

Tender Notification for

“AWARD OF WORK FOR REPAIRING OF TWO NOS. 20 MVA 66/11KV POWER TRANSFORMERS IN BRPL.”

CMC/BR/23-24/RB/CR/AG/1088 DT.12.01.2023

Due Date for Submission of Tender: 01.02.2023, 03:30PM

Date and Time of opening: 01.02.2023, 03:45 PM

BSES RAJDHANI POWER LIMITED,

BSES Bhawan, Nehru Place, New Delhi-110019

Corporate Identification Number: U74899DL2001PLC111527

Telephone Number: +91 11 49207235

Website: www.bsedelhi.com

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REQUEST FOR QUOTATION

1.1 GENERAL

BSES Rajdhani Power Limited invites sealed tenders in 2 envelopes for **“AWARD OF WORK FOR REPAIRING OF TWO NOS. 20 MVA 66/11KV POWER TRANSFORMERS IN BRPL”**.

1.01 The bidder must qualify the requirements as specified in clause 1.3 stated below. **The sealed envelopes shall be duly superscribed as-**

“AWARD OF WORK FOR REPAIRING OF TWO NOS. 20 MVA 66/11KV POWER TRANSFORMERS IN BRPL.” “CMC/BR/22-23/RB/CR/AG/1088 DT.01.02.2023”.

BRPL invites sealed tenders from eligible bidders for the above-mentioned work (clause 1.01).

Estimated cost of work	: Rs. 2,12,00,000/-(Value after scrap deduction)
Earnest money Deposit	: Rs. 4, 24,000/-
Cost of Tender form (Non- Refundable)	: Rs.1180/- (including GST)
Duration of the Work	: 04 months (from date of issue of LOI/order)
Tender documents on sale	: 12/01/2023 (working days)
Date & time of Submission of Tender	: 01/02/2023 till 15:30 HRS
Date & time of opening of Tender (Opening of technical bid)	: 15:45HRS on 01/02/2023

- 1.1. The tender document can be obtained from address given below against submission of non-refundable demand draft of **Rs. 1180/-** drawn in favour of BSES Rajdhani Power Ltd, payable at Delhi:

Head of Department

Contracts & Material Dept.

BSES Rajdhani Power Limited

Ist Floor, “C” Block, BSES Bhawan

Nehru Place, New Delhi -110019.

- 1.2. Only DD shall be accepted for tender fees.

- 1.3. The tender documents will be issued on all working days up to the date mentioned in clause 1.3. The tender documents & detail terms and conditions can also be downloaded from the website www.bsesdelhi.com. In case tender documents are downloaded from the above website, then the bidder has to enclose a separate demand draft covering the cost of bid documents.

1. POINTS TO BE NOTED

- 2.1. Works envisaged under this contract are required to be executed in all respects up to the period of completion/ duration of work mentioned above.
- 2.2. Only those agencies, who fulfil the qualifying criteria as mentioned in clause 3 should submit the tender documents.
- 2.3. BSES RAJDHANI Power Ltd reserves the right to accept/reject any or all bids without assigning any reason thereof and alter/amend/modify/add/reduce the amount and quantity mentioned in the tender documents at the time of placing Order
- 2.4. The bid will be summarily rejected if:
 - (a) **Earnest Money Deposit (EMD)** and **Tender Fee** of requisite amount is not deposited as per tender conditions
 - (b) Bid received after due date and time.

2. EMD

- 3.1. The bidder shall furnish, as part of its bid, an EMD of the requisite amount. The EMD is required to protect the Company against the risk of Bidder 's conduct which would warrant forfeiture. The EMD shall be denominated in any of the following forms:
 - (a) BG from nationalized / Scheduled Bank, as per the format annexed in the tender document, in favour of BSES Rajdhani Power Limited valid for 6(six) months from original due date of bid submission.
 - (b) Fixed Deposit (lien marked in favor of BSES RAJDHANI POWER LTD) valid for 6(six) months from original due date of bid submission.
- 3.2. Please note that bank details as given below have been provided only for the purpose of making BG for EMD.

Beneficiary Name	: BSES Rajdhani Power Limited
Bank Name	: State Bank of India
A/c No.	: 40214783615
IFSC Code	: SBIN0009601

The EMD of the bidders who are not technically qualified shall be returned after the price bid opening.

- 3.3. Earnest money given by all the bidders who are techno commercially qualified except the lower bidder shall be returned within 8 (Eight) weeks after award of the work.
- 3.4. The EMD of the successful bidder shall be returned on submission of CPBG as per tender terms.
- 3.5. The EMD may be forfeited in case of:
 - (a) The Bidder withdraws its bid during the period of bid validity specified by the Bidder in

the Bid Form or

- (b) The successful Bidder does not
 - (i) Accept the Purchase Order/Work Order, or
 - (ii) furnish the required CPBG as per tender terms
- (c) The bidder is found to have submitted false or forged, any of the documents/certificates/information.

1.3 Qualifying Criteria: - Technical & Commercial

The prospective bidder must qualify all of the following requirements to be eligible to participate in the bidding:

Technical Qualifying Criteria:

1. Bidder must have experience of 5 years in Manufacturing/ Repairing of power transformers and should have supplied/ repaired power transformer of same or higher ratings. The bidder must have supplied or repaired at-least 1 no. Power transformers of same or higher ratings within last 5 financial years for major utilities.
2. The bidder shall attach relevant work orders and performance certificate from client for the repaired transformers in service for minimum 1 year.
3. The bidders should have qualified technical & qualified QA personnel at various stages of manufacture & testing.
4. Testing of power transformer should be in NABL accredited test Lab.
5. Details of technical consultant or Technical collaboration , if any
6. Approved vendor list for various raw material and bought out items.

Commercial Qualifying Criteria:

1. Bidder must provide proof of having average annual turn over of Rs. 3 Cr. or above during the last three financial years (FY 19-20, 20-21 & 21-22). In case the audited balance sheet is not available with the bidder for 21-22, the bidder shall submit the audited balance sheet for FY 18-19 or turnover certified by the auditor.
2. Bidder must provide proof of having solvency of an amount equal to Rs. 50 Lacs or more from any nationalized/ scheduled commercial bank.
3. Bidder should have valid Registration No. of GST.
4. Bidder should have PAN No & should fulfill all statutory compliances like PF, ESI registration.
5. Duly signed & stamped tender documents submitted with all annexure.

6. Entities that have been debarred/blacklisted by any Private/central/state government institution including electricity boards in India will not be considered; in this regard a written statement has to be provided on bidder's letterhead along with other documents. Vendors/ Agencies who have been debarred/ blacklisted/ suspended by BRPL in last 3 financial years will not be considered in this tender.
7. The bidder should submit an undertaking for “No Litigation” / no legal case is pending with BRPL or its Group Companies. Bidders having any litigation/ legal case pending with BRPL shall not be considered qualified for this tender.
8. The bidder should give an undertaking on the company’s letter head that all the documents/certificates/information submitted by them against the tender are genuine.

The bidder should give an undertaking on their letterhead that all the documents/certificates/information submitted by them against the tender are genuine/true/correct and the copies of documents have been made from the original document/s. Further in case any of the documents/certificates/information submitted by the bidder is found to be false or forged, BRPL at its sole discretion shall be free to take all actions as permitted under law, including forfeiture of EMD and disqualification from participation in the future tenders for 1 year in BRPL & its group companies.

Please note that by participation in tender and submission of bid, the bidder authorize BRPL to verify the bidder’s credentials like work order copies, performance certificates etc. submitted by the bidder from the respective issuing client. If required, BRPL may also direct the bidder to provide the required contact details of the client who can confirm the authenticity of the documents submitted to facilitate the verification process within the timelines provided by BRPL. That upon demand the bidder shall be providing such details to BRPL within timelines provided by BRPL. Further in case any of the documents/certificates/information submitted by the bidder is found to be false or forged or the default from the side of bidder in providing the details for verification, BRPL at its sole Discretion shall be free to take all actions as permitted under law, including forfeiture of EMD disqualification from participation in the future tenders for 1 year in BRPL & its group companies.

The bidder shall submit all necessary documentary evidence to establish that the Bidder meets the above qualifying requirements.

- a) Firms who are debarred/ blacklisted in other utilities in India will not be considered.
- b) Company reserves the right to carry out technical capability/ infrastructure assessment of the Bidders by factory/office inspection or by any other means and company’s decision shall be final in this regard.
- c) No joint ventures/ consortiums are allowed.

Also, the Bidder shall furnish the following commercial & technical information along with the tender:

- a) Last three Financial Years (FY 19-20, 20-21 & 21-22) audited financial statement.

- b) Bidder to submit UDIN based CA Certificate showing upto date all statutory compliance like GST returns/ PF and ESI returns etc. i.e upto FY 21-22.
- c) Detail of Banker & Cash Credit limit
- d) Details of constitution of the company (Proprietary/ Limited/ Pvt. Ltd. Along with details)
- e) Memorandum & Articles of Association of the Company
- f) Organization Chart of the company
- g) Experience details with credentials

Please note: For Existing vendors/ registered vendors of BRPL, evaluation will also include the past performance in the contracts via-a-vis performance in terms of HR issues, all statutory Compliance parameters and wages disbursement by Vendors. BRPL reserves the right to disqualify their bid based on the above performance parameters in spite of them meeting the above qualification criteria.

BRPL reserves the right to disqualify any bidder in spite of the bidders meeting the above Qualifying requirements. The decision of BRPL shall be final & binding on the bidders.

BRPL may ask for any other document as may be required to substantiate/ justify the submissions made by bidders.

3. PRE-BID MEETING:

A pre-Bid meeting shall be organized physically or digitally (through web conferencing platform) at the time and date as specified in the tender documents in the presence of those bidders or their authorized representatives who may choose to be present.

The details of the proposed Webex Meeting (if applicable) are given below: -

Time: - 20.01.2023, 03:00 HRS India

NIT - 1088 Rep. of 2 nos. 20 MVA PTR

Hosted by Head C&M

<https://bsesbrpl.webex.com/bsesbrpl/j.php?MTID=mcdf5c96a1a680a2d2ebc50fcb75ac618>

Friday, Jan 20, 2023 3:00 pm | 3 hours | (UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi

Meeting number: 2512 543 8569

Password: 12345 (12345 from video systems)

Join by video system

Dial 25125438569@bsesbrpl.webex.com

You can also dial 210.4.202.4 and enter your meeting number.

Join by phone

+65-6703-6949 Singapore Toll Access code: 251 254 38569

All queries related to this tender must reach to C&M Department of BRPL at least three days before the date of the pre- bid meeting. All the bidder's queries shall be replied to in the pre-



BSES Rajdhani Power Limited

bid meeting. In case any change is required in the tender document the same shall be effected in the form of corrigendum to this tender. The bidder or their representatives who intend to bid and who have either purchased tender documents or will pay tender fees for downloaded documents are invited to attend the pre-bid meeting. Corrigendum, if any, to the tender document shall be hosted on the website subsequent to the pre-bid meeting. Bidders are requested to submit their offer strictly in line with this tender document & corrigendum if any.

4. BID SUBMISSION

The bidders are required to submit the bid in 2(two) parts and in original & duplicate (total 2 copies) at the following address:

Head of Department,
Contracts & Material Department,
BSES Rajdhani Power Limited,
1st Floor, "C" Block, BSES Bhawan,
Nehru Place,
New Delhi- 110019.

Technical bid documents along with commercial terms and conditions shall also be submitted in Pen Drive. No price bid shall be submitted in Pen Drive. **The PEN Drive should be owned by Bidder.** The bidder shall ensure that the Pen Drive is free from all viruses/malware. The pen drive once submitted shall not be returned.

This is a two part bid process. Bidders are to submit the bids **in 2(two) parts**. Both these parts should be furnished in separate sealed covers super scribing **NIT no. DUE DATE OF SUBMISSION, with particulars as PART-A Techno-Commercial Bid and Part-B PRICE BID** and these sealed envelopes should again be placed in another sealed envelope which should be super scribed with —**"Tender Notice No. & Due date of opening"**. The same shall be submitted before the due date & time specified.

6.3.1 PART A: TECHNO-COMMERCIAL BID, UNPRICED (Envelop-1):

The first sealed envelope shall contain an Unpriced Techno-commercial bid in paper form (hard copies) and envelope super-scribing **PART-A Techno-Commercial Bid**. The details to be submitted in techno-commercial bids are given below:

- a) General information about bidder
- b) Documentary evidence in support of all the qualifying criteria as per clause 4.0,
- c) EMD of requisite amount
- d) Non-refundable separate demand draft for Rs. 1180/- In case the forms are downloaded from the website
- e) Technical Literature if any.
- f) Details of experience of works of the same or similar nature. Copy of work orders and performance certificates.

g) Power of attorney

h) Acceptance to Commercial Terms and Conditions viz Delivery schedule/period, Payment terms, BG etc

i) Any other relevant document to support bidder meeting QR

Techno-Commercial Bid should not contain any cost information whatsoever and shall be submitted within the due date. After techno-commercial evaluation, the list of techno-commercially qualified bidders will be posted immediately on the BSES website.

The bidder should submit complete tender document along with all corrigendum (if any) published against this NIT at our website, signed and stamped with bidder's seal as an acceptance of all the terms & conditions of the Tender.

6.3.2 PART B: PRICE BID (Envelop-2):

The second sealed envelope shall contain Price bids in paper form (hard copies and envelope super-scribing **PART-B Price Bid** on it. The details to be submitted in the Price bid are given below:

(a) **PRICE BID** shall Comprise of Prices **strictly** in the Format enclosed in SECTION VII. Any change in price bid format, content may lead to rejection of the bid.

(b) Price Bid will be opened after techno-commercial evaluation of all the bids and only of the qualified bidders.

6.3.3 FINANCIAL BID EVALUATION THROUGH REVERSE AUCTION

Reverse Auction (RA) shall be conducted for finalization of contract and the details of the price bid shall not be shared with bidders. The qualified bidders will participate in reverse auction through SAP-SRM tool. The RA process shall be governed by the terms and conditions enclosed as Annexure-III in this tender document. Training/details shall be provided to bidders before participation in auction. In case RA is not conducted /concluded for any reasons, a "final no regret" financial bid in a sealed envelope will be called for from all qualified bidders. Notwithstanding anything stated above, the Company reserves the right to assess bidders' capability to perform the contract, should the circumstances warrant such assessment in the overall interest of the Company. In this regard, the decision of the Company shall be final and binding on the bidders.

6. TIME SCHEDULE

The activities and their timelines are given hereunder which needs to be adhered by the bidders.

S. No.	Activity	Description	Due date
1	Submission of Technical & Commercial Queries, if any	All Queries related to NIT	19.01.2023
2	Pre-Bid Meeting	Discussion on pre-bid queries	20.01.2023
3	Submission of Techno-Commercial & Price Bid	Unpriced Techno-Commercial & Price Bid in separate sealed envelopes	01.02.2023
4	Opening of Techno-Commercial Bid	Opening of PART-A	01.02.2023
5	Opening of Price Bid	Opening of PART-B of only the techno-commercially qualified bidders (List of bidders will be published at our website)	To be informed separately
6	Reverse Auction	As per RA terms	Schedule will be intimated to eligible bidders through email from id: BRPL.Eauction@relianceada.com

7. AWARD DECISION

- 8.1. Company intends to award the business on a lowest bid basis, so bidders are encouraged to submit the bid competitively. The decision to place order/LOI solely depends on Company on the cost competitiveness across multiple lots, quality, delivery and bidder 's capacity, in addition to other factors that Company may deem relevant.
- 8.2. The Company reserves all the rights to award the contract to one or more bidders who meet the execution requirement or nullify the award decision without assigning any reason thereof.
- 8.3. In case the performance of any contractor is found unsatisfactory during the execution process, the award will be cancelled and BRPL reserves the right to award the work to another contractor(s) who will be found eligible/fit.
- 8.4. The abnormally higher or abnormally lower bids shall not be considered with respect to estimated cost. The criteria decided by BRPL on this shall be final and binding on

- 8.5. The bidding firms are advised to quote their Margin / Administrative Service Charges accordingly. BRPL reserves the right to reject the bids quoted with abnormally higher or abnormally lower individual activity rates. The criteria decided by BRPL on this shall be final and binding on the bidders and will not be open for discussion under any circumstances.

8. MARKET INTEGRITY

We have a fair and competitive marketplace. The rules for the bidders are outlined in the Terms & Conditions of the tender documents. Bidders must agree to these rules prior to participating in the tender. In addition to other remedies available, we reserve the right to exclude a bidder from participating in future markets due to the bidder's violation of any of the rules or obligations contained in the Terms & Conditions. Bidder(s) who violate the marketplace rules or engage in behaviour that disrupts the fair execution of the marketplace restricts a bidder from participation in future tenders of BRPL to a length of time as decided by BRPL, depending upon the seriousness of the violation. Examples of violations include, but are not limited to:

- Failure to honour prices submitted to the market place.
- Breach of the terms published in Request for Quotation/NIT
- Misrepresentation of facts, submitting false and fabricating documents

9. CONFIDENTIALITY

All information contained in this tender document is confidential and may not be disclosed, published or advertised in any manner without written authorization from BRPL. This includes all bidding information submitted.

All tender documents remain the property of BRPL and all bidders are required to return these documents to BRPL upon request.

Bidder(s) who do not honour these confidentiality provisions will be excluded from participating in future bidding events.

The bidder shall sign a Non-Disclosure Agreement (NDA) in the format attached in tender document and submit along with its bid.

