Procedure for Participating in Tender

Tender Enquiry No.	Job Description	Estimated Cost/EMD (Rs.)	Tender Participation Fee including GST	Last date and time for Payment of Tender Participation Fee
TPWODL/PJ/O/SU/044	Rate Contract six (06) months for Supply of 8MVA, 33/11KV DTR as per the list (Annexure – I enclosed).	5.44 Cr / 5.44 Lakh	Rs. 5900.00	22.10.2021, 15.00 Hrs.

Please note that corresponding details mentioned in this document will supersede any other details mentioned anywhere else in the Tender Document.

Procedure to Participate in Tender.

Following steps to be done before "Last date and time for Payment of Tender Participation Fee" as mentioned above

1.

a. **For Regular Bidders:-**Non-Refundable Tender Participation Fee, as indicated in table above, to be submitted in the form of direct deposit in the following bank account and submit the receipt along with a covering letter clearly indicating the Tender Reference number –

Beneficiary Name – TPWODL EXPENDITURE ACCOUNT
Bank Name – UNION BANK OF INDIA
Branch Name – SAMABALPUR NAYA PARA
Address – AT/PO: SAMBALPUR ,DIST SAMBALPUR-ORISSA, PIN -768 001
Branch Code – 536521.
Bank & Branch Code – UNION BANK OF INDIA & 536521
Account No – 365201010033244
Account type – CURRENT
IFSC Code – UBIN0536521

b. **For MSME Category Bidders:-** Bidders from MSME category are exempted for payment of tender fee and have to pay only 50% EMD amount. Interested MSME bidders are required to submit undertaking with valid registration certificate before last date and time of tender purchase.

2. **Authorization Letter:-** Eligible and Interested Bidders to submit duly signed and stamped letter on Bidder's letterhead indicating

   a. Tender Enquiry number

   b. Name of authorized person

   c. Contact number

GENERAL CONDITIONS OF CONTRACT

d. e-mail id

e. Details of submission of Tender Participation Fee

E-mail with necessary attachment of 1 and 2 above to be send to priyabrat.jena@tpwesternodisha.com with copy to harish.sharma@tpwesternodisha.com before "Last date and time for Payment of Tender Participation Fee". Interested bidders are to submit Tender Participation Fee & Authorization Letter before Last date and time as indicated above, and communicate to us on above mentioned email IDs, after which link from Tata Power E-Tender system (Ariba) will be shared for further communication and bid submission.

Please note all future/further correspondence regarding the tender, bid submission, bid submission date extension, Pre-bid query etc will happen only through Tata Power E-Tender system (Ariba). User manual to guide the bidders to submit the bid through e-Tender system (Ariba) is also enclosed.

No e-mail or verbal correspondence will be responded. All communication will be done strictly with the bidders who have done the above steps (Payment of tender fee and submission of letter with requisite details) to participate in the Tender.

Also it may be strictly noted that once date of "Last date and time for Payment of Tender Participation Fee" is lapsed no Bidder will be sent link from Tata Power E-Tender System (Ariba). Without this link vendor will not be able to participate in the tender. Any last moment request to participate in tender will not be entertained.

Any payment of Tender Participation Fee / EMD by Bidder who have not done the pre-requisite will not be refunded.

Also all future corrigendum's to the said tender will be informed on Tender section on website https://www.tatapower.com

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OPEN TENDER NOTIFICATION
FOR
RATE CONTRACT FOR SUPPLY OF 8MVA, 33/11KV, 3-Ø, Cu. Wound, ONAN type, POWER TRANSFORMER.

Tender Enquiry No.: TPWODL/PJ/O/SU/044

Due Date for Bid Submission: 12.11.2021 [15:00 Hrs.]

TP Western Odisha Distribution Limited (TPWODL)
Burla , Sambalpur - 768017

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CONTENTS OF THE ENQUIRY

CONTENTS

1.0 Event Information

1.1 Scope of work

Open tenders are invited in through e-tender bidding process from interested and eligible Bidders as defined below:

Line Item no.	Description	EMD Amount (Rs.)	Tender Processing Fee including GST (Rs.)
1	Rate contract six (06) months for Supply of 8MVA, 33/11KV PTR (As per Annexure - I).	5,44,000/-	5900/-

1.2 Availability of Tender Documents

Refer “Procedure for participating in tender”.

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1.3 Calendar of Events

(a)	Date of sale/ availability of tender documents from TPWODL Website	From 08.10.2021 Onwards
(b)	Date by which interested and eligible vendors to pay tender fee and confirm participation in accordance with "Procedure for participating in tender"	22.10.2021 , up to 15.00 Hrs
(c)	Date & Time of Pre-Bid Meeting (If any)	NA
(d)	Last Date of receipt of pre-bid queries, if any	29.10.2021 up to 15:00 Hours
(e)	Last Date of Posting Consolidated replies to all the pre-bid queries as received	03.11.2021 up to 17:00 Hours
(f)	Last date and time of receipt of Bids	12.11.2021 up to 15:00 Hours
(g)	Date & Time of opening technical bids & EMD (Envelope-1 & 2)	Participating Bidders will get mail intimation from Tata Power E-Tender system (Ariba) when their Technical Bids are opened. Refer Section 4.2 for details
(h)	Date & Time of opening of Price of qualified bids	Bidders will get mail intimation from Tata Power E-Tender system (Ariba) when their Price Bids are opened. Refer Section 4.5 for details.

Note: - In the event of extension of last date of submission of bids, same shall be intimated to the participating bidders through e-tender system.

1.4 Mandatory documents required along with the Bid

1.4.1 EMD of requisite value and validity
1.4.2 Tender Fee in case the tender is downloaded from website
1.4.3 Requisite Documents for compliance to Qualification Criteria mentioned in Clause 1.7.
1.4.4 Drawing, Type Test details as specified at Annexure I (as applicable)
1.4.5 Duly signed and stamped 'Schedule of Deviations' as per Annexure III on bidder's letter head.
1.4.6 Duly signed and stamped 'Schedule of Commercial Specifications' as per Annexure IV on bidder's letter head.
1.4.7 Proper authorization letter/ Power of Attorney to sign the tender on the behalf of bidder.
1.4.8 Copy of PAN, GST, PF and ESI Registration (In case any of these documents is not available with the bidder, same to be explicitly mentioned in the 'Schedule of Deviations').
1.4.9 Sample submission/Demonstration:-N/A.

Please note that in absence of any of the above documents, the bid submitted by a bidder shall be liable for rejection.

1.5 Deviation from Tender

Normally, the deviations to tender terms are not admissible and the bids with deviation are liable for rejection. Hence, the bidders are advised to refrain from taking any deviations on this

GENERAL CONDITIONS OF CONTRACT

Tender. Still in case of any deviations, all such deviations shall be set out by the Bidders, clause by clause in the 'Annexure III - Schedule of Deviations' and same shall be submitted as a part of the Technical Bid.

1.6 Right of Acceptance/ Rejection

Bids are liable for rejection in absence of following documents:-

1.6.1 EMD of requisite value and validity
1.6.2 Tender fee of requisite value
1.6.3 Price Bid as per the Price Schedule mentioned in Annexure-I
1.6.4 Necessary documents against compliance to Qualification Requirements mentioned at Clause 1.7 of this Tender Document.
1.6.5 Filled in Schedule of Deviations as per Annexure III
1.6.6 Filled in Schedule of Commercial Specifications as per Annexure IV
1.6.7 Receipt of Bid within the due date and time

TPWODL reserves the right to accept/reject any or all the bids without assigning any reason thereof.

1.7 Qualification Criteria

(a) The bidder should be manufacturer of Transformer (as per Annexure-I). Bidder should have own manufacturing facility to manufacture the same. Bidder must submit undertaking in this regard.

(b) The bidder has to quote full quantity of the tendered total quantity of the material covered under this notification. The bidder should have supplied minimum 100% of the quoted/offered quantity of same/ higher size during any one of the financial year out of the immediate past three financial years.

Bidders shall submit self attested copies of P.O.'s (all pages) along with the successful execution proof define the date of delivery (i.e. store verification report/ excisable invoice/ receipted challan etc.) executed successfully for the relevant financial years.

(c) The bid shall be accompanied by user's certificate from any Distribution Utility/State Govt./ Central Govt. or their undertaking(s) in support of satisfactory performance of their for above materials supplied earlier to them. In case the bidder has a previous association with TPWODL for similar products and services, the performance feedback for that bidder by TPWODL's User Group shall only be considered irrespective of performance certificates issued by any third organization.

(d) In-house testing facilities for acceptance test as per TPWODL specs. Bidder must submit undertaking in this regard

(e) The bidder has to submit the type test report of the quoted/offered materials from CPRI/NABL accredited laboratory. Copies of the type test reports conducted within five (5) year from the date of opening of the Technical Bid as indicated in this tender & the drawing of the offered material duly approved by the type testing agency should be attached/ enclosed.

N.B.- The type test report should cover all test conforming to IS.

(f) The bidders who have earlier failed to execute the Purchase Order(s) of WESCO/ TPWODL and or blacklisted by the WESCO/ TPWODL/ any of the distribution Utility shall not be eligible to participate in this tender.

TPWODL reserves the right to waive minor deviation, if they do not materially affect the capacity of the bidder to perform the contract.

GENERAL CONDITIONS OF CONTRACT

(g) *The bidder should have average annual turnover of Rs. 11Crore or above for last 3 FY. Bidders have to submit copy of audited Balance Sheet and P&L Account in this regard*.

NB: -Bidders must furnish self-attested audited Annual Accounts and P&L Account in this regard of past 3 best financial year/ 5 years to establish their Turnover.

1.8 Marketing Integrity

We have a fair and competitive marketplace. The rules for bidders are outlined in the General Condition of Contracts. Bidders must agree to these rules prior to participating. In addition to other remedies available, TPWODL reserves 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 General Condition of Contracts. A bidder who violates the market place rules or engages in behavior that disrupts the fair execution of the marketplace, may result in restriction of a bidder from further participation in the marketplace for a length of time, depending upon the seriousness of the violation. Examples of violations include, but are not limited to:

- Failure to honor prices submitted to the marketplace
- Breach of terms as published in TENDER/NIT

1.9 Supplier Confidentiality

All information contained in this tender is confidential and shall not be disclosed, published or advertised in any manner without written authorization from TPWODL. This includes all bidding information submitted to TPWODL. All tender documents remain the property of TPWODL and all suppliers are required to return these documents to TPWODL upon request. Suppliers who do not honor these confidentiality provisions will be excluded from participating in future bidding events.

2.0 Evaluation Criteria

- The bids will be evaluated technically on the compliance to tender terms and conditions.
- The bids will be evaluated commercially on the overall all-inclusive lowest cost for the complete tender BOQ as calculated in Schedule of Items *[Annexure I].* TPWODL reserves the right to split the order line item wise and / or quantity wise among more than one Bidder. Hence all bidders are advised to quote their most competitive rates against each line item.
- Bidder has to mandatorily quote as per schedule of item [Annexure-I]. Failing to do so TPWODL may reject the bid.

NOTE: In case of a new bidder not registered, factory inspection and evaluation shall be carried out to ascertain bidder's manufacturing capability and quality procedures. However TPWODL reserves the right to carry out factory inspection and evaluation for any bidder prior to technical qualification.

In case a bidder is found as disqualified in the factory evaluation, their bid shall not be evaluated any further and shall be summarily rejected. The decision of TPWODL shall be final and binding on the bidder in this regard.

2.1 Price Variation Clause: The prices shall remain **firm** during the entire contract period.

3.0 Submission of Bid Documents

3.1 Bid Submission

Bidders are requested to submit their offer in line with this Tender document.

GENERAL CONDITIONS OF CONTRACT

All correspondence regarding the tender, bid submission, bid submission date extension, Pre-bid query etc will happen only through Tata Power E-Tender system (Ariba).

No e-mail or verbal correspondence will be responded. All communication will be done strictly with the bidders who have participated in the Tender as elaborated in procedure for participating in tender.

Bids shall be submitted in 3 (Three) parts:

FIRST PART: "EMD" of Rs.544000/- (Rupees Five Lakh Forty Four Thousand only) shall be submitted. The EMD shall be valid for 210 days from the due date of bid submission in the form of Bank Guarantee (BG) favoring 'The TPWODL". The EMD BG has to be strictly in the format as mentioned in General Condition of Contract, failing which it shall not be accepted and the bid as submitted shall be liable for rejection.

EMD shall be strictly in the format of Bank Guarantee and Original Hard Copy shall be delivered at the following address in Envelope clearly indicating Tender Reference Number, Name of Tender and Bidder Name. Please note as return of EMD from Bank Account is non-standard practice the same may take more time than return of EMD BG.

CHIEF CONTRACT & STORES

TP WESTERN ODISHA DISTRIBUTION LIMITED

BURLA , DIST-SAMBALPUR , STATE- ODISHA , PIN- 768017

SECOND PART: "TECHNICAL BID" shall contain the following documents:

a) Documentary evidence in support of qualifying criteria
b) Technical literature/GTP/Type test report etc. *(if applicable)*
c) Qualified manpower (if available)
d) Testing facilities *(if applicable)*
e) No Deviation Certificate as per the Annexure III – Schedule of Deviations
f) Acceptance to Commercial Terms and Conditions viz Delivery schedule/period, payment terms etc. as per the Annexure IV – Schedule of Commercial Specifications.
g) Quality Assurance Plan/Inspection Test Plan for supply items *(if applicable)*

The technical bid shall be properly indexed and is to be submitted through e-tender. Hard Copy of Technical Bids not be submitted.

THIRD PART: "PRICE BID" shall contain only the price details and strictly in format as mentioned in Annexure I with explicit break up of basic prices, Taxes & duties, Freight etc. In case any discrepancy is observed between the item description stated in Schedule of Items mentioned in the tender and the price bid submitted by the bidder, the item description as mentioned in the tender document (to the extent modified through Corrigendum issued if any) shall prevail. Price Bid is to be submitted in Soft Copy through Tata Power E-Tender system (Ariba) only. Hard Copy of Price Bid not to be submitted.

SIGNING OF BID DOCUMENTS:

GENERAL CONDITIONS OF CONTRACT

The bid must contain the name, residence and place of business of the person or persons making the bid and must be signed and sealed by the Bidder with his usual signature. The names of all persons signing should also be typed or printed below the signature.

The Bid being submitted must be signed by a person holding a Power of Attorney authorizing him to do so, certified copies of which shall be enclosed.

The Bid submitted on behalf of companies registered with the Indian Companies Act, for the time being in force, shall be signed by persons duly authorized to submit the Bid on behalf of the Company and shall be accompanied by certified true copies of the resolutions, extracts of Articles of Association, special or general Power of Attorney etc. to show clearly the title, authority and designation of persons signing the Bid on behalf of the Company. Satisfactory evidence of authority of the person signing on behalf of the Bidder shall be furnished with the bid.

A bid by a person who affixes to his signature the word 'President', 'Managing Director', 'Secretary', 'Agent' or other designation without disclosing his principal will be rejected.

The Bidder's name stated on the Proposal shall be the exact legal name of the firm.

3.2 Contact Information

Please note all correspondence regarding the tender, bid submission, bid submission date extension, Pre-bid query etc will happen only through TPWODL E-Tender system (Ariba).

No e-mail or verbal correspondence will be responded. All communication will be done strictly with the bidders who have participated in the Tender as elaborated in procedure for participating in tender.

Communication Details:

Package-Owner

Name: Mr Choudhury Priyabrat Jena

E-Mail ID: priyabrat.jena@tpwesternodisha.com

HoD

Name: Mr Ajit Singh

E-Mail ID: ajit.singh@tpwesternodisha.com

Chief Contracts & Stores

Name: Mr. Harish Sharma

E-Mail ID: harish.sharma@tpwesternodisha.com

Bidders are strictly advised to communicate with Package Owner through TPWODL E-tender System (Ariba) only. They need to pay Tender Participation Fee and receive the Ariba log-in. Above contact details are for reference purpose only.

3.3 Bid Prices

Bidders shall quote for the entire Scope of Supply / work with a break up of prices for individual items and Taxes & duties. The bidder shall complete the appropriate Price Schedules included herein, stating the Unit Price for each item & total price with taxes, duties & freight up to destination at various sites of TPWODL. The all-inclusive prices offered shall be inclusive of all costs as well as Duties, Taxes and Levies paid or payable during the execution of the supply work, breakup of price constituents.

GENERAL CONDITIONS OF CONTRACT

Applicable GST to be specified clearly.

The quantity break up shown else-where other than Price Schedule is tentative. The bidder shall ascertain himself regarding material required for completeness of the entire work. Any items not indicated in the price schedule but which are required to complete the job as per the Technical Specifications / Scope of Work mentioned in the tender, shall be deemed to be included in prices quoted.

3.4 Bid Currencies

Prices shall be quoted in Indian Rupees Only.

3.5 Period of Validity of Bids

Bids shall remain valid for 180 days from the due date of submission of the bid.

Notwithstanding clause above, the TPWODL may solicit the Bidder's consent to an extension of the Period of Bid Validity. The request and responses thereto shall be made in writing.

3.6 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.

3.7 Modifications and Withdrawal of Bids

The bidder is not allowed to modify or withdraw its bid after the Bid's submission. The EMD as submitted along with the bid shall be liable for forfeiture in such event.

3.8 Earnest Money Deposit (EMD)

The bidder shall furnish, as part of its bid, an EMD amounting as specified in the tender. The EMD is required to protect the TPWODL against the risk of bidder's conduct which would warrant forfeiture.

The EMD shall be forfeited in case of:

a) The bidder withdraws its bid during the period of specified bid validity.

Or

b) The case of a successful bidder, if the Bidder does not
i) accept the purchase order, or
ii) furnish the required performance security BG

3.9 Type Tests (if applicable)

The type tests specified in TPWODL specifications should have been carried out within five years prior to the date of opening of technical bids and test reports are to be submitted along with the bids. If type tests carried out are not within the five years prior to the date of bidding, the bidder will arrange to carry out type tests specified, at his cost. The decision to accept/ reject such bids rests with TPWODL.

4.0 Bid Opening & Evaluation process

4.1 Process to be confidential

GENERAL CONDITIONS OF CONTRACT

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 TPWODL's processing of Bids or award decisions may result in the rejection of the Bidder's Bid.

4.2 Technical Bid Opening

The bids shall be opened internally by TPWODL. First the envelope marked “EMD” will be opened. Bids without EMD/ cost of tender (if applicable) of required amount/ validity in prescribed format, shall be rejected.

Next, technical bids of bidders who have submitted EMD shall be opened. Participating Bidders will get mail intimation from Tata Power E-Tender system (Ariba) when their Technical Bids are opened.

4.3 Preliminary Examination of Bids/ Responsiveness

TPWODL 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. TPWODL may ask for submission of original documents in order to verify the documents submitted in support of qualification criteria.

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.

Prior to the detailed evaluation, TPWODL 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.

Bid determined as not substantially responsive will be rejected by the TPWODL and/or the TPWODL and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

4.4 Techno Commercial Clarifications

Bidders need to ensure that the bids submitted by them are complete in all respects. To assist in the examination, evaluation and comparison of Bids, TPWODL may, at its discretion, ask the Bidder for a

clarification on its Bid for any deviations with respect to the TPWODL specifications and attempt will be made to bring all bids on a common footing. 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 owing to any clarifications sought by TPWODL.

4.5 Price Bid Opening

Price Bid of only Technically and / or Safety Qualitied Bidders shall be considered and open internally by TPWODL. Bidders will get mail intimation from TPWODL E-Tender system (Ariba) when their Price Bids are opened. The EMD of the bidder withdrawing or substantially altering his offer at any stage after the technical bid opening will be forfeited at the sole discretion of TPWODL without any further correspondence in this regard.

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4.7 Reverse Auctions

TPWODL reserves the right to conduct the reverse auction (instead of public opening of price bids) for the products/ services being asked for in the tender. The terms and conditions for such reverse auction events shall be as per the Acceptance Form attached as Annexure VI of this document. The bidders along with the tender document shall mandatorily submit a duly signed copy of the Acceptance Form attached as Annexure VI as a token of acceptance for the same.

5.0 Award Decision

TPWODL will award the contract to the successful bidder whose bid has been determined to be the lowest-evaluated responsive bid as per the Evaluation Criterion mentioned at Clause 2.0. The Cost for the said calculation shall be taken as the all-inclusive cost quoted by bidder in Annexure I (Schedule of Items) subject to any corrections required in line with Clause 4.3 above. The decision to place purchase order / LOI solely depends on TPWODL on the cost competitiveness across multiple lots, quality, delivery and bidder's capacity, in addition to other factors that TPWODL may deem relevant.

TPWODL reserves all the rights to award the contract to one or more bidders so as to meet the delivery requirement or nullify the award decision without assigning any reason thereof.

In case any supplier is found unsatisfactory during the delivery process, the award will be cancelled and TPWODL reserves the right to award other suppliers who are found fit.

NOTE : Please note that Intimation of Price Bid Opening will go only to those bidders who are Technically Acceptable and whose price bid are opened. Bidders who are not successful in technical or commercial part of the process will be intimated to collect EMD only after end of process

It is informed that TPWODL shall not provide status updates or give explanation of process followed for bidder selection criteria whatsoever, to any participating bidder.

6.0 Order of Preference/Contradiction:

In case of contradiction in any part of various documents in tender, following shall prevail in order of preference:

1. Schedule of Items (Annexure I)
2. Post Award Contract Administration (Clause 7.0)
3. Submission of Bid Documents (Clause 3.0)
4. Scope of Work and SLA (if any)
5. Technical Specifications (Annexure II)
6. Inspection Test Plan (if any)
7. Acceptance Form for Participation in Reverse Auction (Annexure VI)
8. General Conditions of Contract (Annexure VII)

7.0 Post Award Contract Administration

7.1 Special Conditions of Contract

- After finalization of tender, Purchase Order shall be issued on successful bidder.
- Post award of purchase order, Business Associate (BA) shall submit applicable Performance Bank Guarantee as per GCC within 30 days. PBG applicable shall 5% of purchase order Value. PBG submitted, shall be released after completion of applicable guarantee period plus one month.
- Guarantee period shall be as per technical specifications.

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- **Within 30 days of Rate Contract issuance by TPWODL, it is the responsibility of BA to get manufacturing clearance and CAT-A issued from TPWODL.** In case BA does not get necessary approvals for issuance of CAT-A within mentioned timelines, then TPWODL reserve the right to cancel issued purchase order / release order and also reserve the right to forfeit EMD/PBG.
- **Delivery period shall be 90 days from date of receipt of release order / CAT-A approval whichever is later.**
- TPWODL shall short close the issued Release Order / purchase order, in case of any quality issues.
- Any change in statutory taxes, duties and levies shall be borne by TPWODL.
- All other terms and conditions of TPWODL GCC shall be applicable.

7.2 Drawing Submission & Approval

The relevant drawings and GTPs need to be submitted as per special condition of contract mentioned in point no. 7.1.

7.3 Delivery Terms

The delivery of material shall be made as per special condition of contract mentioned in point 7.1.

7.4 Guarantee Period

Guarantee Period of the supplied material shall be as per technical specification attached separately with this tender.

7.5 Payment Terms

On delivery of the materials in good condition and certification of acceptance by certified official, Associate shall submit the Bills/ Invoices in original in the name of TPWODL to Invoice Desk. The payment shall be released **within 45 days** from the date of submission of certified bills/ invoices.

7.6 Climate Change

Significant quantities of waste are generated during the execution of project and an integrated approach for effective handling, storage, transportation and disposal of the same shall be adopted. This would ensure the minimization of environmental and social impact in order to combat the climate change.

7.7 Ethics

- TPWODL is an ethical organization and as a policy TPWODL lays emphasis on ethical practices across its entire domain. Bidder should ensure that they should abide by all the ethical norms and in no form either directly or indirectly be involved in unethical practice.
- TPWODL work practices are governed by the Tata Code of Conduct which emphasizes on the following:
- We shall select our suppliers and service providers fairly and transparently.
- We seek to work with suppliers and service providers who can demonstrate that they share similar values. We expect them to adopt ethical standards comparable to our own.
- Our suppliers and service providers shall represent our company only with duly authorized written permission from our company. They are expected to abide by the Code in their interactions with, and on behalf of us, including respecting the confidentiality of information shared with them.

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- We shall ensure that any gifts or hospitality received from, or given to, our suppliers or service providers comply with our company's gifts and hospitality policy.
- We respect our obligations on the use of third party intellectual property and data.

Bidder is advised to refer GCC attached at Annexure IX for more information.

Any ethical concerns with respect to this tender can be reported to the following e-mail ID: sunilk.sharma@tpwesternodisha.com.

8.0 Specification and standards:

Attached separately with tender.

9.0 General Condition of Contract

Any condition not mentioned above shall be applicable as per GCC for Supply attached along with this tender.

10.0 Safety

10.0 Safety related policies can be accessed on Company's website .

11.0 http://www.tatapower.com

GENERAL CONDITIONS OF CONTRACT

ANNEXURE I

Schedule for Items

Sr. No.	Description	Qty. (in Nos.)	UoM	Unit Price (in Rs.)	GST @	Unit Price with GST/ Landing Price (in Rs.)	Amount (in Rs.)
1	8MVA, 33/11KV, 3-Ø, Cu. Wound, ONAN type, POWER TRANSFORMER.	06	EA				
HSN CODE:						TOTAL AMOUNT (in Rs.)	

NOTE:

- The quantity mentioned above is for evaluation purpose only and may vary during the execution.
- The unit price with GST in column no. 7, is landed price FOR TPWODL Odisha Locations. Exact delivery location shall be specified in the Release Order.
- The bidders are advised to quote prices strictly in the above format. Failing to do so, bids are liable for rejection.
- The bidder must fill each and every column of the above format. ***Mentioning "extra/inclusive" in any of the column may lead for rejection of the price bid.***
- No cutting/ overwriting in the prices is permissible.

GENERAL CONDITIONS OF CONTRACT

ANNEXURE II

Technical Specifications attached separately with the tender.

ANNEXURE III

Schedule of Deviations

Bidders are advised to refrain from taking any deviations on this TENDER. Still in case of any deviations, all such deviations from this tender document shall be set out by the Bidders, Clause by Clause in this schedule and submit the same as a part of the ***Technical Bid.***

Unless specifically mentioned in this schedule, the tender shall be deemed to confirm the TPWODL's specifications:

S. No.	Clause No.	Tender Clause Details	Details of deviation with justifications

By signing this document we hereby withdraw all the deviations whatsoever taken anywhere in this bid document and comply to all the terms and conditions, technical specifications, scope of work etc. as mentioned in the standard document except those as mentioned above.

Seal of the Bidder:

Signature:

Name:

GENERAL CONDITIONS OF CONTRACT

ANNEXURE IV

Schedule of Commercial Specifications

(The bidders shall mandatorily fill in this schedule and enclose it with the offer Part I: Technical Bid. In the absence of all these details, the offer may not be acceptable.)

S. No.	Particulars	Remarks
1.	Prices firm or subject to variation (If variable indicate the price variation clause with the ceiling if applicable)	Firm / Variable
1a.	If variable price variation on clause given	Yes / No
1b.	Ceiling	-------- %
1c.	Inclusive of Excise Duty	Yes / No (If Yes, indicate % rate)
1d.	GST is applicable at concessional rate	Yes / No (If Yes, indicate % rate)
1e.	Octroi payable extra	Yes / No (If Yes, indicate % rate)
1f.	Inclusive of transit insurance	Yes / No
2.	Delivery	Weeks / months
3.	Guarantee clause acceptable	Yes / No
4.	Terms of payment acceptable	Yes / No
5.	Performance Bank Guarantee acceptable	Yes / No
6.	Liquidated damages clause acceptable	Yes / No
7.	Validity (180 days) (From the date of opening of technical bid)	Yes / No
8.	Inspection during stage of manufacture	Yes / No
9.	Rebate for increased quantity	Yes / No (If Yes, indicate value)
10.	Change in price for reduced quantity	Yes / No (If Yes, indicate value)
11.	Covered under Small Scale and Ancillary Industrial Undertaking Act 1992	Yes / No (If Yes, indicate, SSI Reg. No.)

GENERAL CONDITIONS OF CONTRACT

ANNEXURE V

Checklist of all the documents to be submitted with the Bid

Bidder has to mandatorily fill in the checklist mentioned below:-

S. No.	Documents attached	Yes / No / Not Applicable
1	EMD of required value	
2	Tender Fee as mentioned in this RFQ	
3	Company profile/ organogram	
4	Signed copy of this RFQ as an unconditional acceptance	
5	Duly filled schedule of commercial specifications (Annexure IV)	
6	Sheet of commercial/ technical deviation if any (Annexure III)	
7	Balance sheet for the last completed three financial years; mandatorily enclosing Profit & loss account statement	
8	Acknowledgement for Testing facilities if available (duly mentioned on bidder letter head)	
9	List of Machine/ tools with updated calibration certificates if applicable	
10	Details of order copy (duly mentioned on bidder letter head)	
11	Order copies as a proof of quantity executed	
12	Details of Type Tests if applicable (duly mentioned on bidder letter head)	
13	All the relevant Type test certificates as per relevant IS/ IEC (CPRI/ ERDA/ other certified agency) if applicable	
14	Project/ Supply Completion certificates	
15	Performance certificates	
16	Client Testimonial/ Performance Certificates	
17	Credit rating/ Solvency certificate	
18	Undertaking regarding non blacklisting (On company letter head)	
19	List of trained/ Untrained Manpower	

GENERAL CONDITIONS OF CONTRACT

Annexure VI

Acceptance Form for Participation In Reverse Auction Event

(To be signed and stamped by the bidder)

In a bid to make our entire procurement process more fair and transparent, TPWODL intends to use the reverse auctions as an integral part of the entire tendering process. All the bidders who are found as technically 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. TPWODL shall provide the user id and password to the authorized representative of the bidder. *(Authorization Letter in lieu of the same shall be submitted along with the signed and stamped Acceptance Form).*
2. TPWODL will make every effort to make the bid process transparent. However, the award decision by TPWODL would be final and binding on the supplier.
3. The bidder agrees to non-disclosure of trade information regarding the purchase, identity of TPWODL, 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 TPWODL.
6. In case of intranet medium, TPWODL shall provide the infrastructure to bidders. Further, TPWODL 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 TPWODL.
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 TPWODL site.
10. The prices submitted by a bidder during the auction event shall be binding on the bidder.
11. No requests for time extension of the auction event shall be considered by TPWODL.
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.

Signature & Seal of the Bidder

GENERAL CONDITIONS OF CONTRACT

Annexure VII

General Conditions of Contract – Attached separately with the tender.

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CONTENTS	
CLAUSE NO.	**DESCRIPTION**

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GENERAL CONDITIONS OF CONTRACT

1.0 ORGANIZATIONAL VALUES

The Tata Group has always been a value driven organization. These values continue to direct the Group's growth and businesses. The six core Tata Values underpinning the way we do business are:

Integrity - We must conduct our business fairly, with honesty and transparency. Everything we do must stand the test of public scrutiny.

Understanding - We must be caring, respectful, compassionate and humanitarian towards our colleagues and customers around the world and always work for the benefit of India.

Excellence - We must constantly strive to achieve the highest possible standards in our day to day work and in the quality of goods and services we provide.

Unity - We must work cohesively with our colleagues across the group and with our customers and partners around the world to build strong relationships based on tolerance, understanding and mutual co-operation.

Responsibility - We must continue to be responsible and sensitive to the countries, communities and environments in which we work, always ensuring that what comes from the people goes back to the people many times over.

Agility - We must work in a speedy and responsive manner and be proactive and innovative in our approach.

2.0 ETHICS

In our effort towards Excellence and in Management of Business Ethics at TPWODL, an Ethics Management Team is constituted.
The main objective of the Ethics Management Team is to:

1. Record, address and allay the issues and concerns on ethics raised by different stakeholders like employees, consumers, vendors, Associates etc. by initiating immediate corrective actions.
2. Ensure proper communication of the ethics policies and guidelines through prominent displays at all offices of TPWODL and through printed declarations in all concerned documents where external stakeholders are involved.
3. Ensure proper framework of policies as preventive measures against any ethics violation recorded by them.
4. Prepare and submit MIS of all issues and concerns, corrective and preventive actions on monthly basis to the top management for their information.

All Associates and Stakeholders are requested to register any grievance on ethics violation on our website www.tpwesternodisha.com

3.0 CONTRACT PARAMETERS

GENERAL CONDITIONS OF CONTRACT

3.1 Issue/Award of Contract

TPWODL awards the contract to the Associate in writing in the form of Purchase Order (PO) or Rate Contract (RC), hereafter referred as Contract, through in any or all of following modes physical handover / post / e-mail / web document / fax with all the attachments/enclosures which shall be part of the contract document.

On receipt of the contract, the associate shall return to TPWODL copy of the contract document duly signed by legally authorized representative of associate, within two days of Effective Date of Contract for contracts having contract execution time less than 30 days and within five days for all other contracts.

3.2 Contract Commencement Date

The date of issue/award of contract shall be the Effective Date of Contract or Contract Commencement date.

3.3 Contract Completion Date

The date of expiry of Guarantee Period shall be deemed as the Contract Completion Date.

3.4 Contract Period/Time

The period from Contract Commencement Date to Contract Completion Date shall be deemed as the Contract Period/Time.

3.5 Contract Execution Completion Date

The stipulated date for completing the supply as per schedule of quantities shall be deemed as the Contract Execution Completion Date.

3.6 Contract Price /Value

The total all inclusive price/value mentioned in the PO/RC is the Contract Price/Value and is based on the quantity, unit rates and prices quoted and awarded and shall be subject to adjustment based on actual quantities supplied and accepted and certified by the authorized representative of the company unless otherwise specified in schedule of quantities or in contract documents.

3.7 Contract Document

The Contract Document shall mean and include but not limited to the following:

- NIT/Tender Enquiry, QR, Instruction to Bidders, Special Condition of Contract (SCC) of tender, GCC, Technical & Commercial Specifications including relevant annexure and attachments).
- Bids & Proposals Received from Associate including relevant annexure/attachments.
- RC/PO with agreed deviations from the tender/bid documents.
- All the Inspection and Test reports, Detailed Engineering Drawings.
- Material Dispatch Clearance Certificate (MDCC).
- Minutes of Meeting (MoM)

3.8 Contract Language

All documents, instructions, catalogues, brochures, pamphlets, design data, norms and calculations, drawings, operation, maintenance and safety manuals, reports, labels, on deliveries and any other data shall be in English Language.

GENERAL CONDITIONS OF CONTRACT

The Contract documents and all correspondence between the TPWODL, Third Parties associated with the contract, and the Associate shall be in English language.
However, all signboards required indicating "Danger" and/or security at site and otherwise statutory required shall be in English, Hindi, and local languages.

3.9 Reverse Auction

TPWODL reserves the right to conduct the reverse auction (instead of public opening of price bids) for the products / services being asked for in the tender. The terms and conditions for such reverse auction events shall be as per the Acceptance Form attached in Annexure F. The bidders along with the tender document shall mandatorily submit a duly signed copy of the Acceptance Form as mentioned in the Annexure J as a token of acceptance for the same.

