

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES DEPARTMENT

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

NOTICE INVITING TENDER

SUB: Operation & Maintenance of 110/11 kv Sub station -BI-Yearly Contract.- REG.

Ref: Enquiry no: 9251700030 / DATED: 27/09/2017; DUE DT: 24/10/2017

Tender of the following work should be submitted in a sealed cover consisting of Four inner sealed covers such as 1) Pre-Qualification Criteria 2) EMD cover,3) Technical bid cover & 4) Price bid cover, all super- scribing the name of work, enquiry number etc.

- 1) EMD cover shall contain requisite **EMD of ₹ 1,23,900/-**. **Payment of EMD & SD must be in e-Collect mode only**. Tender without EMD will be summarily rejected and the Technical bid & price bid shall not be considered.
- 2) Pre-qualification criteria cover shall contain duly filled and signed with seal in all pages of relevant documents. such as experience, value of work executed in the similar nature of work etc. Any bid without proper documentary evidence for pre-qualification shall not be considered for further evaluation.
- 3) Technical bid cover shall contain duly filled in Technical bid document signed with seal by the tenderer in all the pages.
- 4) One set of unpriced bid of Contract Work Schedule duly signed with seal by the tenderer for accepting the work content (BOM) should be submitted along with the Technical bid for technical evaluation.
- 5) The price bid cover shall contain price bid document duly filled in and signed with seal by the tenderer in all the pages. The tenderer has to quote most competitive rates for all the items given in the Bill of Quantities in price bid.

The complete Pre-qualification bid, Technical bid and price bid along with requisite **EMD of ₹ 1,23,900/-** shall reach the office of the undersigned on or before **24/10/2017 at 14.00 Hrs.**

MSE suppliers can avail EMD Waiver benefits only if they submit along with the offer, attested copies of either EM II Certificate having deemed validity (five years from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II Certificate along with attested copy of a **CA Certificate** (Format Enclosed). Tenders without EMD/MSME proof as detailed above will be summarily rejected.

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

The Prequalification bid will be opened on the same day at **14.30 hrs.** In case of opening day falls on holiday or happened to be declared as a holiday the receipt and opening of the tender shall automatically fall on the same timing of the next working day. Date and time of opening of the Price Bid shall be intimated only to the bidders those who have qualified after evaluation of the Technical bid. You / Your authorized representative may participate in the tender opening.

Clarification if any can be obtained from the undersigned.

Kindly acknowledge the receipt of the entire set of tender document.

Thanking you,

Yours faithfully,

For Bharat Heavy Electricals Limited,
Sr.Engineer / Contracts
Maintenance & Services

Encl:

1) NIT – Notice Inviting tender (Consists of Preamble, Technical Bid & price bid)

Tender should be addressed to: **Sr. THE ENGINEER,
MAINTENANCE & SERVICES / CONTRACTS,
2&4 BUILDING, BHARAT HEAVY ELECTRICALS LIMITED,
HIGH PRESSURE BOILER PLANT,
TIRUCHIRAPPALLI – 620014
TAMILNADU**

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

NOTICE INVITING TENDER

01.	Name of work	Operation & Maintenance of 110/11 kv Sub station -BI-Yearly Contract.
02.	Earnest Money Deposit	₹ 1,23,900/-
03.	Duration of the contract	24 Months (from date of commencement of the work)
04.	Last Date for Receipt of Tender	14.00 Hrs on 24/10/2017
05.	Date of Technical Bid Opening	14.30 Hrs on 24/10/2017
05.	Date of Price Bid Opening	Will be intimated to those who are Qualified separately.
07.	Guarantee Period	Not applicable

The Tender documents can be down loaded from BHEL website (www.bhel.com) / govt. website (www.tenders.gov.in) at free of cost.

Tender document contains 24 Pages (Pre-qualification Bid- 02 Pages, Technical Bid - 21 Pages, Schedule for price bid – 01 page).

ISSUING OFFICER

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

PRE-QUALIFICATION BID

NAME OF THE WORK: Operation & Maintenance of 110/11 kv Sub station -BI-Yearly Contract.