10. CONTACT INFORMATION

Technical & Commercial clarification, if any, regarding this tender shall be sought in writing and sent by e-mail to the following e-mail IDs:

Address	Name/ Designation	E-mail Address / Phone Number
Technical		
AWARD OF WORK FOR REPAIRING OF TWO NOS. 20 MVA 66/11KV POWER TRANSFORMERS IN BRPL.	Mr.Abhinav Srivastava CES - AsVP	Abhinav R Srivastava@relianceada.com 01149107308
	Mr. Sheshadri Krishnapura Head – TSG	Sheshadri Krishnapura/REL/RelianceADA.
	All technical queries shall also be marked copy to Commercial team as per the details below.	
	Commercial	
C&M Dept, 1st Floor, C Block, BSES Rajdhani Power Ltd BSES Bhawan, Nehru Place, New Delhi – 110019.	Ms. Anima Gaur Sr.Mng-(Contracts)	anima.gaur@relianceada.com 011-49209429
	Mr. Amitava Nandi, AsVP – (Contracts)	Amitava.Nandi@relianceada.com / 011-4920 9619
	Mr. Ananda Raj, Head – (Contracts)	Ananda.Raj@relianceada.com / 011-4920 9014

SECTION – II: INSTRUCTION TO BIDDERS

1.0 GENERAL

BSES Rajdhani Power Ltd, hereinafter referred to as “The Company are desirous of **AWARD OF WORK FOR REPAIRING OF TWO NOS. 20 MVA 66/11KV POWER TRANSFORMERS IN BRPL.**

- 1.1** All the Bids shall be prepared and submitted in accordance with these instructions.
- 1.2** Bidder shall bear all costs associated with the preparation and delivery of its Bid, and the Company will in no case shall be responsible or liable for these costs.
- 1.3** The Bid should be submitted by the Bidder in whose name the bid document has been issued and under no circumstances it shall be transferred /sold to the other party.
- 1.4** The Company reserves the right to request for any additional information and also reserves the right to reject the proposal of any Bidder, if in the opinion of the Company, the data in support of RFQ requirement is incomplete.
- 1.5** The Bidder is expected to examine all instructions, forms, terms & conditions and specifications in the Bid Documents. Failure to furnish all information required in the Bid Documents or submission of a Bid not substantially responsive to the Bid Documents in every respect may result in rejection of the Bid. However, the Company’s decision in regard to the responsiveness and rejection of bids shall be final and binding without any obligation, financial or otherwise, on the Company.
- 1.6** The company reserves the right to split the order among various successful tenderers in any manner he chooses without assigning any reason whatsoever

2.0 SCOPE OF WORK

The complete scope of work has been defined in relevant section of this tender document.

DISCLAIMER

- 2.01** This Document includes statements, which reflect various assumptions, which may or may not be correct. Each Bidder/Bidding Consortium should conduct its own estimation and analysis and should check the accuracy, reliability and completeness of the information in this Document and obtain independent advice from appropriate sources in their own interest.
- 2.02** Neither Company nor its employees will have any liability whatsoever to any Bidder or any other person under the law or contract, the principles of restitution or unjust enrichment or otherwise for any loss, expense or damage whatsoever which may arise from or be incurred or suffered in connection with anything contained in this Document, any matter deemed to form part of this Document, provision of Services and any other information supplied by or on behalf of Company or its employees, or otherwise arising in anyway from the selection process for the work.
- 2.03** Though adequate care has been taken while issuing the Bid document, the Bidder should satisfy itself that Documents are complete in all respects. Intimation of any discrepancy shall be given to this office immediately.

2.04 This Document and the information contained herein are Strictly Confidential and are for the use of only the person(s) to whom it is issued. It may not be copied or distributed by the recipient to third parties (other than in confidence to the recipient's professional advisors).

3.0 COST OF BIDDING

The Bidder shall bear all cost associated with the preparation and submission of its Bid and the company will in no case be responsible or liable for those costs.

4.0 BIDDING DOCUMENTS

4.01 The Scope of Work, Bidding Procedures and Contract Terms are described in the Bidding Documents. In addition to the covering letter accompanying Bidding Documents, the Bidding Documents include:

SECTION I	Request For Quotation
SECTION II	Instructions to Bidder
SECTION III	Commercial Terms & Conditions
SECTION V	Scope of Work
SECTION VI	Price Format

4.02 The Bidder is expected to examine the Bidding Documents, including all Instructions, Forms, Terms and Specifications. Failure to furnish all information required by the Bidding Documents or submission of a Bid not substantially responsive to the Bidding Documents in every respect will may result in the rejection of the Bid.

5.0 AMENDMENT OF BIDDING DOCUMENTS

5.01 At any time prior to the deadline for submission of Bids, the Company may for any reasons, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding Documents by Amendment.

5.02 The Amendment shall be part of the Bidding Documents, pursuant to Clause 5.01, and it will be notified in writing by Fax/e-mail to all the Bidders who have received the Bidding Documents and confirmed their participation to Bid, and will be binding on them.

5.03 In order to afford prospective Bidders reasonable time in which to take the Amendment into account in preparing their Bids, the Company may, at its discretion, extend the deadline for the submission of Bids.

6.0 PREPARATION OF BIDS

6.1 LANGUAGE OF BID

The Bid prepared by the Bidder, and all correspondence and documents relating to the Bid exchanged by the Bidder and the Company, shall be written in the English Language. Any printed literature furnished by the Bidder may be written in another

Language, provided that this literature is accompanied by an English translation, in which case, for purposes of interpretation of the Bid, the English translation shall govern.

7.0 DOCUMENTS COMPRISING THE BID

The Bid prepared and submitted by the Bidder shall comprise the following components:

- (a) Bid Form ,Price & other Schedules (STRICTLY AS PER FORMAT) and Technical Data Sheets completed in accordance with Technical Specification.
- (b) All the Bids must be accompanied with the required EMD as mentioned in the Section-I against each tender.

8.0 BID FORM

- 8.1 The Bidder shall submit "Original" Bid Form and the appropriate Price Schedules and technical specifications enclosed with the Bidding Documents.

9.0 EMD (EARNEST MONEY DEPOSIT)

- 10.1. The bidder shall furnish, as part of its bid, an EMD of the requisite amount. The EMD is required to protect the Company against the risk of Bidder 's conduct which would warrant forfeiture. The EMD shall be denominated in any of the following forms:

- (c) BG from nationalized / Scheduled Bank, as per the format annexed in the tender document, in favour of BSES Rajdhani Power Limited valid for 6(six) months from original due date of bid submission.
- (d) Fixed Deposit (lien marked in favor of BSES RAJDHANI POWER LTD) valid for 6(six) months from original due date of bid submission.

The EMD may be forfeited in case of:

- (a) if the Bidder withdraws its bid during the period of bid validity specified by the Bidder in the Bid Form or
- (b) in the case of a successful Bidder, if the Bidder does not
 - (i) Accept the Purchase Order/Work Order, or
 - (ii) Furnish the required performance security BG.
- (c) If the bidder is found to have submitted false or forged any of the documents/certificates/information.

10.0 BID PRICES

10.01 Bidders shall quote for the entire Scope of work with prices for individual items. The tenderer is required, at his expense, to obtain all the information he may require to enable him to submit his tender including necessary visits to the site to ascertain the local conditions, procurement of necessary materials, labour, etc., requirements of the local/government/public authorities in such matters.

Prices quoted by the Bidder shall be “Firm” and not subject to any price adjustment during the performance of the Contract. **A Bid submitted with an adjustable price/PVC will be treated as non -responsive and rejected.**

11.0 BID CURRENCIES

Prices shall be quoted in Indian Rupees Only.

12.0 PERIOD OF VALIDITY OF BIDS

12.01 Bids shall remain valid & open for acceptance for a period of 120 days from the date of opening of the Bid.

12.02 Notwithstanding Clause 12.01 above, the Company may solicit the Bidder’s consent to an extension of the Period of Bid Validity. The request and the responses thereto shall be made in writing and sent by Fax/post/courier

13.0 ALTERNATIVE BIDS

Bidders shall submit Bids, which comply with the Bidding Documents. Alternative Bids will not be considered. The attention of Bidders is drawn to the provisions regarding the rejection of Bids in the terms and conditions, which are not substantially responsive to the requirements of the Bidding Documents.

14.0 FORMAT AND SIGNING OF BID

14.01 The original Bid Form and accompanying documents(as specified in Clause 9.0),clearly marked "Original Bid", must be received by the Company at the date, time and place specified pursuant to Clauses 15.0 and 16.0.

14.02 The original copy of the Bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to sign on behalf of the Bidder. Such authorization shall be indicated by written Power-of-Attorney accompanying the Bid.

14.03 The Bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the Bid.

14.04 Bid shall be signed with stamp by the bidder on all the pages.

D. SUBMISSION OF BIDS**15.0 SEALING AND MARKING OF BIDS**

- 15.01 Bid submission: One original (hard copies) of all the Bid Documents shall be sealed and submitted to the Company before the closing time for submission of the bid.
- 15.02 The Technical Documents and the EMD shall be enclosed in a sealed envelope and the said envelope shall be superscribed with — Technical Bid & Commercial Terms & Conditions “. The price bid for both the options to be submitted in separate sealed envelopes and shall be inside another sealed envelope with superscribed —“Financial Bid “. Both these envelopes shall be sealed inside another big envelope. All the envelopes should bear the Name and Address of the Bidder and marking for the Original. The envelopes should be superscribed with —“Tender Notice No. & Due date of opening“.
- 15.03 The Bidder has the option of sending the Bids in person. Bids submitted by Email/Telex/Telegram /Fax will be rejected. No request from any Bidder to the Company to collect the proposals from Courier/Airlines/Cargo Agents etc shall be entertained by the Company.

16.0 DEADLINE FOR SUBMISSION OF BIDS

- 16.01 The original Bid must be timely received by the Company at the address specified in Section-I
- 16.02 The Company may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Documents in accordance with Clause 9.0, in which case all rights and obligations of the Company and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

17.0 ONE BID PER BIDDER

Each Bidder shall submit only one Bid by itself. No Joint Venture/Consortium is acceptable. A Bidder who submits or participates in more than one Bid will cause all those Bids to be rejected.

18.0 LATE BIDS

Any Bid received by the Company after the deadline for submission of Bids prescribed by the Company, pursuant to Clause 16.0, will be declared "Late" and rejected and returned unopened to the Bidder.

19.0 MODIFICATIONS AND WITHDRAWAL OF BIDS

- 19.01 The Bidder is not allowed to modify or withdraw its Bid after the Bid's submission.

E. EVALUATION OF BID

20.0 PROCESS TO BE CONFIDENTIAL

Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process. Any effort by a Bidder to influence the Company's processing of Bids or award decisions may result in the rejection of the Bidder's Bid.

21.0 CLARIFICATION OF BIDS

To assist in the examination, evaluation and comparison of Bids, the Company may, at its discretion, ask the Bidder for a clarification of its Bid. All responses to requests for clarification shall be in writing and no change in the price or substance of the Bid shall be sought, offered or permitted.

22.0 PRELIMINARY EXAMINATION OF BIDS / RESPONSIVENESS

- 22.01 Company will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the Bids are generally in order.
- 22.02 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price per item that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price per item will be corrected. If there is a discrepancy between the Total Amount and the sum of the total price per item, the sum of the total price per item shall prevail and the Total Amount will be corrected.
- 22.03 Prior to the detailed evaluation, Company will determine the substantial responsiveness of each Bid to the Bidding Documents including production capability and acceptable quality of the Goods offered. A substantially responsive Bid is one, which conforms to all the terms and conditions of the Bidding Documents without material deviation.
- 22.04 Bid determined as not substantially responsive will be rejected by the Company and/or the Bidder and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

23.0 EVALUATION AND COMPARISON OF BIDS

- 23.01 The evaluation of Bids shall be done based on the delivered cost competitiveness basis.
- 23.02 The evaluation of the Bids shall be a stage-wise procedure. The following stages are identified for evaluation purposes: In the first stage, the Bids would be subjected to a responsiveness check. The Technical Proposals and the Conditional ties of the Bidders would be evaluated.

Subsequently, the Financial Proposals along with Supplementary Financial Proposals, if any, of Bidders with Techno-commercially Acceptable Bids shall be considered for final evaluation.

23.03 The Company's evaluation of a Bid will take into account, in addition to the Bid price, the following factors, in the manner and to the extent indicated in this Clause:

- a) Work completion schedule
- b) Conformance to Qualifying Criteria
- c) Deviations from Bidding Documents

Bidders shall base their Bid price on the terms and conditions specified in the Bidding Documents. No deviation to the bid terms and conditions shall be acceptable.

23.04 Any adjustments in price, which result from the above procedures, shall be added for the purposes of comparative evaluation only to arrive at an "Evaluated Bid Price". Bid Prices quoted by Bidders shall remain unaltered.

F. AWARD OF CONTRACT

24.0 CONTACTING THE COMPANY

24.01 From the time of Bid opening to the time of contract award, if any Bidder wishes to contact the Company on any matter related to the Bid, it should do so in writing.

24.02 Any effort by a Bidder to influence the Company and/or in the Company's decisions in respect of Bid evaluation, Bid comparison or Contract Award, will result in the rejection of the Bidder's Bid.

25.0 THE COMPANY'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS

The Company reserves the right to accept or reject any Bid and to annul the Bidding process and reject all Bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Company's action.

26.0 AWARD OF CONTRACT

The Company will award the Contract to the successful Bidder whose Bid has been Determined to be the lowest-evaluated responsive Bid, provided further that the Bidder has been determined to be qualified to satisfactorily perform the Contract. Company reserves the right to award order other bidders in the tender.

27.0 THE COMPANY'S RIGHT TO VARY QUANTITIES

The Company reserves the right to vary the quantity i.e. increase or decrease the numbers/quantities to any extent without any change in rates terms and conditions during the validity of the contract.

28.0 LETTER OF INTENT/ NOTIFICATION OF AWARD

The letter of intent/ Notification of Award shall be issued to the successful Bidder whose bids have been considered responsive, techno-commercially acceptable and evaluated to be the lowest (L1). The successful Bidder shall be required to furnish a letter of acceptance within 7 days of issue of the letter of intent /Notification of Award by Company.

29.0 CORRUPT OR FRAUDULENT PRACTICES

29.01 The Company requires that the Bidders observe the highest standard of ethics during the procurement and execution of the Project. In pursuance of this policy, the Company:

(a) Defines, for the purposes of this provision, the terms set forth below as follows:

"Corrupt practice" means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving, or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and

"Fraudulent practice" means a misrepresentation of facts in order to influence a award process or the execution of a contract to the detriment of the Company, and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non -competitive levels and to deprive the Company of the benefits of free and open competition.

- (b) Will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question ;
- (c) Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a contract.

29.02 Furthermore, Bidders shall be aware of the provision stated in the Terms and Conditions of Contract.

SECTION – III: TERMS AND CONDITIONS

COMMERCIAL TERMS & CONDITIONS:

(A) FOR SUPPLY PART:

The scope shall include supply of materials as per rate annexure for repairing of power transformers of following ratings:

- A.** 1 no. 20 MVA 66/11 KV, Sr.no. 27150 and GEC make power trf lying at G-1 Grid at BRPL.
- B.** 1 no. 20 MVA 66/11 KV, Sr.no. 2009602 and BHEL make power trf lying at Nangloi Grid at BRPL.

Further for disposal of Hazardous Waste, as per the guidelines of Central Pollution Control Board for handling and storage of hazardous waste that:

1. Storage facility should have appropriate containment system.
2. The container / enclosure holding hazardous waste should be marked #Hazardous Waste #in red colour in English / Hindi.
3. You must take precautions to prevent any accidental ignition or reaction of ignitable or reactive waste.
4. The container system should be leak proof and able to drain / remove liquids.
5. Used/waste oil is to be sold only through registered recycler/re-refiner.

Note: Please note that the subject PTR is under insurance claim. "M/s Howden Insurance Brokers India Pvt Ltd" is BRPL's Insurance consultant throughout the completion of this work and they will inform you with a copy to BRPL's Insurance representative Mr. Sanjay Arora (AsVP-F&A) for the involvement of Surveyor at various stages.

Their name and contact details are mentioned as below:-

Howden Insurance Brokers India Pvt. Ltd.

Lalit Mohan / 9811944993

Lalit.mohan@howdenindia.com

BSES Rajdhani Power Limited

Sanjay Arora / Phone No. 011-492099515

E-mail: sanjay.arora@relianceada.com

Please note that in addition to the work procedure given under clause nos.# 5 & 7 the repairing work of these PTRs shall be strictly carried out in accordance with the guidelines / instruction/ clearances by the above officials.

The insurer may desire to auction the scrap material to ascertain the competitive scrap value quoted by the successfully bidder at any stage and the difference thus arises if any will be adjusted in the contract value accordingly. The above shall be entirely based on the decision of the insurer and BRPL will not be liable for any losses on this account. The successful bidder shall fully co-operate with this procedure unconditionally.

2. RATES:

The item wise rates for above Scope of work shall be as finalized through this tender. The rates shall be firm for the entire duration of work carried out by you the order and are not subject to escalation for any reason whatsoever. The prices are also inclusive of Loading, Unloading to and fro transportation and insurance and up to the delivery at our site or store.

