



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

TENDER SPECIFICATION
FOR



Tender enquiry for construction of cooling system and allied foundation work & Complete Erection, Testing, Commissioning & Handing over to customer of 09 Nos. 160 MVA 230/110 KV 3 Ph. Auto Transformer against "J" W.O. 73089A17200 at M/s Tantransco substations.

ON BEHALF OF

BHARAT HEAVY ELECTRICALS LIMITED,

JHANSI: 284120

TENDER SPECIFICATION NO: JHS/FES/007/24

- **DATE & TIME OF RECEIPT OF THE TENDER:** 09.02.2024 **Till 13.00 Hrs.**
- **DATE & TIME OF TENDER OPENING:** 09.02.2024 **After 14.00 Hrs.**

Reverse Auction- To Be Done



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

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Detail of Bidder and Documents to be submitted along with Technical Bid

Please number your documents in continuation with tender documents at bottom (footer) of page.

Sl. NO	Particular	Details	Page. No.
1	Name of the firm		
2	Name of the Proprietor/Partners		
3	Address		
4	Mobile No.		
5	E-mail ID		
Essential Documents			
Sl. NO	Particular	Details	Page. No.
6	Acceptance of Terms & conditions signature on all pages without conditions of contractor	Submitted/ Not submitted	
7	Blank price bid format duly signed by the contractor.	Submitted/ Not submitted	
9	Copy of ESI registration	ESI No.-	
10	Copy of Pan Card	Pan Card No.-	
11	Copy of GST	GST No.	
12	A class Electrical Licence in the name of Contractor's firm with Validity		
13	No Deviation Certificate as per Annexure-G	Submitted/ Not submitted	
14	Copy of ownership form	Submitted/ Not submitted	
15	Receipt of tender fees deposition	Amount- Rs.472/-	
16	Receipt of EMD deposition	Amount-Rs. 1,33,920/-	
17	Copy of Turn Over and Income Tax return for last 03 years FY 2021-2022 FY 2022-2023 FY 2023-2024	Submitted/ Not submitted	
18	Work experience i. Copy of work order ii. Work Completion certificate Relevant TDS/TRACES (in case of Experience in private sector)	Submitted/ Not submitted	
19	Copy of PF registration	PF No.	
20	Self-Declaration	Submitted/ Not submitted	

We will fulfil all the obligations of the contractor and abide by the terms & Conditions mentioned in the enquiry.

Date :-

Signature With Name & Seal



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

TABLE OF CONTENTS

SL.No.	Section	Page. No.
1	Tender Enquiry	1
2	Details of bidders and documents to be submitted	2
3	Table content	3
4	Notice inviting tender	4
5	Transformer Details	6
6	Scope of Work	7-21
8	Price Bid format	22-23
9	Payment Terms, Work Completion and LD details	24-26
10	Tendering Procedure	28-31
11	General Terms & Conditions of enquiry	29-45
12	No Deviation Certificate	46
13	Self-Declaration	47
15	List of tools and testing equipment	48-49
16	Drawing and detailed estimate for construction of cooling system and allied foundation work	50
17	Check list and erection protocol	51
18	Specification for open and closed store cum offices	52

Date :-

Contractor Signature With Name & Seal



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

NOTICE INVITING TENDER





BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

NOTICE INVITING TENDER

Sl. No.	Particulars	Details
1	Name of the Works	Tender enquiry for Construction of cooling system and allied foundation work & Complete Erection, Testing, Commissioning & Handing over to customer of 09 Nos. 160 MVA 230/110 KV 3 Ph. Auto Transformer against “J” W.O. 73089A17200 at M/s Tantransco substations.
2	Tender Evaluation Criteria	As per tender documents
3	Last date of receipt of tender	(As on page # 1)
4	Date of opening of tender	(As on page # 1)
5	Address for submitting the tender	(As on page # 6)
6	Earnest Money Deposit	Rs.1,33,920/-
7	Tender Fees	Rs. 472/-
8	Reverse Auction	RA will be conducted

Note- EMD may be accepted in the following forms;

- I. EMD shall be accepted through Electronic-Mode in favor of BHEL (NEFT/RTGS/Net Banking)
- II. 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.

BHEL account details: Bank Name: - SBI; A/c No.: - 10670828866; IFSC Code: - SBIN0003807 A/c Holder Name: - BHARAT HEAVY ELECTRICALS LIMITED Branch Location-Jhansi.

The contractors may physically visit the work place before quoting their rates. For relevant details, please visit our website “www.bhel.com” & www.eprocure.gov.in.

Note: BHEL takes no responsibility for any delay / loss of documents or correspondence sent by courier or post. Late tenders shall be rejected outright.

TO BE SIGNED BY THE TENDERER

Certified that all Sections of the Tender have been read / complied & agreed to, and each page of the tender offer has been signed & stamped.

(Signature of Authorized person(s))



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

Sub.: Tender enquiry for Construction of cooling system and allied foundation work, & Complete Erection, Testing, Commissioning & Handing over to customer of 09 Nos. 160 MVA 230/110 KV 3 Ph. Auto Transformer against “J” W.O. 73089A17200 at M/s Tantransco substations, Providing DG set for getting 3-Ph suitable power supply during above work.

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:** 09.02.2024 Till 13.00 Hrs.
- **DATE & TIME OF TENDER OPENING:** 09.02.2024 After 14.00 Hrs.
- **PLACE OF TENDER SUBMISSION:** “WORKS CONTRACT TENDER BOX” placed in Tender Room, Administrative Building, Security Gate, BHEL, Jhansi – 284120.
- **Address of on line Tender Submission-** tenderbox.jhs@bhel.in

The details of the work shall be as per the **Scope of Work** . Prices are to be submitted as **Price-bid format (Annexure-A)**. The other conditions and details of tender are as follows:

1. PROJECT:

M/s Tantransco sites(Kadaperi, Singarapet, Vannaman Galam, Hosur 1&2, Cuddalore, Thiruvanna Malai, Tirupur, Satha Madurai, Thikalay, Keezha Kuppam, Oragadam, Alagarkoil, Kadalangudy).

2. DETAILS OF EQUIPMENTS:

09 Nos. 160 MVA 230/110 KV 3 Ph. Auto Transformer

3.0 APPROXIMATE SHIPPING WEIGHT AND DIMENSIONS: For W.O. : . 73089A17200

Shipping weight (Without Oil)	-	115000 Kg
Dimension (Approx.)	-	Over All Shipping
Length		7500 MM
Width		3800MM
Height		4700MM
Weight of oil		61000 Ltr.
Total weight with oil & fittings	-	1,79,500 Kg.

Note-The above details are tentative and is to ascertain the facilities required at site.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

4.0 SCOPE OF WORK: Construction of cooling system and allied foundation work & Complete Erection, Testing, Commissioning & Handing over to customer of 09 Nos. 160 MVA 230/110 KV 3 Ph. Auto Transformer against "J" W.O. 73089A17200 at M/s Tantransco substations, Providing DG set for getting 3-Ph suitable power supply during above work.

I. Scope : "Civil work for Cooling system and allied foundation work of 160MVA Transformer at Tentransco." As per attached drg. And scope of work.

1. Construction of raft for pedestal of A Frame and Pipe Support:
 - i) Raft of size .5 m x 1.5 m.
 - ii) 11 individual raft for pipe support.
 - iii) .2 Set of four pedestal for pipe support.
2. Construction of 29 number pedestals of size 500 x 500 mm and 8 number pedestals of Size 600 x 600mm over the above constructed raft.
3. Construction of M Kiosk foundation of size 1.63 m x 1.0 m as per attached drawing.
4. M-20 Grade (Nominal Mix 1:1.5:3) of concrete is to be used for concreting work.
5. The depth of various footing will be as per attached drawing.
6. The final finished level of the footings will be as per drawing and site requirement.
7. 40 mm Gravel filling of 150 mm above NGL (as per drawing) in the excavated area.
8. Centering and shuttering work as per requirement.
9. Reinforcement work with 12 mm main and distribution bars and 8 mm ring for the above-mentioned concreting works.

The scope shall also include all associated & enabling works including the cost of labour, tools & tackles and materials. The above list is indicative and not exhaustive and shall include any other work not mentioned above but becomes important for successful completion of the entire work.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

II. Scope for complete erection, testing & commissioning of newly supplied 09 nos.160 MVA 230/110 KV 3 Ph. Auto Transformer-

1	Shifting of materials from store to working place
2	Test IR of Core-Frame-Tank, due point of dry air in transformer and pressure test.
3	Removing of Impact recorder
4	Pre-erection testing of bushings & turret CT
5	Erection of cooling pipe works like A frame, headers, conservator, radiators, ladder etc. including flushing of radiators)
6	Erection of Turrets and bushings
7	Internal inspection of transformer
8	Inspection of storage tank, testing of oil by chemical, filling of oil in storage tank and filtration, sending of oil to LAB for BDV, PPM, resistivity, IFT & tan delta checking.
9	Dry out cycle of transformer & nitrogen purging, oil filling in transformer tank and conservator, Hot Oil Circulation to get the required parameters of oil.
10	Sending of oil of transformer tank to LAB for BDV, PPM, resistivity, IFT & tan delta checking.
11	Installation of cooling fan
12	Cable laying in conduit/tray, trenches, overhead and termination related to transformer, OLTC Panel, marshaling box, RTCC panel, etc
13	Pre-commissioning testing of transformer
14	Other supporting works for successful commissioning of transformer
15	Commissioning and handing over of transformer

III. Scope of power supply during cooling system and allied foundation work & Complete Erection, Testing, Commissioning & Handing over to customer of 09 Nos. 160 MVA 230/110 KV 3 Ph. Auto Transformer against “J” W.O. 73089A17200 at M/s Tantransco substations.

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Qty of scope of work	Power Supply required for Construction of cooling system and allied foundation work, & Complete Erection, Testing, Commissioning & Handing over to customer of 09 Nos. 160 MVA 230/110 KV 3 Ph. Auto Transformer	
1	Activities: During construction of cooling system and allied foundation work	
2	Activities	Detail work description
	Erection	Power supply required during Cutting , welding, drilling, heating etc. for installation of cooling pipe works.
	Turret CT & Bushing testing	Power supply required during Turret CT & Bushing testing
	Oil filling in storage tank	Power supply required for 29KL approx. oil filling in storage tank
	Vaccum & Oil Filtration	Continue power supply required for Vacuum & Oil Filtration of 61 KL approx. Oil.
	Oil filling in Transformer	Power supply required for filling of 61KL approx. oil in Transformer
	Hot oil circulation	Continue power supply required for during hot oil circulation.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

	Oil Top up & aircell charging	Continue power supply required for oil top up & aircell charging
	Pre - Commissioning Testing	Continue power supply required during pre- commissioning testing.
	NIFPS Installation	Continuous power supply will be required during NIFPS installation & Commissioning.
	Note	For completing the ETC work & charging of transformer, any additional activities need to be carried out, for which if power supply is required will be in agency scope.

Note-The contractor erection team along with T&P for E&C will be required to mobilize after award of work/issue of letter to site and commence the work at site within 7days of time.

Note- Following T& P & Consumables will be in agency scope if required during attending the above work at sites-

1. Filtration Machine of min. 10KL capacity with operator & power supply cable.
2. Storage Tank minimum 02 nos. with 20 KL capacity.
3. N2 Cylinder/dry air plant (99.99% purity and better than -60 Dew point) with power supply cable
4. Expert Manpower with tools etc. (Fitter, Electrician & Helper)
5. Calibrated BDV & PPM Kit
6. Testing Kits with testing engineer
7. Calibrated dew point meter
8. Vacuum pump & pressure gauges
9. Hydra /Crane of suitable capacity with operator
10. Gas cutting set
11. Welding/Brazing Machine with associated accessories , power supply cable & required gas cylinders .
12. Drilling Machine with power supply cable.
13. Man, machine & materials required for construction of cooling bank foundation up to customer satisfaction level.
14. Complete T&P for civil work.

Note-

- 1- If any other T&P required to complete the work at site will be in agency scope.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

5) Stages of works:

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

1. ARRANGEMENT FOR STORAGE AREA & PORTA CABIN AND STORAGE OF MATERIAL:

- I. The contractor has to be arranged the temporary store delicate materials of Transformer / Reactor i.e. Insulation material, breathers, drying agent, set of gasket, O-ring, buchholz relay, PRV, NRV, copper conductor, GCD, set of valves, hardware, OLDA equipment, testing equipment, oil drums, bushings, conservator, pipe work etc,
- II. The contractor will have to be ensured that material stored in open yard should be elevated from ground level to avoid water logging. No material shall be directly placed / stored on open/ loose soil. Accessories shall be covered with water resistance tarpaulin.
- III. The contractor has to make arrangement for inspection, verification, storage, upkeep during storage & watch and ward of the equipment's/ material dispatched to site. The shifting of all transformer accessories, associated equipment, bushings & oil drums from store to erection site will be in agency scope.
- IV. 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.
- V. The Contractor will have to submit the actual photograph of store constructed/arranged by them at site duly certified by self & BHEL/Customer representative along with the bill to claim the charges on this account after final commissioning of Transformer (Not applicable for spare unit).
- VI. The Contractor may visit the site to understand the site condition & other details of working of site before bid quotation.

Note: After final commissioning & handing over of Transformers, porta cabin (site office) & container (covered storage) shall be taken out by contractor from site within one month.

STAGE-II CIVIL WORK RELATED TO COOLING BANKS-

2. SCOPE- The civil work as per Attached annexure-----

Note- Above is scope of work, but if any work is left to complete work as per drg will also be covered in scope. Contractor may also visit the site to assess the site condition and quantum of work before submission of offer.

4.1 Carriage of Materials By Mechanical Transport including loading, Unloading and stacking up to 1 Km.

.... **Earth-S-**Carriage & disposal or surplus excavated earth/rock beyond initial lead by mechanical means not necessarily all the times on pucca roads, including loading, unloading, dressing, excavated materials, etc, complete as per specifications.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

2.4) Earth work in excavation by mechanical means / manual means over area, back filling and disposal of surplus earth-

The excavation of all type of soil shall be done to correct lines and levels. This shall also include, where required, proper shoring to maintain excavations and also furnishing, erecting and maintaining of substantial barricades around excavated area to avert accidents. The contractor shall ensure that excavations are made to the correct depth and width as per drg.

After execution of concrete work, all fill materials, whether such materials is brought from other area with in site or from excavated earth soil will be subject to the Engineer in charge approval. No earth fill shall commence until surface water discharges and steams have been properly intercepted or as per direction of Engineer in charge.

All excavation shall be kept free of water. Grading in the vicinity of excavation shall be properly closed to prevent surface water running into excavated areas. Contractor shall remove by pumping or other means approved by Engineer any water inclusive of rain water and subsoil water accumulated in excavation and keep all excavations dewatered until the foundations work is completed and backfilled.

The surplus excavated materials/ soil shall be deposited / disposed of as per Engineer in charge after the fill work is completed.

2.5) Providing & Laying of Cement Concrete (1:3:6) –The contractor shall execute the PCC work (1:3:6) as per drg/ direction of engineer.

2.6) Steel reinforcement grade Fe 500D for RCC work including straightening, cutting, bending, placing in position and binding. -

The contractor shall provide the test certificates from the supplier to the engineer. At site, the samples selected by engineer shall be tested by the contractor at local laboratory of the engineer choice. To demonstrate the tensile strength of the steel. The cost of such testing shall be deemed to be included in the contractor, s rates. The bar having cracks or splits on the bends shall be rejected. Engineer may also advise the test of physical & chemical properties for each lot as per relevant IS code.

4.5- Centering and Shuttering including strutting, propping etc. and removal of form for all heights –The contractor shall execute the centering and shuttering work as per drg / direction of engineer.

4.6- Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including, cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete. The contractor shall execute the structural steel work as per drg / direction of engineer. Engineer may also advise the test of physical & chemical properties for each lot as per relevant IS code.

4.7-Providing and fixing mild steel round holding down bolts with nuts and washer plates complete. The contractor shall execute the same work as per drg / direction of engineer. Engineer may also advise the test of physical & chemical properties for each lot as per relevant IS code.

4.8- Fabrication and erection of structural steel works at max. 30.0 mtr. Height consisting of railing, clams, purlins with channel and angles etc. The contractor shall execute the structural steel work as per drg / direction of engineer. Engineer may also advise the test of physical & chemical properties for each lot as per relevant IS code.

4.9- Providing and laying in position machine batched M 20 grade cement concrete for reinforced cement concrete work-

The cement shall be used the Portland cement meeting the requirements of the relevant Indian standard, from an approved manufacturer. At site, setting time & compressive strength test to be done for each lot as per engineer direction.

The sand used for the concrete shall be composed of hard siliceous materials. It shall be clean and of a sharp angular grit type and free from earthy or organic matter and deleterious salts and screened through a mesh not more than 5 mm in the clear. At site , moisture content , silt clay content & organic impurity test to be done as per engineer direction.

The aggregates shall be of clean broken hard granite or other stone specified or approved by the engineer. It shall be of hard, closed –grained quality. It shall also be as far as possible cube like preferable angular, but not flaky, perfectly clean



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

and free from earth., organic, or other deleterious matters. All fine and coarse aggregates shall be obtained from sources approved by engineer. At site, moisture content and sieve analysis test to be done as per engineer direction.

The water used for mixing concrete shall be fresh clean and free from oil, acid and alkali organic materials or other deleterious substances. Salty or brackish water should not be used. Potable water is generally satisfactory. At site , Acidity , alkalinity test to be done as per engineer direction if required.

The contractor shall be responsible for maintaining the mix, control & testing of concrete throughout the working period. Neither the mix proportions nor the source of the supply of materials shall be altered without the prior approval of the engineer.

The minimum cement content, the water cement ratio, the slump and all other characteristics of concrete shall be demonstrated to confirm to the relevant Indian standard.

The contractor shall be mixed with an approved concrete mixer. The contractor shall provide the measuring equipment and shall maintain and operate the equipment as required to accurately determine and control the amount of each separate ingredient entering the concrete. The equipment shall be constantly maintained in first class workable conditions during the working period. The concrete mixing shall be cleaned and inspected at suitable intervals in the presence of the engineer. At site, crushing strength (Cube test) is to be done as per engineer direction.

The concrete after it is 24 hrs old shall be cured by keeping concrete wet continuously for a period of 10 days after laying.

Immediately after the shuttering is removed., all the defective areas honey-combed surfaces, rough patches, holes left by form-holes etc., shall be brought to the notice of the engineer who may permit the patching of the defective area or reject the concrete work. The rejected concrete shall be removed and replaced by the contractor without any additional cost to the owner. After removing loose materials, surface shall be cleaned and prepared for further concreting work. The use of epoxy for bonding fresh concrete shall be carried out as directed by engineer.

The contractor shall carry out tests on sample sand, aggregates, cement, reinforcement, water & concrete as per direction of engineer.

Agency will submit the Royalty clearance certificate before submitting the bill.

Note- Above is scope of work, but if any work is left to complete work as per drg will also be covered in scope. Contractor may also visit the site to assess the site condition and quantum of work before submission of offer.

➤ **STAGE-III: ERECTION WORK**

3. RECEIPT OF MATERIALS, VERIFICATION, STORAGE, WATCH & WARD TILL COMMISSIONING OF TRANSFORMER AND HANDLING OVER TO CUSTOMER:

This activity will involve the following work:

- I. The main tank shall be checked for it 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, to be done by agency. Fixing & Locking of rollers shall be also in agency scope.
- II. Receipt of all materials, storage, watch & ward of all accessories including online gas monitoring system, other monitoring/control devices, oil, NCT and spares supplied against this Contract in the store at site.
- III. Checking of N₂ pressure in main tank and maintaining it at 0.25 Kg/cm² with dry Nitrogen gas of dryness not less than (-) 60 °C dew point before start of erection. The log books of N₂ pressure and dew point nitrogen filled Main tank till erection is commenced.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

IV. Summary of Erection activities is as under-

- a- Verification of all materials and submission of reports.
- b- Core isolation test (CFT test) & DEW Point checking to be done by agency prior to internal inspection, if any discrepancies is noticed, to be rectified by agency.
- c- Internal inspection of transformer & submission of reports in line with BHEL check list / manual. In case any minor problem noticed during internal inspection, to be attended by agency.
- d- Pre -erection test as per BHEL/Customer check list/manual.
- e- Pressure test of air cell (0.07 Kg./sq. cm), conservator (0.5 Kg/Sq. cm) and radiators (0.3 Kg/Sq.Cm) for assessment of leakage after cleaning and submit the report in line with BHEL check list/ manual. In case any leakages noticed, to be attended by agency.
- f- Installation of Turrets, Bushings, cooling bank, conservator, cooling fans with pedestal, A frame, Header , radiators , Breather , all cooling and other pipes, OLTC accessories , OLTC Panel , RTCC panel, Marshaling box and other equipments to be done for completion of installation activities. During installation BHEL check list /Manual to be followed and Erection completion report to be submitted to BHEL. During installation work if any mismatching of pipes, holes, leakage of radiators noticed, to be modified/ rectified by the contractor. In case dismantling of any panel is required to complete the installation work of our panels will be in agency scope.
- g- The check list / manual to be followed during dry out cycle of transformer & nitrogen purging, oil filtration, filling and Hot Oil Circulation to get the required parameters of oil. The report of said activities to be submitted by agency in line with BHEL check list. Copy of oil test report prior to charging of transformer to be submitted by agency to BHEL for review & approval. After 24 hrs of transformer charging, DGA test to be conducted by agency and report to be submitted to BHEL for review & approval in line with BHEL check list /manual.
- h- Cable laying in conduit/tray, trenches, overhead and termination related to transformer, OLTC Panel, marshaling box , RTCC panel ,etc (All equipment cabling i.e. from transformer body mounted instruments to transformer MB from cooling bank to fan/pump MB, internal wiring of Power Transformer cooling system, control panel, transformer fan/PP TB to MB shall be in the contractor's scope. Arranging of Ferrule, lugs and cable tie & tag will be in agency scope. Cable glands & tray will be supplied by BHEL. In case any modification/rectification required during work will be in agency scope.
- i- Pre-commissioning testing to be done by agency in line with BHEL/customer check list / manual and to be submitted to BHEL for review & approval. RTCC panel commissioning will be also in agency scope. During commissioning of transformer, if any discrepancies noticed to be attended / modified/rectified/replaced by agency.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