4.0 SCOPE OF WORK

All the activities that are to be undertaken by the Associate to realize the contractual deliverables in completeness form Scope of Work. Following clauses list, but not limited to, major requirements of the scope of work.
The associate shall satisfy himself and undertake fully the technical/commercial requirements of items to be supplied as listed in the Schedule of Quantities together with the tests to be performed /test reports to be furnished before dispatch, arrangement of stage and final inspections during manufacturing as per terms and conditions of contract, technical parameters & delivery terms and conditions including transit insurance to be met in order to fully meet TPWODL's requirements.

Completeness: Any supplies and services which might have not been specifically mentioned in the Contract but are necessary for the scope mentioned in Special Terms & Conditions and/or completeness of the works at the highest possible level, including any royalties, license fees & compensation to be paid, whether incurred by the associates or by a third party for the work covered in the scope, regardless of when incurred, shall be supplied/provided by the associate without any extra cost and within the time schedule for efficient , smooth and satisfactory operation and maintenance of the works at the highest possible level under Indian conditions (but according to international standards for facility of this type), unless expressly excluded from the scope of supplies and services in this Contract.

TPWODL have the right, during the performance of the Contract, to change the scope and/or technical character of the Project and/or of the supplies and services stipulated in the Contract by submitting a request in writing to the Associate. The Associate shall, within fifteen days of receipt of such request from the TPWODL, provide Purchaser with a reasonably detailed estimate of the cost of the change outlined in the request.
In the event, TPWODL requests a change, the Contract price and time shall be adjusted upwards or downwards, as the case may be and shall be mutually agreed to. The associate shall not be entitled to any extension of time unless such changes adversely affect the time schedule.

The Associate shall not proceed with the changes as requested till adjustment of contract price and time schedule where so applicable in terms of or otherwise directed by the TPWODL.

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5.0 PRICES/RATES/TAXES

Unless specified elsewhere in the contract document, the prices/rates are inclusive of cost of finished product for which MDCC will be issued by TPWODL, packaging and forwarding charges, freight and transit insurance charges covering loading at Associate's works, transportation to TPWODL store/site & unloading & delivery at TPWODL stores/TPWODL site, cost of documentation including all the relevant test certificates and other supportive documents to be furnished.

The Prices/Rates are inclusive of GST, particularly Goods and Services Tax as applicable. All government levy / taxes shall be paid only when the invoice is submitted according to the relevant act.

The prices/rates shall remain firm till actual completion of entire supply of goods/ material/ equipment as per contract is achieved and shall remain valid till the completion of the contract.

The prices shall remain unchanged irrespective of TPWODL making changes in quantum in all or any of the schedules of items of contract.

5.1 Changes in Statutory Tax Structure

If rate of any or all of the statutory taxes and duties applicable to the contract changes, such changes shall be incorporated by default if the changes occur within the contract execution time and shall be applicable if the contract is executed by the Associate within the Contract Execution Time.

For execution of contracts beyond contract execution time, where the delay is not attributable to TPWODL no upward revision in tax /duties shall be considered irrespective of changes in the statutory tax structure either within the contract execution time or beyond. However, in such cases, benefits due to any downward revisions in statutory tax rates shall be passed on to TPWODL.

6.0 TERMS OF PAYMENT

On delivery of the materials in good condition and certification of acceptance by TPWODL official, Associate shall submit the Bills/Invoices in original in the name of "TP Western Odisha Distribution Ltd" to invoice desk, complete with all required documents as under:

- Test Reports (4 sets).
- MDCC issued by TPWODL.
- Packing List.
- Drawing and Catalogue.
- Guarantee/Warrantee Card.
- Delivery Challan.
- O&M Manual.

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- Copy of Order.
- Minutes of Meeting.

Bills/ invoices shall mention Supplier's GST Number. TPWODL will make 100% payment within 30 days of submission of the Bill/Invoice complete in all respects and along with all the requisite documents mentioned above, subject to condition that Associate has furnished the requisite Security-cum-Performance Guarantee as stipulated in the contract.

6.1 Quantity Variation

Payment will be made on the basis of actual quantity of supplies/actual measurement of works accepted by TPWODL and not on the basis of contract quantity.

6.2 Full and Final Payment

Full & Final Payment in all contracts shall be made subject to the associate submitting "No Demand Certificate" in the format as per Annexure-C.

7.0 MODE OF PAYMENT

Payment shall be made through crossed Cheque or RTGS whichever of the two modes chosen by the Associate, in favour of Associate's Bank Account on TPWODL records, on whose name Contract has been issued. Those Associates opting for the RTGS mode shall submit the details of Bank Account and other details as per annexure G. Further, for any payments made, TPWODL is not responsible for any consequences/disputes Associate have among the owners channel partners, sub-Associates and all such dispute/concerns shall be settled solely by the Associate.

8.0 SECURITY CUM PERFORMANCE DEPOSIT

Associates shall submit within 15 days from the effective date of issue of PO/RC, Security Performance Bank Guarantee (SPBG) in the format as per Annexure B of this document from banks acceptable to TPWODL for:

(a) 5% of the PO value if purchase order value is more than Rs 5 Crores.

(b) 10% of the PO value if purchase order value is less than Rs 5 Crores.

This shall remain valid till the end of the Guarantee Period of contract, plus one month.

(c) 5% of the RC value in case of Rate Contract. This shall remain valid till the Guarantee period plus one month.

- For PO/RC values less than Rs. 5 lacs, Associate may request for deduction of amount equivalent to SPBG value from their first invoice. Such amount shall be withheld by TPWODL while processing the invoice and shall be released after completion of Guarantee Period plus one month.
- For PO/RC values less than Rs. 3 lacs, the clause (8.0) for Security cum Performance Bank Guarantee (SPBG) shall not be applicable.
- In case of RC (Rate Contract) after the expiry of RC validity, Associate shall have to submit SPBG. However, the Associate has the option to re-submit the SPBG as per actual RO

  (Release Order) value issued against the RC, valid for Guarantee Period plus one month.

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The Guarantee Period shall be considered as per the last RO issued against the said RC. The original SPBG as submitted against the RC shall be released on submission of the new SPBG to TPWODL. Alternatively, Associate may extend the validity of original SPBG only till the requisite period, i.e. Guarantee Period plus one month.

9.0 STATUTORY COMPLIANCE

9.1 Compliance to Various Acts

Associate should ensure adherence to all applicable laws, rules and regulation applicable under this contract from time to time. In case of violation any risk, costs etc shall be in associates account and keep TPWODL indemnified always till completion of contracts.

9.2 SA 8000

As TPWODL is SA 8000 compliant, it expects its Associates to follow guidelines of SA 8000:2014 on the following aspects

1. Child Labour

2. Forced or Compulsory Labour

3. Health & Safety

4. Freedom of Association & Right to Collective Bargaining

5. Discrimination

6. Disciplinary Practices

7. Working Hours

8. Remuneration

9. Management System

9.3 Affirmative Action

TPWODL appreciate and welcome the engagement/employment of persons from SC/ST community or any other deprived section of society by their business associates.

Relaxation in Contract Clauses under Affirmative Action for SC/ ST Business Associates**

TPWODL believes that inclusive growth is the key to sustainable development, and to promote the same Policy on Affirmative Action for Scheduled Caste & Scheduled Tribe Communities has been adopted across the company.

Under the same pre-text, and to promote entrepreneurship among SC/ST community TPWODL has taken initiative by proposing relaxations in contract clauses as per below:

S. No	Initiative	for SC/ ST BA's	Guideline Document
1	Tender Fees	100% waiver for SC/ST community	All Open Tenders
2	Earnest Money Deposit	50 % relaxation of estimated EMD value	All limited and Open Tenders

GENERAL CONDITIONS OF CONTRACT

3	Performance Bank Guarantee	50% relaxation in PBG for order value above 50 lacs else 25% relaxation	All limited and Open tenders
4	Turnover	25% relaxation in company turnover under qualifying requirement criteria	All Open Tenders

****Classification of BAs under SC/ST shall be governed under following guidelines:**

- Proprietorship/ Single Ownership Firm: Proprietor of the firm should be from SC/ST community. Governing document shall be duly audited balance Sheet for the last FY bearing the name of proprietor.
- Partnership Firm: Only such firms shall qualify which have SC/ST partners holding equal to or more than 50% of the total ownership pattern of the firm. Governing document shall be Partnership Deed and audited balance sheet/ ITR for last FY.
- Private limited company: Only such firms shall qualify which have SC/ST directors holding equal to or more than 50% of the total ownership pattern of the firm. Governing document shall be Memorandum of Understanding (MoU) and/or Article of Association (AoA).

Governing document shall be Memorandum of Understanding (MoU) and/or Article of Association (AoA).

Note: Certification from SC/ST commission shall be required for deciding upon SC/ST status of a person.

10.0 QUALITY

10.1 Knowledge of Requirements

The Associate shall be deemed to have carefully examined and to have knowledge of the equipment, the general and other conditions, specifications, schedules, drawings, etc. forming part of the Contract and also to have satisfied himself as to the nature and character of the work to be executed and the type of the equipment and duties required including wherever necessary of the site conditions and relevant matters and details. Any information thus procured or otherwise obtained from TPWODL/Consultants shall not in any way relieve the Associate from his responsibility and executing the works in accordance with the terms of contract.

10.2 Material/Equipment/Works Quality

The items / works under the scope of the Associate shall be of the best quality and workmanship according to the latest engineering practice and shall be manufactured from materials of best quality considering strength and durability for their best performance and, in any case, in accordance with the specifications set forth in this Contract. All material shall be new. Substitution of specified material or variation from the process of fabrication/ construction/ manufacture may be permitted but only with the prior written approval of the TPWODL.

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10.3 Adherence to Rules & Regulations

The Associate shall procure and/or fabricate/erect all materials and equipment in accordance with all requirements of Central and State enactment, rules and regulations governing such work in India and at site. This shall not be construed as relieving the Associate from complying with any requirement of TPWODL as enumerated in the Contract which may be more rigid than and not contrary to the above mentioned rules, nor providing such construction as may be required by the above mentioned rules and regulations. In case of variance of the Technical Specification from the laws, ordinance, rules and regulations governing the work, the Associate shall immediately notify the same to the TPWODL. It is the sole responsibility of the Associate, however, to determine that such variance exists. Wherever required by rules and regulations, the Associate shall also obtain the statutory authorities' approval for the plant, machinery and equipment to be supplied by the Associate.

10.4 Specifications and Standards

The Associate shall follow all codes and standards referred in the Contract Document. Codes and standards of other may be followed by the Associate with the prior written approval of TPWODL, provided materials, supplies and equipment according to the standard are equal to or better than the corresponding standards specified in the Contract.

Brand names mentioned in the Contract documents are for the purpose of establishing the type and quality of products to be used. The Associate shall not change the brand name and qualities of the bought-out items without the prior written approval of the TPWODL. All such products and equipment shall be used or installed in strict accordance with original manufacturer's recommendations, unless otherwise directed by the TPWODL. In any circumstances the codes, specimen and standards prescribed by any government agency should not be violated.

11.0 INSPECTION/PARTICIPATION

11.1 Right to Carry Out Inspection

TPWODL reserves the right to send its representatives for inspection or participation at various stages of contract execution listed below, applicable as per contract construction.

- During basic design and detail engineering of material/ Equipment carried out by Associate /Outsourced Agencies.
- During manufacturing stages of the product at Associate’s/Associate’s Outsourced Agency’s Plant/Facility.
- During Pre-dispatch Inspection and Testing of finished/manufactured product at Associate’s/Associate’s outsourced Agency’s Plant/Facility.
- During Installation & Commissioning Activities/Stages.
- Prior to Clearing of the completed installation for commissioning.
- Any other stage as find appropriate by TPWODL during contract execution time.

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All inspections and participations shall be carried out by TPWODL giving written intimation to the Associate or receiving appropriate advance written inspection call from the Associate, unless otherwise specified elsewhere in the contract document.

11.2 Facilitating Inspection

The Associate shall provide all opportunities and information to TPWODL's engineers to get acquainted with the technical know-how and the methods and practices adopted by the Associate in basic and detail engineering. The Associate shall provide documents, drawings, calculations etc. as may be required by TPWODL's Engineers.

The Associate shall provide free of charge office accommodation, office facilities, secretarial services, communication facilities, general and drawing office stationary, etc. as may be reasonably required by the TPWODL's engineers. Similarly, facilities shall also be provided by Associate's outsource agencies/partners/authorized dealers (collectively termed as sub associates) if such basic and detail engineering activities are carried out in the design offices of sub-Associates.

The Associate shall be responsible for the safety of employees of TPWODL/Third Party Agency when they are at the Associate's /Associate's outsource agency's plant or facility for carrying out/witnessing inspection/testing. All statutory safety precautions as applicable shall be followed by the Associate during Inspection Testing. If TPWODL inspectors are not satisfied with the safety arrangements at the plant, TPWODL have the right to call off inspection till such time corrective action is taken by the Associate.
Before raising the call for pre-dispatch final inspection and testing, the Associate shall conduct all the tests—type tests, routine tests etc-as specified in the contract document and submit copies of the test certificates to TPWODL along with the inspection call, for scrutiny of TPWODL.

The Associate and TPWODL shall jointly document all the observations, comments and action points after completion of inspection and it shall be binding on the Associate to provide compliance on all the points requiring compliance and furnish the compliance report to the designated authority of TPWODL for receiving clearance for dispatch of materials

11.3 Third Party Nomination

TPWODL also may nominate a third party for the purpose of carrying out the inspection and such an agency shall be entitled to all the rights and privileges of TPWODL as far as conducting the inspection.

11.4 Waiver of Inspections

TPWODL on its own discretion shall chose to waive off any inspection and ask the Associate to submit all the test reports as applicable as per contract specifications, related to inspection and testing of the goods ordered for scrutiny and clearance for dispatch.

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11.5 Incorrect Inspection Call

In case it is observed that the material offered for inspection is not ready at the time of TPWODL inspection visit rendering it as futile, all costs towards such inspection shall be recovered from the BA. Taxes as applicable on such recoveries shall be borne by the BA.

12.0 MDCC & DELIVERY OF MATERIALS

12.1 Material Dispatch Clearance Certificate

Associate shall deliver material/goods/equipment against Supply Contracts or Supply Part of Composite/Service Contracts only after receiving Material Dispatch Clearance Certificate (hereafter termed as MDCC) issued by designated authority of TPWODL. Material delivered at TPWODL stores or at project site without a valid MDCC issued by the designated official of TPWODL shall be rejected. MDCC shall be issued to associate furnishing compliance report on the action points documented during pre-dispatch inspection and testing at Associate's/ Sub Associate's plant/ facility. In case Pre-dispatch inspection is waived at the discretion of TPWODL, then, MDCC shall be issued on receiving all the test reports-routine& type-from the Associate and finding them in order.

The associate shall include and provide for securely protecting and packing the materials so as to avoid loss or damage during handling and transport by air, sea, rail and road or any other means.

All such packing shall allow to the extent possible for easy removal and checking at Site. The associate shall take special precautions to prevent rusting of steel and iron parts during transit by sea. Gas seals or other materials shall be utilized by the associate for protection against moisture during transit of all Plant and Equipment.

Each Equipment or parts of Equipment shall be tagged with reference to the assembly drawings and corresponding part numbers. Each bale or package shall contain a packing note quoting specifically the name of the associate, item description, quantity, item / package identification.

All packing cases, containers, packing and other similar materials shall be new and supplied free by the associate and it shall not be required to be returned to the associate.
Notwithstanding anything stated in this clause, the associate shall be entirely responsible for loss, damage or depreciation or deterioration to the materials and supplies due to faulty and/or insecure packing or otherwise during transportation to the Site until otherwise provided herein.

In case of the consignments dispatched by road, the associate shall ensure that it or its subcontractors:

i) Identify and obtain the correct type of trucks/trailers, keeping in view the nature of consignments to be dispatched.

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ii) Take such actions as may be necessary to avoid all possible chances of damages during transit and to ensure that all packages are firmly secured.

Timelines for inspection and MDCC is as below:

S. No.	Inspection	MDCC issuance time including Inspection time (max.)
1	Outside Sambalpur	12 days
2	Within Sambalpur	5 days
3	Waiver*	3 working days

* Associate is expected to raise the inspection call assuming that Inspection shall be carried out by TPWODL. The decision for waiver of inspection shall be on sole discretion of TPWODL.

12.2 Right to Rejection on Receipt

Goods/Material/Equipment delivered in condition physically damaged & incomplete as a product ordered, or not packed and transported as per the terms and conditions of the contract is liable to be rejected. Such item shall be lifted back by Associates within 15 days from receipt of rejection note from TPWODL and have to supply back the material within next 30 days or within the timeframe mutually decided by Associate and TPWODL.

If delivery of the material is beyond the agreed time, Liquidated damage clause, mentioned in this GCC separately shall be applicable; but the period for levy of LD shall be considered as per the original delivery schedule and not from the agreed timelines for material rectification.

12.3 Consignee

Unless otherwise specified in the Contract Document, Materials/Goods/Equipment shall be consigned to “Stores-In-Charge”, TPWODL, Burla.

12.4 Submission of mandatory documents on Delivery

Following documents shall be mandatorily submitted by BA along with supply of material to TPWODL stores/site:

S. No.	Documents	Requisite
1	Invoice copy in original	With all consignments
2	LR copy	Wherever required
3	Packing list	With all consignments
4	MDCC	With all consignments
5	Purchase order / Release order	Signed copy
6	Test certificates	With all consignments
7	Inspection/JVR report	In case pre-dispatch inspection is conducted
8	Device data in CD as per template for metering items	Wherever applicable

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12.5 Dispatch and Delivery Instructions

S. No.	Instructions
1	Purchase order/ Release order no. shall be mentioned on invoice and on material
2	TPWODL material code and material description shall be mentioned in invoice and on material.
3	"Property of TPWODL" shall be embossed on material.
4	The material shall be properly sealed and packed in standard packing as per purchase order terms & conditions.
5	The weight and quantity of material shall be mentioned wherever applicable
6	The material supplied shall be co-related with the packing list.
7	The name plate detail on equipment shall include Material code, Material description, specification detail of material [as applicable], Serial No. Year of manufacturing, PO/RO no. and date, "PROPERTY OF TPWODL, Burla", Guarantee period and Associate's name.
8	In case of manual unloading, supplier / transporter shall deploy sufficient Labour for unloading the material at TPWODL central store. For heavy item(s), crane will be provided by TPWODL [unloading cost will be recovered from the associate].
9	The driver should have valid License and one helper in truck. All the documents of truck like registration papers, PUC etc. should be available in Truck.
10	BA representative should accompany the material and get it unloaded / stacked in his presence wherever possible.

13.0 GUARANTEE

13.1 Guarantee of Performance

Associates shall stand guarantee that the equipment and material supplied under the contract is free from design, manufacturing, material, construction, erection & installation and workmanship & quality defects and is capable of its due, rated and intended quality performance, as an integrated product delivered under the contract, for a specific period termed as Guarantee Period(as elaborated elsewhere in this clause). The Associate should also guarantee that the equipment/material is new and unused except for the usage required for the tests and checks required as part of quality assurance.

13.2 Guarantee Period

The Guarantee Period will be equipment/service/work specific and shall be as specified in the Standard Specifications of TPWODL for the equipment/material/service/work and where standard specifications are not part of contract documents or guarantee period is not specified in the standard specifications, the guarantee period shall be as per the Special Terms and Conditions of the Contract. In case of no mention of the guarantee period in standard specifications or SCC Guarantee Period will be 60 Months from the Date of Commissioning or 66 months from the date of delivery of final lot of supplies made, whichever is earlier.

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13.3 Failure in Guarantee Period (GP)

If the equipment and material supplied under the contract fails to perform its due, rated & intended quality performance, during the Guarantee period, the associate is liable to undertake repair/rectify/replace the equipment and material supplied within time frame specified in the SCC or elsewhere in the contract documents at associate's cost to make the equipment and material supplied/service or work rendered under the contract of performing its due, rated and intended quality performance. If Associate fails to repair/rectify/replace the equipment or material supplied rendered under the contract, failed in Guarantee Period, TPWODL will be at liberty to get the same done at Associate's risks and costs and recover all such expenses plus the TPWODL's own charges (@ 20% of expenses incurred), from the Associate or from the "Security cum Performance Deposit" as the case may be.

If during the Warranty/ Guarantee period some parts of the supplies are replaced owing to the defects/ damages under the Warranty, the Warranty period for such replaced parts shall be until the expiry of twelve months from the date of such replacement or renewal or until the end of original Guarantee period, whichever is later.

Any repairs during the Guarantee Period shall be carried out by the Associate within 30 days of reporting the issue to Associate by TPWODL. However, if replacement of the Equipment is required, Associate shall notify the same to TPWODL within 7 days of reporting the issue by TPWODL. Thereafter, the total time for supply of new equipment/ material shall be equal to the original delivery period of that equipment/ material as specified in the Contract. In case the Associate is not able to rectify/ replace the faulty equipment/ material within the stipulated timelines as mentioned above, penalty shall be levied as per the Liquidated Damages clause mentioned in this document. The penalty amount shall be recovered from the payment due to the vendor or by encashment of the SPBG as the case may be.

13.4 Cost of repairs on failure in GP

The cost of repairs/rectification/replacement, required transportation, site inspection /mobilization/ dismantling and re-installation costs as applicable, to be borne by Associate. The Associate has to ensure that the interruption in the usage of intended purpose of the equipment is minimized to the maximum extent In lieu of the time taken for repairs/rectification/ replacement.

13.5 Guarantee period for Goods Outsourced

If the Associate outsources partly equipment/materials/services from third party as mutually agreed upon at the pre award stage of contract, TPWODL shall have the benefit of any additional guarantee period if provided by the third party for the part supplied/executed by them.

13.6 Latent Defect

Hidden defects in manufacturing or design of the product supplied and which could not be identified by the tests conducted but later manifested during operation of the equipment are termed as latent defects. Associates shall further be responsible for 'free replacement' for another period of THREE years from the end of the guarantee period for any 'Latent Defects' if noticed and reported by the Company.

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13.7 Support beyond the Guarantee Period

The Associate shall ensure availability of spares and necessary support for a period of at least 10 years post completion of guarantee period of equipment supplied against the contract.

14.0 LIQUIDATED DAMAGES

a) For supplies which are of standalone use, multiple in quantities and having a single final delivery schedule, Liquidated damages shall be levied without prejudice to any of the other contractual rights of TPWODL, as described below:

   For delay of each week and part thereof from the delivery schedule specified in the contract, 1% of contract value corresponding to undelivered quantity, provided full quantity is supplied within 130% of the original contract time. If full contractual quantity is not delivered within 130% of contract time for delivery, TPWODL has the right to levy LD on the entire contract value, subject to a maximum of 10% of the total contract value.

b) For Supplies having phased delivery schedule as per contract terms, standalone use and multiple in quantities, Liquidated damages shall be levied without prejudice to any of the other contractual rights of TPWODL, as described below:

For the purpose of calculating and applying LD, each delivery lot shall be considered separately. For delay of each week and part thereof, from the delivery schedule specified for the lot, 1% of the contract value corresponding to the undelivered quantity of the lot subject to a maximum of 10% of the total contract value of the subject lot. However, if full contractual quantity is not delivered within 130% of contract time for delivery, TPWODL has the right to levy LD on the entire contract value, subject to a maximum of 10% of the total contract value. Deduction of LD shall be on landed cost i.e. contract value inclusive of taxes and in pursuant statutory compliance GST would be applicable at the stipulated rate and the same shall be borne by Business Associate. In case of LD deduction, a GST invoice shall be issued by TPWODL as a proof of deduction/ recovery.

14.1 LD Waiver Request

Any request of LD waiver shall be submitted within thirty (30) days of deducting LD. Request submitted beyond the timeline shall not be entertained.

15.0 UNLAWFUL ACTIVITIES

The Associate shall have to ensure that none of its employees are engaged in any unlawful activities (whether covered under the scope of the present GCC or not) subversive of the TPWODL's interest failing which appropriate action (legal or otherwise) may be taken against the Associate by the TPWODL, in accordance with the terms of the present GCC.

16.0 CONFIDENTIALITY

Associate and its employees or representatives thereof shall strictly maintain the confidentiality of various information they come across while executing the contract as detailed below.

16.1 Documents

All maps, plans, drawings, specifications, schemes and other documents or information related to the Contract/Project and the subject matter contained therein and all other information

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given to the Associate by the TPWODL in connection with the performance of the contract shall be held confidential by the Associate and shall remain the property of the TPWODL and shall not be used or disclosed to third parties by the Associate for any purpose other than for which they have been supplied or prepared. The Associate may disclose to third parties, upon execution of confidentiality agreements, such part of the drawings, specifications or information if such disclosure is necessary for the performance of the Work provided such third parties agree in writing to keep such information confidential to the same extent and degree as provided herein, for the benefit of the TPWODL.

16.2 Geographical Data

Maps, layouts and photographs of the unit/plant including its surrounding regions showing vital installation for national security of country or those of TPWODL shall not be published or disclosed to the third parties or taken out of the country without prior written approval of the TPWODL and upon execution of confidentiality agreements satisfactory to the TPWODL with such third parties prior to disclosure.

16.3 Associate's Processes

Title to secret processes if any developed by the Associate on an exclusive basis and employed in the design of the equipment shall remain with the Associate. TPWODL shall hold in confidence such processes and shall not disclose such processes to the third parties without prior approval of the Associate and execution by such third parties of secrecy agreements satisfactory to the Associate prior to disclosure. Upon completion of contract, such processes shall become the property of the TPWODL. Title to technical specifications, drawings, flow sheets, norms, calculations, diagrams, interpretations of test results, schematics, layouts and such other information, which the Associate has supplied to the TPWODL under the Contract shall be passed on to the TPWODL. The TPWODL shall have the right to use these for construction, erection, start-up, Trial Run, operation, maintenance, modifications and/or expansion of the works including for the manufacture of spare parts.

16.4 Exclusions

The provision of Clauses 16.1 to 16.3 shall not apply to information:

- Which at the time of disclosure are in the public domain which later on become part of public domain through no fault of the party concerned, or
- Which were in the possession of the party concerned prior to disclosure to him by the other party, or
- Which were received by the party concerned after the time of disclosure without restriction on disclosure or use, from a third party who did not acquire such information directly or indirectly from the other party or has no obligation of confidentiality for such information.

16.5 Violation

In case of violation of this clause, the Associate is liable to pay compensation and damages as may be determined by the competent authority of TPWODL.

17.0 INTELLECTUAL PROPERTY RIGHTS

If, in the course of performance of its functions and duties as envisaged by the scope of the present GCC, the Associate acquires or develops, any unique knowledge or information which

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would be covered, or, is likely to be covered within the definition of a trademark, copyright, patent, business secret, geographical indication or any other form of intellectual property right, it shall be obliged, under the terms of this present GCC, to share such knowledge or information with the TPWODL. All rights, with respect to, or arising from such intellectual property, as afore mentioned, shall solely vest in TPWODL.

Moreover, the Associate undertakes not to breach any intellectual property right vesting in a third party/parties, whether by breach of statutory provision, passing off, or otherwise. In the event of any such breach, the Associate shall be wholly liable to compensate, indemnify or make good any loss suffered by such third party/parties, or any compensation/damages arising from any legal proceeding/s, or otherwise. No liability of TPWODL shall arise in this respect, and any costs, damages, expenses, compensation payable by TPWODL in this regard to a third party/parties, arising from a legal proceeding/s or otherwise, shall be recoverable from the Associate.

18.0 INDEMNITY

The Associate shall at all times indemnify, keep indemnified and hold harmless the TPWODL and its officers, directors, employees, affiliates, agents, successors and assigns against all actions, claims, demands, costs, charges and expenses arising from or incurred by reason of any infringement of patent, trade mark, registered design, copy rights and/or industrial property rights by manufacture, sale or use of the equipment supplied by the Associate whether or not the TPWODL is held liable for by any court judgment. In this connection, the TPWODL shall pass on all claims made against him to the Associate for settlement.

The Associate assumes responsibility for and shall indemnify and save harmless the TPWODL from all liability, claims, costs, expenses, taxes and assessments including penalties, punitive damages, attorney's fees and court costs which are or may be required to be paid by the TPWODL and its officers, directors, employees, affiliates, agents, successors and assigns arising from any breach of the Associate's obligations under the Contract or for which the Associate has assumed responsibilities under the Contract including those imposed under any local or national law or laws, or in respect to all salaries, wages or other compensation for all persons employed by the Associate or his Sub-Associates or suppliers in connection with the performance of any work covered by the Contract. The Associate shall execute, deliver and shall cause his Sub-Associate and suppliers to execute and deliver, such other further instruments and to comply with all the requirements of such laws and regulation as may be necessary there under to conform and effectuate the Contract and to protect the TPWODL.

The TPWODL shall not be held responsible for any accident or damages incurred or claims arising, due to the Associate's error there from prior to completion of work. The Associate shall be liable for such accidents and after completion of work for such accidents as the case may be due to negligence on his part to carry out Work in accordance with Indian laws and regulations and the specifications set forth herein.

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19.0 LIABILITY & LIMITATIONS

19.1 Liability

Except for any specific liability which may be identified in the Contract and which may be payable hereunder, Associate shall not be liable for any special, incidental, indirect, or consequential Damages or any loss of business Contracts, revenues or other financial loss (or equivalents thereof no matter how claimed, computed or characterized) arising out of or in connection with the Performance of the Work or supply of Goods ***unless caused by Associate's negligence, willful misconduct or breach of contract.***

If the Associate is a joint venture or consortium, all concerned parties shall be jointly and severally bound to the TPWODL for the fulfillment of the provisions of the Contract. The consortium or the joint venture shall designate one party as their leader, who will be the coordinator between the parties and TPWODL. The constituents & leader of the consortium or joint venture shall not be changed without the prior consent of TPWODL.

TPWODL shall have no liability or any special, incidental, indirect or consequential Damages for any loss of Business Contracts, revenues or other financial loss arising out of this Contract.

19.2 Limitation of Liability

The total liability of Associate against any contract shall be limited to the Total All Inclusive Contract Value.

20.0 FORCE MAJEURE

Force Majeure applies if the performance by either Party ("the Affected Party") of its obligations under Contract is materially and adversely affected.

"Force Majeure" shall mean any event or circumstance or combination of events or circumstances referred below and their consequences that wholly or partly prevents or unavoidably delays any Party in the performance of its obligations under this Agreement, but only and to the extent that such events and circumstances are not within the reasonable control, directly or indirectly, of the Affected Party and could not have been avoided even if the Affected Party had taken reasonable care:

- Act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, embargo, blockade, revolution, riot, bombs, religious strife or civil commotion, etc. Politically motivated sabotage, or terrorism, etc.
- Action or Act of Government or Governmental agency for which remedy is beyond the control of the affected parties. Any act of God.

Note: Causes like power breakdown/ shortages/fire/strikes, accidents etc do not fall under Force Majeure.

Time being the essence of the Contract, if either party is prevented from the performance of its obligations in whole or in part due to an event of Force Majeure, then provided Notice of

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happening of any event by the Affected Party is given to the other party within seven (7) days from the date of occurrence of such event, which DIRECTLY has impact on works and submitted details and quantum of resulting effect, but at the same time had made all possible efforts to mitigate and overcome effects thereof, the Affected Party's performance under this Contract shall be suspended until such event ceases and the Scheduled Completion shall be delayed accordingly.

If Force Majeure event(s) continue for a period of more than three months, the parties shall hold consultation to discuss the further course of action.

Neither party shall be considered to be in default or in breach of its obligation under the Contract to the extent that performance of such obligation by either party is prevented by any circumstances of Force Majeure which arise after effective date of Contract.

Neither party can claim any compensation from the other party on account of Force Majeure.

21.0 SUSPENSION OF CONTRACT

21.1 Suspension for Convenience

TPWODL may, at any time and at its sole option, suspend execution of all or any portions of the schedule of items of contract to be supplied/work to executed by Associate under the contract by providing to the Associate at least two business days written notice for contracts having contract completion period less than sixty days and at least seven business days' notice for all other contracts.

Upon receipt of any such notice, the Associate shall respond as follows as applicable as per contract construction.

- Immediately discontinue further supply of material/goods specified in the suspension notice for supply contracts
- Immediately discontinue further service/work and supply of materials of those services/ materials/work specified in the suspension notice for service /composite contract
- Promptly make every reasonable effort to obtain suspension, upon terms satisfactory to TPWODL, of all orders, outsourcing arrangements, and rental Contracts to the extent that they relate to performance of the portion of Work suspended by the notice.
- Protect and maintain the portion of the service/Work already completed, including the portion of the Work suspended hereunder, unless otherwise specifically stated in the notice.
- Continue delivering/carrying out the supply/service/work items as per contract conditions, which do not fall under purview of the suspension notice.

On receipt of resumption notice from TPWODL, the Associate shall resume execution of contract as specified in the resumption notice, within the time frame specified in the resumption notice.

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21.2 Suspension for Breach of Contract conditions.

TPWODL shall suspend execution of whole/or part thereof the contract till such time Associate complies with the conditions stipulated under section clause 22.1 for breach/default of contract conditions.

21.3 Compensation in lieu of Suspension

If the suspension of the contract in whole or in part is for convenience of TPWODL and not due to any breach of contract conditions by the associate, TPWODL at its discretion shall consider compensating all reasonable additional costs incurred by Associate in lieu of suspension of whole or part of contract, on representation of the Associate providing justified estimates of such additional costs and such estimates are found acceptable and approved by competent authority of TPWODL.

If the suspension of contract in whole or part thereof is due to breach of contract conditions (refer clause 22.1) by the Associate, Associate shall not be entitled for any compensation for any cost incurred in lieu of suspension of whole or part of contract and also shall be liable for compensating all the losses arising to TPWODL in lieu of suspension of contract. Resumption notice shall be subject to the Associate taking corrective action for the breach of contract conditions within the time frame and as per the terms specified in the suspension notice.

22 TERMINATION OF CONTRACT

22.1 Termination for Default/Breach of Contract

The contract / PO /RC shall be subject to termination by TPWODL in case of breach of the contract by the Associate which shall include but not be limited to the following:

a. Withdrawal or intimation by the Associate of its intent to withdraw or surrender the execution / completion of the contracted work /PO or failure in ensuring adherence to any delivery schedules, in deviation of the contract/PO.

b. Refusal or neglect on the part of the Associate to supply material/equipment of quantity or quality as specified by TPWODL and within the timeframe as specified in the contract document or refusal or neglect to execute the services/work in terms of the agreed standards of quantity or quality and/or within the timeframe specified in the contract/PO.

c. Failure in any respect to perform any portion of the Work contracted with promptness, diligence, or in accordance with the terms of the contract.

d. Failure to furnish guarantees as specified and /or failure to comply with the terms thereof.

e. Failure to furnish such relevant documents or information within the time specified which may be necessary for due execution / completion of the works and documentation.