3. TAX & DUTIES:

- (i) Prices shall be inclusive of all taxes and duties including labour cess (except GST). However, Income Tax(TDS) as per applicable rate in accordance with Income Tax Act will be deducted from contractor's bills.
- (ii) GST at actual shall be paid extra on submission of GST Registration and self-declaration on Contractor's letter head stating that you have deposited/or will deposit the Tax as per the applicable GST laws. Contractor shall furnish its GST registration number.
- (iii) Any statutory variations i.e. increase/decrease in Taxes / Duties introduced by central Govt. / State Govt. shall be reimbursed/recovered to/from Contractor against documentary evidence and proof.
- (iv) As Per Notification No. 39/2021 # Central Tax dated 21st December, 2021 w.e.f 01/01/2022 registered person (ie, Recipient/Purchaser) can avail tax credit on those invoices only which have been reflected in GSTR 2A or GSTR2B (it means 100% matching of invoice is required). Also, GST has to be deposited by Supplier/Contractor by filing of GSTR- 1 and GSTR-3B.
- (v) In view of above, if the same is not complied with by the supplier/Contractor and the Recipient/Purchaser is not in position to avail / utilize Input Tax Credit due to non-compliance or non-filing of GSTR-1 and GSTR-3B for the month/quarter (as applicable) in which the supply was made, then Recipient/Purchaser has right to hold 100% GST amount from next payment due of the subsequent month till the time default is not cured.

- (vi) For releasing of the payment kept on hold on account of non-compliance of GST Act, supplier/Contractor shall submit payment proof i.e GST Portal screenshot reflecting name of Recipient/Purchaser along with GSTR-1 and GSTR-3B for month/quarter (as applicable) in which the same has been discharged. Payment shall not be released, till the time necessary proof showing the discharge of GST liabilities by the contractors for the period in default are submitted to the Company.
- (vii) Further, the recipient/purchaser shall also be entitled to recover any financial loss suffered by the Company (including tax, interest, penalty and lapse of input credit) due to non-compliance or non-filing of GSTR-1 and GSTR-3B by the supplier/Contractor.
- (viii) In case where delivery of goods is being made on FOR site basis, the Supplier/Contractor is responsible to comply with rules applicable for E-way bill. Any violation in provision of E-way Bill will attract penalty and seizure of Transit Material. Any Penalty and Pre-Deposit due to violation of rules/provision shall be paid and borne by Supplier/Contractor. Also, Supplier/Contractor is responsible to get the goods released from the concerned authority. Delay in supply due to seizure of goods shall attract liquidated damages as per Order / Agreement provisions.

4. TERMS OF PAYMENT:

100% payment shall be made to you after 30 days of receipt of repaired Transformer at our stores/ Site and on submission of your Bill along with MRN, JVR, Stage Inspection, Scrap Invoice, Delivery Challan, MDCC, P.O. Copy.

1. The Scrap material shall be retained by the contractor and the credit towards the same shall be given to BRPL for above Power Transformer.
2. The credit against scrap shall be adjusted in the invoices to be raised.

5. QUANTITY & ESTIMATES:

All the materials in required quantity shall be fitted on the repaired Power Transformers.

The quantity of material shall be as signed off by BSES's nominated third party inspection agency. This inspection agency shall be verifying JVR, stage inspection & Final inspection reports on BSES's part.

The actual quantity shall be arrived on the basis of quantity of material to be used decided during joint inspection and the unit rate as finalized through this tender.

You shall prepare provisional estimate for repair of each transformer after design approval of damaged transformer from our Engineering Department and submit it to our C&M department for approval. The estimate shall be based on JVR & approved design and the unit rates finalized.

Based on the approval of provisional estimates, the vendor shall go ahead with the coil manufacturing process.

After stage inspection, the vendor shall submit the final estimates (mentioning actual wt. of HV & LV Leg coil recorded at the time of stage inspection) to C&M for final approval.

6. DELIVERY:

The repaired transformer shall be delivered within 4 months for 66/11 KV 20 MVA per PTR from the date of JVR. This is the maximum time which will be allowed after which the LD shall be applicable.

7. TECHNICAL SPECIFICATION, TEST PROCEDURE & QUALITY ASSURANCE:

The Detailed Technical Specification for repairing of Power Transformers is enclosed herewith. The Contractor shall submit the test Instruction/Procedure/Test Format before starting the work for our approval. The Contractor shall submit all the Test Reports & joint inspection report in the approved format.

Contractors shall submit detail quality plan which shall be as per BSES format with all reference and acceptance documents for our review and approval. BSES shall clearly identify Customer hold point where our inspectors shall fully involve for inspection and clearance of the transformer.

JVR shall be conducted at contractor's works within 10 days of lifting of the transformer from our site/ store.

Further, Within 7 days of JVR the contractor shall submit the design calculation for the transformer to our Engineering Dept. and obtain the approval of Design. The Performa for submitting the design calculation shall be as given by our Engineering Dept.

The Vendor shall not sell old HV/ LV wdg. Other parts etc. scrapped at the time of JVR till the designs are approved by our CES dept. & provisional estimate approved by C&M.

The scrap must be disposed by the vendor in front of BRPL & BRPL's representative.

Contractors shall not process further without inspection and clearances by our inspector on each of this identify Customer hold point stages.

It shall be noted that the quality of repairing work and your services shall be fully to our satisfaction and in case not found to be up to the mark, we reserve the right to cancel this order.

BSES representative to fully associate during complete repairing process i.e. inspection at time of lifting, defusing, inspection at the time of repair, assembly and at the time of final testing/inspection. The bidders shall raise inspection calls / intimation for customer clearance accordingly at all the stages including JVR during opening of the transformer, scrap assessment, stage inspection points and final acceptance inspection. The bidder shall not proceed without obtaining written clearance from BRPL.

All routine tests shall be carried out by the Contractor without any extra charge to the Company, unless expressly agreed otherwise. The tentative schedule for tests shall be informed to Company well in advance, to enable the buyers representative to visit Contractors factory for witnessing the tests.

8. GUARANTEE/ DEFECT LIABILITY PERIOD:

The Contractor shall guarantee that workmanship shall be of finest quality and the material used shall be suitable for the purpose for which the same is to be used. The Contractor shall also guarantee that all the material shall be in strict compliance with the Technical Specifications and as per the approved QAP and the requirements agreed upon. The Contractor shall provide guarantee for a period of 60 months from the date of commissioning or 66 months from the date of receipt of the transformer, whichever is earlier. The Contractor shall rectify, repair or replace (at our options) free of charge any such defective part/equipment. If any such equipment is to be returned to your plant for repair etc. during the guarantee period, then the expenses for transportation to and from your plant or any other place of repair service, travel and living expenses etc. shall be necessarily borne by Contractor. The repaired transformer shall be shifted in a condition ready to energize.

9. CONTRACT PERFORMANCE SECURITY BANK GUARANTEES:

9.1 CONTRACTOR shall furnish the Security Performance Bank Guarantee in the prescribed format (Appendix I) within 1 month from the date of issue of Order for due performance of the provisions of Purchase and Work Order.

9.2 The Security Performance Bank Guarantee shall be of 10% of the total initial value of order and shall be valid till defect liability period, plus three (3) months towards claim period

9.3 The Security Performance Bank Guarantee shall be issued from any nationalized bank as per company format.

9.4 The Company shall reserve the right to invoke the bank guarantee unconditionally and without recourse to the Contractor, if there is failure to perform any part of the Contract for whatsoever reason. This clause is pertaining to performance of contractual obligations and the decision of Company shall be final in this regard.

9.5 In the event, in Company sole judgment, the Contractor has fulfilled all its obligations under this Contract, Company shall release the security performance bank guarantee without interest, within seven (7) days from the last date up to which the performance bank guarantee is to be kept valid or if it is assessed by the Company that Contractor has not fulfilled its obligation then the performance bank guarantee shall be extended by the Contractor till that period as requested by the Company.

10. SECURITY FOR SCRAP VALUE OF TRANSFORMER AND INDEMNITY BOND:-

Contractor has to give Indemnity Bond for the value of Rs. 50 Lacs before lifting the trf. For repairing as per the approved format. Also Contractor has to submit Rs. 10 Lacs bank guarantee per power transformer towards safe custody of the transformer at their works before lifting the same for repairing as per the approved format. Also the vendor shall submit transit insurance copy before lifting and it shall remain valid till the delivery of rep. trf.

Transformers shall be delivered to the vendor for repairing till such time as the vendor deposits security as detailed above the repair contract may be deemed to be cancelled if security is not deposited within ten days without any further reference to the vendor.

11. IMPORT LICENCE & FOREIGN EXCHANGE:

Import license /foreign exchange, if required, by the Seller for executing this order shall be arrangement by the Seller. Buyer shall not be responsible for the same.

12. S.S.I UNIT:

If the SELLER'S establishment is covered under the purview of Small Scale Industrial Undertakings (SSI Unit) and Ancillary Industrial Undertakings, he shall declare so within

one week of receipt of the Purchase Order of its status failing which it will be presumed that it is a non-SSI unit.

13. ARBITRATION:

To the best of their ability, the parties hereto shall endeavor to resolve amicably between themselves all disputes arising in connection with the proposed Agreement. If the same remain unresolved, within fifteen (15) days of the matter being raised by either party, either party may refer the dispute for settlement by arbitration. The arbitration to be undertaken by a sole arbitrator to be appointed by the company. The decision of the arbitrator is final and binding upon both the parties. The arbitration proceeding shall be conducted in accordance with the provisions of the Indian Arbitration & Conciliation Act, 1996 and the venue of such arbitration shall be New Delhi only.

14. FORCE MAJEURE:

14.1 General:

An “Event of Force Majeure” shall mean any event or circumstance not within the reasonable control, of the Party affected, but only if and to the extent that:

Such event or circumstance, despite the exercise of reasonable diligence, could not have been prevented, avoided or reasonably foreseen by such Party;

Such event or circumstance materially and adversely affects the ability of the affected Party to perform its obligations under this Contract, and the affected Party has taken all reasonable precautions, due care and reasonable alternative measures in order to prevent or avoid the effect of such event on the affected party’s ability to perform its obligations under this Contract and to mitigate the consequences thereof. For the avoidance of doubt, if such event or circumstance would not have materially and adversely affected the performance of the affected party had such affected party followed good industry practice, such event or circumstance shall not constitute force majeure.

Such event is not the direct or indirect result of the failure of such Party to perform any of its obligations under this Contract; and Such Party has given the other Party prompt notice describing such events, the effect thereof and the actions being taken in order to comply with Article 14.1

14.2 Specific Events of Force Majeure:

Subject to the provisions of Article 14.1, Events of Force Majeure shall include only the following to the extent that they or their consequences satisfy the above requirements:

The following events and circumstances:

Effect of any natural element or other acts of God, including but not limited to storm, flood, earthquake, lightning, cyclone, landslides or other natural disasters, and Explosions or fires Public disorder, insurrection, rebellion, sabotage, riots or violent demonstrations of a local character; Declaration of the Site as war zone.

Any order, regulation, directive, requirement from any Governmental, legislative, executive or judicial authority.

14.3 Notice of Events of Force Majeure

If a force majeure event prevents a party from performing any obligations under the Contract in part or in full, that party shall :

Immediately notify the other party in writing of the force majeure events within 2 working days of the occurrence of the force majeure event

Be entitled to suspend performance of the obligation under the Contract which is affected by force majeure event for the duration of the force majeure event

Use all reasonable efforts to resume full performance of the obligation as soon as practicable

Keep the other party informed of all such efforts to resume full performance of the obligation on a regular basis

Provide prompt notice of the resumption of full performance or obligation to the other party.

14.4 Mitigation of events of force majeure:

The Contractor shall:

- (i) Make all reasonable efforts to prevent and reduce to a minimum and mitigate the effect of any delay occasioned by an Event of Force Majeure, including applying other ways in which to perform the Contract;
- (ii) Use its best efforts to ensure resumption of normal performance after the termination of any Event of Force Majeure and shall perform its obligations to the maximum extent practicable as agreed between the Parties; and
- (iii) Keep the Company informed at regular intervals of the circumstances concerning

the event of Force Majeure, with best estimates as to its likely continuation and what measures or contingency planning it is taking to mitigate and or terminate the Event of Force Majeure.

14.5 Burden of proof:

In the event that the Parties are unable in good faith to agree that a Force Majeure event has occurred to an affected party, the parties shall resolve their dispute in accordance with the provisions of this Contract. The burden of proof as to whether or not a force majeure event has occurred shall be upon the party claiming that the force majeure event has occurred and that it is the affected party.

14.6 Terminations for certain events of force majeure:

If any obligation of any Party under the Contract is or is reasonably expected to be delayed or prevented by a Force Majeure event for a continuous period of more than 1 (one) month during the Term of the Contract the Contract shall be terminated at the discretion of the Company and neither Party shall be liable to the other for any consequences arising on account of such termination.

15. LIQUIDATED DAMAGES:

The delivery period indicated above shall be guaranteed. In case of a delay, you shall be liable to pay us by way of liquidated Damages @ 1 % of the repairing cost of the Transformer for each weeks delay or part thereof subject to a maximum of 10% of the total value of Order/ for undelivered portion thereof.

16. ACCEPTANCE:

Acceptance of this order implies and includes acceptance of all terms and conditions enumerated in this work order in the technical specification and drawings made available to you, detailed scope of work, detailed technical specification & detailed equipment, drawing. Complete scope of work and the Contractors and Company contractual obligation are strictly limited to the terms set out in the order. No amendments to the concluded order shall be binding unless agreed to in writing for such amendment by both the parties.

17. SAFETY CODE:

The Contractor shall ensure adequate safety precautions at site as required under the law of the land to facilitate safe working during the execution of work and shall be entirely responsible for the complete safety of their workmen as well as other workers at site and premises during execution of contract.

The contractor shall observe the safety requirements as laid down in the contract and in case of sub-contract (only after written approval of company), it shall be the responsibility of main contractor that all safety requirements are followed by the employees and staff of the sub-contractor.

The contractor employing two hundred employees or more, including contract workers, shall have a safety co-ordinator in order to ensure the implementation of safety requirements of the contract and a contractor with lesser number of employees, including contract workers, shall nominate one of his employees to act as safety co-ordinator who shall liaise with the safety officer on matters relating to safety and his name shall be displayed on the notice board at a prominent place at the work site.

The contractor shall be responsible for non-compliance of the safety measures, implications, injuries, fatalities and compensation arising out of such situations or incidents. In case of any accident, the contractor shall immediately submit a statement of the same to the owner and the safety officer, containing the details of the accident, any injury or casualties, extent of properly damage and remedial action taken to prevent recurrence and in addition, the contractor shall submit a monthly statement of the accidents to the owner at the end of each month.

18. CLEANLINESS & PRECAUTIONS TO BE TAKEN WHILE DOING WORK AT SITE TO PREVENT DUST POLLUTION:

All debris shall be removed and disposed of at assigned areas on daily basis. Surplus excavated earth shall be disposed of in an approved manner. In short, the contractor shall be fully responsible for keeping the work site clean at all times. In case of non-compliance, company shall get the same done at Contractor's risk and costs. While carrying out any civil work including road/ pit digging, plinth/ fence making, road restoration etc contractor shall adhere to below mentioned guidelines.

1. No construction material/ debris shall be stored on metalled road.
2. Wind breakers of appropriate height on all sides of ear marked area using CGI sheets shall be raised to ensure that no construction material dust fly outside ear marked area.

3. The construction material i.e. coarse sand, stone aggregates, excavated earth, cement and any other material to and from the site shall be transported under wet and covered condition to ensure their non-slippage en-route to avoid air contamination.
4. The contractor shall provide mask and helmet to every worker working on the construction site and involved in loading/unloading and carriage of construction material and construction debris to prevent inhalation of dust particles.
5. Over loading of vehicles shall be strictly prohibited
6. The construction material at site shall be stored under wet and covered condition.
7. The dumping sites for temporarily storing the excavated earth shall be properly levelled, watered and rehabilitated by plantation to avoid flying of dust.
8. The worker at the site shall be sensitized to adopt / observe the dust controlled measures in true spirit.
9. If any C&D waste is generated at site the same will be transported to the C&D waste site only and the record for the same will be maintained by the agency.
10. Wet jet in grinding and stone cutting is being permitted at site.
11. The necessary record for dust control is being maintained by the department on day to day basis and being monitored regularly.

The Execution vendors shall be responsible for all the preventive and protective environmental steps as per guidelines. Any violations from the above guidelines have been viewed very seriously by the authorities. Concerned agency is liable for the penalties / other action by the authorities, The Agency shall indemnify BRPL from all liabilities on this account.

19. VENDOR CODE OF CONDUCT:

Contractor confirms to have gone through the Policy of BRPL on legal and ethical code required to be followed by contractor encapsulated in the "Vendor Code of Conduct" displayed on the official website of BRPL (www.bsesdelhi.com) also, which shall be treated as a part of the contract.

Contractor undertakes that he shall adhere to the Vendor code of Conduct and also agrees that any violation of the Vendor Code of Conduct shall be treated as breach of the contract.



BSES Rajdhani Power Limited

In event of any such breach, irrespective of whether it causes any loss/damage, company (BRPL) shall have the right to recover loss/damage from Contractor.

The Contractor hereby indemnifies and agrees to keep indemnified the company (BRPL) against any claim/litigation arising out of any violation of Vendor Code of Conduct by the Contractor or its officers, agents & representatives etc.

20. ECONOMIC LIMITS:

The net repairing cost of individual transformer shall be within the Economic Limit decided by BSES. It shall be at BSES's discretion to accept/ reject the transformer for repairing based on the provisional estimate submitted the vendor. Economic limit shall be decided after rate finalization.

21. CREDITS:

The Scrap material shall be retained by the contractor and the credit towards the same shall be given to BRPL for Power Transformer. The Rate of Scrap material shall be as decided through tender. The rates shall be inclusive of all applicable taxes & duties. The credit against scrap shall be adjusted in the invoices to be raised.