- j- Erection protocol attached with NIT, to be jointly signed by customer prior to charging of transformer. If any punch points related to ETC work given by customer, to be attended by agency prior to charging of transformer.
- k- After charging of transformer, jointly signed MOM with customer for completion of work and charging of transformer/ commissioning certificate/Completion certificate of work by BHEL officials to be submitted by agency to BHEL.
- l- Material reconciliation of received materials and handing over of balance materials to customer to be done by agency. The Copy of materials reconciliation, receipt of balance materials handed over to customer, copy of HR & Quality clearance and filled & signed transformer check list to be submitted by agency to BHEL.
- m- Oil particle count. Fine filtration for achieving the parameter of oil particle parameter as per customer norms.
- n- Before filling of oil in to storage tank, random testing of oil from supplied drums qty of samples (approx.. 10% of total quantity) or decided by customer/BHEL of BDV, PPM, Tan Delta and Resistivity /IFT test to be done in NABL/customer approved Labs. After test results ok then oil to be filled in storage tank.
- o- Total Gas content after HOC should be less than 1%, to be maintained by HOC properly. Oil sample report should be as per customer norms.
- p- Agency have to follow BHEL site engineer instruction for completion of works at site. All documents like check list, election protocol, test report, material verification report etc. should be dully signed by agency & BHEL engineer.
- q- Multiple times of team mobilization at site based on availability of front & materials will be in agency scope. No idling and multiple mobilization /demobilization charges of team will be payable.
- r- Erection team should be comprising of qualified & experience fitter, electrician, supporting man power etc. and supervisor for deployment at site to carry out awarded work. BHEL may ask for submission of documents related to qualification & experience of team.
- s- Obtaining of electrical clearances before charging of transformer from concerned authority will be in agency scope.
- t- In case of materials shortages at site during work, if required materials are available in nearest site of BHEL, may be brought by agency at their own cost for saving of time.

Note- If any clarification required regarding check list / manual, may be enquired from BHEL Engineer.

4. PRE-ERECTION TESTS – (ALL TURRET CTs)

This activity will involve the following work:

- I. Cleaning of accessories including, turrets & main tank shall be carried out at erection site before pre-erection testing is started.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

- II. 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 Core-Tank, Frame-Tank & Core- Frame 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.
 - iv) For NCT: Continuity, Insulation Resistance, Ratio, Polarity, Winding resistance and determination of knee point.

5. PRE-ERECTION TEST - (C & TAN D TEST OF BUSHINGS)

This activity will involve the following work:

- I. Cleaning of bushings including its all petticoats shall be carried out at erection site before pre-erection testing is started.
- II. OIP bushings shall require to be in vertical position for minimum 4-6 hrs before testing is started.

Before start of erection, capacitance and tan delta test as per at variable frequency & 50 Hz of all bushings as per BHEL norms shall be conducted. During the testing, the bushing shall be hang in vertical.

Note- Testing as briefed above is not limited to scope of agency, if any other testing is required to complete the work / customer instructions will be in agency scope.

6. 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 / BHEL check list 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 by agency in consultation with BHEL.

7. 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.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

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.

Stage –III

After thorough cleaning of each individual Radiator, air pressure of 0.3 Kg/cm² to be applied for leakage test. All resources shall be arranged by E&C contractor.

8. ERECTION OF MAIN TANK ACCESSORIES, COOLER BANK, CABLING WORK & NCT

This activity will involve the following work:

- I. Before erection is started, cleaning of all accessories including, conservators, radiators, coolers, pipe works, turrets, bushings etc shall be carried out by cotton cloth.
- II. Erection of Bushings shall be done by using suitable capacity of crane/Hydra.
- III. 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 thermosiphon etc. Any adjustment, repair work i.e. oil leakage, alignment etc. will have to attend by contractor.
- IV. Dry air/N₂ cylinder from portable unit or pressurized cylinder shall be pumped in Transformer/ Reactor 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/ Reactor. Contractor will also have to make arrangement for the dry air unit / pressured cylinders of dry air/N₂ Cylinder at site for the purpose.
- V. During erection it is mandatory to use water resistance tarpaulin or protective covering so as to negate chances of any ingress of moisture, dust, dirt or any foreign material in the Transformer/ Reactor.
- VI. Installation of on-line gas monitoring system and other instruments (if included in supplies) shall also be included in contractor's scope of work.
- VII. Carrying out pressure testing on completely assembled Transformer/ Reactor by filling N₂/ Dry Air to pressure of 0.25 Kg/cm² and arresting leakages (if any) to ensure leakage free assembly.
- VIII. Carry out touch up painting on Transformer/ Reactor 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.
- IX. Erection of NCT along with structure (if included in supplies) shall also be included in contractor's scope of work.
- X. All cabling, cable termination, glanding and tagging, connection of Transformer neutral with Neutral bus, NCT & earthing of various equipment / accessories with earth-grid.
- XI. Locking of Transformer main tank by welding on embedded plates of foundation shall be done by contractor as per BHEL drawing. The welding machine & welding electrode along with qualified welder is to be arranged by contractor.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

- XII. For cooler bank foundation / equipment foundation - drilling, cleaning of each hole & fixing of anchor fastener with adhesive/filler for all foundation bolts etc. shall be done by contractor as per BHEL drawing. The drilling machine & gun for adhesive/filler along with skilled manpower is to be arranged by contractor. Anchor fastener & adhesive/filler materials shall be supplied by BHEL.
- XIII. Minor modification/ rectification /civil work shall also be included in contractor's scope of work during the work mentioned in scope..
- XIV. Wiring of RTCC panel & Marshaling Box shall also in contractor's scope of work and if any other wiring is required to complete the work will be in agency scope..

Note- Rectification/ modification of transformer accessories & attending the weld leakages at any part of transformer/ accessories if required will be in agency scope.

➤ **STAGE-III: DRYOUT & OIL CIRCULATION**

9. N2 DRYOUT CYCLES

This activity will involve the following work:

- I. After Erection of all accessories and successful leakage testing, the job shall be subjected to dry out cycles (min. two cycle).
- II. In 1st dryout cycle, vacuum pulling and maintaining a vacuum of less than 1.0 Torr for a minimum period of 48 Hrs. After completion of vacuum cycle of 48 hrs, the vacuum break is achieved by using Nitrogen gas/ Dry Air Plant purging till the pressure of 0.25 Kg/cm² is achieved and maintaining minimum period of 24hrs. After completion of 24 hrs with nitrogen gas/ dry air pressure, the dew point of gas filled in the tank is measured and noted for record.