Ref: Enquiry no: 9251700030 / DATED: 27/09/2017; DUE DT: 24/10/2017

PRE-QUALIFICATION CRITERIA

The following eligibility criteria shall be complied to fulfill the Technical bid:-

Sl. No	Description	Vendor to confirm
1	Only those bidders who are having valid ESA or higher Electrical license from Tamilnadu Electrical Licensing Board for electrical works shall quote. Documentary evidence in support of the same shall be enclosed with the offer.	
2	The bidder should have minimum 3 year experience in operation and maintenance of similar or higher capacity EHT substations.	
3	Bidder should submit the performance/ work completion certificate from minimum one customer for the satisfactory completion of the work awarded. Work order copy also shall be enclosed along with performance/ work completion certificate in the past seven years.	
4	BHEL may verify the information provided by vendor. In case the information provided by vendor is found to be false / incorrect, the offer shall be rejected. Bidder to confirm.	
5	(i) BHEL Vendor code (if applicable) - (ii) PAN Number (Copy to be Enclosed) - (iii) GSTN registration Number (Copy to be Enclosed) - (iv) Mobile number (Which is linked to GSTN registration Number) - (v) Email id (Which is linked to GSTN registration Number) - (vi) HSN Code & SAC Offer will be entertained only if the vendor submit the details as above & has a valid GST registration no. If any specific exemption is available, a declaration with due supporting documents need to be furnished for considering the offer. Otherwise the offer shall be rejected.	
6	Acceptance for Scope of Work as per the Enquiry.	
7	Acceptance for All Terms & Conditions as per the Enquiry.	

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

8	The bidder along with its associate/collaborators/sub-contractors/sub-vendors/consultans/service providers shall strictly adhere to BHEL fraud prevention policy displayed on BHEL website http://www.bhel.com and shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice.	
9	Income Tax Return-Filed for 3 years (15-16,16-17 & 17-18)	1). 2). 3).
10	Annual Turnover for 3 years (14-15,15-16 & 16-17) Average : ` 18.59 Lacs	1). 2). 3).
11	Solvency : ` 12.50 Lacs	

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

TECHNICAL BID

SCOPE OF WORK: Operation & Maintenance of 110/11 kv Sub station -BI-Yearly Contract.

ITEM NO.	SCOPE OF WORK	QTY & UOM
10	<p>SCOPE OF WORK: Carrying out day to day operation and Maintenance works in 110 KV switch yard, 110/11kV Transformers, 11KV VCB panels, 11KV/415 V station transformers, Electrical control panel room, 2X2000KVA Diesel Generator set HT switch gear & NGR panel and other auxiliary equipment installed in the SS by deploying operation & maintenance staff with necessary safety equipment & tools. The O&M should be performed for 24 Hrs (3 shifts) for 2 years.</p>	8 QTR
	<p>DETAILED TECHNICAL SPECIFICATION:</p> <p>1.0 OPERATION ACTIVITIES IN 110 KV SWITCH YARD:</p> <p>1.1). Observing and recording the voltage, current, KVA demand, temperature, OLTC system, Tap position of the Four 110/11kV 10/12.5 MVA Transformers and maintaining the correct supply voltage at the Transformers out going as required.</p> <p>1.2). Inspection of all the switch yard equipment as indicated in the single line diagram and noting down any abnormalities of the system and inform to SS-in-charge for appropriate direction.</p> <p>1.3). Checking all the earth pits, connections and watering periodically for its healthiness.</p> <p>1.4). Cleaning of the yard free from vegetation regularly.</p> <p>1.5). Checking the Transformer for its normal working condition and inspect the Transformer for any oil leakage, conservator oil level, changing of silica gel etc.</p> <p>1.6). Checking the SF6 breakers daily for the gas pressure position and ensure its safe operation.</p> <p>1.7). Inspect the total substation Bus bar & conductor junction clamps and its connection for healthiness & effectiveness.</p> <p>1.8). Checking the Nitrogen fire protection system daily for the gas pressure position and ensure its safe operation of four transformers.</p>	

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

	<p>2.0.OPERATION ACTIVITIES IN 110 KV CONTROL&RELAY PANEL ROOM:</p> <p>2.1).Regular Cleaning of all the 11 KV HT SWG panel, control relay panels, battery charger, ACDB, DCDB, 110 KV yard control box, control panels, CT, PT& BAY control junction boxes and RTCC panels.</p> <p>2.2).Checking the DC Battery & Battery Charger for its proper functioning.</p> <p>2.3).During breakdown/ fault condition, observe the flag indication of the protective relays, lamp indications, annunciators connected with 110 KV and 11 KV panels (Viz. Distance protection, Restricted Earth Fault, Earth fault, Differential protection, Over Load etc.) and take corrective steps to resume the power as early as possible as directed by SS in-charge.</p> <p>2.4).Take immediate action to rectify the fault by taking corrective action and details of fault shall be recorded (like IR values and other relevant readings). Before restoring power supply clearance shall be obtained from the SS-in-charge.</p> <p>2.5).Recording all the activities conducted in the SS log book.</p>	
	<p>3.0.MAINTENANCE ACTIVITIES OF SUB STATION:</p> <p>3.1).During maintenance work, the following works to be carried out at 110 KV Substation yard / 11 KV panels.</p> <p>a).Required line clearance to be obtained for switching OFF 110 KV breakers /isolator/ 11 KV VCB.</p> <p>b).Draw out breaker, opening of switches to ensure safety during working.</p> <p>3.2).Resume power ('ON') after removing of Earth Rod, inspect the line / panels free from materials / tools and return the LC.</p> <p>3.3).Preventive maintenance to be carried out for all the equipment as mentioned in Annexure-I once in a year and respective preventive maintenance check list has to be filled-in and recorded.</p> <p>3.4).In case of major breakdown or emergency cut OFF power supply to the faulty section, the same to be informed to BHEL Engineer-in-charge.</p> <p>3.5).Keeping in touch with TNEB / ALUNDUR staff for any instructions regarding Operation during power failure/tripping well in advance and inform BHEL SS-in-charge.</p>	