(B) SERVICE PART:

1. Definition:

The following terms & expressions as used in this order shall have the meaning defined and interpreted here under:

1.1 Company: The terms Company shall mean BSES Rajdhani Power Limited having its office at BSES Bhawan, Nehru Place, New Delhi 110 019 and shall include its authorized representatives, agents, successors and assigns.

1.2 Contractor: contractor shall mean the successful Tendered / vendor to whom the contract has been awarded

1.3 Rates: The terms Rates shall mean the rate as mentioned for the work under this work order and payable to the Contractor for the full and proper performance of the jobs covered under this work order.

1.4 Order Specification: The terms Order Specification shall mean the Technical specification of the work as agreed by you and description of Work as detailed all such particulars mentioned directly/referred to or implied as such in the order.

1.5 Engineer In charge: The terms Engineer In charge shall mean the Company's nominated representative for the purpose of all the works being executed by the Contractor in relation to this work Order.

1.6 Inspector: The terms Inspector shall mean the Company's nominated representative for the purpose of carrying out the Inspection for the works being executed by the Contractor in relation to this work Order.

2. LANGUAGE AND MEASUREMENT:

The order issued to the contractor by the company and all correspondence and documents relating to the order placed on the Contractor shall be written in English language.

Metric System shall be followed for all dimension, units etc.

3. SCOPE OF WORK:

The scope of work to be carried out by you shall be work required for repairing, painting and freight charges of the damaged of power trf. Of following ratings:

1. 1 no. 20 MVA 66/11 KV, Sr.no. 27150 and GEC make power trf lying at G-1 Grid at BRPL.
2. 1 no. 20 MVA 66/11 KV, Sr.no. 2009602 and BHEL make power trf lying at Nangloi Grid at BRPL.

All the manpower, tools and tackles, are included in your scope of work.

Contractor shall be responsible for to and fro transportation, transit insurance cover, Safe loading, unloading and dragging (if required) within cost of transportation rates.

Necessary road permit required for entry and exit of material in respective states is entirely the responsibility of the contractor.

In case of any failure of transformer within guarantee period, the contractor shall carry out the repair free of cost.

The repaired Power Transformer supplied by you shall be ready to energize.

4. RATES:

The item wise rates for above Scope of work are as mentioned in this contract. The rates shall be firm for the entire duration of work carried out by the contractor under the order and are not subject to escalation for any reason whatsoever.

All the rates applicable for repairing work shall be as per agreed rates schedule. The quantity or repairing work shall be as signed off by our Inspectors.

5. TAX & DUTIES:

- (i) Prices shall be inclusive of all taxes and duties including labour cess (except GST). However, Income Tax(TDS) as per applicable rate in accordance with Income Tax Act will be deducted from contractor's bills.
- (ii) GST at actual shall be paid extra on submission of GST Registration and self-declaration on Contractor's letter head stating that you have deposited/or will deposit the Tax as per the applicable GST laws. Contractor shall furnish its GST registration number.
- (iii) Any statutory variations i.e. increase/decrease in Taxes / Duties introduced by central Govt. / State Govt. shall be reimbursed/recovered to/from Contractor against documentary evidence and proof.
- (iv) As Per Notification No. 39/2021 # Central Tax dated 21st December, 2021 w.e.f 01/01/2022 registered person (ie, Recipient/Purchaser) can avail tax credit on those invoices only which have been reflected in GSTR 2A or GSTR2B (it means 100%

- matching of invoice is required). Also, GST has to be deposited by Supplier/Contractor by filing of GSTR- 1 and GSTR-3B.
- (v) In view of above, if the same is not complied with by the supplier/Contractor and the Recipient/Purchaser is not in position to avail / utilize Input Tax Credit due to non-compliance or non-filing of GSTR-1 and GSTR-3B for the month/quarter (as applicable) in which the supply was made, then Recipient/Purchaser has right to hold 100% GST amount from next payment due of the subsequent month till the time default is not cured.
- (vi) For releasing of the payment kept on hold on account of non-compliance of GST Act, supplier/Contractor shall submit payment proof i.e GST Portal screenshot reflecting name of Recipient/Purchaser along with GSTR-1 and GSTR-3B for month/quarter (as applicable) in which the same has been discharged. Payment shall not be released, till the time necessary proof showing the discharge of GST liabilities by the contractors for the period in default are submitted to the Company.
- (vii) Further, the recipient/purchaser shall also be entitled to recover any financial loss suffered by the Company (including tax, interest, penalty and lapse of input credit) due to non-compliance or non-filing of GSTR-1 and GSTR-3B by the supplier/Contractor.
- (viii) In case where delivery of goods is being made on FOR site basis, the Supplier/Contractor is responsible to comply with rules applicable for E-way bill. Any violation in provision of E-way Bill will attract penalty and seizure of Transit Material. Any Penalty and Pre-Deposit due to violation of rules/provision shall be paid and borne by Supplier/Contractor. Also, Supplier/Contractor is responsible to get the goods released from the concerned authority. Delay in supply due to seizure of goods shall attract liquidated damages as per Order / Agreement provisions.

6. TERMS OF PAYMENT:

100% payment shall be made to you within 30 days of receipt of repaired Transformer at our stores/ Site and on submission of your Bill along with following documents:

- i) Copy of Work Order.
- ii) J.V.R. Copy.
- iii) MDCC Copy.
- iv) GRN/MRN.
- v) Documents showing compliance of statutory requirements as applicable.

7. RISK AND COST:

The Company at his option will be entitled to terminate the contract and to carry out work from else where at the risk and cost of the Contractor either the whole or any part which the Contractor has failed to deliver or dispatch within the time stipulated as F.O.R site or if the same, where not available, the best and the nearest available substitute there from the Contractor shall be liable for any loss which the Company may sustain by reason of such risk purchases in addition to L.D at the rate mentioned above.

8 INDEMNITY BOND:

The Contractor shall protect, indemnify and save harmless the Company, its successors, assigns, customers and users of its products, against all liability, including costs, expenses, claims suits or proceedings at law, growing out of or, in connection, with any patent infringement (including process patents, if any), or violation of any license with respect thereto, by reason by the manufacture and/or sale by, or on behalf of the supplier of the plant or any part thereof in India for the purpose for which it is furnished, or the sale by the Company its successors and assigns of products made, manufactured, fabricated, processed or produced with the said plant or any part thereof in India for the purpose for which it is furnished and shall defend or settle at the supplier's own expense, any such claims, suits or proceedings.

9. ARBITRATION:

To the best of their ability, the parties hereto shall endeavor to resolve amicably between themselves all disputes arising in connection with the proposed Agreement. If the same remain unresolved, within fifteen (15) days of the matter being raised by either party, either party may refer the dispute for settlement by arbitration. The arbitration to be undertaken by a sole arbitrator to be appointed by the company. The decision of the arbitrator is final and binding upon both the parties. The arbitration proceeding shall be conducted in accordance with the provisions of the Indian Arbitration & Conciliation Act, 1996 and the venue of such arbitration shall be New Delhi only.

10. FORCE MAJEURE:

10.1 General:

An “Event of Force Majeure” shall mean any event or circumstance not within the reasonable control, of the Party affected, but only if and to the extent that:

Such event or circumstance, despite the exercise of reasonable diligence, could not have been prevented, avoided or reasonably foreseen by such Party;

Such event or circumstance materially and adversely affects the ability of the affected Party to perform its obligations under this Contract, and the affected Party has taken all reasonable precautions, due care and reasonable alternative measures in order to prevent or avoid the effect of such event on the affected party's ability to perform its obligations under this Contract and to mitigate the consequences thereof. For the avoidance of doubt, if such event or circumstance would not have materially and adversely affected the performance of the affected party had such affected party followed good industry practice, such event or circumstance shall not constitute force majeure.

Such event is not the direct or indirect result of the failure of such Party to perform any of its obligations under this Contract; and Such Party has given the other Party prompt notice describing such events, the effect thereof and the actions being taken in order to comply with Article 14.1

10.2 Specific Events of Force Majeure:

Subject to the provisions of Article 14.1, Events of Force Majeure shall include only the following to the extent that they or their consequences satisfy the above requirements:

The following events and circumstances:

Effect of any natural element or other acts of God, including but not limited to storm, flood, earthquake, lightning, cyclone, landslides or other natural disasters, and

Explosions or fires Public disorder, insurrection, ebllion, sabotage, riots or violent demonstrations of a local character; Declaration of the Site as war zone.

Any order, regulation, directive, requirement from any Governmental, legislative, executive or judicial authority.

10.3 Notice of Events of Force Majeure

If a force majeure event prevents a party from performing any obligations under the Contract in part or in full, that party shall :

Immediately notify the other party in writing of the force majeure events within 2 working days of the occurrence of the force majeure event

Be entitled to suspend performance of the obligation under the Contract which is affected by force majeure event for the duration of the force majeure event

Use all reasonable efforts to resume full performance of the obligation as soon as practicable

Keep the other party informed of all such efforts to resume full performance of the obligation on a regular basis

Provide prompt notice of the resumption of full performance or obligation to the other party.

10.4 Mitigation of events of force majeure:

The Contractor shall:

- (i) Make all reasonable efforts to prevent and reduce to a minimum and mitigate the effect of any delay occasioned by an Event of Force Majeure, including applying other ways in which to perform the Contract;
- (ii) Use its best efforts to ensure resumption of normal performance after the termination of any Event of Force Majeure and shall perform its obligations to the maximum extent practicable as agreed between the Parties; and
- (iii) Keep the Company informed at regular intervals of the circumstances concerning the event of Force Majeure, with best estimates as to its likely continuation and what measures or contingency planning it is taking to mitigate and or terminate the Event of Force Majeure.

10.5 Burden of proof:

In the event that the Parties are unable in good faith to agree that a Force Majeure event has occurred to an affected party, the parties shall resolve their dispute in accordance with the provisions of this Contract. The burden of proof as to whether or not a force majeure event has occurred shall be upon the party claiming that the force majeure event has occurred and that it is the affected party.

10.6 Terminations for certain events of force majeure:

If any obligation of any Party under the Contract is or is reasonably expected to be delayed or prevented by a Force Majeure event for a continuous period of more than 1 (one) month during the Term of the Contract the Contract shall be terminated at the discretion of the Company and neither Party shall be liable to the other for any consequences arising on account of such termination.

11. SUBLETTING OF WORK ORDER:

CONTRACTOR shall not assign or transfer the whole or any part of this Work Order or any other benefits accruing there from nor shall it subcontract / sublet the whole or any part of the Works.

12. SAFETY CODE:

The Contractor shall ensure adequate safety precautions at site as required under the law of the land to facilitate safe working during the execution of work and shall be entirely responsible for the complete safety of their workmen as well as other workers at site and premises during execution of contract.

The contractor shall observe the safety requirements as laid down in the contract and in case of sub-contract (only after written approval of company), it shall be the responsibility of main contractor that all safety requirements are followed by the employees and staff of the sub-contractor.

The contractor employing two hundred employees or more, including contract workers, shall have a safety co-ordinator in order to ensure the implementation of safety requirements of the contract and a contractor with lesser number of employees, including contract workers, shall nominate one of his employees to act as safety co-ordinator who shall liaise with the safety officer on matters relating to safety and his name shall be displayed on the notice board at a prominent place at the work site.

The contractor shall be responsible for non-compliance of the safety measures, implications, injuries, fatalities and compensation arising out of such situations or incidents.

In case of any accident, the contractor shall immediately submit a statement of the same to the owner and the safety officer, containing the details of the accident, any injury or casualties, extent of properly damage and remedial action taken to prevent recurrence and in addition, the contractor shall submit a monthly statement of the accidents to the owner at the end of each month.

13. SECRECY CLAUSE:

The technical information, drawing and other related documents forming part of order and the information obtained during the course of investigation under this order shall be the Company's exclusive property and shall not be used for any other purpose except for the execution of the order. The technical information drawing, records and other document shall not be copied, transferred, or divulged and/or disclosed to third party in full/part, not misused in any form whatsoever except to the extent for the execution of this order.

This technical information, drawing and other related documents shall be returned to the Company with all approved copies and duplicates including drawing/plans as are prepared

by the Contactor during the executions of this order, if any, immediately after they have been used for agreed purpose.

In the event of any breach of this provision, the contractor shall indemnify the Company against any loss, cost or damage or claim by any party in respect of such breach.

14. ENVIRONMENTAL, HEALTH & SAFETY PLAN

Contractor will make ensure that the Environment, Health & Safety (EHS) requirements are clearly understood and faithfully implemented at all levels at site as per instruction of Company.

Contractors must comply with these requirements:

- a) Comply with all of the elements of the EHS Plan and any regulations applicable to the work
- b) Comply with the procedures provided in the interests of Environment, Health and Safety
- c) Ensure that all of their employees designated to work are properly trained and competent
- d) Ensure that all plant and equipment they bring on to site has been inspected and serviced in accordance with legal requirement and manufacturer's or suppliers' instructions
- e) Make arrangements to ensure that all employees designated to work on or visit the site present them for site induction prior to commencement of work
- f) Provide details of any hazardous substances to be brought onsite
- g) Ensure that a responsible person accompanies any of their visitors to site

All contractors' staff is accountable for the following:

Use the correct tools and equipment for the job and use safety equipment and protective clothing supplied, e.g. helmets, goggles, ear protection, etc. as instructed Keep tools in good condition

Report to the Supervisor any unsafe or unhealthy condition or any defects in plant or equipment

Develop a concern for safety for them and for others Prohibit horseplay not to operate any item of plant unless they have been specifically trained and are authorized to do so.

15. **VENDOR CODE OF CONDUCT:**

Contractor confirms to have gone through the Policy of BRPL on legal and ethical code required to be followed by contractor encapsulated in the "Vendor Code of Conduct" displayed on the official website of BRPL (www.bsesdelhi.com) also, which shall be treated as a part of the contract.

Contractor undertakes that he shall adhere to the Vendor code of Conduct and also agrees that any violation of the Vendor Code of Conduct shall be treated as breach of the contract.

In event of any such breach, irrespective of whether it causes any loss/damage, company (BRPL) shall have the right to recover loss/damage from Contractor.

The Contractor hereby indemnifies and agrees to keep indemnified the company (BRPL) against any claim/litigation arising out of any violation of Vendor Code of Conduct by the Contractor or its officers, agents & representatives etc.

16. **COMPLETION PERIOD:**

The repaired transformer shall be delivered within 4 months for 20 MVA 66/11 KV per Power Transformers from the date of JVR.

17. **ACCEPTANCE:**

Acceptance of this order implies and includes acceptance of all terms and conditions enumerated in this work order in the technical specification and drawings made available to you, detailed scope of work, detailed technical specification & detailed equipment, drawing. Complete scope of work and the Contractors and Company's contractual obligation are strictly limited to the terms set out in the order. No amendments to the concluded order shall be binding unless agreed to in writing for such amendment by both the parties.

However, during the course of the execution of the order if at any time the Company's representative observe and form an opinion that the work under the order is not being performed in accordance with the terms of this work order, the Company reserves its right to cancel this work order forthwith without assigning any reason and the Company will recover all damages including losses occurred due to loss of time from the contractor.