Note- In case DEW Point is not in order then 2nd cycle is to be done.

- III. In 2nd dryout cycle, the vacuum for 24 hrs and nitrogen gas purging for 24 hrs shall be carried out till desired dew point of main tank is achieved as per BHEL requirement under this scope.

In the above dry out cycles, nitrogen gas/dry air of UHP grade (- 60 °C dew point or better, purity 99.99% or better) shall be required.

Note- In case DEW Point is not in order then further cycle is to be done till achieving the DEW Point parameters/limit as per direction by BHEL Engineer.

10. OIL PREPARATION, OIL FILLING, HOT OIL CIRCULATION:

This activity will involve the following work:

- I. 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



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

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 20 KL. The contractor needs to arranged the storage Tank as per Main Tank capacity and kept the filtered oil ready & tested as per BHEL/Customer standard, so that oil filling will be executed in one go at site.

- II. After filling of oil in the storage tank and completion of oil filtration, oil testing for BDV, moisture (PPM), Tan delta, IFT & Resistivity shall be required to be carried out before filling in main tank. If any other tests of oil required from customer end will be in agency scope.
- III. Filling of Transformer / Reactor 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 min. 06 KL per hour or more) and other accessories shall be under the purview of the contractor.
- IV. 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 24 hrs to achieved desired insulation parameters of oil and PI values of winding. IR values has to be recorded regularly. The process shall be continued till clearance from BHEL is provided to end the process.

11. OIL TESTING - BDV & MOISTURE CONTENT OF STORAGE TANKS

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

12. OIL TESTING – BDV, MOISTURE CONTENT, TAN DELTA & RESISTIVITY OF MAIN TANK

- I. After completion of hot oil circulation, the testing of oil samples for BDV, Moisture Content (PPM), Tan-delta, Resistivity at 90°C & IFT and other test required by customer 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.** PI value should be more than 2.

13. OIL TESTING – DGA BEFORE CHARGING

- I. After obtaining desired parameters of oil testing as per Clause 12.1, oil samples from main tank shall be collected in oil sample bottles (SS) having both side valves for DGA testing before final charging of equipment. Oil testing shall be done at a reputed NABL accredited lab acceptable to BHEL/customer. Oil testing shall be done at a reputed NABL accredited lab acceptable to BHEL/customer. In case customer ask for fine filtration & particle count test of oil shall be in agency scope. Total gas content during DGA test should be less than 1%.

Note- Testing as briefed above is not limited to scope of agency, if any other oil testing is required to complete the work / customer instructions will be in agency scope.

14. During warrantee period of transformer for one year from the date of commissioning, if any complaints against poor workmanship noticed, to be attended by agency.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

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

15. PRE-COMMISSIONING TESTS – LOW VOLTAGE TESTS

This activity will involve the following work:

- I. After desired oil parameters are achieved and completion of settling time, the pre-commissioning tests shall be conducted on Transformer. The list of tests to be carried out are as under:
- i) Isolation test for CC, CL and tank
 - ii) Measurement of Tan Delta and Capacitance Measurement of Bushings at variable and 50 Hz frequency.
 - iii) Measurement of Tan Delta and Capacitance Test of Winding
 - iv) Measurement of Magnetization Current,
 - v) Measurement of vector Group, Polarity
 - vi) Magnetic Balance Test.
 - vii) Short Circuit Impedance Test.
 - viii) Floating Neutral Test.
 - ix) Contact Resistance measurement of joints of HV/IV/LV/Neutral etc.
 - x) Measurement of Turn Ratio at all tap positions.
 - xi) Measurement of Winding Resistance at all tap positions.
 - xii) Measurement of Insulation Resistance and determination of PI as per BHEL norms/ customer requirements.
 - xiii) Measurement of particle count by particle count meter and carry out filtration for attaining the values as per BHEL standards.
 - xiv) Functional tests of all Accessories/ Marshalling box operation test of OLTC up to RTCC.

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.

16. PRE-COMMISSIONING TEST - CAPACITANCE & TAN DELTA TEST OF BUSHING AND/OR WINDING

- I. Following test shall be carried out under the scope of work:
- i. Measurement of Capacitance and Tan delta of Bushings at variable and 50 Hz frequency as per BHEL factory test report.
 - ii. Measurement of Capacitance and Tan delta of Windings as per BHEL factory test report

17. PRE-COMMISSIONING TEST – SFRA TEST

- I. 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.

NOTE- Calibration certificate of test equipment's shall be required along with test reports.

Note- Testing as briefed above is not limited to scope of agency, if any other testing is required to complete the work / customer instructions will be in agency scope.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

18. FINAL COMMISSIONING & HANDING OVER:

This activity will involve the following work:

- I. 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.
- II. After charging of the transformer, following test shall be carried out:
 - i) DGA 24hrs after charging
- III. Handing over of all spares and accessories including oil to customer and obtaining completion certificate/commissioning certificate for commissioned transformer with different activities.

19) 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:

- I. 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.
- II. 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 daily/weekly basis or as required by them.
- III. 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.
- IV. 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.
- V. On award of contract, site documents as mentioned below shall be collected compiled, arranged by contractor from customer.
 - i) Lorry receipt certificate of equipment, accessories received at site.
 - ii) Material verification and material receipt certificate.
 - iii) Site opening certificate.
 - iv) Work completion certificate/commissioning certificate issued by customer/BHEL officials.
 - v) Operational acceptance certificate
 - vi) 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.
 - vii) Site closing certificate.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

Further any other document required by BHEL as per contract for installation services portion must also be obtained/ furnished to customer for fulfillment of contractual commitment.

- VI. 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.
- VII. Contractor will have to arrange energy meter and required cable to tap the power supply from the point/distribution board provided at site by customer at contractor cost. All further distribution point of utilization as required shall also be contractor's responsibility.
- VIII. 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.
- IX. The Contractor will have to adhere and follow all the local rules and statutory requirements and as given in Annexure-C, D, E, F.
- x. If contractor is deploying any subcontractor for execution of job of the erection and testing of the transformer, the subcontractor should have adequate experience and credential in same field i.e. erection, testing, storage, shifting etc. of similar size of transformer. The contractor should have "A" class electrical license, PF registration and other legal formalities which are required to execute the job in Neepco s/s premises. Also prior permission from BHEL shall be taken before any deployment of any sub-contractor.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

ANNEXURE-A

20.

PRICE BID

Item Sl. No.	Description of Work	Qty.	Unit	Unit Rate(Rs.)	Total Price (Rs.)	% Calculation of Total Amount (Rs.)
i	Construction of civil work for cooling system and allied foundation work of 09 nos. 160 MVA transformer at M/s Tantransco sites.	09	No.			17% of item no.-06
ii	Arrangement of 09 nos. temporary open store for transformer accessories and 09 nos. closed store cum site offices for electrical/electronic component as per attached Annexure-K for all 09 M/s Tantransco sites considering one closed & one open store for each site and payment will be done to agency accordingly.	09	Site			13% of item no.-06
iii	Receipt of Materials, its verification & storage, safe custody of transformer and its accessories, watch & ward at sites up to commissioning of 09 nos. 160 MVA auto transformer considering 09 nos. sites. Site wise payment will be made to agency.	09.	Site			08% of item no.-06
iv	Providing DG set including fuel and operator cost for getting 3-Ph suitable continue power supply for construction of cooling bank foundation, erection, testing, oil filtration, oil filling & commissioning of 09 nos. auto transformer as well as civil & ETC work of NIFPS system.	09	No.			20% of item no.-06



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

v	Complete erection, testing, commissioning & handing over to customer of 09 Nos. 160 MVA 230/110 KV 3 Ph. Auto Transformer	09	No			42% of item no.-06
vi	Total Cost					100%

Rupees in Words

Rupees in figures

Note:

- (1) Offer to be valid for 120 days
- (2) BHEL may delete, add any activity/activities at the time of order.
- (3) GST will be payable extra as applicable.
- (4) If there is a discrepancy between words and figures, the amount in words shall prevail.
- (5) RA: YES
- (6) Payment will be done as per payment terms & conditions for the items which will be executed successfully at site verified by BHEL officials.
- (7) L1 will be decided based on total quoted lowest price for item Sr. no.- vi .
- (8) Contract will be awarded to L1 & other party in ratio of 60:40 of total 09 nos. 160 MVA Trfr i.e. 05 nos. Trfr to L-1 party & 04 nos. Trfr to other party respectively based on counter offer to L2 and other bidders on L1 rates. In case L2 and other bidders will not accept the offer, then contract will be awarded to L1 party for above total work for 09 nos. 160 MVA transformers.
- (9) In case more than one contractor quoted the l1(lowest and technically accepted) rates, l1 shall be decided based discount offered in sealed bid.
- (10) After opening of the tenders if BHEL Jhansi decides to negotiate the tendered should be in a position to depute his representatives at short notice with full authority for negotiating, as well as commercial terms and concluding the contract.

I/We agree with above and all other terms & conditions of the contract.

(Signature of Contractor with Seal)



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

8) PQR :

A. Average Annual financial turnover during the last 3 years, ending 31st March'2023 will be Rs. 20.08 Lacs.

Note- Contract will be awarded to L1 & other party in ratio of 60:40 of total 09 nos. 160 MVA Trfr i.e. 05 nos. Trfr to L-1 party & 04 nos. Trfr to other party respectively based on counter offer to L2 and other bidders on L1 rates. In case L2 and other bidders will not accept the offer, then contract will be awarded to L1 party for above total work for 09 nos. 160 MVA transformers.

The bidders will have to furnish documents of Duly audited financial statement/ Balance sheet and P&L/certificate from CA to be submitted as a supporting document. If all balance sheets/FS are not available for all three years then the average shall be calculated by dividing the sum of turnover of submitted balance sheets/FS by three.

B: Experience of having successfully completed similar works during last 7 years ending 31/12/2023, details are as below-

- i) 3 similar completed works each costing not less than Rs. 26.78 Lacs.
"Or"
- ii) 2 similar completed works each costing not less than Rs. 43.48 Lacs.
" Or"
- iii) 1 similar completed work costing not less than Rs. 53.57 Lacs.

Experience in similar work means experience in executing Installation & commissioning contract (inclusive of supply material)/overhauling contract (Inclusive of supply material)/AMC work of any rating oil filled / Dry Type / Power/Traction Transformer or any electrical equipment's of switchyard/generating stations.

C)Experience in Govt./Public Sector: -

Documentary proof (Copy of WO/PO/LOI and work completion certificate in support of Above eligibility criteria shall be submitted along with techno – commercial bid.

D) Experience in private Sectors: -

Documentary proof (Copy of WO/PO/LOI and work completion certificate along with TDS certificate/Traces) in support of above eligibility criteria shall be submitted along with Techno – commercial bid.

E) Taxes & Duties:

a-GST shall be applicable as per prevailing rates on Total Contract Value.

b-All credits applicable in GST shall be suitably passed on to BHEL as per government guidelines in case of credit is not available as denied by GST portal due to improper Documentation or wrong uploading of data by bidder, the same will be recovered from The bidder along with interest, if any.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

9) TERMS OF PAYMENT:

- I. 15% payment of sum of unit rate for scope of works item sr. no. i to v after completion of civil work for cooling system and allied foundation work of each 160 MVA transformer M/s Tantransco site.
- II. 55% payment of sum of unit rate for scope of works item sr. no. i to v after completing following works
 - a. Complete erection & up to oil filling & pre-commissioning testing in the newly supplied each BHEL make 160 MVA 230/110 KV 3 Ph. Auto Transformer dully verified by BHEL officials.
- III. Balance 20% payment of sum of unit rate for scope of works item sr. no. i to v after commissioning & handing over to customer of newly supplied each BHEL make 160 MVA 230/110 KV 3 Ph. Auto Transformer dully verified by BHEL officials.
- IV. Commissioning certificate issued by customer/Joint MOM with customer/ Work Completion certificate issued by BHEL official will be required for release of payments.
- V. Balance 10% after a period of 01 years from the date of commissioning and handing over to customer of each transformer.
- VI. The payment will be released within 45 days of completion of work & submission of clear bill in all respect.

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

- 1) Workmen insurance policy.
- 2) Work completion certificate with respect to their scope issued by Customer/BHEL officials.
- 3) Copy of work order
- 4) Copy of contract agreement.
- 5) Copy of security deposit receipt.
- 6) Original invoice/Digital signed invoice
- 7) Duly filled and signed check list of transformers verified by BHEL officials.
- 8) Duly filled and signed Erection Protocol verified by BHEL officials.
- 9) Oil and Electrical test reports dully signed by customer/BHEL.
- 10) Proof for providing DG set for getting 3Ph suitable continue power supply verified by BHEL officials
- 11) Proof of made open and closed store at site verified by BHEL officials

11) 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.

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.

Bidder has to give his undertaking that GST portion of the invoice shall be released only upon:

All invoices raised by contractors /vendors must be GST compliant Tax invoices as per GST invoices rules.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

Contractor declaring such invoices in his GSTR-1 or any modified return as notified by government. Also a declaration is to be given that the GSTR 3B has been filed / to be filed in month, year as per provision of GST Act.

Receipt of good /services and tax invoices by BHEL and Confirmation of payment of GST thereon by contractor on GSTN portal.

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.

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.

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.

Reverse Charge under GST.

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.

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.

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

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

12) SCHEDULE OF WORK (COMPLETION PERIOD):

- I. The complete work of said transformer as per tender scope has to be started within 7 days from the date of intimation from BHEL and completion within 90 days for each transformer.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

- II. 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 7 days, after receiving communication from BHEL Jhansi.
- III. BHEL reserve right to execute all activities mention in contract in risk and cost of contractor in case of non- mobilization during execution of given work.

13) LD Penalty: A sum of Rs. @ 0.5% per week or part thereof for each day of delay in completion of civil work for cooling system and allied foundation work & Complete Erection, Testing, Commissioning & Handing over to customer of each 160 MVA transformer at site. The maximum Liquidated Damage (LD) for delay i.e. LD for delay in successful completion of above work shall be 10% of the contract price of sum of unit rate for scope of works item i to v each transformer. The Liquidated damaged amount if any, will be recovered from the payment due under the Erection and /or any other means as deemed fit by the BHEL. GST amount will be levied & deducted from contractor bill in respect of LD.

14)

Defect liability period will be applicable for a period of 01 year from the date of completion of work of last transformer as per scope of NIT. 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.

14) BHEL reserve right to execute all activities mention in contract in **risk and cost** of contractor without entitling the contractor to any compensation. Resorting to any, some, all of the action 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 of the business with BHEL etc., in any event of the following-

- a. Contractors repeated poor performance, withdrawal from or abandonment of the work in except in force majeure
- b. Serious lapses in performances disregard of the BHEL instructions.
- c. Insolvency of contractor
- d. Non-fulfillment of any contractual obligations or obligations under the laws.

15) 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.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

16.0

TENDERING PROCEDURE:

The tender shall be accepted and processed as follows:

The Tender shall be submitted in **Two Part Bid** as described below:

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

- i) EMD of amount, equivalent to value as per Clause No. 17.1 below, drawn in favor of “**Bharat Heavy Electricals Limited**” payable at JHANSI shall be enclosed. In the absence of submission of EMD, the offer will be summarily rejected.
- i) Tender Fees of **Rs. 472/-** in favor of “**Bharat Heavy Electricals Limited**” in electronic mode only in favor of BHEL. In the absence of submission of same, the offer will be rejected. GST shall be extra.

ii) 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.

16.2 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) The prices/Rates shall be quoted in price schedule.
- iii) Price bids of only techno-commercially short listed vendors will be opened.
- iv) 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**.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

The Tender shall be addressed to the following:

To,

**THE TENDER ROOM (WORKS CONTRACT TENDER BOX')
ADMINISTRATIVE BUILDING, Security Gate
BHARAT HEAVY ELECTRICALS LTD,
P.O. BHEL JHANSI (UP) 284120**

- 16.3** The tender shall be dropped in the above stipulated tender box positively **before 13.00 hrs on the due date (as mentioned above)**. It will be bidder's responsibility to ensure submission of tender in the designated "Works Contract Tender Box" before expiry of due date and time. Any tender which is received after **13.00 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.
- 16.4** In case, Bidders wants to deputing their representative at BHEL JHANSI 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.
- 16.5** Bidders may note that the **Two-Part Bid** of the tender shall be opened in tender room of BHEL Jhansi on tender due\ date after 14.00 hrs. in presence of those tenderer's who choose to be present.
- 16.6** 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.
- 16.7** 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.
- 16.8** Cost of the Tender documents is **Rs. 472/- (Rupees Four Hundred Seventy-Two only)**, shall be accepted through Electronic-Mode only in favor of BHEL (NEFT/RTGS/Net Banking/IMPS/UPI). The procedure of tender fee deposit is given below. Tender received without remittance of tender cost will not be considered & will be rejected. GST shall be extra.

17.0 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.

17.1 Rates of EMD shall be as under:

17.1.1 For works: Rs. 133920/-

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.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

MODES OF DEPOSIT:

EMD shall be accepted through Electronic-Mode only in favor of BHEL (NEFT/RTGS/Net Banking/IMPS/UPI etc.). The bank details for deposit of EMD deposit is given in **Clause 19.0 below**.

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.

17.2 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.

17.3 EMD given by all unsuccessful tenderer shall be refunded.

17.4 EMD shall not carry any interest.

17.5 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.

18.0 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.

18.1 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.

18.2 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). Bank Details of SD deposit is given below.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

18.3 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 after a period of 01 year from the date of completion of complete work as per NIT/work order & fulfillment of contractual obligations as per the terms of contract. The completion of work as per NIT will be verified by BHEL officials.
- vi) The Security deposit shall not carry any interest.

19.0 Bank details of depositing EMD/SD

EMD/SD/ Tender Fee will be accepted only in electronic Mode, which can be deposited in following account-

For EMD & Tender fees A/c No. **10670828866**, IFSC Code-SBIN0003807,
Name - BHEL JHANSI, Bank-State Bank of India, Branch Location-Jhansi.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

ANNEXURE-B

TERMS AND CONDITIONS

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 Jhansi, – 284120 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.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

2. GENERAL CONDITIONS OF CONTRACT

- I. The agencies which are currently under hold/ban/suspension of business dealing with BHEL and communicated thereof shall not be considered in this tender.
- II. 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.
- III. All the quoted prices shall be exclusive of taxes & duties as may be applicable.
- IV. The offer should be valid for minimum of 120 days from the date of opening the bid.
- V. Over run charges shall not be applicable.
- VI. 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.
- VII. 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.
- VIII. 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.
- IX. 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.
- X. 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.
Sr. Dy. General Manager, Transformer Field Engineering Services Department, Bharat Heavy Electricals Ltd, P.O. BHEL Jhansi at email ID-akhatloiya@bhel.in



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

3.0) SPECIAL CONDITIONS OF CONTRACT:

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

- I. 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.
- II. 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.
- III. 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.
- IV. 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-C to F.
- V. 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.
- VI. 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.
- VII. The Contractor shall not sublet, transfer or assign the whole or any part of the work under the Contract.
- VIII. 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.
- IX. Without prejudice to the aforesaid clause, BHEL reserves its right to terminate the Contract without assigning any reason thereof by giving 07 days' notice in writing to the Contractor.
- X. 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.
- XI. 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



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

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.

- XII. 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.
- XIII. 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.
- XIV. In the event of schedule is delayed for the reason beyond Contractor's control, the Contractor shall keep the provision for continuing the work up to 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.
- XV. 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.
- XVI. **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.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

XVII. 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.

Notwithstanding anything contained in the contract, neither BHEL nor the Contractor shall be held responsible for total or partial non-execution of any of the contractual obligations, should the obligation become unreasonably onerous or impossible due to occurrence of a 'Force Majeure' which directly affects the obligations to be performed by the BHEL or the contractor; Such events include war, military operations of any nature, blockages, revolutions, insurrections, riots, civil commotions, insurgency, sabotage, acts of public enemy, fires, explosion, epidemics, quarantine restrictions, floods, earthquake, or acts of God, restrictions by Govt. authorities; over which the BHEL or the contractor has no control.

The party claiming to be affected by force majeure shall notify the other party in writing without delay, within two weeks from the occurrence of such situation and on the cessation thereof. Extension of time sought by the contractor along with supporting evidence and so granted by BHEL for the work affected, if any, shall not be construed as waiver in respect of remaining execution. Rescheduling of execution on account of force majeure conditions, if so agreed by BHEL, will not entail the contractor to claim any increase in the price on whatsoever account.

Notwithstanding above provisions, BHEL shall reserve the right to cancel the Contract, wholly or partly, in order to meet the overall project schedule and make alternative arrangements. If deemed necessary, BHEL may takeover partly processed work at a mutually agreed price.

- 8.18 **Validity of contract-** Validity of contract will till one year from the date of completion of all work as per contractor scope in NIT.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

ANNEXURE- C

INSTRUCTIONS TO CONTRACTOR

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

1. 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.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

2. 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.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

3. 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.

10. 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
- .. Inter State Migrant Act.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

ANNEXURE-D

STATUTORY INSTRUCTIONS TO CONTRACTOR

4. 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.

5. 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.

6. CONCILIATION PROCEEDINGS UNDER THE BHEL CONCILIATION SCHEME, 2018

The Parties agree that if at any time (whether before, during or after the arbitral or judicial proceedings), any Disputes (which term shall mean and include any dispute, difference, question or disagreement arising in connection with construction, meaning, operation, effect, interpretation or breach of the agreement, contract or the Memorandum of Understanding (delete whichever is inapplicable), which the Parties are unable to settle mutually), arise inter-se the Parties, the same may, be referred by either party to Conciliation to be conducted through Independent Experts Committee to be appointed by competent authority of BHEL from the BHEL Panel of Conciliators.

Notes:

7. No serving or a retired employee of BHEL/Administrative Ministry of BHEL shall be included in the BHEL Panel of Conciliators.
8. Any other person(s) can be appointed as Conciliator(s) who is/are mutually agreeable to both the parties from outside the BHEL Panel of Conciliators.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

The proceedings of Conciliation shall broadly be governed by 7.11 of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in Annexure to this SCC.

(The Conciliation Proceedings hereunder, supersede the relevant terms & conditions given in "Special Terms & Conditions and Statutory Compliances" or any other Tender document, where ever applicable).

9. JURISDICTION –

Any matter of dispute arising out of or in connection with this contract shall be under jurisdiction of Jhansi Court only.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

CODE FOR SAFETY MANAGEMENT AT SITES

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

10. GUIDELINES FOR SAFE WORK PRACTICES

- a) 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:
- b) Safety Helmets Conforming to IS: 2925 shall be worn by all at sites where there is any possibility of any object falling from overhead.
- c) 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.
- d) 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.
- e) Ear protection Device Conforming to IS: 6229 shall be used by any person exposed to excessive noise in his work.
- f) 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.
- g) 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.

11. HOUSE KEEPING

- a) 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.
- b) Work places & passageways that are slippery due to oil, water etc. shall be cleaned up or strewn with sand/ similar substance.
- c) Action shall be taken to discourage the practice of throwing materials/ equipment's for elevated locations to lower levels.

12. ILLUMINATION

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

13. FIRE HAZARDS/ ACCIDENTS AND THEIR CONTROL

- a) BHEL employees should ensure that first aid fire- fighting equipment, arranged by customer, is available in the vicinity of work place.
- b) 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.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department

TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

- c) 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.
- d) Switching off of power supply to welding machines etc. shall be ensured during non-working period.
- e) 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.

14. FIRST AID

- a) 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.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

ANNEXURE – E

STATUTORY LIABILITIES OF THE CONTRACTOR

- 1) 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
- 2) Contractor shall comply with all statutory requirement, rules, regulations & notification etc in relation to employees issued from time to time by the concerned authorities
- 3) 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
- 4) 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
- 5) Contractor shall ensure payment of ESI contributions under ESI Act 1948, and provide ESI membership no. of each employee
- 6) 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
- 7) Contractor shall furnish proper returns to the concerned statutory authorities
- 8) Contractor shall be solely responsible for non-payment, delayed payment of wages, contribution under EPF & MP Act, ESI Act etc.
- 9) 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
- 10) Payment of bonus under Bonus Act, payment of gratuity under Gratuity Act and retrenchment compensation under Act will be sole responsibility of the Contractor
- 11) Over & above the daily wage rate, payment shall be made for leave with wages
- 12) 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
- 13) 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
- 14) 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
- 15) 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
- 16) Contractor shall indemnify BHEL against all claims and losses under various statutes or any civil or criminal law in connection with the employees deployed by him
- 17) 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
- 18) 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



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department

TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

- 19) 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
- 20) Contractor to obtain license under CL(R&A) Act 1970
- 21) Adherence to all local, state and central legislation on safety measures as applicable to the work at site shall be ensured.
- 22) 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.

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BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

ANNEXURE-F

**FORMAT FOR
"NO DEVIATION CERTIFICATE"**

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)



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

ANNEXURE-G

Self- Declaration on Rs. 10 Non Judicial- stamp

1. We are not presently put on hold, suspended, de-listed, banded or black listed by any units of BHEL and other Customers.
2. We have not been booked by CBI and / or indicated by a Court of Law in any criminal case relating to the business during the last 5 years.
3. The above declaration is absolutely true and best of our knowledge.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

ANNEXURE-H

List of Tools & Testing Equipments

Sl. No.	<u>Tools</u>
1	All size spanners, Screws driver & L and key
2	Filter Machine min. 6 KL/hrs capacity
3	N2 gas cylinder/dry air plant of (-60) dew point purity 99.99% with regulator and connecting pipes
4	Crane/ Hydra of suitable capacity with proper size sling, belt & rope
5	Gas cutting & brazing set with operator along with required gas cylinder
6	Welding M/c with operator
7	Drilling M/c
8	Suitable size plastic pipe for Injecting the N2 gas with adopter
9	M.S. reducer size from 50 mm to 25 mm
10	Minimum 12 meter 1/2" level pipe with adopter
11	Tarpaulin of suitable size
12	Safety Belt, Shoes & Helmet
13	Clean Empty drum
14-	Storage tank of suitable capacity
15-	Vacuum Pump, pipe and flange
16-	pully block, Chain Block ,D shackles, winch machine for moving transformer if required
17-	Pressure test arrgt. For radiator , air cell and conservator.
18-	Stairs & Cotton waste etc
19-	Complete T&P for civil work
Note -All T&P for dragging , Turning & placing of transformer on plinth will be in agency scope.	



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

	<u>Testing Equipment's</u>
1	Motorize megger of 5 KV
2	Dew point meter
3	Pressure gauge range from 0 to 6 kg /cm ²
4	Ratio meter
5	Tan delta & SFRA Kit
6	Multi meter
7	Resistance measurement kit
8	Kit for demagnetization
9	Vacuum gauge suitable for measuring of 760 hg with adopter
10	BDV & PPM kit

Note- Before use of equipment , calibration certificate to be submitted to BHEL.



BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

Annexure-I

Drawing and detailed estimate for construction of cooling system and allied foundation work- Uploaded in separate file.

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BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

Annexure-J

BHEL check list and Erection Protocol: Uploaded in separate file.

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BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
Transformer Field Engineering Services Department
TENDER DOCUMENT

TENDER ENQUIRY NO.: JHS/FES/007/24

DATE: - 18.01.2024

Annexure-K

Specification for open and closed store cum offices

Specification for open store-

- 1) Size for open store will be 12 Mtr. X 10 Mtr. (L x W).
- 2) Raise the height of platform 150 mm compact properly and maintain the slop to avoid water logging.
- 3) Arrange the concrete block to place above all the materials to avoid the direct contact with earth.
- 4) Fencing of open store.
- 5) Illumination of open store.
- 6) Item of open store should be covered with polythene.

Specification for closed store-

- 1) Size of closed store will be 16 Ft. X 12 Ft. x 9 Ft (L X W X H).
- 2) Roof of closed store cum office will be GI sheet /asbestos sheet.
- 3) Cement flooring will be of closed store cum office.
- 4) 02 nos. window with closing door and 01 no. main door of standard size with proper locking arrangement. Materials for door should be should Iron/ Plywood.
- 5) Provision of ceiling fan.
- 6) Wiring for illumination and fan etc.
- 7) White washing of closed store cum office.
- 8) 02 nos. fire extinguisher.

Signature of contractor with seal.