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f. Liquidation, bankruptcy either voluntary or involuntary OR entering into any composition or compromise with its creditors, or Insolvency.

g. In case any reasonable information has been received by TPWODL that Associate has adopted/ or attempted to adopt any unethical conduct, action in award of the contract /PO or at any time thereafter.

h. Failure to comply with applicable statutory provisions as contained in the contract or failure to comply with the applicable laws.

i. Failure to comply with safety regulations/clauses stipulated in the contract or as may be generally instructed by TPWODL.

If the default or breach as specified under clause 22 (except sub clause g thereof) be committed by the associate for the first time, TPWODL shall issue, along the with notice of default or breach, a warning notice instructing the associate to take remedial/corrective action within the time frame stipulated in the warning notice and not to repeat the same in future. The timeframe for corrective action by the associate shall be specific to the nature of breach of contract and the same shall not be objected to by the Associate. If the Associate fails to comply with the instructions in the warning notice or in taking corrective action to the satisfaction of TPWODL then TPWODL may terminate the entire or part of contract at its discretion by issuing termination notice without incurring any liability on this ground.

In case the contract is terminated for any breach of the nature specified in clause 22 g stated above, TPWODL shall have the right to terminate all the contracts TPWODL is having with the Associate by issuing termination notice which shall be without prejudice to the other rights of TPWODL available to it under law.
Without prejudice to its right to terminate for breach of contract, TPWODL may, without assigning any reason, terminate the Contract in whole or in part at any time at its discretion while the contract is in force by serving a written notice of two weeks to the Associate.

In the event of TPWODL having proceeded with termination of the contract the associate shall comply and proceed further in the following manner:

a) Associate shall discontinue the supply, on the expiry of the said period of two weeks.

b) Associate shall ensure that no further steps are being taken towards discharge of the obligations, terms and conditions as contained in the contract/PO. This shall include initiation of actions not limited to discontinuation of other allied and associated arrangements which the associate might have entered into with third parties for due discharge of its obligations under the contract with TPWODL.

c) The Associate shall perform thereafter such tasks as may be necessary to preserve and protect the terminated portion of the material/service/work in progress and the materials and equipment at TPWODL sites or in transit thereto. However the associate shall continue to fulfill its contractual obligations with regard to the part of contract not terminated.

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d) It shall be open for TPWODL to conduct a joint assessment with the associate of the material, supplies, equipment, works or in general as to the subject matter of the contract in regard to which the associate claims having completed its obligations before or during such termination.

e) It shall be open to TPWODL to seek invocation of the performance bank guarantee or any other guarantee or other security deposit by whatever name called submitted by the associate, which shall not be objected to or protested against by the associate.

In case of termination of the contract the parties agree to be governed inter alia by the following:

a) In case TPWODL exercises its right of termination as stated above the associate shall not dispute or object to the same.

b) The Associate shall be entitled to receive and claim only such payments OR sums of money from TPWODL as may be found payable to it in regard to works executed by it under the terms of the contract and no other claim of any nature whatsoever shall be made by the Associate.

c) All such provisions which the parties have agreed to survive and prevail even after termination of the contract shall remain effective despite the termination.

In the event of such termination, TPWODL may finish the Work by whatever method it may deem expedient, including the hiring of services and /or purchase of material equipment from such third parties as TPWODL may deem fit or may itself provide any labor or materials and perform any part of the Work. The associate undertakes to bear the incremental costs if any paid by TPWODL in such a case attributable to failure on the part of the associate. The Associate in such a case shall not be entitled to receive any further payments and any sums found payable to it may be adjusted by TPWODL against the amount recoverable from him on this ground. The same shall be without prejudice to other rights available to TPWODL under law against the associate.

Upon the termination of any of the contract due to occurrence of any circumstances provided in clauses stated above and constituting repeated breach or misconduct, TPWODL shall be entitled to bar the associates its agents, affiliates from undertaking any negotiation / tendering, bidding, participation activities concerning TPWODL for a period of two years from date of such termination. The same shall be without prejudice to other rights available to TPWODL.

22.2 Termination for Convenience of Associate

Associate at its convenience may request for termination of contract, clearly assigning the reason for such request. TPWODL has full right to accept, reject or partially accept such request. However, associate shall continue its supply as per contract till final approval is given to associates for such termination.

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22.3 Termination for Convenience of TPWODL

TPWODL at its sole discretion may terminate the contract by giving 30 days prior notice in writing or through email to the Associate. TPWODL shall pay the Associate for all the supplies/ services rendered till the actual date of contract termination against submission of invoice by the Associate to that effect.

23.0 DISPUTE RESOLUTION & ARBITRATION

In case of any dispute or difference the parties shall endeavor to resolve the same through conciliatory and amicable measures within 15 Days failing which the matter may be referred by either party for resolution by the sole arbitrator to be appointed mutually by both the parties. The arbitral proceedings shall be conducted in accordance with Arbitration and Conciliation Act 1996 and the place of arbitration shall be Sambalpur. The language to be used at proceedings shall be English and the award of the arbitrator shall be final and binding on the parties. The parties shall bear their respective costs of arbitration. The associate shall continue to discharge its obligations towards due performance of the works as per the terms of the contract during the arbitration proceedings unless otherwise directed in writing by TPWODL or suspended by the arbitrator. Further, TPWODL shall continue making such payments as may be found due and payable to the associate for such works.

23.1 Governing Laws and Jurisdiction

The parties shall be subject to the jurisdiction of the courts of law in Sambalpur and any matter arising here from shall be subject to applicable law in force in India.

24.0 ATTRIBUTES OF GCC

24.1 Cancellation

The Company reserves the right to cancel, add, delete at its sole discretion, all or any terms of this GCC or any contract, order or terms agreed between the parties in pursuance without assigning any reasons and without any compensation to the Associates.

24.2 Severability

If any portion of this GCC is held to be void, invalid, or otherwise unenforceable, in whole or part, the remaining portions of this GCC shall remain in effect.

24.3 Order of Priority

In case of any discrepancies between the stipulations in General Conditions of the Contract (GCC) and Special Conditions of Contract (SCC), the GCC shall stand superseded by the SCC to the extent stipulated hereinabove while balance portion of respective clauses of GCC shall continue to be applicable.

25.0 ERRORS AND OMISSIONS

The Associate shall be responsible for all discrepancies, errors and omissions in the drawings, documents or other information submitted by him, irrespective of whether these have been approved, reviewed or otherwise accepted by the TPWODL or not. However any error in design/drawing arising out of any incorrect data/written information from TPWODL will not be considered as error and omissions on part of the Associate.

26.0 TRANSFER OF TITLES

The title of ownership and property to all equipment, materials, drawings & documents shall pass to the TPWODL on acceptance of material by store/site after Inspection.

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However, such passing of title of ownership and property to the TPWODL shall not in any way absolve, dilute or diminish the responsibility and obligations of the Associate under this Contract including loss or damages and all risks, which shall vest with the Associate.

27.0 INSURANCE

The Contractor shall take out the Insurance Policies which shall cover all risks including the following, as applicable:-

a) The value of the policy shall cover the total value of all the items till they are handed over to TPWODL.

b) TPWODL shall be the principal holder of the policy. The Associate shall be the loss payee under the policy. Associate / Sub-contractor of the Associate shall not be holders or beneficiaries in the policy nor shall they be named in the policy. TPWODL reserves the exclusive right to assign the policy.

c) While the payment of premium may be phased in agreement with the insurance company, at no time shall goods and services required to be provided by the associate shall remain uninsured in accordance with (a) above.

d) A copy of the Insurance policy shall be made available to TPWODL prior to first dispatch lot of any Equipment and policy shall be kept alive and valid at all times up to the stage of final acceptance.

e) TPWODL reserves the right to take out whatever policy that is deemed necessary by him if the associate fails to keep the said policy alive and valid at all times and/or causes lapses in payment of premium thereby jeopardizing the said policy. The cost of such policy(s) shall be recovered / deducted from the amount payable to the associate.

f) The policy shall ensure that the TPWODL's decision regarding replacement of goods damaged, lost or rendered unusable shall be final.

In all cases, the associate shall lodge the claims with the underwriters and also settle the claims and shall also notify TPWODL of any filed claims. However, the associate shall proceed with the repairs and/or replacement of the equipment/components without waiting for the settlement of the claims. In case of seizure of materials by concerned authorities, the associate shall arrange prompt release against bond, security or cash as required. TPWODL, upon request by the associate, will extend all reasonable assistance to the associate in such a case.

All the insurance claims shall be processed and settled by the associate and the missing/damaged items shall be replaced / repaired by them without any extra cost to TPWODL and without affecting the completion time.

28.0 SUGGESTIONS & FEEDBACK

We welcome all our Business Associates to write to us about their experience with TPWODL; be it our Company, our services or our people. Each and every concern, issue, query and suggestion from you will help us to become a better company to work with and shall help us develop a strong bonding of trust and a long term relationship with you.

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You may send your feedback by filling up our Business Associate Feedback Form enclosed herewith as *Annexure-I.* You can also log on to our website www.tpwesternodisha.com to provide your feedback.

- Suggestions for us
- Feedback form
- Knowledge Sharing/ Experience with TPWODL
- Any issues with TPWODL.

Submission of feedback form is mandatory before the release of final payment to the BA.

29.0 CONTACT POINTS

In case Business Associate needs information with respect to payments or has any grievances, same may be lodged by log on to our website: tpwesterodisha.com

30.0 LIST OF ANNEXURES

S. No.	Subject	Annexure
1.	Performa for Bid Security Bank Guarantee	A
2.	Performa for Performance Bank Guarantee (CP cum EP)	B
3.	Performa for No Demand Certificate by Associate	C
4.	Performa For Application For Issuance of Consolidated TDS Certificate	D
5.	Business Associate Feedback Form	E
6.	Acceptance Form For Participation In Reverse Auction Event	F
7.	Form for RTGS Payment	G
8.	Vendor Appraisal Form	H
9.	Manufacturer Authorization Form	I

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ANNEXURE-A

PROFORMA FOR BID SECURITY BANK GUARANTEE

TP Western Odisha Distribution Ltd.,
Burla.

WHEREAS, (Name of the Bidder) _____

(hereinafter called "the BIDDER") has submitted his bid dated_____ for the (Name of Contract) _____ (hereinafter called "the BID").

KNOW ALL men by these presents we (Name of the Bank) _____ of (Name of the Country) _____ having our registered office at_____(hereinafter called "the BANK) are bound unto The TP Western Odisha Distribution Ltd (TPWODL) in the sum of _____ for which payment well and truly to be made to the TPWODL the Bank binds himself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this _____ day of _____ 20_____.

The CONDITIONS of this obligation are**:**

i) If the Bidder withdraws his Bid during the period of bid validity specified in the Proforma of Bid or

ii) If the Bidder having been notified of the acceptance of his Bid by the TPWODL during the period of bid validity fails or refuses to furnish the Contract Performance Bank Guarantee, in accordance with the Instructions to Bidders.

We undertake to pay the TPWODL up to the above amount upon receipt of its first written demand, provided that in its demand the TPWODL will note that amount claimed by it is due to it owing to the occurrence of one or both conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date (No of days as mentioned in tender enquiry) days after the closing date of submission of bids as stated in the Invitation to Bid or as extended by you at any time prior to this date, notice of which extension to the Bank being hereby waived, and any demand in respect thereof should reach the Bank not later than the above date.

DATE …… **SIGNATURE OF THE BANK** ……..

WITNESS …… **SEAL** ……..

(Signature, Name & Address)

(At least 2 witnesses)

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ANNEXURE- B

PROFORMA FOR PERFORMANCE BANK GUARANTEE (CP cum EP)

(On Rs.100/- Stamp Paper) Note:

a) Format shall be followed in toto
b) Claim period of one month must be kept up
c) The guarantee to be accompanied by the covering letter from the bank confirming the signature to the guarantee

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TP Western Odisha Distribution Ltd., Burla

CP cum EP BG No…….

Order/Contract No……dated……

1. You have entered into a Contract No _____ with M/s._____ (hereinafter referred to as "the Vendor") for the supply cum erection / civil work of _____ (hereinafter referred to as" the said Equipment") for the price and on the terms and conditions contained in the said contract.
2. In accordance with the terms of the said contract, "the Vendor" agreed to furnish you with an irrevocable, unconditional and acceptable bank guarantee for 10% of the value of contract and to be valid till the end of Guarantee period plus one month towards "Contract cum Equipment performance". For this purpose you have agreed to accept the guarantee.
3. In consideration thereof, we, _____ hereby irrevocably and unconditionally guarantee to pay to you on demand but in any case before the end of five working days from the date of the claim and without demur and without reference to "the Vendor" such amount or amounts not exceeding the sum of Rs._____(Rupees _____ only) being _____% (_____ percent) of the total value of the contract on receipt of your intimating that "the Vendor" has not fulfilled his contractual obligations. You shall be the sole judge for such non-fulfillment and "the Vendor" shall have no right to question such judgment.
4. You shall have the right to file / make your claim on us under the guarantee for a **further period of one month** from the date of expiry.
5. This guarantee shall not be revoked without express consent and shall not be affected by your granting time or any other indulgence to "the Vendor", which shall include but not be limited to, postponement from time to time of the exercise the same in you or any right which you may have against "the Vendor" and to exercise the same in any covenant contained or implied in the said contract or any other course or remedy or security available to you, and our Bank shall not be released from its obligations under this guarantee by

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your exercising any of your rights with reference to matters aforesaid or any of them or by reasons of any other act or forbearance or other acts of omission or commission on your part or any other indulgence shown by you or by any other matter or thing whatsoever which under the law would, but for this provision have the effect of relieving our bank from its obligation under this guarantee.

6. We also agree that you shall be entitled at your option to enforce this guarantee against our bank as a principal debtor, in the first instance, notwithstanding any other security or guarantee that you may have in relation to "the Vendor's" liabilities in respect of the premises

7. This guarantee shall not be affected by any change in the constitution of our Bank or "the Vendor" or for any other reason whatsoever.

8. Any claim / extension under the guarantee can be lodge-able at outstation banks or at Sambalpur branch and claim will also be payable at Sambalpur Branch (to be confirmed by Sambalpur Branch by a letter to that effect in case BG is from the branch outside Sambalpur).

9. Notwithstanding anything herein contained, our liability under this guarantee is limited to Rs._____ (Rupees_____ only and the guarantee will remain in force up to and including _____(Date) and shall be extended from time to time for such period or period as may be desired by "the Vendor".

10. Unless a demand or claim under this guarantee is received by us in writing within one months from_____ (expiry date) i.e. on or before _____ (claim period end date), we shall be discharged from all liabilities under this guarantee thereafter.

Dated at_____ this_____ day of _____ 20__

Bank's rubber stamp

1. Banks full address

Designation of Signatory

2. Bank official number

GENERAL CONDITIONS OF CONTRACT

ANNEXURE-C

PROFORMA FOR "NO DEMAND CERTIFICATE" BY ASSOCIATE

(On Company's Letter head or with Company Seal)
(To be submitted by the Associate to TPWODL Accounts Department at the time of receipt of full and final payment)

(Certificate No. CCP/002)

Name of the Project

Order/ Contract No.

Dated

Name of the Associate Scheme

No. / Job No.

We, M/s._____ (Associate) do hereby acknowledge and confirm that we have received the full and final payment due and payable to us from TPWODL, in respect of our aforesaid Order No _____ dated_____ including amendments, if any, issued by TPWODL to our entire satisfaction and we further confirm that we have no claim whatsoever pending with TPWODL under the said contract / W.O.

Notwithstanding any protest recorded by us in any correspondence, documents, measurement books and / or final bills etc., we waive all our rights to lodge any claim or protest in future under this contract.

We are issuing this "NO DEMAND CERTIFICATE" in favour of TPWODL, with full knowledge and with our free consent without any undue influence, misrepresentation, coercion etc.

Place **Name**

(Company Seal)

GENERAL CONDITIONS OF CONTRACT

ANNEXURE-D

PROFORMA FOR APPLICATION FOR ISSUANCE OF CONSOLIDATED TDS CERTIFICATE

To be printed on the letterhead

To,

The TP Western Odisha Distribution Ltd,

Burla

Sub: Application for issuance of Consolidated TDS Certificate for the FY _____

Dear Sir,

I / we hereby request / authorize you to issue me / us a consolidate TDS Certificate for the financial year _____ against tax deducted at source by you from my / our payments / bills during the said year from time to time under Chapter XVII – B of the Income Tax Act, 1961.
For and on behalf of

Signature

Name

Address

Contact No. (Land Line)

(Mobile)

PAN #

Assessing authority

ATTACH THE COPY OF PAN CARD

GENERAL CONDITIONS OF CONTRACT

ANNEXURE-E

BUSINESS ASSOCIATE FEEDBACK FORM

With an objective to improve our internal processes and systems, and serve you better, we solicit your valuable feedback & suggestions. It is estimated that it will take about 10 minutes to complete this survey. We assure you that your feedback shall be kept confidential. Please send the duly filled feedback form in the "TPWODL addressed - attached envelop"

You are associated with us as

 OEMs Service Contractor Material Suppliers Material & Manpower Supplier

You are associated with us for

 Less than 1 year More than 1 year but less than 3 years More than 3 years

Your office is located at

 Sambalpur Within 200 kms from Sambalpur More than 200 kms from Sambalpur

Your nearly turnover with TPWODL

 Less than 25 Lacs 25 Lacs to 1 Crore More than 1 Cr.

Additional Information

Your Name	
Your Designation	
Your Organization	
Contact Nos.	
Email	

We once again thank you for your participation in this survey. Please spare 10 minutes to give your feedback on following pages (Section A to E)

GENERAL CONDITIONS OF CONTRACT

SECTION – A

(Please √ mark in the relevant box and give your remarks / suggestions / information for our improvement).

S. No.	Parameters	1 Do Not Agree	2 Slightly in Agreement	3 In Fair Agreement	4 Mostly in Agreement	5 Fully Agree	Remarks/ Suggestion
1	You receive all relevant queries / tenders from us in timely manner.						
2	We provide you enough lead time to respond to our queries / tenders.						
3	We provide you adequate support (drawings, documents, clarifications, briefing etc.) to enable you meet our requirements.						
4	All following elements of our contract / purchase order are rational :						
4.1	Scope of Work						
4.2	Delivery / Execution Schedule						
4.3	Payment Terms						
4.4	Liquidated Damages						
4.5	Performance Guarantee						
5	Our purchase orders / contracts are simple, specific & easy to understand						
6	TPWODL demonstrate willingness to be flexible in administration of Contract / Purchase Order						
7	We provide timely responses / clarifications to your queries						
8	TPWODL representative you interact / coordinate with is adequately empowered to support you in meeting contractual obligations						

GENERAL CONDITIONS OF CONTRACT

S. No.	Parameters	1 Do Not Agree	2 Slightly in Agreement	3 In Fair Agreement	4 Mostly in Agreement	5 Fully Agree	Remarks/ Suggestion
9	TPWODL provide you all necessary infrastructure support for timely and quality completion of work (including AMC)						
10	TPWODL Engineer-in-Charge timely certifies the jobs executed/ material supplied						
11	TPWODL Engineer-in-Charge efficiently supervises the job execution for timely completion of job						
12	BIRD (Bill Inward Receipt Desk) initiative has improved payment disbursement process						
13	Our approach for Inspection and Quality Assurance effective to expedite project completion?						
14	TPWODL never defaults on contractual terms						
15	In TPWODL Contracts closure is done within set time limit						
16	Our material receiving procedures are well defined and efficiently deployed to reduce mutual inconvenience						
17	Bank Guarantees are released in time bound manner						
18	Our processes related to payment / account settlement are effective.						
19	You get payments on time						
20	TPWODL Employees follow Ethical behaviour						

GENERAL CONDITIONS OF CONTRACT

SECTION – B

SECTION – B (Please rate the following parameters on a scale of 1 to 5, where 1 - Minimum; 5 - Maximum)

S. No.	Parameters	1	2	3	4	5	Remarks/ Suggestion
1	How do you rate courtesy/ empathy/ attitude level and warmth of TPWODL employees you interact with from following team?						
1.1	Project Engineering						
1.2	District / Zones						
1.3	Projects/HOG (TS &P)						
1.4	Inspection & Quality Assurance						
1.5	Stores						
1.6	Metering & Billing						
1.7	Accounts / Finance						
1.8	Administration						
1.9	IT & Automation						
2	How would you rate TPWODL in comparison to your other clients in terms of **fairness of treatment and transparency** with its Business Associates?						
3	How would you rate TPWODL in comparison to your other clients in terms of **processes and systems to manage partnership** with its Business Associates						
4	How would you rate TPWODL in comparison to your other clients in terms of **building long term & mutually relations**hip with its Business Associates						

GENERAL CONDITIONS OF CONTRACT

SECTION – C

Please √ mark in the relevant box and give your remarks / suggestions / information for our improvement.

S. No.	Parameters	Certainly No	Probably No	Certainly Yes	Probably Yes	Remarks/ Suggestion
1	Based on your experience with TPWODL, would you like to continue your relationship with TPWODL?					
2	If someone asks you about TPWODL, would you talk "positively" about TPWODL?					
3	Would you refer TPWODL name to others in your community, fraternity and society as a professional & dynamic organization?					

SECTION - D

If we ask you to rate us on a scale of 1 to 10, how will you rate TPWODL, that truly represents your overall satisfaction with us (please tick appropriate box) -

1	2	3	4	5	6	7	8	9	10

GENERAL CONDITIONS OF CONTRACT

SECTION – E

Please √ mark in the relevant box and give your remarks / suggestions / information for our improvement.

Please spare your thoughts for TPWODL's improvement in particular areas of weaknesses, particularly relating to some great practices, attitudes that you have seen elsewhere in Indian and International Organizations, which you recommend TPWODL to adopt. Please give your valuable salient recommendations.

Please spare your thoughts for TPWODL's improvement in particular areas of major concerns for you. We also welcome your suggestions to adopt any best practices, altitudes that you

Recommendation	*Please tick (√) your top 5 expectations out of the following 10 points listed below -*	
(Please list down improvement you expect from TPWODL)	*Timely payment*	
1	*Flexibility in Contracts/PO*	
	Clarity in PO,s & Contracts	
2	*Timely response to quarries*	
	Timely certification of works executed	
3	*Clarity in Specs, drawings, other docs etc.*	
	Adequate information provided on website for tender notification, parties qualified etc.	
4	*Timely receipt of material at site for execution*	
	Performance Guarantee/EMD released in time	
5	*Inspection & quality assurance support for timely job completion*	

We thank you for your time and courtesy!!

GENERAL CONDITIONS OF CONTRACT

ANNEXURE-F
ACCEPTANCE FORM FOR PARTICIPATION IN REVERSE AUCTION EVENT

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

In a bid to make our entire procurement process more fair and transparent, TPWODL intends to use the reverse auctions through SAP-SRM tool as an integral part of the entire tendering process. All the bidders who are found as technically 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. TPWODL shall provide the user id and password to the authorized representative of the bidder. (Authorization Letter in lieu of the same shall be submitted along with the signed and stamped Acceptance Form).
2. TPWODL will make every effort to make the bid process transparent. However, the award decision by TPWODL would be final and binding on the supplier.
3. The bidder agrees to non-disclosure of trade information regarding the purchase, identity of TPWODL, 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 TPWODL.
6. In case of intranet medium, TPWODL shall provide the infrastructure to bidders. Further, TPWODL 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 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 TPWODL.
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 TPWODL site.
10. The prices submitted by a bidder during the auction event shall be binding on the bidder.
11. No requests for time extension of the auction event shall be considered by TPWODL.
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.

Signature & Seal of the Bidder

GENERAL CONDITIONS OF CONTRACT

ANNEXURE-G

To,

DGM (Finance)
The TP Western Odisha Distribution Ltd.,
Burla.

Sub: **e-Payments through National Electronic Fund Transfer (NEFT) OR Real Time Gross Settlement System (RTGS)**

Dear Sir,

We request and authorize you to affect e-payment through NEFT/RTGS to our Bank Account as per the details given below:-

Vendor Code :

Title of Account in the Bank :

Account Type :

(Please mention here whether account is Savings/Current/Cash Credit)

Bank Account Number :

Name & Address of Bank :

Bank Contact Person's Names :

Bank Tele Numbers with STD Code :

Bank Branch MICR Code :

(Please enclose a Xerox a copy of a cheque. This cheque should not be a payable at par cheque)

Bank Branch IFSC Code :

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(You can obtain this from branch where you have your account)

Email Address of accounts person: (to send payment information) :

Name of the Authorized Signatory: :

Contact Person's Name: :

Official Correspondence Address: :

We confirm that we will bear the charges, if any, levied by our bank for the credit of NEFT/RTGS amounts in our account. Any change in above furnished information shall be informed to TPWODL well in time at our own. Further, we kept TPWODL indemnified for any loss incurred due to wrong furnishing of above information.

Thanking you,

For _____

(Authorised Signatory)

(Signature with Rubber Stamp)

Certification from Bank:

We confirm that we are enabled for receiving NEFT/RTGS credits and we further confirm that the account number (specify Bank a/c no.) of (Please mention here name of the account holder), the signature of the authorised signatory and the MICR and IFSC Code of our branch mentioned above are correct.

This also is certified that the above information is correct as per Bank record

(Manager's/ Officers Signature under Bank Stamp)

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ANNEXURE-H

VENDOR APPRAISAL FORM

TO BE SUBMITTED BY VENDOR (To be filled as applicable)			
VENDOR:			
1.0	**DETAILS OF THE FIRM**		
	1.1	NAME (IN CAPITAL LETTERS)	:
	1.2	TYPE OF CONCERN (PROPRIETARY) Partnership, Pvt. Ltd., Public Ltd. etc.	:
	1.3	YEAR OF ESTABLISHMENT	:
	1.4	LOCATION OF OFFICE POSTAL ADDRESS TELEGRAPHIC ADDRESSES, TELEX NO. FAX NO.	:
	1.5	LOCATION OF MANUFACTURING UNITS	:
		i)UNITS 1	:
		ii)OTHER UNITS	:
2.0	**PRODUCTS MANUFACTURED**		:
3.0	**TURNOVER DURING THE LAST 3 YEARS (TO BE VERIFIED WITH THE LATEST PROFIT & LOSS STATEMENT).**		:
4.0	**VALUE OF FIXED ASSETS**		:
5.0	**NAME & ADDRESS OF THE BANKERS**		:
6.0	**BANK GUARANTEE LIMIT**		:
7.0	**CREDIT LIMIT**		:
8.0	**TECHNICAL**		
	8.1	NO. OF DESIGN ENGINEERS (INDICATE NO. OF YEARS EXPERIENCE IN RELATED FIELDS)	:
	8.2	NO. OF DRAUGHTS MEN	:
	8.3	COLLABORATION DETAILS (IF ANY)	:

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		8.3.1 DATE OF COLLABORATION	:
		8.3.2 NAME OF COLLABORATOR	:
		8.3.3 RBI APPROVAL DETAILS	:
		8.3.4 EXPERIENCE LIST OF COLLABORATOR	:
		8.3.5 DURATION OF AGREEMENT	:
	8.4	AVAILABILITY OF STANDARDS / DESIGN PROCEDURES / COLLABORATOR'S / DOCUMENTS (CHECK WHETHER THESE ARE LATEST/CURRENT	:
	8.5	TECHNICAL SUPPORT, BACK-UP GUARANTEE, SUPERVISION, QUALITY CONTROL BY COLLABORATOR (WHEREVER ESSENTIAL). (THIS CLAUSE IS RELEVANT WHEN VENDOR'S EXPERIENCE IS INADEQUATE)	:
	8.6	QUALITY OF DRAWINGS	:
9.0	**MANUFACTURE**		
	9.1	SHOP SPACE, LAYOUT LIGHTING, VENTILATION, ETC.	:
	9.2	POWER (KVA)	:
		MAINS INSTALLED	:
		UTILIZED	:
		STANDBY POWER SOURCE	:
	9.3	MANUFACTURING FACILITIES (ATTACH LIST OF EQUIPMENT AS APPLICABLE)	:
		9.3.1 MATERIAL HANDLING	:
		9.3.2 MACHINING	:
		9.3.3 FABRICATION	:
		9.3.4 HEAT TREATMENT	:
		9.3.5 BALANCING FACILITY	:
		9.3.6 SURFACE TREATMENT PRIOR TO PAINTING/ COATING, POLISHING, PICKLING, PASSIVATION, PAINTING, ETC.	:
	9.4	SUPERVISORY STAFF	:
	9.5	ADEQUACY OF SKILLED LABOURS (MACHINISTS, WELDERS, ETC.)	:
	9.6	NO. OF SHIFTS	:

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	9.7	TYPE OF MATERIAL HANDLED (SUCH AS CS, SS, ETC.)	
	9.8	WORKMANSHIP	:
	9.9	MATERIAL IN STOCK AND VALUE	:
	9.10	TRANSPORT FACILITIES	:
	9.11	CARE IN HANDLING	:
10.0	**INSPECTION / QC / QA / TESTING**		
	10.1	NUMBER OF PERSONNEL (INDICATE NO. OF YEARS OF EXPERIENCE)	:
	10.2	INDEPENDENCE FROM PRODUCTION	:
	10.3	AVAILABILITY OF PROCEDURAL WRITE UP/QUALITY PLAN	:
	10.4	INCOMING MATERIAL CONTROL AND DOCUMENTATION	:
	10.5	RELIABILITY/REPUTATION OF SUPPLY SOURCES	:
	10.6	STAGE INSPECTION AND DOCUMENTATION	:
	10.7	SUB-ASSEMBLY & DOCUMENTATION	:
	10.8	FINAL INSPECTION AND DOCUMENTATION	:
	10.9	PREPARATION OF FINAL DOCUMENTATION PACKAGE	:
	10.10	TYPE TEST FACILITIES	:
	10.11	ACCEPTANCE TEST FACILITIES	:
	10.12	CALIBRATION OF INSTRUMENTS AND GAUGES (WITH TRACEABILITY TO NATIONAL STANDARDS) (ATTACH LIST)	:
	10.13	STATUTORY APPROVALS LIKE BIS, IBR, ETC.(AS APPLICABLE)	:
	10.14	SUB-VENDOR APPROVAL SYSTEM AND QUALITY CONTROL	:
	10.15	DETAILS OF TESTS CARRIED OUT AT INDEPENDENT RECOGNIZED LABORATORIES	:
		i) FURNISH LIST OF TESTS CARRIED OUT AND THE NAME OF THE LABORATORY WHERE THE TESTS WERE CONDUCTED	:
		ii) CHECK AVAILABILITY OF CERTIFICATES AND REVIEW THESE WHEREVER POSSIBLE	:
11.0	**EXPERIENCE (INCLUDING CONSTRUCTION / ERECTION / COMMISSIONING) TO BE FURNISHED IN THE FORMAT INDICATED IN APPENDIX)**		:

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12.0	**SALES, SERVICE AND SITE ORGANIZATIONAL DETAILS**	:
13.0	**CERTIFICATE FROM CUSTOMERS (ATTACH COPIES OF DOCUMENTS)**	:
14.0	**POWER SITUATION**	:
15.0	**LABOUR SITUATION**	:
16.0 *	**APPLICABILITY OF SC/ST RELAXATION (Y/N) IF YES, SUPPORTING DOCUMENTS TO BE ATTACHED**	
17.0	**ORGANIZATIONAL DETAILS** 1. PF NO 2. ESI NO 3. INSURANCE FOR WORK MAN COMPENSATION ACT NO 4. ELECTRICAL CONTRACT LIC NO 5. ITCC / PAN NO 6. SALES TAX NO 7. WC TAX REG. NO	:
18.0	**DOCUMENTS TO BE ENCLOSED:** 1. FACTORY LICENSE 2. ANNUAL REPORT FOR LAST THREE YEARS 3. TYPE TEST REPORT FOR THE ITEM 4. PAST EXPERIENCE REPORTS 5. ISO CERTIFICATE –QMS, EMS, OHAS, SA 6. REGISTRATION OF SALES TAX 7. COPY OF TIN NO. 8. COPY OF SERVICE TAX NO. 9. REGISTRATION OF CENTRAL EXCISE 10. COPY OF INCOME TAX CLEARANCE. 11. COPY OF PF REGISTRATION 12. COPY OF ESI REGISTRATION 13. COPY OF INSURANCE FOR WORK MAN COMPENSATION ACT NO 14. COPY OF ELECTRICAL CONTRACT LIC NO 15. COPY OF PAN NO 16. COPY OF WC TAX REGISTRATION 17. DOCUMENTS IN SUPPORT OF SC/ST RELAXATION AT S.NO.16.0 18. GSTN CERTIFICATE	

*** Classification of BA s under SC/ST shall be governed under following guidelines:**

- **Proprietorship/ Single Ownership Firm:** Proprietor of the firm should be from SC/ST community. Governing document shall be Proprietorship Deed.

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- **Partnership Firm:** Only such firms shall qualify which have SC/ST partners holding equal to or more than 50% of the total ownership pattern of the firm. Governing document shall be Partnership Deed.
- **Private Limited Company:** Only such firms shall qualify which have SC/ST directors holding equal to or more than 50% of the total ownership pattern of the firm. Governing document shall be Memorandum of Understanding (MoU) and/or Article of Association (AoA).

NOTE: Certification from SC/ST Commission shall be required for deciding upon SC/ST status of a person.

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ANNEXURE-I

MANUFACTURER AUTHORIZATION FORM

(To be submitted on OEM's Letter Head)

Date: …….

Tender Enquiry No.: ……..

To,

Chief (Procurement & Stores)

The TP Western Odisha Distribution Ltd,
Burla

Sir,

WHEREAS M/s. *[name of OEM],* who are official manufacturers of …… having factories at *[address of OEM]* do hereby authorize M/s *[name of bidder]* to submit a Bid in relation to the Invitation for Bids indicated above, the purpose of which is to provide the following Goods, manufactured by us

……and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with the Special Conditions of Contract or as mentioned elsewhere in the Tender Document, with respect to the Goods offered by the above firm in reply to this Invitation for Bids.

We hereby confirm that in case, the channel partner fails to provide the necessary services as per the Tender Document referred above, M/s *[name of OEM]* shall provide standard warranty on the materials supplied against the contract. The warranty period and inclusion / exclusion of parts in the warranty shall remain same as defined in the contract issued to their channel partner against this tender enquiry.

Yours Sincerely,

For ……..

Authorized Signatory

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STANDARAD TECHNICAL SPECIFICATION

For

TWO WINDING OUTDOOR ONAN TRANSFORMER

3.15MVA, 5MVA, 8MVA, 10MVA AND 12.5MVA

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CONTENTS

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1. SCOPE

a. This specification covers the technical requirements of design, manufacture, testing at manufacturer's works, packing, forwarding, supply and unloading at site/store of TP Western Odisha Distribution Limited of below rating outdoor type, oil immersed Two Winding Power Transformer complete with all accessories for trouble free and efficient performance.

i. 3.15 MVA, 33/11 kV
ii. 5 MVA, 33/11 kV
iii. 8 MVA, 33/11 kV
iv. 12.5 MVA, 33/11 kV

b. The transformer shall be complete with all components and accessories, which are necessary or usual for their efficient performance and trouble free operation under the various operating and atmospheric conditions specified in clause no. 3

c. Such of the parts that may have not been specifically included, but otherwise form part of the transformer as per standard trade and/or professional practice and/or are necessary for proper operation of transformer, will be deemed to be also included in this specification. The successful bidder shall not be eligible for any extra charges for such accessories etc. notwithstanding the fact that at the time of an initial offer bidder had segregated such items and quoted for them separately.