SECTION-IV: BILL OF QUANTITY/ PRICE FORMAT

RATE ANNEXURE- FOR EACH 20 MVA 66/11 KV

(A) SUPPLY PART :					
S.N	Item Description	Unit	Unit Rate without taxes Rs.	GST %	Unit Landed Rate in Rs.
1	HV Copper leg coils complete with insulation	Per kg.			
2	LV Copper leg coils complete with insulation	Per kg.			
3	Fresh Transformer Oil of standard quality as per IS:335	Per ltr.			
4	HV Bushing for 66/11KV Power Transformer(test tap and oil filling and draining port)- Condenser Type	Each			
5	OLTC (Tap Changer) for 66/11 kv Power Transformer	Each			
6	Complete Marshalling Box and cooling control panel without WTI/OTI for 66/11 kv power transformer	Each			
7	HV Bushing Metal Parts for 66/11KV Power Transformer	Per trf.			
8	LV Bushing for 66/11 kv Power Transformer	Per trf.			
9	LV Bushing Metal Part for 66/11 kv Power Transformer	Each			
10	Set of Gaskets for 66/11 kv Power Transformer	Each			
11	Sundry item viz, cover bolts plug, caps screw, washer, insulation Material, arcing horn, air release plug, minor repair of tank required if any aluminums name plate, including wheel and axle Equalizing pipe, MS plate for OLTC chamber and any other covered above but required to complete repair for 66/11 kv Power Transformer	Each			
12	Silica gel Breather with fresh Silica gel	Each			
13	Double Float Buchholz Relay for main tank and OLTC magnetic type	Each			
14	Valve on side of Buchhloz Relay	Each			

15	Magnetic oil level gauge	Each			
16	Radiator	Per kg.			
17	Radiator Valve (Butterfly Valve)	Each			
18	Radiator/Filter Drain Valve	Each			
19	Conservator oil Drain valve	Each			
20	Top & bottom Sampling valve	Each			
21	Top and Bottom oil filter valve for main tank	Each			
22	Middle oil sampling valve	Each			
23	OLTC Conservator oil Drain valve	Each			
24	Valve between OLTC and Conservator	Each			
25	Radiator air release plug	Each			
26	Pressure Release valve	Each			
27	Air release plug	Each			
28	Conservator oil filling cap	Each			
29	Cock for releasing relays gases	Each			
30	Cooling Fan	Each			
31	Fan Stand	Each			
32	Oil Surge Relay magnetic type	Each			
33	Sudden Pressure Valve relief(S.P.R/ RPRR)	Each			
34	LV & HV WTI CT	Each			
35	NCT(Neutral CT)	Each			
36	WTI with 4 switches, digital type with repeaters with PT 100 sensors and current converter unit	Each			
37	OTI with 4 switches, digital type with repeaters with PT 100 sensors and current converter unit	Each			
38	Aircell	Each			
39	Marshalling box stand	Each			
40	Knife switch arrangement	Each			
41	Outdoor type NCT outdoor type 1600/1-1A 5P20 and PS Class	Each			
(B)	LABOUR PART:				
S.N	Item Description	Unit			

1	Labour charges for complete repairs of transformer at bidder/repairer's work for 66/11KV Power Trf.	Per Trf.			
2	Painting as per specifications For 66/11KV Power Trf.	Per Trf.			
3	Loading at site/ stores, to and fro transportation to bidder/repairer's factory and back to Grid/Site, unloading at Grid/Site Including insurance cover For 66/11KV Power Trf. and dragging(if required)	Per Trf.			
4	Repairing /Servicing of OLTC	Per Trf.			
5	Repairing /Servicing of Marshalling box	Per Trf.			
6	Testing of Repaired Transformer as per Technical Specification	Per Trf.			
(C)	CREDITS:				
S.N	Item Description	Unit	Unit Rate in Rs.	Taxes(GS T/TCS)	Unit Landed Rate in Rs.
1	Scrap of old copper leg coils with oil soaked paper insulation	Per kg.			
2	Scrap transformer Oil	Per ltr.			
3	Scrap Radiators/ any Iron parts	Per kg.			
4	Scrap HV/LV bushing Metal parts(Brass)	Per kg.			
5	Scrap HV/LV bushing Metal parts(Copper)	Per kg.			
6	Scrap OLTC	Each			

SECTION-V

TECHNICAL SPECIFICATIONS


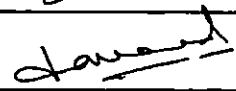
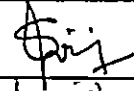
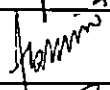
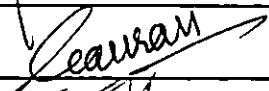
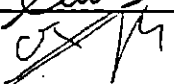
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Specification No: BSES-TS-131-RPTR-RO, (Page 1 to 40)



Technical Specification for Repairing and Servicing of Power Transformer

Specification no – BSES-TS-131-RPTR-R0

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Prepared by	Jeena Borana	
	Javed Ahmed	
Reviewed by	Srinivas Gopu	
	Abhinav Srivastava	
Approved by	Gaurav Sharma	
	Gopal Nariya	

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1.0 SCOPE

For Scope of Work, refer Annexure A

2.0 CODES & STANDARDS

Materials, equipment and methods used in the Repairing and Servicing of Power Transformer shall conform to the latest edition of following standards –

Indian Standards

IS : 335	Insulating oil
IS : 1271	Thermal evaluation and classification of electrical insulation
IS : 60137	Bushing for alternating voltage above 1000V
IS : 16227	Current transformers
IS : 3347	Dimensions for porcelain transformer bushing
IS : 3637	Gas operated relays
IS : 3639	Fitting and accessories for power transformers
IS : 4201	Application guide for CT's
IS : 2026-7	Guide for loading of oil immersed transformers
IS : 8478	Application guide for On load tap changer
IS : 8468	On load tap changer
IS 10028	Code of practice for selection, installation & maintenance of transformers
IS : 60947	LV switchgear & controlgear Part-1
IS : 2026	Power Transformers
IS : 5561	Electrical power connectors
IS : 6272	Specification for Industrial cooling fans
IS : 1866	Code of practice for electrical maintenance and supervision of mineral insulating oil in the equipment
IS : 3043	Code of practice for earthing
IS : 6792	Method for determination of electrical strength of insulating oils.
IS: 12676	OIP Paper insulated condenser bushing dimension and requirements
	Indian Electricity Rules
	Indian electricity act
	CBIP manual

3.0 MAJOR DESIGN CRITERIA & PARAMETERS

3.1	Voltage variation on supply side	+ / - 10%
3.2	Frequency variation on supply side	+ / - 5%
3.3	Transient condition	-20% or +10% combined variation of voltage and frequency
3.4	Service condition	Refer annexure B

4.0 TERMS AND CONDITIONS FOR SERVICING OF POWER TRANSFORMER

4.1	General Terms and Conditions	<ul style="list-style-type: none">i) The vendor shall have to lift the transformer from the substation after getting consent and written approval from owner. A complete list of material along with handing Over/Taking over Performa as per Annexure-D shall be handed over to the vendor.ii) Before lifting of transformers, the vendor to check and ensure that core coil assembly is fitted with the transformers. During Joint verification at vendors work if core/coil found missing the vendor shall repair the same on his cost and risk by giving credit of scrap of Copper/core approximate nearest/equal to quantity of the same make transformer core/coil.iii) Vendor has to give the inspection call before opening of the transformer at his works and the transformer shall be opened in presence of the representative of owner. The joint verification of the transformer shall be done and report for repairing/servicing shall be prepared as per formats attached as Annexure-E. Based on the above report, vendor has to take the approval of the work before proceeding with the repairing/servicing work.
4.2	On site inspection of Transformer	<ul style="list-style-type: none">- Physical inspection of transformer at site/sub-station shall be checked for the present condition of the transformer and all components /accessories as a bench mark for preliminary assessment of extent of servicing/repair required and preparation of handing over/taking over document jointly with the Owner as per Annexure-D.- The owner shall carryout field test as per clause 8.0 and furnish Field Test Report of transformer along with brief history and last DGA report to vendor as a benchmark document.

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER

4.3	Field check before lifting of transformer	<p>Bidder shall carryout following checks on the transformer including accessories jointly with Owner's representative at site and record the observations in handing over/taking over document as per Annexure-D</p> <ul style="list-style-type: none">a) Check tank, radiators, Conservator and bushing for oil leaks. If oil level has fallen down below specified level (at site temp.), the cause of leakage should be determined. Check for leaks on all joints, valves, connections etc. shall be carried out.b) Check HV & LV bushing surface for damage, signs of chipping, dirt, oil films etcc) Check condition of relief vents.d) Check functioning of cooling arrangement.e) Check calibration of local & remote temperature indicators.f) Check operation of buchholz relay and magnetic oil level gauge.g) Check functioning of tap changer both local/remote as well as automatic/ manual control. Check motors and it's controls.h) Check that all control, alarm, power supply circuit are in order, switches are functioning and fuses in the circuit are well placed and of proper rating.i) Check the condition of Painting.j) Check the presence of nameplate, caution plate etc.
4.4	Transportation of transformer	<p>Following shall be in scope of the vendor :-</p> <ul style="list-style-type: none">i) Lifting, dragging, loading and transportation of the transformer from the site to vendor's works and unloading, handing of transformer in vendor's works.ii) Transportation of new Oil (to be supplied by the owner as a free issue item in case of servicing) from owner's store to vendor works.iii) Complete transit insurance.

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER

4.5	Servicing of Transformer at Vendor's work	<p>i) Un-tanking the transformer at vendor's works in presence of owner's representative. During un-tanking, inspection and testing at vendor's works shall be carried out. This will help to assess exact quantum and nature of servicing/repair involved. Preparation of joint verification report highlighting condition of the transformer including it's core and winding and nature of replacement /repairing of components to be carried out.</p> <p>ii) Transportation of new Oil (to be supplied by the owner as a free issue item in case of servicing) from owner's store to vendor works.</p> <p>iii) Servicing of the transformer including repair/replacement of parts/accessories as per approval of the owner.</p> <p>iv) Repairing of core and change of winding is excluded from the scope of servicing of Transformer.</p>
4.6		<p>i) After servicing, the Power Transformer shall be deemed to be fully ready for charging and will be fitted with all necessary components and accessories, which are necessary for efficient performance and trouble free operation of transformer under various operating and atmospheric conditions.</p> <p>ii) Loading and transformation of the transformer after servicing from the vendor's works and finally unloading the transformer at sub-station site/store as per direction of the owner.</p> <p>iii) Dismantling of transformer before dispatch from site and Erection, Testing and commissioning of the refurbished transformer are excluded from the scope of the vendor. However, the vendor shall depute their representative during testing and commissioning of the transformer at site with no additional financial implication to the Owner.</p>
4.7	Major checks during Un-tanking of the transformer	Transformer should be un-tanked in presence of owner for the following checks and Joint Verification Report shall be prepared.
4.8	Core and Coil	<p>i) While un-tanking, looseness in laminations, core bolts, insulating block shall be checked. The top yoke shall be checked for any kind of weld and burnt marking.</p> <p>ii) If any bolt/nut is found loose that should be tightened. Moreover, if there is any slacking of windings, Tie-rod/Coil Clamping Screws shall also be tightened.</p>
4.9	Condition of Coil	i) Visual inspection regarding the colour of the insulation paper. If it has oxidized fully and the colour has

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER

		<p>become black or the paper has become brittle, respective winding shall be replaced by new one and repairing shall be done as per clause 5.0 of this specification.</p> <ul style="list-style-type: none"> ii) For the paper that appears in order, the small piece shall be checked for degree of polymerization for assessing the life of the paper. iii) The complete winding shall be given hot oil bath. Complete coil to be washed properly with clean oil under pressure to remove sludge and other accumulations, which prevent proper circulation of oil. iv) All spacers shall be checked properly for any deformation. If any spacer is found displaced, the same shall be put at the proper place by loosening the top bolt. If required the press board should be changed. v) The entire paper of the tie rod shall be removed and new paper wrapped. vi) Proper drying of all the replaced papers should be ensured while carrying out the job. vii) The connection between the windings and bushing shall be checked for healthiness and if required shall be attended. viii) The complete core coil shall be kept in the vacuum oven and shall be taken out only when it is completely dehydrated. The I.R. value should be more than 2000MΩ and Polarisation index $(PI=IR_{(10 \text{ min})}/IR_{(1 \text{ min})})$ factor shall be more than 1.5 respectively.
4.10	OLTC	<ul style="list-style-type: none"> i) Complete cleaning of the OLTC contacts and pitting, if any, shall be properly done. After cleaning contact resistance to be checked to ensure the proper cleaning of the contacts. ii) Papers of all the tapping leads is to be changed with the good quality crape papers , the test certificate and sources of the papers shall be scrutinized by the owner. iii) All lugs /crimping at the OLTC taps shall be checked and re-crimped if required. iv) Separation plate/Phase Barrier plate to be checked for any sort of mechanical damage and if found damaged shall be replaced after taking approval from the owner. v) Moving contacts of OLTC will be checked properly for wear and tear and if required the same shall be changed.

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER

		<ul style="list-style-type: none">vi) Insulation rods to be checked for its proper mechanical and insulating strength by applying high voltage across OLTC.vii) Complete wiring of OLTC both in remote and manual mode to be checked.viii) Vendor has to submit the list of the spares required for OLTC for the review of the owner.ix) If required, wiring of OLTC is to be carried out by reputed make FRLS cable and report for owner will verify the same.x) Manual operating handle, if not available, shall be provided.xi) Oil surge relay of OLTC to be checked for proper functioning and if required shall be changed.
4.11	Transformer tank	<ul style="list-style-type: none">i) For complete tank cleaning and removal of the sludge and carbon, hot oil cleaning shall be carried out. For flushing out the sludge, hot oil cleaning to continue till sludge is completely removed.ii) All carbon shall be removed.iii) Painting of the entire outer surface and inner surface of the tank and all other accessories shall be carried out.
4.12	Radiators	<ul style="list-style-type: none">i) For complete cleaning and removal of the sludge and carbon from the radiator, hot oil cleaning shall be carried out. For flushing out the sludge from the radiator, hot oil cleaning to continue till sludge is completely removed.ii) Air pressure test as per relevant standard shall be carried out for the radiators. Damaged radiator fins shall be repaired/replaced.iii) Painting of the entire outer surface of the radiators shall be carried out.
4.13	Conservator and air cell	<ul style="list-style-type: none">i) Conservator shall be cleaned by hot oil cleaningii) Leakage in the air cell shall be checked. If required, the air cell shall be replaced with approval from the Owner.iii) Painting of the entire outer surface of the conservator shall be carried out.
4.14	Bushing	<ul style="list-style-type: none">i) All types of bushing shall be checked for hair crack and damages and it shall be replaced wherever required. In case bushing-having damage to any skirt, it should be replaced by new one. The bushings shall conform to the latest IS 3347 & IS 12676ii) Before using the old bushing it should be subjected to high voltage at 90% of the voltage and if the bushing does not withstand the test, it shall be replaced.iii) In case the bushing CT has been provided for WTI, the

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		<p>ratio and proper functioning is to be checked.</p> <p>iv) Tan Delta and capacitive leakage test shall be carried out for capacitive type bushings.</p> <p>v) For new bushings minimum creepage distance shall be 31 mm/kV</p> <p>vi) For 66kV OIP bushing of approved make and 33kV and 11kV porcelain bushing shall be used</p>
4.15	Support insulator and busbars	<p>i) Damaged support insulator shall be replaced with the porcelain glazed insulator of the creepage distance not less than 31 mm/ KV. The insulator shall be reputed make and subjected to the approval of the Owner.</p> <p>ii) If required, busbars shall be provided for connecting the three/four runs of 1CX1000 sq.mm., 11KV XLPE cable.</p> <p>iii) Provision for screen earthing of the cable shall be provided.</p>
4.16	Axles and wheels	Proper functionality of flanged bi-directional wheels and axles shall be ensured.
4.17	Silica gel breather	<p>i) Breather shall be checked and it shall be ensured that the breather is leak proof and it breaths through the capillary only. In case the breather is not serviceable, it shall be replaced.</p> <p>ii) If the old breather is retained, Silica gel and oil in sealing cup shall be changed.</p>
4.18	WTI, OTI and Marshalling Box	<p>i) WTI & OTI should be properly calibrated for indication of the correct temperature and initiating the alarm and trip contacts. In case, WTI and OTI are not serviceable, the same shall be replaced</p> <p>ii) Functioning of RTD's of oil and winding temperature indicators, if provided, shall be checked.</p> <p>iii) The Complete wiring, NO & NC contacts are to be checked and if required rewiring of the cubicle should be done. In case anything is found burnt/damaged, the same shall be repaired with the guarantee of one year.</p> <p>iv) All cabling as required is to be done by FRLS cable. All contactors shall be of approved vendor.</p> <p>v) All door and flange gasket neoprene or EPDM should be changed for proper environment protection.</p> <p>vi) Space heater and cubicle light shall be checked for proper operation.</p>
4.19	Remote indications	<p>i) Remote WTI, OTI & TPI should be properly calibrated. In case, these are not serviceable, the same shall be replaced</p> <p>ii) Proper functioning of all alarm to be checked and corrected as required.</p> <p>iii) Cooler control and fan failure scheme shall be checked</p>

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		<p>and necessary correction shall be made as required.</p> <p>iv) The Complete wiring and NO & NC contacts are to be checked and if required rewiring of the cubicle should be done. In case anything is found burnt/damaged the same shall be repaired with the guarantee of one year.</p> <p>v) All cabling as required is to be done by FRLS cable. All contactor shall be of approved make.</p> <p>vi) All door and flange gasket neoprene or EPDM should be changed for proper environment protection.</p> <p>vii) Space heater and cubicle light shall be checked for proper operation.</p>
4.20	General Work	<p>i) Accessories, which are not serviceable, shall be replaced. Before replacement joint verification report shall be prepared and approval shall be obtained from the Owner.</p> <p>ii) In case of OLTC, servicing/repairing detailed report from OEM to be submitted.</p> <p>iii) All gaskets shall be changed by new ones. In addition, the vendor shall provide a complete set of spare gaskets for all joints. The gasket shall be type-B conforming to IS-4253 (Part-II)/1980 and any amendments thereof.</p> <p>iv) All nuts & bolts shall be replaced by new ones. Steel bolts and nuts exposed to atmosphere shall be cadmium plated or zinc plated. On outdoor equipments all bolts, nuts and washers in contacts with non-ferrous parts, which may carry current, shall be phosphor-bronze, where transfer of current is through the bolts.</p> <p>v) All fuses shall be replaced by new ones.</p> <p>vi) Checking for the functionality of all protective relaying i.e., Buchholz, OSR, PRV, PRD, MOG etc. for proper functioning. If required these shall be changed after taking approval from owner.</p>
4.21	Painting	<p>i) Tank and other metallic parts shall be thoroughly cleaned with caustic soda and there after with emery paper to remove oil, original old paint and rust (if any) to ensure good bond between metal and Paint. After above process, Tank internals shall be cleaned by Shot/Sand blasting method.</p> <p>ii) One coat of high quality and heat resistant Epoxy based rust resisting primer as per IS:2074 with latest amendments. shall be applied on the complete outer surface of tank, conservator, radiator and other metal parts before applying the two coats of battleship grey</p>

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		<p>shade 692 (IS 5) polyurethane paint. All paints shall be oil and weather resistant type. The total paint thickness shall not be less than 80 micron with the glossy finish however vendor should take the approval of final paint shade from owner.</p> <p>iii) The internal surfaces of transformer shall be painted by two coats of bright yellow heat resistant & oil resistant paint. Paint shall neither dissolve nor react in hot transformer oil.</p> <p>iv) Each earthing point to be checked and it should be free from the paint</p>
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5.0 TERMS AND CONDITIONS FOR REPAIRING OF POWER TRANSFORMER

