



भारत हेवी इलेक्ट्रिकल्स लिमिटेड, भोपाल  
**BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL**

TRANSFORMER SERVICES DEPARTMENT

Phone: +91-755-2502686, 3651, 3195 E-mail: [txx.bpl@bhel.in](mailto:txx.bpl@bhel.in) krishnasingh@bhel.in

TENDER NOTICE NO. TXX/TN/2019-20/07

DATED: 03/09/2019

Sub.: Receipt, unloading, handling, storage, erection, commissioning and handing over of 1 No. x 201.67 MVA 400/20 KV 1-Ø Generator Transformer at M/s. NTPC Rihand.

Dear Sir(s),

Sealed tenders are invited for carrying out the subject work. The tender submission and opening details are as follows:

- **DATE & TIME OF RECEIPT OF THE TENDER:** 23/09/2019 Till 11.00 Hrs.
- **DATE & TIME OF TENDER OPENING:** 23/09/2019 after 14.00 Hrs.
- **PLACE OF TENDER SUBMISSION:** "GREEN COLOURED WORKS CONTRACT TENDER BOX" placed in Tender Room, Administrative Building, Ground Floor, BHEL, Bhopal – 462 022.

The details of the work shall be as per the **Scope of Work (Clause No. 4.0)**. Prices are to be submitted as **Price-bid format (Annexure-I)**. The other conditions and details of tender are as follows:

1.0) **PROJECT:**

1 No. x 201.67 MVA 400/20 KV 1-Ø Generator Transformer (Peeble Make) for NTPC Rihand.

2.0) **DETAILS OF EQUIPMENTS:**

1 No. x 201.67 MVA 400/20 KV 1-Ø Generator Transformer (Peeble Make) of NTPC Rihand site.

3.0) **APPROXIMATE SHIPPING WEIGHT & DIMENSIONS OF MAJOR PARTS:**

Sl. No.	Description	201.67 MVA Generator Transformer
1.	Shipping Weight transformer tank	160.0 Tons
2.	Weight of Accessories	45.0 Tons
3.	Quantity of oil	37.80 KL
4.	Dimension of transformer tank (Approximate)	L-6200, W-4200, H-4400 mm
5.	420 KV, HV Bushing Dimensions (Approximate)	L-6390 mm, Wt. 1450 Kg

4.0) **SCOPE OF WORK:**

This project consists of E&C of 1 no. x 201.67 MVA 400/20 KV 1-Ø Generator Transformer (Peeble Make) is to be carried out at NTPC Rihand. The contractor to be engaged for E&C will be required to mobilise their T&P and man power after award of work to site and commence the work at site within 7 days of time. The details of work content to be carried out by the Contractor will broadly comprise of following 5 stages:

➤ **STAGE – I : STORAGE OF ACCESSORIES**

4.1 **CONSTRUCTION OF TEMPORARY STORE & WATCH & WARD:**

4.1.1 The contractor will have to build a temporary store cum office at the site at an appropriate location to be provided by the customer. The store shall have the following:

- A covered room/ porta-cabin of minimum size 4M x 4M for office and another covered room/container of minimum size of 4Mx8M for storing of fragile accessories and important costly items.
- An open fenced area of about 12M x 12M shall be covered for storing large accessories suitable for outdoor storage like oil drums, bushings, conservator, pipe

work etc. This open yard shall be elevated from ground level to avoid water logging. No material shall be directly placed / stored on open/ loose soil.

- The contractor will have to maintain the facilities like furniture for office, electricity & water in store area. The contractor has to make arrangement for inspection, verification, storage, upkeep during storage & watch and ward of the equipment's/ material dispatched to site from the time to time till final take over by Customer.
- Any loss damage, theft to the materials/ equipment's/ installation (if any) will have to be compensated by the Contractor in case of non-deployment, negligence or willful lapses. Sufficient numbers of watchmen shall be deployed by the Contractor at required locations for this purpose at his cost. In accidental cases, it is responsibility of the contractor to file F.I.R. and provide peripheral assistance for insurance survey and claims under insurance policy.

The Contractor will have to submit the actual photograph of store constructed by them at site duly certified by self & BHEL/Customer representative along with eh bill to claim the changes on this account.

➤ **STAGE-II: PLACEMENT OF MAIN TANK ON PLINTH**

**4.2 UNLOADING OF MAIN TANK & MAINTAINING ITS N<sub>2</sub> PRESSURE:**

This activity will involve the following work:

- 4.2.1 Unloading of Equipment from road trailer, the contractor will have to organize unloading of equipment from Hydraulic Road Trailer after its receipt at project site near plinth. The distance of unloading point to the plinth can be anywhere up to a maximum distance of 100 meter. This unloading has to be organized within reasonable time frame of 5 days from its receipt. Any delay on the part of contractor, without any valid reason shall attract penalty, in the form of holding-up charges of trailer. These charges shall be passed on to the contractor on actual basis as levied by transporter on BHEL.
- 4.2.2 Checking of N<sub>2</sub> pressure in tank and maintaining it at 0.25 Kg/cm<sup>2</sup> with pure and dry Nitrogen gas of dryness not less than (-) 50 °C dew point till erection is started. Nitrogen Gas Cylinders (having 99.9% dryness) whenever required for maintaining the N<sub>2</sub> pressure in ICT Main Tank till erection is completed shall be arranged by Contractor.

**4.3 DRAGGING OF MAIN TANK UPTO THE PLINTH & MAINTAINING ITS N<sub>2</sub> PRESSURE:**

This activity will involve the following work:

- 4.3.1 After unloading, main tank required to place on final erection location by manual dragging. This distance of dragging will be limited upto 100 mtrs. Dragging of the Transformer as per site requirement is in the scope of E&C contractor at site.
- 4.3.2 The main tank shall require for proper placement on the plinth matching with center lines as per BHEL drawing. The agency has to co-ordinate with customer to obtain inputs of transformer/reactor center lines from CIVIL layout as per BHEL drawings for final placement.
- 4.3.3 N<sub>2</sub> pressure in Transformer is to be maintained at 0.25 Kg/cm<sup>2</sup> continuously till erection is commenced.

**4.4 TURNING OF MAIN TANK:**

- 4.4.1 The main tank may require turning by any degree during the process of dragging. The scope shall cover one turning of main tank by any degree. The activity shall include jacking, dismantling and re-fixing of rollers on main tank etc.

➤ **STAGE-III: ERECTION WORK**

**4.5 RECEIPT, VERIFICATION, STORAGE, UP-KEEP AND HANDLING OF ACCESSORIES:**

This activity will involve the following work:

- 4.5.1 The main tank shall be checked for its proper placement on the plinth matching with center lines as per BHEL/ Customer drawing and ensure the tightness of roller bolts. Minor adjustment may be required.
- 4.5.2 Receipt and storage of all accessories including online gas monitoring system, other monitoring/control devices, oil and spares supplied against this Contract in the store at site.
- 4.5.3 Checking of N<sub>2</sub> pressure in main tank and maintaining it at 0.25 Kg/cm<sup>2</sup> with dry Nitrogen gas of dryness not less than (-) 50 °C dew point before start of erection. The log books of N<sub>2</sub> pressure and dew point nitrogen filled Main tank till erection is commenced.
- 4.5.4 The contractor shall be fully responsible for all joint material verification to be carried out along with BHEL & customer representative, for checking and recording of material/ accessories received at site and to be stored under his control. The contractor will have to ensure inspection of all materials, accessories for any damage/ shortage (if any). **Records will have to be maintained for all the material received with date of receipt, material taken out for erection etc in registers and report to BHEL periodically.** The contractor will have to submit actual photographs of stored items for verification.
- 4.5.5 Dew point measurement of nitrogen filled Main tank prior to start of its erection. Internal inspection of the Main tank to find out and rectify transportation damages (if any).
- 4.5.6 Shifting of all accessories conservators, radiators, coolers, pipe works, bushings etc to erection site for pre-erection test.

**4.6 PRE-ERECTION TESTS – (ALL TURRET CTs)**

This activity will involve the following work:

- 4.6.1 Cleaning of accessories including, turrets & main tank shall be carried out at erection site before pre-erection testing is started.
- 4.6.2 Before start of erection, testing of turret mounted CT's, neutral CT's, main tank CTs etc shall be carried out to ascertain their healthiness. The tests to be carried out are as follows:
  - i) Isolation test of CC, CL of transformer at 500V.
  - ii) Continuity, Insulation Resistance, Ratio, Winding resistance and determination of knee point of all protection CTs.
  - iii) Continuity, Insulation Resistance, Ratio, Winding resistance of all metering CTs.

**4.7 PRE-ERECTION TEST - (C & TAN D TEST OF BUSHINGS)**

This activity will involve the following work:

- 4.7.1 Cleaning of bushings including its all petticoats shall be carried out at erection site before pre-erection testing is started.
- 4.7.2 OIP bushings shall require to be in vertical position for minimum 4-6 hrs before testing is started.
- 4.7.3 Before start of erection, capacitance and tan delta test of all bushings shall be conducted. During the testing, the bushing shall be hang in vertical position isolating from earth part.

**4.8 PHYSICAL INSPECTION/ PRESSURE TEST ON RADIATOR BANK**

After unloading of the Radiator bank at site each individual radiator shall be physically inspected at site before erection. After physical inspection every Radiator shall be pressure test as BHEL standards and the results shall be recorded. Any observation in physical inspection/ pressure test shall be informed to concerned BHEL Engineer at site and necessary action shall be taken to rectify the defect at site. Major rectification work shall be taken in consultation with BHEL.