2. APPLICABLE STANDARDS

The equipment (and the materials used) covered by this specification shall unless otherwise stated, be designed, manufactured and tested in accordance with the latest editions of the following Indian standards & other relevant standards for components, BEE & CEA guidelines with latest amendment from time to time, thereof, some of which are listed below:

i.	IS 5: 2007	Specification for Colors for Ready Mixed Paints and Enamels
ii.	IS 104: 1979 (REAFFIRMED 2004)	Specification for ready mixed paint, brushing, zinc chrome, priming
iii.	IS 335 : 2018 / IEC60296	Specification for New insulating oils

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iv.	IS 649: 1997 (REAFFIRMED 2001)	Methods for testing steel sheets for magnetic circuits of power Electrical apparatus.
v.	IS 1576: 1992 (Reaffirmed 2004)	Solid Pressboard for Electrical Purposes -Specification
vi.	IS 2026: 2011 / IEC 60076 -2011	Specification for Power Transformers
vii.	IS 2099 : 1986 (REAFFIRMED 2003) / IEC-61037	Specification for Bushings for Alternating Voltages Above 1000 Volt
viii.	IS 2362: 1993 (REAFFIRMED 2004)	Determination of Water content in oil by Karl Fischer Method- Test Method
ix.	IS 2544: 1973 (Reaffirmed 2001)	Specification for Porcelain post insulators for systems with nominal Voltage Greater than 1000V
x.	IS 2705: 1992 (Reaffirmed 2002)	Specification for Current Transformers
xi.	IS 3401: 1992 (REAFFIRMED 2003)	Specification of Silica Gel
xii.	IS 3637: 1966 (Reaffirmed 2001) / IEC-364	Specification for gas operated relay (Buchholz relay).
xiii.	IS 4253: Part II: 1980 (Reaffirmed 2004)	Specification for cork composition sheets - Part II: Cork and Rubber
xiv.	IS 4257 (Part I): 1981 (Reaffirmed 2004)	Dimensions for Clamping Arrangements for Porcelain Transformer Bushings - Part I : For 12 kV to 36 kV Bushings
xv.	IS 4257 (Part II): 1986 (Reaffirmed 2004)	Dimensions for Clamping Arrangements for Porcelain Transformer Bushings for 72 kV to 123 kV Bushings

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xvi.	IS 5082: 1998 (REAFFIRMED 2003)	Specification for Wrought Aluminum and Aluminum Alloy Bars, Rods, Tubes, Selection, Plates and Sheets for Electrical purposes
xvii.	IS 5561: 1970 (REAFFIRMED 2002)	Specification for Electric Power Connectors.
xviii.	IS 6103: 1971 (REAFFIRMED 2001)	Specification for Method of Testing of specific resistance (Resistivity) of electrical insulating liquids
xix.	IS 6262: 1971 (Reaffirmed 2001)	Method of test for power factor and dielectric constant of electrical Insulating liquids
xx.	IS 6600: 1972 (Reaffirmed 2001)	Guide for Loading of Oil-immersed Transformer.
xxi.	IS 6792: 1992 (Reaffirmed 2003)/IEC-156	Method for Determination of Electric Strength of Insulating Oil
xxii.	IS 8468: 1977 (REAFFIRMED 2006)	On-load tap changers
xxiii.	IS 8603 (PART-1)2008 (REAFFIRMED 2006)	Dimensions for Porcelain Transformer Bushings for Use in Heavily Polluted Atmospheres - Part I: 12 kV, 17.5 kV, 24 kV and 36 kV Bushing
xxiv.	IS 9335 (Reaffirmed 2001)	Specification for Cellulosic Papers for Electrical Purposes
xxv.	IS 10028: 1981 (Reaffirmed 2001)	Code of Practice for Selection, Installation and Maintenance of Transformers
xxvi.	IS 12444: 1988	Specification for Continuously Cast and Rolled Electrolytic Copper Wire Rods for Electrical Conductors.
xxvii.	IS 13964: 1994 (Reaffirmed 2004)	Methods of Measurement of Transformer and Reactor Sound level
xxviii.	IS 3639: 1966	Specification for fitting & accessories of Power Transformer
xxix.	IS 1866: 2000	Code of practice for maintenance of transformer oil
xxx.	IEC 60156: 1995	Insulating liquids - Determination of the breakdown voltage at Power frequency - Test method

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xxxi.	IEC 60296: 2003	Specification for unused mineral insulating oils for transformers And switchgear
xxxii.	IEC 60529: 2001	Degrees of protection provided by enclosures (IP Code)
xxxiii.	IEC 60437	Radial Interference test on high-voltage insulator

3. CLIMATIC CONDITIONS OF THE INSTALLATION

The material shall be suitable for following climatic conditions,

[a] Maximum altitude above sea level	: 1000 m
[b] Maximum ambient temperature	: 50 ° C
[c] Maximum daily average ambient air temperature	: 40 ° C
[d] Minimum ambient air temperature	: -5° C
[e] Maximum temperature attainable by an object exposed to the sun	: 60 ° C
[f] Maximum yearly weighted average ambient temperature	: 32° C
[g] Maximum relative humidity	: 100%
[h] Average no. of rainy days in a year	: 120 days
[i] Average annual rainfall	: 150 cm
[j] Maximum wind pressure	: 260 Kg/Sq.Mtr
[k] Average number of thunderstorm days per annum	: 70

Environmentally, the region where the equipment will be installed includes coastal areas, subject to high relative humidity, which can give rise to condensation.

Onshore winds will frequently be salt laden. On occasions, the combination of salt and condensation may create pollution conditions.

Therefore, outdoor material and equipment shall be designed and protected for use in exposed, heavily polluted, salty, corrosive, tropical and humid coastal atmosphere.

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4. GENERAL TECHNICAL REQUIREMENTS

4.1 Technical Particulars:

S. No.	Description	Particulars				
1	Type	Two Winding Transformer	Two Winding Transformer	Two Winding Transformer	Two Winding Transformer	Two Winding Transformer
2	Application	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor
3	Rating	3.15 MVA	5 MVA	8 MVA	10 MVA	12.5 MVA
4	Cooling Medium	ONAN	ONAN	ONAN	ONAN	ONAN
5	Number of Phases	Three (3)	Three (3)	Three (3)	Three (3)	Three (3)
6	Voltage Ratio	33/11 kV	33/11 kV	33/11 kV	33/11 kV	33/11 kV
7	Connection	Delta/Star	Delta/Star	Delta/Star	Delta/Star	Delta/Star
8	Vector Group	DYn11	DYn11	DYn11	DYn11	DYn11
9	System Voltage					
	a) HV side Nominal/ Highest	33/36 kV	33/36 kV	33/36 kV	33/36 kV	33/36 kV
	b) LV side Nominal/ Highest	11/12 kV	11/12 kV	11/12 kV	11/12 kV	11/12 kV
10	Short Circuit Impedance (at Base MVA)	6.25%	7.15%	8.35%	8.35%	10%
11	HV Taps	On Load Tap changer shall be provided with 17 Position taps for variation of voltages. Tap Position no-5 shall be the principle tap position for each rating as stated in clause 1.1. Transformer shall be suitable for continuous operation at a voltage of 110% of each operating tap and 120% of the rated current on each tap. Transformer shall be capable of delivering the rated current at a voltage equal to 105% of rated voltage, without exceeding the temperature rise specified. + 5% to – 15% in 17 equal steps of 1.25% each for On-load tap changer on HV winding.				
12	Type of Earthing					
	a) HV Side	Without Neutral Point	Without Neutral Point	Without Neutral Point	Without Neutral Point	Without Neutral Point
	b) LV Side	Neutral Point	Neutral Point	Neutral Point	Neutral Point	Neutral Point

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		Solidly Earthed	Solidly Earthed	Solidly Earthed	Solidly Earthed	Solidly Earthed
13	Voltage fluctuation	±10%	±10%	±10%	±10%	±10%
14	Frequency	50 Hz ±3 %	50 Hz ±3 %	50 Hz ±3 %	50 Hz ±3 %	50 Hz ±3 %
15	Basic Insulation Level: (neutral should not be graded)					
	a) For 33kV	170 kVp rms	170 kVp rms	170 kVp rms	170 kVp rms	170 kVp rms
	b) For 11kV & Neutral	75 kVp rms	75 kVp rms	75 kVp rms	75 kVp rms	75 kVp rms
16	One (1) minute power frequency withstand voltage:					
	a) For 33kV	70 kV rms	70 kV rms	70 kV rms	70 kV rms	70 kV rms
	b) For 11kV & Neutral	28 kV rms	28 kV rms	28 kV rms	28 kV rms	28 kV rms
17	Phase arrangement	Phase markings U-V-W from left to right when viewed from HV side.				
18	Direction of Power Flow	Bidirectional	Bidirectional	Bidirectional	Bidirectional	Bidirectional
19	Maximum Flux Density	1.9T	1.9T	1.9T	1.9T	1.9T
20	Magnetic material used for core	CRGO Silicon Steel: Grade M3 or Better	CRGO Silicon Steel: Grade M3 or Better	CRGO Silicon Steel: Grade M3 or Better	CRGO Silicon Steel: Grade M3 or Better	CRGO Silicon Steel: Grade M3 or Better
21	Winding					
	a) Maximum Current Density	2.6 Amps/sq mm	2.6 Amps/sq mm	2.6 Amps/sq mm	2.6 Amps/sq mm	2.6 Amps/sq mm
	b) Nature of insulation HV/LV	A/A	A/A	A/A	A/A	A/A
22	Temperature rise limit:					
	a) Winding by Resistance	a)55 deg. C	a)55 deg. C	a)55 deg. C	a)55 deg. C	a)55 deg. C
	b) Oil by Resistance	b)45 deg. C	b)45 deg. C	b)45 deg. C	b)45 deg. C	b)45 deg. C
	c) Maximum temperature gradient between oil and winding	c)10 deg. C	c)10 deg. C	c)10 deg. C	c)10 deg. C	c)10 deg. C

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23	Wheels	The transformer shall be provided with four flanged bi-directional rollers suitable for rail gauges in both the axis for movement of the transformer in either direction.
24	Fault levels	The anticipated fault levels on the 33 kV and 11 kV sides are 600 MVA and 125 MVA respectively.
25	Over fluxing capability	Transformers shall be designed for continuous over fluxing withstands capability due to -10% to +10% voltage variation on HV side and frequency variation of ±3%. Combined variation of voltage and frequency shall be within ±10%.
26	Auxiliary Supply	
	a) AC	a) 415 Volts 3 phase 4 wire, ungrounded (Provision to connect neutral to be made in the terminal block). Two 415 V sources shall be made available by purchaser.
	b) DC	b) 24V & 48V
27	No Load Current	Tolerance for No-Load Current shall be +30% of the declared value. NLC shall be 0.5 % of full load current.
28	Core Grounding	The core and frame grounding connection shall be brought out through a suitable bushing for provision of external grounding. The bidder shall submit the drawing clearly showing the details of core grounding.
29	Transformer Dimension	To be submitted as per design & will be finalized during evaluation
30	Terminal Connection – For without HV/LV box	
	a) HV Side	1. The Terminals shall be brought out through suitable 36 kV bushing for overhead connections. 2. The bushing shall be provided with pal connector arrangements for the upto 232sqmm Cu conductor. 3. Palm connector material shall be same as of bushing current carrying material to avoid the heating due to difference in material.
	b) LV Side	1. The Terminals shall be brought out through suitable 36 kV bushing for overhead connections. 2. The bushing shall be provided with pal connector arrangements for the upto 2 no's of 232sqmm to 525sqmm Cu conductor (As per rating) 3. Palm connector material shall be same as of bushing current carrying material to avoid the heating due to difference in material.
	c) Neutral terminal Arrangements	LV neutral shall be brought out through 11 kV class bushing and shall also be suitable for direct solidly grounding earth strip 02 No's 65x10mm connection.

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31	Terminal Connection – For with HV/LV box	
	a) HV Side	1) On HV side for 33 KV suitable cable box arrangement shall be provided. 2) The HV box shall have two door opening system with Proper locking & earthing arrangement for easier access. 3) The cable box shall be detachable from the disconnecting chamber housing HT bushings (36 kV). 4) Disconnecting type links shall be provided to extend the connections from HT bushings to the bus bars in the cable box. The cable box shall house the heat shrunk insulated tinned copper bus bars with support insulators. 5) The cable box shall be provided with entry arrangements for 3Cx300 sq mm including detachable gland plates & earthing strips required. 6) The bus bars shall be provided with termination arrangements for the 3Cx300 sq mm cables. 7) Suitable Cable support structure for the six no. of cables with clamping arrangements is to be provided. 8) Top inspection cover with lifting handle for the disconnecting chamber, top and side inspection covers with lifting handles for cable end box shall be provided. Canopy to be provided on the inspection cover. 9) Heater with thermostat through switch inside cable box and silica gel breather arrangement shall be provided for cable end box. 10) Copper flexible shall be provided at HV cable box to connect HV cable with HV bus bar. Two no copper strip for earthing of cable to be provided by bidder. Cable box shall have earthing provision for GIS earth flat and earth flat to be connected to earthing strip inside the cable box. 11) Bimetallic interface at dissimilar metal connections shall be provided for connecting cable connections. 12) Cable Box cover shall be such that it can be fixed with minimum nuts & bolts after taking care of sealing and water ingress. 13) Minimum phase to phase clearance-315 mm 14) Minimum phase to earth clearance-315 mm 15) Palm connector material shall be same as of bus bar material to avoid the heating due to difference in material of palm, busbar and stem. Thickness and width of palm shall also be same as of busbar. 16) The current density of copper busbar and bushing stud shall be 2.6 A/sqmm and for brass 0.35 A/sqmm.

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	b) LV Side	1) On LV side suitable cable box arrangement shall be provided. 2) The LV box shall have two door opening system with Proper locking arrangement for easier access. 3) The cable box shall be detachable from the disconnecting chamber housing LT bushings (17.5kV). 4) Disconnecting type links shall be provided to extend the connections from LT bushings to the bus bars in the cable box. The cable box shall house the heat shrunk insulated tinned copper bus bars (size 100mmX12mm) with support insulators. 5) The cable box shall be provided with entry arrangements for 2Nos. 11kV, 1core 1000sqmm cables (two conductor/phase) including detachable gland plates & earthing strips. 6) The bus bars shall be provided with termination arrangements for the 1000 sq mm cables. 7) Suitable Cable support structure for the six no. of cables with clamping arrangements is to be provided. 8) Top inspection cover with lifting handle for the disconnecting chamber, top and side inspection covers with lifting handles for cable end box shall be provided. 9) Heater with thermostat and silica gel breather arrangement shall be provided for cable end box. 10) Copper flexible shall be provided at HV cable box to connect HV cable with HV bus bar. Two no copper strip for earthing of cable to be provided by bidder. 11) Bimetallic interface at dissimilar metal connections shall be provided for connecting cable connections. 12) Cable Box cover shall be such that it can be fixed with minimum nuts & bolts after taking care of sealing and water ingress. 13) Minimum phase to phase clearance-130 mm 14) Minimum phase to earth clearance-110 mm 15) Palm connector material shall be same as of bus bar material to avoid the heating due to difference in material of palm, busbar and stem. Thickness and width of palm shall also be same as of busbar. 16) The current density of copper shall be 2.6 A/sqmm and for brass 0.35 A/sqmm.					
	c) Neutral terminal Arrangements	LV neutral shall be brought out through 11 kV class bushing and shall also be suitable for direct solidly grounding earth strip 02 No's 65x10mm connection.					
32.	On Load Tap changer (OLTC) on HV Side (With 1 phase Motor)						
	a) Type	On Load	On Load	On Load	On Load	On Load	
	b) Range	+10% to -10% in	+10% to -10% in	+10% to -10% in	+10% to -10% in	+10% to -10% in	

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		steps of 1.25%	steps of 1.25%	steps of 1.25%	steps of 1.25%	steps of 1.25%
	c) Number of Steps	16 (17 Position)	16 (17 Position)	16 (17 Position)	16 (17 Position)	16 (17 Position)
	d) Principal Tap Position	5th Position	5th Position	5th Position	5th Position	5th Position
	e) Manual / Automatic	Yes (Both)	Yes (Both)	Yes (Both)	Yes (Both)	Yes (Both)
	f) Remote / Local	Yes (Both)	Yes (Both)	Yes (Both)	Yes (Both)	Yes (Both)
	g) Indian Standard	8468-2006	8468-2006	8468-2006	8468-2006	8468-2006
	h) All contacts should be SCADA compatible and suitable for connection to TMU	Yes	Yes	Yes	Yes	Yes
	i) Separate Conservator, OSR, PRV & MOG	Yes	Yes	Yes	Yes	Yes
	j) Potential free contacts for SCADA Provided	Yes	Yes	Yes	Yes	Yes
	k) 415 V Auto changeover facilities for OLTC Motor Provided.	Yes	Yes	Yes	Yes	Yes
	l) Flow of Power	Bidirectional	Bidirectional	Bidirectional	Bidirectional	Bidirectional
	m) Surge Relay	Yes	Yes	Yes	Yes	Yes
	n) Whether separate tap winding provided for OLTC.	Yes	Yes	Yes	Yes	Yes
	o) Whether Selector and diverter chamber are separate	Yes	Yes	Yes	Yes	Yes
	p) RTCC	RTCC unit not required with Transformer. But all compatible arrangement to be provided for future installation of RTCC.				

4.2 Minimum clearance (In Air) between live parts shall be as follows:

Location	33 kV (Bare Bushing)	11 kV (Bare Bushing)	Neutral (Bare bushing)
Phase to phase	315 mm	130 mm	130 mm
Phase to Ground	315 mm	130 mm	130 mm

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4.3 Creepage Distances for bushings shall be as follows:

Location	33 kV	11 kV	Neutral
Total	900mm	300mm	300 mm

4.4 Neutral CT requirement for Transformer:

LV Neutral CT

Rating	CTR	Class	Burden	Knee Point Volt	I mag at Vk/2	ISF	Rct
3.15 MVA	300-600/1A	PS 5P20	15 VA	>=300V	<30mA	-	<=10 ohm
5 MVA	300-600/1A	PS 5P20	15 VA	>=300V	<30mA	-	<=10 ohm
8 MVA	300-600/1A	PS 5P20	15 VA	>=300V	<30mA	-	<=10 ohm
12.5 MVA	800-400/1A	PS 5P20	15 VA	>=300V	<30mA	-	<=10 ohm

WTI CT for HV Side

Purpose	CTR	Class	Burden	Knee Point Volt	I mag at Vk/2	ISF	Rct
3.15 MVA	As per OEM design	0.2	As per OEM design	As per OEM design	As per OEM design	<=10	As per OEM design
5 MVA	As per OEM design	0.2	As per OEM design	As per OEM design	As per OEM design	<=10	As per OEM design
8 MVA	As per OEM design	0.2	As per OEM design	As per OEM design	As per OEM design	<=10	As per OEM design
12.5 MVA	As per OEM design	0.2	As per OEM design	As per OEM design	As per OEM design	<=10	As per OEM design

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WTI CT for LV Side

Purpose	CTR	Class	Burden	Knee Point Volt	I mag at Vk/2	ISF	Rct
3.15 MVA	As per OEM design	0.2	As per OEM design	As per OEM design	As per OEM design	<=10	As per OEM design
5 MVA	As per OEM design	0.2	As per OEM design	As per OEM design	As per OEM design	<=10	As per OEM design
8 MVA	As per OEM design	0.2	As per OEM design	As per OEM design	As per OEM design	<=10	As per OEM design
12.5 MVA	As per OEM design	0.2	As per OEM design	As per OEM design	As per OEM design	<=10	As per OEM design

CTs shall not limited to the below mentioned points. All CTs shall be as per IS: 2705.

a) All cabling from equipment to terminal boxes shall be of FRLS copper of size not less than 4 sq.mm and shall have insulated sleeve throughout the length and shall be laid in covered cable conduits. Wire terminals shall be hard core copper using round lugs. Wiring of all the cores shall be brought up to the terminal block and disconnecting type terminals shall be used. The CTs shall be shorted at CT terminals from the bidder's end only.

b) Brass nuts along with lock-nuts, brass washers and spring washers shall be provided for all CT connections.

c) All CTs shall have polarity marking and terminals shall have well defined marking for the purpose of usage, which shall be clearly written on CT terminal plates.

d) CT specifications along with winding diagrams shall be provided in the transformer nameplate.

e) Neutral & WTI CT test certificates shall be provided along with Transformer test certificates.

f) In marshalling box protection CT and WTI CT shall be separately marked for wiring purpose. Also provide marking plate on WTI and neutral bushing CT on top of tank.

g) Location of WTI and Neutral CT shall be such that easily wiring can be accessible at the time of commissioning and maintenance.

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4.5 Insulating Oil:

a. Oil for first filling together with 10% extra shall be supplied with each transformer. The oil shall comply in all respects with the provisions of IS 335, IEC No.60296. Particular attention shall be paid to deliver the oil free from moisture having uniform quality throughout in non-returnable steel drums.

b. The oil shall be of EHV grade and shall have the following main characteristics or equivalent (the requirements indicated are determined in accordance with the test methods as per IS: 335). The oil in the transformer shall be filled up to 'Transport filled level' before dispatch of the transformer.

c. The maker of the oil shall be subject to approval by the Purchaser.

d. Also refer below GTP table for insulating oil

Sr. No.	Characteristics	Requirement as per IS:335	Method of Test
1.	Appearance	The oil shall be clear and transparent and free from suspended matter or sediment temperature.	A sample of Oil shall be examined in 100mm thick layer at 27deg C
2.	Density at 29.5° C (max)	0.89 g/cm^3	IS 1448 (P:16):1990
3.	Kinematic Viscosity @ 27° C. (Max.)	27 cSt.	IS 1448 (P:25):1976
4.	Interfacial tension Min.	0.04 N/m	IS:6104:1971
5.	Flash Point (Closed CUP)	140° C	IS 1448 [P : 21] : 1992
6	Pour Point (max)	-6° C	IS 1448 [P : 10] : 1970
7	Neutralization Value (total acidity) max.	0.03 mg/KOH/g	IS 1448 [P : 2] : 1967
8	Corrosive sulphur (In terms of classification of copper strip)	Non Corrosive	IS 1448 (Part-I)/Annex B of IS :335
9	Electric Strength (Breakdown voltage)	The sampling shall be done in accordance with the procedure laid down in IS 6855: 1973.	IS 6792 : 1992
	i) New untreated oil	30 kV (r.m.s.)	
	If the above value is not attained, the oil shall be filtered		
	ii) After Filtration Min	60 kV (r.m.s.)	
10	Dielectric Dissipation Factor (tan-delta) at 90°C, max.	0.002	IS:6262-1971

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11	Specific resistance (resistivity) ohm/cm/min		IS:6103-1971
	a) At 90° C, Min	35 X 10^{12} ohm-cm	
	b) At 27° C, Min	1500X 10^{12} ohm-cm	
12	Water content, max. per million	30 (avg. 20 ppm)	Karl Fischer Method
13	Oxidation Stability		
	(i) Neutralization value after oxidation Max. (ii) Total sludge, after oxidation, max.	0.40 mg. KOH/g 0.1 percent by weight	Appendix C of IS:335
14	Tan delta at 90° C after ageing test (max)	0.20	IS 6262:1971
15	Saponification Value	Max. 1.0 mg. KOH/g	Appendix E IS-335
16	Presence of oxidation inhibitor	The oil shall contain anti-oxidant additives.	IS 13631 : 1992

4.6 Maximum Acceptable Losses:

The transformer losses should be as defined below:

a. "Maximum No load loss" (NLLmax) at rated voltage on principal tapping and at rated frequency.

b. "Maximum Load loss" (LLmax) at rated current for the principal tapping at 75°C excluding auxiliary losses.

The losses shall not exceed the value given below,

Description	Losses Type	3.15 MVA	5 MVA	8 MVA	10 MVA	12.5 MVA
Max. guaranteed No Load Losses As defined above at point no 4.6 (A)above	NLL max	4 KW	5.5 KW	7 KW	8.5 KW	9 KW
Max. guaranteed Load losses As defined above at point no 4.6 (B)above	LL max	20 KW	29 KW	45 KW	54 KW	68 KW

However bidder can offer loss values lower than as mentioned above, but no financial advantage is available for the same.

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4.7 Performance:

a. The transformer shall be capable of being operated, without danger, on any tapping at the rated MVA with voltage variation of ±10 % corresponding to the voltage of the tapping.

b. Transformer shall be capable of operating under natural cooled condition up to specified load.

c. The transformer shall be designed with particular attention to the suppression of maximum harmonic voltage, especially the third and fifth so as to minimize interference with communication circuit.

d. The transformer shall be able to withstand thermal and mechanical stresses caused by symmetrical or asymmetrical fault on any winding.

e. The transformer and all its accessories including CTs etc. shall be designed to withstand without injury, the thermal and mechanical effects of any external short circuit to earth and of short circuits at the terminals of any winding for a period of 3 secs.

f. Loading of the transformer shall be as per IS: 6600.

4.8 FREQUENCY

The transformer shall be suitable for continuous operation with a frequency variation of ±3% from normal of 50 Hz without exceeding the specified temperature rise.

4.9 PARALLEL OPERATION

The similar ratio transformers shall operate satisfactorily in parallel with each other if connected between high voltage and low voltage conductor.

4.10 SHORT CIRCUIT WITHSTAND CAPACITY

The transformer shall withstand the short circuit at its terminals for the specified fault levels for minimum duration of 3 seconds.

4.11 EARTHQUAKE

As the Transformers will be installed in areas prone to earthquakes, they shall be designed to withstand seismic forces equivalent to 0.1 g acceleration. Necessary devices for clamping the wheels to the rails shall also be provided along with any other suitable anti earthquake clamping arrangement.

5.0	GENERAL CONSTRUCTIONS :

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5.1	**GENERAL**	1. All transformers shall be provided with detachable, flanged, bi-directional wheels for movement and mounting on rail gauge. Purchaser shall provide rail tracks grouted in concrete foundation. Bidder shall provide means for locking the wheels in positions parallel to and at right angles to the longitudinal axis of the tank. 2. Transformer shall be two winding type, with cold rolled grain oriented, silicon-steel laminations having excellent magnetic properties, insulated and clamped to minimize vibration and noise. Laminations shall be insulated from each other with material having high inter-lamination insulation resistance and rust inhibiting property All covers and seals shall be oil and airtight and shall not be affected by mineral or synthetic oil action. 3. All fasteners of M10 and below size should be of stainless steel. All fasteners of M12 and above size should be hot dip galvanized. To achieve a good quality corrosion free painting, supplier should provide epoxy plus polyurethane paint with minimum total paint thickness of 120 microns. 4. The framework, clamping arrangement and general structure of the cores of each transformer shall be of robust construction and shall be capable of withstanding any shock to which they may be subjected during transport, installation and service. The framework and the core bolts shall be efficiently insulated from the core so as to reduce the eddy-currents to a minimum. 5. The limbs and the yokes of the core shall have similar sections to minimize heating and noise arising from transverse flux. The joints in the laminated magnetic circuit shall be interleaved. Necessary cooling ducts shall be provided for heat dissipation from the core so that the anticipated maximum hot spot temperature in the core shall not be injurious to any material used in the core assembly. 6. The core clamping frame shall be provided with lifting eyes having ample strength to lift the complete core and winding assembly. The core assembly of oil immersed transformers shall be electrically connected to the transformer tank for effective core earthing. 7. The neutral terminal shall be brought out through neutral bushing from the tank and the same shall be brought upto the skid level, duly insulated by means of suitably rated epoxy insulators. The neutral conductor lead shall be of copper conductor designed to carry the maximum E/F current with solidly earthed neutral. The bidder shall justify the voltage/current rating of the neutral bushing chosen during detailed engineering. The voltage rating of the neutral bushing shall be chosen considering the probable voltage rise for neutral floating conditions. The current rating shall be chosen considering solidly earthed neutral. The neutral shall be formed at the bottom of the winding and brought to LVN bushing through a separate path. 8. The neutral CT shall be mounted in an enclosure (IP 55) outside the main transformer tank. Both primary and secondary terminals of the NCTs

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		shall be accessible for testing. The NCTs shall be mounted in the Neutral to Earth path. 9. Top sampling valve shall be internally/externally piped and brought out of the tank sideways at skid level. 10. Transformer with all accessories shall be of free-standing type. Transformer accessories shall be designed in such a way that no supporting posts/structures are necessary other than the rail. 11. The sets of radiator banks shall be connected to the main tank through a header pipe welded to the tank. Design wherein individual radiator is connected to main tank is not acceptable. Individual radiator tubes shall be connected to main tank thru butterfly valves at both ends of radiator tubes. Arrangement shall be made for suitable gap between main tank and radiator tubes. 12. Transformer conservator breather shall be of conventional breather type with silica gel filled. 13. The oil level shall be higher than HV bushing terminal. 14. The part of the HV bushing terminal, to which overhead conductor/UG cable is connected should not be involved either in the oil sealing arrangement or air release arrangement. This is to be specifically confirmed by the bidder at the time of offer. 15. Two separate parts shall perform the two functions of receiving the jumper and oil sealing. 16. Air seals are not acceptable at HV bushing terminals. 17. The oil shall be supplied in non-returnable drums. The quantity shall be of 10% excess over the requirement of transformer at 30ºC. 18. Magnetic oil level indicator shall comprise with 2 nos. mercury contact/switch (for High / Low oil level alarm). 19. Conventional breather or equivalent shall be used for main tank & silica gel breather with clear sight glass and oil sealing arrangement shall be used for OLTC purpose. 20. The transformer shall be suitable for operation at full rated power on all tapings without exceeding the applicable temperature rise. The transformer shall be designed to suppress harmonic content, especially the third and fifth, so as to eliminate distortion in the waveform and consequent additional insulation stress, noise on communication system and undesirable circulating currents between the neutrals at different transformer stations. 21. The design of each transformer shall be such that the risk of accidental short-circuits due to birds or vermin are obviated. 22. All outdoor apparatus, including bushing insulators and fittings shall be so designed that they do not collect water at any point. 23. All electrical connections and contacts shall be of ample cross sections for carrying the rated current without excessive heating. 24. Each transformer shall be designed for minimum no-load and load losses within the economic limit and as per the Indian Standards.

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		25. Ground terminals shall also be provided on marshalling box, OLTC local control panel and cable end box to ensure effective earthing. 26. For continuity of earth connection, all gasketed joints shall be provided with minimum two numbers copper strip jumpers of adequate size. 27. Rain Guard shall provided for LV compartment, Buchholz Relay, OSR, PRV, SPR, Cooler Control Box and Marshalling Box so that rain water can enter to the junction box of these relays/ cubicles. Wiring shall be bottom entry. 28. All devices contacts to be wired upto Marshalling Box and must be compatible for communication with RS485 & 61850. 29. PRV & Buchholz Relay of qualitrol or Atvus make only. 30. At the time of erection and commissioning, authorized person of the bidder shall be present at the site till completion of the work. 31. OLTC motor must be single phase operated. **32. Sampling Valve must be provided for both at the bottom side of main tank and OLTC tank for collecting oil sample.**
5.2	**CORE**	1. The core shall be of high grade cold rolled, non-ageing, grain oriented, annealed silicon steel lamination (CRGO), having low loss & good grain properties, coated with hot oil proof insulation, bolted together to the frames firmly to prevent vibration or noise. 2. The grade of core shall be M3 or better. The core shall be stress relived by annealing under inert atmosphere if required, especially suitable for transformer. 3. All core clamping bolts (If any) shall be effectively insulated. Only one grade and one thickness of core shall be accepted and no mixing of different grades shall be allowed. 4. The complete design of the core must ensure permanency of the core losses with continuous working of the transformers. 5. The value of the maximum flux density allowed in the design & grade of laminations used shall be clearly stated in the offer. 6. The successful bidder is required to submit the following documents with regard to the procurement of core material: a) Invoice of supplier b) Mill's test certificate c) Packing list d) Bill of landing e) Bill of entry certificate by custom f) Description of material, electrical analysis, physical inspection certificate for surface defects, thickness and width of the material g) Subjecting to at least 10% of the transformer to routine tests and no load and load loss measurement 7. Purchaser shall impose heavy penalty or black list bidders using seconds/ defective CRGO sheets or load losses found to be more than stipulated limit.

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		8. After being sheared the laminations shall be treated to remove all burrs. Both sides of steel laminations shall be so constructed that eddy currents will be minimum. 9. The core frame shall be provided with lugs suitable for lifting the complete core and coil assembly of the transformer. 10. The core and the coil shall be so fixed in the tank that shifting will not occur when the transformer is moved or during a short circuit. 11. All steel sections used for supporting the core shall be thoroughly sand blasted after cutting, drilling and welding. Each core lamination shall be insulated with a material that will not deteriorate due to pressure and hot oil. 12. The supporting frame work of the core shall be so designed as to avoid presence of pockets which would prevent complete emptying of tank through drain valve or cause trapping of air during oil filling. Adequate lifting lugs shall be provided to enable the core and windings to be lifted. 13. Core Grounding: i. The grounding lead from the core shall be brought out of the tank through a 11 kV class bushing and grounded externally. ii. A protective cover shall be provided for the bushing. iii. The core grounding rod (stem) through the bushing shall be solid rod (stem). iv. The design of core grounding arrangement shall be such that the grounding links shall not come out of core during installation as well service conditions. v. The supplier shall submit a drawing clearly showing the details of core grounding. vi. The core / frame grounding's both connections shall be brought out through a suitable bushing for provision of external grounding. vii. The bidder shall submit the drawing clearly showing the details of core grounding.
5.3	**WINDING**	1. The windings shall be so designed that all coil assemblies of identical voltage ratings shall be interchangeable, and field repairs to the windings can be made readily, without special equipment. 2. The coils shall be supported between adjacent sections by insulating spacers, and the barriers bracings and other insulation used in the assembly of the windings shall be arranged to ensure a free circulation of the oil and to reduce hot spots in the windings. 3. Coils should be transposed to minimize magnetic forces and extra supports shall provide for inter-disc connection. 4. All materials used in the insulation and assembly of the winding shall be new, insoluble, non-catalytic, and chemically inactive in the hot transformer oil, and shall not soften or otherwise be adversely affected under the operating conditions.

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5. The current density of coil shall not exceed 2.6 Amps/ sq mm at min tap of respective PTR's higher rating.
6. All threaded connections shall be provided with locking facilities. All leads from the winding to the terminal board and bushings shall be rigidly supported to prevent injury from vibration. Guide tubes shall be used where practicable.
7. The winding shall be brought out through bushing and provided with suitable terminal connectors, the details of which will be forwarded later.
8. The windings shall be clamped securely in place so that they will not be displaced or deformed during short circuits. The assembled core and windings shall be vacuum-dried and suitably impregnated before removal from the treating tank. The copper conductors used in the coil structure shall be best suited to the requirements, and all permanent current carrying joints in the windings and the leads shall be brazed.
9. Sharp bends should be avoided in the windings as far as possible, where unavoidable such bends should be reinforced with extra insulation tapes.
10. The tolerance for the winding resistance measurement for different phases but at same taps shall be limited to 1%.
11. The change in impedance values between the winding (HV/LV) shall not exceed ±10% of nominal impedance value as specified at all taps on HV/LV side.
12. The windings shall be brought out through bushing. The windings shall be designed to withstand the specified thermal and dynamic short-circuit stresses.
13. The end turns of the high voltage windings shall have reinforced insulation to take care of the voltage surges likely to occur during switching or any other abnormal condition.
14. Winding shall be suitable for connection of reactors or capacitors which would be subjected to frequent switching. All the windings shall be capable of withstanding stresses that may be caused by such switching.
15. Primary and secondary windings shall be constructed from high-conductivity (copper conductors), Double Paper Covered (DPC) copper conductor.
16. The insulation between core and bolts and core and clamps shall withstand **2.5 kV for one minute.**
17. Proper bonding of inter layer insulation with the conductor shall be ensured. Test for bonding strength shall be conducted as per standards.
18. All turns of windings shall be adequately supported (by which material) to prevent movement. The core/coil assembly shall be securely held in position to avoid any movement under short circuit conditions.
19. **The joints in the winding shall be avoided but if it is necessary then, these shall be properly brazed and the resistance of the joints shall be less than that of parent conductor. Crimping is not allowed at any joints.**

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5.3 INSULATING PAPER AND INSULATING PRESSBOARD

1. The bidder shall submit characteristics along with make for all the type of insulation papers and Pressboards to be used with the offer.
2. Inter layer insulation both for HV and LV windings shall be Epoxy diamond dotted Thermally Upgraded Kraft Paper (TUKP) and compressed pressboard of make (refer Clause no.5.21) subject to approval of TPWODL.
3. For Winding insulation, only Double Paper Covered insulation is acceptable with laying in opposite direction to each other and each paper must have overlapping more than 25% of its width.
4. Thermally Upgraded Kraft Paper (TUKP) and Pressboard should be made of pure Cellulose from soft wood pulp manufactured from sulphate process. No additive, adhesive or coloring matter shall be present.
5. Thermally Upgraded Kraft Paper (TUKP) and Pressboard should be of class A (105°C) insulation material.
6. All spacers, axial wedges / runners used in windings shall be made of pre-compressed solid pressboard.
7. All axial wedges/runners shall be properly milled to dovetail shape so that they pass through the designed spacers freely.
8. Insulation shearing, milling and punching operations shall be carried out in such a way, that there should not be any burr, sharp edges and dimensional variations.
9. Thermally Upgraded Kraft Paper (TUKP) self-adhesive tape to be used for bonding of insulating paper layer, spanner and paperboards that are immersed in the oil filled transformer.

Below required values could be verified if required at any stage of the inspection and it should fulfil the requirement as per below table:

Characteristics	Thermally Upgraded Kraft Paper (TUKP)	Pressboard (all Sizes)
1. Dimension	As specified by bidder with ±5% tolerance.	As specified by bidder with tolerance as per IS1576.
2. Apparent Density	>0.80 g/cm^3	as per IS1576 w.r.t Thickness
3. pH of Aqueous extract	6-8%	6-8%
4. Electrical strength i) in air ii) In Oil	7KV/mm ----------	12KV/mm 35KV/mm
5. Ash content	Maximum 1%	Maximum 0.7
6. Moisture content	Maximum 8%	Maximum 8%
7. Oil absorption	----------	Minimum 9%

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		Bidder has to submit the test certificates as per IS-9335, IS-1576 for all type of insulating materials covering above stated parameters along with below parameters during stage inspection : 1. Substance (Grammage) (g/m3) 2. Compressibility 3. Tensile strength 4. Conductivity of water extract 5. Shrinkage in air 6. Flexibility 7. Cohesion between plies1. 8. Elongation 9. Air permeability 10. Tear index 11. Heat stability
5.4	**TANK**	1. The transformer tank and cover shall be fabricated from good commercial grade low carbon steel suitable for welding and shall be of adequate thickness. 2. The tank and the cover shall be of welded construction. All seams shall be welded and where practicable they shall be double welded. 3. The tank shall have sufficient strength to withstand without permanent distortion (i) filling by vacuum and (ii) continuous internal gas pressure of 0.35 atmosp. with oil and operating level. 4. The tank material shall be as per IS: 2026 or equivalent with ultrasonic testing done for elimination of defects in rolled plates. 5. The welding shall be as per prior approved WPS (Welding Procedure Specs) by trained and tested welders. 6. The welding plan shall be shown in general i.e. Category-wise or for each type of weld in the mechanical fabrication drawing, which shall be submitted to Purchaser. 7. All fittings like elbows, bends etc. shall be seamless as per applicable American or Indian Standards. 8. No resistance welding of fasteners shall be done anywhere on the transformer. 9. The tank shall have an oil tight bolted flanged joint near the base of the transformer so that the tank can be lifted off to provide access to the core and coils. 10. To ensure oil tightness, recessed neoprene or equivalent gaskets shall be used. 11. Manholes with welded flange and bolted covers shall be provided on the tank. 12. The manhole shall be of sufficient size to afford easy access to the lower ends of all the bushings, OLTC terminals etc. to permit replacement of auxiliaries without removing tank covers. 13. Inspection covers on elevation (on vertical plane) shall be provided for all HV bushing turrets.

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		14. Suitable guides shall be provided for positioning the various parts during assembly or dismantling. 15. Adequate space shall be provided between the cores and windings and the bottom of the tank for collection of any sediment. 16. All joints including bolted as well as flanged, shall have machined matching surfaces/inner edges with smooth finish, to ensure leak proof joints. 17. Lifting eyes or lugs shall be provided on all parts of the transformer requiring independent handling during assembly or dismantling. In addition, the transformer tank shall be provided with lifting lugs and bosses properly secured to the sides of the tank, for lifting the transformer either by crane or by jacks. 18. The design of the tank, the lifting lugs and bosses shall be such that the complete transformer assembly filled with oil can be lifted with the use of these lugs without any damage or distortions. 19. The tank shall be provided with two nos. of suitable copper alloy lugs for the purpose of grounding. 20. The grounding pads should be mirror finished. Two grounding pads, located on opposite sides of the tank shall be provided with two tapped holes for connecting it with station ground mat. Necessary hardware like M10 GS bolts and spring washers shall also be provided for connections. 21. Each tank shall be equipped with the following valves with standard flange connection for external piping: **a)** One drain valve located on the low voltage side of the transformer and placed to completely drain the tank. At the option of the Purchaser's a large valve may be furnished with an eccentric reducer. This valve shall be equipped with a small sampling cock. **b)** One filter valve located at the top of the tank on the high-voltage side. The opening of this valve shall be baffled to prevent aeration of the oil. **c)** One filter valve, located slightly above the bottom of the tank. **d)** One relief valve to operate at a pressure below the test pressure for the tank. **e)** Other two nos. valves shall also be provided, as required for proper functioning of the transformer. **f)** A suitable locking arrangement shall be provided for locking these valves in close/open position. 22. All valves should be provided with clear open/close position indications. Wherever rising spindle type valves are provided the valves should be clockwise rotating for closing operations. 23. For the auxiliary lead wiring from individual instrument to marshalling box, the cables shall be provided in the conduits. 24. All the transformers shall be provided with a ladder having 'anti-climbing' device. 25. Transformer tank shall be of welded sheet steel construction and provided with gaskets steel cover plates.

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		26. Base shall be suitably reinforced to prevent any distortion during lifting. Base channels shall be provided with skids and pulling eyes to facilitate handling. 27. All seams shall be electrically double welded for absolute oil tightness. 28. Suitable arrangement shall be made for mounting HV and LV lightning arrestors of the transformer. 29. Guards shall be provided for drain, bottom sampling and filter valves to prevent oil pilferage. 30. Minimum Thickness for the transformer shall be as follows: Tank Side wall (mm) 10 Tank Top Cover (mm) 12 Tank Bottom Plate (mm) 12 Conservator (mm) 06
5.5	**OIL-PRESERVING EQUIPMENT**	1. Oil preserving equipment shall be conventional conservator type. The conservator shall have two filter valves, one at the bottom at one end, the other at the top, opposite end, in addition to the valve specified in the Accessories for the main tank. The conservator or expansion tank shall also have a shutoff valve and a small drain valve and sampling cock, the latter so arranged as not to interfere with oil lines. The oil level gauges (prismatic and magnetic) shall be mounted on the conservator or expansion tank. The top of the conservator shall have contact with atmosphere through two silica gel breathers to facilitate replacement of breather without having to keep Buchholz relay inoperative. The silica gel breathers shall have Polyurethane Type body & it should be transparent and UV protected. 2. Proper valve arrangement (Two top valve & one bottom valve on conservator) is to be provided for proper oil filling. 3. Prismatic oil level indicators with red color float shall be provided on main tank and OLTC tank Conservator. Dual contacts are required for both MOGs (Main Tank & OLTC conservator). 4. Separate conservator tank shall be provided for OLTC.
5.6	**TAP CHANGING MECHANISM on Load Tap changer (OLTC)**	1. OLTC shall have the entire feature to meet the requirement. The equipment shall conform to the latest applicable Indian standard / IEC standard. Equipment complying with any other authoritative standards such as British, VDE etc. shall also be considered if offered. 2. The OLTC gear shall be designed to complete successfully tap changes for the maximum current to which transformer can be loaded i.e. 120% of the rated current. Devices shall be incorporated to prevent tap change when the through current is in excess of the safe current that the tap changer can handle. The OLTC gear shall withstand through fault currents without injury. 3. When a tap change has been commenced it shall be completed independently of the operation of the control relays and switches. Necessary safeguards shall be provided to allow for failure of auxiliary power supply or any other contingency which may result in the tap changer movement not being completed once it is commenced.

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4. OLTC shall be a separate compartment & should be external to transformer tank. Oil in compartments which contain the making and breaking contacts of the OLTC shall not mix with oil in other compartments of the OLTC or with transformer oil. Gases released from these compartments shall be conveyed by a pipe to a separate oil conservator or to a segregated compartment within the main transformer conservator. A OSR with shut off valves and MOG shall be installed between OLTC and conservator tank. The OLTC conservator shall be provided with prismatic oil level gauges with red color float. The length and alignment of the MOG and OSR pipe shall be such that, the transformer does not trip by the vibration of the pipe.
5. Oil in compartments of OLTC which do not contain the make and break contacts, shall be maintained under conservator head through valve pipe connections. Any gas leaving these compartments shall pass through the OSR relay before entering the conservator. The cable entry of OSR should be from bottom end instead from side
6. Oil filled compartments shall be provided with filling plug, drain valve with plug, air release vent, oil sampling device, inspection opening with gasket and bolted cover with lifting handles.
7. The OLTC motor shall be provided with AC 230 V auto changeover facilities. Tap position indication along with the various alarms of tap changer shall be indicated in the marshaling box.
8. Separate OLTC tank should be provided at a height lower than that of the main conservator tank so that the same is easily accessible for maintenance.
9. OLTC driving mechanism and its associated control equipment shall be mounted in an outdoor, weather proof cabinet, which shall include:
   • Driving motor (AC 230V - 1 phase, 50 Hz)
   • Motor starting contactor with thermal overload relays, isolating switch and HRC fuses.
   • Duplicate sources of power supply with automatic changeover from the running source to the standby source and vice versa.
   • End Limit Switch shall be provided to prevent operation beyond extreme taps & Contacts shall be provided for operation through SCADA.
   • Limit switch to cut off electrical operation on insertion of manual handle (Contacts shall be provided for operation through SCADA).
   • Local/Remote selector switches shall be provided with status indication.
   • Control switch: Raise/off/lower (spring return to normal type). (Contacts shall be provided for operation through SCADA).
   • Remote/local selector switch (maintained contact type). (Contacts shall be provided for operation through SCADA).
   • Mechanical tap position indicator showing rated tap voltage against each position and resettable maximum and minimum indicators.
   • Limit switches to prevent motor over travel in either direction & final mechanical stops.

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• Brake or clutches to permit only one tap change at a time on manual operation.
• Emergency manual operating device (hand crank or hand wheel).
• Electrically interlocked reversing contactors (preferably also mechanically interlocked).
• 240V, 50 HZ, AC space heaters with switch and MCB.
• Interior lighting fixture with lamp door switch and MCB.
• Gasketed and hinged door with locking arrangement.
• Terminal blocks, internal wiring, earthing terminals and cable glands for power and control cables.
• Necessary relays, contactors, current transformers etc.
• Thermal device or other means shall be provided to protect the motor and control circuit. All relays, switches, fuses etc. shall be mounted in local OLTC control cabinet and shall be clearly marked for the propose of identification.
• A five digit counter shall be fitted to the tap changing equipment to indicate the number of operation completed.
• The equipment shall be suitable for supervisory control and indication with make before break multi-way switch, having one potential free contact for each tap position. This switch shall be provided in addition to any other switch/switches which may be required for remote tap position indication.'
• Operation from the local or remote control switch shall cause one tap movement only until the control switch is returned to the off position between successive operations.
• OLTC shall be provided with PRV.
• Suitable manholes covers should be provided on the sidewalls to give access to the selector switches of the OLTC. There should be ample access for opening /Reconnecting tap-leads to the OLTC from all sides.
• Suitable valves shall be provided to take sample of oil from the OLTC chamber during operation of the transformer.

10. **Control Requirements for OLTC-**

The following electrical control features shall be provided:
• Positive completion of load current transfer, once a tap change has been initiated, without stopping on any intermediate position, even in case of failure of external power supply.
• Only one tap change from each tap change impulse even if the control switches or push button is maintained in the operated position.
• Cut-off of electrical control when manual control is resorted to. It shall not be possible to operate the electric drive when the manual operating gear is in the use.
• Cut-off of a counter impulse for a reverse tap change until the mechanism comes to rest and resets the circuits for a fresh operation.
• Cut-off of electrical control when it tends to operate the tap beyond its extreme position. Mechanical limit switches shall be provided for this purpose to achieve suitable interlocking.

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11. **Alarms-**
    The following alarms shall be provided with the additional contact arrangement for connection to SCADA.
    - End Limit Switch
    - Manual Operation Insertion
    - A.C. supply failure
    - Drive motor auto tripped
    - Tap Stuck up change delayed
    - OSR trip
    - MOG Alarms
    - PRV Trip
    - TC in Progress.
    - Any other protective feature, if considered essential by the Bidder.

12. Tap Changer Control and Transformer Monitoring Unit (TMU):
    This equipment is not required to be supplied by the bidder of the Transformer.

13. Auxiliary Power Supply of OLTC, Cooler Control and Power Circuit :

i. Two auxiliary power supplies, 415 volt, three phase four wire shall be provided by the Purchaser for OLTC and power circuit.

ii. All loads shall be fed by one of the two feeders through an electrically interlocked automatic transfer switch housed in the marshalling box for on load tap changer control and cooler circuits.

iii. Design features of the transfer switch shall include the following:
a) Provision for the selection of one of the feeder as normal source and other as standby.
b) Upon failure of the normal source, the load shall be automatically transferred after an adjustable time delay to standby sources.
c) Indication to be provided at marshalling box for failure of normal source and for transfer to standby source and also for failure to transfer.
d) Automatic re-transfer to normal source without any intentional time delay following re-energization of the normal source.
e) Both the transfer and the re-transfers shall be dead transfers and AC feeders shall not be paralleled at any time.

14. **Manual Control:**
    The cranking device for manual operation of the OLTC gear shall be removable and suitable for operation by a man standing at ground level. The mechanism shall be complete with the following:
    a) Mechanical tap position indicator which shall be clearly visible from near the transformer.
    b) A mechanical operation counter.
    c) Mechanical stops to prevent over-cranking of the mechanism beyond

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		the extreme tap positions. d) The manual control considered as back up to the motor operated load tap changer control shall be interlocked with the motor to block motor start-up during manual operation. The manual operating mechanism shall be able to show the direction of operation for raising the HV terminal voltage and vice-versa.
5.7	**BUSHINGS**	1. Bushings provided by the bidder shall be as per IS2099-1986. The bushings shall have high factors of safety against leakage to ground and shall be so located as to provide adequate electrical clearance between bushings and grounded parts. Bushings of identical voltage rating shall be interchangeable. All bushings shall be equipped with suitable terminals of approved type and size and all external current carrying contact surfaces shall be plated, adequately. The insulation class of the high voltage neutral bushing shall be properly co-ordinate with the insulation class of the neutral of the high voltage winding. 2. All main winding leads shall be brought out through outdoor type bushings as specified which shall be so located that the full flashover strength will be utilized and the adequate phase clearance shall be realized. 3. Each bushing shall be so coordinated with the transformer insulation that all flash-over will occur outside the tank. 4. All porcelain used in bushings shall be of the wet process, homogeneous and free from cavities or other flaws. The insulation (porcelain) shall be without any joint up to 145kV class. The glazing shall be uniform in colour and free from blisters, burns and other defects. Stresses due to expansion and contraction in any part of the bushing shall not lead to deterioration. 5. Bushings rated for 72.5 kV and above shall be of the oil filled condenser type with a central tube and draw-in conductor which shall be connected to the connector housed in the helmet of the bushings. The pull through lead shall be fitted with a gas bubble deflector. Condenser type bushings shall be equipped with following : a) Provision for power factor, dissipation factor and tan delta testing without disconnecting main leads. b) Stress rings and lower end shields. c) Current transformers shall be provided, if specified and the bushing shall be so arranged that it can be removed without disturbing the current transformers and secondary terminals. d) Bushing turrets shall be provided with vent pipes which shall be connected to route any gas collection through the Buchholz relay. 6. All oil filled bushing shall be provided with prismatic type oil gauge with red colored float inside the gauge for oil level indication. The oil gauge glass shall be so designed that it shall give satisfactory service (without melting/cracking or bulging) at specified site conditions, throughout the life of transformer/bushing. It shall not turn opaque during the service.

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		7. In case of oil communicating type bushing (for 33 KV & 11 KV), venting screw of the hollow stud, shall be provided with Teflon gaskets, to avoid oil leakage problem through the same. Angle of inclination to vertical for any bushing shall not exceed 30 deg. All bushings shall have puncture strength greater than the dry flash-over value. 8. Main terminals shall be solder less terminals, and shall be of the type and size specified in the drawings. The spacing between the bushings must be adequate to prevent flashover between phases under all conditions of operation. 9. The Bidder shall give the guaranteed withstand voltages for the above and also furnish a calibration curve with different settings of the co-ordination gap, to the purchaser to decide the actual gap setting. Bidder's recommendations are also invited in this respect. 10. The following routine tests shall be carried out on all bushings in the presence of purchaser's representative, in addition to any other specified in the IS: a) Visual examination b) One minute dry withstand test c) Oil tightness test d) Partial discharge test (Applicable on 66 kV only) e) Test for capacitance and power factor, dispassion factor and tan delta (on CT only) measurement. 11. The bushings shall have a link type isolating facility for tap for maintenance tests viz. power factor measurement etc. (Terminal shall be provided for the measurement of power factor and tan delta).
5.8	**NEUTRAL CURRENT TRANSFORMERS**	1. The current transformers shall conform to Indian Standards and shall have the class of accuracy, burden and other details as per IS. The design and construction shall be sufficiently robust to withstand the thermal and mechanical stresses resulting from maximum short circuit current. The core laminations shall be of high grade silicon steel or other equivalent alloy. The exciting current shall be as low as possible. Characteristics of the CTs shall be furnished by the bidder. 2. Bidder shall forward following information for CTs along with the offer. a) Winding dimensional drawing of CT including mounting details. b) Total weight of each CT. c) Quantity of oil/CT (if applicable) d) Rating and diagram plate drawing. e) CT characteristic curves with excitation current Vs secondary voltage for each core as measured in the case of protection CTs. f) CT secondary resistance as measured in ohms. g) Maximum shipping weight and volume. h) CT mounting drawing. I) All type test report as per IS

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5.9	**GASKETS**	1. All bolted connection to the tank shall be fitted with suitable oil-tight gaskets which shall give satisfactory service under the operating conditions. Gaskets shall be of rubber/Nitrate. 2. Special attention shall be given to the methods of making the oil-tight joints between the tank and the cover as also between the cover and the bushings and all other outlets to ensure that the joints can be remade satisfactorily and with ease, with the help of semi-skilled labor. 3. Where compressible gaskets are used, steps shall be provided to prevent over compression. 4. All the bolts provided shall be of hot dip galvanized. 5. All bolts shall be provided with one spring washer and two numbers of flat washers and with locking bolts. 6. All gasket joints shall be provided with equalizing links to extend earth connections.
5.10	**RADIATORS**	1. The radiators of cooler units shall be epoxy painted the entire surface including edges should be cleaned properly before painting to avoid peeling of paint at the edges. 2. Radiators shall be metal spray painted. 3. Bidder shall submit procedure for surface preparation and painting/galvanising of radiators along with the bid. 4. Price for galvanized radiators shall be quoted separately. 5. The colour shade for the radiator shall be shade 631 as per IS: 5. 6. Tank mounted radiators/coolers shall be of the detachable type with bolted and gasketted flanged connections. 7. The following accessories shall be provided for radiator: a) Shut off valves and blanking plates on transformer tank at each point of connection. b) Top and bottom shut off valves and blanking plates on each radiator. c) Lifting lugs d) Top oil filling plug. e) Air release plug at top. f) Oil drain plug at bottom. g) Top oil filling pump. 8. All radiators shall be tested for: a) Vacuum test for one hour b) Hydraulic pressure test using transformer oil for one and half hour (as per ASME) c) Air test can be done in place of hydraulic pressure test provided. d) water tank will be made available for submerging the radiators into water for leak detection. e) All the tests shall be done in black condition (i.e. before applying any paint). 9. The transformer design shall be such that the radiators and conservator can be mounted on either side of the tank.

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5.11.1	**CONTROL WIRING**	1. TTB links in Marshalling box shall be of droppable type. 2. Ring type lugs must be used for connecting CT control wiring at all places. 3. Anodized aluminum plate showing details of all terminals nos.& drawing shall be provided along with marshalling box. 4. Wiring from the current transformers and other control and alarm equipment shall be carried out in conduits or alternatively in concealed trays and terminated in marshalling box. 5. All terminal blocks for WTI, OTI etc shall be of disconnecting type. Terminal blocks for short circuiting the current transformer shall be provided separate from the terminal blocks accommodating the control and indicating circuits. The direct and alternating current terminals shall be isolated from each other. 6. All tapings of all CTs shall be brought to terminals in the marshalling box. The terminals for the current transformer leads shall be suitable for accommodating , 6 sq.mm cable leads, with disconnecting type links, while the terminals for the control and other circuits shall be suitable for accommodating 4 sq.mm. cable leads. All wires shall be stranded copper, 1.1kV grade insulation, fire resistant and shall be of reputed make. A minimum of ten spare terminals for control wiring shall be provided. 7. Suitably rated switches shall be provided to enable the control supply to the transformer to be cut off from the cabinet. 8. Enough Space shall be provided at the bottom of the operating cabinet to mount the Purchaser's control cables double compression type glands. The number and size of the cable glands shall be intimated later. All terminal blocks for control shall be rated for 10 Amps. 9. Wire and cable bunching rods shall be provided on all terminal blocks on either side. The wire terminals shall be engraved or otherwise indelibly marked ferrules and the wires shall be colour coded. 10. All terminal blocks shall have terminal nos. on either side of terminals. 11. Stud type fuse mounts shall be provided with an insulating cover as protection against accidental contact with live terminals. 12. Acrylic name plates shall be provided on doors of marshalling box cabinet, CT junction box and thermo junction box. Name plates shall also be provided for all the components inside the marshalling box. 13. Additional 230V, 15 Amps, 3 pin plug point shall be provided for testing purposes inside the marshalling box. 14. A suitably rated light point with its associated control switches shall be provided inside the housing for use in emergency. 15. All alarm and control devices shall be ungrounded. 16. Bidder shall furnish a list of the relays, control switches, timers, and other accessories like Bidder, bushing, MOG etc. indicating the make, type, auxiliary supply requirements, contact rating etc. along with quotation.

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		17. The make of devices shall be subject to approval by purchaser, after finalization of order. The bidder shall furnish O & M manual for all the auxiliary equipment's. 18. A single metal-enclosed main isolating switch, with HRC fuses, shall be provided for the cooling plant. 19. The contactors, starters and relays provided in the marshalling box shall be reputed make such as Siemens, L&T, ABB or equivalent make as per purchaser's approval. 20. The switching in or out of the cooling equipment shall be controlled by winding/oil temperature and there shall be provided for automatic switching in or out at predetermined temperature levels which should be capable of adjustment in settings. 21. The local mechanical indication scheme for all annunciation shall be provided in the marshalling box with mechanical target relays/contactors. 22. The following alarm indication shall be provided each with 2NO contacts. i. Failure of power supply/control supply. ii. Conservator oil level low (MOG)/ Oil Level High iii. PRD Trip./PRV TRIP iv. Buchholz relay trip/alarm. v. Winding Temperature high. vi. Winding Temperature high-high. vii. Oil Temperature high. viii. Oil Temperature high-high. ix. Bucholz/OSR of OLTC trip x. OLTC oil level low / OLTC oil level high xi. SPR Trip
5.11.2	**Valves**	1. All valves upto and including 100 mm shall be of gun metal or of cast steel. Larger valves may be of gun metal or may have cast iron bodies with gun metal fittings. They shall be of full way type with internal screw and shall open when turned counter clock wise when facing the hand wheel. 2. Suitable means shall be provided for locking the valves in the open and close positions. Provision is not required for locking individual radiator valves. 3. Each valve shall be provided with the indicator to show clearly the position of the valve. 4. All valves flanges shall have machined faces. 5. All valves in oil line shall be suitable be suitable for continuous operation with transformer oil at 100°C. 6. The oil sampling point for main tank shall have two identical valves to be put in series. Oil sampling valve shall have provision to fix rubber hose of 10 mm size to facilitate oil sampling. 7. A valve or other suitable means shall be provided to fix the on line dissolved gas monitoring system to facilitate continuous dissolved gas

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<table>
<tr><td></td><td></td><td>analysis. The location & size of the same shall be finalized during detail engineering stage.
8. After testing, inside surface of all cast iron valves coming in contact with oil shall be applied with one coat of oil resisting paint/varnish with two coats of red oxide zinc chromate primer followed by two coats of fully glossy finishing paint conforming to IS:2932 and of a shade (preferably red or yellow) distinct and different from that of main tank surface.
9. Outside surface except gasket setting surface of butterfly valves shall be painted with two coats of red oxide zinc chromate conforming to IS:2074 followed by two coats of fully glossy finishing paint.
10. All hardware used shall be cadmium plated/electro galvanized.</td></tr>
<tr><td>5.12</td><td>INSULATION</td><td>1. The dielectric strength of the winding insulation and of the bushings shall conform to the values given in IS 2026 (latest version).

2. For rated system voltage, the following impulse test voltage shall be offered.
System voltage: 12 KV, 36KV.
Impulse Test Voltage: 75 kV, 170KV.

3. The transformer shall be capable of operating continuously at its normal rating without exceeding temperature limits as specified below:

<table>
<tr><td></td><td>Type of cooling</td><td>Temperature rise</td></tr>
<tr><td>Winding</td><td>ONAN cooled</td><td>55 deg.C</td></tr>
<tr><td>Oil</td><td>All types</td><td>45 deg.C</td></tr>
</table>
</td></tr>
<tr><td>5.13</td><td>ACCESSORIES</td><td>Each transformer shall be provided with the following accessories:
1. Dial Type Thermometers for Oil (OTI)
A dial-type indicating thermometer of robust pattern mounted on the side of the transformer at a convenient height to read the temperature in the hottest part of the oil and fitted with alarm and trip contacts and contacts for switching in and switching out the cooling system at predetermined temperatures.
2. Winding Temperature Indicator (WTI) in one winding of each phase as described below:
a) It shall be indicating type, responsive to the combination of top oil temperature and winding current, calibrated to follow the hottest spot temperature of the transformer winding.
b) The winding temperature detector shall operate a remote alarm in the event the hottest spot temperature approaches a dangerous level and in the case of ONAN (Oil Natural and Air Natural) Thus WTI shall have 4 independent NO contacts for alarm and trip and cooler control.
3. Equipment for remote winding and oil temperature Indicators including these to be installed in the Purchaser's control room shall be provided.</td></tr>
</table>

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Pocket with heater coil and CT for RTD for winding hot spots shall be provided.

4. **For purpose of remote recording and data acquisition system**
   Top oil temperature detector along with suitable transducer and other necessary devices to provide two sets of 4-20 mA signals with PT-100 type of sensors.
5. Tap changer indicator of OLTC along with suitable transducer and other necessary devices to provide two sets of 4-20 mA signals along with one set of 1-16K resistance output shall be provided.
6. All digital outputs for remote annunciation/control/DAS shall be provided with two changeover (NO) contacts for alarm condition and two changeover (NO) contacts for trip condition. The OTI & WTI shall be provided with micro switches, instead of mercury switches for alarm and trip purpose. All the interconnected wiring between TJB, Marshalling box and OLTC etc shall be done by the bidder and schematics drawings of the same shall be supplied.
7. **One magnetic-type oil-level gauge** each in Main Tank and OLTC Tank with low and high level alarm contacts for main tank MOG and low level alarm for OLTC tank MOG and a dial showing minimum, maximum and normal oil levels. The gauge shall be readable from the transformer base level. It should have cable disconnecting facility at top of MOG, to facilitate testing of MOG. Along with MOG, prismatic type oil level indicator (glass window) shall also be provided on conservator.
   MOG technical parameters should be according to the below mentioned specifications.

General Technical Requirements for MOG:

S No	DESCRIPTION	UNITS	
1	Mounting Pad Diameter	Mm	150
2	Electric Switch		Two no's Micro Switches/ mercury switch
3	Contact Rating		5 Amps 240V AC, 0.25 Amp 220V DC

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		4	Switch Operation		Normally open, closes when oil level drops to near empty condition. Switch recovers automatically on rising of oil level
		5	Mounting of indicator		Vertical
		6	Dial Marking		Maximum, Minimum, 1/4, 1/2 & 3/4
		7	Movement of float arm		In the plane perpendicular to seating face
		8	Conservator Dia	mm	900 mm
		9	Air cell in conservator		Yes
		10	Switches for		Low Oil level Alarm, High oil level Alarm.
		11	Color		Black marking with white/yellow background.
		12	Readable from transformer base level		Yes
		13	Cable disconnecting facility at top of MOG to facilitate testing of MOG		Yes

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		14	Mechanical Protection degree		IP55
		15	Suitable for transformer rating	MVA	
		16	Packing		Supplier shall ensure that the equipment covered by this specification shall be prepared for rail/road transport (local equipment) and be packed in such a manner so as to protect the equipment from damage in transit.
		17	Marking		The unit shall be appropriately marked as "PROPERTY OF TPWODL, DELHI" and with the name of the vendor, Manufacturer type/serial no. , and year of manufacturing at suitable location.
		18	Warranty		2 years from the date of purchase. In case any defects are found, the vendor shall replace the product free of cost.
		19	Test Reports		Test certificates to be provided : 1) Specified levels. 2) Switch operation 3) HV Test 4) Leakage Test 5) Insulation Test
		20	Acceptance test		Following tests shall be carried out: 1) Specified levels 2) Switch operation 3) HV Test 4) Leakage Test 5) Insulation Test

8. One oil filling valve (inlet)

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9. One oil drain valve
10. One filter valve located at the top of the tank on the HV side.
11. Oil sampling valves.
12. **Pressure relief device**

a). Spring-loaded Pressure Relief Device (PRV) with mechanical flag indicator shall be provided on the main tank top of the transformer.

b). Oil splashguard along with draining arrangement (with wire net on both side) up to ground level to be provided for prevention of oil splashing.

c). Arrangement for air-release through a gate valve should be provided at the base of the PRV.

d). The PRV shall not be located in the vicinity of the Marshalling Box or OLTC Box for safety of operating personnel.

e). A pair of potential free contacts shall be provided to trip the transformer on action of the pressure relief device.

f). It shall have the limit switch with 2NO and 2NC contacts, flag, switch operated rod etc.

g). PRV shall be tested for all the applicable test such as Leakage Test, Switch operation, break down test.

One double float gas detector relay (Buchholz relay) with alarm and tripping contacts to detect accumulation of gas and sudden changes of oil pressure complete with shut off valves between Relay and Conservator Tank flange-couplings to permit easy removal without lowering oil level in the main tank, a bleed valve for gas venting and test valve. The installation shall be weather proof to avoid any water seepage inside the relay. The cable entry should be from bottom end of Buchholz relay instead from side. Marking of Magnetic reed type switches shall be available on buchholz relay.

13. **Buchholz relays:** should be according to the following general technical parameters as mentioned in below table.

S. No.	Description	Unit	Requirements
1	Type of relay		Magnetic reed switch type Buchholz relays suitable for nominal pipe bore of 80 mm with

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						2 sets of potential free contacts suitable for 48V to 220V DC.
			2	No. of Switching systems		2
			3	Suitable for Transformer Rating	MVA	above 10
			4	Nominal Pipe Bore	mm	80
			5	Type of Flange		Round
			6	Diameter of flange	mm	185
			7	Diameter of bolt circle	mm	145
			8	Number of the bolts		4
			9	Size of the bolts		M16
			10	Flange Thickness	mm	16
			11	Surge Test (TRIP)	cm/s	90 to 160
			12	Gas Volume (ALARM)	cc	200 to 300
			13	Velocity Test	cm/s	90 to 160
			14	Relay operating range: Oil Temperature		10°C to 100°C
			15	Relay operating range: Oil Viscosity		65 to 75 centistokes at 10°C, 2 to 3.5 centistokes at 100°C
			16	Element Test		With oil, at 1.75Kg/cm^2 for 15 minutes,
			17	High Voltage Test		Shall be able to withstand 2000 V at 50 Hz for 1 minute
			18	Insulation Resistance Test		Shall be Greater than 10 Mega ohms with 500 V megger

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19	Porosity Test		With oil, at 1.5 kg/cm^2 for 4 hours - There shall not be any leakage or mechanical damage
20	Mechanical Strength Test		With oil at 8 kg/cm^2 for 1 minute
21	Resistance of the Switch		Not to exceed 0.1 ohm across the electrodes of magnetic switch
22	Cable entry in terminal box		From bottom side

14. **Oil Surge Relay** should be according to the following general technical parameters as mentioned in below table.

S. No.	Description	Unit	Requirements
1	Type of relay		Magnetic reed switch type OSR suitable for 25 mm nominal pipe bore with 1 set of potential free contact to be used for 48V to 220 DC
2	No. of Switching systems		1
3	Suitable for		OLTC
4	Nominal Pipe Bore	mm	25
5	Type of Flange		Square
6	Diameter of flange	mm	78 square
7	Diameter of bolt circle	mm	72
8	Number of the bolts		4
9	Size of the bolts		M10
10	Flange Thickness	mm	6 mm
11	Surge Test (TRIP)	cm/s	70 to 130

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		12	Velocity Test	cm/s	70 to 130
		13	Relay operating range: Oil Temperature		10°C to 100°C
		14	Relay operating range: Oil Viscosity		66 to 75 centistokes at 10°C, 2 to 3.5 centistokes at 100°C
		15	Element Test		With oil, at 1.75Kg/cm^2 for 15 minutes,
		16	High Voltage Test		Shall be able to withstand 2000 V at 50 Hz for 1 minute
		17	Insulation Resistance Test		Shall be Greater than 10 Mega ohms with 500 V megger
		18	Porosity Test		With oil, at 1.5 kg/cm^2 for 4 hours - There shall not be any leakage or mechanical damage
		19	Mechanical Strength Test		With oil at 8 kg/cm^2 for 1 minute
		20	Resistance of the Switch		Not to exceed 0.1 ohm across the electrodes of magnetic switch
		22	Cable entry in terminal box		From bottom side

15. Radiators shall be complete with motors, fans etc as described in clause 5.10.
16. Oil Preserving Equipment.
17. Eye bolts and lugs on all parts for ease of handling.
18. Two grounding terminals.
19. Diagram and rating plate.
20. One set of equipment for control, protection, indication and annunciation for each transformer comprising motor contactors, detecting elements or devices, indicating apparatus instruments, relay, annunciators, etc.
21. Separate tank mounted marshalling box for terminal blocks for current transformer secondary only with Cable conduits for cables from devices to marshalling box.
22. Provision shall be made for installing resistance temperature detectors for temperature recording instruments arranged separately for the following:

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		a) Hot oil b) Winding hot spot 23. Two silica gel breathers (more than 5kg) each of 100% capacity for main tank. 24. Ladder with ant-climbing arrangement and lock. Ladder should mount on side of transformer and not on HV/ LV side bushing. Ladder shall have suitable slope for safety purpose. 25. Inspection covers for transformer inspections on all phases (on vertical plane) 26. Provide separate contacts for OSR relay in marshalling box. The equipment and accessories furnished with the transformer shall be suitably mounted on the transformer for ease of operation, inspection and maintenance, and the mounting details shall be subject to the approval of the purchaser. All valves shall be provided either with blind companion flanges or with pipe plugs, for protection. All valves shall have open/close position clearly marked. Indication, alarm and relay equipment shall have contacts suitable for operation with 220/50V Volts DC supply. Any other accessories or appliances recommended by the Bidder for the satisfactory operation of the transformers shall be supplied.
5.15	**Following Tests shall be carried out on the Marshalling Box**	a) Functional tests / 2KV withstand. b) Dimensional checks. c) Make and operation of contactors, relays. d) Factory test report attached for bought out items. e) Test for Enclosure Protection.
5.16	**ANTI RUSTING/ CORROSION TREATMENT**	1. The bidder shall ensure that all fabrication i.e. transformer tank, radiators, marshalling boxes and other accessories are treated for highest quality performance for the entire life of the transformer. The Bidder shall submit plan for extra measures he is taking for prevention of corrosion, along with the offer. 2. Finishes on transformer and appurtenant parts, edges (exposed to atmosphere) 3. NO GAS CUT EDGE OR SURFACE shall be acceptable unless smoothly ground to plane surface without irregular projections and corners (which cannot be blasted to the required roughness). 4. For all radiators the following painting procedure shall be followed. The metal spray (99.95% assay zinc) to a thickness about 100 microns with surface roughening and two coats of paints with proper supervision and quality checks. Bidder shall indicate separate price for metal spray of radiators. 5. In this corrosion prevention measure it is imperative that the job is fully monitored for optimizing the proper conduct of the procedure as given in the various national standards. The coating shall be as per BS: 2569 (latest revision). The coating requirement shall be to BS: 5493 Gr. SC10Z.

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		6. The Bidder shall submit a Quality Plan, giving the parameters and checking methods, (major, critical, minor). 7. The paint shade used shall be shade 631 as per IS:5. The following shall be the check points for the metal spray of Radiators:- a) Metal Spray b) Surface preparation c) Chemical analysis of actual material used for spray (batch wise identification). d) Coating Process (the first trial job will be witnessed to see if the written procedure is followed). e) Coating thickness test, adhesion test as per BS. f) Repair area classification major or minor and accordingly the repair from blasting onwards otherwise. 8. Bidder may quote for galvanized radiators instead of metal spray radiators as an alternative.
5.17	**CENTRE OF GRAVITY**	The centre of gravity of the assembled transformer shall be low and as near the vertical centre line as possible. The transformer shall be stable with or without oil. If the centre of gravity is eccentric relative to track either with or without oil, its location shall be shown on the outline drawing.
5.18	**CENTRAL LINE MARKING**	Central line of the transformer, tank, cooler bank, cable box etc shall be marked properly with indication to avoid any confusion during installation of the transformer.
5.19	**PAINTING**	1. Before painting, surface preparation shall be done by sand blasting and procedure for sand blasting has to be submitted by the Vendor along with the bid. The surface preparation for all external surface prior to painting or coating shall be witnessed by customer or shall be treated as customer hold points. After sand blasting at all edges Belzona E metal to be applied. 2. Before shipment all steelwork not under oil shall be painted with a primary coat of anti-corrosive paint of durable nature and two coats of battleship grey paint (Shade 631 of IS:5). Paint shall be epoxy type. The interior surfaces shall be painted as per bidder's standard practice. All the paint including primer shall be applied after testing such as air test, hydraulic test etc. Bidder shall submit their procedure for painting for Purchaser's approval, along with the offer. 3. Painting of Marshalling box: Two coats of red oxide primer & two coats of synthetic enameled paint after chemical treatment. 4. Metal parts not accessible for painting shall be made of corrosion resistant material. 5. Paint shall be as per Indian Standard/International Standard for quality, surface preparation, application method, thickness check and any other test. 6. Additional paint shall be supplied along with the transformer for applying touch up paint at site during installation. The shade of the paint used shall be shade 631 as per IS: 5.

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5.20.	**NITROGEN INJECTION DRAIN AND STIR SYSTEM**	This system is not to be given along with Transformer. But all provisions to be provided and must be compatible for future connection of NITROGEN INJECTION DRAIN AND STIR SYSTEM
5.21	**MAKE OF MAJOR COMPONENTS & RAW MATERIALS**	The BA shall procure the following constituent items from the designated vendors as follows:

S.no	RAW MATERIAL/EQUIPMENT	MAKE
a)	Copper	M/S Sterlite, M/S Hindustan Copper, M/S Hindalco
b)	Core	M/S AK Steels, POSCO, Kawasaki/ JFE, Nippon Steel
c)	Insulation paper	Raman Boards- Mysore, Senapathy Whiteley – Bangalore
d)	Transformer Oil	Savita, Apar, Gandhar
e)	Gaskets & Corks	Nu Cork, Anchor Corks
f)	Steel For Tank	M/S TISCO, M/S SAIL, M/S Bhushan Steel, M/S ISSCO, M/S RINL, M/S Jindal Steel.

Also, Bidder has to provide all test certificates from original manufacturers & relevant sourcing documents. BA shall also have shot blasting facility.

5.22 SURFACE PREPARATION AND PAINTING

1. The paint shall be applied by airless spray.
2. Steel surfaces shall be prepared by **shot blast cleaning** (IS-9954) to grade Sq.2.5 of ISO 8501-1 or **chemical cleaning** including phosphating of the appropriate quality (IS 3618).
3. **Heat resistant (Hot oil proof) paint** shall be used for the **inside surface** and whereas for **external surface one coat of thermosetting powder paint or one coat of epoxy primer (zinc chromate) followed by two coats of polyurethane (P.U.) base paint**. as per table given below:

S. No.	Paint type (should be UV restraint, non-fading)	Area to be painted	No of coats	Total dry film thickness (min); micron
1.	Thermosetting **powder paint**	Inside	01	30

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				Outside	01	60
			2.	**Liquid Paint**		
			a.	Epoxy (primer)	Outside	01	30
			b.	P.U. Paint (finish paint)	Outside	02	25 (each)
			c.	Hot oil resistant paint	Inside	01	35

The two coats shall be of oil and weather-resistant nature with final coat as flossy and non-fading paint of shade 631 as per IS 5 or RAL 7032.

4. The dry film thickness shall not exceed the specified minimum dry film thickens by more than 25%.
5. Any damaged part shall be cleaned to bare metal with an area extending 25 mm around its boundary. A priming coat shall be immediately applied followed by full paint finish equal to that originally applied and extending 50 mm around the perimeter of the original damage. The repainted surface shall present a smooth surface which shall be obtained by carefully chamfering the paint edges before and after priming.
6. Painting shall not affect by weather changes & performance against pilling out or fading etc. to be guaranteed for 5 Years.

6.0	**NAME PLATE AND MARKING**	
6.1	**RATING PLATE**	1. A stainless steel rating plate, of at least 1 mm thickness, shall be fitted to each transformer in a visible position and shall carry all the information as specified in the standards. 2. The letters on the rating plate shall be engraved black on the white/silver back ground. 3. Fixing screws for outdoor use shall be of stainless steel or any other corrosion resistant metals. 4. The Name plate shall be embossed with “PO no. with date” & “PROPERTY OF TPWODL”. 5. Danger notice shall have red lettering on a white background or they may be pictorial as approved by the Purchaser. 6. The name plate shall contain following information: a) Type of transformer (Two Winding Transformer) b) Relevant standard. c) Manufacturer’s Name d) Manufacturer’s Serial No. e) Year of Manufacture f) No. of phases g) Rated kVA h) Rated frequency i) Rated Voltage

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		j) Rated current k) Connection symbol l) Percentage impedance voltage at rated current. m) Type of cooling (ONAN). n) Total Mass. o) Mass and Volume of insulating Oil. p) Connection diagram showing the internal connections. q) Temperature rise r) Insulation levels of the windings, including neutral end of windings with non-uniform insulation. s) Transportation weight t) Untanking weight. u) Core and windings weight v) Table giving the tapping voltage, tapping current and tapping power for each tapping. w) Values of short circuit impedance on the extreme tapings and on the principal tapping and indication of the winding to which the impedance is related. x) A table of all guaranteed particulars. y) Quantity of oil required for normal filling. z) HV and LV phase to phase clearances. aa) Vector diagram bb) Indication of the winding which is fitted with tapping. cc) Table giving the tapping voltage, the tapping current and the tapping power of each winding, for each tap. dd) Value of short circuit impedance on the extreme tapping and on the principal tapping and indication of the winding to which the impedance is related. ee) Information of the ability of the transformer to operate at a voltage exceeding 110 % of the tapping voltage or, for the principal tapping, 110 % of the rated voltage. ff) provide tan delta value of insulating oil, transformer and bushing.
6.2	**Valve Schedule Plate**	The name plate shall contain information of all the valves, their locations, quantities and schematic for the valves.
6.3	**On Load Tap Changer Plate.**	The name plate shall contain following information: a) Type b) S.No. c) Year of Manufacturing d) Motor i. Operating Voltage ii. Normal Working Current iii. Max. rated Though current e) Phase f) Frequency (Hz)

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		g) Steps (Numbers) h) Step Voltage i) Weight / Volume i. Tap Changer Without Oil (Kg) ii. Oil (Kg) iii. Total j) Control Voltage (V) k) Transition Resistance (Ohms)
6.4	**Marshalling Box**	a) Manufacture's Name. b) Manufacture's Serial No. c) Year of Manufacturing. d) Purchase Order No. The following shall be clearly mentioned / Engraved on the Plate: " Property of TPWODL, Delhi" Engraved drawing of control circuit, CT / PT circuit and TB shall be available on Marshalling Box and OLTC Box
6.5	**Oil filling instruction plate for conservator**	The name plate shall contain a) step wise process for filling oil in conservator b) Table of fittings with functions c) Conservator diagram with oil filling process d) Precautions in detail
7.0.	**TESTS**	All routine, acceptance & type tests shall be carried out in accordance with the relevant IS/IEC. All routine/acceptance tests shall be witnessed by the purchaser/his authorized representative. All the components and fittings shall also be type tested as per the relevant standards. Following tests shall be necessarily conducted on the Power Transformers in addition to others specified in IS/IEC standards. Test for the OLTC shall be done as per the IS 8468
7.1	**Routine tests**	

Sr. No.	Test to be done	Reference BIS	Clause no.
1	Measurement of Winding Resistance	IS 2026 (Part 1)	16.2.1 & 16.2..3
2	Measurement of voltage ratio, polarity and vector group check	IS 2026 (Part 1)	16.3, 8.6 8.7
3	Measurement of short impedance and load loss at 50% and 100% load	IS 2026 (Part 1)	16.4
4	Measurement of no load losses and magnetizing current at rated frequency and 90%, 100% and 112.5% of rated voltage	IS 2026 (Part 1)	16.5
5	Measurement of insulation resistance	IS 2026 (Part 1)	16.6
6	Dielectric Test.	IS : 2026 (Part III)-2009	

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		7	Test on -Load Tap Changer.	IS : 2026-2011 (Part I)	10.8	
		8	Measurement of Zero-sequence impedance on three phase transformer.	IS : 2026-2011 (Part I)	3.7.3	
		9	Bushing shall be tested for Capacitance and Power factor and shall meet the manufacture's requirement.	IS : 2026 (Part III)	10	
		10	All CTs and resistance of image coil for winding temperature indicator shall be checked for ratio test, polarity and knee point voltage test.			
		11	Determination of Capacitances and dissipation factor winding-to-earth and between windings.			
		12	Magnetic balance test.			
		13	Measurement of Magnetizing current at low voltage.			
		14	Vacuum withstand test on tanks and radiators.			
		15	The total Losses shall comprise of the No Load Losses, Load Losses (I^2R loss + stray loss) and Auxiliary Losses at rated output duly converted at 75 °C average winding temperature and shall also be indicated in the test report. Load loses shall be that corresponding to rated load on HV, LV windings.			
		16	Physical Verification of complete Transformer with all assembly including test rollers, radiators, cable boxes etc.			
		17	Voltage Regulation at rated load and at unit, 0.9, 0.8 lagging power factor.			
		18	Measurement of Acoustic Noise Level.			
		19	Measurement of the power taken by the fans			
		20	Functional tests on auxiliary equipment:- i. Test on OTI and WTI ii. High Voltage test on insulation test for Auxiliary Wiring. iii. High Voltage test on insulation test for Auxiliary Wiring			
		21	Test on Oil filled in Transformer: i. Dielectric Strength of Oil ii. Water Content.			

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			iii. Dielectric Dissipation factor (tan delta at 90° C. iv. Resistivity			
		22	Induced over voltage withstand test	IS 2026 (Part 3)	11	
		23	Separate Source voltage withstand test	IS 2026 (Part 3)	10	
		24	Oil Pressure test on completely assembled transformer at 0.35kg/sq.cm for 8 hrs	IS 1180 (Part 1)	21.5.1.2 & 21.5.1.3	
		25	BDV and moisture content of oil in transformer (Type-2 oil)	For mineral oil : IS 335 (2018)	For mineral oil : IS 335Table 2	
7.2	**Acceptance tests**	1. At least 10% transformer of the offered lot (minimum of one) shall be subjected to all the tests mentioned under the section 'ROUTINE Test" in presence of TPWODL representative at the place of manufacture before dispatch without any extra charges. The testing shall be carried out in accordance with IS: 2026. 2. Oil Leakage test for acceptance shall be conducted at pressure of 0.35kg/sq.cm for one hour as per IS2026. 3. Temperature Rise Test (on one unit of first lot against every release order / PO for each rating, for further lots, TPWODL reserves the right to perform Temperature rise if required) [As per IS 2026 (Part 2) Clause no.4] 4. The painted surface shall pass the Cross Adhesion Test (IS1180 part 1 clause no. 21.4.d). 5. At stage inspection -Checking of weight, dimensions, fitting and accessories, tank sheet thickness, oil quantity, material finish and workmanship, physical verification of core coil assembly and measurement of flux density on one unit of each rating of the offered lot with reference to the GTP and contract drawings. 6. At Final inspection, the incoming raw material and its movement/consumption record in the related jobs of TPWODL will be verified by inspecting officer. In case of any deviation or non-availability of such records, the offered lot may get rejected. 7. The format of final inspection as per annexure.			
7.3	**Type Tests**	The type tests to be carried out by the Bidder shall include but not limited to the following: 1. Measurement of winding resistance. 2. Measurement of voltage ratio and check of voltage vector relationship. 3. Measurement of impedance voltage / short-circuit impedance (Principal tapping) and load loss. 4. Measurement of no load loss and current. 5. Measurement of insulation resistance.				

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		6. Dielectric Test. 7. Temperature rise for determining the maximum temperature rise after continuous full load run. The ambient temperature and time should be stated in the test certificate. 8. Tests on on-load tap-changer. 9. Short Circuit withstand test. 10. Test to verify IP55 of Marshalling and cable boxes. 11. Lightning Impulse voltage test with chopped wave. Note: The bidder shall submit the test report from CPRI or ERDA for g, i and k of the above mentioned.
7.4	**Special Tests**	Following type tests shall be carried out on one transformer of each rating, at the works of the bidder, in presence of Purchaser's representative. 1. Temperature rise test including DGA (DGA shall be done before & after the heat run test). 2. Impulse Test (Including chopped wave on all the three limbs of HV & LV).
7.5	**Type Test on Nitrogen Injection Drain and Stir System (NIDS)**	NA
7.6	**Special Test**	The following tests shall be carried out by mutual agreement between the purchaser and the bidder. All Tests shall be done as per the relevant standard. Test certificates shall be submitted for bought out items. High voltage withstand test shall be performed on auxiliary equipment and wiring after complete assembly. a) Measurement of the harmonics of the No-Load Current. b) Determination of transient voltage transformer characteristics. c) Measurement of insulation resistance to earth of the windings, and / or measurement of Dissipation factor (tan δ) of the insulation system capacitances.(Theses are reference values for comparison with later measurement in the field. No limitation for the values are given here.). d) Lightning impulse test on Neutral terminals. e) Long duration induced AC voltage test (ACLD) transformer winding 72.5 <Um≤ 170kV. f) Magnetic circuit (isolation) test. g) SFRA Test.
7.7	**TESTS AT SITE**	After erection at site, the transformers shall be subjected to the following tests and the bidder shall guarantee results of test certificates under service conditions. a) Measurement of winding resistance. b) Measurement of voltage ratio and check of voltage vector relationship. c) Measurement of magnetizing current. d) Magnetic balance test on three phase transformer. e) Magnetic circuit (isolation) test. f) Measurement of short circuit Impedance at low voltage.

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		g) Insulation resistance measurement. h) Dielectric Test on oil. i) Determination of Capacitances and dissipation factor winding-to-earth and between windings. j) Bushing Capacitance and tan δ. k) Test on other Auxiliaries. l) No-Load and Excitation current. This is for bidder's information that tests at site may be in bidder's scope based on mutual agreement between bidder and purchaser's. However, in any case bidder shall be required to send their engineer to confirm that the erection & commissioning is done in a satisfactory manner.
7.8	**FURTHER TESTS**	The purchaser reserves the right of having any other reasonable tests carried out at his own expense either before shipment, or at site to ensure that the transformer complies with the requirements of this specification.
8.0.	**TYPE TEST CERTIFICATES**	The Bidder shall furnish the type test certificates of the Two Winding Power Transformer for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at CPRI / ERDA as per the relevant standards. Type tests should have been conducted in certified Test laboratories during the period not exceeding 5 years from the date of opening the bid. In the event of any discrepancy in the test reports, i.e. any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be carried out without any cost implication to the Purchaser.
9.0.	**PRE-DESPATCH INSPECTION**	1. Equipment shall be subject to inspection by a duly authorized representative of the Purchaser. Inspection may be made at any stage of manufacture at the option of the purchaser and the equipment if found unsatisfactory as to workmanship or material, the same is liable to rejection. 2. Bidder shall grant free access to the places of manufacture to Purchaser's representatives at all times when the work is in progress. 3. Inspection by the Purchaser or its authorized representatives shall not relieve the supplier of his obligation of furnishing equipment in accordance with the specifications. 4. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by Purchaser. Following documents shall be sent along with material: a) Test reports b) MDCC issued by TPWODL c) Invoice in duplicate d) Packing list e) Drawings & catalogue f) Guarantee / Warrantee card g) Delivery Challan h) Other Documents (as applicable)

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5. In respect of raw material such as core stampings, winding conductors, insulating paper and oil, bidder shall use materials manufactured/supplied by standard manufacturers and furnish the manufacturers' test certificate as well as the proof of purchase from these manufacturers (excise gate pass) for information of the purchaser. The bidder shall furnish following documents along with their offer in respect of the raw materials:
   a) Invoice of supplier.
   b) Mill's certificate
   c) Packing List.
   d) Bill of Landing
   e) Bill of entry certificate by custom

6. After the main raw-material i.e. core and coil material and tanks are arranged and transformers are taken for production on the shop floor, to ensure the quality of transformers, the inspection shall be carried out by the purchaser's representative at following stages:

   i. Stage Inspection I – Bidder has to facilitate for stage inspection of Tank, HV and LV windings and Core of the offered transformers. Bidder has to facilitate for stage inspection of Tank, HV and LV windings in one inspection call without any extra charges. Multiple inspections calls for stage inspection-I will not be considered and the delay will be accountable at bidder end. At this stage checking of weights, dimensions, tank sheet thickness, Pressure and vacuum test and quality of material, finish & workmanship as per GTP/QA plan and approved drawings. During stage inspection TPWODL reserves the rights to dismantle the assembled core to ensure that the CRGO laminations used are of good quality.

   ii. Stage inspection II – Bidder has to facilitate for stage inspection - II for Core coil assembly of the offered transformers in without any extra charges. The testing shall be carried out in accordance with IS : 2026 and as per GTP/QA plan/Drawing.

   Note: For Stage inspection, Annexure –II will be referred.

   iii. Final Inspection - Bidder has to facilitate for final inspection once the offered transformer is ready for dispatch. Inspection will be done as per w.r.t tests mentioned in Clause 7.2 and inspection test plan format in Annexure-III.

7. To ascertain the quality of the transformer oil, the original manufacturer's tests report shall be submitted at the time of inspection. Arrangements shall also be made for testing of transformer oil, after

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		taking out the sample from the manufactured transformers and tested in the presence of purchaser's representative. 8. The Bidder shall intimate the purchaser in advance for inspection, so that an officer for carrying out inspection could be deputed, as far as possible within 07days (Within Delhi)/ 12Days (outside Delhi) from the date of intimation. 9. Further, about the readiness of the transformers, for final inspection for carrying out tests as per relevant IS/IECs shall be sent by the Bidder along with routine test certificates. The inspection shall normally be arranged by the purchaser at the earliest after receipt of offer for pre-delivery inspection. 10. In case of any defect/ defective workmanship observed at any stage by the purchaser's Inspecting officer, the same shall be pointed out to the Bidder in writing for taking remedial measures. Further processing shall only be done after clearance from the inspecting officer / purchaser. 11. All tests and inspection shall be carried out at the place of manufacture unless otherwise specifically agreed upon by the manufacturer and purchaser at the time of purchase/tender. 12. The manufacturer shall offer the inspector representing the Purchaser all reasonable facilities, without charges, to satisfy him that the material is being supplied in accordance with this specification. This will include Stage Inspection during manufacturing stage as well as during Acceptance Tests. 13. The bidder shall provide all services to establish and maintain quality of workmanship in his works and to ensure the mechanical / electrical performance of components, compliance with drawings, identification and acceptability of all materials, parts and equipment as per latest quality standards of ISO 9000. 14. The Purchaser has the right to have the test carried out at his own by an independent agency wherever there is a dispute regarding the quality supplied. Purchaser has right to test 1% of the supply selected either from the stores or field to check the quality of the product. In case of any deviation purchaser have every right to reject the entire lot or penalize the bidder, which may lead to blacklisting, among other things.
10.0.	**INSPECTION AFTER RECEIPT AT STORES**	1. The material received at Purchaser's store shall be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection and one copy of the report shall be sent to Project Engineering department. 2. In case the transformers proposed for supply against the order are not exactly as per the tested design, the Bidder shall be required to carry out the short circuit test and impulse voltage withstand test at its own cost in the presence of the representative of the Purchaser. The supply shall be accepted only after such test is done successfully, as it confirms on successful withstand of short circuit and healthiness of the active parts

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		thereafter on un-tanking after a short circuit test. Apart from dynamic ability test, the transformers shall also be required to withstand thermal ability test or thermal withstand ability will have to be established by way of calculations. 3. The Purchaser reserves the right to conduct all tests on Transformer after arrival at site / stores and the manufacturer shall guarantee test certificate figures under actual service conditions. 4. The Purchaser reserves the right to conduct short circuit test and impulse voltage withstand test in accordance to IS, afresh on each ordered rating at purchaser cost, even if the transformer of the same rating and similar design are already tested. This test shall be carried out on a transformer to be selected by the purchaser either at the manufacturer's works when they are offered in a lot for supply or randomly from the supplies already made to purchaser's stores. The findings and conclusions of these tests shall be binding on the bidder. 5. Test at TPWODL store/Site: after receipt of transformers at TPWODL stores/Site, following minimum tests will be carried out. a) Total weight of the transformer. (It should be as per the offer, subjected to tolerance as per approved drawings & GTPs). b) Oil level in the transformer c) Verifications of all the fittings. d) Physical verification of all the transformers for any damages, oil leakage, quality of painting etc. 6. Test at site: The purchaser reserves the right to conduct all tests on Transformer after arrival at site/stores and the manufacturer shall guarantee test certificate figures under actual service conditions. 7. Shock/impact recorder data analysis to be submitted by bidder to ascertain the concealed damage.
11.0.	**GUARANTEE**	1. Bidder shall stand guarantee towards design, materials, workmanship & quality of process/ manufacturing of items under the contract for due and intended performance of the same, as an integrated product delivered under this contract. 2. In the event any defect is found by the Purchaser up to a period of 48 months from the date of commissioning or 60 months from the date of last supplies made under the contract, whichever is earlier. 3. Bidder shall be liable to undertake to replace/rectify such defects at his own costs, within mutually agreed timeframe, and to the entire satisfaction of the Purchaser, failing which the Purchaser will be at liberty to get it replaced/rectified at Bidder's risks and costs and recover all such expenses plus the Purchaser's own charges (@ 20% of expenses incurred), from the Bidder or from the "Security cum Performance Deposit" as the case may be. 4. In case of Two Winding Power Transformer fails within the guarantee period the purchaser will immediately inform the Bidder who shall take back the failed Two Winding Power Transformer within 15 days from the

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		date of intimation at his own cost and replace / repair the transformer within forty five days of date of intimation with a roll over guarantee. 5. The outage period i.e. period from the date of failure till unit is repaired / replaced shall not be counted for arriving at the guarantee period. Bidder shall further be responsible for 'free replacement' for another period of THREE years from the end of the guarantee period for any 'Latent Defects' if noticed and reported by the Purchaser.
12.0.	**PACKING**	1. Bidder shall ensure that all the equipment covered under this specification shall be prepared for rail/road transport in a manner so as to protect the equipment from damage in transit. 2. The packing may be in accordance with the bidder's standard practice but he should give full particulars of packing for the approval of the purchaser. Special arrangement should be made to facilitate handling and to protect the projecting connections from damage in transit. 3. The transformer shall be shipped filled with oil/without oil but with the tank filled with Nitrogen under pressure complete with gas cylinder reducer, connection and pressure gauges. (After testing dew point of the Nitrogen filled. Dispatch clearance will be given only after achieving satisfactory dryness i.e. dew point measurement results). These accessories will be part of purchase. However, if neutral grounding transformer and reactors are included in the scope, these can be transported with oil. (Whichever way desired by the purchaser depending on the size etc.) 4. Provisions for monitoring of oil and gas pressure during transport and storage and a make-up Nitrogen cylinder shall be made. 5. A shock recorder also shall be provided during transport. 6. Bushings shall be packed in proper containers for transport. 7. All parts shall be adequately marked to facilitate field erection. 8. Boxes and crates shall be marked with the contract number and shall have a packing list enclosed showing the parts contained therein. 9. Unloading, dragging of transformer upto 50 mtrs & keeping it on foundation at TPWODL site/stores will be in the scope of supplier. The bidder shall take care of this point while quoting the rates for Freight & Insurance charges. **Note: One use plastic not to be used for packing of the material.**
13.0.	**TENDER SAMPLE**	N.A.
14.0.	**TRAINING**	1. Bidder to facilitate training related to operation and maintenance activities of the transformer and mounting and accessories within six months of the erection of the transformer.
15.0.	**QUALITY CONTROL**	1. The bidder shall submit with the offer Quality assurance plan indicating the various stages of inspection, the tests and checks which will be carried out on the material of construction, components during

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		manufacture and bought out items and fully assembled component and equipment after finishing. 2. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. 3. The Purchaser's engineer or its nominated representative shall have free access to the manufacturer's/sub-supplier's works to carry out inspections. 4. The Bidder shall invariably furnish following information along with his bid, failing which the bid shall be liable for rejection. Information shall be separately given for individual type of equipment offered. i. Statement giving list of important raw materials, names of sub-suppliers for the raw materials, list of standards according to which the raw materials are tested. ii. List of tests normally carried out on raw materials in the presence of Bidder's representative, copies of test certificates. iii. Information and copies of test certificates as in (I) above in respect of bought out accessories. iv. List of manufacturing facilities available. v. Level of automation achieved and list of areas where manual processing exists. vi. List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such tests and inspection. vii. List of testing equipment available with the bidder for final testing of equipment along with valid calibration reports shall be furnished with the bid. Manufacturer shall possess 0.1 class instruments for measurement of losses. viii. Quality Assurance Plan (QAP) withholds points for purchaser's inspection. 5. The successful Bidder shall within 30 days of placement of order, submit following information to the purchaser. i. List of raw materials as well as bought out accessories and the names of sub-Suppliers selected from those furnished along with offer. ii. Type test certificates of the raw materials and bought out accessories. 6. The successful Bidder shall submit the routine test certificates of bought out accessories and central excise passes for raw material at the time of routine testing
16.0.	**MINIMUM TESTING FACILITIES**	Bidder shall have adequate in house testing facilities for carrying out all routine tests, acceptance tests and pre-dispatch inspection as per relevant International / Indian standards. The bidder shall have minimum testing facilities in house for following: a) Heat run test b) SFRA c) Pre dispatch inspection as per clause no. 9 above.

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17.0	**MANUFACTURING ACTIVITIES**	1. The successful bidder will have to submit the bar chart for various manufacturing activities clearly elaborating each stage, with quantity. 2. This bar chart should be in line with the Quality assurance plan submitted with the offer. 3. This bar chart will have to be submitted within 15 days from the release of the order.
18.0.	**SPARES, ACCESSORIES AND TOOLS**	1. Bidder shall provide a list of recommended spares with quantity and unit prices for 5 years of operation after commissioning. 2. The Purchaser may order all or any of the spare parts listed at the time of contract award and the spare parts so ordered shall be supplied as part of the definite works. 3. The Purchaser may order additional spares at any time during the contract period at the rates stated in the Contract Document. 4. Bidder shall give an assurance that spare parts and consumable items will continue to be available through the life of the equipment which shall be 25 years minimum. 5. However, the Purchaser shall be given a minimum of 12 months' notice in the event that the Bidder or any sub-vendor plans to discontinue manufacture of any component used in this equipment. 6. Any spare apparatus, parts or tools shall be subject to the same specification, tests and conditions as similar material supplied under the Contract. They shall be strictly interchangeable and suitable for use in place of the corresponding parts supplied with the equipment and must be suitably marked and numbered for identification. 7. The bidder shall also provide the following mandatory spares along with the transformer. i) HT Bushing (1 no.) ii) LT Bushingf (1no.) iii) Neutral Bushing (1 no.) iv) Bucholtz Relay (1 no.) v) Valves (1Set) vi) OTI, WTI (1 each) vii) PRV (1 no); OSR (1 no); MOG (1 no) viii) Transducers for OTI, WTI, PTI xii) Set of gaskets (1 no.) xiii) Set of mandatory spares for tap changer (1 no.) xiv) Oil – 10% extra xv) Radiator tube plug – 5 No xvi) Radiator tube valves – 2 No xvii) Radiator tube plug oil seals – 12 No xviii) MCCB (1 no.) xix) MCB (1 no.) xx) L/R switch (1 no.) xxi) R/L switch (1 no.) xxii) OLTC counter (1 no.)

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xxiii) Space heater & thermostat (1 no.)
xxv) Bushing CT for Neutral (1 no.)

19.0. DRAWINGS AND DOCUMENTS

a. Following drawings and documents shall be prepared based on TP WESTERN ODIDHA DISTRIBITION LIMITED specifications and statutory requirements and shall be submitted with the bid:

b. Completely filled in Technical Particulars and compliance to each clause of the specification General Technical Requirements to Additional Details.
c. Description of the transformer and all components including brochures.
d. General arrangement for Transformer.
e. Bill of material.
f. Experience Certificate and list
g. Type test certificates.
h. List of makes of major components as listed above.

2. **Drawings / documents to be submitted after the award of the contract are as under**:

Sr. No	Description	For Approval	For Review Information	Final Submissio
1.	Technical Parameters	√	√	√
2.	GA Drawing of Transformer	√	√	√
3.	HV and LV bushing internal view with terminal connector	√	√	√
4.	Internal coil arrangement with dimensions	√	√	√
5.	Breather Drawing		√	√
6.	Rating Plate	√	√	√
7.	Cooling calculation with no. of radiators and fins mentioned specifically	√	√	√
8.	Prismatic oil level gauge drawing			√
9.	Installation Instruction		√	√
10.	QA & QC Plan		√	√
11.	Test Certificates	√	√	√
12.	Shipping drawings showing dimensions	√	√	√

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				and weights of each package.			
			13.	Assembly drawings and weight of main component parts.	√	√	√
			14.	Drawings giving Weights for foundations	√	√	√
			15.	Tap changing and name plate diagram.	√	√	√
			16.	Schematic control along with logic block diagram and wiring diagram for all auxiliary equipment.		√	√
			17.	Schematic diagram showing the flow of oil in the cooling system as well as each limb and winding. Longitudinal and cross-sectional views showing the duct sizes, cooling pipes etc.	√	√	√
			18.	Large scale drawings of high and low tension windings of the transformers showing the nature and arrangement of insulation and terminal connections.	√	√	√
			19.	Bushing drawing and specifications.	√	√	√
			20.	Crane requirement for assembly and dismantling.		√	√
			21.	Overhead Conductor Connections.		√	√
			22.	Foundation drawing of transformer, radiator supports, etc.	√	√	√
			23.	Valve Schedule details	√	√	√
			24.	HV , LV Bushing fixing and connection Details		√	√

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		25.	Radiator drawing and their fixing arrangement.		√	√	
		26.	Marshlling junction box details	√	√	√	
		27.	Thermo junction box details.	√	√	√	
		28.	Neutral arrangement	√	√	√	
		29.	Drawing showing conservator with air bag and oil filling instructions	√	√	√	
			In addition to the above, the following drawing / information for each item pertaining to marshalling box and OLTC shall also be supplied.				
		30.	General arrangement drawing of the marshaling box	√	√	√	
		31.	Shipping drawings showing dimensions and weight of each package	√	√	√	
		32.	Drawing giving the weight for its foundation.	√	√	√	
		33.	Schematic control drawing and TB schedule / wiring diagram for all elements	√	√	√	
		34.	Valve Schedule	√	√	√	
		35.	Test report of all bought out elements.	√	√	√	
		36.	Cooler Control drawing	√	√	√	
		37.	The tightening torque chart	√	√	√	
		38.					