	All the scope of work mentioned hereunder is included in the scope of repairing in addition to the work under clause 4.0 for servicing of transformer.	
5.1	Scope of work	<p>Following additional scope of work is also included in the scope of work for repairing of transformer</p> <p>i) Repair/replacement of damaged core identified during Joint Verification Report and approved by the owner.</p> <p>ii) Replacement of winding as per approval of the owner.</p> <p>Before re-installing the core and coil into the tank after repair, stage inspection shall be carried out in presence of Owner's representative and stage inspection report shall be prepared.</p>

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5.2	General terms and condition	<ul style="list-style-type: none">i) Vendor has to furnish the list of all the spares required for servicing of the transformer. All the accessories or parts being used for replacement shall be new and of approved make in line with the list attached as clause 6.0 The vendor has to submit the test report of these components at the time of inspection.ii) All the works as listed under clause no.4.0 for servicing and both of the clause no.4.0 & 5.0 for repairing, have to be completed before offering final inspection of the transformer.iii) Before re-installing the core and coil into the tank, stage inspection shall be carried out in presence of Owner's representative. The joint stage inspection report shall be prepared as per formats attached as Annexure-E. Standard quality plan for Stage inspection is attached as Annexure-F .iv) In case of transformer having no name plate the dimension of tank, radiator & conservator to be measured at the time of JVR and submitted for technical approval for quantity of oil.v) The Vendor may be allowed to dispose all detained material after approval of estimate for repair from the Owner.vi) In case of replacement of winding, the Vendor shall retain the one coil of HT & LT for physical verification till the stage inspection and estimate approval.vii) Any deviation with respect to the scope of work and specification should be clearly brought out by the vendor. In case of no deviation, it will be deemed that vendor has agreed on all the work as mentioned in the specification.viii) Vendor shall offer inspection call to owner after completion of servicing work for which at least 1-week advance notice shall be given. Test will be performed in presence of owner's representative. Standard quality plan for final inspection to be approved by BSES
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5.3	Core and Coil	<ul style="list-style-type: none"> i If core lamination is found to be damaged, the same shall be replaced and the weight of the damaged core shall be recorded in JVR. ii In case of rewinding the following shall be followed: iii The conductors shall be of electrolytic copper. Current density in winding should not be more than 2.5 A/sq mm. For any deviation prior approval of the owner is required. iv Temperature rise test shall be carried out after reassembly of the transformer. v All insulation materials shall be of quality appropriate to the insulation classes of respective transformer and shall conform to IS-2026 and amendments thereof. <ul style="list-style-type: none"> a. After removing the top ring and core if sludge is found in between the windings, the HT windings shall be taken out and LT windings shall be cleaned properly with hot oil before putting it in the oven. b. All top rings to be changed by new ones. c. Binding between the winding layers to be checked and if loosened proper care shall be taken. d. If there is any slight deformation in the coil the same shall be corrected.
5.4	Transformer oil	Vendor shall replace transformer oil of approved make as per Annexure-G.

6.0 FITTINGS AND ACCESSORIES ON POWER TRANSFORMER

6.1	Rating and Diagram Plate	Required (in case of Repair only)
6.2	Material	Anodized aluminum 16SWG
6.3	Background	SATIN SILVER
6.4	Letters, diagram & border	Black
6.5	Process	Etching
6.6	Name plate details	<p>Following details shall be provided on rating & diagram plate as a minimum</p> <ul style="list-style-type: none"> i) Type/kind of transformer with winding material. ii) Standard to which it is repaired. iii) Name of vendor who repaired the transformer. iv) Transformer new serial no. v) Month & year of repair. vi) Rated frequency. vii) Rated voltages in KV. viii) Number of phases.

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		<ul style="list-style-type: none"> ix) Rated power in KVA x) Type of cooling. xi) Rated current in Ampere. xii) Vector group symbol. xiii) 1.2/50μ sec wave impulse voltage withstand level in kv. xiv) Power frequency withstand voltage in KV. xv) Impedance voltage at rated current & freq. In % at principal, minimum, maximum tap. xvi) Load loss at rated current. xvii) No-load loss at rated voltage & frequency. xviii) Auxiliary loss if applicable. xix) Continuous ambient temp. at which ratings apply. xx) Top oil and winding temp. rise at rated load and ambient temp. xxi) Winding connection diagram. xxii) Transport weight of transformer. xxiii) Weight of core and frame. xxiv) Weight of winding. xxv) Weight of core and winding. xxvi) Weight of tank & fitting. xxvii) Total weight. xxviii) Volume of oil. xxix) Weight of oil. xxx) NCT, WCT details. xxxii) Tapping details. xxxiii) Name of Owner. xxxiv) PO no. and date. xxxv) Guarantee period.
6.7	Instruction plate for OLTC	Required.
6.8	Oil filling instruction	Required.
6.9	Valve schedule instruction	Required.

7.0 APPROVED MAKE OF COMPONENTS

7.1	Core Lamination	Nippon/JFE/Posco
7.2	Insulating Material (press board, kraft paper, press paper)	Sumitomo corporation, Japan Weidmann, Switzerland Raman Boards, Thandavapura Munkajo Paper, AB Sweden Senepathy Whiteley, Bangalore
7.3	Copper / Aluminium (rod)	Sterlite industries, Lonavala Birla Copper, Bharuch

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		Hindustan Copper, New Delhi Bharat Alum. Co., New delhi National Alum. Co. , new delhi
7.4	Transformer Oil	Apar, Mumbai Savita Chemicals, Mumbai Rajpetro
7.5	Gasket	Nu-Cork products, Gurgaon Talbro, Faridabad Cortica Mfg. Chemical Gujarat Cork, Valaad Everest Electric
7.6	Condenser Bushing	Alstom BHEL, Bhopal CGL, Nashik ABB
7.7	Porcelain Bushing	CJI
7.8	Buchholz Relay	Proyog / ATVUS
7.9	Temperature Indicator	Precimeasure / Perfect Controls
7.10	OLTC	CTR, Pune
7.11	MOG	Sukrut Udyog, Pune Atvus Industries, Kolkata
7.12	Pressure relief valve	Sukrut/Qualitrol
7.13	Oil Surge relay	Sukrut Udyog, Pune Atvus Industries, Kolkata
7.14	Repeater for WTI/OTI	Accord/Precimeasure
7.15	Temperature Scanner	Accord/Precimeasure
7.16	Neutral CT	Pragati / ECS / KAPPA
7.17	WCT	Pragati / ECS / KAPPA
7.18	Switch	L&T/ Siemens/Anchor
7.19	HRC Fuse links and base	Siemens/L&T/GE
7.20	AC contactor & over load relay	L&T/Siemens/Schneider
7.21	Terminals	Connectwell / elmex
7.22	Push Button / Actuator	L&T / Siemens
7.23	Thermostat	Velco/Girish
7.24	Heater	Velco/Girish
7.25	Selector Switch	Siemens / Kaycee
7.26	Tap position indicator	Accord
7.27	Digital tap change counter	Selectron
7.28	LED indication lamp	MIMIC/Siemens/Binay
7.29	Lugs/Glands	Jainson/Dowells/Comet
7.30	Radiators	CTR/Hi-Tech Radiators/Tarang Engineers
7.31	Sudden Pressure Relay	Sukrut / Qualitrol
7.32	Aircell	Sukrut(Unirub)/Pronol / Rubber Product

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7.33	Auxiliary Relays	ABB/Siemens/Schneider/L&T/GE
7.34	Timers	L&T /Siemens

Note – Any other make of component to be approved by purchaser

8.0 QUALITY ASSURANCE

8.1	Vendor quality plan	To be submitted for purchaser approval.
8.2	Inspection point	To be mutually identified and agreed in quality plan.

9.0 PROGRESS REPORTING

9.1	Outline Document	To be submitted for purchaser approval for outline of production, inspection, testing, inspection, packing, dispatch, documentation programme. The vendor shall submit Time schedule for Servicing / repairing of Power Transformer within 5 Days of receipt of Transformer at there works.
9.2	Detailed Progress report	To be submitted to Purchaser once a month containing i) Progress on material procurement ii) Progress on servicing (As applicable) iii) Progress on assembly (As applicable) iv) Progress on internal stage inspection v) Reason for any delay in total programme vi) Details of test failures if any in manufacturing stages.(if applicable) vii) Progress on final box up Constraints / Forward path

10.0 INSPECTION DURING REPAIR

10.1	Inspection and Testing during repair	
10.2	Core	i) Sample testing of core material for checking specific loss, bending properties, magnetization characteristics & thickness. ii) Check on the quality of varish if used on the stampings for a) measurement of thickness & hardness of varish on stampings. b) Solvent resistance test to check that varish

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		<p>does not react in hot oil.</p> <ul style="list-style-type: none"> c) Check overall quality of varnish by sampling to ensure uniform hipping color, no bare spots, no burnt varish layer and no bubbles on varished surface. iii) Check on the amount of burrs. iv) Bow check on stampings. v) Check for the overlapping of stampings. Corners of the sheet are to be apart. vi) Visual & dimensional check during assembly stage. vii) Check on complete core for measurements of iron-loss and check for any hot spot by exciting the core so as to induce the designed value of flux density in the core. viii) Check for inter laminar insulation between core sectors before & after pressing. ix) Visual & dimensional checks for straightness & roundness of core, thickness of limbs & suitability of clamps. x) High voltage test (2KV for one min.) between core and clamps. xi) Certification of all the tests.
10.3	Insulating Materials	<ul style="list-style-type: none"> i) Sample check for physical properties of materials. ii) Check for dielectric strength. i) Visual and dimensional checks. ii) Certification of all tests.
10.4	Windings	<ul style="list-style-type: none"> i) Sample check on winding conductor for mechanical properties & electrical conductivity. ii) Visual & dimensional check on conductor for scratches, dept. mark etc. iii) Sample check on insulating paper for PE value, bursting strength, electric strength. iv) Check for reaction of hot oil on insulating paper. v) Check for bending of the insulating paper on the conductor. vi) Check to ensure that physical condition of all material taken for winding is satisfactory & free of dust. vii) Check for absence of short circuit between

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		parallel strands. viii) Check for brazed joints wherever applicable. ix) Measurement of voltage ratio to be carried out when core/yoke is completely restocked and all connections are ready. x) Certification of all above results.
10.5	Oil	As per Annexure –G & IS 335 (2018) Type II, All test results shall confirm to Annexure-G of specification.

11.0 TESTING OF TRANSFORMER

11.1	Routine tests	Tests shall be carried out in accordance with IS 2026 & IEC-60076
11.2	Test before lifting of transformer by vendor for servicing/repair	<ul style="list-style-type: none"> i) Followings Tests shall be performed before handing over the transformer to the vendor for the servicing. Tests shall be carried out at site by owner and the test results along with brief history of the transformer shall be handed over to the vendor. <ul style="list-style-type: none"> a) Measurement of insulation resistance & polarization index between HV & LV, HV & Earth, LV & Earth (In case the transformer has been kept out of service under DGA failure, no megger testing is necessary) b) Measurement of resistance at all taps. Vector Group and polarity test at principal tap. d) Measurement of Magnetising current at LT voltage at principal tap. e) Magnetic balance test at principal tap f) Single Phase Short Circuit test . g) Ratio test of HV WTI CT, LV WTI CT and neutral CT h) Turns Ratio test i) Test report of oil as per IS 1866-2000 i.e., colour / dirtyness, B.D.V. Resistivity, water content, surface tension, neutralization value, DDA, flashpoint, and Tan-Delta as far as available. j) DGA analysis of oil mainly for hydrogen, methane, ethane, ethylene, acetylene, CO and CO₂ content. k) Furan test

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		<p>Based on the above tests, if it is concluded that transformer is not faulty, the transformer will be given for servicing.</p> <p>ii) If it is concluded that transformer is faulty, the transformer should be segregated for repairs.</p>
<p>11.3</p>	<p>Acceptance test after servicing / repair of Transformer</p>	<p>After servicing/repair all routine tests in accordance with IS: 2026 and IEC60076 shall be carried out on each transformer. The sequence of routine testing shall be as follows-</p> <ul style="list-style-type: none"> i) Measurements of insulation resistance and Polarisation Index. Min value of IR shall be 2000 Mega ohms and min PI value shall be 1.5. ii) Measurements of winding resistance corrected at 75°C and principal tap (HV and LV) and two extreme taps. iii) Vector Group, Ratio test and polarity test iv) Separate sources withstand voltage test (HV & LV) at 75% of original test voltage. v) Measurement of iron losses at 90%, 100% and 110% of rated voltage. vi) Induced voltage withstand test at 75% of original test voltage. vii) Load losses measurement corrected at 75°C at Principal tap and Impedance measurement at principal tap (HV and LV) of the transformer. viii) Regulation corrected at 75°C, unity p.f. and 100% load. ix) Efficiency corrected at 75°C and 100% load. x) Magnetic balance test. xi) Temperature rise test, only in case of rewinding. xii) Lightning impulse test on each transformer, only incase of rewinding. xiii) Measurement of Zero phase sequence impedance xiv) Measurement of noise level xv) Test on on-load tap changer. xvi) All component parts and auxiliary equipment such as oil, bushings, tap changing gear, C.T.s, etc. shall be routine tested as per relevant Indian Standards.

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		<p>High voltage test shall be performed on auxiliary equipment and wiring after complete assembly. Performance testing of relays, WTI, OTI, MOG & PRVs</p> <p>xvii) Oil leakage test on transformer completed with all fittings (without radiator in case of servicing) & filled with oil at pressure equal to weight of oil + 0.7 atmospheric pressure on bottom valve for a period of 12 hours.</p> <p>xviii) Operation of OLTC shall be tested for two complete forward and two complete backward directions at full load current of the transformer.</p> <p>xix) SFRA testing</p> <p>xx) Oil BDV test</p> <p>xxi) Oil sample sealing for complete oil testing from CPRI/ERDA as per Annexure-G</p> <p>xxii) One sample sealing for DGA test (before & after HRT) from CPRI/ERDA</p>
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12.0 PACKING, SHIPPING, HANDLING AND STORAGE

12.0	Packing	
12.1	Packing protection	Against corrosion, dampness, heavy rains, breakage and vibration
12.2	Packing for accessories and spares	Robust wooden non-returnable packing case with all the above protection and identification labels.
12.3	Packing identification label	<p>In each packing case, following details are required:</p> <ul style="list-style-type: none"> i) Individual serial number ii) Purchaser's name iii) PO number (along with SAP item code, if any) & date iv) Equipment Tag no. (if any) v) Destination vi) Manufacturer/Supplier's name vii) Address of manufacturer/supplier's / its agent viii) Description and quantity ix) Country of origin x) Month and year of manufacturing xi) Case measurements xii) Gross and net weights in kilograms xiii) All necessary slinging and stacking

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		instructions.
12.4	Shipping	<p>i) The bidder shall ascertain at an early date and definitely before the commencement of manufacture, any transport limitations such as weights, dimensions, road culverts, overhead lines, free access etc. from the manufacturing plant to the project site; and furnish to the Purchaser confirmation that the proposed packages can be safely transported, as normal or oversize packages, upto the plant site. Any modifications required in the infrastructure and cost thereof in this connection shall be brought to the notice of the Purchaser.</p> <p>ii) The vendor shall be responsible for all transit damage due to improper packing.</p>
12.5	Handling and Storage	Detail handling & storage instruction sheet / manual needs to be furnished before commencement of supply.

13.0 DEVIATIONS

Deviations from this Specification shall be stated in writing with the tender by reference to the Specification clause/GTP/Drawing and a description of the alternative offer. In absence of such a statement, it will be assumed by the Buyer that the Seller complies fully with this specification.

14.0 DRAWING AND DOCUMENTS

Drawing submission shall be as per the matrix given below. All documents/ drawing shall be provided on A3/A4 sheet in box file with separators for each section. PDF shall also be provided of all documents. Deviation sheet and GTP shall be provided in excel sheet. Language of the documents shall be English only. Deficient/ improper document/ drawing submission may liable for rejection.

S.no	Documents to be submitted	With the bid	After Award	
			For Approval	Prior to dispatch
1	Copy of specification along with company seal & signature on each page.	✓		
2	Type test reported similar rated transformer	✓		
3	Detailed reference list of customers	✓		

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S.no	Documents to be submitted	With the bid	After Award	
			For Approval	Prior to dispatch
	already using the serviced/repaired transformer during the last 5 years with particular emphasis on units of similar design and rating.			
4	Details of manufacturers quality assurance standard and programme and ISO 9000 series or equivalent national certification.	✓		
5	Deviations from this specification. Only deviations approved in writing before award of contract shall be accepted.	✓		
6	Details of facilities of the bidder where the transformer is intended to be repaired.	✓		
7	Guaranteed technical particulars		✓	
8	Design details		✓	
9	All Calculations pertaining to winding and core in case of repair.		✓	
10	Vendor list		✓	
11	Detailed dimensional drawing for all components, general arrangement drawing showing detailed component layout and detailed schematic and wiring drawings for all components which are replaced by Vendor.		✓	
12	Terminal arrangement & cable box details etc (as applicable)		✓	
13	Marshalling box and support structure drawing & details of Schematic & wiring drawings		✓	
14	Fan mounting structure drawings		✓	
15	Rating and diagram plate in case of repair		✓	
16	Transport / shipping dimension and weights, space required for handling parts for maintenance		✓	
17	List of makes of all fittings and accessories		✓	
18	Quality assurance program.		✓	

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S.no	Documents to be submitted	With the bid	After Award	
			For Approval	Prior to dispatch
19	Detailed installation and commissioning instructions		✓	
20	Inspection and test reports carried out in manufacturers works			✓
21	Test certificates of all bought out items.			✓
22	Operation and maintenance instructions as well as trouble shooting charts.			✓

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER**ANNEXURE - A SCOPE OF WORK**

Scope shall include transportation, servicing, testing, replacement of accessories and Repairing of Power transformer as per this specification. This specification covers assessment, estimation, complete repairing and servicing, testing and safe transportation to and from of Power Transformer damaged/failed transformers laying at various stores/sites of BSES.