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

	<p>3.6).All the electrical complaints should be attended, corrected and recorded immediately.</p> <p>3.7).Maintenance of AC & DC distribution boards and panels of the equipment wherever required.</p> <p>3.8).Proper Safety procedure should be followed by using safety shoes, safety hand gloves etc. as per the instructions while executing the service works in 110 KV yard, 11 KV panel room & Battery room, etc.</p> <p>3.9).The contractor may specifically note that the scope of work as detailed above are only indicative of the probable nature of work and the entire scope of work is not limited to the information furnished above.</p> <p>3.10).Required spares will be issued by BHEL free of cost at BHEL SS stores.</p>	
	<p>4.0.MAN POWER DETAILS (QUALIFICATION & EXPERIENCE):</p> <p>4.1).The contractor shall depute the following manpower:</p> <p>(a).Site In-charge- 1 no.</p> <p>(b).Shift Enigneer-4 nos.(incl. 1 person reliever)</p> <p>(c).Shift Technician- 4 nos.(incl. 1 person reliever)</p> <p>(d).Technicians in General Shift-2 nos.</p> <p>4.2).A qualified and experienced reliever should be available throughout the year to replace Site Engineer/Shift engineer/technician during leave/absent period for smooth and continuous operation & maintenance of the substation.</p> <p>4.3).The contractor shall furnish all the contact details of their staff working in the operation and maintenance team, with a copy of their certificates.</p> <p>4.4).HPBP, TRICHY shall have the right to disallow any O&M staff, if found unfit to perform. HPBP, TRICHY instructions issued in writing shall be binding on the contractor who shall replace the person.</p> <p>4.5).The contractor shall provide separately identifiable uniforms for the O&M staff. Necessary PPE like safety hand gloves, safety shoes, earthing rods, etc. shall be arranged by the contractor for the O&M staff.</p>	

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

	<p>4.6).The qualification and experience details shall be as follows:</p> <p>(a).Site in-charge: Degree in Electrical engineering with a minimum 7 years Experience in 110 KV or above SS operation and maintenance.</p> <p>(b).Shift Engineer: Diploma in electrical Engineering with 5 years experience OR, ITI in Electrical trade with minimum of 7 years experience in EHT substation operation and maintenance with valid C license issued by electrical licensing Board</p> <p>(c).Technician: Diploma in electrical Engineering with 2 years experience OR ITI in Elect. Trade with minimum 5 years experience in EHT SS operation and maintenance with valid B-license issued by electrical licensing Board.</p>	
	<p>5.0.PAYMENT TERMS:</p> <p>Quarterly payment at the end of every quarter with submission of proper supporting documents and maintenance records.</p>	
	<p>Maintenance Schedules:</p> <p>1.0).Daily maintenance schedule:</p> <p>1.1).Noting the peak hour readings as per schedule.</p> <p>1.2).Note down the HT/LT/DG/Control meter readings of substation for analyzing and reporting.</p> <p>1.3).Monitoring and recording the transformer parameters such as:</p> <p>a).Winding temperature.</p> <p>b).Oil temperature.</p> <p>c).Oil level in Main tank & condenser bushings</p> <p>d).Checking the breathers of transformer & OLTC.</p> <p>e).Checking of oil leakage, if any, and take immediate action to stop leakage. (If transformer is required to be sent outside for any modifications / repair / overhauling, the same has to be informed in advance and the cost will be borne by BHEL).</p> <p>f).OLTC oil level checking. OSR relay status and noting down operation counter details.</p> <p>g).OLTC On-line oil filtration unit operations & indications has to be checked-4 no's.</p> <p>1.4).Cleaning of HT Switch gears panels, control panels and LT panels externally as per the schedule.</p> <p>1.5).Check auxiliary supply and control voltages.</p> <p>1.6).Check the condition of indication lamps provided on HT and LT panels.</p>	