3. **<u>List of Calculations to be submitted:</u>**
   All the calculations shall be step by step showing the use of formulas and other practical considerations. **Concise calculations in table or excel sheet shall not be accepted.** Also, the reference (only standard sources as IS, IEC or any such standard is acceptable) of the formulas shall be mentioned.

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		1. Resistance Calculation (75 deg. C) 2. Load Losses Calculation (at 75 deg. C) 3. No load Loss Calculation. 4. Auxiliary & Stray Loss Calculation. 5. Weight of Copper (Bare and with Insulation also). 6. Weight of Core. 7. BH curve & Loss/Kg graph of core material offered. 8. Flux Density calculations. 9. Efficiency vs Load curve of the offered design. 10. Current Density Calculations. 11. Short Circuit withstand. 12. Temperature Rise Calculations. 13. Cooling Calculations. 14. Calculation sheet for Lifting lug design and mounting lug design to be submitted by Bidder. 4. **<u>Additional Documents to be submitted :</u>** 1. List of raw materials as well as bought out accessories and the names of sub-suppliers selected from those furnished along with offer. 2. Type test certificates of the raw materials and bought out accessories. 3. The successful Bidder shall submit the **routine test certificates of bought out accessories** and central excise passes for raw material at the time of routine testing. All the documents & drawings shall be in English language. After the receipt of the order, the successful bidder will be required to furnish all relevant drawings/parameters/ calculation to TPWODL for approval. 5. **<u>Instruction Manuals</u>**: Bidder shall furnish two softcopies (CD) and four (4) hard copies of nicely bound manuals (In English language) covering erection and maintenance instructions and all relevant information and drawings pertaining to the main equipment as well as auxiliary devices.
20.0	**CAPITALIZATION OF LOSSES AND LIQUIDATED DAMAGES**	Capitalisation of losses will be as per Annexure B which is attached herewith. No (+)ve tolerance shall be allowed at any point of time, on the quoted losses after the award. In case, the losses during type testing ,routine testing etc are found above the quoted losses, the award shall stand cancelled. In such a case, the CPG money shall also be forfeited.
21.0	**GUARANTEED TECHNICAL PARTICULARS**	
21.1	**All clauses and points in the Specification to be complied for along with GTR.**	
21.2	**<u>ADDDITIONAL DETAILS:</u>**	

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Sl. No.	Description	Unit	As furnished by Bidder
1.	Tapings on HV winding ON Load a) Range b) Number of steps c) Principal tap		
2.	For ON load taps, specify details of OLTC gear(incl. type & make)		
2.1	Manual/automatic control		
2.2	Remote/local control		
2.3	If remote control, whether the remote Control cubicle included in Bidder's scope of supply		
2.4	Voltage class of OLTC		
2.5	Current rating of OLTC		
2.6	a)Location of OLTC with respect to HV winding (attach sketch). b)Location of OLTC (In Tank/Outside Tank)		
2.7	Whether separate tap winding provided for OLTC		
2.8	Whether Selector and diverter chamber are separate		
2.9	Total oil in the OLTC – in selector switch -- In diverter switch		

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3.	Winding				
3.1	Maximum current density in winding	Amps/mm2			
3.2	Use of continuously transposed conductor (CTC) in LV winding. (YES)	Yes/No			
3.3	Area of cross section of winding conductor (HV/LV/Reg).	mm² (Minimum)			
3.4	Description of winding insulation				
3.5	Nature of insulation	Class			
3.6	Bare weight of copper in windings without paper insulation and leads.	Kg (Minimum)			
3.7	Details of winding and winding conductor				
4.	Tank :				
4.1	Approximate thickness				
	I. Sides II. Bottom III. Cover	mm mm mm			
4.2	Material of tank				
5.	Maximum temperature-rise above an ambient of (deg.C) a)Top oil b)Windings c) Temperature Gradient between Oil and Winding	 °C °C °C			
6.	Total loss at rated voltage at principal tapping and rated frequency.	KW			
7.	Component losses: at 90%, at 100%, and 110% :				
7.1	Maximum Guaranteed No load loss at rated voltag				

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			principal tapping and at rated frequency:	KW		
		7.2	Calculated No load loss at rated principal tapping & rated frequency. Submit necessary calculations	KW		
		7.3	Maximum guaranteed I^2R loss at rated current for the principal tapping at 75°C.	KW		
		7.4	Calculated I^2R loss at rated current for the principal tapping at 75°C. Submit necessary calculations.	KW		
		7.5	Calculated additional losses (Eddy + stray losses) at rated current for the principal tapping at 75°C. Submit necessary calculations.	KW		
		7.6	Maximum guaranteed additional losses (Eddy + stray losses) at rated current for the princi tapping at 75°C.	KW		
		7.7	Maximum Guaranteed auxiliary losses	KW		
		7.8	Auxiliary losses at rated current for principal tripping: (KW)	KW		
		7.9	Maximum Calculated total Losses (sum of sr. no. 19.2+19.4+19.5+19.7) submit necessary Calculation.	KW		
		7.10	Guaranteed total Losses (sum of sr. no. 19.1+19.3+19.6+19.7) submit necessary Calculation.	KW		

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	8	Impedance voltage at rated current for the principal tapping HV – LV (Percent) Note: (The above impedance values shall be on full MVA rating of transformer i.e. For 2 winding transformer on 31.5 MVA base)	%			
	9	Reactance at rated current and rated frequency (On full MVA rating of transformer i.e. For 2 winding transformer on 31.5 MVA base) i) HV – LV ii) No load current at rated voltage and rated frequency	%			
	10	a)Partial discharge level : b)Noise level : c)Harmonic content in charging current :				
	11	Insulation level				
	11.1	Separate source power-frequency voltage withstand : i)HV winding ii)LV winding iii)LV neutral	kV rms kV rms kV rms			
	11.2	Induced over voltage withstand i)HV winding				

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		ii)LV winding iii)LV neutral	kV rms kV rms kV rms		
	11.4	Full wave lightning impulse withstand voltage nd i)HV winding ii)LV winding iii)LV neutral	 kV peak kV peak kV peak		
	11.5	Uniform/Graded Insulation i)HV winding ii)LV winding iii)LV neutral	 kV peak kV peak kV peak		
	12	a)External short circuit withstand capacity b)External short circuit withstand capacity kA i) for HV side ii) for LV side c)Duration of external short withstand capacity	MVA KA In Sec.		
	13	Efficiencies at 75 deg.C at unity power factor : a) At full load b) At 3/4 full load c) At 1/2 full load d) At 1/4 full load	 % %		

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		% %			
14	Efficiencies at 75 deg.C at 0.8 power factor : a) At full load b) At 3/4 full load c) At 1/2 full load d) At 1/4 full load	 % % % %			
15	a)415 V single phase short circuit impedance b)Percentage variation between phases.				
16	Regulation at full load at 75 deg.C a)At unity power factor b)At 0.8 power factor lagging	 % %			
17	Number of coolers or cooler banks per transformer	Not Applicable			
17.1	Cooling fans a) Type b) Quantity c) Rating	Not Applicable			
18	a) Rating of each cooler or cooler bank in percent. b) Whether Radiators can be placed on either side of transformers and whether mounted separately				

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		c) Whether Reverse flow blocking device and flow indicators provided			
	19.1	**Terminal arrangement: for Without HV Box** a) High voltage b) Low voltage c) Neutral (LV) d) HV terminal phase spacing e) LV terminal phase spacing f) Any other information			
	19.2	**Terminal arrangement: For With HV Box** a) High voltage b) Low voltage c) Neutral (LV) d) HV terminal phase spacing e) LV terminal phase spacing f) Any other information			
	20	Approximate masses: a)Core b) Winding c) Bare weight of copper in windings without paper insulation and leads d)Tanks, fittings and accessories. e)Oil f)Total mass	Kg Kg Kg Kg Kg kg		

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	21	Approximate quantity of oil required for filling (main tank) OLTC Overall maximum dimensions of the transformer complete with accessories : a) Length b) Breadth c) Height	 mm mm mm			
	22	Untanking height Reference standards				
	23	Details of HV Bushings line (HV line end) a)Voltage class, b)Current rating, c)1.2/50 μs impulse withstand d)Make e)Type f)Creepage distance, total g)Creepage distance, protected. h)Year of manufacture. i)Qty. of oil in oil filled bushing	 kV A kV (rms) mm mm			
	24	Details of LV Bushings line (LV line end) a)Voltage class, b)Current rating, c)1.2/50 μs impulse withstand d)Make e)Type	 kV A kV (rms)			

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		f)Creepage distance, total g)Creepage distance, protected. h)Year of manufacture. i)Qty. of oil in oil filled bushing	mm mm		
	25	Details of HV Bushings a)Voltage class, b)Current rating, c)1.2/50 μs impulse withstand d)Make e)Type f)Creepage distance, total g)Creepage distance, protected. h)Year of manufacture. i)Qty. of oil in oil filled bushing	kV A kV (rms) mm mm		
	26	Details of Neutral Bushings a)Voltage class, b)Current rating, c)1.2/50 μs impulse withstand d)Make e)Type f)Creepage distance, total	 kV A kV (rms) mm		

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		g)Creepage distance, protected. h)Year of manufacture. i)Qty. of oil in oil filled bushing	mm		
	27	Details of Core Grounding Bushings a)Voltage class, b)Current rating, c)1.2/50 μs impulse withstand d)Make e)Type f)Creepage distance, total g)Creepage distance, protected. h)Year of manufacture. i)Qty. of oil in oil filled bushing	 kV A kV (rms) mm mm		
	28	Details of Core Grounding Bushings Neutral a)Voltage class, b)Current rating, c)1.2/50 μs impulse withstand d)Make e)Type f)Creepage distance, total g)Creepage distance, protected. h)Year of manufacture. i)Qty. of oil in oil filled bushing	 kV A kV (rms) mm mm		

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	29	Details of LV Cable Connection a)Clearances i)Phase to Phase ii)Phase to Earth b)Drawing enclosed c)Length Of Each phase Bus Bars d) The Bus bars are suitable for how many numbers of 1Cx 1000 sq mm, 11 kV, XLPE cable.			
	30	Designed Fault Levels: a) HV b) LV	MVA MVA		
	31	Core a)Material & Grade b) thickness in mm c)Type of core d)Operating flux density e)Maximum flux density f)Over fluxing capability for ±10% voltage & ±3% frequency variation g)Specific No load loss for the grade of core chosen at the specified flux density. h) Net weight of CRGO lamination in core.(Kg minimum).	Yes / No Watts/Kg		

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	Please submit copy of graph in support of this)				
32	Details of CTs on HV Bushings.(Line) a)No. of cores b)Ratio for each core c)VA burden - for each core. (along with Imag and VK wherever necessary) d)Accuracy class of each core. e)Year of manufacture. f)Short time thermal current rating i)Current ii)Rated time	Not Applicable			
33	Details of CTs on LV Bushings.(Line) a)No. of cores b)Ratio for each core c)VA burden - for each core. (along with Imag and VK wherever necessary) d)Accuracy class of each core. e)Year of manufacture. f)Short time thermal current rating i)Current ii)Rated time	Not Applicable			
34	Rail gauge (along both axis)				
35	Whether Cooler control scheme conforms to specified Capability of transformer to remain in operation from hot condition after failure of forced cooling Full load Minutes	NA			

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36	Overload capacity of transformer for 100% ONA coolers working simultaneously				
37	Whether Neutral end surge diverter recommended by bidder				
38	If yes details of surge diverter a) Type b) Make c) KV class d) kV rating				
39	Tertiary winding if any kept isolated then the bidder to state whether one terminal to be earthed or any other precautions required during service conditions				
40	On load tap changer – Particulars a)Make b)Type, designation c)Suitable for auto/manual operation d)Rated voltage kV e)Basic insulation level (BIL) of OLTC (kV peak) f)One minute power frequency voltage withstand of OLTC g)Rated current (A) h)No. of steps i)Step voltage (V) j) Rated voltage of drive motor – V k) Whether diverter and selector chambers are separate. l)Rated voltage of control circuit – V m)Time to complete tap changing operation from any one step to next higher or lower tap.				

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		i) On auto operation - Sec. ii) On manual operation through push button - Sec. n)List of routine tests to be carried out on tap changer o)Location of the taps with respect to the terminal of the tapped winding p) Drawing or pamphlet number of the technical a descriptive particulars of the OLTC, enclosed with t bid. q)Separate conservator and Buchholz relay provide for OLTC (Yes/No) r)RTCC (Remote Tap Changer Control Panel) i. List of tap changer Annunciation ii. Two sets of potential free contacts for Scada provided. iii. Two sets of 0/20 mA output for tap position indication provided. iv. 230 V AC Auto-changeover facility for OLTC motor provided.			
	41	Marshalling Box a)Derived control supply Voltage b)415 V control supply provided. c)Local OTI/WIT provided. d)Remote OTI/WIT provided. e)Two sets of 0/4-20 mA signals for OTI/WIT provided. f)List of annunciations.	V		

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	g)Two sets of potential free contacts for annunciations provided.				
42	Whether Marshalling boxes (ground as well as tank) provided as per specifications i.e				
43	<u>Surface Preparation/Painting</u> 1) Material used fir Adequate rust proofing done on transformer and radiator (Details of measures to be enclosed) 2) Type of paint (epoxy/enamel) 3) Whether galvanized radiator offered as alternative.				
44	Conservator Oil preservation system Details (Air bag) a) Material of separator/Air bag b) Details of air pressure for the separator i. Design pressure ii. Working pressure iii. Bursting pressure (Puncture strength) c) Procedure of oil filling with air bag to be enclosed. d) Any precautions to be taken during maintenance of transformer with air bag to be mentioned here.				
45	General arrangement drawing of the transformer indicating details of HV/MV/LV terminals and over all dimensions enclosed	Yes / No			
46	Neutral Bushing Calculation to be submit.	Yes			

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21.0 SCHEDULE OF DEVIATIONS:

(TO BE ENCLOSED WITH THE BID)

All deviations from this specification shall be set out by the Bidders, clause by Clause in this schedule. Unless specifically mentioned in this Schedule, the tender shall be deemed to confirm the purchaser's specifications:

S.No.	Clause No.	Details of deviation with justifications

We confirm that there are no deviations apart from those detailed above.
Seal of the Company:

Signature

Designation

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ANNEXURE-I

A) INSPECTION TEST PLAN FOR STAGE INSPECTION-I OF POWER TRANSFORMER

S No.	Particulars	Details
(A)	**GENERAL INFORMATION:**	
1	Name of firm	
2	Order No. and Date	
3	Details of offer	
a)	Rating	
b)	Quantity	
c)	Serial Numbers	
4	Details of last stage inspected lot:	

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a)	Total quantity inspected	
b)	Serial Numbers	
c)	Date of stage inspection	
d)	Quantity offered for final inspection of (a) above with date	
(B)	**Position of manufacturing for the offered quantity:**	
a)	Complete tanked assembly	
b)	Core and coil assembly ready	
c)	Core assembled	
d)	Coils ready for assembly	
	i) HV coils ii) LV coils	

Note: i) The stage inspection-I shall be carried out in case:-

a) 100% quantity of core and coil shall be ready for inspection.
b) 100% Quantity of Tank and its mountings i.e Marshalling box, conservator etc. shall be ready for inspection.

ii) Quantity offered for stage inspection should be offered for next level of Inspection within 15 days from the date of issuance of clearance for stage inspection, otherwise stage inspection already cleared shall be liable for cancellation.

S No.	Particulars	As offered	As observed	Deviation and Remarks
(C)	**<u>Inspection of Core :</u>** (I) Core Material 1) Manufacturer's characteristic certificate in respect of grade of lamination used. (Please furnish test certificate)			
	2) Thickness of core lamination			
	3) Remarks regarding Rusting and smoothness of core.			
	(II) Core Construction :			

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	(1) Core Diameter (mm)			
	(2) Total cross sectional area of core			
	(3) Effective cross sectional area of core			
	(4) Whether top yoke is cut for LV connection.			
	(5) If yes, at 4 above, whether Reinforcement is done.			
	(6) Core length (leg center to leg center)			
	(7) Window height.			
	(8) Core height			
	(9) Core weight only			
(D)	**INSPECTION OF WINDING**			
	(I) Winding material			
	(1) Material used for			
	a) HV winding			
	b) LV winding			
	(2) Grade of material for			
	a) HV winding			
	b) LV winding			
	(3) Test certificate of manufacturer (enclosed copy) for winding material of:			
	a) HV			
	b) LV			
	(II) Construction Details 1) Size of Cross sectional area of conductor for :			
	a) HV winding			
	a) LV winding			
	2) Type of insulation for conductor of :			
	a) HV winding			
	b) LV winding			
	3) Diameter of coils in:			

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	a) LV winding			
	a) Internal Diameter (mm)			
	ii) Outer diameter (mm)			
	b) HV winding			
	a) Internal diameter (mm)			
	ii) Outer diameter (mm)			
	4) Current density of winding material used for:			
	a) HV			
	b) LV			
	5) Total No. of turns			
	a) HV coils			
	b) LV coils			
	6) Total weight of coils of			
	a) LV winding (Kg)			
	b) HV winding (Kg)			
(E)	**INSULATION MATERIALS**			
	(I) DPC Paper Insulation			
	a) Type of Paper (Dotted Kraft or Diamond Dotted Kraft)			
	b) Make			
	c) Thickness (mm)			
	d) DPC laying direction			
	e) Percentage Overlapping			
	II) Interlayer Insulation			
	a) Type of Paper			
	b) Make			
	c) Thickness (mm)			
	III) Between HV and LV winding			
	a) Type of Paper			

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	i. Make			
	ii. Thickness (mm) (all size)			
	b) Type of Pressboards			
	i. Make			
	ii. Thickness (mm) (all size)			
	IV) Between core and LV			
	Type of Paper			
	i. Make			
	ii. Thickness (mm) (all size)			
	Type of Pressboards			
	i. Make			
	ii. Thickness (mm) (all size)			
	V) Material used for top and bottom yoke and insulation			
	a) Type of Material			
	i. Make			
	ii.Thickness (mm) (all size)			
	VI) Material used for Spanner, wedge and Axial for insulation			
	a) Type of Material			
	i. Make			
	ii. Thickness (mm) (all size)			
	iii. Visual condition(i.e free from dust, burr, damage and sharp edges)			
	VII) Test certificate of manufacturer (enclose copy for all type of papers and pressboard used)			
(F)	**CLEARANCES: (mm)**			
	(I) Related to core and winding			
	1) LV to core (radial)			
	2) Between HV and LV (Radial)			

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	3) Thickness of duct between HV and LV coil mm			
	(II) Between core – coil assembly and tank:			
	1) Between winding and body			
	a) Tank height wise			
	b) Tank side wise			
(G)	**TANK :**			
	(I) Construction Details:			
	1) Circular shape			
	2) Thickness of side wall (mm)			
	3) Thickness of top and bottom plate (mm)			
	4) Provision of sloping top cover			
	5) Tank internal dimensions (mm)			
	a) Diameter			
	b) Height			
	(II) General Details :			
	1) Inside painted by oil corrosion resistant paint (please specify which type of coating done)			
	2) Provision of lifting lugs.			
	a) Numbers			
	b) Weither reinforcement done by welding all side of Lug			
	3) Provision of air release plug			
	4) Provision of hot dip galvanized GI Nuts Bolts with 1no. plain and 1no. spring washer.			
	5) Deformation of side wall of tank when subject to:			
	a) Vacuum of (-) 0.7 Kg/sq.cm for 30 minutes.			
	b) Pressure of 0.8 Kg/sq.cm. for 30 minutes.			
(K)	**TERMINALS:**			
	1) Material whether of Brass Rods			
	a) HV			

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	b) LV			
	2) Size (dia. In mm)			
	a) HV			
	b) LV			
(L)	**BUSHINGS – Two part**			
	1) Whether HV & LV bushings mounted as per drawing.			
	a) HV- Top Inclined			
	b) LV – Side			
	2) Bushing Clearance: (mm)			
	a) LV to Earth			
	b) HV to Earth			
	3) Bushing are two part and inner part shall be sealed and external part is replaceable without affecting sealing and need of opening of top cover.			
(M)	**TANK BASE:**			
	1) Whether tank base is welded folded upwards, as Specified in specification.			
(N)	**OIL:**			
	1) Name of supplier			
	2) Breakdown voltage of oil: (kV)			
	a) Filled in tanked transformer			
	b) In storage tank (to be tested by Inspecting officer).			
	3) Supplier's test certificate (enclose copy)			
(O)	**ENGRAVING:**			
	1) Engraving of Sl. No. and name of firm and YoM.			
	a) On bottom of clamping channel of core-coil assembly.			
	b) On Body of tank (on Yellow base with Black)			
(P)	**MS Plate of size 125× 125 mm welded on width side of stiffener.**			

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	i) Following details engraved (as per approved GTP):			
	a) Serial Number			
	b) Name of firm			
	c) Order No. and date			
	d) Rating			
	e) Date of dispatch			
(Q)	**NAME PLATE DETAILS:**			
	Whether Name Plate is as per approved drawing			
(R)	**COLOUR OF TRANSFORMER**			
	1) Tank body (Inner side)			
	2) Tank body (Outer side)			

PURCHASER'S OFFICER BIDDER'S REPRESENTATIVE

DATE OF INSPECTION

B) INSPECTION TEST PLAN FOR STAGE INSPECTION- II OF POWER TRANSFORMER

S No.	Particulars	Details
(A)	**GENERAL INFORMATION:**	
1	Name of firm	
2	Order No. and Date	
3	Details of offer	
a)	Rating	
b)	Quantity	
c)	Serial Numbers	
4	Details of last stage inspected lot:	
a)	Total quantity inspected	

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b)	Serial Numbers	
c)	Date of stage inspection	
d)	Quantity offered for final inspection of (a) above with date	
(B)	**Position of manufacturing for the offered quantity:**	
a)	Complete tanked assembly	
b)	Core and coil assembly ready	
c)	Core assembled	
d)	Coils ready for assembly	
	i) HV coils ii) LV coils	

Note: i) The stage inspection-II shall be carried out in case:-

100% quantity of core coil assembly shall be ready for inspection.

ii) Quantity offered for stage inspection should be offered for next level of Inspection within 15 days from the date of issuance of clearance for stage inspection, otherwise stage inspection already cleared shall be liable for cancellation.

ANNEXURE-II

Inspection Test Plan for Power Transformers

1	Name of the firm / BA	
2	Date of inspection	
3	Details of offer made	
	(i) Order No. and date	
	(ii) Rating	
	(iii) Quantity	
	(iv) Sl. No. of transformers	
4	Date of stage inspection of the lot	

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5	Reference of stage inspection clearance	
6	Sample Quantity (10% of the offered lot, min. one)	Sr. No.----------

S. No.	Name of test	Specified value(Range)	Reference documents	Test Result	Pass/Fail
1	Visual inspection for material, finish and workmanship	Free from cracks, nicks, protrusion and other visible defects.	TPWODL specification		
2	Physical Verification of complete Transformer with all assembly including test rollers, radiators, cable boxes etc. and Checking of weights, Dimensions.	GTP Values	TPWODL specification		
3	Measurement of Winding Resistance	GTP Values	IS : 2026-2011 (Part I) cl. 10.2		

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4	Measurement of voltage ratio and phase displacement	GTP Values	IS : 2026-2011 (Part I) cl. 10.3		
5	Verification of vector group relationship	DYn11	IS : 2026-2011 (Part I) cl. 8.6, 8.7		
6	Measurement of short-circuit impedance and Load Loss.	GTP Values	IS : 2026-2011 (Part I) cl. 10.4		
7	Measurement of No-Load Loss and Current (Losses at 90, 100 and 110% of rated voltage).	GTP Values	IS : 2026-2011 (Part I) cl. 10.5		
8	Measurement of insulation resistance.	GTP Values	IS : 2026-2011 (Part I) cl. 10.1.3		
9	Dielectric Test	GTP Values/TPWODL Specification	IS : 2026 (Part III)-2009		
10	Test on ON-Load Tap Changer	GTP Values/TPWODL Specification	IS : 2026-2011 (Part I) cl. 10.8		
11	Zero-Phase sequence Measurement	GTP Values	IS : 2026-2011 (Part I) cl. 10.7		
12	Oil Pressure/leakage test on completely assembled transformer at 0.35kg/sq.cm for 8 hrs.	Should withstand	TPWODL Specification		
13	Bushing shall be tested for Capacitance and Power factor and shall meet the manufacture's requirement.	GTP / TPWODL Specification	IS : 2026 (Part III) cl. 10		
14	All CTs and resistance of image coil for winding temperature indicator shall be checked for ratio test, polarity and knee point voltage test	GTP / TPWODL Specification	TPWODL Specification		

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15	Determination of Capacitances and dissipation factor winding-to-earth and between windings.	GTP / TPWODL Specification	IS : 2026 (Part I) cl.10.1.3		
16	Magnetic balance test	GTP / TPWODL Specification			
17	Measurement of Magnetizing current at low voltage		IS : 2026-2011 (Part I) cl. 10.1.3		
18	Voltage Regulation at rated load and at unit, 0.9, 0.8 lagging power factor	GTP/TPWODL specification	GTP/TPWODL specification		
19	Measurement of Acoustic Noise Level	GTP/TPWODL specification	GTP/TPWODL specification		
20	Measurement of the power taken by the fans	GTP/TPWODL specification	TPWODL specification		
21	Functional tests on auxiliary equipment: i. Test on OTI and WTI ii. High Voltage test on insulation test for Auxiliary Wiring.	GTP/TPWODL specification	TPWODL specification		
22	Test on Oil filled in Transformer i. Dielectric Strength of Oil ii. Water Content. iii. Dielectric Dissipation factor (tan delta at 90° C. iv. Resistivity	GTP/TPWODL specification	TPWODL specification,		
23	Temperature rise test	GTP/TPWODL specification	IS : 2026 (Part II)		
24	Short Circuit withstand test	Should withstand	IS : 2026 (Part V)		
25	Test to verify IP55 of Marshalling and cable boxes.	Should Confirm IP55	TPWODL Specification		
26	Lightning Impulse voltage test with chopped wave.	GTP/TPWODL Specification	IS : 2026 (Part III) cl. 13		

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PURCHASER'S OFFICER

BIDDER'S REPRESENTATIVE

DATE OF INSPECTION

ANNEXURE – III

SOURCE OF MATERIAL/PLACES OF MANUFACTURE, TESTING AND INSPECTION

S No.	Item	Source of Material	Place of Manufacture	Place of testing and Inspection
1.	Core Laminations			
2.	Copper Conductor			
3.	Insulating winding wires			
4.	Transformer Oil			
5.	Press Boards			
6.	Thermally Upgraded Kraft Paper (TUKP)			

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7.	Tank material			
8.	Gaskets			
9.	Bushing HV/LV			
10.	Paint			
11.	OLTC			
12	NIDS			
13	CTs			
14	WTI			
15	OTI			

ANNEXURE – IV

Methodology for computing total owning cost for Power Transformer

TOC	**= IC + (A xWi) + (B xWc); Losses in KW**
TOC	= Total Owning Cost
IC	= Initial cost taxes of transformer as quote by the manufacturer
A Factor	= Cost of load losses in Rs/Kw (A = 334447)
B Factor	= Cost of load losses in Rs/KW (B = 151616)
Wi	= No load losses quoted by the manufacturer
Wc	= Load losses quoted by the manufacturer in KW

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TPWODL

NIT No.: TPWODL/PJ/O/SU/044

For Reference- User Manual e-Bidding & Auction (Ariba)

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SUPPLIER MANUAL ANSWERING TO E-BIDDING

	Version 1.2
Company Confidential	DEC - 2020

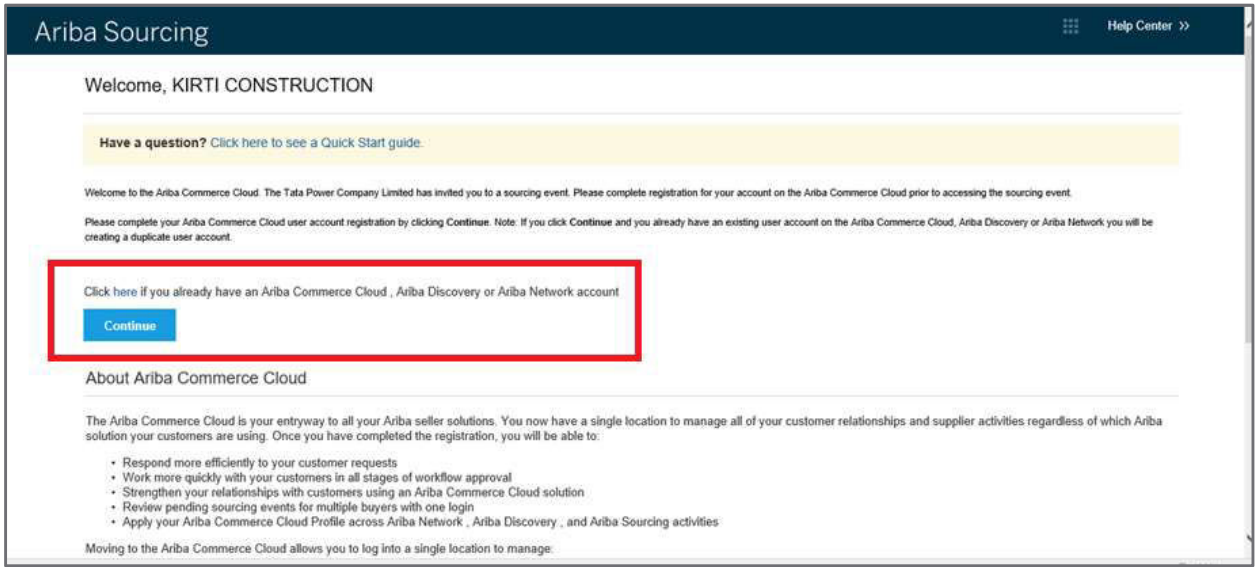
INDEX

1- Accessing Ariba Sourcing

Step 1: You will get an invitation to your email from Ariba System. Keep this email, it contains your login Information and a direct link to Ariba.

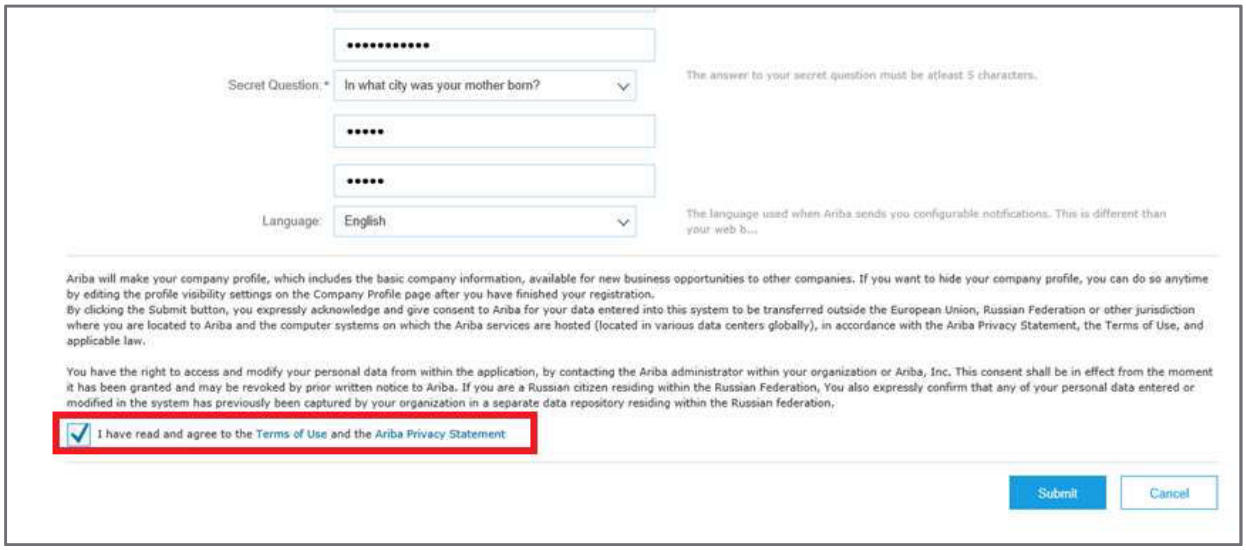
Step 2: Click “Click Here” to access the Ariba Web Site.

Step 3: Supplier has to click on "Continue"



Step 4: The registration process only takes a few moments, with a simple one-page registration Define your password and secret question. Click “OK”

Step 5: If it's the first time you are invited to use UPM Ariba, you'll need to accept the "Participant Terms". Select "I accept the terms of this agreement". Click "Submit".

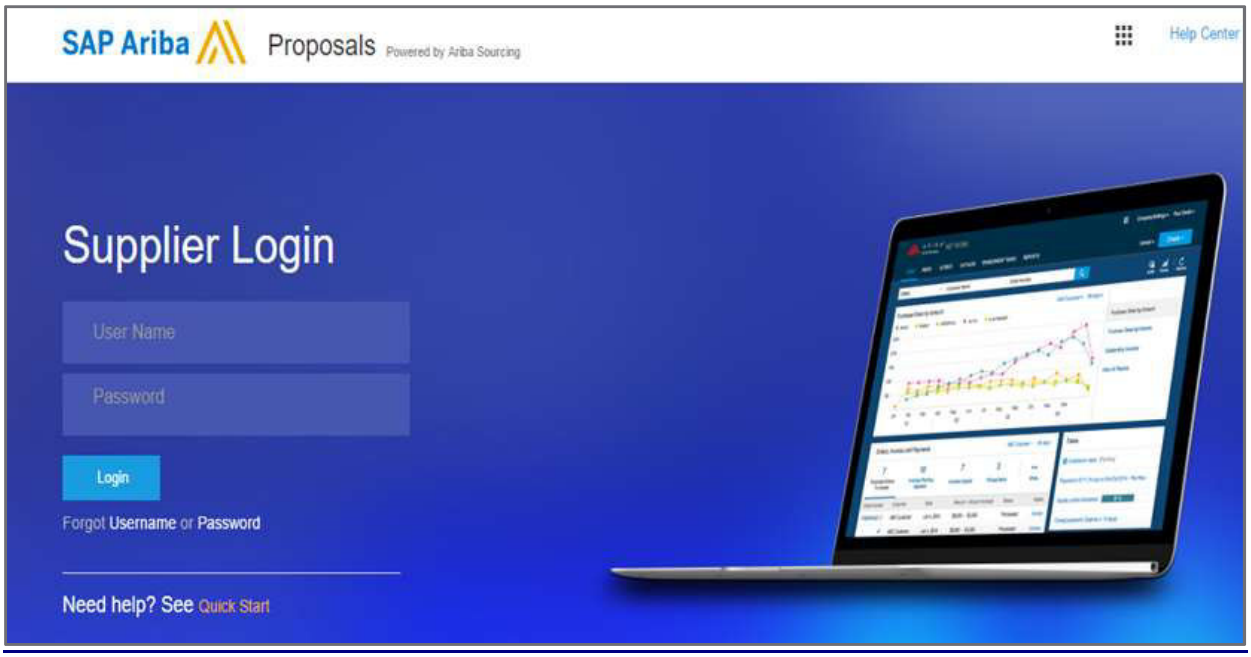


2 Vendor Screen - Submitting Your Answers / Proposal

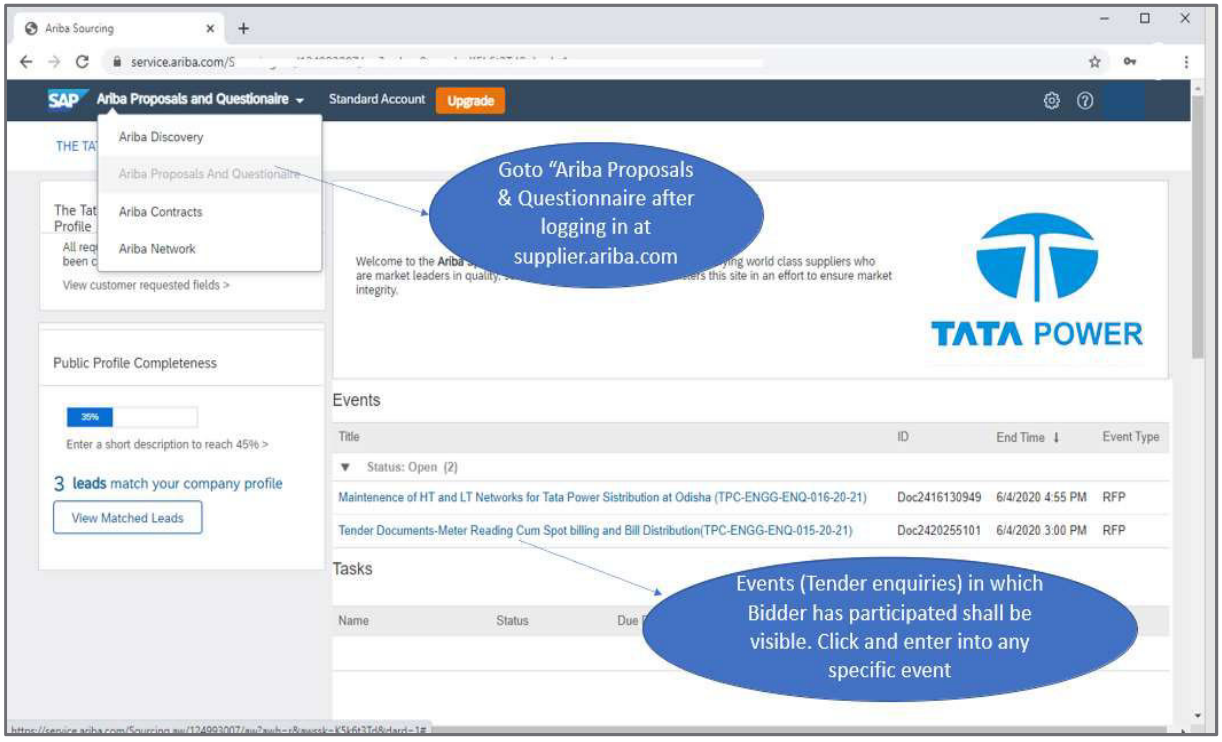
2.1.1 If vendor goes through mail invitation then directly Screen 3.1.1 will appear, but if If you have used Ariba before and have already accessed an event for the buyer-specific account with your current log in ID, click the **Login** button to continue. Log in with your Ariba username and password in order to participate in the event OR you have to follow the following steps.

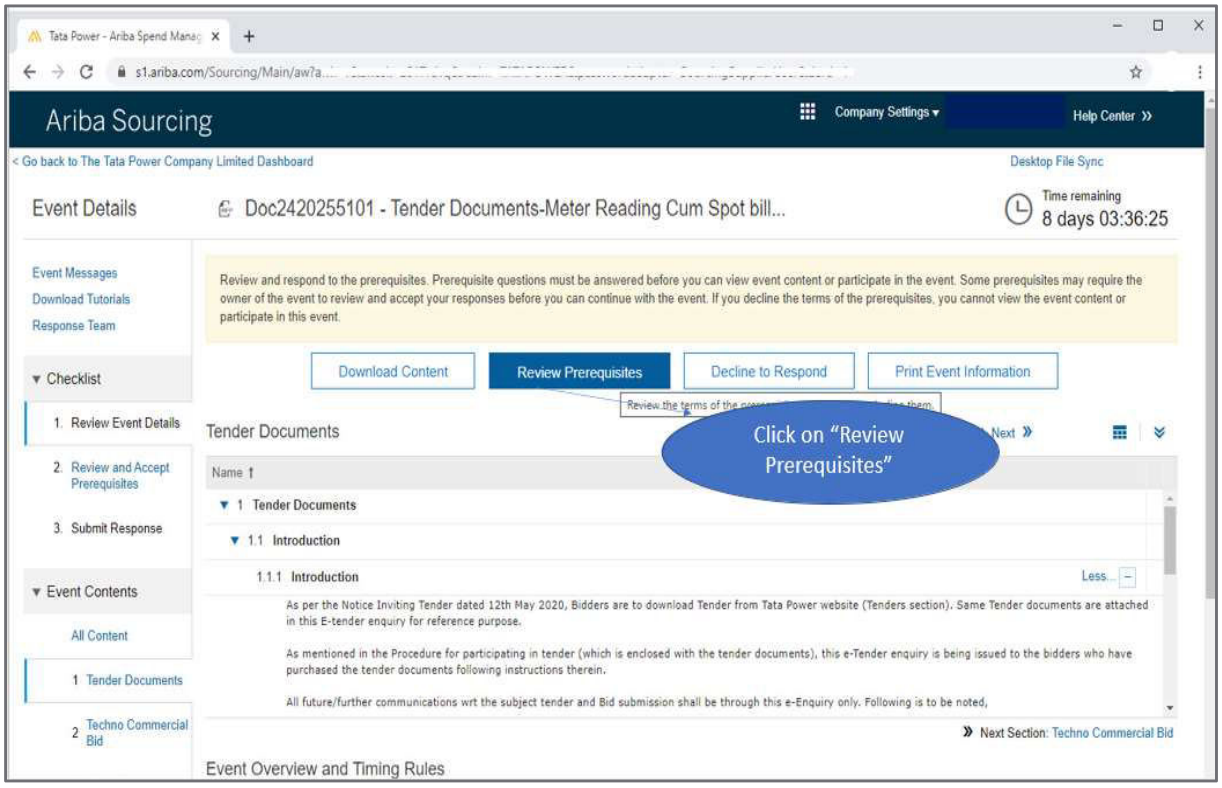
Step 1 - Log on **supplier.ariba.com**

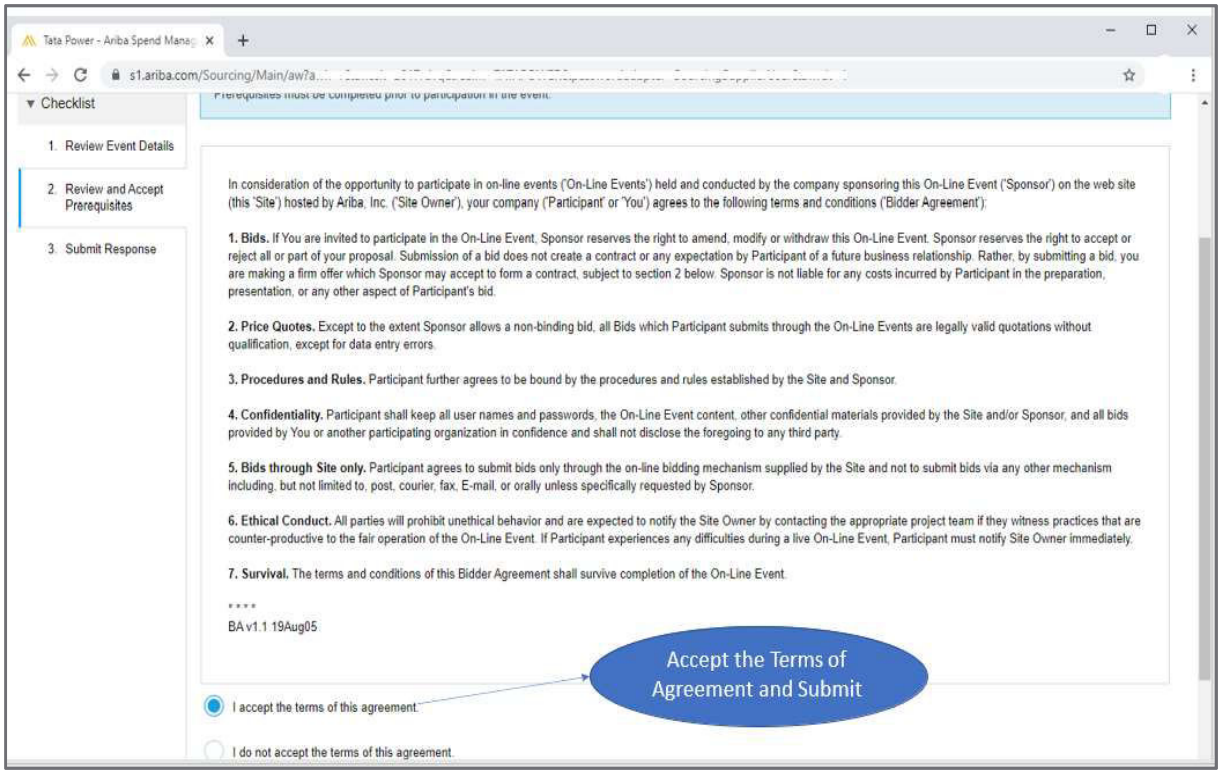
Step 2 - Put your USER ID and Password in following screen

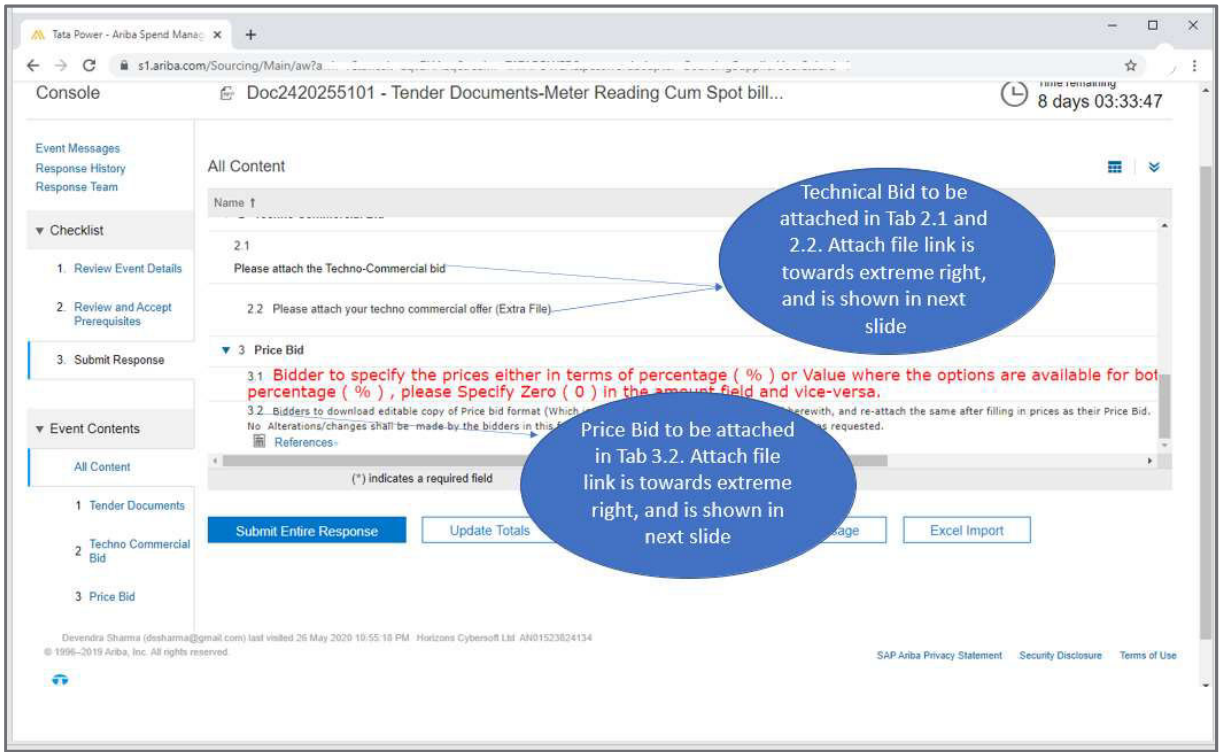


Step 3 - Go to “Ariba Proposals & Questionnaire”.






Tata Power - Ariba Spend Manag
s1.ariba.com/Sourcing/Main/aw?a...
Checklist
1. Review Event Details
2. Review and Accept Prerequisites
3. Submit Response
In consideration of the opportunity to participate in on-line events ('On-Line Events') held and conducted by the company sponsoring this On-Line Event ('Sponsor') on the web site (this 'Site') hosted by Ariba, Inc. ('Site Owner'), your company ('Participant' or 'You') agrees to the following terms and conditions ('Bidder Agreement'):
1. Bids. If You are invited to participate in the On-Line Event, Sponsor reserves the right to amend, modify or withdraw this On-Line Event. Sponsor reserves the right to accept or reject all or part of your proposal. Submission of a bid does not create a contract or any expectation by Participant of a future business relationship. Rather, by submitting a bid, you are making a firm offer which Sponsor may accept to form a contract, subject to section 2 below. Sponsor is not liable for any costs incurred by Participant in the preparation, presentation, or any other aspect of Participant's bid.
2. Price Quotes. Except to the extent Sponsor allows a non-binding bid, all Bids which Participant submits through the On-Line Events are legally valid quotations without qualification, except for data entry errors.
3. Procedures and Rules. Participant further agrees to be bound by the procedures and rules established by the Site and Sponsor.
4. Confidentiality. Participant shall keep all user names and passwords, the On-Line Event content, other confidential materials provided by the Site and/or Sponsor, and all bids provided by You or another participating organization in confidence and shall not disclose the foregoing to any third party.
5. Bids through Site only. Participant agrees to submit bids only through the on-line bidding mechanism supplied by the Site and not to submit bids via any other mechanism including, but not limited to, post, courier, fax, E-mail, or orally unless specifically requested by Sponsor.
6. Ethical Conduct. All parties will prohibit unethical behavior and are expected to notify the Site Owner by contacting the appropriate project team if they witness practices that are counter-productive to the fair operation of the On-Line Event. If Participant experiences any difficulties during a live On-Line Event, Participant must notify Site Owner immediately.
7. Survival. The terms and conditions of this Bidder Agreement shall survive completion of the On-Line Event.
****
BA v1.1 19Aug05
I accept the terms of this agreement.
I do not accept the terms of this agreement.
Accept the Terms of Agreement and Submit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s1.ariba.com/Sourcing/Main/aw?a...
Console
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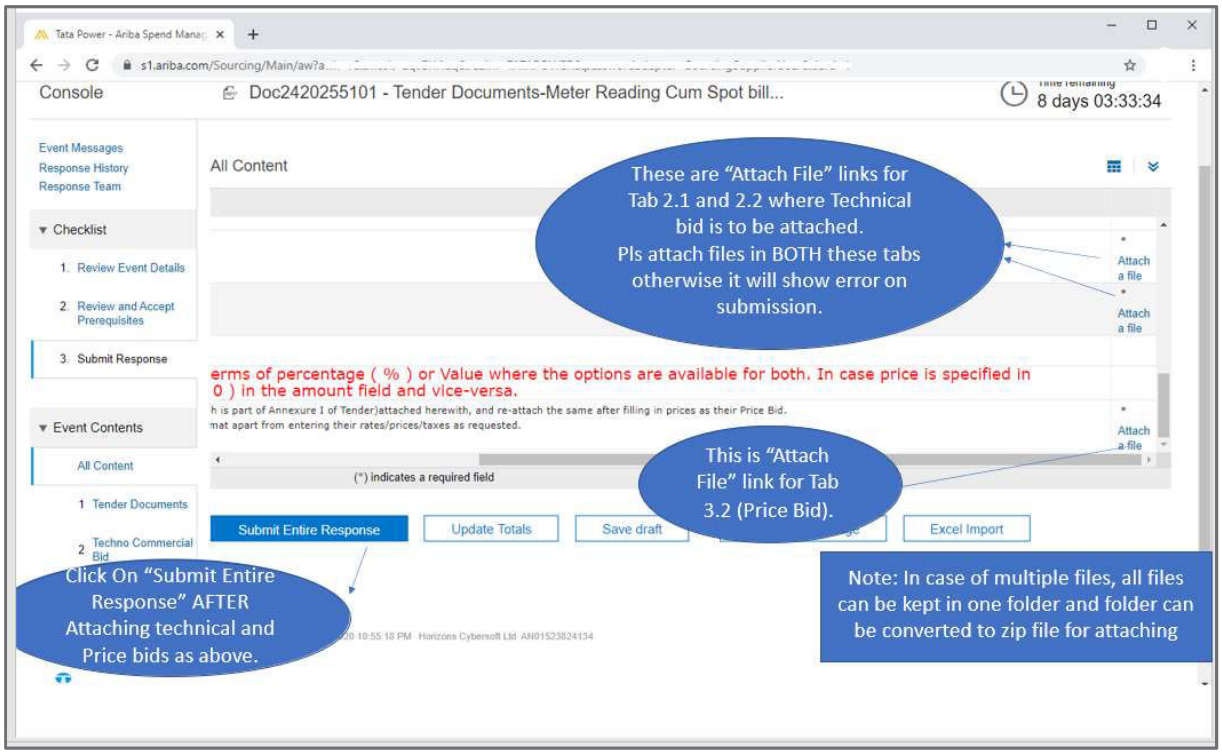
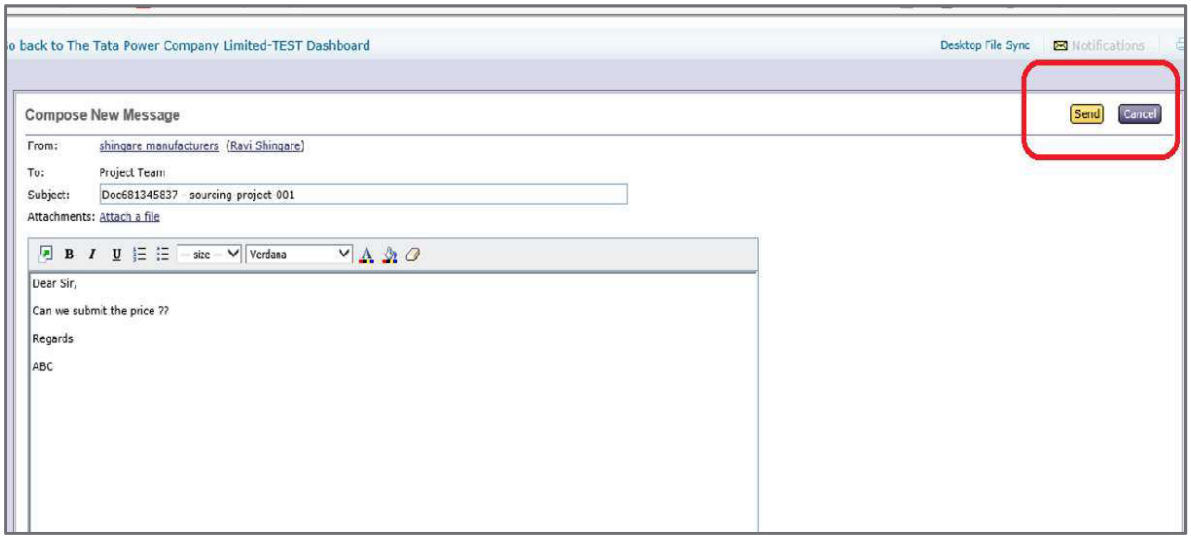
Event Messages
Response History
Response Team
Checklist
1. Review Event Details
2. Review and Accept Prerequisites
3. Submit Response
Event Contents
All Content
1 Tender Documents
2 Techno Commercial Bid
3 Price Bid
All Content
Name
2.1
Please attach the Techno-Commercial bid
2.2 Please attach your techno commercial offer (Extra File)
3 Price Bid
3.1 Bidder to specify the prices either in terms of percentage (%) or Value where the options are available for bot
percentage (%) , please Specify Zero (0) in the amount field and vice-versa.
3.2...Bidders to download editable copy of Price bid format (Which
No Alterations/changes shall be made by the bidders in this
References
(*) indicates a required field
Submit Entire Response
Update Totals
Excel Import
Technical Bid to be attached in Tab 2.1 and 2.2. Attach file link is towards extreme right, and is shown in next slide
Price Bid to be attached in Tab 3.2. Attach file link is towards extreme right, and is shown in next slide
SAP Ariba Privacy Statement
Security Disclosure
Terms of Use



3 Communicating with Tata Power Buyer during e- bidding

Step 1: Click "Compose Message".

Step 2: Compose Your Message and click "Send".



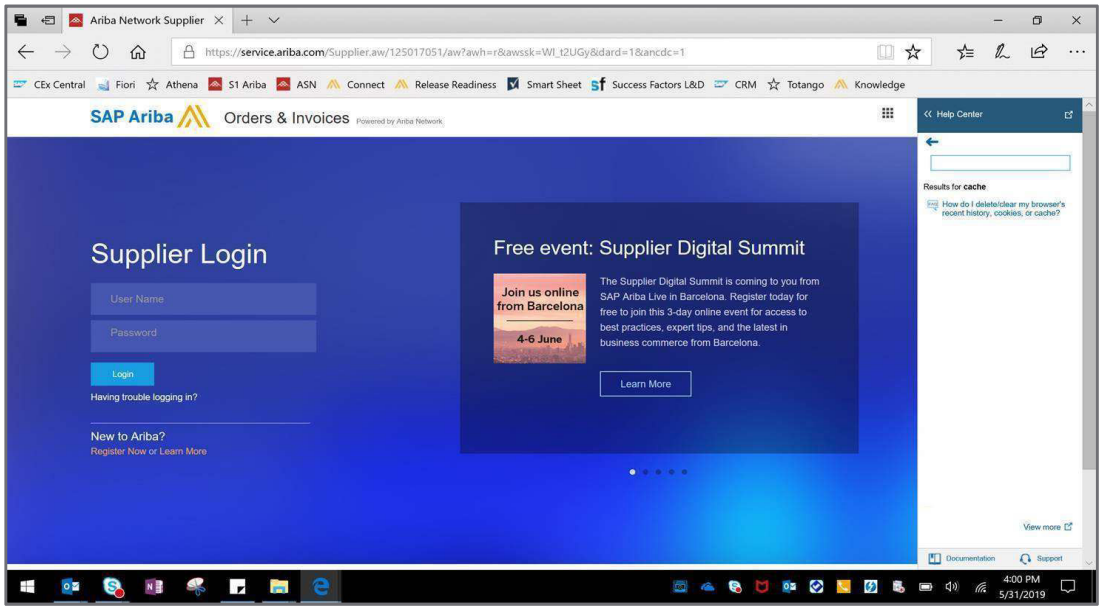
ARIBA TRAINING VIDEOS

Participating in a RFI or RFP on Ariba Network - https://www.youtube.com/watch?v=9_XXUaVyI7o

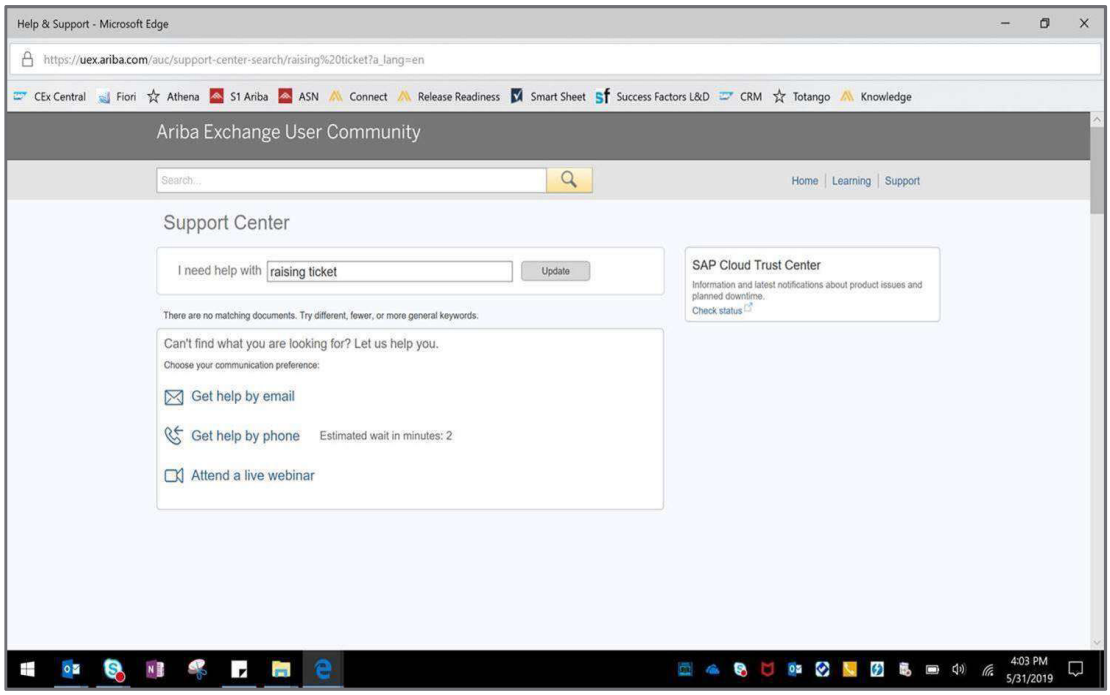
Support from Ariba - Supplier can raise the Ticket for "Support"

Here are the steps that Suppliers can follow for raising a ticket or requesting a call back from Support team. They can do so without logging in – pls follow the brief instructions given below.

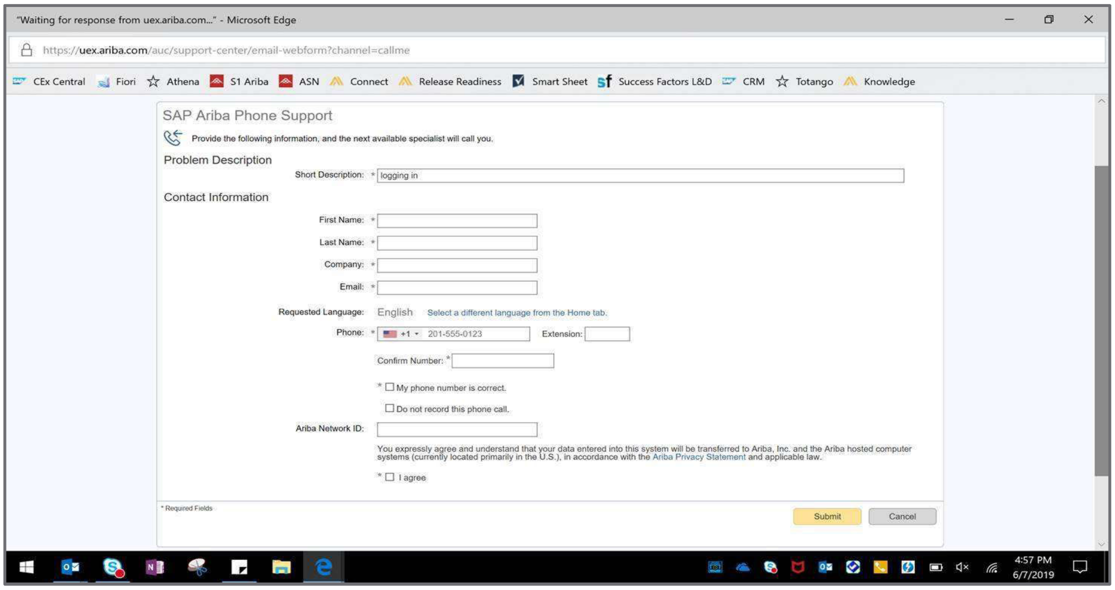
1. Go to login page>Choose "Support" on the bottom right corner



2. Add query and press "Start" – After that, following screen will pop up where you can choose either Get Help by Email or Get Help by Phone.



3. Choose phone and add following basic details and you will get call back



If not by phone, they can ask for a response/support by email.

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

SUPPLIER FREQUENTLY ASKED QUESTIONS

- **If I registered on my buyer's Ariba Sourcing site in the past, do I need to register again?**

Answer- Yes. Although you have registered on your buyer's Ariba Sourcing site in the past, registering on the Ariba Commerce Cloud is required. The registration process only takes a few moments, with a simple one-page registration. Registering on the Ariba Commerce Cloud gives you access to all your buyer relationships with one username and password.

- **What is the Ariba Commerce Cloud?**

Answer: - The Ariba Commerce Cloud is your entry point to all of your seller solutions.
Rather than managing log in information for multiple buyers' sites, you will have one log in and one account. This means fewer passwords to remember, easier user maintenance for your company, and a unified profile for your organization.

- **Do I need to add Product and Service Categories during registration?**

Answer:-Yes; this is a required field. Product and Service Categories classify what your company sells, and the system uses this information to match potential business opportunities with your products and services.

Click **Add Product and Service Categories** to select one or more categories from the list of options. During registration, you only need to choose one category, preferably related to the event you are joining. You can add, refine, or remove categories any time after the registration process.

- **Do I need to add ship-to or service locations during registration?**

Answer: - Yes; this is a required field. Ship-to or Service locations inform buyers where your company sells its products or provides its services, and the system uses this information to match potential business opportunities with your products and services.

Click **Add Ship-to or Service Locations** to select one or more sales territories from a list. You can add, refine, or remove ship-to or service locations any time after the registration process.

Additional Information: - D-U-N-S is a registered trademark of Dun & Bradstreet or its subsidiaries in the United States and other countries.

- **What is the difference between the Email and Username fields in my profile?**

Answer: - The Email field represents the email address where you wish to receive email notifications. The Username field is the identifier that you use to access your account. The Username field must be in email format, but you do not have to use a valid email address.

Note: Leave the **This is my username** box checked if you want your email address to be the same as your username.

- **How do I participate in my buyer's event using an email invitation?**

Answer: - Use the **Click here** link in the email notification to access the sourcing event.

While buyers might customize the email content you receive, all email invitations contain a link to access the event.

Depending on your previous experience with Ariba solutions, do one of the following to access the event after you click the link:

- If you are new user, click **Continue** on the welcome page. You continue to register an Ariba account to link with your buyer and participate in the event.
- If you have used Ariba before and have already accessed an event for the buyer-specific account with your current log in ID, click the **Login** button to continue. Log in with your Ariba username and password in order to participate in the event.
- If you already have an existing Ariba Network, Ariba Discovery, or Ariba Sourcing supplier account, but you have not accessed any events for the inviting buyer's site, use the **Click here if you already have an Ariba Commerce Cloud, Ariba Discovery or Ariba Network account** link. After clicking the link, log in with your existing account to move your information to your buyer's site.

Additional Information:- Registering an Ariba account provides you with a consolidated view of all your customer relationships. With this one profile, you can view business opportunities, participate in sourcing events, participate in contract negotiations, and manage orders, catalogs, and invoices.

- **Why doesn't the link in the email invitation to participate in a sourcing event work?**

Answer:-If you cannot click the link, or the link does not open the log in page, highlight and copy the Uniform Resource Locator (URL), and then paste the URL into your web browser.

- **Can my company have multiple accounts?**

Answer:-Your Company can have multiple Ariba accounts, depending on your business needs. For example, if your company has several locations around the world, you might want a separate account for each region.

Most companies choose to have one account with multiple customer relationships, which provides a centralized location to maintain their company profile information and all of their customer relationships.

- **How do I complete registration if my username already exists?**

Answer: - This message means that you already have an Ariba Network, Ariba Discovery, or Ariba Sourcing supplier account registered under username you entered. You can either register ua new account by creating a new username, or access one of the following sites to request a password reset for the registered username:

- Ariba Network (This login page is used for all Ariba Network, Ariba Sourcing, or Ariba Contracts suppliers).
- Ariba Discovery login page

To reset your password, click the **Having trouble logging in?** Link on the Login page.

- **Nothing happens when I click Forgot Username and enter my email address**

Issue: - Nothing happens when I click the **Forgot Username** link and enter my email address.

Cause: - After you submit your request to retrieve your username, the Ariba Network sends an email notification with usernames that match the email address you submitted.

Some possible reasons why you may not receive this username retrieval email notification:

- The email address on your account does not match the email address you entered when submitting the request.
- Your buyer-specific account was deactivated before you could move it to the Ariba Commerce Cloud. Generally, that means you probably have not participated in an event with that buyer for a while.

Solution: -

- To ensure you receive this email notification:
- Make sure you type the email address configured within your account.

If your buyer-specific account has been deactivated, contact your buyer to determine how to proceed.

- **Where is my password reset email?**

Answer: - After you submit your request for a password reset, Ariba sends instructions to the email address associated with your account. If you didn't receive a password reset email, check the following scenarios to troubleshoot.

The username you entered is in the wrong format, or it isn't associated with the email address you are checking.

- Keep in mind, your username is in the format of a full email address, but it can be associated with any email address you entered previously.
- Your username is also case-sensitive.
- To confirm that you are using the correct username and format, return to the Ariba login page, and click the **Having trouble logging in?** link (**Forgot Username** if you're working in Ariba Discovery).
    - Choose **I forgot my username**, and click **Continue**.
    - Enter the email address associated with your account, and click **Submit**.

- You will receive an email that lists the exact format of the username associated with the email you entered.

You entered the correct username, but you still didn't receive the password reset email notification.

- This can occur if the configured email address is different from the account you are checking.
- You might have multiple accounts for your company, so make sure you are attempting to access the correct account.

Your email configuration or company's security settings might also prevent you from receiving the password reset email. To find out, check your junk mail folder or email filter settings to verify that automated emails from Ariba are not blocked from your email account.

Why do I get this message on the SAP Ariba Login page: "The username and password pair you entered was not found"?

Answer: - You entered an incorrect **Username** or **Password**. You might receive this message if you entered a previous **Username** or **Password**. Remember that your **Username** has the format of an email address, and both the **Username** and **Password** are case sensitive.

Click the **Having trouble logging in?** Link on the Login page if you don't remember your log in information.