Sr. No	Description	Scope of Work
1.0	Testing of transformer before handing over (at owners site)	NO
1.1	Testing of transformer at site after repair / servicing	NO
1.2	Supervising commissioning of transformer when put back in service	YES
1.3	Routine testing as per this specification	YES
1.4	Submission of Documentation as detailed below	YES

ANNEXURE – B SERVICE CONDITIONS

1.0	Delhi Atmospheric conditions	
1.1	Average grade atmosphere :	Heavily polluted, dry
1.2	Maximum altitude above sea level	1000 M
1.3	Ambient Air temperature	Highest 50 deg C, Average 40 deg C
1.4	Minimum ambient air temperature	0 Deg C
1.5	Relative Humidity	90 % Max
1.6	Seismic Zone	4 as per IS 1893
1.7	Rainfall	750 mm concentrated in four months

ANNEXURE – C FORMAT FOR DATA OF TEMPERATURE RISE TEST

The vendor shall conduct and furnish temperature rise test on transformer after repair at its work in following format.

Time in Hrs.	Current in amp	Voltage in KV	Input in KW	Cooler A Temp. in DEG C			Top oil temp. in DEG C	Average ambient Temp. in DEG C	Top oil rise in DEG C
				Top	Bottom	Diff.			

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER**ANNEXURE – D HANDING OVER/TAKING OVER OF POWER TRANSFORMER**

HANDING OVER/TAKING OVER OF POWER TRANSFORMERS BEING SENT FOR REPAIR/SERVICING

PLACE:
DATE :

1.0	Name of the Vendor	
2.0	Address	
3.0	Phone / Fax No	
4.0	Name of Representative with Designation	

A	Transformer Details		
Name Plate details (English /Hindi/Marathi)			
1.0	Make		
2.0	Capacity		
3.0	Voltage Rating		
4.0	Serial Number		
5.0	Year of Manufacture		
6.0	Weight of Core & Winding		
7.0	Weight of Oil		
8.0	Quantity of Oil		
B.	List of accessories/Items handed over along with Main transformer		
Sr. No	Description	Handed over /Received	REMARKS Appearing Healthy – AH Missing – M No provision – NP Damaged - D
1.0	Main tank valves (butterfly valve, drain valve, filter valve etc)		
2.0	Conservator tank with oil level indicating glass tube		
3.0	MOG with Low oil level alarm		
4.0	Oil circulation valves of conservator (Top & Bottom)		
5.0	Air Cell		
6.0	Conservator oil drain valve		
7.0	Main silica gel breather assy.		
8.0	Main silica gel breather		

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER

	pipe		
9.0	Silicagel breather assembly for OLTC		
10.0	Pipe for silicagel breather assembly for OLTC		
11.0	Conservator mounting brackets /Frame		
12.0	Equalising pipe connecting conservator tank with main transformer tank		
13.0	Buchholz relay		
14.0	Oil surge relay for OLTC		
15.0	Air release cock of Buchholz relay		
16.0	Oil drain cock of Buchholz relay		
17.0	Valves on either side of buchholz relay		
18.0	Air release valve on top cover of the tank		
19.0	Explosion vent/PRV		
20.0	Connecting pipe between explosion vent & conservator		
21.0	Air release cock (brass) on top of explosion vent		
22.0	HV side turrets connecting pipe with equilising pipe		
23.0	HV Bushings		
23.1	Porcelain insulators		
23.2	Metal Parts (brass)		
23.3	Clamps		
24.0	LV Bushings		
24.1	Porcelain insulators		
24.2	Metal Parts (brass)		
24.3	Clamps		
25.0	11KV Copper Bus Bar		
25.1	NOS. and Size		
25.2	Weight		
26.0	11KV Lightning arrestor		
26.1	Quantity and present condition		

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER

27.0	Blanking plates		
28.0	Main tank oil filtration valves		
28.1	Top		
28.2	Bottom		
28.3	Emergency oil drain valve (bottom)		
28.4	Oil sampling valves- top/middle/bottom		
29.0	Marshalling Box		
29.1	WTI		
29.2	OTI		
29.3	Transducer for OTI		
29.4	Transducer for WTI		
29.5	AC Main switch		
29.6	Strip Heater		
29.7	Lamp holder		
29.8	Lamp Switch		
29.9	Fans contactors		
29.10	Cable entry gland plate		
29.11	Condition of wiring		
29.12	Condition of door		
29.13	Door-lock Handle		
29.14	Door glass		
30.0	Radiator valves top & Bottom		
31.0	Number of radiators and condition		
32.0	Axle & Wheels assy.		
33.0	No. of cooling Fans / Make		
34.0	OLTC Details		
34.1	Make		
34.2	Type		
34.3	Serial number		
34.4	OLTC Operating handle		
34.5	Local /Remote Switch		
34.6	AC Mains ON/OFF switch		
34.7	Driving Motor		
34.8	Brakes		
34.9	Step by Step relays		
34.10	Direction sequence switch		
34.11	Control supply transformer		

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER

34.12	Raise /Lower Switch		
34.13	Raise contactor		
34.14	Lower Contactor		
34.15	OLTC Operation Counter		
34.16	Driving mechanism door handle		
34.17	Driving mechanism door glass		
35.0	Selector switch oil single relay		
36.0	Selector switch conservator		
37.0	Equalising pipe connecting to conservator and selector switch oil circulation valves		
38.0	Silica gel breather of selector switch conservator		
39.0	Selector switch chamber air release cock		
40.0	Selector switch chamber oil circulation valves		
41.0	Selector switch chamber oil level indicating glass		
42.0	Oil in selector switch		
43.0	General condition of OLTC driving mechanism		
43.1	Name Plate		
43.2	Caution plate		
43.3	Transformer oil		
43.4	Total quantity of oil handed over to vendor at site		
45.0	RTCC		
45.1	Tap position indicator		
45.2	Remote WTI		
45.3	Remote OTI		
45.4	Automatic voltage regulator		
45.5	Raise/Lower PB/switch		
45.6	Contactor		
45.7	Auto manual switch		
45.8	AC Main switch		

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER

45.9	Strip Heater		
45.10	Lamp holder		
45.11	Lamp Switch		
45.12	Cable entry gland plate		
45.13	Condition of wiring		
45.14	Condition of door		
45.15	Door-lock Handle		
45.16	Indication/Alarm conditions		
45.17	Fan Failure Scheme		
45.18	Annunciator (FACIA)		
C.	List of Test report and past history handed over along with main transformer		
Sr. No	Description	Handed over/Received	Remarks Satisfactory – S Not satisfactory – NS
1.0	IR Values		
1.1	HV-LV+E		
1.2	LV-HV+E		
1.3	HV – LV		
1.4	Oil Temperature		
2.0	PI Values		
2.1	HV		
2.2	LV		
3.0	Transformer oil BDV at 2.5mm gap		
3.1	Main Tank		
3.2	Bottom		
3.3	Top		
4.0	OLTC		
5.0	DGA Report		
6.0	Oil Test report as per IS 1866-2000		
6.1	Colour / Dirtiness		
6.2	Water Content (ppm)		
6.3	Flash Point Deg C		
6.4	Pour point Deg C		
6.5	Neutralisation value (mg KOH/gm)		
6.6	Interfacial Tension (mN/m)		
6.7	Dielectric dissipation factor at 90 Deg C (at 40HZ & 60HZ)		

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER

6.8	Resistivity (90 Deg C X 10 ¹² (ohm-cm)		
6.9	Sediment and sludge		
7.0	Magnetisation currents at low voltage (principal tap)		
8.0	Magnetic balance		
9.0	Turn ratio test		
10.0	Winding resistance HV & LV		
11.0	Single phase short circuit		
12.0	Ratio of WTI CT (HV & LV) & neutral CT		
D.	Brief history of Transformer		
1.0	Load Condition		
2.0	NOS of Through faults		
3.0	NOS of Failures & abnormalities		
4.0	Repair carried in life time		
5.0	Date of dehydration		
6.0	Oil leakage & condition of gaskets		
7.0	Others (if any)		

NOTE: The transformer tank is handed over/Taken over with complete core and core assembly.

Signature & seal of
Handing over officer
(rep of Owner)

Signature & seal of
(Rep. Of the vendor)

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER**ANNEXURE – E JOINT VERIFICATION REPORT OF POWER TRANSFORMER**

(For repairing / Servicing at vendors work)

Repairing agency details				
1.	Name of the company			
2.	Address			
3.	Phone / fax No			
4.	Name of representative & designation			
A	Transformer Details			
1.0	Name Plate details			
2.0	Make			
3.0	Capacity			
4.0	Voltage rating			
5.0	Serial number			
6.0	Year of manufacture			
7.0	Weight of Core & winding			
8.0	Weight of oil			
9.0	Quantity of oil			
B	Joint Verification report of Core, Coil assembly & oil			
Sr No	Description	Unit	QTY	Remarks Good Condition-GC Servicing required-SR Damaged to be replaced-TBR
1.0	Total weight of core & coil assembly (3 limbs)	Kg		
2.0	HV winding			
2.1	Weight per limb	Kg		
2.2	Inner diameter	Mm		
2.3	Outer diameter	Mm		
2.4	Total number of turns	No's		
2.5	Wire size of the conductor			
2.6	Cross sectional area of conductor	mm ²		
2.7	Number of parallel paths	No's		
2.8	Current density	A/mm ²		
3.0	LV winding			
3.1	Weight per limb	Kg		
3.2	Inner diameter	Mm		
3.3	Outer diameter	Mm		
3.4	Total number of turns	No's		
3.5	Wire size of the conductor			
3.6	Cross sectional area of conductor	mm ²		
3.7	Number of parallel paths	No's		

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER

3.8	Current density	A/mm ²		
4.0	Oil quantity as per name plate	Litre		
4.1	Oil quantity drained out from main tank at factory	Litre		
4.2	Oil quantity received at site	Litre		

NOTES

1. Before lifting of transformers, the vendor to check and ensure that core coil assembly is fitted with the transformers. During JVR if coil/core found missing the vendor will repair the same on his cost and risk by giving credit of scrap of copper/core approximate nearest/equal to quantity of the same make of transformer core/coil.
2. In case of rewinding the conductors shall be of electrolytic grade copper. Current density in winding should be around 2.5A/mm². Under no circumstances, current density more than 2.6A/mm² is acceptable.
3. If core lamination is found to be damaged the weight of the damaged core has to be provided and recorded in JVR.
4. The vendor may be allowed to dispose all detained material after approval of estimate for repair from the owner.
5. In case of replacement of winding, the vendor shall retain one coil of HT & LT for physical verification till stage inspection and estimate approval.

C Joint Verification report of accessories			
Sr No	Description	Remarks as per handing over document Appearing healthy – AH Missing – M No provision – NP Damaged - D	Remarks of JVR Good condition – GC Servicing required – SR To be replaced – TBR Missing to be provided-TBD
1.0	Main tank valves (butterfly valve, drain valve, filter valve etc)		
2.0	Conservator tank with oil level indicating glass tube		
3.0	MOG with Low oil level alarm		
4.0	Oil circulation valves of conservator(Top & Bottom)		
5.0	Air Cell		
6.0	Conservator oil drain valve		

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER

7.0	Main silica gel breather assy.		
8.0	Main silica gel breather pipe		
9.0	Silicagel breather assembly for OLTC		
10.0	Pipe for silicagel breather assembly for OLTC		
11.0	Conservator mounting brackets /Frame		
12.0	Equalising pipe connecting conservator tank with main transformer tank		
13.0	Buchholz relay		
14.0	Oil surge relay for OLTC		
15.0	Air release cock of Buchholz relay		
16.0	Oil drain cock of Buchholz relay		
17.0	Valves on either side of buchholz relay		
18.0	Air release valve on top cover of the tank		
19.0	Explosion vent/PRV		
20.0	Connecting pipe between explosion vent & conservator		
21.0	Air release cock (brass) on top of explosion vent		
22.0	HV side turrets connecting pipe with equilising pipe		
23.0	HV Bushings		
23.1	Porcelain insulators		
23.2	Metal Parts (brass)		
23.3	Clamps		
24.0	LV Bushings		
24.1	Porcelain insulators		
24.2	Metal Parts (brass)		
24.3	Clamps		
25.0	11KV Copper Bus Bar		
25.1	NOS. and Size		
25.2	Weight		
26.0	11KV Lightning arrestor		
26.1	Quantity and present condition		

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER

27.0	Blanking plates		
28.0	Main tank oil filtration valves		
28.1	Top		
28.2	Bottom		
28.3	Emergency oil drain valve (bottom)		
28.4	Oil sampling valves- top/middle/bottom		
29.0	Marshalling Box		
29.1	WTI		
29.2	OTI		
29.3	Transducer for OTI		
29.4	Transducer for WTI		
29.5	AC Main switch		
29.6	Strip Heater		
29.7	Lamp holder		
29.8	Lamp Switch		
29.9	Fans contactors		
29.10	Cable entry gland plate		
29.11	Condition of wiring		
29.12	Condition of door		
29.13	Door-lock Handle		
29.14	Door glass		
30.0	Radiator valves top & Bottom		
31.0	Number of radiators and condition		
32.0	Axle & Wheels assy.		
33.0	No. of cooling Fans / Make		
34.0	OLTC Details		
34.1	Make		
34.2	Type		
34.3	Serial number		
34.4	OLTC Operating handle		
34.5	Local /Remote Switch		
34.6	AC Mains ON/OFF switch		
34.7	Driving Motor		
34.8	Brakes		
34.9	Step by Step relays		
34.10	Direction sequence switch		
34.11	Control supply transformer		
34.12	Raise /Lower Switch		
34.13	Raise contactor		
34.14	Lower Contactor		

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER

34.15	OLTC Operation Counter		
34.16	Driving mechanism door handle		
34.17	Driving mechanism door glass		
35.0	Selector switch oil single relay		
36.0	Selector switch conservator		
37.0	Equalising pipe connecting to conservator and selector switch oil circulation valves		
38.0	Silica gel breather of selector switch conservator		
39.0	Selector switch chamber air release cock		
40.0	Selector switch chamber oil circulation valves		
41.0	Selector switch chamber oil level indicating glass		
42.0	Oil in selector switch		
43.0	General condition of OLTC driving mechanism		
43.1	Name Plate		
43.2	Caution plate		
43.3	Transformer oil		
43.4	Total quantity of oil handed over to vendor at site		
45.0	RTCC		
45.1	Tap position indicator		
45.2	Remote WTI		
45.3	Remote OTI		
45.4	Automatic voltage regulator		
45.5	Raise/Lower Pb/switch		
45.6	Contactors		
45.7	Auto manual switch		
45.8	AC Main switch		
45.9	Strip Heater		
45.10	Lamp holder		
45.11	Lamp Switch		
45.12	Cable entry gland plate		
45.13	Condition of wiring		
45.14	Condition of door		
45.15	Door-lock Handle		
45.16	Indication/Alarm conditions		



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TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER

45.17	Fan Failure Scheme		
45.18	Annunciator (FACIA)		
46.0	Any other observations		

NOTE: Please attach copy of handing over/ taking over document.

Signature and seal of
Owners representative

Signature and seal of
Vendor's representative

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER**ANNEXURE – F STAGE INSPECTION REPORT FOR POWER TRANSFORMER**

(For repair / servicing at vendor's works)

Repairing agency details				
1.0	Name of the company			
2.0	Address			
3.0	Phone / fax No			
4.0	Name of representative & designation			
A Transformer Details				
1.0	Name Plate details			
2.0	Make			
3.0	Capacity			
4.0	Voltage rating			
5.0	Serial number			
6.0	Year of manufacture			
7.0	Weight of Core & winding			
8.0	Weight of oil			
9.0	Quantity of oil			
B Joint Verification report of Core, Coil assembly & oil				
Sr. No	Description	Unit	QTY	Remarks Good Condition-GC Servicing required-SR Damaged to be replaced-TBR
1.0	Total weight of core & coil assembly (3 limbs)	Kg		
2.0	HV winding			
2.1	Weight per limb	Kg		
2.2	Inner diameter	Mm		
2.3	Outer diameter	Mm		
2.4	Total number of turns	No's		
2.5	Wire size of the conductor			
2.6	Cross sectional area of conductor	mm ²		
2.7	Number of parallel paths	No's		
2.8	Current density	A/mm ²		
3.0	LV winding			
3.1	Weight per limb	Kg		
3.2	Inner diameter	mm		
3.3	Outer diameter	mm		
3.4	Total number of turns	No's		
3.5	Wire size of the conductor			
3.6	Cross sectional area of conductor	mm ²		
3.7	Number of parallel paths	No's		

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER

3.8	Current density	A/mm ²		
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1. In case of rewinding the conductors shall be of electrolytic grade copper. Current density in winding should be around 2.5A/mm². Under no circumstances, current density more than 2.6 is acceptable.
2. The vendor may be allowed to dispose all detained material after approval of estimate for repair from the owner.
3. In case of replacement of winding, the vendor shall retain one coil of HT & LT for physical verification till stage inspection and estimate approval.