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

	<p>1.7).Check the proper working condition of RTCC panels for each Transformer.</p> <p>1.8).Check the batteries and battery chargers for proper functioning.</p> <p>1.9).Isolation & Re-energization of feeders as per the demand of operation.</p> <p>1.10).Test & reset the annunciator in all panels, take corrective action whenever necessary.</p> <p>1.11).Inspection of water stagnation in cable cellar and removal of the stagnated water and sludges.</p> <p>1.12).Required House keeping work to maintain aesthetic look as per instruction of SS in-charge.</p> <p>1.13).Recording on-line data logging system available in BHEL M&S Webpage.</p> <p>1.14).Regular check up and monitoring of nitrogen purging system available in 4nos of Transformer.</p> <p>1.15).Checking and up keeping lighting systems in switch yard, control room and around control room.</p> <p>1.16).Correspondence with BHEL / TANGEDCO officials related with Power Supply operations and interruptions etc.</p>	
	<p>2.0.Weekly Schedule:</p> <p>2.1).Carry out preventive maintenance as per the check-lists available in Equipment manuals/ BHEL checklists available with SS in-charge.</p> <p>2.2).Prepare list of spares and material required for carrying maintenance work and submit it to BHEL in advance for better spares/ material management.</p> <p>2.3).Maintain/ record the proper storage of material / spares for easy & immediate identification of spares at the time of critical need with the provision of tags, list of materials with the location details.</p> <p>2.4).Carry out battery maintenance as per schedule.</p> <p>2.5).Measurement of voltage of each cell and should be recorded.</p> <p>2.6).Operation of online filtration unit of OLTC of transformer as per SS in-charge instructions.</p>	

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

	<p>3.0).Monthly schedule:</p> <p>3.1).Checking the discharge devices and fuses.</p> <p>3.2).Carry out preventive maintenance of battery charger in both Float and Boost mode.</p> <p>3.3).Checking of oil leakage and general body inspection of Transformers.</p> <p>3.4).Manual actuation of cooling fans in Transformers and ensure correctness of running.</p> <p>3.5).Checking the condition of silica-gel in breather.</p> <p>3.6).Checking the oil level in oil seal of breather.</p> <p>3.7).Check the Control room lights , yard lights and water pump at cellar room.</p> <p>3.8).Cleaning of the Cable Cellar/Trench, Burnt oil pit, Storm water pit & drains as per BHEL engineer instruction.</p> <p>3.9).Contractor should submit all log, PM check list and test and calibration reports to SS in-charge.</p> <p>3.10).Checking the bellow expansion in the marshalling box WTI and OTI.</p> <p>3.11).Checking of exhaust fan in the battery room.</p>	
	<p>4.0).Quarterly schedule:</p> <p>4.1).Checking the overall condition of radiators, transformer main tank, Bushings and cleaning the same periodically.</p> <p>4.2).At the time of any total shut down of 110KV SS, checking of all making & breaking points of AB switches, line healthiness, ACSR clamps and connector healthiness, PT & CT terminations, transformer terminations, insulation bushes condition, oil leakage points, etc., Tap changer operations in local & remote.</p> <p>4.3).Rectification & corrective action of loose connections.</p> <p>4.4).Checking the indication lamps and contactors in the nitrogen purging systems.</p>	

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

<p>5.0).Yearly schedule/Half Yearly:</p> <p>5.1).Prepare the schedule for carrying out preventive maintenance program on the equipment & submit report after completion of maintenance activity.</p> <p>5.2).Check the earth pit values(substations & lightning protection) and do the preventive maintenance.</p> <p>5.3).Testing of of all protective equipment in the control panels like over current, earth fault, Buchholz relay, REF relay, etc., and report to be submitted.</p> <p>5.4).Earth resistance testing for earth pits using own instruments and submits report for the same.</p> <p>5.5).Checking of battery cable connections.</p> <p>5.6).Cleaning of all bushings & its inspection thereof, checking of horn gap distance & its tightness.</p> <p>5.7).External cleaning of Transformer radiators.</p> <p>5.8).Checking of all Cooling fans.</p> <p>5.9).Maintenance of OLTC driving mechanism, Oil replacement, operational check & maintaining circuit along with the OEM.</p> <p>5.10).Maintenance of OLTC diverter switch.</p> <p>5.11).Checking of transformer trouble & operating devices.</p>	
<p>5.12).Checking of marshalling box.</p> <p>5.13).Checking of transformer neutral earthing, body earthing & earth pit resistance measurement.</p> <p>5.14).BDV, PPM & Resistivity test of transformer oil.</p> <p>5.15).Tan delta & capacitance measurement of bushing & main windings.</p> <p>5.16).Measurement of winding resistance at all tap positions.</p> <p>5.17).Testing of transformer oil for DGA.</p> <p>5.18).Oil filtering work in all Transformers by using Standard Oil filtering m/c, if necessary oil top up to be done and submit Oil test reports.</p> <p>5.19).Based on the recommendation of OLTC OEM and BHEL engineer, OLTC overhauling should be carried out.</p> <p>5.20).Transformer OLTC oil sample has to be taken once in 6,months/ as per BHEL O&M in-charge advice to test BDV and DGA to assure healthy condition of OLTC oil.</p> <p>5.21).Thermal imaging of all overhead ACSR line joints and termination, XLPE cable and submit the hard copy of image with date time to assure healthiness cable and ACSR terminations.</p> <p>5.22).All the meters (voltmeters, ammeters, energy meters, multi function meters, etc.,) shall be calibrated with NABL lab.</p>	