#### **4.9 RADIATOR / CLEANING / FLUSHING OF RADIATOR /COOLER BANK**

The E&C contractor shall ensure to deploy the Filter M/c and Storage Tank at the start of E&C activities at site. The cleaning/ Flushing of Radiator/ Cooler Bank and associated pipe works shall be carried out well in advance before the start of Erection of Cooler Banks at site. The Cleaning / Flushing of cooler Bank shall be executed in 2 stages followed by its pressure testing at site.

##### **Stage –I**

In this stage all the Radiator/ Cooler banks and associated pipe work, after unloading shall be shifted to Erection location. At Erection location the thoroughly cleaned by compressed air at site.

##### **Stage –II**

After thorough cleaning of each individual Radiator of Radiator / Cooler Bank and pipe work shall be flushed with the Transformer oil through Filter M/c. The E&C contractor shall arrange the filter M/c well in advance to carry out cleaning of Radiator bank in advance.

#### **4.10 ERECTION OF MAIN TANK ACCESSORIES, COOLER BANK AND CABLING WORK**

This activity will involve the following work:

- 4.10.1 Before erection is started, cleaning of all accessories including, conservators, radiators, coolers, pipe works, turrets, bushings etc shall be carried out by cotton cloth.
- 4.10.2 Erection of 400kV Bushings shall be done by using mobile crane only. The mobile crane must be operated on outriggers for greater stability while lifting 400kV Bushings for erection. Erection work through Hydra-tyre mounted shall not be allowed for HV Bushing Erection at site. In the event of crane is not used by contractor for bushing erection, the recovery as per rate in optional activities will be made.
- 4.10.3 Assembly of transformer accessories, cooling pipework, pumps, fans, radiators/coolers, Buchholz's pipe work, marshalling box, PRVs, OTI, WTI, RTD sensors, online DGA equipment and thermosyphne etc. Any adjustment, repair work i.e. oil leakage, alignment etc. will have to attend by contractor.
- 4.10.4 Dry air from portable unit or pressurized cylinder shall be pumped in Transformer tank throughout erection/ exposure during erection period. Contractor will have to ensure that their workmen take utmost care during erection to safeguard and avoid ingress of dust, dirt or any foreign material in the Transformer. Contractor will also have to make arrangement for the dry air unit / pressured cylinders of dry air at site for the purpose.
- 4.10.5 Installation of on-line gas monitoring system and other instruments (if included in supplies) shall also be included in contractor's scope of work.
- 4.10.6 Carrying out pressure testing on completely assembled Transformer by filling N<sub>2</sub> up to pressure of 0.2 Kg/cm<sup>2</sup> and arresting leakages (if any) to ensure leakage free assembly.
- 4.10.7 Carry out touch up painting on Transformer and cooling system. Arranging of polyurethane paint of specified shade & quality shall also be in the scope of Contractor. Application of zinc rich paint over weld joints of galvanized surfaces, if any.
- 4.10.8 All cabling, cable termination and tagging, neutral formation for Transformer & earthing of various equipment / accessories with earth-grid, filling of foundation pockets by arranging cement and concrete where ever pockets left for foundation bolts etc.

##### **➤ STAGE-IV: DRYOUT & OIL CIRCULATION**

#### **4.11 N2 DRYOUT CYCLES**

This activity will involve the following work:

- 4.11.1 After Erection of all accessories and successful leakage testing, the job shall be subjected to minimum 2 Nos of dry out cycles. In first Dry out cycle started by vacuum pulling and maintaining a vacuum of less than 1.0 Torr for a minimum period of 72 Hrs.
- 4.11.2 After completion of vacuum cycle of 72 hrs, the vacuum needs to break by using the UHP grade Nitrogen gas having the Dew point of – 50 degrees centigrade and better ( -60°C and above is desirable) is achieved

by nitrogen gas purging till the pressure of 0.25 Kg/cm<sup>2</sup> is achieved and maintaining minimum period of 24hrs.

- 4.11.3 After completion of 24 hrs with nitrogen gas pressure, the dew point of gas filled in the tank is measured and noted for record.
- 4.11.4 The vacuum for 72 hrs and nitrogen gas purging for 24hrs becomes one cycle of dryout cycle. Second cycle comprises of 48 Hrs of vacuum cycle followed by 24 hrs of Nitrogen purging shall be executed after completion of First cycle.
- 4.11.5 **Minimum 2 dryout cycles** or till the desired value of Dry out i.e. Dew point of Main tank is achieved shall be under the scope of Contractor.

#### **4.12 OIL PREPARATION, OIL FILLING, HOT OIL CIRCULATION:**

This activity will involve the following work:

- 4.12.1 Sample testing of oil from drums (5-8 drums randomly selected from the supplied lot) shall be required to be carried out for BDV, PPM, IFT, Resistivity & Tan delta before pouring into storage tank at site.
- 4.12.2 The Contractor has to arrange adequate size oil storage tank as per capacity of main tank to ensure oil filling in the main tank without interruption. Oil filling in the main tank shall not be permitted without preparation of complete oil. In the event of single storage tank of the required capacity is not available then complete oil should preferably be contained in storage Tanks of capacity not lesser than 30 KL. The contractor needs to arranged the storage Tank as per Main Tank capacity and kept the filtered oil ready & tested as per BHEL/ NTPC standard, so that oil filling will be executed in one go at site.
- 4.12.3 After filling of oil in the storage tank and completion of oil filtration, oil testing for BDV, moisture, Tan delta & Resistivity shall be required to be carried out before filling in main tank as per Clause 4.9.
- 4.12.4 Filling of Transformer main tank, its cooler bank and complete assembly with prepared and tested oil under vacuum up to desired level. The required oil tanks, filter machine (Ultra High Vacuum type oil treatment plant preferably 10 KL per hour or more) and other accessories shall be under the purview of the contractor.
- 4.12.5 Hot Oil Circulation - Drying out of Transformer with high vacuum filter machine and maintaining equilibrium temperature in tank up to 55°C between inlet and outlet temperature in for not less than 72 hrs to achieved desired insulation parameters of oil and PI values of winding. IR values has to be recorded regularly at an interval of 4 hrs during the complete Hot oil circulation process. In the format provided by BHEL. The process shall be continued till clearance from BHEL is provided to end the process.

#### **4.13 OIL TESTING - BDV & MOISTURE CONTENT OF STORAGE TANKS**

- 4.13.1 After filling of oil in the storage tank and completion of oil filtration, oil testing for BDV & moisture shall be required to be carried out before filling in main tank at a reputed NABL accredited lab acceptable to BHEL/customer.

#### **4.14 OIL TESTING – BDV, MOISTURE CONTENT, IFT, TAN DELTA & RESISTIVITY OF MAIN TANK**

- 4.14.1 After completion of hot oil circulation, the testing of oil samples for BDV, Moisture Content, Tan-delta & Resistivity at 90°C and IFT of processed oil before final charging of equipment shall be under scope of contractor. Testing shall be carried out from NABL accredited lab acceptable to BHEL/customer. **Acceptance norms for BDV of equipment is 70 KV or above and moisture content of less than 05 PPM.**

#### **4.15 OIL TESTING – PARTICLE COUNT OF MAIN TANK**

- 4.15.1 E&C contractor has to maintain the filtration level of oil in Generator Transformer, so as to achieve the desired value of particle count as per Table-I. If required E&C contractor may use the additional ultra-fine filtration machine to achieve the particle count as per BHEL standards. E&C contractor also required to arrange the equipment to measure the particle count of oil of GT after filtration. The measuring equipment must have a valid calibration certificate at the time of measurement.

Table I Particle Count

If measured with particle counter which works on ISO 4402 and ISO 4406:1987	$\geq 2$ micron should be $\leq 10000$ particles / litre
If measured with particle counter which works on ISO 11171 and ISO 4406:1999	$\geq 4$ micron should be $\leq 15000$ particles / litre

#### 4.16 OIL TESTING – DGA BEFORE CHARGING

4.16.1 After obtaining desired parameters of oil testing as per Clause 4.14.1, the testing of oil samples for DGA testing before final charging of equipment shall be under scope of contractor. Testing shall be carried out from NABL accredited lab acceptable to BHEL/customer.

➤ **STAGE – V: TESTING & COMMISSIONING**

#### 4.17 PRE-COMMISSIONING TESTS – LOW VOLTAGE TESTS

This activity will involve the following work:

4.17.1 After desired oil parameters are achieved and completion of settling time, the pre-commissioning tests shall be conducted on ICT. The list of tests to be carried out are as under:

- i) *Isolation test for CC, CL and tank*
- ii) *Measurement of Magnetization Current,*
- iii) *Measurement of vector Group, Polarity*
- iv) *Contact Resistance measurement of joints of HV/IV/LV/Neutral etc.*
- v) *Measurement of Turn Ratio at all tap positions.*
- vi) *Measurement of Winding Resistance at all tap positions.*
- vii) *Measurement of Insulation Resistance and determination of PI (10/1 min value)*
- viii) *Measurement of particle count by particle count meter and carry out filtration for attaining the values as per BHEL standards.*
- ix) *Functional tests of all Accessories/ Marshalling box operation test of OLTC.*

The list is indicative and it may vary marginally as per BHEL norms/ customer requirements. All the tests shall be carried out by using calibrated instruments. Arranging all the test instruments shall also be in the Contractor's scope.