Signature and seal of
Owners representative

Signature and seal of
Vendor's representative

TECHNICAL SPECIFICATION FOR REPAIRING AND SERVICING OF POWER TRANSFORMER**ANNEXURE – G TECHNICAL SPECIFICATION OF TRANSFORMER OIL**

Sr No	Item description	Specification requirement
1.1	Function	
1.1.1	Viscosity	
1.1.1.1	Viscosity at 40°C	15 mm ² /s, Max
1.1.1.2	Viscosity at 0°C	1800 mm ² /s, Max
1.1.2	Pour Point	- 10°C, Max
1.1.3	Water content	30 mg/Kg, Max
1.1.4	Breakdown voltage	
1.1.4.1	New unfiltered oil	30 kV, Min
1.1.4.2	After filtration	70 kV, Min
1.1.5	Density at 20°C	0.895 g/ml, Max
1.1.6	Dielectric dissipation factor at 90°C	0.005, Max
1.1.7	Particle Content	Manufacturer to specify the data
1.2	Refining/Stability	
1.2.1	Appearance of oil	Clear, free from sediment and suspended matter
1.2.2	Acidity	0.01 mg KOH/g, Max
1.2.3	Interfacial tension at 27°C	0.04 N/m, Min
1.2.4	Total sulphur content	Manufacturer to specify the data
1.2.5	Corrosive sulfur	Not-corrosive
1.2.6	Potentially Corrosive sulfur	Not-corrosive
1.2.7	DBDS	Not detectable (<5 mg/kg)
1.2.8	Inhibitor	Not detectable (<0.01%)
1.2.9	Metal Passivator	Not detectable (<5 mg/kg)
1.2.10	Other additives	Manufacturer to specify the data
1.2.11	2-furfural and related Compounds content	Not detectable (<0.05 mg/kg) for each individual compound
1.3	Performance	
1.3.1	Oxidation stability, test duration 164 h	
1.3.1.1	Total acidity	1.2 mg KOH/g, Max
1.3.1.2	Sludge	0.8%, Max
1.3.1.3	DDF at 90°C	0.5, Max
1.3.2	Gassing Tendency	Manufacturer to specify the data
1.3.3	ECT	Manufacturer to specify the data
1.4	Health,safety and Environment	
1.4.1	Flash point	135°C, Min
1.4.2	PCA content Max	3%, Max
1.4.3	PCB content	Not detectable (<2 mg/Kg)

SCHEDULE - A

SCHEDULE OF GENERAL PARTICULARS

1. Name of the firm:
2. Registered Office Address:
3. Complete Address of the Works:
4. Total space occupied in sq. meters:
(Covered area & open area)
5. Mention Type of Ownership Whether:
Proprietary/Partnership/Pvt. Ltd./Ltd. Firm
6. Type of industry whether SSI/Medium/Large:
7. Repairing capacity per month of the Distribution transformer:

Note: Enclose photocopies of relevant documents.

SCHEDULE – B

FORMAT FOR DETAILS OF PAST SUPPLIES/REPAIRING

S.N	Financial Year	Name of SEBs/ Govt. Department/ Public Sector Utility/Private/ Discoms to whom Power trf. supplied/ repaired	Order Reference No.	Rating	Qty.	Total Quantity (For Financial Year)
1.						Rating 20 MVA
2.						Rating 20 MVA

Note: Enclose complete details including performance certificates. Attach additional sheet if required

SCHEDULE – C

LIST OF TESTING EQUIPMENTS/INSTRUMENTS

Sl. No.	Name of Instruments	Qty. available	Make	Range

SCHEDULE – D

LIST OF TOOLS & TACKLES

Sl No.	Name of tools & tackles	Qty. available	Make

SCHEDULE – E

**DETAILS OF QUALIFIED PERSONS EMPLOYED IN MANUFACTURE/
REPAIR OF TRANSFORMER**

S.No.	Name	Qualification	Since when working with tenderer

(a) In respect of graduate Engineers:

(b) In respect of diploma in engineering:

(c) In respect of Technicians:

(d) Total number of other workers employed in manufacture/repair of transformers with the Tenderer:

Skilled workers

Un-skilled workers

(Nos.)

(Nos.)

ANNEXURE –I :BID FORM

To,

**Head of Department,
Contracts & Material Department,
BSES RAJDHANI Power Ltd
1st Floor, C Block
BSES Bhawan, Nehru Place
New Delhi 110019.**

Dear Sir,

- 1 We understand that BRPL is desirous of awarding the contract for..... (Name of the Work) work in its licensed distribution network area in Delhi.
- 2 Having examined the Tender Documents for the above named works, we the undersigned, offer to deliver the goods/services in full conformity with the Terms and Conditions, technical specifications & Scope of Work as may be determined in accordance with the terms and conditions of the contract. The quoted amounts for this work are in accordance with the Price Schedules attached herewith and are made part of this bid.
- 3 If our Bid is accepted, we undertake to deliver the entire goods/services as per delivery/ completion schedule mentioned in Section III from the date of award of order/letter of intent.
- 4 If our Bid is accepted, we will furnish a Contract Cum Performance Bank Guarantee (CPBG) for due performance of the Contract in accordance with the Terms and Conditions of the NIT.
- 5 We agree to abide by this Bid for a period of 180 days from the due date of bid submission and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- 6 We declare that we are aware of the provision of all Laws associated with the supply of equipment's/materials or Services and the prices have been quoted accordingly.
- 7 Unless and until Letter of Intent is issued, this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
- 8 We understand that BRPL is not bound to accept the lowest, or any bid BRPL may receive.
- 9 There is provision for Resolution of Disputes under this Contract, in accordance with the Laws and Jurisdiction of Contract.
- 10 We do hereby agree and shall abide the terms of tender documents/agreement, in full

Dated this..... day of..... 2023

Signature..... In the capacity of

.....duly authorized to sign for and on behalf of

(IN BLOCK CAPITALS).....

FORMAT – 4.1

EMD BANK GUARANTEE

(To be issued in a Non Judicial Stamp Paper of Rs.100/-purchased in the name of the bank)
Whereas [name of the Bidder] (herein after called the “Bidder”) has submitted its bid dated[date of submission of bid] for the supply/services of [name and/or description of the goods/sevices] (here after called the “Bid”). KNOW ALL PEOPLE by these presents that WE [name of bank] at [Branch Name and address],having our registered office at[address of the registered office of the bank](herein after called the “Bank“),are bound unto BSES RAJDHANI Power Ltd., with its Corporate Office at BSES Bhawan, Nehru Place, New Delhi - 110019 ,(herein after called —the “Purchaser“)in the sum of (Rupees only) for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this_____ day of_____ 2023. The Conditions of this obligation are:

1. If the Bidder withdraws its Bid during the period of bid validity specified by the Bidder on the Bid Form;

or

2. If the Bidder, having been notified of the acceptance of its Bid by the Purchaser during the period of bid validity:

(a) Fails or refuses to execute the contract form, if required: or

(b) Fails or refuses to furnish the performance security, In accordance with the instructions to Bidders/Terms and Conditions.

We undertake to pay to the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that is its demand the purchaser will note that amount claimed by it is due to it, owing to the occurrence of one or both of the two condition(s), specifying the occurred condition or condition(s). This guarantee will remain in force up to and including 180 days after the due date of submission bid, and any demand in respect thereof should reach the Bank not later than the above date.

(Stamp & signature of the bank)

Signature of the witness(s)

FORMAT – 4.2

PROFORMA OF CONTRACT CUM PERFORMANCE BANK GUARANTEE

(TO BE ISSUED ON RS 100/- STAMP PAPER)

This Guarantee made at _____ this [____] day of [____] 2023

1. WHEREAS **M/s BSES Rajdhani Power Limited**, a Company incorporated under the provisions of Companies Act, 1956 having its Registered Office at **BSES Bhawan, Nehru Place, New Delhi - 110019**, India hereinafter referred to as the “Company”, (which expression shall unless repugnant to the context or meaning thereof include its successors, administrators, executors and assigns).
2. AND WHEREAS the Company has entered into a contract for _____ (Please specify the nature of contract here) vide Contract No. _____ dated _____ (hereinafter referred to as the “Contract”) with M/s. _____, (hereinafter referred to as “Contractor”, which expression shall unless repugnant to the context or meaning thereof be deemed to mean and include each of their respective successors and assigns) for providing services on the terms and conditions as more particularly detailed therein.
3. AND WHEREAS as per clause ____ of General Conditions of Contract, the Contractor is obliged to provide to the Company an unconditional bank guarantee for an amount equivalent to ten percent (10%) of the total Contract Value for the timely completion and faithful and successful execution of the Contract from [_____] pl. specify the name of Bank) having its head/registered office at [_____] through its branch in _____(pl. specify the name of Branch through which B.G is issued) hereinafter referred to as “the Bank”, (which expression shall unless it be repugnant to the context or meaning thereof be deemed to include its successors and permitted assigns).
4. NOW THEREFORE, in consideration inter alia of the Company granting the Contractor the Contract, the Bank hereby unconditionally and irrevocably guarantees and undertakes, on a written demand, to immediately pay to the Company any amount so demanded (by way of one or more claims) not exceeding in the aggregate [Rs.].....(in words) without any demur, reservation, contest or protest and/or without reference to the Contractor and without the Company needing to provide or show to the Bank ,grounds or reasons or give any justification for such demand for the sum/s demanded.
5. The decision of the Company to invoke this Guarantee and as to whether the Contractor has not performed its obligations under the Contract shall be binding on

the Bank. The Bank acknowledges that any such demand by the Company of the amounts payable by the Bank to the Company shall be final, binding and conclusive evidence in respect of the amounts payable by the Supplier to the Owner. Any such demand made by the Owner on the Bank shall be conclusive and binding, notwithstanding any difference between the Owner and the Contractor or any dispute raised, invoked, threatened or pending before any court, tribunal, arbitrator or any other authority.

6. The Bank also agrees that the Company at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor without proceeding against the Contractor notwithstanding any other security or other guarantee that the Company may have in relation to the Contractor's liabilities.
7. The Bank hereby waives the necessity for the Company first demanding the aforesaid amounts or any part thereof from the Contractor before making payment to the Company and further also waives any right the Bank may have of first requiring the Company to use its legal remedies against the Contractor, before presenting any written demand to the Bank for payment under this Guarantee.
8. The Bank's obligations under this Guarantee shall not be reduced by reason of any partial performance of the Contract. The Bank's obligations shall not be reduced by any failure by the Company to timely pay or perform any of its obligations under the Contract.
9. The Bank further unconditionally and unequivocally agrees with the Company that the Company shall be at liberty, without the Bank's consent and without affecting in any manner its rights and the Bank's obligation under this Guarantee, from time to time, to:
 - (i) Vary and/or modify any of the terms and conditions of the Contract;
 - (ii) Forebear or enforce any of the rights exercisable by the Company against the Contractor under the terms and conditions of the Contract; or
 - (iii) Extend and/or postpone the time for performance of the obligations of the Contractor under the Contract;

and the Bank shall not be relieved from its liability by reason of any such act or omission on the part of the Company or any indulgence shown by the Company to the Contractor or any other reason whatsoever which under the law relating to sureties would, but for this provision, have the effect of relieving the Bank of its obligations under this Guarantee.

10. This Guarantee shall be a continuing bank guarantee and shall not be discharged by any change in the constitution or composition of the Contractor, and this Guarantee



BSES Rajdhani Power Limited

shall not be affected or discharged by the liquidation, winding-up, bankruptcy, reorganization, dissolution or insolvency of the Contractor or any of them or any other circumstances whatsoever.

- 11. This Guarantee shall be in addition to and not in substitution or in derogation of any other security held by the Company to secure the performance of the obligations of the Contractor under the Contract.
- 12. NOTWITHSTANDING anything herein above contained, the liability of the BANK under this Guarantee shall be restricted to _____ (insert an amount equal to ten percent (10%) of the Contract Value) and this Guarantee shall be valid and enforceable and expire on _____ (pl. specify date) or unless a suit or action to enforce a claim under this Guarantee is filed against the Bank on or before the date of expiry.
- 13. On termination of this Guarantee, all rights under the said Guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities hereunder.
- 14. The Bank undertakes not to revoke this Guarantee during its validity except with the prior written consent of the Company and agrees that any change in the constitution of the Bank or the Contractor shall not discharge our liability hereunder.
- 15. Company may assign this Guarantee to any Person or body whether natural, incorporated or otherwise under intimation to the Bank. The Bank shall be discharged of its obligations hereunder by performance in accordance with the terms hereof to such assignee without verifying the validity / legality / enforceability of the assignment.
- 16. This Guarantee shall be governed by the laws of India. Any suit, action, or other proceeding arising out of, connected with, or related to this Guarantee or the subject matter hereof shall be subject to the exclusive jurisdiction of the courts of Delhi, India.
Dated this day of2023 at

(Signature)
.....

(Name)
.....

(Designation with Bank Stamp)

Attorney as per

Power of Attorney No.....



BSES Rajdhani Power Limited

Date.....

Beneficiary's bank detail with IFSC Code:

Beneficiary Name	: BSES Rajdhani Power Limited
Bank Name	: State Bank of India
A/c No.	: 40214783615
IFSC Code	: SBIN0009601

Vendor has to fill this form & submit along with the PERFORMANCE BANK GUARANTEE

1. Bank Email ID-----Bank Phone No-----

2. Where to Dispatched the BG -Local Address of bank -----

3. Where to Dispatched the BG Head Office Address -----

FORMAT – 4.3

NO DEVIATION DECLARATION

NO DEVIATION –A(Technical)

NIT NO & DATE:

DUE DATE OF TENDER:

We hereby accept all terms and conditions of the technical scope of work as mandated in the tender documents subject to the following deviations as mentioned against the applicable technical qualifying requirement:

S.NO.	SL.NO OF TECHNICAL SPECIFICATION/SCOPE OF WORK	DEVIATIONS, IF ANY

SIGNATURE & SEAL OF BIDDER

NAME OF BIDDER

Note-The above template is indicative only, May vary depending on the nature of procurement/value.

NO DEVIATION –B(Commercial)

NIT NO & DATE:

DUE DATE OF TENDER:

We hereby accept all terms and conditions of the commercial requirement as mandated in tender document subject to the following deviations as mentioned against the applicable commercial qualifying requirement:

S.NO.	S. NO OF COMMERCIAL REQUIREMENTS	DEVIATIONS, IF ANY

SIGNATURE & SEAL OF BIDDER

NAME OF BIDDER



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Note:-It is important to explicitly include all such terms and conditions which are considered absolutely necessary to be accepted by bidder without any deviation. Tender document shall have a stipulation that deviation to such criteria shall make the bid liable for rejection.

FORMAT – 4.4

BIDDER'S COMMUNICATION DETAILS

Bidder should furnish the below details for future communication: -

<u>GENERAL INFORMATION</u>	
NAME OF Company	
POSTAL ADDRESS	

FOR TECHNICAL QUERY:		
CONTACT PERSON & DESIGNATION	NAME	DESIGNATION
E-MAIL	MOBILE NO	TELEPHONE NO

FOR COMMERCIAL QUERY:		
CONTACT PERSON & DESIGNATION	NAME	DESIGNATION
E-MAIL	MOBILE NO	TELEPHONE NO

Note: No communication shall be entertained from any other email id, except as mentioned above. Bidder needs to inform the company if any changes in the email id on their letter head duly signed by the authorized signatory.

**ANNEXURE – II: ACCEPTANCE FORM FOR PARTICIPATION IN REVERSE AUCTION
EVENT**

(To be signed and stamped by the bidder prior to participation in the auction event)

BRPL intends to use the reverse auction through SAP-SRM tool as an integral part of the entire tendering process. All the bidders who are found as techno commercially qualified based on the tender requirements shall be eligible to participate in the reverse auction event. The following terms and conditions are deemed as accepted by the bidder on participation in the bid event:

1. BRPL shall provide the user id and password to the authorized representative of the bidder. (Authorization letter in lieu of the same be submitted along with the signed and stamped acceptance form)
2. BRPL will make every effort to make the bid process transparent. However, the award decision by BRPL would be final and binding on the supplier/Contractor.
3. The bidder agrees to non-disclosure of trade information regarding the purchase, identity of BRPL, bid process, bid technology, bid documentation and bid details.
4. The bidder is advised to understand the auto bid process to safeguard themselves against any possibility of non-participation in the auction event.
5. In case of bidding through internet medium, bidders are further advised to ensure availability of the entire infrastructure as required at their end to participate in the auction event. Inability to bid due to telephone line glitch, internet response issues, software or hardware hangs; power failure or any other reason shall not be the responsibility of BRPL.
6. In case of intranet medium, BRPL shall provide the infrastructure to bidders, further, BRPL has sole discretion to extend or restart the auction event in case of any glitches in infrastructure observed which has restricted the bidders to submit the bids to ensure fair & transparent competitive bidding. In case of an auction event is restarted, the best bid as already available in the system shall become the start price for the new auction.
7. In case the bidder fails to participate in the auction event due any reason whatsoever, it shall be presumed that the bidder has no further discounts to offer and the initial bid as submitted by the bidder as a part of the tender shall be considered as the bidder's final no regret offer. Any offline price bids received from a bidder in lieu of non-participation in the auction event shall be out rightly rejected by BRPL.
8. The bidder shall be prepared with competitive price quotes on the day of the bidding event.
9. The prices as quoted by the bidder during the auction event shall be inclusive of all the applicable taxes, duties and levies and shall be FOR at BRPL site.
10. The prices submitted by a bidder during the auction event shall be binding on the bidder. No further communication will be there.
11. No requests for time extension of the auction event shall be considered by BRPL.

12. The original price bids of the bidders shall be reduced on pro-rata basis against each line item based on the final all-inclusive prices offered during conclusion of the auction event for arriving at contract amount.

For.....

Signature:

Name:

Designation: