

No.: DM (P&E)/CHP/ENQ/ 206/ 96

Date:21/01/2023

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Dear Sir,

Sub: Enquiry to obtain Budgetary Offer for complete overhauling/ repairing, installation, testing & commissioning of 6 MVA, 33/3.3 KV Transformer installed at Master Control Sub-station of Coal Handling Plant, under Haldia Dock Complex (HDC), SMP, Kolkata including dismantling at site, transportation, and both side loading & unloading.

Plant & Equipment Division (P&E Division), Haldia Dock Complex (HDC), Syama Prasad Mookerjee Port, Kolkata (SMPK) **invites quotations to obtain Budgetary Offer** for executing the subject work as per the enclosed Technical Specification, Scope of work and Terms & Conditions.

The Budgetary Offer may be submitted via e- mail at the above mentioned e-mail id or via post at the following address:

Sr. Dy. Manager (P&E), 1st floor, Operational Administrative Building, Chiranjibpur, Plant & Equipment Division, Haldia Dock Complex, SMP, Kolkata.

The Budgetary Offer is to be submitted latest by **06.02.2023**.

आपका धन्यवाद/Thanking you,

आपका आभारी/Yours faithfully,

एस. एस. के. हसन. इमाम / S. S. K. Hassan Imam
उप प्रबंधक (पी एंड ई) / Dy. Manager (P&E)
कृते वरिष्ठ उप प्रबंधक (पी एंड ई) / For Sr. Dy. Manager (P&E)
हल्दिया गोदी परिसर / Haldia Dock Complex
श्यामा प्रसाद मुखर्जी पोर्ट, कोलकाता / Syama Prasad Mookerjee Port, Kolkata

संलग्न/Enclo:- As stated above.

TECHNICAL SPECIFICATION

6MVA, 33kV/3.3kV Outdoor type Transformer (Oil-cooled) with on-load tap-changing feature.

Maker's Name : The General Electric Co. of India Ltd.
Transformer to IS: 2026/1962.
Made in India.

Kind	: Double Wound
KVA	: 6000
Volts at No-Load	: { HV 33000 LV 3300
Amperes	: { HV 105 LV 1050
Phases	: { HV 3 LV 3
Diagram	
Drawing No.:	BN - 21548

Type of Cooling	: ON
Frequency	: 50 Hz
Vector Group	: Dy 11
Impedance Volts	: 6.92
Volume of Oil	: 4510 Litres
Mass of Oil	: 3910 kg
Untanking Mass	: 6570 kg
Transport Mass	: 12800 kg
Total Mass	: 16000 kg

Maker's Ref. No.	: CSP-2937/CTP-3357
Maker's Serial No.	: 96210
Year of modification	: 1978
Customer's Ref.	: CON. E 73/604
Temp. Rise in Oil	: 45°C & Winding: 55°C

Tap Switch Position	Leads Joined	HV Volts	LV Volts
1	2 - 3	35475	3300 ↑ ↓
2	2 - 4	34650	
3	2 - 5	33825	
4	2 - 6	33000	
5	2 - 7	32175	
6	2 - 8	31350	
7	2 - 9	30525	
8	2 - 10	29700	
9	2 - 11	28875	

OLTC Crompton Greaves Ltd.	
Type	: F.300/33/100
Sl. No.	: 42378802
Service Voltage	: 33 KV
Normal working Current	: 69.3A
Wt. of tap changer excluding oil	: 610 kg
Oil in selector switch Tank	: 660 kg (750L)
Total Wt.	: 1720 kg

SCOPE OF WORK:-

Observations and assessment of work as per preliminary survey:

- i) The transformer has been kept in assembled and oil filled condition in the Master Control Sub-station of Ore & Coal Handling Plant, HDC, SMPK and presently out of commission . Both way safe loading, transportation and unloading to be made by the contractor to/from their workshop, from/to the installed positions as indicated above at their risk and cost.
- ii) **Old and used insulating oils (Transformer Oil) of the transformer and its OLTC chamber will be retained by the contractor and after repair/re-insulating, transformers and OLTC chambers to be filled-in and topping up by supplying new transformer oil by the contractor, conforming to IS as indicated in "Inspection & Testing".**
- iii) If any part of the turn or a full turn of HV and/or LV coil(s) found damaged, the damaged portion needs to be re-built with the replacement of a portion of associated coil and lead by equivalent grade & size of electrolytic copper strip. Removal of Burrs, cleaning of Core Assembly and varnishing Core Limb laminations in and around also to be done suitably and applicable in general prior to re-insulating the coils.

Overhauling of On Load Tap Changer (OLTC) by cleaning of all contact points and re-insulating of all Tap Leads by equivalent insulation including all connections of its Control Box accessories. Contacts between leads for the purpose of actual operation must be tested after assembly.
- iv) **On Load Tap Changer (OLTC) Units:**
Motor to be serviced and re-varnished with the **replacement of existing capacitor and bearings (SKF/FAG) by new one.**

Contact resistance to be suitably checked.

Fiber Glass-Plate of same thickness to be replaced by new one at all contact points including checking of proper connections and connecting leads.
- v) **Replacement of complete insulation (major and minor) of Transformers** i.e. Separators, Spacers, Spacer Lock Sticks, Coil Base & Top, Axial Sticks, Coil Holding Studs, etc, Inner & Interlayer of Winding including Re-winding with re-insulation of total HV & LV coils and including all leads after proper annealing.
- vi) Checking of all brazing/gas welding points of coil and leads for rectification where necessary, prior to re-insulation.
- vii) Servicing & Checking of Buchholz Relay and its contacts including test for proper functioning.
- viii) **Replacement by annealed copper strip** at repaired portion of coil and leads and covering by equivalent insulations all through are necessary to achieve original dimension and to regain technical parameters as per Technical Specification of the original manufacturer as far as practicable.
- ix) **Replacement of all gaskets and oil seals.**
- x) **Replacement of fasteners at necessary points.**
- xi) Replacement of explosion vent diaphragm, clear tough glasses of all oil level indicators Magnetic Oil Gauge (MOG), Winding Temperature Indicator (WTI) and Oil Temperature Indicator (OTI) including their connecting tubes/wires and complete in all respect.
- xii) **Replacement of Silica Gel at the Breather** by new Dehydrating Silica Gel with the replacement of oil seal and the container.
- xiii) **Replacement of all Drain Valves** (4" flange type of equivalent grade) and overhauling of all other valves, where required.
- xiv) **Painting of Main Tank, Conservator Tank, OLTC Tank, Control Box, Radiator Banks, Breather and all other Tubes after removal of old Paint**, cleaning and de-greasing both inside and outside for varnishing/painting. The external surfaces of the Transformer and its accessories should be painted with **one coat of Epoxy Primer followed by two coats of Epoxy Dark**

Admiralty Grey Shed No.632 of IS:5. Interior of the tank should be painted with hot oil resistant varnish.

- xv) Elliptical Cooling Tube Stacks of the Radiator Banks to be re-fabricated/replaced at places after repairing, welding and pressure testing to stop leakage of oil prior to painting (for pressure testing: 1.8 kg/cm² air pressure to be stabled for at least 2 minutes).
- xvi) Assembly of Transformer including Core and Coils as per its original dimensions.
- xvii) Routine Testing as per IS:2026 and Inspection Plan.
- xviii) Installation, connections with HV and LV Boards including Controls of Tap Changers, Neutral Earthing, etc. including commissioning test after topping and filtration of new Transformer oil and ultimate commissioning under Industrial Load condition; **Oil Filtration Plant (of capacity approx. 600 LPH /1200 LPH as available) will be provided by Haldia Dock Complex free of cost with operating personnel under your supervision.**
- xix) (a) Operation of WTI & OTI will be checked for indication of Temperature in energized condition of transformers at site checking of continuity of trip & alarm contacts by auxiliary supply in de-energized condition of transformer at site.
- xx) (b) Operation of MOG will be conducted at site by increasing & decreasing of Oil level through filter machine when transformer will be kept de-energized. Keeping auxiliary supply 'on' trip & alarm contacts of Buchholz Relay will also be checked at site with the variation of oil level in de-energized condition of transformer.
- xxi) Two-way transportation including loading and unloading for repairing, assembly, testing, installation and commissioning to be done by the contractor. **Indemnity Bond to be submitted by the contractor under SMPK's Proforma through Notary Public, Govt. of West Bengal, before taking out the Transformer for repairing at their workshop.**
- xxii) **Replaced old materials i.e. capacitor and old bearings of OLTC Motor, MOG, WTI, OTI, Drain Valves to be deposited by the contractor at HDC's store.**
- xxiii) At the time of fault in the transformer, one no. 3 Core, 33 kV grade PILC cable was connected at the HV end. The terminal box was filled with insulating compound. During fault, the entire compound came out from the terminal box due to impact of the fault as a result of which the terminal box cover got damaged. The damaged PILC cable with termination has been removed. One no. 3 Core X 240 sq. mm. XLPE insulated cable has been laid between the Transformer and the 33 KV Circuit Breaker inside the Sub-station. **The scope of work would also include complete modification of the 33 KV terminal box so that the 33 KV grade, 3 Core X 240 sq. mm. XLPE insulated cable may be terminated at the terminal box maintaining necessary gap between the phases and between phase to earth as per IE rules and subsequent termination of the same cable at the Transformer and the Circuit Breaker end, including supply and delivery of Hit Shrinkable type Cable Termination Kit and 33 KV boot .**

Dimensional Drawing of the existing cable termination box is enclosed with the enquiry document for reference.

INSPECTION & TESTING

Inspection and Testing will be carried out, phase-wise, by the representative of Sr. Dy. Manager(P&E) or his authorized agency at the contractor's workshop premises/at site as per following Inspection Plan for which providing all testing instruments and making arrangement for testing would be under the scope of the contractor.

- a) Inspection & Testing of Core & Coils after draining of oil and de-tanking. Quantity of damaged turn of 33KV & 3.3KV coils will be determined under Joint inspection.**
- b) Inspection & Testing of Core & Coils after repair/re-insulation, assembly, etc. and before re-tanking.**
- c) Following Tests to be carried out:**
 - i) IR value of HV and LV winding,
 - ii) Ration Test
 - iii) Vector Group Test
 - iv) Magnetic Balance Test
 - v) Winding Resistance Test at different taps,
 - vi) Over Voltage Test – At 56 KV AC for 33 KV winding and at 10 KV AC for 3.3 KV winding
 - vii) Double Voltage Double Frequency Test
 - viii) Load Loss Test
- d) Inspection of New Transformer Oil and Testing of Transformer Oil as per IS:335-1993 with latest amendment, if any along with manufacturers Test Certificate/Challan, etc.**
- e) Commissioning :**
 - No Load Charging of the Transformer feeding from 33 KV side and subsequently under Industrial Load Condition at site.

At least 7 days advance notice to be given for each of the stage inspections.

Inspection and Testing by representative/authorized agency of Manager (P&E) shall not relieve you of your obligation for repairing the transformer in accordance with specification.

Terms & Conditions

1. **PRICE:** The Prices should be quoted excluding GST. The prices should be indicated in the **Bill of Quantities** only. All other incidental charges for the execution of the contract should be included. The rates should remain firm during the tenure of contract period.

The contractor shall provide all materials (as mentioned in scope of supply of contractor), labour, equipment and all kind of tools & tackles necessary in connection with the contract work.

2. **TAXES & DUTIES:** The particulars of GST and other statutory taxes & duties, if any, as applicable are to be furnished clearly in the offer. If any Tax and Duty/ increase in rate of Tax and Duty is imposed / effected by the Central / State Government, which will be applicable to this Contract, Trustees will consider reimbursement of payment made against such taxes, duties against documentary evidence of such payment made. If there is downward revision in any of those taxes, duties or abolition of any of these, you shall give due rebate on such of the rates, as would be effected by such revision or abolition.
3. **INSPECTION:** During execution of the work as well as after completion of the jobs, the same will be inspected jointly by the representative of HDC and authorised representative of the contractor. Physical checking of the work under execution and executed job will have to be carried out, based on the Scope of Work by the representative of Plant and Equipment Division, HDC. The contractor will have to provide all facilities to execute the work successfully, at their own risk, cost and arrangement.
4. **PAYMENT TERMS:** 100% payment will be made within 30 (thirty) working days from the date of submission of clear and unambiguous bill, against certification of completion of the work by HDC's officials. The bill should be accompanied with Inspection cum work done certificate.

Payment will be made through **ECS**, for which the contractor has to mention the particulars of their bank account viz. name of the Bank, address of the Branch, Branch Code, A/c No., MICR No., RTGS Code etc. in their bills.

5. **JOB COMPLETION :**

- a) The transformer is to be lifted from site within 15 days after receipt of clear order.
 - b) After reaching the transformer at the contractor's works, joint inspection to assess the extend of damage would have to be done within 15 days of arrival of the transformer at the contractor's works.
 - c) The repaired transformer is to be delivered and commissioned at the site of Haldia Dock Complex within 60 days from the joint inspection as mentioned under Clause 5 (b) above.
6. The **GUARANTEE** will be covered for a period of 12 months counted from the dates of successful commissioning of the Transformer and completion of work in all respect. In default, the Trustees will be at liberty to get the repairs done at the risk and cost of the Contractor. **The Security Deposit (3 % of the contract value, excluding GST) would be released after successful completion of the Guarantee Period.**
 7. **VALIDITY OF OFFER:** The offer should be valid for **60 days** from the date of opening of the offer.
 8. **EVALUATION CRITERIA OF THE OFFER:** While evaluating, the rate quoted by the tenderers against the complete work as mentioned in the BOQ, will be taken into account and selection will be made on the basis of **total lowest price** against the said items.
 9. **GATE PASS :** In connection with execution of the order, necessary **Gate Pass** for entering into the **Dock Area** will be provided on **chargeable basis**, on submission of requisite documents. The contractor shall have to abide by the rules and regulations of HDC, SMP, Kolkata, which may be varied time to time, in respect of entry / exit and movement in the premises. Necessary Gate pass for entering into the Dock area will be issued for the personnel, machineries, materials etc. of the contractor for execution of the instant work on payment of necessary charges as per rules then prevailing on the