#### 4.18 PRE-COMMISSIONING TEST - CAPACITANCE & TAN DELTA TEST OF BUSHING AND/OR WINDING

4.18.1 Following test shall be carried out under the scope of work:

- i) *Measurement of Capacitance and Tan delta of Bushings*
- ii) *Measurement of Capacitance and Tan delta of Windings*

#### 4.19 PRE-COMMISSIONING TEST – SFRA TEST

4.19.1 Sweep Frequency Response Analysis (SFRA) in three combinations for all windings test shall be carried out for transformer / reactor. The signature of the test shall be submitted in hard copy as well as program file of the software which easily downloadable and readable in PC/laptop. This report shall contain phase wise and three phase comparison of the plots.

#### 4.20 FINAL COMMISSIONING & HANDING OVER:

This activity will involve the following work:

4.20.1 Final connection with system, thorough checking of compatibility and functionality of Transformer protection with customer protection system, readiness for charging of the Transformer, commissioning and handing over.

4.20.2 After charging of the transformer / reactor, following test shall be carried out:

- i) DGA 24hrs after charging

- 4.20.3 Handing over of all spares and accessories including oil to customer and obtaining completion certificate for different activities.
- 4.20.4 Submission of all records of various stages of pre-erection, erection & testing stages in the prescribed BHEL format signed by BHEL/Customer representative at site time to time in the form of bound booklet & scanned copy.
- 4.21 PREPARATION AND SUBMISSION OF CHECK LIST/ TEST RESULTS AFTER COMPLETION OF WORK AT EACH STAGE**
- 4.21.1 The executing contractor for E&C works at site needs to submit Checklist / Test results after completion of each stage of activity. The payment for each stage of activity shall be admissible only after submission of check list /Test results associated with that stage of activity as per BHEL standard duly endorsed by Site Engineer /BHEL Engineer in charge for site activities.

## **5.0 FACILITIES AND OTHER REQUIREMENTS AT SITE:**

The facilities available at site and other requirements to be adhered at site while executing the work shall be as follows:

- 5.1 Contractor shall appoint a well-qualified, knowledgeable and experienced Engineer/Supervisor to lead/guide E&C activities at site. While day to day management of the site and supervision of the works shall be the responsibility of Contractor's Engineer-In-charge/authorized representative, he will report to BHEL executive to assist him to discharge the overall responsibility of the execution of the project. He will have to regularly interact with BHEL and customer officials and appraise them on all aspects/developments at site.
- 5.2 The contractor will have to appraise BHEL officials on the progress of activities on site on daily basis and shall send the written progress report by email/fax to BHEL on weekly basis or as required by them.
- 5.3 Contractor is responsible to employ required number of skilled/semi-skilled and unskilled workmen as per site requirements to complete the entire project as per schedule.
- 5.4 Contractor will have to ensure that the Health, Safety and Environment (HSE) requirements are clearly understood and faithfully implemented at all levels at site. They will have to ensure adequate safety precautions at site as per the various statutes and shall be entirely responsible for the complete safety of their workmen/employees at the site. Necessary Personal Protection Equipment's (PPE's) (such as Helmets, Goggles, safety Belts, Gloves, First aid box etc.) shall be provided to the worker/staff as per requirement during erection work.**
- 5.5 On award of contract, site documents as mentioned below shall be collected compiled, arranged by contractor from customer.
- i) Particulars of each employee employed by Contractor before start of work.
  - ii) Lorry receipt certificate of equipment, accessories received at site.
  - iii) Material verification and material receipt certificate.
  - iv) Site opening certificate.
  - v) Completion certificate
  - vi) Operational acceptance certificate
  - vii) Intimation of insurance claim on account of transit damage or erection damage must be obtained from site duly signed by customer & contractors on behalf of BHEL.
  - viii) Site closing certificate.
- Further any other document required as per contract for installation services portion must also be obtained/ furnished to customer for fulfillment of contractual commitment.
- 5.6 All the instruments/equipment's required for erection, conducting all tests throughout E&C period shall be arranged by the contractor. All the instruments to be used shall be of reputed make and shall have valid calibration certificate.
- 5.7 Construction supply at one point will be provided by BHEL/Customer on free of cost basis. **However, the Contractor will have to arrange for Energy meter and required cable to tap the power supply from the point/distribution board provided at site by customer. All further distribution point of utilization as required shall also be contractor's responsibility.**

- 5.8 In the event of halt in work for whatsoever reason, if the BHEL requires for demobilization of the T&P from the site and re-deployment as per requirement then Contractor has to do so after receipt of such information from BHEL in writing and hence, Contractor shall keep the provision for 1 (one) time mobilization and re-deployment in their scope for such contingencies
- 5.9 The Contractor will have to adhere and follow all the local rules and statutory requirements and as given in Annexure-IV, V, VI.

## 6.0 TERMS OF PAYMENT:

The payment shall be made to the contractor in parts after successful completion of activities as per the Scope of Work (Clause 4.0) mentioned above, bill will be process within 30 days after receipt of complete set of proper document at BHEL, Bhopal office and in case of MSME payment shall be made within 45 days / in case of others – 60 days after completion of work/ after receipt of complete set of proper document. The total quoted price is divided (in percentage terms) into 05 (five) stages containing group of activities as per price schedule (Annexure-I). The party can claim payment after successful completion of respective stage of work as per scope of work under Clause 4.0. An activity completion certificate stage wise endorsed by BHEL person shall be required to be attached with every bill to be raised.

The breakup of stages / activities and percentage payment admissible against stage as per scope of work is mentioned in price schedule (Annexure-I).

Sl.No	Details of activities as per Scope of Work	Break-up of Price (in %)
1.0	<b>Stage-I: Storage of Accessories ( for detail refer Annexure-I)</b>	5.0
2.0	<b>Stage-II: Placement of Main Tank on plinth ( for detail refer Annexure-I)</b>	24.5
3.0	<b>Stage-III: Erection work ( for detail refer Annexure-I)</b>	25.0
4.0	<b>Stage-IV: Dry out &amp; oil circulation ( for detail refer Annexure-I)</b>	32.5
5.0	<b>Stage-V: Testing &amp; Commissioning ( for detail refer Annexure-I)</b>	13.0
	<b>Total</b>	<b>100.0</b>

6.1 The Contractor has to submit the following documents with every bill:

- i) Wage sheet of manpower deployed.
- ii) Workmen insurance policy.
- iii) PF deposit challan.
- iv) Stage of Activity completion certificate endorsed by BHEL representative & duly filled checklist of each stage of activity. (Checklist will be issued along with work order)
- v) Log sheet record of N2 pressure of main tank & cylinders endorsed by BHEL/Customer for with the bill against Stage-III (Annexure-I).

All the payment shall be made as per BHEL norms and is subject to deduction of **Security Deposit** and **Income Tax** at source as per the applicable rules. **Security Deposit recovered shall only be refunded after completion of defect liability period (as mentioned in clause 7.5 below).**

6.2 HSN code /SAC, rate of tax under GST and Applicable GST (IGST, CGST/SGST/UT/GST) and GSTIN shall be clearly mentioned by the bidder on invoice.

6.3 GST portion of the **invoice shall be released only upon:**

- a) All invoices raised by contractors /vendors must be GST complaint Tax invoices as per GST invoices rules.
- b) Contractor declaring such invoices in his GSTR-1 or any modified return as notified by government.
- c) Receipt of good /services and tax invoices by BHEL and
- d) Confirmation of payment of GST thereon by contractor on GSTN portal.

- e) Alternatively, Contractor has to submit BG of appropriate value which shall be valid at least one month after the confirmation of date of payment of GST by contractor on GSTN portal and receipt of Tax invoice and receipt of services, whichever is later. Contractor has to give an undertaking in this regard.
- f) Contractor has to give an undertaking to BHEL that they have declared invoice in his return and paying GST within timeline prescribed for availing ITC by BHEL.

Payment to Contractor for GST portion will be released only after completion of above activity and on availment of ITC by BHEL.

6.4 In case GST credit is delayed/denied to BHEL due to **non/delayed receipt of services /goods and /or tax invoices** or expiry of the timeline prescribed in GST law for availing such ITC, or any other reasons not attributable to BHEL, GST amount shall be recoverable from contractor along with interest levied /leviable on BHEL.

#### 6.5 **Reverse Charge under GST**

6.5.1 In respect of services, reverse charge liability shall arise at the earliest of date of payment to service provider or 60 days from the date of issue of invoice by service provider. Contractor has to submit bill for payment within 30 days from the date of invoice. Any interest or penalty implications attributable to the contractor shall be recovered from them.

6.5.2 Any GST liability arising on BHEL under reverse charge before actual receipt of goods and /or invoice thereof would be subject to recovery of interest leviable for the period between the date of such liability and actual date of eligibility of ITC based on receipt of goods, receipt of invoices and other condition specified in GST Law.

#### 6.6 **Penalty**

6.6.1 Penalty if chargeable from suppliers/ contractors as per NIT, applicable GST will be charged in addition to the same.

#### 6.7 **Tax Deduction at sources**

6.7.1 TDS as per extent provisions of the GST Law shall be deducted from supplier/contractor bill.

### 7.0 **SCHEDULE OF WORK (COMPLETION PERIOD):**

7.1 The completion time for Generator Transformer shall be six (6) months after getting written intimation from BHEL for commencement of work or from receipt of the last consignment (respective transformer & accessories) at site or readiness of foundation / plinth from customer side, whichever is later. The site receipt date shall be taken as start date for the work.

