOUNT</b>					

## ANNEXURE-VI

**BILL OF QUANTITIES FOR UNDER GROUND EARTHING AND ELECTRODES REV.00**

Name of Project

Extension of 400 kV Substation at Bhiwadi

Name of Work

Bill of Quantity for Under Ground Earthing and Electrodes

S. No	Description	Unit	Qty	Unit Rate (Rs.)	Amount (Rs.)
1	Unloading, storing and laying of 40 mm dia MS Rods at a depth of ----600----- mm measured from the top of FGL (either top of gravel or top of land as the case may be) for bringing out risers just below gravel level near the equipment foundations as per requirement including following works: - excavation of trenches - laying of MS rod - welding of rods (refer Drg No. TB-STD-316-Rod Welding Rev 00 for Welding details of rods) - backfilling of soil for bringing out pig tail risers of 40 dia MS rod (approximately 2000) for equipments. Risers shall be raised from the earthmat (at 600 mm depth) to 150 mm above ground level to the nearest point of the equipment. This shall include all cutting, bending, welding, fixing, application of zinc rich paint on cutting surface, etc to the main earthmesh. - any other work necessary to complete the laying of earthmat (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- ----40-----% at contract stage.)	KM	9.1		
2	Fabrication & laying of Auxiliary Mat of 40 mm Dia MS Rods at a depth of 300 mm from top of FGL including excavation & backfilling as per Drg No. TB-STD-316-Auxiliary mat Rev 00. - any other work necessary to complete the laying of earthmat (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- ----40-----% at contract stage.)	Nos.	150		
3	Installing of Pipe Electrode(to be driven - 3.0 Mtr) as per Drg. No. TB-STD-316-Pipe Electrode Rev 00 including following works: - excavation - installing the pipe electrode with alternate layers of Coke & charcoal, salt - backfilling and compaction - Casting the Test Pit with Cast Iron covers - any other work necessary to complete the work (GI Pipe, Nuts, Bolts & Washers and funnel with wire mesh will be supplies by BHEL. Quantity may vary by +/- ----40-----% at contract stage).	Nos.	8		
4	Installing of 40 mm diameter Rod Electrode with test pit as per Drg. No. TB-STD-316-Rod Electrode Rev 00 including following works for reactors and transformers: - excavation - installing the rod electrode - backfilling and compaction - Casting the Test Pit with Cast Iron covers - any other work necessary to complete the work (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- ----40-----% at contract stage)	Nos.	15		
5	Installing of 40 mm diameter Rod Electrode without test pit including following works: - excavation/hammering of rod in earth - installing the rode electrode - backfilling and compaction - any other work necessary to complete the work  (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- ----40-----% at contract stage)	Nos.	65		
	<b>TOTAL AMOUNT</b>				

## ANNEXURE-VII

**BILL OF QUANTITIES FOR UNDER GROUND EARTHING AND ELECTRODES REV.00**

Name of Project

Extension of 400 kV Substation at Moga

Name of Work

Bill of Quantity for Under Ground Earthing and Electrodes

S. No	Description	Unit	Qty	Unit Rate (Rs.)	Amount (Rs.)
1	Unloading, storing and laying of 40 mm dia MS Rods at a depth of ----600----- mm measured from the top of FGL (either top of gravel or top of land as the case may be) for bringing out risers just below gravel level near the equipment foundations as per requirement including following works: - excavation of trenches - laying of MS rod - welding of rods (refer Drg No. TB-STD-316-Rod Welding Rev 00 for Welding details of rods) - backfilling of soil for bringing out pig tail risers of 40 dia MS rod (approximately 2000) for equipments. Risers shall be raised from the earthmat (at 600 mm depth) to 150 mm above ground level to the nearest point of the equipment. This shall include all cutting, bending, welding, fixing, application of zinc rich paint on cutting surface, etc to the main earthmesh. - any other work necessary to complete the laying of earthmat (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- ----40-----% at contract stage.)	KM	2.8		
2	Fabrication & laying of Auxiliary Mat of 40 mm Dia MS Rods at a depth of 300 mm from top of FGL including excavation & backfilling as per Drg No. TB-STD-316-Auxiliary mat Rev 00. - any other work necessary to complete the laying of earthmat (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- ----40-----% at contract stage.)	Nos.	60		
3	Installing of Pipe Electrode(to be driven - 3.0 Mtr) as per Drg. No. TB-STD-316-Pipe Electrode Rev 00 including following works: - excavation - installing the pipe electrode with alternate layers of Coke & charcoal, salt - backfilling and compaction - Casting the Test Pit with Cast Iron covers - any other work necessary to complete the work (GI Pipe, Nuts, Bolts & Washers and funnel with wire mesh will be supplies by BHEL. Quantity may vary by +/- -----40-----% at contract stage).	Nos.	4		
4	Installing of 40 mm diameter Rod Electrode with test pit as per Drg. No. TB-STD-316-Rod Electrode Rev 00 including following works for reactors and transformers: - excavation - installing the rod electrode - backfilling and compaction - Casting the Test Pit with Cast Iron covers - any other work necessary to complete the work (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- ----40-----% at contract stage)	Nos.	9		
5	Installing of 40 mm diameter Rod Electrode without test pit including following works: - excavation/hammering of rod in earth - installing the rode electrode - backfilling and compaction - any other work necessary to complete the work  (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- ----40-----% at contract stage)	Nos.	27		
<b>TOTAL AMOUNT</b>					



भारत भारी बिजली केंद्रों के लिए भारी बिजली उपकरणों का निर्माण करने वाला एक निजी कंपनी है।  
(भारत भारी बिजली केंद्रों के लिए भारी बिजली उपकरणों का निर्माण करने वाला एक निजी कंपनी है।)

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**Date: 05.06.2007**

### **Summary Price Proposal**

Our total contract value for the entire scope of work to be performed under Annexure-I, II, III, V, VI & VII is Rs. \_\_\_\_\_ (Amount in figure)  
\_\_\_\_\_ (Amount in words).

(SIGNATURE OF TENDERER)  
WITH STAMP