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

<p>Note:</p> <ol style="list-style-type: none">1).The contractor should engage qualified & experienced operating & maintenance personnel. The total staff proposed for this contract should be mentioned separately for O&M in their offer.2).Spares and other electrical consumable items will be supplied free of cost by BHEL at stores/ site.3).Required Transportation for O & M staff to be arranged by the contractor on their own.4).PF & ESI other statutory conditions should be taken care by the contractor.5).The contractor shall arrange the following equipment for annual testing work along with valid NABL approved lab test reports:<ol style="list-style-type: none">a).Automatic 3 phase relay testing unit to test numerical relays.b).HV capacitance & tan delta test kit to test power transformerc).Micro ohm meter for contact resistance measurement.d).Transformer winding resistance meter.e).Transformer turns ratio meter.f).Primary current injection test kit up to 2000 A for CT test.g).3 Pole / 1 Pole time interval meters for breaker timing test.h).Digital/ motorized insulation resistance tester up to 10 KV.i.)Battery operated digital / soil resistivity test kit.j).3 Phase Energy Meter Test kit for Energy meter testing.k).Single Phase Automatic / Manual relay test kit for testing numeric / static / Electro magnetic relays.l).Transformer oil filtration machine.m).Transformer oil test kit.n).Thermal imaging camera.	
---	--

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

Annexure-I			
List of equipment at 110/11kV Sub station			
Sl. No	Equipment description	Quantity	UOM
1	96 kV Lighting Arrestor	18	Nos
2	110 kV motorized Isolators with earth switch	4	Nos
3	110 kV motorized Isolators without earth switch	4	Nos
4	110 kV Line current transformer with ratio 500 / 1 A	6	Nos
5	110 kV Transformer bay current transformer 100 / 1 A	12	Nos
6	Potential transformer for bus (110kV/v3) / (110V/v3)	6	Nos
7	110 kV 2000 A SF6 circuit breaker 3 phase	2	Nos
8	110 kV 1250 A SF6 circuit breaker 3 phase	3	No
9	110 kV 800 a SF6 circuit breaker 3 phase	1	No
10	110 / 11 kV, 10 / 12.5 MVA capacity power transformers DYN11 with OLTC	4	Nos
11	11 kV switch board (including bus raiser panels & trunk panels)	27	Nos
12	Maintenance free 110V DC 200Ah battery	1	Set
13	Battery charger	1	No
14	ACDB panel	1	No
15	DCDB panel	1	No
16	Maintenance of UPS along with batteries	1	No
17	Nitrogen firefighting system and control panels	4	Nos
18	2x2000 kVA DG HT VCB panel	6	Nos
19	2x2000 kVA DG NGR control panel	2	Nos
20	Pumps and motor for fuel handling system	1	Set
21	Earth pits	96	Nos
22	Analog Relays and meters in 11 KV SWG, 110 KV C&R, CT, PT, Isolators control and other panels	1	Lot
23	100 kVA Station transformer	1	No
24	Spare items for maintenance (CT, PT, LA, OLTC, etc.)	1	Lot
25	Water pumps for cable cellar/ burn oil pits	3	Nos

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

<p>Special terms and conditions:</p> <ol style="list-style-type: none">1).Trouble shooting in HT panels and rectification, if defective works to be carried out as instructed by SS-in-charge.2).Recording attendance of staffs in 3 shifts and coordinating with SS maintenance & TNEB officials to carry out day-to-day works and take monthly meter reading.3).Constant vigilance of 110/ 11 KV distribution system, incoming and outgoing voltages, and Tap positions of HT Transformer shall be maintained and recorded suitably in daily log sheet and submitted to the Substation-in-charge.4).The log book will be maintained and staff working in the rotational shifts shall maintain & recorded data's and submit to the Substation-in-charge.5).Maintaining good housekeeping in substation, up-keeping the panel boards and surrounding areas, cleaning transformer yard and, batteries etc. as instructed by SS -in-charge. Cleaning includes the removing of vegetation and garbage in the switchyard of approx. area 80 m x 80 m.6).The contractor shall arrange for proper supervision and organization from his side for carrying out the works to the extent of fullest satisfaction of Ss0incharge.7).The periodical maintenance chart for various operational and control equipment, transformers to be prepared by the contractors and it should be approved by the SS-in-charge before taking over SS O&M.8).A repair request form regarding electrical maintenance will be provided to the contractor. They should enter the data like date of receiving complaint, date of completion of job, materials / spares used for that work etc. and submit to the SS-in-charge.9).Adequate precaution shall be taken to prevent danger from electrical equipment. No materials on any of the sites of work shall be so stacked or placed as to cause danger or inconvenience to any person/equipment.10).All necessary personal safety equipment as considered adequate by the Engineer should be kept available for the use of the person employed on the site and maintained in a condition suitable for immediate use and the contractor should take adequate steps to ensure proper use of equipment by those concerned. Inspection of all equipment and noting down any abnormalities of the equipment's and reporting to the shift in charge of substation.11).Studying the logbook and note down the operation carried out in the previous shift and complete the pending works.12).The contractor has to submit the organization chart of their set up for the works and any change thereafter in the organization set up should be intimated to SS in-charge.	
--	--

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

<p>13).The contractor shall carry out health performance test at its cost for all the workmen engaged in the work through a registered medical practitioner and produce certificate on demand.</p> <p>14).It shall be the responsibility of the contractor to see the workmen do not utilize the departmental canteen facilities. Contractor has to make his own arrangement to provide refreshment of the workmen.</p> <p>15).Contractor's materials such as tools, testing equipment etc., shall have to be brought inside the factory/switch yard with proper documents/voucher and make necessary entry in the security gate. They should maintain proper record for tool equipment, materials etc., brought inside the factory complex.</p> <p>16).The contractor should extend fullest cooperation with the third party agencies engaged, if any by BHEL to adhere the statutory regulations.</p> <p>17).Water and electricity will be provided by this organization at free of cost at site.</p> <p>18).The contractor shall be responsible for the equipment and materials handed over to him and in case of any mishandling or missing of the same shall be repaired or replaced by his own risk and cost.</p> <p>19).Effective periodical supervision, apart from the regular work done by the Shift Engineer/technician during round the clock maintenance of the substation should be made by the higher level competent person of the contracting organization.</p> <p>20).Any damage done to the existing installation, equipment or building particularly due to the negligence of the contractor shall be the entire responsibility of the contractor to repair, rectify and replace the same free of cost.</p> <p>21).Timely submission of the invoice with all necessary supporting documents for the work done or the duration of the work has completed to be ensured.</p> <p>22).All the instruments brought by the contractor for maintenance work should have valid calibration certificate from NABL accredited labs.</p> <p>23).In case any leave of site in-charge/Working staff should be informed and prior permission to be obtained from the Engineer In-charge.</p> <p>24).The working staff should have the knowledge & Experience in operating the firefighting unit and first aid treatment.</p> <p>25).The Contractor should apply Occupational Health & Safety regulations, Codes and practices in the work place.</p> <p>26).Induction into workplace - location of work area and storage area, Timetable, Uniform, House-Keeping rules, Emergency procedures, Evacuation procedures should be provided by the contractor.</p>	
---	--

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

	<p>27).Annual test reports for relays and meters and other equipment shall be submitted in duplicate within a month after the completion of testing.</p> <p>28).Maintenance/ store/ incident/ accident records shall be maintained as per the instruction of SS-in charge.</p> <p>29).All the O&M staff shall be provided with First aid and firefighting training by certified agents.</p> <p>30).Daily/ Sunday/ holiday gate pass and cycle pass for the O&M staff shall be arranged by the Site-in-charge as per the BHEL practice.</p> <p>31).All other terms & Conditions shall be accepted by the vendor as per the Tender Documents.</p>	
--	---	--

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

GENERAL TERMS AND CONDITIONS FOR M&S CONTRACTS

- 1) The workmen of contractor should be covered under PF/ESI, etc. as per labour laws.
- 2) Safety precautions have to be ensured by the Contractor Depending on the work nature. Necessary work permit system and personal protective equipment (PPE) such as electrical resistance rubber gloves, helmet, spectacle goggles, safety shoes, safety belt etc. as applicable to Mechanical works should be adhered while carrying out the work.
- 3) PPES for appropriate trade job has to be ensured by the contractor at the job site at all times.
- 4) The contractors may visit the area to assess the quantum of work before quoting.
- 5) The contractor should mention the point to point confirmation.
- 6) Contractor should commit for Terms and Conditions of the enquiry otherwise the offer shall be liable for rejection.
- 7) **TWO PART BID SYSTEM:** Contractor should send their offer for two part bid system as below
- 8) Contractor may visit to get acquaintance with quantum of day to day work by visiting BHEL Trichy premises before quoting.
- 9) The contractor should quote the exact time required to complete the work in their offer.

TENDERING CONDITIONS:

- a) The Bidders shall submit the offer in TWO PART BID SYSTEM (Part -I & II) along with EMD as indicated below which shall be sealed in ONE OUTER ENVELOPE.
- b) Envelope I- This sealed envelope should contain all the copies of technical bid together with un-priced commercial bid. This envelope should be clearly marked "Part I - Technical and commercial bid", indicating Enquiry No., Due Date and Address & Reference of the Bidder. Envelope I should contain sealed EMD cover indicating the enquiry detail.
- c) Envelope II - This sealed envelope should contain price details. This envelope should be clearly marked as - "Part -II Price bid", indicating Enquiry No., Due Date and Address & Reference of the Bidder.
- d) Envelope III - This sealed envelope should contain requisite **EMD**. This envelope should be clearly marked as - "EMD COVER", indicating Enquiry No., Due Date and Address & Reference of the Bidder.
- e) All the three envelopes shall be put in one cover, duly sealed, super scribing as offer for Enquiry No., and due date of opening, Name of the work and the address and reference of the Bidder.
- f) The offer should reach this office on or before the due date by 14.00 Hrs. (IST). Late offers will not be considered.

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

g) Tender should not be addressed to any Individual's name but only by designation to:

THE Sr.ENGINEER
MAINTENANCE & SERVICES / CONTRACTS,
2&4 BUILDING,
BHARAT HEAVY ELECTRICALS LIMITED,
HIGH PRESSURE BOILER PLANT,
TIRUCHIRAPALLI - 620 014.
TAMIL NADU, INDIA.

- h) Tenders should be free from CORRECTION AND ERASURES, Corrections if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.
- i) Offers should be in ENGLISH and accompanied by detailed Point to point confirmation of the scope of work.

OPENING OF TENDERS:

- a) The Part I - Technical & un-priced commercial bid and EMD Cover alone would be opened on the Tender opening date (as mentioned in the enquiry) by 14.30 hrs. (IST)
- b) The Part II - Price bid of technically suitable Bidders alone would be opened. The Technically suitable Bidders would be informed about the Price bid opening date.
- c) Clarifications if any required by BHEL for Technical evaluation would be sought from Bidders before opening of Part II - price bid.

GST:

1. Response to Tenders for Contractor will be entertained only if the vendor has a valid GST registration no which should be clearly mentioned in the offer. If any specific exemption is available, a declaration with due supporting documents need to be furnished for considering the offer.
2. Contractor shall mention their GSTN registration number in all their invoices and invoices shall be in the format as specified/prescribed under GST laws. Invoices shall necessarily contain Invoice number (in case of multiple numbering system is being followed for billing like SAP invoice no, commercial invoice no etc., then the Invoice No which is linked/uploaded in GSTN network shall be clearly indicated), item description as per PO, Quantity, Rate, Value, applicable taxes with nomenclature (like IGST, SGST, CGST & UTGST) separately, HSN/ SAC Code, etc.
3. All invoices shall bear the HSN Code for each item separately (Harmonized System of Nomenclature)/ SAC code (Services Accounting Code).

LD CLAUSE:

If the contractor fails to complete the work as per terms & conditions of the order within the delivery schedule, 0.5% of the order value will be deducted for each week of delay

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

or part thereof subject to a maximum of 10% of the total contract value.

IMPORTANT NOTE: BHEL reserves the right to short close this AMC with one month advance notice due to administrative reasons. BHEL's decision in this regard is final.

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

COMMERCIAL TERMS AND CONDITIONS FOR M&S CONTRACTS

- 1) Quarterly payment will be made by every completion of the quarterly maintenance on submission of invoice in triplicate duly certified by Engineer in charge. Attendance register should be maintained.
- 2) ***Payment of EMD & SD must be in e-Collect mode only, while making such payment, Enquiry number may be mentioned in Remark column. Offers without EMD shall be liable for rejection.***

Procedure to remit money to BHEL Trichy's Account :

Login to : <https://www.onlinesbi.com/prelogin/icollecthome.htm?corpID=574693>

1. Select State Bank Collect available on the top (pre login page)
2. Accept the terms and conditions and click "PROCEED"
3. Select State "TAMILNADU " and Institution type " INDUSTRY ".
4. Select " BHEL TRICHY under "INDUSTRY".
5. In the next page, Select APPROPRIATE category, fill details correctly & click "SUBMIT".
6. If all details entered are correctly populated, click "CONFIRM "to proceed.
7. Make payment as per your convenience. (Options available are payment of fees through SBI Net Banking, State Bank ATM cum Debit Cards / Other Bank Debit / Credit Cards and through SBI Branches).
8. SAVE & Keep the copy of receipt for future reference.
9. Outsiders as well as BHEL Employees can use this facility

You may also Login by typing " SBI e-collect " in Google.

- 3) Security Deposit shall be furnished by the successful vendor to the total contract value before starting the work. The total amount of Security Deposit will be 5% of the contract value. EMD of the successful tenderer shall be converted and adjusted towards the required amount of Security Deposit. SD is forfeited in case of any failure in execution of the contract or due to any shortcomings observed in the documentation furnished earlier for getting qualified or in case the Contractor is banned.
- 4) An additional payment as per circular ref. BHE/HR/W/EW/08.04.2014 is to be paid to the contract workmen as below, over and above the minimum wages prescribed by the government of Tamil Nadu:
Unskilled - Rs.3200/-
Semiskilled - Rs.3700/-
Skilled - Rs.4100/-
- 5) Bonus @ 8.33 % to workmen to be paid.

Sign & Seal of Contractor

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)



ISO 9001

ENQ No: 9251700030

Dt.27.09.2017

- 6) **Rate should be quoted as per price bid.**
- 7) Taxes if any will be mentioned separately in the offer.
- 8) The rate that is offered should be comprehensive and no separate charges will be made towards expenses like travel, boarding and lodging.
- 9) The contractor should quote the validity of the offer.
- 10) If two or more vendors offer the same rate, negotiation will be conducted separately.
- 11) The contractor should remit the salary/wages for their workmen only through Bank. Monthly clearance will be given in respect of all contractors, if only the salary/ wages to the workmen has been remitted through the bank account of the contract workmen. The relevant Bank statement/proof for Bank payment should be produced along with PF and ESI challan's to Welfare Section every month.

Sign & Seal of Contractor

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)) _____ dt. _____, Category: (Micro/Small). (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as per the latest audited financial year _____ 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):

₹ _____ 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):

₹ _____ Lacs

(Strike off whichever is not applicable)

The above investment of ₹ _____ Lacs is within permissible limit of ₹ _____ Lacs for _____ Micro / Small (Strike off which is not applicable) Category under MSMED Act 2006.

Or

The company has been graduated from its original category (Micro/Small) (Strike off which is not applicable) and the date of graduation of such enterprise from its original category is (dd/mm/yyyy) which is within the period of 3 years from the date of graduation of such enterprise from its original category as notified vide S.O. No. 3322(E) dated 01.11.2013 published in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:

(Signature)

Name:

Membership number:

Seal of Chartered Accountant

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

(0431) 257-5958 [e-mail: avinashsahoo@bheltry.co.in](mailto:avinashsahoo@bheltry.co.in)

ENQ No: 9251700030

Dt.27.09.2017

SCHEDULE FOR PRICE BID

SUB: Operation & Maintenance of 110/11 kv Sub station -BI-Yearly Contract.

Ref: Enquiry no: 9251700030 / DATED: 27/09/2017; DUE DT: 24/10/2017

ITEM No.	DESCRIPTIONS	UOM	QTY	RATE IN ₹	VALUE IN ₹
10	ANNUAL MAINTENANCE CONTRACT FOR OPERATION AND MAINTENANCE OF BHEL 110 / 11 KV SUBSTATION FOR TWO YEARS. SCOPE OF WORK: Carrying out day to day operation and Maintenance works in 110 KV switch yard, 110/11kV Transformers, 11KV VCB panels, 11KV/415 V station transformers, Electrical control panel room, 2X2000KVA Diesel Generator set HT switch gear & NGR panel and other auxiliary equipment installed in the SS by deploying operation & maintenance staff with necessary safety equipment & tools. The O&M should be performed for 24 hrs. (3 shifts) for 2 years.	QTR	8		

NOTE: Please quote rate for the above item text with reference from detailed text of Scope of work.

- Taxes if any should be quoted extra

- 1). Quarterly payment will be made by every completion of the quarterly maintenance on submission of invoice in triplicate duly certified by Engineer in charge.
- 2). Tax deduction will be made from every bill at the prevailing rate as per the Government rule and regulation from time to time.
- 3). Detailed scope of work and other terms and conditions are specified in the Technical Bid of the Tender.
- 4). Cumulative L-1 will be considered for Ordering.

Sign & Seal of Contractor