7.2 As per the current manufacturing plan, these transformers are included in the manufacturing plan of the financial year 2019-20. Hence, considering that if the last transformer is dispatched in the month of October, 2019, provision of two months is kept for transportation and six months for erection, the maximum completion date shall be June, 2020. **Hence, completion time shall be June, 2020 OR six months after getting written intimation from BHEL for commencement of work or from receipt of the last consignment (respective transformer & accessories) at site or from the readiness of foundation/plinth, whichever is later.**

7.3 The bidder will have to ensure before submission of his bids, that adequate manpower and resources are available at his disposal to be deployed at site in the above given time frame. Contractor has to mobilize man power and T&P within 7days, after receiving communication from BHEL TXX, Bhopal.

7.4 **PENALTY:** Penalty @ 0.5% per week subject to maximum of 10% of the contract price shall be levied for the delay in completion of E&C work within contract period as stipulated period mentioned in clause 7.2. **GST on penalty shall be charged in extra.**

7.5 **Defect liability period** will be applicable for a period of 12 months from the date of commissioning of the equipment. During the Defects Liability Period, the contractor shall at his own cost and initiative, correct, repair and/or rectify any and all defects of the work that may arise due to poor/ defective workmanship. Mobilization of T & P including crane, filter m/c etc., for attending erection deficiencies, will be contractor's responsibility. In event of failure to do so, BHEL may proceed to have such rectifications made by the others at the contractor's risk and cost.

## **8.0 EXTRA WORK / ACTIVITIES:**

The total work content envisaged in the tender and as mentioned in the scope of work (Clause 4.0) is to be undertaken on lumpsum basis and accordingly the contract price of work order only will be admissible. However, under exigencies which may arise due to unforeseen problems during erection, failure of equipment's or any other reasons, extra work/activities may be required to be undertaken, which is not covered in the scope of work. BHEL will then ask the contractor to carry out such extra work/activities, a prior consent will be required from BHEL authorized official before undertaking any such extra work activities.

The applicable rates for extra work/ activities have been fixed by BHEL as a percentage of awarded Unit Price of that particular ICT in question as per Annexure-II (Sr.no: 1 to 6). The bidders are required to quote for their Unit Price (in Rs) for undertaking E&C of ICT in price schedule (Annexure-I) only. After finalization of tender, the awarded Unit Price of ICT shall be multiplied with respective percentages of extra work/ activity as given in Annexure-II (Sl.no: 1 to 6) to derive price in Rupees of that activity.

The extra work may also arise from the main scope of work and if any activity from (Annexure-I/S.No.1/1.1 to 1.21) is required to be repeated due to above unforeseen problems or any other reasons which is not attributable to the Contractor. The awarded Unit price of transformer shall be multiplied with respective percentages of activity (as per Annexure-I/S.No.1/1.1 to 1.21) to derive price in Rupees of that activity.

## **9.0 MANDATORY REQUIREMENT FOR CONSIDERING THE OFFER:**

The tender shall be governed by following mandatory requirements for considering the offer:

- 9.1 **QUALIFYING CRITERIA:** Only those parties who fulfill the following eligibility criteria shall be considered for participating in the tender:
    - 9.1.1 Average Annual financial turnover during the last 3 years, ending 31st March of the previous financial year, should be at least Rs 3.78 Lakhs. The bidders will have to furnish documents of audited annual accounts (balance sheets, profit loss accounts) in support of their firm meeting the above criteria. In case documents of last financial year are not available, provisional certificate by auditor will be required.
    - 9.1.2 Experience of having successfully completed similar works during last 7 years ending last day of month previous to the one in which applications are invited should be either of the following:
      - a. One similar completed work costing not less than the amount equal to Rs 10.09 Lakhs.  
OR
      - b. Two similar completed each works costing not less than the amount 6.30 Lakhs.  
OR
      - c. Three similar completed each works costing not less than the amount equal 5.04 Lakhs.
- Similar works means erection, testing & commissioning of 400kV or higher class Transformers / Reactors OR Allied work which include dismantling, re-erection or repair of above class of Transformers / Reactors. The parties will have to furnish documents (LOA & Work Completion Certificate/ MOM) in support of their firm meeting any one of the above criteria.
- 9.2 Permanent Income tax account number (PAN) and Goods & Services Tax Identification Number (GSTIN).
  - 9.3 Copy of Permanent Provident Account Number.
  - 9.4 The contractor shall possess valid Electrical License of 400KV or above.
  - 9.5 All the workmen deployed at site shall be covered under workmen compensation insurance. The insurance policy will have to be taken after award of work its copy shall be submitted on award of contract. An undertaking in this regards will have to be given along with the offer.
  - 9.6 Tender cost of Rs. 500/- in favor of BHEL Bhopal as per Annexure-III/Clause 2.9. GST shall be extra.
  - 9.7 Earnest Money Deposit as per Annexure-III/Clause 3.0
  - 9.8 A "No Deviation Certificate" in the prescribed format as per Annexure-VII will have to be compulsorily attached with the offer.

The price schedule format, rates of optional activities, Terms and Conditions stipulating tendering procedure, EMD, Security Deposit, General Conditions of Contract, Special Conditions of Contract, Instructions to Contractor Code for Safety Management at Sites, Statutory Liabilities of the Contractor, No deviation format, Organizational

information are enclosed in Annexure-I to VIII. The tenderer is advised to study these annexures and put up signature with seal as acceptance of various clauses.

For and on behalf of BHEL Bhopal,

  


**Krishna Chandra Singh**  
**(Dy. Manager/TXX)**

Enclosures: Annexure-I to Annexure-VIII, as above

**PRICE SCHEDULE**

TENDER NOTICE NO. TXX/TN/2019-20/07

DATED: 03/09/2019

Equipment: 1 No. x 201.67 MVA 400/20 KV 1-Ø Generator Transformer for NTPC Rihand.

Scope: Receipt, unloading, handling, storage, erection, commissioning and handing over of 1 No. x 201.67 MVA 400/20 KV 1-Ø Generator Transformer at NTPC Rihand.

**1. Break-up of Unit Price (in %)**

Sl. No.	Details of activities as per Scope of Work	Unit	Rate in % of Unit Price of Trafo.	Qty	Total % of Unit Price of Transformer
A	B	C	D	E	F = D x E
<b>STAGE – I: STORAGE OF ACCESSORIES</b>					
1.1	Construction of temporary store and watch & ward	% Lumpsum	5.00	Lumpsum	5.00
<b>STAGE – II: PLACEMENT OF MAIN TANK ON PLINTH</b>					
1.2	Unloading/ Loading of main tank from road trailer	% Lumpsum	12.00	Lumpsum	12.00
1.3	Dragging of main tank upto the plinth	% Per Meter	0.10	100	10.00
1.4	Turning of main tank	% Per Turn	2.50	1	2.50
<b>STAGE – III: ERECTION WORK</b>					
1.5.	Receipt, verification, storage, up-keep and handling of accessories	% Lumpsum	7.50	Lumpsum	7.50
1.6	Pre-erection test (all Turret CTs )	% Lumpsum	2.50	Lumpsum	2.50
1.7	Pre-erection test - (Capacitance & Tan d test of bushings)	% Lumpsum	2.50	Lumpsum	2.50
1.8	Physical inspection / Pressure Test on Individual Radiator of Radiator Bank before Erection	% Lumpsum	2.50	Lumpsum	2.50
1.9	Cleaning of Radiator/Cooler Bank & Associated pipe works –with compressed air followed by Flushing with Transformer oil.	% Lumpsum	2.50	Lumpsum	2.50
1.10	Erection of main tank accessories, Cooler bank and Cabling work	% Lumpsum	7.50	Lumpsum	7.50
<b>STAGE – IV: DRYOUT &amp; OIL CIRCULATION</b>					
1.11	N2 dryout Cycle	% Per Cycle	5.00	2	10.00
1.12	Oil preparation, Oil filling and Hot Oil Circulation	% Lumpsum	7.50	Lumpsum	7.50
1.13	Oil testing - BDV & moisture content of storage tanks	% Per Sample	0.50	04	2.00
1.14	Oil testing - BDV, Moisture, IFT, Tan δ, Resistivity & Particle Count of main tank	% Lumpsum	2.00	Lumpsum	2.00
1.15	Oil testing – Particle count of main tank	% Lumpsum	10.00	Lumpsum	10.00
1.16	Oil testing - DGA before charging	% Lumpsum	1.00	Lumpsum	1.00
<b>STAGE – V: TESTING &amp; COMMISSIONING</b>					
1.17	Pre-commissioning test - Low Voltage test	% Lumpsum	2.50	Lumpsum	2.50

1.18	Pre-commissioning test - Capacitance & Tan delta test of bushing and/or winding	% Lumpsum	2.50	Lumpsum	2.50
1.19	Pre-commissioning test - SFRA Test	% Lumpsum	2.50	Lumpsum	2.50
1.20	Final commissioning & handing over	% Lumpsum	3.00	Lumpsum	3.00
1.21	Preparation and submission of the Check list/ test results after completion of each stage of activity	% Lumpsum	2.50	Lumpsum	2.50
<b>2.0</b>	<b>Total Price (%)</b>				100

**2. Price to be quoted bidder's (in Rs)**

Sl. No.	DETAILS OF WORK	UNIT PRICE (exclusive of taxes and duties) (In Rs.)	Qty. (In Nos.)	TOTAL PRICE (exclusive of taxes and duties) (In Rs.)
A	B	C	D	E=CxD
2.1	Price for Receipt, unloading, handling, storage, erection, commissioning and handing over of 1 No x 201.67 MVA, 400/20 KV 1-Ø Generator Transformer at M/s NTPC Rihand, as per entire scope of work clause 4.0 of tender.	.....	1 (One)	.....
2.2	<b>Total price exclusive of GST [ F=(1) ]</b>			
	TOTAL PRICE IN WORDS :			

Note :

- 1) The offer will be evaluated on the basis of total lumpsum price as quoted above in Row - "F".
- 2) Applicable GST shall be paid extra. **Any loss of tax credit due to reason attributable to contractor shall be recovered from them along with interest.**
- 3) 3% price is included in above for using long boom crane for 400 kV bushing erection and if bushings are erected with hydra only (without long boom crane) then 3% price shall be deducted.
- 4) The unpriced Price Bid mentioning "Quoted" against above rates shall be submitted in the offer alongwith the signed copy of the NIT with all the Annexures.

(Signature & seal of Bidder)

**RATES OF EXTRA WORK / ACTIVITIES**

TENDER NOTICE NO. TXX/TN/2019-20/07

DATED: 03/09/2019

**Equipment: 1 No. x 201.67 MVA 400/20 KV 1-Ø Generator Transformer for NTPC Rihand.****Scope: Receipt, unloading, handling, storage, erection, commissioning and handing over of 1 No. x 201.67 MVA 400/20 KV 1-Ø Generator Transformer at NTPC Rihand.**

Sl. No.	DETAILS OF ACTIVITY	UNIT	Rate in % of Transformer as per Annexure-I
1	To carry out complete oil draining from transformer, isolating the cooler bank, dismantling/ packing of turrets, bushing, pipe work, Instruments, Wiring etc.	% Lumpsum	15.00
2	Long Boom Crane suitable for Bushing Erection	% Per Hour	0.30
3	High Vacuum Filter Machine of capacity 6000 LPH or more	% Per Day	0.50
4	Oil Storage tank of capacity 20 KL or more	% Per Day	0.30
5	Supply of heaters for heating the transformer upto 60°C under N2 filled condition and enclosure for controlling the heat loss	% Lumpsum	4.00
6	Supply of Labour for repair/ rectification/ modification, additional work	% Per Manday	0.05

**(Signature & seal of Bidder)**

**TERMS AND CONDITIONS**

**TENDER NOTICE NO. TXX/TN/2019-20/07**

**DATED: 03/09/2019**

**1.0 DEFINITIONS:**

The following terms and expressions shall have the meaning hereby assigned to them, except where the context otherwise requires:

- 1.1 'BHEL' shall mean Bharat Heavy Electricals Limited, a Company registered under the Indian Companies Act, 1956 with its Registered Office at BHEL House, Siri Fort, New Delhi, Pin-110049 through its office at Piplani, Bhopal – 462022 or its authorized Officers or its Engineers or other employees authorized to deal with any matters with which these persons are concerned on its behalf.
- 1.2 'CONTRACTOR' or 'FIRM' shall mean the individual, firm or Company providing the services and shall include their executors, administrators, successors and permitted assigns.
- 1.3 'CONTRACT' or 'CONTRACT DOCUMENT' shall mean and include guidelines and declarations of the registration, the General Terms & Conditions and Statutory Compliances, schedules of quantities, accepted appendices of rates, if any, technical specifications, special specifications, if any, Letter of Intent, agreement & the work order, issued by BHEL.

Any conditions or terms stipulated by the bidder in the tender documents or subsequent letters shall not form part of the Contract unless specifically accepted in writing by BHEL and incorporated in the work order.

- 1.4 'TENDER DOCUMENTS' shall mean Instruction to Tenderers, General Terms & Conditions, Special Conditions, Tender Specifications including drawings and any other documents issued to the bidder against invitation of bid.
- 1.5 'LETTER OF INTENT' shall mean the intimation by a letter / email / fax to the bidder that the tender has been accepted in accordance with provision contained in that letter. The responsibility of the Contractor commences from the date of issue of this letter and all the terms and conditions of Contract are applicable from this date.
- 1.6 'APPROVED, DIRECTED or INSTRUCTED' shall mean approved, directed or instructed by BHEL concerned authorities.
- 1.7 'WORK' or 'CONTRACT WORK' shall mean and include the work to be done in relevant work category by the firm or as specified in the Tender documents.

**2.0 TENDERING PROCEDURE :**

The tender shall be accepted and processed as follows:

The Tender shall be submitted in **TWO PARTS**, as described below:

**2.1 PART-I: (TECHNO-COMMERCIAL BID) :** This part shall consist of the following

- i) EMD of amount, equivalent to value as per Annexure-III/Clause No. 3.0 below, drawn in favor of "**Bharat Heavy Electricals Limited**" payable at **Bhopal** shall be enclosed. In the absence of submission of EMD, the offer will be summarily rejected.
- ii) Tender Fees of **Rs. 500/-** in favor of "**Bharat Heavy Electricals Limited**" shall be accepted through electronic-Mode only in favor of BHEL as detailed in Annexure-III/Clause 2.9 –below. In the absence of submission of same, the offer will be rejected. GST shall be extra.
- iii) Techno-commercial offer comprising of:
  - a) Confirmation of Scope of Work, Supporting documents for qualification criteria and other clauses as applicable etc.

- b) Un-priced copy of PRICE FORMAT. *The un-priced copy of the Price bid format shall be the same as the Price bid but without the Prices. All the quoted Prices/Rates etc. shall be replaced with the word 'QUOTED' or 'Q', in the un-priced copy.*

## 2.2 PART-II: (PRICE BID)

- i) Format containing **PRICES** only (**to be furnished in the enclosed Price Schedule format only**). Prices shall be quoted in Indian Rupees only. Price Bid should not contain any technical details and/or Commercial Terms & Conditions as the same are supposed to be contained in PART-I only so that the same can be evaluated before opening of Price Bid(s).
- ii) Price bids of only techno-commercially short listed vendors will be opened.
- iii) The above two bids (**Part-I and Part-II**) shall be enclosed in a sealed envelope and shall have tenderer's distinctive seal and shall be super-scribed with the **TENDER REF. NO and DUE DATE**.

## 2.3 The Tender shall be addressed to the following:

To,

**THE TENDER ROOM ('GREEN COLOURED WORKS CONTRACT TENDER BOX')  
ADMINISTRATIVE BUILDING, GROUND FLOOR,  
BHARAT HEAVY ELECTRICALS LTD,  
P.O. PIPLANI, BHOPAL (M.P.) Pin-462022.**

- 2.4 The tender shall be dropped in the above stipulated tender box positively **before 11.00 hrs on the due date (as mentioned above)**. It will be bidder's responsibility to ensure submission of tender in the designated "**Green Coloured Works Contract Tender Box**" before expiry of due date and time. Any tender which is received after **11.00 Hrs on the due date and subsequently** shall not be considered and will be returned to the sender. No explanation/ reasoning for late submission/receipt of tender will be entertained.
- 2.5 In case, Bidders wants to deputing their representative at BHEL Bhopal for dropping their offer in the tender box then bidder has to obtain security gate pass for reaching at tender box. In such case, bidders shall have to send personal details to BHEL at least one day in advance for obtaining security gate pass.
- 2.6 Bidders may note that the PART-I: (TECHNO-COMMERCIAL BID) of the tender shall be opened in tender room of BHEL Bhopal on tender due date after 14.00 hrs in presence of those tenderer's who choose to be present. PART-II (PRICE BID) of only those bidders whose offers will be techno-commercially short listed after scrutiny will be opened later.
- 2.7 The tenderer is advised to satisfy themselves for work environments & be acquainted with the actual working and other prevalent conditions regarding organizing resources to various sites across the country prior to submission of tender. No claim will be entertained later on grounds of lack of knowledge.
- 2.8 In case of any query/doubt on the tender specifications, bidder can contact the concerned authority for clarification before tender submission. No modification/ deviation w.r.t. any clause, terms & conditions etc shall be acceptable after opening of tender.
- 2.9 **Cost of the Tender documents is Rs. 500/- (Rupees Five Hundred only) & GST rate as applicable shall be extra**, shall be accepted through electronic-Mode only in favor of BHEL (NEFT/RTGS/Net Banking/POS/SB Collect etc.). The procedure of tender fee deposit is given in Clause 5.0 below. Tender received without remittance of tender cost will not be considered & will be rejected.

## 3.0 EARNEST MONEY DEPOSIT (EMD) :

Earnest Money Deposit will be as per the tender documents. EMD is to be paid by each tenderer for securing fulfillment of any obligation in terms of NIT.

### 3.1 Rates of EMD shall be as under:

- 3.1.1 For works / services: **Rs 25,220/-**

The bidder can also opt for submission of one time EMD of Rs. 5 Lakhs which will qualify him to participate in all other tenders.

### 3.2 MODES OF DEPOSIT:

EMD shall be accepted through Electronic-Mode only in favor of BHEL (NEFT/RTGS/Net Banking/POS/SB Collect etc.). The procedure of EMD deposit is given in **Clause 5.0 below**.

EMD can also be accepted in the form of FDR issued by Schedule Banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL).

In case total EMD amount is more than to Rs. 2 Lakhs, the amount in excess of Rs. 2.0 Lakhs may also be accepted in the form of Bank Guarantee from scheduled bank. The Bank Guarantee in such cases shall be valid for at least six months.

### 3.3 FORFEITURE OF EMD:

EMD of the Tenderer shall be forfeited as per NIT conditions, if:

- i) After opening of the tender and within the offer validity period, the Tenderer revokes his tender or makes any modification in his tender which is not acceptable to BHEL.
- ii) The contractor fails to deposit the required Security Deposit or commence the work within the period as per LOI / Contract.

EMD by the tenderer shall be withheld in case any action on the tenderer is envisaged under the provisions of extant "Guidelines on Suspension of business dealings with Suppliers / contractors" and forfeited / released based on the action as determined under these guidelines.

3.4 EMD given by all unsuccessful tenderer shall be refunded.

3.5 EMD shall not carry any interest.

3.6 EMD of the successful Bidder shall be converted and adjusted against the security deposit and shall be refunded after the expiry of the warranty period / defects liability period as applicable.

### 4.0 SECURITY DEPOSIT (SD) :

The Security Deposit means the security provided by the Contractor towards fulfillment of any obligations in terms of the provisions of the contract.

4.1 The total amount of Security Deposit will be 5% of the contract value. EMD of the successful Bidder shall be converted and adjusted towards the required Security Deposit.

### 4.2 MODES OF DEPOSIT:

The balance amount to make up the required Security Deposit (SD) of 5% of the contract value may be accepted in the following forms:

- i) SD shall be accepted through electronic-Mode only in favor of BHEL (NEFT/RTGS/Net Banking/POS/SB Collect etc.). The procedure of SD deposit is given in Clause 5.0 below.
- ii) Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee Format should have the approval of BHEL
- iii) Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the contractor, A/c BHEL).
- iv) Securities available from Indian Post Offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of the Contractor furnishing the security and duly endorsed / hypothecated / pledged, as applicable in favour of BHEL).

**Note:** Acceptance of Security Deposit against Sl. no. (iii) and (iv) above will be subject to hypothecation or endorsement on the documents in favour of BHEL. However, BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith.

#### 4.3 COLLECTION OF SECURITY:

- i) At least 50% of the required Security Deposit, including the EMD, should be collected before start of the work. Balance of the Security Deposit can be collected by deducting 10% of the gross amount progressively from each of the running bills of the Contractor till the total amount of the required Security Deposit is collected.
- ii) If the value of work order at any time exceeds the contract value, the amount of Security Deposit shall be correspondingly enhanced and the additional Security Deposit shall be immediately deposited by the contractor or recovered from payment/s due to the contractor.
- iii) The recoveries made from running bills (cash deductions towards SD amount) can be released against submission of equivalent Bank Guarantee in acceptable form, but only once, before completion of work.
- iv) EMD of the successful tenderer shall be converted and adjusted against the security Deposit
- v) Security Deposit shall be released to the contractor upon fulfillment of contractual obligations as per the terms of contract.
- vi) The Security deposit shall not carry any interest.

#### 5.0 PROCEDURE OF DEPOSITING EMD/SD/TENDER FEE

EMD/SD/ Tender Fee will be accepted only in electronic Mode, which can be deposited on line through following link as mentioned below:

<https://www.bhelbpl.co.in/qcins/iccs.htm>.

The procedure of depositing EMD/SD/Tender Fee is below:

- a. For depositing amount online, depositor has to open SB- collect through Online E-Payment option available on Internet (www.bhelbpl.co.in under caption new link).
- b. After reading the instruction for depositing the amount; EMD & Tender Fee amount shall be deposited. EMD and Tender Fee may please be deposit together under EMD module where the EMD & Tender Fee both are applicable.
- c. After the successful payment DU No. shall be generated from the banking system.
- d. After depositing the amount, Depositor has to fill Deposit slip available on Internet (www.bhelbpl.co.in under caption new link) by selecting required Enquiry number. Tender Fee and EMD may please be enter separately.
- e. As and when credit received in BHEL account, automatic mail sent to the depositor.

**Note:** - After submitting the Deposit Slip a control number will be generated through system which can be used for getting print out from the system, Bidder's has to submit this printout of deposit slip along with their offer.

#### 6.0 GENERAL CONDITIONS OF CONTRACT

- 6.1 Bidders may note that only the cases in which the work has been awarded directly by manufacturer/utility/Importer of transformer/reactor shall be considered and all other works, which has been sub-let by another contractor, will not be accepted for qualifying in the tender as per NIT Clause 9.0.
- 6.2 The agencies which are currently under hold/ban/suspension of business dealing with BHEL and communicated thereof shall not be considered in this tender.
- 6.3 The tenderer has to confirm all clauses of as mentioned above, Deviations, if any, have to be recorded clearly, against the respective serial number. All the documents of the tender shall be signed by tenderer on every page and sent with the offer.
- 6.4 **Offers will be evaluated on the basis of total lump sum price at each site as per schedule of prices.** The break up of price (in percentage as mentioned in "Terms of payment") is for the purpose of payment after successful completion of each activity by the contractor.

- 6.5 For the **Extra Work / Activities**, the applicable rates are mentioned in Annexure-II-Rates of Extra Work/ Activities. These rates are mentioned against each activity as a percentage of total Contract price of one Station Transformer mentioned in price schedule (Annexure-I)
- 6.6 All the quoted prices shall be **exclusive of taxes & duties** as may be applicable.
- 6.7 The offer should be valid for minimum of 90 days from the date of opening the bid.
- 6.8 The bidders shall be required to submit furnish their organizational information in the format attached herewith as Annexure-VIII.
- 6.9 If the tenderer attaches any other conditions in the offer, than due to its implications prices may be loaded to the quoted price during evaluation.
- 6.10 All tender papers dully filled in and signed by the tenderer must be returned with the offer as proof of the acceptance of the conditions of the Contract.
- 6.11 Official Secret Act: The firm shall give an undertaking under the official secret Act for maintaining secrecy of the drawings, documents or other records connected with the work given to them. The firm shall return all the drawings/documents given to them.
- 6.12 Mode of Communications: Generally, all communications, references etc. shall be delivered through email, fax or given to the authorized supervisor. It will be undertaken that the firm has read and understood the message, within 3 days of the delivery, even if they have not received / not opened/ having any problems on their side. Firm shall communicate their change of authorized supervisor, email address in advance.
- 6.13 All communications shall be made by/addressed to on behalf of BHEL by following officer or his authorized representatives. Any change will be informed time to time.  
Addl. General Manager, Transformer Service Department, Bharat Heavy Electricals Ltd, P.O. Piplani, Bhopal (M.P.) Pin-462022, Tel./Fax : 0755-2503651/2500485, Email : txx@bhel.in.

#### **7.0 SPECIAL CONDITIONS OF CONTRACT:**

The tender shall be governed by general conditions which are as follows:

- 7.1 BHEL does not bind themselves to award the work to lowest tenderer or any other bidder. It will be it sole discretion to process or cancel the tender and no reason/explanation shall be given for their decision.
- 7.2 The tenderer should engage only those workers for the works, which are covered under their P.F. & E.S.I. Registration, Payment of premium for P.F., PAN No. & E.S.I. of engaged workers shall be the responsibility of the contractor and they should submit documentary proof of the same to BHEL.
- 7.3 The prices shall be firm and final and shall be quoted strictly in the price-bid format provided in the Annexure-I. Applicable Service Tax shall be paid extra against proof of their deposition in the accounts of government.
- 7.4 The Contractor shall follow all the statutory compliances and all the prevailing Industrial / Labour laws/ Govt. laws, statutory safety clauses as amended from time to time including as per Annexure-IV to VI.
- 7.5 If any urgent work (in respect whereof the decision of the BHEL shall be final and binding) becomes necessary, the Contractor shall execute the same as may be directed.
- 7.6 The firm shall ensure that no damage is caused to any person/any existing work/property of BHEL/other parties working inside the customer premises. If any such damage is caused, it shall be the responsibility of the firm to make good the losses and compensate the affected parties at his own cost.
- 7.7 The Contractor shall not sublet, transfer or assign the whole or any part of the work under the Contract.
- 7.8 The decision of BHEL regarding interpretation of any terms and conditions set forth in the Agreement shall be final and binding on the Contractor. In case the Contractor does not carry out the Contractual/statutory obligations or the services rendered by him are found to be unsatisfactory, it will be brought to HIS notice first to rectify the deficiency/ anomaly within (15) days failing which BHEL reserves the right to impose the penalty

maximum 10% of the Contract price in the and/or terminate the Contract without assigning any reason whatsoever. In such an event, no damages will be payable for short closure of the Contract.

- 7.9 Without prejudice to the aforesaid clause, BHEL reserves its right to terminate the Contract without assigning any reason thereof by giving 30 days' notice in writing to the Contractor.
- 7.10 The cancellation of Contract may be either for whole or part of the Contract at BHEL's option. In the event of termination of Contract in whole or part BHEL may procure upon such terms and in such manner as deemed appropriate, supplies or services similar to those so terminated and the Contractor shall be liable to BHEL for any excess costs for such similar supplies or services provided that the Contractor shall continue the performance of this Contract to the extent not terminated under the provisions of this clause.
- 7.11 All disputes arising in connection with the Contract shall be settled by mutual consultation. If no agreement is reached the dispute shall be settled in accordance with the provisions of the Arbitration and Conciliation Act, 1996 and the rules made there under. The dispute shall be referred for arbitration to any arbitrator to be appointed by the Head of the Unit. The award of the arbitrator shall be final and binding on both the Parties. The venue of the Arbitration shall be Bhopal in India. The Award to be given by the Arbitration shall be a speaking award. All questions, disputes, differences arising under, out of or in connection with this Contract shall be to the exclusive jurisdiction of Hon'ble Court of Madhya Pradesh.
- 7.12 The firm will be required to sign a Contract with BHEL on a proper Non-judicial stamp paper, in a prescribed format before start of work. The cost towards agreement shall be borne by the firm.
- 7.13 The bidder will have to ensure before submission of his bids, that adequate manpower and resources are available at his disposal to be deployed at site in the above given time frame. The final work schedule may vary depending on the prevalent site conditions and customer requirements and may be revised for early completion of respective activities/readiness of charging during the course of execution. These revised targets shall be informed to Contractor by BHEL time to time. Accordingly, Contractor has to meet such targets set out by the customer/BHEL by augmenting their resources. The Contractor shall have to work in parallel at more than one Transformer/Reactor as may be required during execution of work to meet the targets for readiness of charging set out by the customer and informed by BHEL to Contractor time to time.
- 7.14 In the event of schedule is delayed for the reason beyond Contractor's control, the Contractor shall keep the provision for continuing the work upto one year beyond above completion period if so considered by BHEL for time extension of Contract Agreement. In such case, the rates as quoted in Price Schedule will be applicable for the extended period.
- 7.15 BHEL may also increase/decrease the quantity of equipment's/items included in the work content. Pro-rata rates shall be paid to the Contractor for the same.

7.16 RIGHTS OF BHEL:

BHEL reserves to itself, the following rights without entitling the Contractor to any compensation: -

Resorting to any, some, all of the actions like Contract termination, recovering the dues/ losses from the Security Deposit and the Contract amount, forfeiting the Security Deposit, getting the work done through other agencies at the cost of the Contractor, cancellation of registration, banning the business with BHEL etc., in any event of the followings:

- a) Contractor's repeated poor performance, withdrawal from or abandonment of the work, except in force majeure conditions.
- b) Serious lapse in performance, Persistence disregard of the BHEL instructions.
- c) Insolvency of the Contractor.
- d) Assignment, transfer, subletting of the Contract work without BHEL's written permission.
- e) Non-fulfillment of any Contractual obligations or obligations under the law.

7.17 FORCE MAJEURE:

The following shall amount to force majeure conditions: Acts of God, act of any Government, War, sabotage, riots, civil commotion, police action, flood, fire, cyclone, earthquake, epidemic and other similar causes over which, no Contractor has any control. In such cases, firm shall resume their operations after reasonable and mutually agreed time.

**INSTRUCTIONS TO CONTRACTOR**

**TENDER NOTICE NO. TXX/TN/2019-20/07**

**DATED: 03/09/2019**

1. BHEL shall have the privity of the Contract with the Contractor only and will give instructions to the Contractor or his authorized representative. BHEL will have nothing to do or be concerned with the employment of employees working for the Contractor. The relationship between BHEL and the Contractor will be that of independent entities and nothing herein contained will amount to joint venture, partnership or an employer-employee relationship.
2. The Contractor shall maintain regular contact with the designated employee(s) of BHEL and will interact on matters relating to the work awarded under this Contract.
3. Contractor will ensure that the job is executed through his employees on his rolls and under no circumstances the Contractor will deploy any casual employee to carry out the job nor shall sub-Contract the job without prior written permission.
4. Contractor shall observe Provisions of the relevant labour law in respect of working hours, holidays, rest intervals, leave and overtime to his employee. .
5. Contractor shall obtain Police Verification of all his workers.
6. Contractor shall submit following Certificate for each Contract separately.

"It is certified that PF challans of the amount ----- pertains to my workers whose names are appearing in the wage sheet of the month ----- and these workers are engaged in -----  
--- (type of work) against work order no. ----- in ----- (name of department).

Signature of Contractor

**PAYMENT OF WAGES**

- i) Contractor shall be responsible for making payment of wages through Bank/Cheque before expiry of 7 days from the last day of wage period and to ensure disbursement of wages and shall record under his signature at the end of entries in the Register of wages in the following form. This will not be related with payment by BHEL to contractor.  

"Certified that the amount shown in column no. .... has been paid to the workers concerned in my presence on date ..... at time....."
- ii) In case Contractor fails to make payment of wages to his employees or remittance of contribution to the concerned authorities, the security deposit /other dues under the Contract can be utilized by BHEL to discharge the liability of the Contractor.

**SAFETY AND DISCIPLINARY ACTION**

1. Contractor shall ensure that his employee do not indulge in any unsafe or hazardous practices. They use safety equipment such as safety belts, safety shoes, goggles, helmet and masks where use of such equipment is required in day-to-day operations. All such safety gadgets will be provided by the Contractor failing which BHEL will provide safety equipment to such Contractor employees and cost of which including overheads as deemed fit shall be recovered from Contractor bills/dues. Contractor shall fully indemnify BHEL against any claim for damages for injury to person or property resulting from such accidents.
2. Contractor to ensure that employee deployed in the premises is physically and mentally fit and do not have any criminal record.
3. Contractor will be responsible for good conduct of his employees. In case of misconduct, Contractor shall take prompt disciplinary action as per "Model Standing Orders" on the advise of Contracting officer.
4. The Contractor has to provide a distinct uniform different from BHEL employees. The Uniform should have logo of the Contractors firm / company. The uniform shall be kept in neat, tidy and wearable condition. Wherever necessary, the Cap shall be integral part of the uniform.

5. BHEL shall recover the amount of compensation paid to victim(s) by BHEL towards loss of life / permanent disability due to an accident which is attributable to the negligence of contractor, agency or firm or any of its employees as detailed below.
  - a) Victim: Any person who suffers permanent disablement or dies in an accident as defined below.
  - b) Accident: Any death or permanent disability resulting solely and directly from any unintended and unforeseen injurious occurrence caused during the manufacturing/ operation and works incidental thereto at BHEL factories/ offices and precincts thereof, project execution, erection and commissioning, services, repairs and maintenance, trouble shooting, serving, overhaul, renovation and retrofitting, trial operation, performance guarantee testing undertaken by the company or during any works / during working at BHEL Units/ Offices/ townships and premises/ Project Sites.
  - c) Compensation in respect of each of the victims:
    - (i) In the event of death or permanent disability resulting from Loss of both limbs: Rs. 10,00,000/- (Rs. Ten Lakh)
    - (ii) In the event of other permanent disability: Rs. 7,00,000/- (Rs. Seven Lakh)
  - d) Permanent Disablement: A disablement that is classified as a permanent total disablement under the proviso to Section 2 (I) of the Employee's Compensation Act, 1923."
6. Contract awarded is liable for termination for any contravention of statutory provisions or any other reasons without assigning any explanation or notice to the Contractor.
7. Contractor shall fully comply provisions of various applicable labour laws.

#### **RECORDS & INFORMATION TO BE FURNISHED BY CONTRACTOR**

1. Contractor shall maintain neatly, completely and legibly registers, records, reports and returns for inspection by various authorities at short notice.
2. Contractor shall submit the details of work awarded to him by other departments indicating work order No., nature of work and maximum number of workers employed etc.
3. Contractor shall provide information as required in respect of all his employees employed by him to enable the Contract operating division to monitor compliance of P.F./ESI and also to enable him to furnish information to Ministry and Labour deptt. as may be required.
4. Contractor shall provide full particulars of each employee employed by him before start of the work and from time to time. He will also endorse a copy of returns furnished by him to the Labour Department under the Contract Labour (Regulation and Abolition) Act 1970.

#### **COMPLIANCE OF STATUTORY PROVISIONS**

Contractor shall fully comply various labour laws and other enactments as applicable for such Contracts.

- .. Contract Labour (R&A) Act 1970 and rules 1971.
- .. Payment of Wages Act.
- .. Minimum Wages act 1948, M.P. Rules 1958
- .. Employees State Insurance Act 1948, Rules and regulations 1950
- .. Employees Provident Fund Act 1952 and Pension Scheme 1995
- .. Workmen's Compensation Act 1923
- .. Maternity Benefit Act 1961
- .. Equal Emolument Act 1976
- .. Payment of Bonus Act 1963
- .. Inter State Migrant Act.

#### **STATUTORY INSTRUCTIONS TO CONTRACTOR**

#### **STATUTORY REGISTRATIONS AND CLEARANCES**

Contractor shall commence the work only after obtaining:

1. Labour License (If applicable)
2. Provident fund code no.
3. ESI code no

4. Registration no.
5. Notice of commencement in Form 6-A & Maintain Register of workers Form 13.

**CONTRACTOR SHALL ENSURE FOLLOWING WHILE EXECUTING CONTRACT**

1. Employment card as per rule no 76 of Contract labour (Regulation & Abolition) MP rules, 1973
2. Appointment letter to his employees.
3. Annual leave with wages including EL, CL, National Holiday & Festival holiday.
4. Leave record register.
5. Shall engage only adult workers who have attained the age of 18.
7. Obtain insurance cover for his employees/ equipment's, tools etc & third party insurance coverage at his own cost.
8. Remit Provident fund contributions in prescribed 3A & 6A forms
9. ESI contributions in Form 6
10. Submit challans of PF & ESI contributions every month.
11. Provide Personal protective equipment's for his employees
12. Distribute wage slip each month to his employees,
13. Ensure payment as per minimum wages act, 1948,.
14. Preferably Uniform to labours different from BHEL employees
15. Submit employee and employer contribution as per Shram Kalyan Nidhi Adhiniyam 1982.

**ON COMPLETION OF WORK:** Submission of PF & inspection report

**CODE FOR SAFETY MANAGEMENT AT SITES**

**TENDER NOTICE NO. TXX/TN/2019-20/07**

**DATED: 03/09/2019**

It may please be noted that the following practices are to be observed during execution the work:

**GUIDELINES FOR SAFE WORK PRACTICES**

- Personal Protective Equipment: Provision & use of personal protective equipment conforming to Indian or equivalent standards to all employees of BHEL & its sub-contractors working at sites shall be ensured as specified below:
- Safety Helmets Conforming to IS: 2925 shall be worn by all at sites where there is any possibility of any object falling from overhead.
- Safety Belts (Type 2) Conforming to IS: 3521 shall be used with the life line properly tied, by any person who is required to work at an elevated location from where there is possibility of fall of the person by more than two meters.
- Person who might be exposed to any hazards to his eyes & face during the course of his work shall use 2.1.3 Eye & Face Protection Device Conforming to IS: 8940 or 8520.
- Ear protection Device Conforming to IS: 6229 shall be used by any person exposed to excessive noise in his work.
- Hand & Body Protection Devices IS: 2573 or 6994 or 8519 or 8807 as applicable shall be used by a person who might be exposed to the possibility of Injury to his hand or body while executing a particular task.
- Foot Protection Devices: Safety shoes or good quality covered shoes, depending on the degree of hazard one is likely to be exposed to, shall be worn by persons engaged at servicing sites.

**HOUSE KEEPING**

- Materials, equipment's etc. shall not be placed or left work area so as to obstruct safe movement of people or cause any other mishap.
- Work places & passageways that are slippery due to oil, water etc. shall be cleaned up or strewn with sand/ similar substance.
- Action shall be taken to discourage the practice of throwing materials/ equipment's for elevated locations to lower levels.

**ILLUMINATION**

- Adequate & suitable artificial lighting shall be provided at all work places and their approaches.
- Lamps shall be protected by suitable guards where necessary to prevent danger, if the lamp breaks.
- Hand-held lamps shall be powered by either 24V supply or dry cells.
- Emergency lighting provisions for night work shall be made to minimize danger in case of power failure.
- Insertion of electrical wires directly into socket holes without proper plug top for drawing power shall not be allowed.
- Proper earthing & insulation of all temporary electrical lines laid for servicing jobs shall be ensured.

**FIRE HAZARDS/ ACCIDENTS AND THEIR CONTROL**

- BHEL employees should ensure that first aid fire- fighting equipment, arranged by customer, is available in the vicinity of work place.
- Arrangements shall be made to contain sparks generated during welding, cutting or other operations and sparks shall not be allowed to fall down on combustible materials, if any, kept below.
- Every scaffold shall be of safe design for the purpose for which it is to be used and shall be of safe and sound constructions and maintained in good conditions.
- Switching off of power supply to welding machines etc. shall be ensured during non-working period.
- Rolling & dragging gas cylinder shall be allowed but suitably designed cage system shall be used for lifting of gas cylinders to elevated work locations and also for lowering them.

**FIRST AID**

- BHEL/ sub-contractor shall be required to maintain a first aid box with essential items. The box shall be available for use at all hours of work.

**STATUTORY LIABILITIES OF THE CONTRACTOR****TENDER NOTICE NO. TXX/TN/2019-20/07****DATED: 03/09/2019**

- All statutory requirement under Minimum Wages Act 1948, Payment of Wages Act 1936, Workmen Compensation Act 1923, EPF & MP Act 1952, Payment of Gratuity Act 1972, ESI Act 1948, Contract Labour (R&A) Act 1970, Payment of Bonus Act 1965, Income Tax Act, Service Tax Act and all other applicable Act etc shall be complied by the Contractor
- Contractor shall comply with all statutory requirement, rules, regulations & notification etc in relation to employees issued from time to time by the concerned authorities
- Contractor shall ensure payment of statutory prescribed minimum wages as applicable from time to time in the presence of authorized representative of BHEL and maintain proper records of their timely disbursement. These records need to be preserved for a minimum period of at least 3 years and should be made available even after the contract is over for any verification by statutory / BHEL authority
- Contractor to provide PF Pass Book to his employees ensure payment of PF, EDLI, pension dues under EPF and MP Act 1952 to the RPFC
- Contractor shall ensure payment of ESI contributions under ESI Act 1948, and provide ESI membership no. of each employee
- Contractor shall produce proof of deductions as well as remittance of PF, EDLI, Pension, ESI contribution, administrative charges etc where ever applicable and shall maintain proper records
- Contractor shall furnish proper returns to the concerned statutory authorities
- Contractor shall be solely responsible for non-payment, delayed payment of wages, contribution under EPF & MP Act, ESI Act etc.
- In case the Contractor fails to make payment of wages to his employees or remittance of contribution to the concerned authorities, the security deposit / other dues under the contract can be utilized by BHEL to discharge the liability of the contractor
- Payment of bonus under Bonus Act, payment of gratuity under Gratuity Act and retrenchment compensation under Act will be sole responsibility of the Contractor
- Over & above the daily wage rate, payment shall be made for leave with wages
- Contractor shall observe provisions of the Factories Act in respect of working hours, holidays, rest intervals, leave & overtime to his employees. No work shall be done on second / third shift, overtime, Sundays or on other declared holidays without written permission
- In case a contractor employs women as employee, he will discharge his obligation under law in respect of such women workers such as prohibition of engaging them during night hours, prohibition of employing them for more than 9 hours per day, provision of crèche facility, grant of maternity leave as per rules etc
- Contractor shall be responsible for making payment of wages before expiry of 7 days from the last day of wage period and to ensure disbursement of wages in the presence of the authorized representative of the contract operating division & HR representative who shall record under his signature to the end of entries in the register of wages and give certificate to this effect which shall be enclosed with the bill for claiming payment
- In case the Contractor fails to make payment to his employees within the stipulated date / time, security deposit can be utilized for payment of wages etc. In case of such an eventuality the Contractor shall replenish such an amount immediately
- Contractor shall indemnify BHEL against all claims and losses under various statues or any civil or criminal law in connection with the employees deployed by him
- The contractor shall issue all the necessary Personal Protective Equipment's (PPEs) to all his workmen involved in the job. The liability for any compensation on account of any injury sustained by an employee of the contractor shall be exclusively of the Contractor
- Contractor to obtain insurance cover for his employees / equipment, tools & tackles etc and take third party risk insurance coverage at his own cost. BHEL shall not be responsible for any loss, damage, pilferage of his property under employees
- Contractor should have independent code numbers under EPF & MP Act 1952 and ESI Act 1948 Service Tax and shall cover his employees under the said codes
- Contractor to obtain license under CL(R&A) Act 1970
- Adherence to all local, state and central legislation on safety measures as applicable to the work at site shall be ensured.
- This document may be treated as a part of the NITs and your acceptance of these requirements will be essential for qualifying to work as our sub-contractor.

**FORMAT FOR  
"NO DEVIATION CERTIFICATE"**

**TENDER NOTICE NO. TXX/TN/2019-20/07**

**DATED: 03/09/2019**

**NO DEVIATION CERTIFICATE**

This is to certify that our offer is exactly in line with your Tender Enquiry No. \_\_\_\_\_ . This is to expressly certify that we have read all the clauses of tender and our offer contains **no deviation** either Technical or Commercial in either direct or indirect form.

**Signed By :**

Name : \_\_\_\_\_

Designation : \_\_\_\_\_

Organization : \_\_\_\_\_

Date & Place : \_\_\_\_\_

Phone/Fax/Email : \_\_\_\_\_

Stamp & Seal : \_\_\_\_\_

**(Signature & seal of Bidder)**

**ORGANIZATIONAL INFORMATION****TENDER NOTICE NO. TXX/TN/2019-20/07****DATED: 03/09/2019**

<b>Sl.</b>	<b>Description</b>	<b>Bidder's Information</b>
1	Bidder's Name, Full Address / Pin Code	
2	Name(s) of Contact Person(s) Mobile No(s). of authorized signatory of bid document	
3	Tel. No. / Fax No./ e-mail	
4	Bid Ref. No. & Date	
5	Type of Company (Limited Company / Private Company / Co-Operative Society / Partnership Firm / Proprietorship)	
6	Year of establishment, Company Registration No. & date	
7	Director / Partner / Owner/ Proprietor Information	
8	Approved as erection Contractor for any other reputed Transformer Manufacturers in ABB / Siemens / Alstom / CGL / BHEL / NTPC / POWERGRID / Central / State Govt. Agency/PSU	
9	Income Tax PAN	
10	GSTIN Tax Registration No.	
11	Service Tax Registration No.	
12	PF Registration No.	
13	Electrical Contractor License No. & Validity	

Attach list the T&amp;Ps and testing instruments owned by the bidder along with copy of PO.