basis of written request from the Haldia Dock Complex is presently issuing RFID based Dock Entry Permits. With a view to strengthen security of the dock, it has been decided that photocopy of identity has to be submitted for one time registration of all the individuals seeking man permits. The following documents will be considered as a valid proof of identity.

- Passport (Relevant pages with photo & address).
- Driving License.
- Voter ID Card (EPIC)
- AADHAR (UID).
- Income Tax Pan Card.

10. **Liquidated Damage:** If the contractor fails to complete the job within the stipulated date or such extension(s) thereof, as may be allowed by the **Sr. Dy. Manager(P&E)**, HDC_SMP in writing, the contractor shall be required to pay as compensation(Liquidated Damage) to HDC and not as penalty, @ ½% of **total contract value for every week or part thereof**, provided always the entire amount of compensation to be paid under the provision of the clause shall not exceed 10% of the total contract value. HDC_SMP may, without prejudice to any other method of recovery, deduct the amount of such damages from any money which is due or which may become due to the contractor. The payment or deduction of such damages shall not relieve the contractor from their obligation to complete the work or from any other of their obligations or liabilities under the contract. **GST** on L.D. amount at the prevailing rate will be applicable.

11. **Acceptance of offer:** HDC, SMP, would have the right to execute any job, partly or fully, as per discretion. HDC, SMP reserve the right to accept or reject the offer in part or as a whole and do not bind themselves to accept the lowest offer or any offer, without assigning any reason and no damage claim whatsoever will be payable by HDC, SMP in this regard. Mere issuance of enquiry document to any bidder or opening of the offer shall not construe that the bidder is considered automatically qualified.

12. **The Contractor should have the following credentials:**

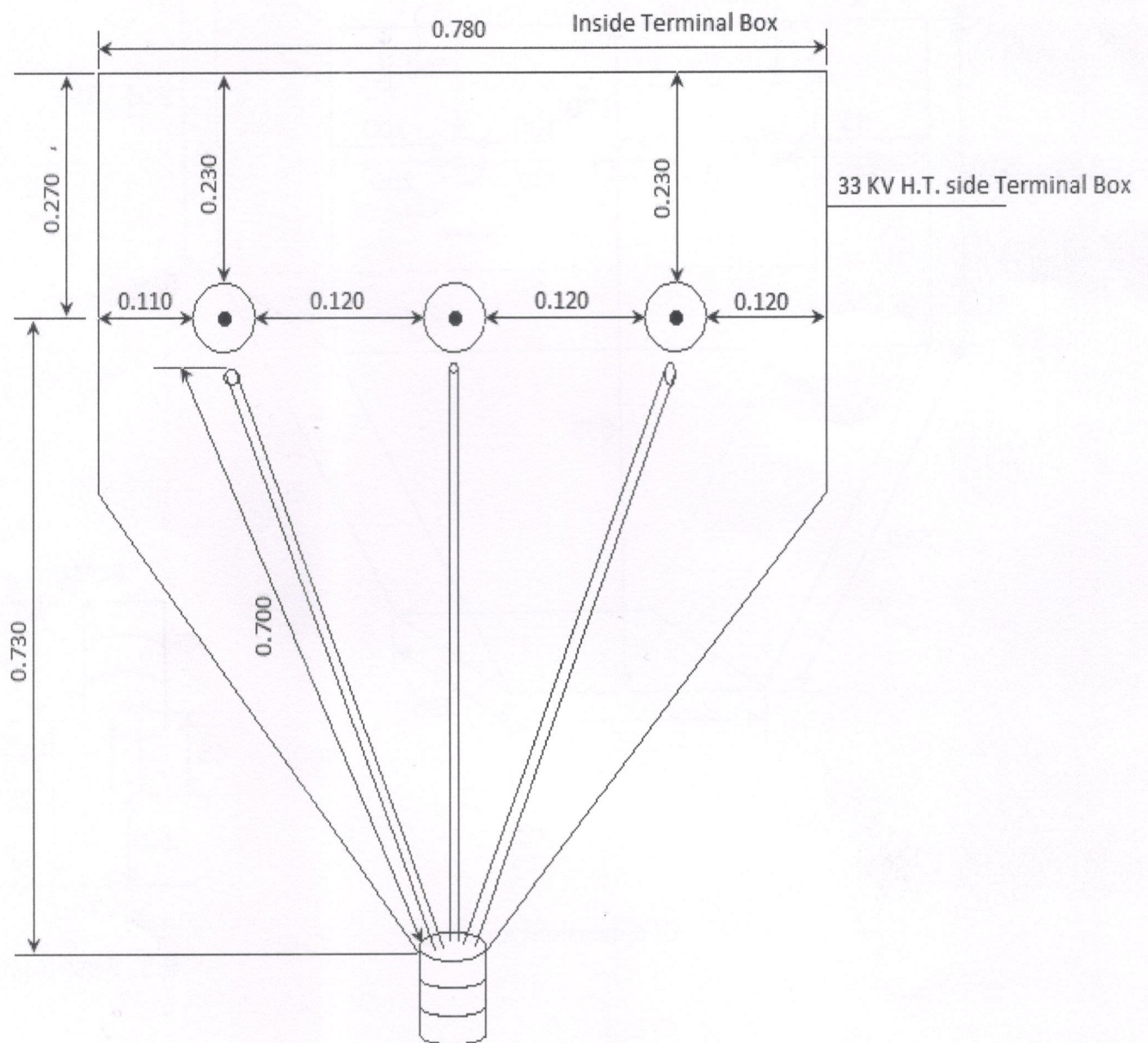
- a) Valid Electrical Contractor's License issued by competent authority of State / Central Govt.
- b) The contractor should not have been banned or de-listed or debarred by any Government or Quasi Government Agency or Public Sector Undertaking in India.
- c) Valid Goods and Services Tax (GST) Registration Certificate, issued by Government of India.
- d) Valid Profession Tax Clearance Certificate (PTCC) or Up-to-date Profession Tax payment challan, if applicable. If this is not applicable, the bidder must submit a declaration in this regard.
- e) Documentary evidence [i.e. Work Order, successful completion certificate (with performance) from clients indicating the date of completion, value of the work done or receipt copy of challan or GRN or GST Invoice etc.] **in support of successful execution of similar type of work.**
- f) **Similar type of work means experience in carrying out supply, installation, testing and commissioning / repair/ maintenance of Power/ Distribution Transformer of minimum 750 KVA rating at Port Sectors / Central Govt. / State Govt. / PSU / other reputed organization.**

The enquiry document has to be submitted, duly signed under their official seal on each page, as a token of acceptance of the aforesaid terms and conditions by the bidder.

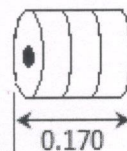
BILL OF QUANTITY

Item Sl. No.	Item Description	Quantity	Unit rate (in Rs.), excluding GST	Amount (in Rs.), excluding GST
1.	Overhauling / Repairing, Transportation, Installation, Testing, & Commissioning of 1 no. 6 MVA, 33 KV/ 3.3 KV Transformer having Sl. No. 96210 of Haldia Dock Complex, SMPK as per Scope of Work, inspection & testing and other stipulations.	1 no.		
2.	Complete repair / rewinding of defective winding of defective winding / limb with new conductor including replacement of all spacer & packing material as per scope of work. [Quantity will be determined under joint inspection with representative of Sr. Dy. Manager (P&E) after dismantling and testing at the contractor's works]			
a)	HV Winding	1 limb		
b)	LV Winding	1 limb		
3.	Replacement of HV/ LV insulators	1 set		
4..	Complete modification of the 33 KV terminal box of the Transformer for termination of the 33 KV grade, 3 Core X 240 sq. mm. XLPE insulated cable, maintaining necessary gap between the phases and between phase and earth as per scope of work.	1 no.		
5.	Supply & Delivery of Hit Shrinkable type Cable end termination kit suitable for 33 KV grade, 3 Core X 240 sq. mm. XLPE insulated cable. Make : Raychem/ 3 M	2 Sets		
6.	End termination of the Hit Shrinkable type Cable termination kit, suitable for 33 KV grade, 3 Core X 240 sq. mm. XLPE insulated cable, at the transformer HV end and the Circuit Breaker end.	2 Sets		
7.	Two-way transportation of the transformer including loading/ unloading at the Haldia Site and at the contractor's works as per scope of work.	LS		
	Grand Total (in Rs.), excluding GST			

33 KV / 3.3 KV, 6 MVA TRANSFORMER



Stud Top Plate



H.T. Bushing Insulator

All dimensions are in mm