

TP Southern ODISHA DISTRIBUTION LIMITED
(A Tata Power & Odisha Govt. joint venture)
Kamapalli, Courtpetta, Berhampur, Ganjam, Odisha, India -760004
NIT No.: TPSODL/OT/2023-24/65

Procedure for Participating in Tender

Tender Enquiry No	Work Description	EMD (Rs.)	Tender Participation Fee (Inclusive of GST)	Last date and time for Payment of Tender Participation Fee
TPSODL/OT/2023-24/65	Purchase Order for Supply of Trailer Mounted Mobile Power Substation at TPSODL	2,00,000	Rs 5,000	05.01.2024 18:00 hrs

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

Procedure for Participating in Tender. Following steps to be done before “Last date and time for Payment of Tender Participation Fee” as mentioned above.

- Eligible and Interested Bidders to submit duly signed and stamped letter on Bidder's letterhead indicating.
 - Tender Enquiry number
 - Name of authorized person
 - Contact number
 - e-mail id
 - Details of submission of Tender Participation Fee
 - GST Number
- 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 no:

Beneficiary Name : TP Southern Odisha Distribution Limited.
Account No : 625901010050070
Name of the Bank : Union Bank of India, Kamapalli Branch, Berhampur
IFSC Code : UBIN0562599

E-mail with necessary attachment of 1 and 2 above to be send to chandra.sahoo@tpsouthernodisha.com with copy to manoj.kharbanda@tpsouthernodisha.com before “Last date and time for Payment of Tender Participation Fee”.

- Bids are to be submitted only through online e-procurement platform, ARIBA. Any other form of bid submission will not be accepted. Link for bidding through ARIBA e-procurement platform will be mailed to bidder once Letter received as mentioned in point no 1 & 2 above.
- Refer Tender Document for other details.



NIT No.: TPSODL/OT/2023-24/65

**OPEN TENDER NOTIFICATION
for
Purchase Order for Supply of Trailer
Mounted Mobile Power Substation at
TPSODL**

Tender Enquiry No.: TPSODL/OT/2023-24/65

Due Date for Bid Submission:16.01.2024

**TP Southern Odisha Distribution Limited
Berhampur, Odisha**

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1. Event Information

1.1. Scope of work

Open Tenders are invited through E-Tender Bidding Process from interested Bidders for entering into a firm Order for Supply of Trailer Mounted Substation comprising of Power Transformer 3.15MVA 33/11KV Mobile PSS at TPSODL including the following major Equipment and other miscellaneous items.

- a) Power Transformer, 33kV/11kV
- b) 33kV 3-way RMU
- c) 11kV 3-way RMU
- d) Truck-Trailer in line with specification

And other miscellaneous items as per BOQ. (BOQ Enclosed-**Annexure-I, Table-II**)

Sl. No.	Description	EMD Amount (Rs.)	Tender Fee (Rs.)
1	Supply of Trailer Mounted Mobile Power Substation at TPSODL	2,00,000	5,000

1.2. Availability of Tender Documents

Non-transferable tender documents may be purchased by interested eligible bidders from address given below on submission of written application to the under mentioned and upon payment of non-refundable Tender Fee.

Chief (Contracts & Store)

TP Southern Odisha Distribution Limited
Khodasingi | 2nd Floor, BPR North Star | Berhampur – 760010
District - Ganjam | Odisha | India

1.3. Calendar of Events

(a)	Last date and time of Payment of Tender Fee	05.01.2024 18:00 Hrs.
(b)	Last Date of receipt of pre-bid queries if any.	06.01.2024 17:00 Hrs
(c)	Date and Time of Pre-Bid Meeting	NA
(d)	Last Date of Posting Consolidated replies to all the pre-bid queries as received	11.01.2024, 17:00 Hrs
(e)	Last date and time of receipt of Bids	16.01.2024, 18:00 Hrs
(f)	Date & Time of opening technical bids & EMD (Envelope-1 & 2)	16.01.2024, 18:00 Hrs onwards

Note: - In the event of last date specified for submission of bids and date of opening of bids is declared as a closed holiday for TPSODL's office, the last date of submission of bids and date of opening of bids will be the day following working day at appointed times.

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 along with a sample of each item 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')

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 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:

- i. EMD of requisite value and validity
- ii. Tender fee of requisite value
- iii. Price Bid as per the Price Schedule mentioned in Annexure I (BOQ)
- iv. Necessary documents against compliance to Qualification Requirements mentioned at Clause 1.7 of this Tender Document
- v. Filled in Schedule of Deviations as per Annexure III
- vi. Filled in Schedule of Commercial Specifications as per Annexure IV
- vii. Receipt of Bid within the due date and time

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

1.7 Qualification Criteria

- 1. The bidder should have Average Annual turnover of **at least Rs. 5 Cr. for any of last 3 Financial Year (FY)** out of FY 19-20, FY 20-21, FY 21-22, FY 22-23. (Copy of audited Balance Sheet and P&L Account to be submitted in this regard).

2. The Bidder should have **at least 5 years of experience in design and manufacturing of mobile substation/transformer/Compact Substation** of having any rating of transformer either 11/0.4kV or 33/11kV voltage level or **should have at least 5 years of experience in Assembly of all equipment** to make a Mobile substation/Compact Substation of having any rating of transformer either 11/0.4kV or 33/11kV voltage level.

Authorization from the OEM for each bought out major equipment (Major Equipment Transformer, RMU, Automobile) is required to be submitted.

3. The bidder should have **supplied minimum 15 nos.** of Mobile substation/Compact Substation of having any rating of transformer either 11/0.4kV or 33/11kV voltage level in last 5 years

Last day of previous month prior to date of bid submission shall be counted for purpose of years calculation. Copy of Purchase Order/Customer Order received shall be submitted as supporting document.

4. The bidder/OEM should have **Manufacturing facility / Assembling unit inside India**. Self-undertaking to be submitted for the same.

The bidder/OEM should have **in-house routine and acceptance testing facilities** for acceptance test as per relevant IS/IEC specifications of TPSODL. Self-undertaking along with list of technical equipment has to be submitted for the same.

Bidder have to submit an undertaking from OEM from major equipment. i.e for Transformer, RMU and Cable testing in their set up in India, if bidder is not having such facility.

5. The bidder should submit at least one performance certificate issued from **any Utilities/Transmission/Generation Organization/reputed Government organization** inside INDIA of Mobile substation/Compact Substation of having any rating of transformer either 11/0.4kV or 33/11kV voltage level. The work against these issued certificates should be completed in last Six years from the date of bid submission.

In case the bidder has a previous association with Tata Power Group Companies for similar products and services, the performance feedback for that bidder by Tata Power Group Companies User Group shall only be considered irrespective of performance certificates issued by any third organization.

6. The bidder shall have **servicing, repairing, testing & refurbishment facility** with necessary spares and testing equipment for providing prompt after sales service for Mobile Substation. Details of the set-up available shall be brought out in the offer, failing which the offer will be liable for rejection.

The bidder shall submit undertaking along with the bid confirming compliance.



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Preferential norms for Odisha MSMEs as mentioned hereunder shall also be applicable

Tender Fees:

To participate in the tender, MSMEs registered in the State of Odisha shall pay Rs.1,000/- including GST towards the cost of tender paper.

Earnest Money Deposit (EMD):

EMD shall be exempted for MSME registered in the State of Odisha. However, Bidder shall be barred to participate in the tendering process for a period of 2 years in case it backs out post award of the contract.

Qualification Requirement for Open Tenders:

Qualification Requirement of Financial Turnover for MSME registered in the State of Odisha shall be reduced to 20% of the existing criteria.

For Technical Qualification, instead of relying on the volumes/value of earlier Supplies / Projects, assessment of the Bidder shall be done on the basis of feedback from Customers. Past performance experience at Tata Power and its Group Companies shall supersede feedback from other Customers.

Performance Bank Guarantees:

Performance Bank Guarantee for MSME registered in the State of Odisha shall be 25% of the value normally prescribed.

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, TPSODL 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 TPSODL. This includes all bidding information submitted to TPSODL. All tender documents remain the property of TPSODL and all suppliers are required to return these documents to TPSODL upon request. Suppliers who do not honor these confidentiality provisions will be excluded from participating in future bidding events.

2. Evaluation Criteria

- The bids will be evaluated technically in compliance to tender terms and conditions.
- The bid will be evaluated commercially **on the overall all-inclusive lowest cost for the complete tender BOQ** as calculated in Schedule of Items [Annexure I in tender document].
- TPSODL also, reserves right to split the order 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 against each item of Schedule of Items [Annexure I]. Failing to do so, TPSODL may reject the bids.
- It is intended to award the contract to a single bidder. Maximum 03 nos. of eligible bidders (L-1 to L-3) shall be allowed in RA process. Balance bidders i.e. L4, L5 & and so on, would not be allowed to participate in the RA process.

NOTE: In case of a new bidder not registered, factory inspection and evaluation may be carried out to ascertain bidder's manufacturing capability and quality procedures. However, TPSODL 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 TPSODL shall be final and binding on the bidder in this regard.

2.1 Price Variation Clause: Price variation clause will be applicable only on Power Transformer.

PV Clause as per IEEMA Circular (*IEEMA/PVC/DIST_CU_Above 2.5 MVA/2021*).

2.2 Quantity variation Clause: There will not be any guarantee on quantity of job. Job has to be carried out on as and when required basis order from TPSODL on the quantity to be specified in the order.

3. Submission of Bid Documents

3.1 Bid Submission

Bidders are requested to submit their offer in line with this Tender document through e-tendering process. Please note all future correspondence regarding the tender, bid submission, bid submission date extension, etc. will happen only through TPSODL E-Tender system (Ariba).

All communication will be done strictly with the bidder who have done the above step to participate in the Tender.

Bids shall be submitted in 3 (three) parts:

FIRST PART: "EMD" as applicable shall be submitted. ***The EMD of Rs. 2,00,000 (Rupees Two Lakhs Only) shall be valid for 210 days from the due date of bid submission in the form of Bank Guarantee / Bank Draft / Bankers Pay Order (issued from a Scheduled Bank) online NEFT/ RTGS transfer favoring "TP Southern Odisha Distribution Limited" payable at Berhampur.*** The EMD has to be strictly in the format as mentioned in General Condition of Contract, failing which it shall not be accepted by TPSODL and the bid as submitted shall be liable for rejection.



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A separate *non-refundable tender fee of Rs. 5000.00 (Rupees Five Thousand only)* of stipulated amount also needs to be transferred online through NEFT/ RTGS in case the tender document is downloaded from our website.

TPSODL Bank Details for transferring Tender Fee and EMD is as below:

Beneficiary Name : TP Southern Odisha Distribution Limited.
Account No : 625901010050070
Name of the Bank : Union Bank of India, Kamapalli Branch, Berhampur
IFSC Code : UBIN0562599

Note- EMD is preferred in form of Bank Guarantee and to be delivered at the following address. However, in view of present situation if Bidder is finding it difficult to make and submit BG for EMD amount, they can do online transfer of EMD amount in the above-mentioned Account and submit proof of the same as part of Bid Submission.

Please note that in such case, Tender Fee and EMD should be strictly 2 separate transactions.

Please note as return of EMD from Bank Account is non-standard practice the same may take more time than return of EMD BG.

EMD Original Hard Copy shall be delivered at the following address in Envelope clearly indicating Tender Reference/ Enquiry Number, Name of Tender and Bidder Name

Chief (Contracts & Store)
TP Southern Odisha Distribution Limited
Khodasingi | 2nd Floor, BPR North Star | Berhampur – 760010
District - Ganjam | Odisha | India

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 TPSODL E-tender System (Ariba) only. Hard Copy of Technical Bids not to be submitted.

THIRD PART: “PRICE BID” shall contain only the price details and strictly in format as mentioned in Annexure I along 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 TPSODL E-Tendering system (Ariba) only. Hard copy of Price Bid not to be submitted



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The EMD in the form of Bank Draft / BG / Bankers Pay Order shall be submitted in original hard copy and then placed in sealed envelope which shall be clearly marked as below:

EMD

“Purchase Order for Supply of Trailer Mounted Mobile Power Substation at TPSODL”

AT TPSODL, ODISHA The Bid prepared by the Bidder, and all correspondence and documents relating to the Bid exchanged by the Bidder and the TPSODL, shall be written in the English Language. Any printed literature furnished by the Bidder may be written in another Language, provided that this literature is accompanied by an English translation, in which case, for purposes of interpretation of the Bid, the English translation shall govern.

SIGNING OF BID DOCUMENTS:

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 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

All the bidders are requested to send their pre-bid queries (if any) against this tender through e-mail within the stipulated timelines. The consolidated reply to all the queries received shall be posted on TPSODL website by the stipulated timelines as detailed in calendar of events.

Communication Details:

Name: Mr. Chandra Sekhar Sahoo
Contact No: 7894441407
E-Mail ID: chandra.sahoo@tpsouthernodisha.com

Head – Procurement

Name: Mr. Manoj Kharbanda
Contact No: 9971395197
E-Mail ID: manoj.kharbanda@tpsouthernodisha.com

Chief – Contract and Stores

Name: Mr. Subrata Dey
E-Mail ID: subrata.dey@tpsouthernodisha.com

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 TPSODL. 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.

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

The EMD shall be denominated in any of the following form:

- Banker's Cheque/ Demand Draft/ Pay order drawn in favor of TP Southern Odisha Distribution Limited payable at Berhampur.
- Online transfer of requisite amount through NEFT/ RTGS.
- Bank Guarantee valid for 210 days after due date of submission.



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The EMD shall be forfeited in case:

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

Or

- b) The successful Bidder does not
a) accept the Purchase Order/Rate Contract, or
b) furnish the required Performance Security Bank Guarantee

3.9 Type Tests (if applicable)

The type tests specified in TPSODL 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 TPSODL.

4 Bid Opening & Evaluation process

4.1. Process to be confidential.

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

4.2. Technical Bid Opening

Bids will be opened at TPSODL Office, Berhampur. All tender bids shall be opened internally by TPSODL. Presence of any bidder will not be allowed during bid opening process. Technical bid must not contain any cost information whatsoever.

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, the technical bid of the bidders who have furnished the requisite EMD will be opened, one by one.

4.3. Preliminary Examination of Bids/Responsiveness

TPSODL 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. TPSODL 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.



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Prior to the detailed evaluation, TPSODL 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 TPSODL 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, TPSODL may, at its discretion, ask the Bidder for a clarification on its Bid for any deviations with respect to the TPSODL 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 TPSODL.

4.5. Price Bid Opening

Price bids will be opened internally without the presence of any bidder representative. 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 TPSODL without any further correspondence in this regard.

4.6. Reverse Auctions

TPSODL 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 Award Decision

TPSODL 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 3.2 above. The decision to place purchase order/LOI solely depends on TPSODL on the cost competitiveness across multiple lots, quality, delivery and bidder's capacity, in addition to other factors that TPSODL may deem relevant.

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

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

6 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 (Annexure VII)
5. Technical Specifications (Annexure II)
6. Acceptance Form for Participation in Reverse Auction (Annexure VI)
7. General Conditions of Contract (Annexure VIII)

7 Post Award Contract Administration

7.1. Special Conditions of Contract (SCC):

- **Purchase Order shall be issued to successful Bidder.**
- TPSODL appreciates and welcomes the engagement/employment of persons from SC/ ST community or any other deprived section of society by their BAs.
- Post award of rate contract, Business Associate (BA) shall submit applicable Performance Bank Guarantee as per GCC within 30 days. **Performance Bank Guarantee amounting to 10% of the Purchase Order Value** shall be submitted by the BA as per GCC for a period equivalent to warranty Period plus one month. In case of non-submission of CPBG, equivalent amount corresponding to applicable BG value against 100% contract value shall be deducted from first invoice.
- Any change in statutory taxes, duties and levies during the contract period shall be borne by TPSODL. However, in case of delay in work execution owing to reasons not attributable to TPSODL, any increase in total liability shall be passed on the Bidder, whereas any benefits arising owing to such statutory variation in taxes and duties shall be passed on TPSODL.
- MDCC is applicable
- All the terms and conditions of TPSODL GCC-Supply shall be applicable.
- TPSODL shall short close the issued Release Order/Rate contract, in case of any quality issues.
- Delivery period shall be 120 days from date of PO/ GTP approval whichever is later.
- The location of material delivery shall be Berhampur, Odisha.
- Bidders to ensure that their GST registration is valid during validity of contract. Any violation, in this regard may lead to contractual consequences not limited to blacklisting but also payment will be blocked for the works executed.

7.2 Drawing Submission & Approval:

The relevant drawings and GTPs need to be submitted within two weeks of receipt of Purchase Order by the successful bidder to TPSODL for approval. In case, re-submission of drawings is required on request of TPSODL, same needs to be submitted back to TPSODL within 5 days of such request.

7.3 Guarantee Period:

36 months from the date of commissioning or 48 months from the date of last supplies made under the contract, whichever is earlier.

7.4 Delivery/Completion Timeline:

Delivery period shall be 120 days from date of PO/ GTP approval whichever is later.

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 TP Southern Odisha Distribution Limited to Invoice Desk.

Post submission of an error-free and verified invoice (s), **payment shall be released within 45 days.**

The invoice must be in the name of TP Southern Odisha Distribution Ltd. with correct GST No. BA must submit the invoice at the BIRD Counter of TPSODL, located at:

TP Southern Odisha Distribution Limited
Corporate Office, Courtpeta
Berhampur-760004

Below are the check points while receiving the invoice from Vendor.

- a. Tax Invoice must be written if GST is charged. (Invoice/Bill will not be accepted)
- b. HSN or SAC Code is mandatory if Tax invoice is being issued.
- c. Original for Recipient should be written if original invoice is being submitted.
- d. Company Name and Address with state code should be mentioned properly. "TP Southern Odisha Distribution Limited
- e. Invoice number must be within 16 Digit.
- f. Invoice Date must be mentioned.
- g. GST and PAN of both supplier and TPSODL must be mentioned.
- h. E-Invoice is mandatory if BA's turnover is above Rs 10 Cr. (Manual Invoice won't be processed) w.e.f. from 1st August, it will be Rs 5 Cr.
- i. Bank Details should be written on the invoice (Optional)

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. Please refer attached Environment Policy and Sustainability Policy, Annexure-XI for more details.

7.7 Ethics:

TPSODL is an ethical organization and as a policy TPSODL 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.

TPSODL 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.



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- 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.
- 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 Tata Code of Conduct (TCOC) attached at Annexure X for more information.

Any ethical concerns with respect to this tender can be reported to the following e-mail ID:

mpkulkarni@tpsouthernodisha.com

8. Specification and standards

As per Annexure II

9. General Condition of Contract

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

10. Safety:

All jobs are this tender have to be executed strictly in compliance to the Safety terms and Conditions of TP Southern Odisha Distribution Limited. Please refer attached Safety terms and conditions, Annexure-IX, for details. Violation of Safety norms will result in Penalty as mentioned in the above document.

ANNEXURE I

Schedule for Items

Table -I

Sl. No	Item Description	Qty	UOM	HSN Code	Unit Price (Rs.)	GST (Rs.)	All Inclusive Unit Price (Rs.)	Total all Inclusive Price (Rs.)
		A			B	C	D = B+C	E= AXD
1	Trailer Mounted Substation comprising of Power Transformer 3.15MVA 33/11KV Mobile PSS. (including PTR also)	01	EA					
2*	3.15 MVA 33/11kV Power Transformer	01	EA					

*Separate price of Power Transformer is required only to apply the PV Clause.

Note:

- The bid will be evaluated commercially **on the overall all-inclusive lowest cost for the complete tender BOQ** as calculated in Schedule of Items [Annexure I in tender document].
- 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.
- HSN/SAC codes must be mandatorily provided wherever necessary.
- The unit price with GST in column no. “D” of Annexure-I shall be FOR TPSODL Berhampur Location & inclusive of Transit Insurance, Packing and Forwarding charges and shall be inclusive of unloading at TPSODL Berhampur Central Store.
- A tentative BOQ is mentioned in Annexure-I, table-II which has to be filled mandatory by each Bidder. Anything missed out or not specifically mentioned in the tender BOQ (Table no -II) but required for successful completion of the job has to be provided by the bidder and to be built in the prices.

Signature & Seal of the Bidder

Table – II (Tentative BOQ):

SL No.	ITEM DESCRIPTION	UOM	Qty	Unit Price (Rs.)	All Inclusive Unit Price (Rs.)	Total all Inclusive Price (Rs.)
1	3.15 MVA 33/11KV Power Transformer	No	1			
2	RMU 11kv 4 Way 630A BKR O/D	No	1			
3	RMU 33kv 3 Way 630A BKR O/D (4 way)	No	1			
4	33kv, 3Core, 300sqmm, XLPE insulation	mtr	40			
5	Heat shrinkable jointing kit for 3Cx300 mm ² 33KV XLPE Cable (outdoor type)	Set	1			
6	33kv LA (30 KV, 10KA) (Station Class, Class-2)	No	1			
7	11kv, 3Core, 150sqmm, XLPE insulation	mtr	160			
8	Heat shrinkable jointing kit for 3Cx150 mm ² 11KV XLPE Cable (outdoor type)	Set	1			
9	ACDB & DCDB, Lightning distribution boards in 33/11 KV s/s	No	1			
10	Covered conductor,120 mm ² , 33Kv	Mtr	30			
11	Covered conductor,99 mm ² , 11Kv	Mtr	30			
12	11kv LA (12KV,10KA) Station Class	No	3			
13	33kv LA (30 KV, 10KA) (Station Class, Class-2)	No	3			
14	Battery 24V/100AH, Maintenance free VRLA Battery (set 2nos 12V)	No	2			
16	24V,100A Float cum Boost charger (Float/Boost current as per above VRLA Battery)	No	1			
17	100 KVA,33/0.4 KV(Cu) Transformer, IS Energy level-II	No	1			
18	TATA Vehicle with Trolley	No	1			
19	Nut Bolt	Kg	40			
20	MS Channel	Kg	250			
21	Hydraulic operating Cabel Drum	No	2			
22	Cable, Rubber Mat, Copper Braid and Other Accessories	LS	1			



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ANNEXURE II

Technical Specification:

Attached Separately in the tender document.



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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 TPSODL'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:

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 GST	Yes / No (If Yes, indicate % rate)
1d.	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 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'n No.)

Seal of the Bidder:

Signature:

Name:



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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 tender	
3	Signed copy of this tender 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 if applicable	
16	Client Testimonial/Performance Certificates if applicable	
17	Credit rating/solvency certificate if applicable	
18	Undertaking regarding non blacklisting (On company letter head)	
19	List of trained/untrained Manpower	
20	Drawings/Documents mentioned in Sr no. 18 of the specification	

Seal of the Bidder:

Signature:

Name

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 fairer and more transparent, TPSODL 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. TPSODL 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. TPSODL will make every effort to make the bid process transparent. However, the award decision by TPSODL would be final and binding on the supplier.
3. The bidder agrees to non-disclosure of trade information regarding the purchase, identity of TPSODL, 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 TPSODL.
6. In case of intranet medium, TPSODL shall provide the infrastructure to bidders. Further, TPSODL 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 outrightly rejected by TPSODL.
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 TPSODL 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 auction event shall be considered by TPSODL.
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



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Annexure – VII

Scope of Work

Supply of Trailer Mounted Mobile Power Substation at TPSODL as per annexure – I.

Price variation Clause of Copper Wound Transformer

(Rating above 2,500kVA and Voltage Class up to 33 kV)

The price quoted/Confirmed is based on the input cost of raw materials/components and labour cost as on the date of quotation and the same is deemed to be related to process of raw materials and all India average consumer price index number for industrial workers as specified in the price variation clause given below. In case of any variation in these prices/indices, the price payable shall be subjected to adjustment, up or down in accordance with the following formula:

$$\mathbf{P = P0/100 * (8 + 40*(C/C0) + 24*(ES/ES0) + 8*(IS/IS0) + 4*(IM/IM0) + 8*(TO/TO0) + 8*(W/W0))}$$

Wherein,

P = Price payable as adjusted in accordance with above formula

P0= Price quoted/ Confirmed

C0= Price of CC copper rods (refer notes)

This price is as applicable for the month, **ONE** month prior to the date of tendering.

ES0= Price of CRGO Electrical steel Lamination (refer notes)

This price is as applicable for the month, **ONE** month prior to the date of tendering.

IS0= Price of MS Plate of 6 mm thickness (refer notes)

The price is as applicable for the month, **ONE** month prior to the date of tendering.

IM0= Price of insulating materials (refer notes)

This price is as applicable for the month, **ONE** month prior to the date of tendering.

TO0= Price of transformer oil (refer notes)

This price is as applicable for the month, **ONE** month prior to the date of tendering.

W0= All India average consumer price index number for Industrial workers, as published by the Labour Bureau, Ministry of Labour, Govt. of India (Base: 2016=100)

This index number is as applicable for the month, **THREE** months prior to the date of tendering.

For Example, if date of tendering falls in December 2021, applicable prices of Copper (C0), Transformer Oil (TO0) CRGO Steel Sheets (ES0), MS Plate (IS0) and Insulating material (IM0) should be as on 1st November 2021 and all India average consumer price index no (W0) should be for the month of September 2021.

C= Price of CC copper rods (refer notes)

This price is as applicable for the month, **ONE** month prior to the date of delivery.

ES= Price of CRGO Electrical steel Lamination (refer notes)

This price is as applicable for the month, **ONE** month prior to the date of delivery.

IS= Price of MS Plate of 6 mm thickness (refer notes)

The price is as applicable for the month, **ONE** month prior to the date of delivery.

IM= Price of insulating materials (refer notes)

This price is as applicable for the month, **ONE** month prior to the date of delivery.

TO= Price of transformer oil (refer notes)


This price is as applicable for the month, **ONE** month prior to the date of delivery.

W0= All India average consumer price index number for Industrial workers, as published by the Labour Bureau, Ministry of Labour, Govt. of India (Base: 2016=100)

This index number is as applicable for the month, **THREEE** months prior to the date of delivery.


For example, if date of delivery in terms of clause given below falls in December 2022, applicable prices of Copper (C), Transformer Oil (TO), MS Plate (IS), CRGO Steel Sheets (ES) and Insulating material (IM) should be as on 1st November 2022 and all India average consumer price index no (W) should be for the month of September 2022.

The date of delivery is the date on which the transformer is notified as being ready for inspection/dispatch (in the absence of such notification, the date of manufacturer's dispatch note is to be considered as the date of delivery) or the contracted delivery date (including any agreed extension thereto), whichever is earlier.

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	TECHNICAL SPECIFICATION	
Doc. Title	Technical Specification for Mobile Trailer Mounted 3.15 MVA Power Transformer	
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Rev. No	00	Page 1 of 54
Prepared by: TAMAL ADITYA	Reviewed By: SHAILENDRA KUMAR JAISWAL	Approved By: SHIRISH SHARAD DIKAY

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1. SCOPE

This specification covers the technical requirements of design, manufacture, testing at manufacturer's works, packing, forwarding, supply and mobilize at store/site and performance of Trailer Mounted Substation comprising of Power Transformer, 33kV RMU, 11kV RMU, 33kV and 11kV Cable Reeling Arrangement with Drum and one 33kV meter box. Design shall be such that the trailer shall fit following major equipment and accessories mentioned in this specification: -

- 33kV 3-way RMU
- Power Transformer, 33kV/11kV
- 11kV 3-way RMU
- Truck-Trailer with 2 to 3 Axel arrangements.


Along this 33kV and 11kV HT Power Cables and Cable Reeling Arrangement with Drum to be provide separately. It is not the intent to specify completely herein all the details of technical design and construction of material. However, the material shall conform in all respects to high standards of engineering, design and workmanship and shall be capable of performing in continuous commercial operation in manner acceptable to TPSODL, who will interpret the meanings of drawings and specification and shall have the power to reject any work or material which, in his judgment is not in accordance therewith. The offered material shall be complete with all components necessary for their effective and trouble free operation. Such components shall be deemed to be within the scope of Bidder's supply irrespective of whether those are specifically brought out in this specification and/or the commercial order or not.

Above Technical specification shall be provided to bidder along with tender documents


2. APPLICABLE STANDARDS

The equipment covered by this specification shall unless otherwise stated, be designed, manufactured and tested in accordance with the latest editions of the following Indian, International Standards and shall conform to the regulations of the local authorities:


Sl.No	Reference Standard	Reference Standard Name
1	IS 5	Specification for Colors for Ready Mixed Paints and Enamels
2	IS 104	Specification for ready mixed paint, brushing, zinc chrome, priming
3	IS 335	Specification for New insulating oils

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4	IS 649	Methods for testing steel sheets for magnetic circuits of power Electrical apparatus.
5	IS 1576	Solid Pressboard for Electrical Purposes - Specification
6	IS 2026	Specification for Power Transformers
7	IS 2099 / IEC-61037	Specification for Bushings for Alternating Voltages Above 1000 Volt
8	IS 2362	Determination of Water content in oil by Karl in oil Fischer Method- Test Method
9	IS 2544	Specification for Porcelain post insulators for systems with nominal Voltage Greater than 1000V
10	IS 2705	Specification for Current Transformers
11	IS 3401	Specification of Silica Gel
12	IS 3637/ IEC-364	Specification for gas operated relay (Buchholz relay).
13	IS 4253: Part II	Specification for cork composition sheets - Part II: Cork and Rubber
14	IS 4257 (PART I)	Dimensions for Clamping Arrangements for Porcelain Transformer Bushings - Part I : For 12 kV to 36 kV Bushings
15	IS 5082	Specification for Wrought Aluminum and Aluminum Alloy Bars, Rods, Tubes, Selection, Plates and Sheets for Electrical purposes
16	IS 5561	Specification for Electric Power Connectors
17	IS 6103	Specification for Method of Testing of specific resistance (Resistivity) of electrical insulating liquids
18	IS 6262	Method of test for power factor and dielectric constant of electrical Insulating liquids
19	IS 6600	Guide for Loading of Oil-immersed Transformer.
20	IS 6792/ IEC-156	Method for Determination of Electric Strength of Insulating Oil
21	IS 8468	On-load tap changers
22	IS 8603 (PART-1)	Dimensions for Porcelain Transformer Bushings for Use in Heavily Polluted Atmospheres - Part I: 12 kV, 17.5 kV, 24 kV and 36 kV Bushing
23	IS 9335	Specification for Cellulosic Papers for Electrical Purposes
24	IS 10028:	Code of Practice for Selection, Installation and Maintenance of Transformers
25	IS 12444	Specification for Continuously Cast and Rolled Electrolytic Copper Wire Rods for Electrical Conductors.
26	IS 13964	Methods of Measurement of Transformer and Reactor Sound level
27	IS 3639	Specification for fitting & accessories of Power Transformer
28	IS 1866	Code of practice for maintenance of transformer oil
29	IEC 60156	Insulating liquids - Determination of the breakdown voltage at Power frequency - Test method

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30	IS 2074	Ready Mixed Paint, Air Drying, Red Oxide Zinc Chrome, Priming – Specification
31	IS 2932	Enamel, Synthetic, Exterior: (a) Undercoating (b) Finishing – Specification
32	IEC 60296	Specification for unused mineral insulating oils for transformers And switchgear
33	IEC 60529	Degrees of protection provided by enclosures (IP Code)
34	IEC 60437	Radial Interference test on high-voltage insulator
35	IEC 61936-1	Power Installation exceeding 1kV
36	C.B.I.P Publication	Manual on Transformers
37	IEC 62271-200	HV switchgear and control gear-AC Metal Enclosed switchgear and control gear for voltages above 1 kV and upto and including 52kV .
38	IEC 62271-1	Common specifications for high voltage switchgear and control gear standards
39	IEC 62271-102	HV switchgear and control gear-Alternating current disconnectors and earthing switches
40	IEC 62271-103	High voltage switches — Part 1: Switches for rated voltages above 1 kV and less than 52 kV
41	IEC 60529.	Degrees of protection provided by enclosures (1P Code)
42	IEC 62262	Degrees of protection provided by enclosures for electrical equipment against mechanical impacts (IK Code)
43	IEC 60060	High-voltage test techniques
44	IEC 60947 /IS 13947	Low voltage switchgear and control gear
45	IEC 60439-1	Low-voltage switchgear and control gear assemblies- Type tested and partially type tested assemblies
46	IEC 60255-151	Electrical relays - Part 3: Single input energizing quantity measuring relays with dependent or independent time.
47	IEC 60044-1 / IS 2705	Current Transformers
48	IEC 60044-2 / IS 3156	Voltage Transformers
49	IEC 60376	Specification of technical grade sulfur hexafluoride (SF6) for use in electrical equipment
50	IEC 61958	High-voltage prefabricated switchgear and control gear assemblies - Voltage presence indicating system
51	EPR type IE- 3 to IS: 6380/84	Specification for Elastomeric Insulation and Sheath of Electric Cable
52	ARAI	Automotive Research Association of India.
53	IS 9968 (Part-2) 2002	Specification of Elastomer Insulated cables


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3. CLIMATIC CONDITIONS OF THE INSTALLATION:

SL. NO.	CONDITONS	VALUES
1	Max. altitude above sea level	1200m
2	Max. Ambient Temperature	50 °C
3	Max. Daily average ambient temp	35 °C
4	Min Ambient Temp	0 °C
5	Maximum temperature attainable by an object exposed to sun	60 °C
6	Maximum Humidity	95%
7	Minimum Humidity	10%
8	Average No. of thunderstorm days per annum	70
9	Average Annual Rainfall	150 cm
10	Average No. of rainy days per annum	120
11	Thermal Resistivity of soil	150 Deg. Ccm/W
12	Wind Pressure	126 kg/sq. m up to anelevation of 10m
14	Earthquakes of intensity in horizontal direction	equivalent to seismic acceleration of 0.3g
15	Earthquakes of intensity in vertical direction	equivalent to seismic acceleration of 0.15g
16	Wind velocity	300 km/hr.


Environmentally, some of the regions, where the work will take place include 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 for outdoor insulators. Some places are in heavily industrial polluted areas. Therefore, Outdoor material and equipment shall be designed and protected for use in exposed, heavily polluted, salty, corrosive and humid coastal atmosphere.

The atmosphere is generally laden with mild acid and dust in suspension during the dry months and is subjected to fog in cold months. The design of equipment and accessories shall be suitable to withstand seismic forces corresponding to an acceleration of 0.1 g.

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4. GENERAL TECHNICAL REQUIREMENTS:


SL. No.	Description	Desired Value
A. Truck-Trailer		
1	Application	Outdoor
2	Rated voltage	33kV
3	Service voltage	36kV
4	Wheels for trailer	Twelve or Sixteen number
5	Platform	Flat platform with arrangement for fixing of Power Transformer, 33kV and 11kV, 3way (1CB + 2LBS / 2CB + 1LBS)
6	Main chassis	To be designed as per Load
7	Shock Absorber	To be designed as per Load
8	Platform	To be designed as per Load
9	Portable Stool	A double/triple step portable stool (chequered plate with angle support) shall be provided for movement from ground level to trailer platform
10	HT 33kV and 11kV Cable Arrangement	To be provided separately
11	Tyres	12/16 number to bear the assembly (Power Transformer, 33kV and 11kV RMU Panel, Self-weight of trailer and load of workman with accessories)
12	Accessories	Following shall be provided: 2 no. Stepney Wheel replacing kit Air pressure gauge with pump
13	Jacking	4 nos. Hydraulic Jacks shall be provided on four corners. Heights shall be Controllable.
14	Vibration Pad	Required vibration pads shall be provided to avoid any vibration during transportation/operation
15	Axel	Two-Three number to bear the assembly (Power Transformer, 33kV and 11kV RMU Panel, Self-weight of trailer and load of workman with accessories)
16	Suspension	To be designed as per Load
17	Paint	PENTON E2727C/ RAL7032 (Min 80 Microns)
18	Dimensions of platform (+10% tolerances allowed)	Length – 28ft
19	Platform Water drain	The platform shall be designed in such way that any rain water or oil on platform shall drained out properly from platform via opening & pipe arrangement such that it should not spread on other parts.
20	Danger plate & TPCODL/TPNODL/TPSODL/TPWODL name plate	33kV Danger plates & TPSODL plate to be put on all four side.

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21	Reflective tape	Red colour reflective tape to be fixed on all sides of platform from outside and toe arm	
B. RMU			
		33kV	11kV
1	Type of break	SF6	SF6
2	Rated Voltage	36kV	12kV
3	Nominal System voltage	33kV	11kV
4	Rated Current	630 A	630 A
5	Power Freq. withstand Voltage	70kVrms	28kVrms
6	Impulse Withstand Voltage	170kVp	75kVp
7	Rated Frequency	50 Hz	
8	Number of Phases	3	
9	Rated Short time withstand Current (3 sec)	20KA	21kA
10	Rated Short time making Capacity	50kA	
11	Panel height	As per Type Tested Design	
12	Panel Depth	As per Type Tested Design	
13	Panel Width	As per Type Tested Design	
14	Structure	2mm high tensile/CRCA sheet with Powder painting RAL:7032	
15	Installation	Indoor & Outdoor	
16	Cable termination	Bottom In / Back Side Out	
17	Degree of Protection	IP 54	
19	Interrupting Medium	Vacuum for CB & SF6 for LBS and earth switch	
21	No. of Poles	Three	
C. POWER TRANSFORMER			
		3150kVA	
1	Application	Outdoor	
2	Continuous rated capacity	3150 kVA	
3	System voltage (max.) HV	36 kV	
4	System voltage (max.) LV	12 kV	
4	Rated voltage HV	33 kV	
5	Rated voltage LV	11 kV	
6	Line current HV	55.11 A	
7	Line current LV	165.33 A	
8	Frequency	50 Hz(+/- 5%)	
9	No. of Phases	Three	
10	Connection HV	Delta	
11	Connection LV	Star (Neutral Brought out)	
12	Vector group	Dyn-11	
13	Type of cooling	ONAN	

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14	Tap changing arrangement (off load)	+5.0% to –15% in steps of 2.5%
15.	Noise level at rated voltage and frequency	56 dB
16	Permissible temperature rise over ambient of 50°C	
	i) Of top oil measured by thermometer	45 Deg.C
	ii)Of winding measured by resistance	55 Deg.C
	Losses	
17	No Load Loss (fixed losses) kW	3
18	Load Loss at 75°C kW	16
19	Percentage impedance voltage on normal tap at Base MVA (Tolerance shall be as per IS 2026 Part-1, Clause-9, Table-1)	6.25%
20	Insulation Class	A
21	Overvoltage operating capability and duration	112.5% of the rated voltage (continuous)
22	Maximum flux density	1.6 Tesla
23	Impulse withstand voltage	33kV: 170 kVp 11kV: 95 kVp
24	Power frequency withstand voltage	33kV: 70 kVrms 11kV: 28 kVrms
25	Maximum Current Density	2.4A/mm ²
26	Voltage fluctuations permissible	+10% to -10%
27	Neutral terminal	Neutral Bushing shall be in LV Box of Transformer (Two separate brought out neutral from main neutral bus bar, One for taking out the neutral for 4 wire system with openable links and other additional neutral for solid earthing to be taken out of platform on both sides with min. 500mm extension below the platform for connection)
28	Bushing HT	36kV Bushing Top Mounted (Bushing will be connected to LBS/CB Panel as Cable Type arrangement)
29	Bushing LV	17.5kV Bushing Side Mounted (Bushing will be connected to LBS/CB Panel as Cable Type arrangement)
30	Minimum clearances in Cable Box HV a) HV phase to phase/ phase to earth (mm)	400/320

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	b) LV phase to phase/ phase to earth (mm)	280/140
31	WTI CT for LV side (Class= 0.5, Burden= 30VA, ISF<10)	166/1A
32	HT Cable	1 Run, 36 KV, 3Cx50 sq.mm, EPR or suitable Cu Cable suitable for reeling and unreeling application.
		1 Run, 12 KV, 1Cx120sq.mm EPR or suitable Cu Cable suitable for reeling and unreeling application.

5. GENERAL CONSTRUCTIONS:


The trailer mounted substation is designed to comprise the following main components:

- 33 KV motorized Ring Main Units 3 way with Metering panel & all other accessories
- Power Transformer, 33kV/11kV
- 11kV 3-way RMU
- Truck-Trailer with 2 to 3 Axel arrangements.


33kV and 11kV HT EPR or suitable Power Cables along with Cable Reeling Arrangement with Drum to be supplied separately. Other equipment's/Accessories shall be as per specification.

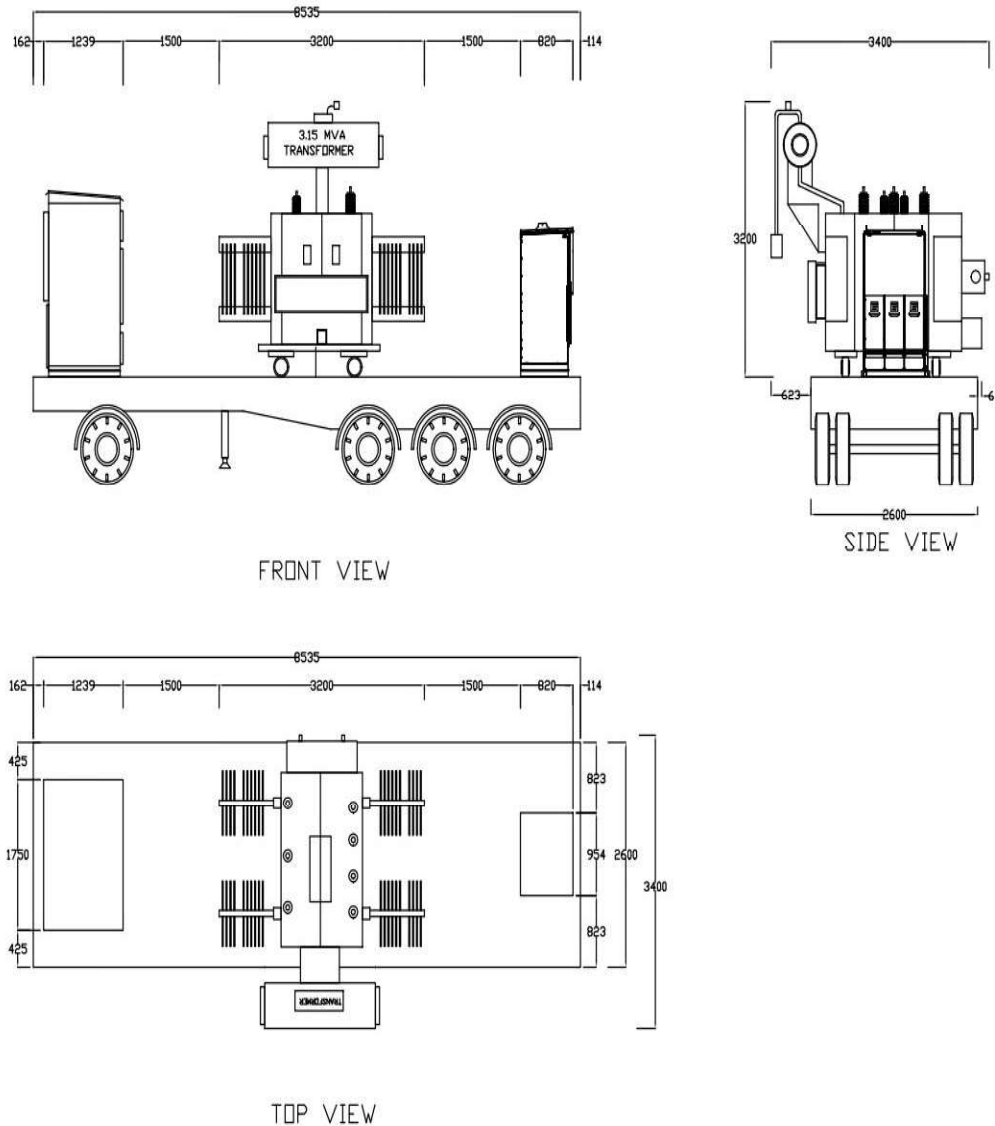
5.1 i)TRAILER & EQUIPMENT ARRANGEMENT

- a) Twelve-wheel / Sixteen-wheel trailer with platform having arrangement for fixing of Power Transformer, HV Switchgear and LV switchgears (33kV and 11kV RMU).
- b) The base of equipment shall ensure rigidity for easy transport and installation.
- c) The LBS having cable connection at both end is connected with circuit breaker through bus bar.
- d) The transformer shall be of 33/11kV, Cu. Winding Distribution transformer as per TPSODL latest specification.
- e) A double/triple step portable stool (chequered plate with angle support) shall be provided for movement from ground level to trolley platform
- f) The 33 KV motorized Ring Main Units 3 way with Metering panel, 11kV 3-way RMU, Power Transformer, 33kV/11kV, 3150KVA, EPR or suitably power cable both 33kV & 11kV grade of size 36 KV, 3Cx50 sq.mm & 12 KV, 1Cx 120sq.mm (4Nos.) with motorized and manual cable reeling arrangement. In case of any jerk and vibration during movement of vehicle cable connections should not be loosed or displaced.

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- g) Other auxiliary components of trailer and interconnections required for the complete operation of the sub-station to be provided.
- h) All side walls and doors to be provided with pad lock arrangement. All side walls shall have Heavy duty hinges such that they are not removable.
- i) Truck-Trailer arrangement should be ARAI (Automotive Research Association of India) certified.
- j) Pulling arrangement shall be truck-trailer type.
- k) Stopper arrangement on four corners of the trailer shall be provided.
- l) Twelve wheel/Sixteen wheel trailer shall be designed to carry the load of all equipment installed on the trailer, weight of trailer, weight of cable, structures and additional 500 kg shall be considered during design of load bearing capacity of each wheel. Load bearing calculation shall be submitted during drawing approval stage.
- m) Provide 4 nos. hydraulic jacks on the four corners of the trailer. Trailer will stand on the jacks during operation stage. Design of trailer should be done so as to carry the total static load during operation and there should not be any vibration of trailer during operation.
- n) All ferrous parts shall be hot dip galvanized with heavy coating after proper surface treatment as per standards. Coating thickness shall not be less than 86 micron at any point.
- o) All nut bolt used must be stainless steel and of size not less than M10.
- p) Alert light shall be provided while Power Transformer and other equipment is in service.
- q) Proper lighting arrangement shall be provided on the trailer for night operation.
- r) Vibration pads shall be provided to avoid any vibration during operation/transport.
- s) No holes shall be left after final completion of the system.
- t) Cable cleating arrangement shall be provided.
- u) Tentative layout of the equipment

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ii) EARTHING:

- All non-current carrying parts of the sub-station equipment shall be earthed to a common earth conductor at two points with 50X8 sq mm GI strip. 4 nos. earthing terminals/studs shall be provided outside trolley two for neutral two for common earthing of all equipment on trailer.
- The diameter of the stud/hole shall be at least 12mm and shall be able to connect and terminate the external earth conductor. The connecting point shall be marked with the "Protective earth" symbol. Separate earthing conductor/strip shall be provided for transformer Neutral.

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iii) PAINT:

- All paint shall be applied on clean, dry surfaces under suitable atmospheric conditions by seven tank process and powder coating. The paint shall not scale off or crinkle or be removed by abrasion during normal handling. The enclosure for the sub-station shall be painted with shade TPSODL Blue, i.e. PENTON E2727C. Sufficient quantity of touch-up paint shall be furnished for application at site. Min. paint thickness shall be 80 micron.


iv) Galvanizing:

- The galvanizing shall be carried out by the hot dip process in accordance with latest IS. However, high tensile steel nuts, bolts & spring washers shall be electro-galvanized to service condition four. The zinc coating shall be smooth, continuous and uniform. It shall be free from acid spots and shall not scale, blister or removable by handling or packing. There shall be no impurity in the zinc or additives to galvanic bath, which could have a detrimental effect on the durability of the zinc coating.
- After galvanizing no drilling or welding shall be performed on the galvanized parts of the equipment except that nuts may be threaded after galvanizing.
- To avoid the formation of white rust, galvanized material shall be stacked during transport and stored in such a manner as to permit adequate ventilation. Sodium dichromate treatment shall be provided to avoid formation of white rust after hot dip galvanization.
- All hardware and nut bolts shall be of GI with minimum 86-micron thickness

5.2 RING MAIN UNIT (RMU)

i) GENERAL CONSTRUCTION FOR RMU

- a) The RMU shall be in an outdoor type panel, spring assisted & gang operated.
- b) Operating mechanism shall be designed in such way that all the three phases shall open and close simultaneously in smooth way.
- c) Equipment grounding shall be provided by bidder at two points with terminals. .
- d) It should have: -
 - i. Viewing window to analyze contact position.
 - ii. Space heater with thermostat.
 - iii. Indicating Lamps & illumination Lamp.
 - iv. Ingress Protection of IP54.
- e) Interlocks: -
 - i. Access to the HT LBS/CB feeder chamber is possible only after switching OFF the main switch.

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- ii. The inner door will not be able to open when Main switch is in ON condition.
- iii. The main switch and the earth switch are mechanically interlocked such that the earth switch can be switched ON only after main switch has been switched OFF & vice versa.


The switchgear and bus bar shall be contained in a stainless-steel tank filled with SF6 gas and the outer body shall be made of minimum CRCA of 2mm or GI high tensile steel 2mm thick with thick gland plates of 3mm. The sheet steel shall have surface treatment of 7 tank process with powder coating of minimum 70 microns. The tank shall have SS sheet of minimum 2mm thickness with internal Arc Type tested and meet the "sealed pressure system" criteria in accordance with the IEC 62271-200. This is a system for which no handling / refilling of gas shall be required throughout the expected operating life, i.e. 30 years. Sealed pressure systems are completely assembled, filled and tested in the factory. The maximum leakage rate of SF6 gas shall be lower than 0.1 % of the total initial mass of SF6 gas per annum. The filling pressure for the switchgear shall be just above the atmospheric pressure so as to reduce the tendency to leak. SF6 gas used for the filling of the RMU shall be in accordance with. IEC 376. It is preferable to fit an absorption material in the tank to absorb the moisture from the SF6 gas and to regenerate the SF6 gas following arc interruption. The degree of protection for RMU tank (Indoor/Outdoor) shall be IP 67. The mimic board shall be provided with IP2X /IP3X degree of protection for Indoor RMUs and protection for Outdoor RMUs shall be minimum IP 54.

The RMU shall be suitable for mounting on truck trailer with provision for cabling through gland plate. The RMU shall be designed so that the position of the different devices is visible to the operator on the front and operations are also visible. The RMU shall be identified by an appropriately sized label which clearly indicates the functional units and their electrical characteristics. The RMU shall be designed to be tamper proof so as to prevent access to all live parts during operation without the use of tools.

The RMU shall be completed with all connection and electrolytic copper bus bar with continuous current carrying capacity of 630A at 50 Deg C ambient. The bus bar shall be fully encapsulated by SF6 gas inside the steel tank. There shall be continuity between the metallic parts of the RMU and cables so that there is no electric field pattern in the surrounding air, thereby ensuring the safety of people. The earth bus bar shall be preferably enclosed in an enclosure to prevent theft/tampering.

All parts of main circuit to which access is required or provided shall be capable of being earthed prior to becoming accessible. This does not apply to removable parts which become accessible after being separated from the switchgear and control gear. The cables shall be earthed by an earth switch with short-circuit making capacity in compliance with IEC 62271-102. Circuit breaker shall not be closed in case Earth Switch is closed. The earth switch shall be fitted with its own operating mechanism and manual closing shall be driven, by a fast-acting mechanism, independent of operator action. Mechanical interlocking systems shall prevent access to the operating shaft to avoid all operator errors such as closing the earth switch when cable is charged.

Any accidental over pressure inside the sealed chamber shall be limited by the opening of a pressure limiting device provided in the rear part of the tank. Gas shall be released to the rear of the

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RMU away from the operator. Bidder shall provide type test report to prove compliance to the 'Internal fault IAC AFLR as per IEC 62271-200. An anti-reflex mechanism on the operating lever shall prevent any attempts to reopen immediately after closing of the switch-or earth switch. All manual operations shall be carried out on the front of the RMU. The instrument transformers (CT/PT) shall be required and to be incorporated in the drawing for discussion at the final stage.

5.2.1 Circuit Breaker for Transformer Local Feeder Control

The circuit breakers shall be of the maintenance free. The position of the power and earthing contacts shall be clearly visible on the front of the RMU. The circuit breakers shall have at least 2 positions: Open-disconnected and closed and shall be constructed in such a way that natural interlocks prevent all unauthorized operations. They shall be fully mounted and inspected in the factory. Breaker operation counter should be provided

An operating mechanism can be used to manually close the circuit breaker and charge the mechanism in a single movement. It shall be fitted with a local system for manual tripping by, an integrated push button. There will be no automatic re-closing. The operating mechanism shall be compatible for remote/SCADA operation. The circuit breaker shall be associated with an integrated protection unit that will operate without any auxiliary power supply and shall include three toroid transformers incorporated in the transformer tee-off bushings, an electronic self-powered relay, a low energy release, and a "fast-on" test receptacle for protection testing (with or without CB tripping). The protection system shall ensure circuit breaker tripping as of a minimum operating. current which is the rated current of the underground network to be protected. The CT settings shall be adjustable & Primary & Secondary Current and range to be decided by user at the time of issuance of tender as per site requirement. Protection core CT complete details should be furnished (Burden, class, ALF). The circuit breaker shall be provided with Phase protection of Definite time/ IDMT element for overcurrent and earth fault with minimum PSM-0.05, Tsm-0.01 having standard characteristics of Standard Inverse, Very inverse, Extremely Inverse as per IEC 60255-3 standard. The Earth Fault Protection shall be provided of. Definite time/ IDMT element having standard characteristics of Standard Inverse, Very inverse, Extremely Inverse as per IEC 60255-3 standard. The "Time Multiplier" with minimum set point of 0.05 TMS shall be available. The breaker shall have the provision of Numerical Relay for indication of Trip on Fault. High set (DT) for overcurrent and earth fault-min. current setting-0.5 In, minimum Time Delay-20 millisecond. The relays shall be suitable numerical relay with necessary elements or any other relay as per the Purchaser's approval. There shall be provision for testing of cable without opening the front door by suitable arrangements. In case cables are to be tested with front door open, doors shall have interlocks such that doors can be opened only with earth switch in closed position. Termination boots as approved by the Purchaser's should have a proper opening to facilitate the testing. The opening shall be covered by means of removable protection cap

In case of front door opened, it shall not be possible to operate the breaker. All panel covers shall be provided with anti-vandal screw bolts so that opening of panel covers is only possible with special tools, which shall be provided by the Bidder. This is required to prevent pilferage. The cable cover door shall be pad lockable and shall be Tamper and Arc proof. There shall be provision of hinged doors in the RMU. The circuit breaker and earth switch shall be lockable in the open or closed positions by 1 to 3 padlocks. Breaker shall have mechanical endurance of at least 2000 operations. The circuit breaker shall be compatible for remote operation and can close (ON) and open (OFF) by

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remote operation

5.2.2 Incomer Load Break Switches:

The Load break switches shall have positions, open-disconnected closed, and earthed, and will be constructed in such a way that natural interlocking prevents unauthorized operations. The position indicator shall provide positive contact indication in accordance with IEC 265-1 standard. In addition, manufacturer shall prove reliability of indication in accordance with IEC 129. The switches shall be fully mounted and inspected in the factory. Manual opening and closing will be driven by a fast-acting mechanism, independent of operator action. Mechanical Interlock should be provided for Earth switch, If cable is back charged Earth switch should not be closed. Each switch can be fitted with an electrical operating mechanism in a specially reserved location, without any modification of the operating mechanism and without de-energizing the RMU. Load break Switch should be operated manually & motorized

5.2.3 Bushings and Cable terminations:

Each cable compartment shall be provided_ with three-_ bushings _of adequate _sizes to terminate the incoming and outgoing cables along with a terminal block (TB) located at convenient accessible location so as to wire all inputs & outputs up to the terminal block (TB). The bushings shall be conveniently located for proper bend so as to allow easy working and termination of cables. The cable termination shall be done with Heat shrinkable /Push ON termination method so that adequate clearances are maintained between phases & cable shall be held by HDPE (fire retardant) cleat. 1 runs, of 3CX50 Sq. mm Cu cable shall be used for cable termination. (It shall be finalized during detailed engineering) All the cable secondary Wiring should 'be rooted through marshaling box separately for relay, CT etc. BA should provide bimetallic washer for tightening of cable.

5.2.3 Earthing:


The size of earth busbar of GI Strip (50x8 mm) shall be as per IEC/IS. Provision shall be made on end of RMU for connecting the earth bus to the earth grid by erecting suitable 2 earth pipes of 50mm dia. G.I rod of 3 meter in Pits. Both the earth pipes are also to be connected in a grid formation. Necessary terminal clamps and connectors shall be included in the scope of supply.

5.2.4 Voltage indicator lamps and phase comparators:

Each function shall be equipped with a fixed type voltage indicator box on the front to indicate whether or not there is voltage in the cables. The capacitive dividers Will supply low voltage power to the lamps. Three inlets can be used to check the synchronization of phases. These devices shall be following IEC 61958 standard.

5.2.5 Front Cover

The front cover shall provide a clear mimic diagram that indicates the different functions. The position indicators shall give a true reflection of the position of the main contacts. They shall be clearly visible to the operator. The lever operating direction shall be clearly indicated in the mimic diagram. The bidder shall provide a marking plate showing RMU's main electrical characteristics.

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5.2.6 Fault Passage Indicators

Fault Passage Indicators shall be installed on the Ring Main Unit. These devices shall be, electronic devices with their own energy source and connected to Single 3 phase Split Core CTs (CBCT). These shall be provided with bright LEDs / flag. Indicators, which shall be clearly visible in the day time. These shall have the following resetting facilities:

- Manual reset
- Resetting after a set time duration
- Electrically reset from remote with at least 2-spare potential free Contacts.

The unit shall have Short Circuit and Earth fault adjustable to different settings with separate Current transformer. They shall be fully field-programmable and shall have at least 16 settings for Earth Fault + 4 settings for Phase-Phase. It shall be possible to Test these indicators at site thru "Test" push button. The Fault Passage Indicators shall also be provided with a SCADA output contact. These shall confirm to the following standards:

IEC 60068-2-6, IEC 60068-2-9	: Environmental testing — For Vibration, solar radiations
IEC 60950	: Information Technology equipment - Safety
IEC 1000-2	: Electromagnetic compatibility for low-frequency conducted disturbances and signaling in public low power supply systems
IEC1000-4	: EMC - Testing & Measurement
IEC 1000-6	: EMC- Immunity for Residential, Commercial and light industrial

5.2.7 Paint


All paint shall be applied on clean dry surfaces under suitable atmospheric conditions by seven tank process and powder coating. The overall paint thickness shall be 125 microns (No negative tolerance is allowed). The paint shall not scale off or crinkle or be removed by abrasion during normal handling. The enclosure of the RMU shall be painted with shade Dark Gray, i.e., BS381C or RAL 7032. Sufficient quantity of touch-up paint shall be furnished for application at site.

5.3 POWER TRANSFORMER

5.3.1 GENERAL CONSTRUCTION:


5.3.1.1 GENERAL:

- i. All transformers shall be provided with detachable, flanged, bi-directional wheel with stopper mounting on truck-trailer. Bidder shall provide means for locking the wheels in positions parallel to and at right angles to the longitudinal axis of the tank.
- ii. 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

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shall be oil and airtight and shall not be affected by mineral or synthetic oil action.

- iii. 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, bidder should provide epoxy plus polyurethane paint with minimum paint thickness of 120 microns.
- iv. The framework, clamping arrangement and general structure of the cores of each transformer shall be of robust construction, having proper support structure and shall be capable of withstanding any shock to which they may be subjected during transport, installation and service. Detailed calculation for selection of bolts shall be submitted. The framework and the core bolts shall be efficiently insulated from the core so as to reduce the eddy-currents to a minimum.
- v. 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.
- vi. 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.
- vii. The neutral terminal shall be brought out through neutral bushing from the tank and the same shall be brought up to 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 Earth Fault 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.
- viii. Top sampling valve shall be internally/externally piped and brought out of the tank sideways at skid level.
- ix. 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.
- x. The sets of radiator banks shall be connected to the main tank through a header pipe welded to the tank. Design wherein an individual radiator is connected to the main tank is not acceptable. Individual radiator tubes shall be connected to the main tank thru butterfly valves at both ends of radiator tubes. Arrangement shall be made for a suitable gap

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between main tank and radiator tubes.

- xi. Transformer conservator shall have Silica gel breather.
- xii. The oil level shall be higher than HV bushing terminal.
- xiii. The part of the HV bushing terminal to which overhead conductor 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.
- xiv. Two separate parts shall perform the two functions of receiving the jumper and oil sealing.
- xv. Air seals are not acceptable at HV bushing terminals.
- xvi. The oil shall be supplied in non-returnable drums. The quantity shall be of 10% excess over the requirement of transformer at 30°C.
- xvii. Magnetic oil level indicator shall comprise with 2 nos. mercury contact/switch (for High / Low oil level alarm).
- xviii. Breather shall be used for main tank and Silica gel/ Silica gel beads breather with clear sight glass.
- xix. The transformer shall be suitable for operation at full rated power on all tap positions 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.
- xx. The design of each transformer shall be such that the risk of accidental short-circuits due to birds or vermin are obviated.
- xxi. All outdoor apparatus, including bushing insulators and fittings shall be so designed that they do not collect water at any point.
- xxii. All electrical connections and contacts shall be of ample cross sections for carrying the rated current without excessive heating. All such contacts shall be tinned copper to avoid bi-metallic affect.
- xxiii. Each transformer shall be designed for minimum no-load and load losses within the economic limit and as per the Indian Standards.
- xxiv. Ground terminals shall also be provided on marshalling box and cable end box to ensure effective earthing.
- xxv. For continuity of earth connection, all gasket joints shall be provided with minimum two numbers tinned copper strip jumpers of adequate size.
- xxvi. Rain Guard shall be provided for LV compartment, Buchholz Relay, PRV, SPR, and Marshalling Box so that rain water can enter to the junction box of these relays/ cubicles.


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Wiring shall be bottom entry.

- xxvii. At the time of erection and commissioning, authorized person of the bidder shall be present at the site till completion of the work.
- xxviii. Cable trays of appropriate size to be provided at necessary locations.

5.3.1.2 CORE:


- i. 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.
- ii. The grade of core shall be M3 or better. The core shall be stress relieved by annealing under inert atmosphere if required, especially suitable for transformer.
- iii. 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.
- iv. The complete design of the core must ensure permanency of the core losses with continuous working of the transformers.
- v. The value of the maximum flux density allowed in the design & grade of laminations used shall be clearly stated in the offer.
- vi. 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.
- vii. TPSODL shall impose heavy penalty or black list bidders using seconds/ defective CRGO sheets or load losses found to be more than stipulated limit.
- viii. 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.
- ix. The core frame shall be provided with lugs suitable for lifting the complete core and coil assembly of the transformer.

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- x. 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.
- xi. All steel sections used for supporting the core shall be thoroughly grit/garnet 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.
- xii. 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.
- xiii. Core Grounding:
 - a) The grounding lead from the core shall be brought out of the tank through a 11kV class bushing and grounded externally.
 - b) A protective cover shall be provided for the bushing.
 - c) The core grounding rod (stem) through the bushing shall be solid rod (stem).
 - d) 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.
 - e) The supplier shall submit a drawing clearly showing the details of core grounding.
 - f) The core / frame grounding's both connections shall be brought out through a suitable bushing for provision of external grounding.

5.3.1.3 WINDINGS:

- i. 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.
- ii. 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.
- iii. Coils should be transposed to minimize magnetic forces and extra supports shall provide for inter-disc connection.
- iv. All materials used in the insulation and assembly of the winding shall be new, insoluble, noncatalytic and chemically inactive in the hot transformer oil and shall not soften or otherwise be adversely affected under the operating conditions.
- v. The current density of coil shall not exceed 2.4 Amps/ sq mm at min tap of respective PTR's higher rating.

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- vi. 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.
- vii. The winding shall be brought out through bushing and provided with suitable terminal connectors, the details of which will be forwarded later.
- viii. 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.
- ix. Sharp bends should be avoided in the windings as far as possible, where unavoidable such bends should be reinforced with extra insulation tapes.
- x. The tolerance for the winding resistance measurement for different phases but at same taps shall be limited to 1%.
- xi. The change in impedance values between the winding (HV/LV) shall not exceed $\pm 10\%$ of nominal impedance value as specified at all taps on HV/LV side.
- xii. The windings shall be brought out through bushing. The windings shall be designed to withstand the specified thermal and dynamic short-circuit stresses.
- xiii. 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.
- xiv. 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.
- xv. Primary and secondary windings shall be constructed from high- conductivity (copper conductors), Double Paper Covered (DPC) copper conductor.
- xvi. The insulation between core and bolts and core and clamps shall withstand 2.5 kV for one minute.
- xvii. Proper bonding of inter layer insulation with the conductor shall be ensured. Test for bonding strength shall be conducted as per standards.
- xviii. 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.
- xix. 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

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not allowed at any joints.


5.3.1.4 INSULATING PAPER AND INSULATING PRESS BOARD:

- The bidder shall submit characteristics along with make for all the type of insulation papers and Pressboards to be used with the offer.
- Inter layer insulation both for HV and LV windings shall be DPC and compressed pressboard of reputed make (subject to approval of TPSODL).
- 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.
- Kraft paper 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.
- Kraft paper and Pressboard should be of class A (105°C) insulation material.
- All spacers, axial wedges / runners used in windings shall be made of pre-compressed solid pressboard.
- All axial wedges/runners shall be properly milled to dovetail shape so that they pass through the designed spacers freely.
- 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.
- Kraft paper 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 fulfill the requirement as per below table

Characteristics	Kraft Paper	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%

Bidder has to submit the test certificates as per IS-9335, IS-1576 for all type of insulating materials covering
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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 plies.
8. Elongation
9. Air permeability
10. Tear index
11. Heat stability

5.3.1.5 TRANSFORMER TANK:

- i. The transformer tank and cover shall be fabricated from good commercial grade low carbon steel suitable for welding and shall be of adequate thickness.
- ii. The tank shall be welded type top cover shall be Flanged type. All seams shall be welded and where practicable they shall be double welded.
- iii. The main tank body of the transformer, excluding tap changing compartments and radiators, shall be capable of withstand pressure of 760 mm of Hg.
- iv. The tank material shall be as per IS: 2026 or equivalent with ultrasonic testing done for elimination of defects in rolled plates.
- v. The welding shall be as per prior approved WPS (Welding Procedure Specs) by trained and tested welders. Calculations and documents should be submitted bidders.
- vi. 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 TPSODL.
- vii. All fittings like elbows, bends etc. shall be seamless as per applicable American or Indian Standards. VIII. No resistance welding of fasteners shall be done anywhere on the transformer.
- viii. To ensure oil tightness, recessed neoprene or equivalent gaskets shall be used.
- ix. Manholes with welded flange and bolted covers shall be provided on the tank.
- x. The manhole shall be of sufficient size to afford easy access to the lower ends of all the bushings to permit replacement of auxiliaries without removing tank covers.
- xi. Suitable guides shall be provided for positioning the various parts during assembly or dismantling.

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- xii. Adequate space shall be provided between the cores and windings and the bottom of the tank for collection of any sediment.
- xiii. All joints including bolted as well as flanged, shall have machined matching surfaces/inner edges with smooth finish, to ensure leak proof joints.
- xiv. 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.
- xv. 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.
- xvi. The tank shall be provided with two nos. of suitable copper alloy lugs for the purpose of grounding.
- xvii. 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 SS bolts and spring washers shall also be provided for connections. All outer nuts & bolts should be stainless steel type.
- xviii. 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 TPSODL'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.
- xix. 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. Any valve opening should not create hindrance to other operation.
- xx. For the auxiliary lead wiring from individual instrument to marshalling box, the cables shall be provided in the conduits.

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- xxi. All the transformers shall be provided with a ladder having 'anti-climbing' device.
- xxii. Transformer tank shall be of welded sheet steel construction and provided with gaskets steel cover plates.
- xxiii. Base shall be suitably reinforced to prevent any distortion during lifting. Base channels shall be provided with skids and pulling eyes to facilitate handling.
- xxiv. All seams shall be electrically double welded for absolute oil tightness.
- xxv. Suitable arrangement shall be made for mounting HV and LV lightning arrestors of the transformer.
- xxvi. Guards shall be provided for drain, bottom sampling and filter valves to prevent oil pilferage.
- xxvii. Minimum Thickness for the transformer shall be as follows:
 - a) Tank Side wall (mm) 6 for 3.15 MVA
 - b) Tank Top Cover (mm) 8 mm for 3.15 MVA
 - c) Tank Bottom Plate (mm) 8 mm for 3.15 MVA

5.3.1.6 PAINTING

- i. Before painting, surface preparation shall be done by Grit/Garnet blasting and procedure for Abrasive 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 Grit/Garnet blasting at all edges Belzona E metal to be applied.
- ii. Before shipment all steelwork not under oil shall be painted with a primary coat of anticorrosive 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 TPSODL's approval, along with the offer.
- iii. Painting of Marshalling box: Two coats of red oxide primer & two coats of synthetic enameled paint after chemical treatment.
- iv. Metal parts not accessible for painting shall be made of corrosion resistant material.
- v. Paint shall be as per Indian Standard/International Standard for quality, surface preparation, application method, thickness check and any other test.
- vi. 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.
- vii. Paint thickness shall be min 120 Microns.

5.3.1.7 SURFACE PREPARATION AND PAINTING

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- i. The paint shall be applied by airless spray.
- ii. Steel surfaces shall be prepared by proper cleaning method (IS-9954) to grade Sq.2.5 of ISO 8501-1 or chemical cleaning including phosphating of the appropriate quality (IS 3618).
- iii. 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
		Outside	01	60
2	Liquid Paint			
a.	Epoxy (primer)	Outside	1	45
b.	P.U. Paint (finish paint)	Outside	2	35 (each)
c.	Hot oil resistant paint	Inside	1	35

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

- iv. The dry film thickness shall not exceed the specified minimum dry film thickness by more than 25%. V. 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.
- v. Painting shall not be affected by weather changes & performance against pilling out or fading etc. to be guaranteed for 5 Years

5.3.1.8 BUSHINGS:

- i. 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 coordinate with the insulation class of the neutral of the high voltage winding.
- ii. 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


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clearance shall be realized.

- iii. Each bushing shall be so coordinated with the transformer insulation that all flash-over will occur outside the tank.
- iv. 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. 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.
- v. In case of oil communicating type bushing (33kV & 11kV), venting screw of the hollow stud, shall be provided with suitable gasket as per IS 4253-2 (latest amendment), 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.
- vi. Main terminals shall be soldering 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.
- vii. 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 TPSODL to decide the actual gap setting. Bidder's recommendations are also invited in this respect.
- viii. The following routine tests shall be carried out on all bushings in the presence of TPSODL's representative, in addition to any other specified in the IS:
 - a) Visual examination
 - b) One-minute dry withstand test
 - c) Oil tightness test
- ix. 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).
- x. Bushing shall be as per the approved make only. All Type test report should be submitted along with bid.
- xi. Termination Arrangement on 11KV and 33KV Side:

(33KV Indoor AIS/GIS and 11KV indoor AIS)

 - a. For 33 KV side cable termination, Palm Connector & Extended Busbar of suitable size (60mm X 10mm) for termination of 1 runs of 3C x 50 sq.mm EPR copper cable. Proper supporting arrangement for extended bus bar and cables shall be provided. For 11 KV side cable termination, Palm Connector & Extended Busbar of suitable size (60mm X 10mm) for termination of runs of 1C x 120 sq.mm EPR copper cable. Proper supporting arrangement for

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extended bus bar and cables shall be provided.

- b. Copper bus bar for connecting transformer bushings to cables with support insulators and insulation sleeve
- c. Frame for cable mounting with HDPE cleats.
- d. Detailed size of all the item shall be submitted during detailed engineering for approval.
- e. Suitable Bimetallic Connector to be supplied wherever applicable

Ester Oil (If Applicable):


In case of Natural Ester oil or Synthetic Ester Oil below are the requirements to be fulfilled: All transformers shall be filled to the required level with new, unused, clean, Natural or Synthetic Ester oil as per TPSODL approval. The use of recycled ester oil is not acceptable. Ester shall be filtered and tested for break down Voltage (BDV) and moisture content before filling. Ester shall be filled under vacuum. The Dielectric strength and water content shall meet the requirement given in specification. Ester oil shall be procured from approved vendor of TPSODL only.

5.3.1.9 GASKET

- i. 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 NRBC (Nitrile Rubber Bonded Cork)
- ii. 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.
- iii. Where compressible gaskets are used, steps shall be provided to prevent over compression.
- iv. All the bolts provided shall be of hot dip galvanized.
- v. All bolts shall be provided with one spring washer and two numbers of flat washers and with locking bolts.
- vi. All gasket joints shall be provided with equalizing links to extend earth connections.
- vii. All Gasket should be fixed such a way that there should not be any damage during operation.

5.3.1.10 OIL PRESERVING EQUIPMENT

- i. Oil preserving equipment shall be conservator (expansion tank) 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

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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 / Envirogel breathers to facilitate replacement of breather without having to keep Buchholz relay inoperative. The breathers shall have clear transparent, UV stabilized /retardant Polycarbonate with min. 3 mm thickness.

- ii. Conservator oil preservation bag (atmoseal bag) shall be provided with a design such that it can be installed at site with ease without any special tools and tackles. The price for COPS bag shall be clearly mentioned in the price schedule at the specified place. With COPS type conservator shall supply air or nitrogen filling arrangement with all accessories needed at the time of commission and pressure gauge arrangement shall be provided for monitoring COPS bag pressure.
- iii. Proper valve arrangement (Two top valve & one bottom valve on conservator) is to be provided for proper oil filling.
- iv. Prismatic oil level indicators with red colour float shall be provided on main tank tank Conservator.


5.3.1.11 ALARMS:

The following alarms shall be provided with the additional contact arrangement for connection to SCADA.

- a) End Limit Switch
- b) Manual Operation Insertion
- c) A.C. supply failure d) Drive motor auto tripped
- e) Tap Stuck up change delayed
- f) OSR trip
- g) MOG Alarms
- h) PRV Trip
- i) TC in Progress.
- j) Any other protective feature, if considered essential by the Bidder


5.3.1.12 PRESSURE RELEASE VALVE

- i. Spring-loaded Pressure Relief Device (PRV) with mechanical flag indicator shall be provided on the main tank top of the transformer.
- ii. Oil splashguard along with draining arrangement (with wire net on both side) up to ground level to be provided for prevention of oil splashing.
- iii. Arrangement for air-release through a gate valve should be provided at the base of the PRV

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- iv. The PRV shall not be located in the vicinity of the Marshalling Box for safety of operating personnel.
- v. A pair of potential free contacts shall be provided to trip the transformer on action of the pressure relief device.
- vi. It shall have the limit switch with 2NO and 2NC contacts, flag, switch operated rod etc.
- vii. PRV shall be tested for all the applicable test such as Leakage Test, Switch operation, break down test.

S.No	DESCRIPTION	UNIT	REQUIREMENT
1	Operating pressure		0.56 Kg/sq cm
2	Port opening diameter		150 mm
3	Operating time		Instantaneous
4	Contact rating		3A at 48 V DC magnetic blowout micro switch
5	Operating temperature		0 to 100 degree Celsius
6	Valve resetting		Automatic
7	Switch		Limit switch DPDT
8	Accuracy class		+/- 1 %
9	Switch resetting		Manual
10	Number of switch		1 limit switch
11	Mechanical protection degree		IP67
12	Suitable for transformer rating MVA		As per tender
13	Cable Entry		1" conduit
14	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.
15	Marking		The unit shall be appropriately marked as TPSODL and with the name of the vendor, Manufacturer type/ serial no. and year of manufacturing at suitable location.
16	Warranty		2 years from the date of purchase of Transformer. In case any defects are found, the vendor shall replace the product free of cost.
17	Test Reports		Test certificates to be provided: 1) Protection Class. 2) Cold & Dry Test 3) Vibration Test 4) Salt spray Test 5) Micro switch rating Test

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18	Acceptance test		Following tests shall be carried out: 1) Physical Test- Dimensions 2) Switch operation test 3) Valve operation test 4) Leakage Test 5) Insulation Test
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5.3.1.13 BUCHHOLZ RELAY:

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. 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 50 mm with 2 sets of potential free contacts suitable for 48V.
2	No. of Switching systems		2
3	Suitable for Transformer Rating	MVA	As per tender
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,

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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
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

5.3.1.14 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.


5.3.1.15 WTI

In one winding of each phase as described below:

- 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.
- 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 spare.

Note:

- Equipment for remote winding and oil temperature Indicators including these to be installed in the TPSODL control room shall be provided. Pocket with heater coil and CT for RTD for winding hot spots shall be provided.
 - 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.
- 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 and Marshalling box etc. shall be done by the bidder and schematics drawings of the same shall be supplied.


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5.3.1.16 VALVE

- i. All Valves shall be of forged carbon steel up to 50mm size and of gun metal or of cast iron bodies with gunmetal fittings for sizes above 50mm. They shall be of full way type with screwed ends and shall be opened by turning counter clockwise when facing the hand wheel. There shall be no oil leakage when the valves are in closed position.
- ii. Each valve shall be provided with an indicator to show the open and closed positions and shall be provided with facility for padlocking in either open or closed position. All screwed valves shall be furnished with pipe plugs for protection. Padlocks with duplicate keys shall be supplied along with the valves.
- iii. All valves except screwed valves shall be provided with flanges having machined faced drilled to suit the applicable requirements, Oil tight blanking plates shall be provided for each connection for use when any radiator is detached and for all valves opening to atmosphere. If any special radiator valve tools are required the OEM shall supply the same.
- iv. Each transformer shall be provided with following valves on the tank:
 - a) Drain valve so located as to completely drain the tank & to be provided with locking arrangement.
 - b) Two filter valves on diagonally opposite corners of 50mm size & to be provided with locking arrangement.
 - c) Oil sampling valves not less than 8mm at top and bottom of main tank & to be provided with locking arrangement.
 - d) One 15mm air release plug.
 - e) Valves between radiators and tank.
 - f) Drain and filter valves shall be suitable for applying vacuum as specified in the specifications.

5.3.1.17 MOG:

One magnetic-type oil-level gauge each in Main Tank with low- and high-level alarm contacts for main 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.

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SL NO	DESCRIPTION	UNIT	REQUIREMENTS
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 48V DC
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	500-700 mm (As per Tank Size and OEM Type Tested Design)
9	Air cell in conservator		Yes
10	Switches for		Low Oil level Alarm, High oil level Alarm.
11	Colour		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
14	Mechanical Protection degree		IP55
15	Suitable for transformer rating	MVA	As per tender requirement
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 "TPSODL" 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 of Transformer. In case any defects are found, the vendor shall replace the product free of cost.

5.3.1.18 Marshalling Box

- i. Marshalling Box suitable for distribution of 3 phase 4 wire, 415V power to various equipment shall be provided. Separate ground mounted marshalling box shall be provided for radiator


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banks, WTI, OTI, transducers, at least two (2) sets of 4-20mA converter cum indicator etc. and similarly tank mounted marshalling box shall be provided for HV/LV CT cable terminals. Two point earthing provision should be provided with 50X6mm GI flat with pad type connector, length should be of min. 80 mm. The marshalling box should include indication circuit with 48V DC supply. All cables and conduits between the transformer and control cabinet shall be included in the scope of supply by bidder. All the wiring shall have provision for connection to SCADA.

- ii. Two sets of independent, potential free contacts shall be provided for various alarms/trips as detailed below. The auxiliary voltage for alarm/ trip circuit shall be 48V DC for 33/11kV Transformer). DC system is required for
- Buchholz alarm
 - OTI alarm
 - WTI alarm (HV/LV based on WTI CT available)
 - MOG (main) alarm
 - Buchholz trip
 - OTI trip
 - WTI trip (HV/LV based on WTI CT available)
 - SPR trip
 - PRV trip
 - AC supply fail

Two sets of spare potential free contacts shall be provided for all alarms for remote annunciation through TPSODL SCADA panels suitable Transducers shall be provided for 4-20mA signals for tap position indication to the TPSODL SCADA panel. The variation in output signals shall be linear for the complete tapping range.


Sno	Item	Provision
1	Supply of ON lamp 3 nos. R,Y,B	To be provided
2	Tap Position Indicator	4-20 MA Signal in Marshalling box
3	Over Current Relay contact	Potential Free Contact in Marshalling box
4	Raise Lower Switch	Potential Free Contact in Marshalling box
5	Hand interlocking Switch	Potential Free Contact in Marshalling box
6	Tap Change in progress	Potential Free Contact in Marshalling box

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7	Odd even Switch	Potential Free Contact in Marshalling box
8	Maximum position reached	Potential Free Contact in Marshalling box
9	Minimum position reached	Potential Free Contact in Marshalling box
10	OTI	4-20mA Signal in Marshalling box
11	Annunciation - Oil level low & High (Main) - Winding Temp. High (HV+ LV) - Oil Temp High - B' relay Alarm - Winding temp trip (HV+LV) - Oil temp trip - B' relay trip - PRV trip - SPR trip	Potential Free Contact in Marshalling box
12	Auto manual selector switch	Potential Free Contact in Marshalling box
13	Supply ON lamp 3 nos. (R,Y,B)	To be provided

- iii. The Enclosure shall be weather proof, sheet steel construction, not less than 3 mm thick. Degree of protection shall be IP55 minimum with Canopy. It shall be provided with two hinged doors one at front and one at back with locking knobs facilities. The doors shall open through 1800. Doors shall have glass window for viewing of OTI & WTI from outside when door is closed. Doors and glass windows shall have proper gaskets for vermin proof and dust tight arrangement. Proper extended rain shed shall be provided.
- iv. Accessories: All accessories shall be mounted properly in suitable channel inside the box. The MCBs shall be mounted on a DIN channel by a MS plate with cutout for MCBs knobs. This shall be covered by a hinged door on the front. Power cable wiring of MCBs to individual contactors shall be done through good quality copper cable of suitable rating with ferrule marking and suitable lugs at both ends. 2.5sqmm stranded copper cable with ring type lugs shall be used for control cabling purpose. All instrument and wiring shall be completely accessible.

SNo	Item	Make	Rating	Quantity
1	Main Incomer MCB 3 Pole	Siemens/ABB/L&T	63 A	2 Nos.
2	3 Pole MCB	Siemens/ABB/L&T	6 A	12 Nos.
3	3 Pole MCB	Siemens/ABB/L&T	10 A	10 Nos.

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4	3 Pole MCB	Siemens/ABB/L&T	16 A	10 Nos.
5	Connector/Terminals	Wago or Phoenix,(Suitable for ting type lugs)	Suitable for 2.5 sq.mm. control cable	To accommodate all the wiring as mentioned below. Additional 10% terminals shall be provided as spare
6	Contactors, starter and relays	Siemens, L&T, English Electric		

- v. Following Tests shall be carried out on the Marshalling Box:
- Functional tests / 2kV withstand.
 - Dimensional checks.
 - Make and operation of contactors, relays.
 - Factory test report attached for bought out items.
 - Test for Enclosure Protection.

5.3.1.19 CENTRE OF GRAVITY & CENTRE LINE MARKING

A. CENTRE OF GRAVITY

The center of gravity of the assembled transformer shall be low and as near the vertical center line as possible. The transformer shall be stable with or without oil. If the center of gravity is eccentric relative to track either with or without oil, its location shall be shown on the outline drawing.

B. CENTRAL LINE MARKING Central line of the transformer, tank, etc. shall be marked properly with indication to avoid any confusion during installation of the transformer

5.3.1.20 ANTI RUSTING CORROSION TREATMENT

- 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.
- Finishes on transformer and appurtenant parts, edges (exposed to atmosphere).
- No gas cut edge on surface shall be acceptable unless smoothly ground to plane surface without irregular projections and corners (which cannot be blasted to the required roughness).
- For all radiators (If Specifically Mentioned) 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.

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- v. 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.
- vi. The Bidder shall submit a Quality Plan, giving the parameters and checking methods, (major, critical, minor).
- vii. The paint shade used shall be shade 631 as per IS: 5.

5.3.1.21 MAKE OF MAJOR COMPONENTS & RAW MATERIALS

The BA shall procure the following constituent items from the designated vendors as follows:

SL NO.	RAW MATERIAL/EQUIPMENT	MAKE
1	Copper	M/S Sterlite, M/S Hindustan Copper, M/S Hindalco.
2	Core	M/S AK Steels, POSCO, Kawasaki/ JFE, Nippon Steel.
3	Insulation paper and Pressboards	ITC paper, ABB, Raman Boards- Mysore, Senapathy Whiteley – Bangalore
4	Transformer Oil (Mineral oil)	Savita, Apar, Gandhar
5	Gaskets & Corks	Nu Cork, Anchor Corks
6	Steel For Tank	M/s, TATA Steel, M/s SAIL, M/s. JSW Steel, M/s. IISCO, M/s. RINL/Vizag Steel, M/s. Jindal Steel,
7	Dehydrating Breather	Yogya, Anushree
8	Buchholz, PRD, SPR, OTI , WTI, and other devices	Reputed make to be approved by TPSODL during detailed engineering.

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


5.3 Cable

5.3.1 GENERAL CONSTRUCTION:


The heat resisting elastomer insulated cable for fixed installation and flexible cable for three phase system suitable for 11kV and 33kV electric supply purposes shall be manufactured and tested strictly in accordance with the Indian Standard IS 9968 (Part – 2)/ Relevant IEC/International standards and its latest amendments. All material used in the manufacturing of cables shall be new and shall be selected as the best available for the intended use. The rating factors for variation in ground and air temperature, depth of laying, thermal resistivity of soil and different laying configuration of cables shall be provided by the Bidder.

5.3.2 General Technical Requirement

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EPR CABLE			
Technical Particulars			
		33kV	11kV
Sl.No.	Description	3C x 50 Sq.mm.	1C x 120 Sq.mm.
1)	Voltage grade	36kV	12kV
		{Suitable for 33KV Earthed System}	{Suitable for 11KV Earthed System}
2)	Reference Standard	Confirming to IS 9968 (Part-2) 2002	
3)	Conductor		
a)	Material to IS: 8130/84	Annealed Tinned Copper	
b)	Nominal area of cross section		
	i) Power core (Sq.mm)	50	120
	ii) Number of Cores	3	1
c)	Flexibility class as per IS: 8130/84	Class – 5	
d)	Max. D.C. resistance of conductor at 20°C. (Ohm/Km)	0.387	0.153
4)	Power cores		
a)	Conductor Screening		
	i) Material	Extruded semi-conducting compound on top of wrapped semiconducting tape over conductor (Black Colour)	
	ii) Approx. thickness (mm)	0.8mm	0.8mm
b)	Insulation		
	i) Material	EPR type IE- 3 to IS: 6380/84	
	ii) Nominal thickness (mm)	4.0mm	4.0mm
c)	Insulation Screening (Non metallic)		
	i) Material	Extruded semi-conducting compound followed by semiconducting tape over insulation screening (Black Colour)	
	ii) Approx. thickness (mm)	0.5mm	0.5mm

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5)	Number of Cores		
	i) Power cores	3C	1C
6)	Metallic Screening		
a)	Material	Annealed Tinned Copper wires braid	
7)	Identification of Power cores	By open spiral coloured RPCT having colours Red, yellow, blue	NA
8)	Laying up	Cores laid up together suitably with fillers as required	
9)	Inner sheath		
a)	Material to IS:6380/84	HD HOFR CSP Type SE-4 (Black colour)	
b)	Minimum thickness (mm)	3.2mm	3.6mm
10)	A layer of proofed tape over the inner	YES	
11)	Outer sheath		
a)	Material to IS:6380/84	HD HOFR PCP Type SE-4 (Black colour)	
b)	Nominal thickness (mm)	4.5	5
c)	Cotton twine reinforcement below the	YES	
12)	Approx. overall diameter of cable (mm)	To be specified by bidder	
13)	Max. Current Rating @ 40Deg C in Air	200 Amps	380 Amps
14)	Printing	Manufacturer's Name and/or Trade Name, Voltage Grade, Cable Size and No of core and Sequential Marking shall be identified throughout the cable length at interval not exceeding one meter by printing on the outer sheath.	

6. MARKING:

All the Components shall be provided with durable and legible nameplates containing all technical parameters. A Danger plate of appropriate size shall also be provided on the

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enclosure. The nameplate should be 1mm thick SS sheet with black background shall contain the following information:-

6.1 Trailer:

- Manufacturer's Name
- Rated Voltage and rating
- Property of TPSODL
- Maximum speed marking shall be provided on four side wall (20 kmph)


6.2 RMU:

All the components and operating devices of the RMU shall be provided with durable and legible nameplates containing all technical parameters. Name plates shall be suitably embossed with "PO no. with date", "PROPERTY OF TPSODL & PO Number along with the following information. A Danger plate of appropriate size shall also be provided on the enclosure.


- Manufacturer's Name
- Month and year of supply
- PO Number
- Rated Voltage
- System Frequency
- Rated Short time withstand current for 1 sec
- Rated Impulse withstand Voltage
- Degree of Protection
- Type Designation or Serial no.
- Year of manufacture
- Applicable Rated values
- Mass of unit
- SF6 gas filling pressure

6.3 Transformer

- 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.
- Sign writing shall also be provided as per the format attached with this specification.
- The letters on the rating plate shall be engraved black on the white/silver back ground.
- Fixing screws for outdoor use shall be of stainless steel or any other corrosion resistant metals.
- The Name plate shall be embossed with "PO no. with date" & "TPSODL".
- Danger notice shall have red lettering on a white background or they may be pictorial as approved by the TPSODL
- The name plate shall contain following information:
 - Type of transformer (Two Winding Transformer)
 - Relevant standard.
 - Manufacturer's Name

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- d. Manufacturer's Serial No.
- e. Year of Manufacture (MM/YYYY)
- f. No. of phases
- g. Rated kVA
- h. Rated frequency
- i. Rated Voltage
- 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 and 110% of the rated voltage.
- ff. Tan delta value of insulating oil and kraft paper of transformer.

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6.3.1 VALVE SCHEDULE PLATE

The name plate shall contain information of all the valves, their locations, quantities and schematic for the valves

6.3.2 OIL FILLING INSTRUCTION PLATE FOR CONSERVATOR

The name plate shall contain

- I. Step wise process for filling oil in conservator
- II. Table of fittings with functions
- III. Conservator diagram with oil filling process
- IV. Precautions in detail

7. TESTS:

7.1 TESTS FOR RMU

All the Routine and acceptance tests shall be carried out in accordance with the relevant IS/IEC standards. All routine/acceptance tests shall be witnessed by the purchaser/his authorized representative. All the components within the RMU enclosure shall have been tested for Routine/acceptance and Type tests as per the relevant standards. All Type tests as per latest IS / IEC shall have been carried out on the RMU as a whole as per relevant IS/IEC. Following tests shall be necessarily conducted on the equipment and its components in addition to others specified in the IS/IEC:

7.1.1 Type Test

- a) Power Frequency withstand test
- b) Mechanical operation test and checking of interlocks
- c) Dielectric test on main and control circuits.
- d) Temperature Rise test.
- e) Internal Arc withstand test,
- f) Degree of Protection test.
- g) Test to check the capability of main and earthing circuits subjected to rated peak and short time withstand current.
- h) Test to check the total time taken to clear the faults (relay pick up+ Trip coil pick up + breaker trip) for instantaneous & time delay modes. Under various settings of relay and trip coil thru secondary current injection.
- i) Salt Spray Test


The above type test certificates must accompany drawing of type tested equipment, duly signed by type testing authority.

The above tests must not have been conducted on the equipment within time frame as per latest CEA Guidelines In case of any change in design/type of Breaker already type tested and the one offered against this specification, the owner reserves the right to demand repetition of type tests, without any extra cost.

All Type tests must be conducted from CPRI/ERDA, Govt Laboratory or International Laboratory.

7.1.1.1 TYPE TEST CERTIFICATE

The Bidder shall furnish the type test certificates of the 33kV & 11 kV RMU for the tests as mentioned

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above as per the corresponding standards. All the tests shall be conducted at CPRI/ERDA or any other International Laboratory as per the relevant standards. Type tests shall have been conducted in CPRI/ERDA or any other International laboratories during the period not exceeding time span as per CEA guidelines. 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 TPSODL.

7.1.2 Routine test:

Following routine tests are to be done on 100% of the lot quantity

2. Dimensional & Visual Checks
3. Operational & Interlock Tests of breaker & isolator switches
4. Measurement of Circuit Resistance
5. Sf-6 chamber pressure withstands/leakage test.
6. HV withstand test across isolator distance.
7. HV withstand test of control and auxiliary circuits.
8. Voltage Indication Tests.
9. Breaker Contact Resistance Test
10. Total Trip Time Check Test through Current Injection in primary.
11. IR Value.

Below routine test has to be provided on cable Boot for cable termination:

- a) Visual inspection of the final finished product.
- b) Intactness with Bushing.
- c) Insulation Test.
- d) AC HV test.

7.1.3 Acceptance test:

All the tests specified under Routine Test Clause above shall be carried out as acceptance test on random samples as per sampling plan under IEC/IS for each lot.

Bidder should have all the requisite testing equipment's to carry out routine and acceptance test mentioned above including:


- a. Facility for primary current injection up to 1000amp.
- b. Facility to check total trip timing of breaker along with breaker main contacts through primary current injection

7.2 TESTS for Transformer:


All routine, acceptance & type tests shall be carried out in accordance with the IS 2026 relevant standards, & TPSODL approved QAP. All routine & acceptance tests shall be witnessed by the TPSODL/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.

7.2.1 ROUTINE TESTS

Transformer routine tests shall include tests stated in latest issue of IS: 2026 (Part –1). These tests shall also include but shall not be limited to the following:

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- 1) Measurement of Winding Resistance.
- 2) Measurement of voltage ratio, polarity and vector group check.
- 3) Measurement of short impedance and load loss at 50% and 100% load.
- 4) Measurement of no-load losses and magnetizing current at rated frequency and 90%, 100% and 112.5% of rated voltage
- 5) Measurement of insulation resistance.
- 6) Dielectric Test.
- 7) Measurement of Zero-sequence impedance on three phase transformers.
- 8) All CTs and resistance of image coil for winding temperature indicator shall be checked for ratio test, polarity and knee point voltage test.
- 9) Determination of Capacitances and dissipation factor winding-to-earth and between windings.
- 10) Magnetic balance test.
- 11) Measurement of Magnetizing current at low voltage.
- 12) Vacuum withstand test on tanks and radiators.
- 13) 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 losses shall be that corresponding to rated load on HV, LV windings.
- 14) Physical Verification of complete Transformer with all assembly including test rollers, radiators etc.
- 15) Voltage Regulation at rated load and at unit, 0.9, 0.8 lagging power factor.
- 16) Measurement of Acoustic Noise Level.
- 17) Functional tests on auxiliary equipment: -
 - a. Test on OTI and WTI
 - b. High Voltage test on insulation test for Auxiliary Wiring
- 20) Test on Oil filled in Transformer: -
 - a. Dielectric strength of oil
 - b. Water content
 - c. Dielectric dissipation factor (tan delta at 90° Celsius)
 - d. Resistivity.
- 21) Induced over voltage withstand test.
- 22) Separate Source voltage withstands test.
- 23) Oil Pressure test on completely assembled transformer at 0.35kg/sq.cm for 8 hrs.
- 24) BDV and moisture content of oil in transformer

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7.2.2 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.
- 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) Short Circuit withstand test.
- 9) Test to verify IP55 of Marshalling and cable boxes(if applicable)
- 10) Lightning Impulse voltage test with chopped wave.

Note: The bidder shall submit the test report from CPRI or ERDA for the tests mentioned above. Following type tests shall be carried out on one transformer of each rating, at the works of the bidder, in presence of TPSODL representative.

- a. Temperature rise test including DGA (DGA shall be done before & after the heat run test)
- b. Impulse Test (Including chopped wave on all the three limbs of HV & LV)


7.2.2.1. 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 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 TPSODL.

7.2.2.2TYPE TESTS, ROUTINE TEST & ACCEPTANCE TEST OF MOG

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 TPSODL/his authorized representative. All the components shall also be type tested as per the relevant standards. Following tests shall be necessarily conducted on the Joint and Termination Kits in addition to others specified in IS/IEC standards Type Test

- a) Porosity test
- b) High voltage and insulation resistance test

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- c) Elements test
- d) Gas Volume test
- e) Loss of oil and surge test
- f) Mechanical strength test
- g) Velocity calibration test

7.2.2.3 Routine Tests

- a) Porosity test
- b) High voltage and insulation resistance test
- c) Elements test
- d) Gas Volume test
- e) Loss of oil and surge test

7.2.2.4 Acceptance Tests

- a) Visual Inspection
- b) Porosity test
- c) High voltage and insulation resistance test
- d) Elements test
- e) Gas Volume test
- f) Loss of oil and surge test
- g) Mechanical strength test
- h) Velocity calibration test


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 TPSODL 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 Rate contract / PO for each rating, for further lots against the same RC, TPSODL 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.

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6) At Final inspection, the incoming raw material and its movement/consumption record in the related jobs of TPSODL will be verified by inspecting officer. In case of any deviation or non-availability of such records, the offered lot may get rejected.

7.2.3 SPECIAL TEST

The following tests shall be carried out by mutual agreement between the TPSODL 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 ($\tan \delta$) of the insulation system capacitances. (These 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
- f. Magnetic circuit (isolation) test
- g. SFRA Test.

7.3 Cable

7.3.1 TYPE TESTS:


7.3.1.2 Tests on Conductor

1. Conductor resistance test
2. Conductor water penetration test

7.3.1.3 Tests on Insulation

1. Tensile strength & Elongation at break (before ageing)
2. Ageing in air oven
3. Tensile strength & Elongation at break
4. Tests for thickness of insulation
5. Eccentricity and Ovality of insulation
6. Hot set test
7. Shrinkage test
8. Gravimetric test (Water absorption)
9. Volume resistivity/ Insulation Resistance

7.3.1.4 Tests on Armour for 3 Core Cable

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1. Tensile test
2. Torsion test
3. Wrapping test
4. Resistance test
5. Mass of zinc coating
6. Uniformity of zinc coating
7. Adhesion test

7.3.1.5 Tests on Armour for 1 Core Cable


1. Tensile test
2. Torsion test
3. Wrapping test
4. Resistance test

7.3.1.6 Tests on complete cable

1. Partial discharge test
2. Thermal ageing test
3. Bending test
4. Dielectric power factor test
5. High voltage test
6. Heat cycle test
7. Impulse withstand test

7.3.1.7 Additional Tests

1. Raw material consumption
2. Color coding identification over copper screen (for 3C cable)
3. Sequential marking check
4. Cable drum length verification
5. Packaging of cable on cable drum
6. Weight of conductor/km
7. Diameter of Conductor
8. Weight of XLPE insulation plus semiconducting screen (of conductor & insulation)/ km
9. Diameter over core
10. Weight of core
11. Weight of copper tape/km
12. Diameter over inner sheath
13. Weight of armour/ km

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14. Cable sealing end caps
15. Weight of outer sheath/ km
16. Diameter of complete cable

7.3.2 TYPE TEST CERTIFICATES:

The Bidder shall furnish the type test certificates for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at CPRI / ERDA as per relevant IS. Type tests should have been conducted during the period not exceeding 10 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, same shall be carried out without any cost implication to TPSODL.

8.0 PRE DISPATCH INSPECTION:


The material shall be subject to inspection by a duly authorized representative of the TPSODL. Inspection may be made at any stage of manufacture at the discretion of the purchaser and the equipment, if found unsatisfactory as to workmanship or material, the same is liable to rejection. Bidder shall grant free access to the places of manufacture to TPSODL representatives at all times when the work is in progress. Inspection by the TPSODL or its authorized representatives shall not relieve the bidder of his obligation of furnishing equipment in accordance with the specifications. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by TPSODL.

Following documents shall be sent along with material.

- a) Test reports
- b) MDCC issued by TPSODL
- c) Invoice in duplicate
- d) Packing list
- e) Drawings & catalogue
- f) Guarantee / Warrantee card
- g) Delivery Challan
- h) Other Documents (as applicable).

9.0 INSPECTION AFTER RECEIPT AT STORES:

The material received at TPSODL, Odisha store will 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 Engineering department.

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10.0 GUARANTEE:

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. In the event any defect is found by the Company up to a period of 36 months from the date of commissioning or 48 months from the date of last supplies made under the contract, whichever is earlier, supplier 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 Company, failing which the Company will be at liberty to get it replaced/rectified at supplier's risks and costs and recover all such expenses plus the Company's own charges (@ 20% of expenses incurred), from the supplier or from the "Security cum Performance Deposit" as the case may be..

11.0 PACKING:

Supplier shall ensure that all the equipment covered under this specification shall be prepared for rail/road transport and be packed in such a manner so as to protect the equipment from damage in transit. The material used for packing shall be environmentally friendly. The bidder shall provide instructions regarding handling and storage precautions to be taken at site. No single use plastic shall be used.

12.0 TENDER SAMPLE: NA.

13.0 QUALITY CONTROL:


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 manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. The Purchaser's engineer or its nominated representative shall have free access to the manufacturer's/sub-supplier's works to carry out inspections. The bidder shall ensure that the material supplied is as per the Guaranteed Technical Particulars as specified in the specifications.

14.0 TESTING FACILITIES:

Bidder shall have adequate in-house testing facilities for carrying out all routine tests & acceptance tests as per relevant International / Indian standards.

15.0 MANUFACTURING ACTIVITIES:

- a) The successful bidder will have to submit the bar chart for various manufacturing activities

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clearly elaborating each stage, with quantity. This bar chart should be in line with the Quality assurance plan submitted with the offer.

- b) CAT-A approval is mandatory to start manufacturing works.

16.0 SPARES, ACCESSORIES AND TOOLS


Bidder shall provide a list of recommended spares with quantity and unit prices for 5 years of operation after Commissioning. 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. The Purchaser may order additional spares at any time during the contract period at the rates stated in the Contract Document. A list of complete set of special tools and gauges required for erection & maintenance and installation procedure should be submitted.

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. However, the Purchaser shall give 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.

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 plant and must be suitably marked and numbered for identification.

16.1. 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 TPSODL 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 TPSODL 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 TPSODL 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.

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7. The bidder shall also provide the following mandatory spares along with the transformer.

- a. HT Bushing (1no.)
- b. LT Bushing (1no.)
- c. Neutral Bushing (1 no.)
- d. Bucholz Relay (1 no.)
- e. Valves (1Set) f. OTI, WTI (1 each)
- f. PRV (1 no); MOG (1 no)
- g. Transducers for OTI, WTI, PTI
- h. Air cell (1 no.)
- i. Set of gaskets (1 no.)
- j. Set of mandatory spares for tap changer (1 no.)
- k. Oil – 10% extra
- l. Radiator tube plug – 5 No
- m. Radiator tube valves – 2 No
- n. Radiator tube plug oil seals – 12 No
- o. MCCB (1 no.)
- p. Space heater & thermostat (1 no.)
- q. Bushing CT for HV (1 no.)
- r. Bushing CT for Neutral (1 no.)
- s. Bushing CT for LV (1 no.)

17.0 DRAWINGS AND DOCUMENTS


Following drawings and documents shall be submitted in line with the requirement of Tender specifications:

Following documents to be submitted along with the bid for evaluation:

- a. Completely filled–in clause wise compliance of this specification along with bid.
- b. Signed and stamped copy of General Arrangement drawing of all equipment on the truck-trailer with Bill of Material
- c. Signed and stamped copy of General Arrangement drawing of HV Switchgear (CB & LBS), Power Transformer, HT cable
- d. Work Experience details
- e. Type test certificates.

Following drawings and documents shall be submitted in line with the requirement of Tender specifications:

- a) Completely filled–in clause wise compliance of this specification along with

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bid.

- b) Signed and stamped copy of General Arrangement drawing of all equipment on the truck-trailer with Bill of Material
- c) Signed and stamped copy of General Arrangement drawing of HV Switchgear (CB & LBS), Power Transformer, HT Cable
- d) Signed and stamped copy of Single Line Diagram and Wiring Diagram with Complete Bill of Quantity
- e) Design of Truck-Trailer
- f) Compliance of all undertaking submitted during technical evaluation

All the Documents and Drawings shall be in English Language.

18.0 SCHEDULE- “A” GUARANTEED TECHNICAL PARTICULARS

Completely filled–in clause wise compliance of this specification along with bid.

19.0 SCHEDULE “B” DEVIATIONS:

(TO BE ENCLOSED WITH TECHNICAL 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:


SL. 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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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 TPSODL, 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 TPSODL 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.

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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.tpsouthernodisha.com

3.0 CONTRACT PARAMETERS

3.1 Issue/Award of Contract

TPSODL 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 TPSODL 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).

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- 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.

The Contract documents and all correspondence between the TPSODL, 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

TPSODL 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.

Bid validity will stand get automatically extended from the date of latest Negotiation event i.e. Reverse Auction or Manual Negotiation and accordingly bid shall be valid further

- i. For minimum 45 days if original bid validity duration is lesser than 45 days at latest negotiation date.
- ii. For actual bid validity duration if original bid validity is more than 45 days at latest negotiation date.

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 TPSODL'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

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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.

TPSODL 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 TPSODL, provide Purchaser with a reasonably detailed estimate of the cost of the change outlined in the request.

In the event, TPSODL 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 TPSODL.

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 TPSODL, packaging and forwarding charges, freight and transit insurance charges covering loading at Associate's works, transportation to TPSODL store/site & unloading & delivery at TPSODL stores/TPSODL site, cost of documentation including all the relevant test certificates and other supportive documents to be furnished.

The Prices/Rates are inclusive of all taxes, levies, cess and duties, 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 TPSODL 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 TPSODL 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 TPSODL.

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6.0 TERMS OF PAYMENT

On delivery of the materials in good condition and certification of acceptance by TPSODL official, Associate shall submit the Bills/Invoices in original in the name of “The TP Southern Odisha Distribution Limited” to invoice desk, complete with all required documents as under:

- Test Reports (4 sets).
- MDCC issued by TPSODL.
- Packing List.
- Drawing and Catalogue.
- Guarantee/Warrantee Card.
- Delivery Challan.
- O&M Manual.
- Copy of Order.
- Minutes of Meeting.

Bills/ invoices shall mention Supplier's GST Number. TPSODL 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 TPSODL 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 TPSODL 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, TPSODL 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.

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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 TPSODL 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 TPSODL 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.
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 TPSODL. 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 TPSODL indemnified always till completion of contracts.

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9.2 SA 8000

TPSODL 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

TPSODL 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**

TPSODL 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 TPSODL 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
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.

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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 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.

9.4 Preferential norms for procurement from MSMEs registered in the State of Odisha

- i. MSME Business Associate registered in the State of Odisha is requested to inform the TPSODL if they fall under provisions of the Micro, Small and Medium Enterprises (MSME) Category and provide necessary documents to TPSODL. The Associate also needs to mention the relevant details on their invoice / bill.
- ii. MSME Business Associate registered in the State of Odisha shall submit the self-undertaking of registration in MSME category at the time of bidding as well as on an annual basis to TPSODL, enabling them to avail the consequent benefits, failing which TPSODL may take appropriate action against such defaults.
- iii. **Tender Fees** - To participate in the tender, MSMEs registered in the State of Odisha shall pay Rs.1,000/- including GST towards cost of tender paper.
- iv. **Earnest Money Deposit (EMD)** - EMD shall be exempted for MSME registered in the State of Odisha. However, Bidder shall be barred to participate in the tendering process for a period of 2 years in case it backs out post award of the contract.

v. Qualification Requirement for Open Tenders

Qualification Requirement of Financial Turnover for MSME registered in the State of Odisha shall be reduced to 20% of the existing criteria.

For Technical Qualification, instead of relying on the volumes / value of earlier Supplies / Projects, assessment of the Bidder shall be done on the basis of feedback from Customers. Past performance experience at Tata Power and its Group Companies shall supersede feedback from other Customers.

- vi. **Performance Bank Guarantees**- Performance Bank Guarantee for MSME registered in the State of Odisha shall be 25% of the value normally prescribed.

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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 TPSODL/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 TPSODL.

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 TPSODL 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 TPSODL. 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 TPSODL, 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 TPSODL. All such products and equipment shall be used or installed in strict accordance with original manufacturer's recommendations, unless

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otherwise directed by the TPSODL. 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

TPSODL 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 TPSODL during contract execution time.

All inspections and participations shall be carried out by TPSODL 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 TPSODL'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 TPSODL'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 TPSODL'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 TPSODL/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 TPSODL inspectors are not satisfied with the safety arrangements at the plant, TPSODL 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 TPSODL along with the inspection call, for scrutiny of TPSODL.

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The Associate and TPSODL 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 TPSODL for receiving clearance for dispatch of materials

11.3 Third Party Nomination

TPSODL 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 TPSODL as far as conducting the inspection.

11.4 Waiver of Inspections

TPSODL 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.

11.5 Incorrect Inspection Call

In case it is observed that the material offered for inspection is not ready at the time of TPSODL 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 TPSODL. Material delivered at TPSODL stores or at project site without a valid MDCC issued by the designated official of TPSODL 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 TPSODL, 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.

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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.
- 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 Berhampur	12 days
2	Within Berhampur	5 days
3	Waiver*	3 working days

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

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 TPSODL and have to supply back the material within next 30 days or within the timeframe mutually decided by Associate and TPSODL.

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/ Purchase Order/ Release Order, Materials/ Goods/ Equipment shall be consigned to "Stores-In-Charge", TPSODL, Berhampur

12.4 Submission of mandatory documents on Delivery

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

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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

12.5 Dispatch and Delivery Instructions

S. No.	Instructions
1	Purchase order/ Release order no. shall be mentioned on invoice and on material
2	TPSODL material code and material description shall be mentioned in invoice and on material.
3	“Property of TPSODL” 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 TPSODL, Berhampur”, Guarantee period and Associate's name.
8	In case of manual unloading, supplier / transporter shall deploy sufficient Labour for unloading the material at TPSODL central store. For heavy item(s), crane will be provided by TPSODL [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.

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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 TPSODL 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 12 Months from the Date of Commissioning or 24 months from the date of delivery of final lot of supplies made, whichever is earlier.

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, TPSODL will be at liberty to get the same done at Associate's risks and costs and recover all such expenses plus the TPSODL'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 TPSODL. However, if replacement of the Equipment is required, Associate shall notify the same to TPSODL within 7 days of reporting the issue by TPSODL. 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

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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, TPSODL 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.

13.7 Support beyond the Guarantee Period

The Associate shall ensure availability of spares and necessary support for a period of atleast 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 TPSODL, 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, TPSODL 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 TPSODL, 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

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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, TPSODL 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 TPSODL as a proof of deduction/ recovery.

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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 TPSODL's interest failing which appropriate action (legal or otherwise) may be taken against the Associate by the TPSODL, 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 given to the Associate by the TPSODL in connection with the performance of the contract shall be held confidential by the Associate and shall remain the property of the TPSODL 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 TPSODL.

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 TPSODL shall not be published or disclosed to the third parties or taken out of the country without prior written approval of the TPSODL and upon execution of confidentiality agreements satisfactory to the TPSODL 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. TPSODL 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 TPSODL. 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 TPSODL under the Contract shall be passed on to the TPSODL. The TPSODL

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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 TPSODL.

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 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 TPSODL. All rights, with respect to, or arising from such intellectual property, as afore mentioned, shall solely vest in TPSODL.

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 TPSODL shall arise in this respect, and any costs, damages, expenses, compensation payable by TPSODL 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 TPSODL 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 TPSODL is held liable for

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by any court judgement. In this connection, the TPSODL 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 TPSODL 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 TPSODL 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 TPSODL.

The TPSODL 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.

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 TPSODL 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 TPSODL. The constituents & leader of the consortium or joint venture shall not be changed without the prior consent of TPSODL.

TPSODL 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.

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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 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

TPSODL 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

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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 TPSODL, 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 TPSODL, the Associate shall resume execution of contract as specified in the resumption notice, within the time frame specified in the resumption notice.

21.2 Suspension for Breach of Contract conditions.

TPSODL 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 TPSODL and not due to any breach of contract conditions by the associate, TPSODL 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 TPSODL.

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 TPSODL 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.

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22 TERMINATION OF CONTRACT

22.1 Termination for Default/Breach of Contract

The contract / PO /RC shall be subject to termination by TPSODL 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 TPSODL 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.
- 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 TPSODL 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 TPSODL.

If the default or breach as specified under clause 22 (except sub clause g thereof) be committed by the associate for the first time, TPSODL 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 TPSODL then TPSODL may terminate the entire or part of contract at its discretion by issuing termination notice without incurring any liability on this ground.

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In case the contract is terminated for any breach of the nature specified in clause 22 g stated above, TPSODL shall have the right to terminate all the contracts TPSODL is having with the Associate by issuing termination notice which shall be without prejudice to the other rights of TPSODL available to it under law.

Without prejudice to its right to terminate for breach of contract, TPSODL 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 TPSODL 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 TPSODL.
- 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 TPSODL sites or in transit thereto. However the associate shall continue to fulfill its contractual obligations with regard to the part of contract not terminated.
- d) It shall be open for TPSODL 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 TPSODL 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 TPSODL 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 TPSODL 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.

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In the event of such termination, TPSODL 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 TPSODL 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 TPSODL 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 TPSODL against the amount recoverable from him on this ground. The same shall be without prejudice to other rights available to TPSODL 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, TPSODL shall be entitled to bar the associates its agents, affiliates from undertaking any negotiation / tendering, bidding, participation activities concerning TPSODL for a period of two years from date of such termination. The same shall be without prejudice to other rights available to TPSODL.

22.2 Termination for Convenience of Associate

Associate at its convenience may request for termination of contract, clearly assigning the reason for such request. TPSODL 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.

22.3 Termination for Convenience of TPSODL

TPSODL at its sole discretion may terminate the contract by giving 30 days prior notice in writing or through email to the Associate. TPSODL 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 endeavour 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 Bhubaneswar. 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 TPSODL or suspended by the arbitrator. Further, TPSODL 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 Berhampur and any matter arising here from shall be subject to applicable law in force in India.

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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 TPSODL or not. However any error in design/drawing arising out of any incorrect data/written information from TPSODL 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 TPSODL on acceptance of material by store/site after Inspection.

However, such passing of title of ownership and property to the TPSODL 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 (BA) 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 TPSODL.
- b) TPSODL 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. TPSODL reserves the exclusive right to assign the policy.

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- 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 TPSODL 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) TPSODL 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 TPSODL'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 TPSODL 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. TPSODL, 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/repared by them without any extra cost to TPSODL and without affecting the completion time.

28.0 SUGGESTIONS & FEEDBACK

We welcome all our Business Associates to write to us about their experience with TPSODL; 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.

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

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

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

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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 www.tpsouthernodisha.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

**The TP Southern Odisha Distribution Limited
Berhampur**

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 Southern Odisha Distribution Limited (TPSODL) in the sum of _____ for which payment well and truly to be made to the TPSODL 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 TPSODL 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 TPSODL upto the above amount upon receipt of its first written demand, provided that in its demand the TPSODL 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 upto 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

**The TP Central Odisha Distribution Limited
Berhampur**

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"/ 'BA')) for the supply 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 ____% 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 your exercising any of your rights with

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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 Berhampur branch of the bank. However, in specific scenario, where Treasury Branch of the bank is not available at Berhampur, then any claim / extension under the guarantee can be lodge-able at Bhubaneswar branch of the bank.
9. Notwithstanding anything herein contained, our liability under this guarantee is limited to Rs. _____ (Rupees _____) only and the guarantee will remain in force upto 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

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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 TPSODL 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 TPSODL, in respect of our aforesaid Order No _____ dated _____ including amendments, if any, issued by TPSODL to our entire satisfaction and we further confirm that we have no claim whatsoever pending with TPSODL 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 TPSODL, with full knowledge and with our free consent without any undue influence, misrepresentation, coercion etc.

Place

Name

(Company Seal)

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ANNEXURE-D

**PROFORMA FOR APPLICATION FOR ISSUANCE OF CONSOLIDATED TDS
CERTIFICATE**

To be printed on the letterhead

To,

The TP Southern Odisha Distribution Limited,

Berhampur

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

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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 "TPSODL 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

☐ Berhampur ☐ Within 200 kms from Berhampur ☐ More than 200 kms from Berhampur

Your nearly turnover with TPSODL

☐ 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)

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SECTION – A

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

S. No.	Parameters	1	2	3	4	5	Remarks/ Suggestion
		Do Not Agree	Slightly in Agreement	In Fair Agreement	Mostly in Agreement	Fully Agree	
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	TPSODL demonstrate willingness to be flexible in administration of Contract / Purchase Order						
7	We provide timely responses / clarifications to your queries						
8	TPSODL representative you interact / coordinate with is adequately empowered to support you in meeting contractual obligations						
9	TPSODL provide you all necessary infrastructure support for timely and quality completion of work (including AMC)						
10	TPSODL Engineer-in-Charge timely certifies the jobs executed/ material supplied						
11	TPSODL 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* (under development)						

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S. No.	Parameters	1	2	3	4	5	Remarks/ Suggestion
		Do Not Agree	Slightly in Agreement	In Fair Agreement	Mostly in Agreement	Fully Agree	
13	Our approach for Inspection and Quality Assurance effective to expedite project completion?						
14	TPSODL never defaults on contractual terms						
15	In TPSODL 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	TPSODL Employees follow Ethical behaviour						

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 TPSODL 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 TPSODL in comparison						

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	to your other clients in terms of fairness of treatment and transparency with its Business Associates?						
3	How would you rate TPSODL in comparison to your other clients in terms of processes and systems to manage partnership with its Business Associates						
4	How would you rate TPSODL in comparison to your other clients in terms of building long term & mutually relationship with its Business Associates						

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 TPSODL, would you like to continue your relationship with TPSODL?					
2	If someone asks you about TPSODL, would you talk “positively” about TPSODL?					
3	Would you refer TPSODL 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 TPSODL, that truly represents your overall satisfaction with us (please tick appropriate box) -

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

SECTION – E

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

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Please spare your thoughts for TPSODL'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 TPSODL to adopt. Please give your valuable salient recommendations.

Please spare your thoughts for TPSODL'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 TPSODL)	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!!

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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, TPSODL 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. TPSODL 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. TPSODL will make every effort to make the bid process transparent. However, the award decision by TPSODL would be final and binding on the supplier.
3. The bidder agrees to non-disclosure of trade information regarding the purchase, identity of TPSODL, 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 TPSODL.
6. In case of intranet medium, TPSODL shall provide the infrastructure to bidders. Further, TPSODL 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 TPSODL.
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 TPSODL 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 TPSODL.
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

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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 TPSODL well in time at our own. Further, we kept TPSODL 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)	:
		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 /	:

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		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	:
	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	:

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	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)		:
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:		

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	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.
- **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 (Contracts & Stores)

The TP Southern Odisha Distribution Limited,
Berhampur.

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

HEALTH AND SAFETY POLICY

We, at Tata Power, reaffirm our belief that the health and safety of our stakeholders is of the utmost importance and takes precedence in all our business decisions. In pursuit of this belief and commitment, we strive to:

- Maintain and proactively improve our management systems to minimize health and safety hazards to our stakeholders and all others influenced by our activities.
- Comply and endeavour to exceed all applicable occupational health & safety legal and other requirements by setting the highest standards.
- Integrate health & safety procedures and best practices into every operational activity with assigned line-functional responsibilities at all levels, for improving and sustaining health & safety performance.
- Involve our employees in maintaining a safe and healthy work environment through risk assessments, periodic reviews of operational procedures, safe work methods and adoption of new technology.
- Develop a culture of safety through active leadership and provide appropriate training at all levels to enable employees developing their skills to work safely.
- Incorporate appropriate health & safety criteria into business decisions for selection of plant and technology, performance appraisal of individuals and appointments in key positions.
- Ensure availability at all times of appropriate resources to fully implement the health & safety policy of the company.
- Promptly report incidents, investigate for root causes and ensure lessons learnt shared and deployed across the company.
- Ensure service providers and their workmen align with company's safety codes and practices for the health and safety of personnel working with us.
- Set safety & health metrics as indicators of excellence, monitor progress and continually improve performance.

We shall actively communicate this policy to all stakeholders by suitable means and periodically review its relevance in continuously changing business environment.

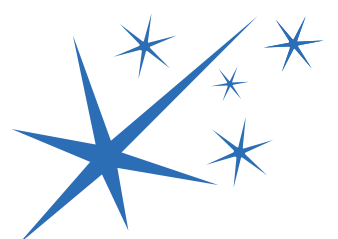


(Praveer Sinha)
CEO & Managing Director

Date: 15th June, 2018

TATA POWER

Lighting up Lives!



The Tata Power Company Ltd



Contractor's Safety Code of Conduct

*Document No.
TPSMS/GSP/CSM/015 REV 06*

*Date of Issue:
15/08/2021*

Contractor's Safety Code of Conduct

Reason for Change	Date of Last Revision	Prepared By	Reviewed By	Approved by
1.Simplify the procedure. 2.Addition of capability building 3.Removal of CFSA 4. Addition of Environment KPI 5.Retention amount is based on Risk involved in Job	<u>11-May-2015-R1</u> <u>15 August-2021-R6</u>	Rajesh Sharma (Head-Safety Generation)	All divisions / Chief Corporate contracts	Suresh H Khetwani (Chief safety and Environment)

The Tata Power Company Ltd		Contractor's Safety Code of Conduct
Document No. TPSMS/GSP/CSM/015 REV 06		Date of Issue: 15/08/2021

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The Tata Power Company Ltd		Contractor's Safety Code of Conduct
Document No. TPSMS/GSP/CSM/015 REV 06		Date of Issue: 15/08/2021

1. Objective

The Tata Power engages contractor workforce to execute, run and maintain various operating sites and facilities across locations for various business verticals including Generation, Transmission, Distribution and Renewable. The activities range from project execution, operation, maintenance to facilities management.

The management of contractor safety represents a significant challenge for management. Tata Power has a responsibility to ensure that contractors are provided with enough information and support to enable them to conduct their roles safely and without endangering health and safety of their own workforce or that of our staff.

To ensure reduction in reportable injuries and achieve goal of "no harm no injury", first edition of contractor safety code of conduct was launched successfully in the year 2014. Since last seven years after the launch of CSCC, Tata Power could achieve the objective of reduction in reportable injuries and fatalities.

Over the period, as the system was being matured, a need was felt to make next revision of the CSCC process. Objective of next revision is improving existing CSCC system and make it user friendly.

2. Scope: This procedure applies to all operating and project sites of The Tata Power Company Ltd and Group companies including new businesses like Electric Vehicle charging, Home Automation, Microgrid, Roof top solar etc.

3. Definitions

- 3.1. Order Manager:** Order Manager is the Tata Power representative, who has the ownership of the given job.
- 3.2. Site Safety Management Plan:** It is the safety plan agreed between Contractor and Tata Power. It will contain the entire job specific safety requirement and will be signed by the contractor.
- 3.3. Contractor:** An individual or a company that provides services to Tata Power under a signed contract.
- 3.4. Emergency:** a serious, unexpected or dangerous situation requiring immediate action, which may result in loss of revenue/property, business discontinuity. In case of Emergency*, services may be procured by selecting the qualified vendor based on the vendor category without the safety bid evaluation. It must be approved by MB level and above.

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- 3.5. Expert Service jobs:** Jobs which needs expert services of contractor which does not involve direct exposure to the potential risk or work which involves only supervisory work such as expert for turbine overhaul, expert for boiler overhaul, expert for pump and motor, expert for compressor overhaul.
- 3.6. CEO/Chief/Head of division/Unit/Utility:** Business in charge of the division who is overall custodian of the generating station or transmission division or distribution division.
- 3.7. Category A Vendor:** Vendor eligible to carry out Very High & High risk (as per Tata Power Hazard Identification and Risk Analysis Procedure) and /or Long-Term Contract related to operation and maintenance (O&M) of plant. Vendors must fulfil the requirement specified for Category A in Appendix 12-CSMF-5 of this document.
- 3.8. Category B Vendor:** Vendors eligible to carry out technical jobs, that are classified under Medium /low risk. Vendors must fulfil the requirement specified for Category B in Appendix 12-CSMF-5 of this document.
- 3.9. Category C Vendor:** Vendors eligible for to carry out low or very low risk administrative and office jobs. For this he must fulfil the requirement specified for Category C in Appendix 12-CSMF-5 of this document.
- 3.10. Category D Vendor:** All Consultants, Medical Practitioners or vendors taking job from Tata Power and working from their own premises (e.g. motor rewinding at vendor's shop floor, equipment sent for repair to vendor's works etc.) are classified as Category D Vendor
- 3.11. High/Very High-Risk Jobs:** A Job or its activities are considered as Very High or High Risk when Order manager apply the "Tata Power Hazard Identification and Risk Analysis" procedure and found safety risk associated with are under Very High or High category. Indicative lists of jobs are given in appendix 15 of this document.
- 3.12. Medium Risk Jobs:** Jobs or its activities are considered as medium risk when Order manager apply "Tata Power Hazard Identification and Risk Analysis" procedure and found the same as Medium Risk.
- 3.13. Low/Very low Risk Jobs:** Any job or its activities are considered as Low or Very low risk while Order manager, calculate it by applying "Tata Power Hazard Identification and Risk Analysis" procedure and found it under Low or Very Low category.
- 3.14. Long Duration Jobs:** When the duration of job is 12 months or more, it is considered as Long duration job

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3.15. High Value Jobs: When the value of the job contract is Rs. One Crore or more it will be considered as High value job.

4. Responsibilities

4.1 Order Manager: Order Manager is the Tata Power representative, who is responsible for:

- 4.1.1 Finalizing the Site Safety Management Plan along with Contractor, Safety Concurrences Group, Divisional Safety Head and Expert (External or Internal) if required.
- 4.1.2 Ensure 100% safety capability building L1, L2, L3 for contractor work force and supervisor before start of Job
- 4.1.3 Ensure Contractor safety revalidation test for all work force quarterly.
- 4.1.4 Supervise and ensure work is carried out as per the Site Safety Management Plan including agreed Risk Assessment (HIRA/JSA) and Method Statement.
- 4.1.5 Conduct audit and evaluate Safety Performance of contractor.
- 4.1.6 Ensure contractors adhere to all statutory provisions.
- 4.1.7 In case any deviation is needed in agreed safety management plan or in CSCC process for execution of job, Management of Change procedure will be applicable, and approval may be obtained from divisional head /Cluster head.

4.2 Contractor: The person, entity or organisation who is executing the job for Tata Power under a contractual agreement and will be responsible for the following

- 4.2.1 To follow all Tata Power Critical Safety Procedure, Rules and guidelines given in Safety Terms and Conditions
- 4.2.2 Undertake job as per Site Safety Management Plan CSM-F10 and method statements agreed with Tata Power.
- 4.2.3 Ensure 100% safety capability building L1, L2, L3 for contractor work force and supervisor before start of Job
- 4.2.4 Ensure Contractor safety revalidation test for all work force quarterly.
- 4.2.5 Raise any concerns regarding their work and its safety with the Tata Power Order Manager.
- 4.2.6 Report all injuries, near misses, unsafe acts/conditions, and occurrences to the Tata Power Order Manager immediately.
- 4.2.7 Ensure that all sub-contractors follow the Tata Power Safety Procedure and agreed Site Safety Management Plan CSM-F10.
- 4.2.8 To follow all statutory requirements as per the laws of the land.
- 4.2.9 All vendors applying for A category jobs or submitting quote for high risk jobs shall obtain certificates of ISO 9001, ISO14001 and ISO45001 before submitting quote for high risk Jobs.

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4.3 Safety Concurrence Group: It is Cross Functional Team of heaving representatives from Execution department, Divisional safety and Corporate / Divisional contracts. SCG will be responsible for the following

- 4.3.1 Assessment of Safety Potential of new vendor before registration as per CSM-F1-Safety Category Qualification Form.
- 4.3.2 Safety Evaluation of the bids as per evaluation format CSM-F-9 Safety Bid Evaluation Criteria
- 4.3.3 Finalization of the Site Safety Management Plan CSM-F-10 submitted by the contractor.

Corporate Safety Team / Cluster Safety Head will be part of SCG during Safety Bid Evaluation for following types of jobs

High-Risk jobs to be carried out in Annual Overhaul / Major Shutdowns and Outages.
Capex jobs of High-Risk Category

5. Responsibilities

5.1 Vendor Registration

For Vendor Registration, Corporate Contract will issue following documents for evaluation of contractor's safety capability

- 1) CSM-F1 –Safety Category Qualification Form
- 2) Safety Terms and Conditions

The document Safety Terms and Conditions provides the information about Tata Power safety System to the contractor. Contractor will submit the CSM-F1- Safety Category Qualification Form with all relevant details and documents to Vendor Registration Initiator, which will in turn forward it to Safety Concurrence Group (SCG) for evaluation. The SCG will evaluate the details submitted by the contractor based on a predetermined criteria CSM-F-5 Safety Potential Evaluation Criteria for Vendor Registration and will determine the category (Category A/B/C/D) for which the contractor will be registered. As mentioned in the above criteria, a site visit may also be organized by SCG prior to registration under Category A and B. In case, the contractor does not qualify the safety criteria, the contractor will not be registered. However, he may apply afresh for registration after 6 months. Please refer Appendix 1: Process Flow Chart for Vendor Registration.

5.2 Bid evaluation

At the time of placing the Purchase Requisition (PR), Order Manager is required to declare the risk involved in the of the job (i.e. Very high/High Risk / Medium Risk / Low/Very low Risk jobs, based on the RPN in HIRA. If the Job is "Very high/High Risk" or "Long Duration", then RFQ will be attached with following documents:

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- 1) CSM-F7- Blank Safety Competency Form
- 2) CSM-F8- PPE requirements
- 3) Safety Terms and Conditions
- 4) Job Specific Safety Requirement (Educational and Professional Qualification, Skill & Experience Manpower, Tools and Tackles (e.g. man lifter, use of drone, use & availability of rescue kit), Work Methodology etc.)

Otherwise the RFQ will be attached only with Safety Terms and Conditions. ~~Long term and low value jobs (see definition) are exempted from the CSCC process.~~

Corporate Contracts will collect duly filled CSM-F7 Safety Competency Form along with the bid. All other stakeholders will also put their efforts to get all relevant safety data during meeting / discussions with the vendor. SCG will evaluate the document as per the CSM-F9 Safety bid evaluation criteria. If any specific condition related to Contract is required to convey to contractor, Site safety team will attach the same as Annexure for specific conditions of job and submit it to contract team along with safety bid evaluation form. Commercial bid of contractor will be considered for evaluation by contract team only if contractor is qualified in safety bid. Site Safety Management Plan, defining the complete procedure of executing the job at site will be signed by the contractor and SCG after mutual agreement. CC will attach a copy of site safety Management Plan and any specific condition of contract along with PO to the successful bidder. Please refer Appendix 6: Process Flow Chart for issuing RFQ and PO significant health and safety risk associated with it.

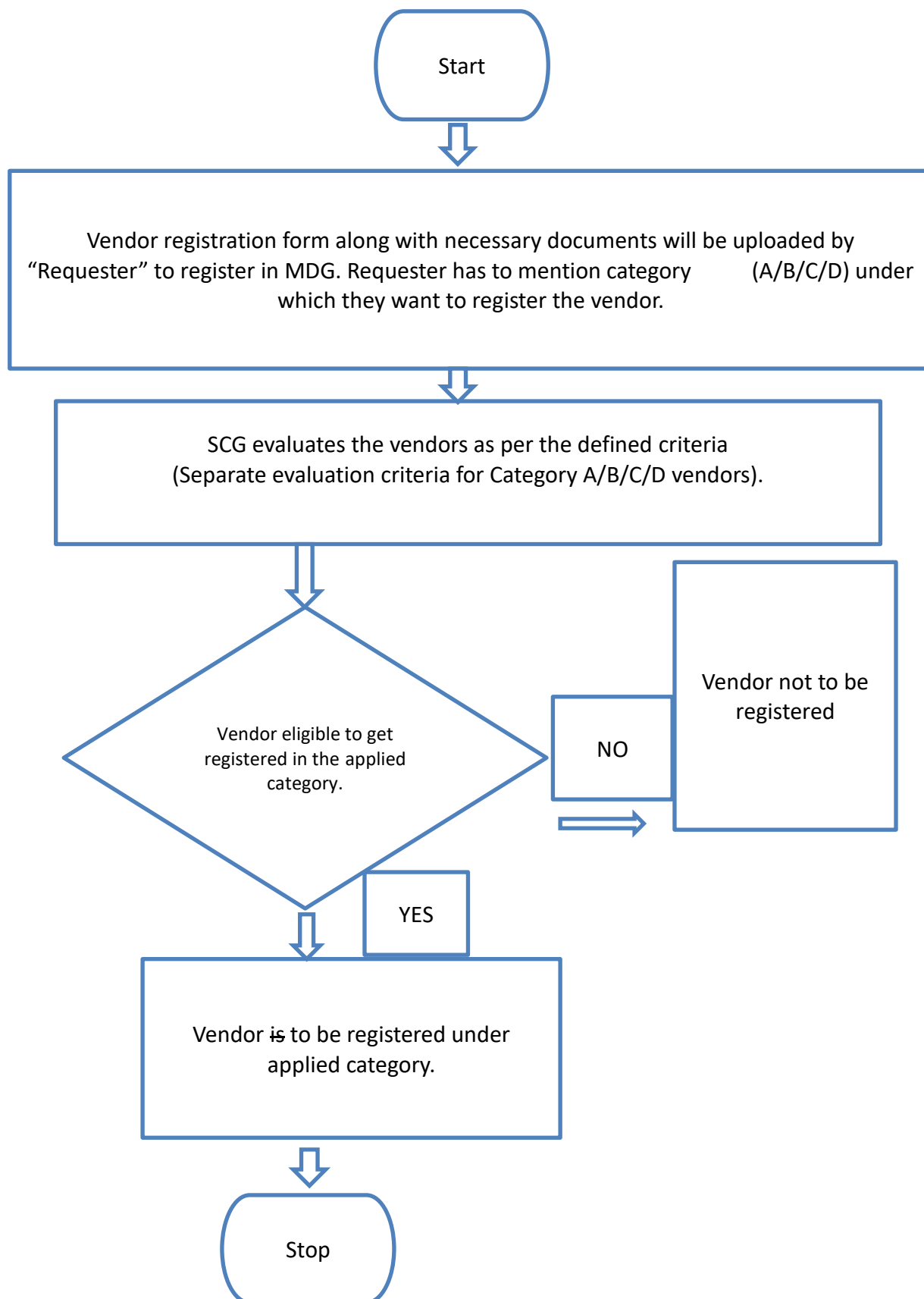
5.3 Capability Building. Refer safety terms and condition clause 5.2. Appropriate training such as SHE L1, L2& L3 is given to ensure that a jobholder, either supervisor or worker, is competent to do his/her job safely. The skill training is provided through TPSDI and other agencies authorized by Tata Power on the list of 15 critical Safety procedures mentioned under safety procedure. Duration of course is as specified by Tata Power. These trainings are on nominal chargeable basis and rates are decided by TPSDI from time to time. Contractor shall ensure that concerned workmen are provided with adequate training before he/she is allowed to execute the work. An evaluation test will be conducted after the completion of the training. Those workmen employee who meet the minimum required competency will be provided with Certificate (Card), which is valid for 3 years, post which the workmen have to reappear for the assessment. If the workman is not able to qualify the assessment, he/she will be given 3 additional attempts to clear in 3-month timeframe failing which he/she will not be allowed to work on high risk jobs.

5.4 Recognition to the Prior Learning in Safety: If "Order Manger" recommends and "Head of the Safety Department of division" is satisfied with the safety knowledge and competency of the employee of contractor a test (RPL) may be conducted by TPSDI / other recognised institute to assess the prior learning in safety. If employees of the contractors will pass in such test, he will be exempted from appearing in SHE L1 training.

5.5 Safety Performance Evaluation

During the time of job execution, regular site inspection will be carried out by the Tata Power officials and violations will be dealt as per CSM–F4 Safety Violation Penalty Criteria. Apart from this, monthly safety performance of the contractor will be evaluated based on the predetermined criteria as per CSM-F11 safety Performance Score and monthly score will be maintained by the Order Manager. Certain percentage of each running bill will be retained as Safety Retention amount and will be released on the basis of Safety Performance Score at certain intervals as defined in CSM- F-3- Safety Performance Evaluation Criteria. Please refer Appendix 10: Process Flow Chart for Safety Performance Evaluation. Percentage of retention amount is mentioned in safety terms and conditions.

Appendix 1: Process Flow Chart for Vendor Registration



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Appendix 2: CSM-F-2 Safety Category Qualification form

1. "Safety Category Qualification Form" is part of vendor registration form. It needs to be filled by the contractor at the time of Registration and should submitted to Requester / order manager with all relevant documents.
2. The same will be evaluated by Safety Concurrence Group as per the criteria given in CSM-F-5.
3. Information provided by contractor will be verified during site visit

Safety Category Qualification Form

(to be filled by the vendor)

Please Consider my application for

Category A Vendor: Vendor eligible to carry out Very High- and High-risk O&M jobs

Category B Vendor: Vendors eligible to carry out technical jobs, classified as Medium / low risk

Category C Vendor: Vendors eligible for to carry out low or very low risk administrative and office jobs

Category D vendor: All Consultants, Medical Practitioners or vendors taking job from Tata Power and working from their own premises.

Register me/us to do following Job(s):

- 1.
- 2.

Name of the Vendor:						
Sr. No	Safety Information	Remarks	Attachment			
1	Certified for i. OHSAS 18001/ ISO 45001, ii. ISO: 14001 iii. ISO: 9001 (ISO certificates to be issued from reputed accreditation agencies specified by Tata Power)	i. Y/ N ii. Y/ N iii. Y/ N	Attach copy of the certification			
2	Safety Statistics for Last Three (3) Years - LTIFR - LTISR	Yes/No		Year 1 (Last FY)	Year 2	Year 3
			LTIFR			
			LTISR			
3	Do you have Safety Policy?	Yes/No	Attach copy of the safety policy.			
4	Do you have Safety training process?	Yes/No	Attach safety training process.			
5	Do you have Safety organization structure e.g. Safety Officers and Safety Committees?	Yes/No	Attach copy of the safety organization structure.			
6	Name and address of sites where work is in progress or worked earlier	Yes/No	Site details to be attached for inspection by Officials.			

Signature :

Name and Designation :

Stamp of Organization :

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Appendix 3: Safety Terms and Conditions

Please refer the attached document Safety Terms and Conditions.

Appendix 4: CSM- F-4 Safety Violation Penalty Criteria

Penalty shall be imposed on the contractors under the following circumstances for breaching the contractual agreements:

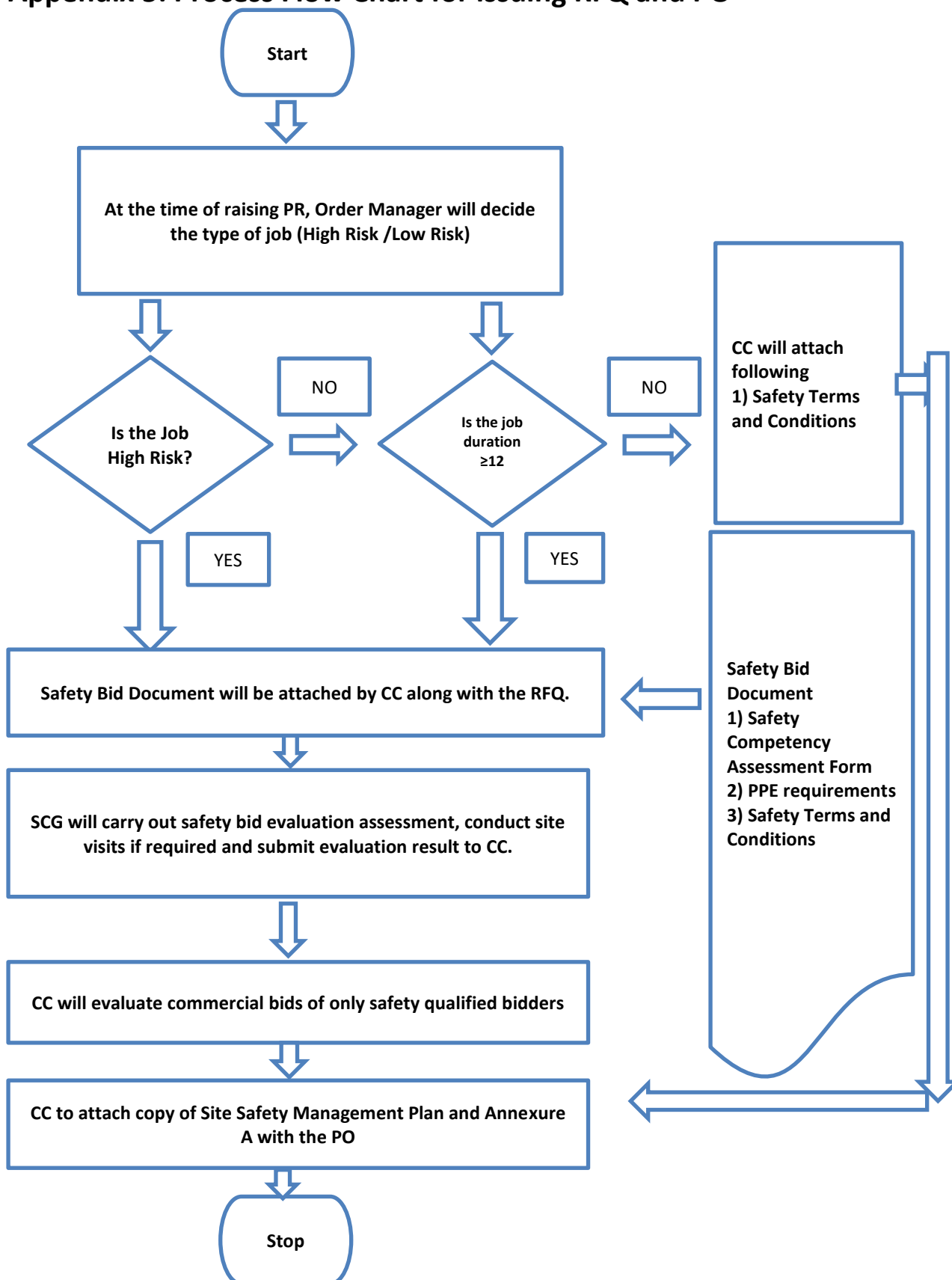
Sr No	Description of violation	Severity	Penalty
1.	Working without Permit	5	5000/-
2.	Untrained (TPSDI) worker on high-risk jobs.	5	5000/-
3.	Unhygienic/Bad condition of PPE	2	250/-
4.	Not following Tata Power Procedure & Standard	4	2000/-
5.	Unsafe Act/Condition of Severity 4	4	2000/-
6.	Unsafe Act/Condition of Severity 5	5	5000/-
7.	No Earthing of Electrical equipment	5	5000/-
8.	Damaged welding cable	5	5000/-
9.	Violation of Positive Isolation Procedure (LOTO Not followed)	5	5000/-
10.	ELCB of more than 30 mA/ELCB not working	5	5000/-
11.	On/Off switch of welding m/c not working	5	5000/-
12.	Electric cable tied with metal wire	5	5000/-
13.	Leakage found DA hose / cylinder	5	5000/-
14.	Use of LPG	5	5000/-
15.	Use of IC engine-based Three-wheeler at the work site.	5	5000/-
16.	Starting the job without Toolbox Talk	5	5000/-
17.	Spatter falling on DA hose / Gas-line/ pathways / Equipment	5	5000/-
18.	No safety latch in crane hook	5	5000/-
19.	Load raised or swung over people or occupied areas of buildings	5	5000/-
20.	Persons standing in swing area of construction equipment.	5	5000/-
21.	Using damaged slings.	5	5000/-
22.	Unstable scaffolding/nonstandard Scaffolding in use	5	5000/-
23.	Handrails and mid-rails are missing	5	5000/-
24.	Safety Harness not anchored with lifeline/fixed structure	5	5000/-
25.	Fall arrestor not provided/ Not being used.	5	5000/-
26.	Double lifeline not used for working at height	5	5000/-
27.	No rubber mat in Electrical Distribution (DB) room	4	2000/-
28.	Water found accumulated in Electrical Distribution room/near welding machine.	4	2000/-
29.	Inserting electric cables into socket, without using plug.	4	2000/-
30.	Use of damaged electrical cable/two core cables.	4	2000/-
31.	Inflammable material found in Distribution Room / welding areas.	4	2000/-
32.	Loose material falling into excavated pit	4	2000/-
33.	Water logging into excavated pit /trenches	4	2000/-

34.	No / inadequate Barricade	4	2000/
35.	Undercut / cave-in found on sides of excavated pits	4	2000/
36.	Grinding wheel/ Coupling/ Piling winch/other rotating parts without guard	4	2000/
37.	The HMV/Mobile Crane operator does not have a valid HMV driving license.	4	2000/
38.	The loading area is not leveled properly.	4	2000/
39.	Ladder not anchored at top	4	2000/
40.	Opening found in working platform of scaffolding/floor	4	2000/
41.	Inadequate illumination at the working area	4	2000/
42.	Loose material lying on Gantry, platform	4	2000/
43.	Cleaning with Compressed Air.	3	500/-
44.	Gas Cylinders using without cap.	3	500/
45.	Gas Cylinders stored without securing	3	500/
46.	Bringing inside any other chemicals, apart from approved by Safety dept.	3	500/
47.	Using drum for sitting or accessing height.	3	500/
48.	Misusing emergency facilities like fire hydrant line/ hose box/ spray system/ eye wash etc.	3	500/
49.	No provision of Safety net where falling materials or tools may occurs	3	500/
50.	Taking electrical supply from non-designated outlet (other than socket).	3	500/
51.	Restricted gangways due to unwanted materials.	3	500/
52.	Not reporting incident.	3	500/
53.	Entering into restricted area like switch yard/ hazardous storage	3	500/
54.	Work without supervision	3	500/
55.	Parking of vehicle without applying wheel choke at right front-front and left rear-rear wheels other than passenger cars.	3	500/
56.	Heavy Vehicle without helper or co-driver.	3	500/
57.	Not wearing florescent safety jacket at site.	3	500/
58.	People travelling in load body of vehicle.	3	500/
59.	Parking of vehicles at non designated area.	3	500/
60.	Shifting heavy materials without guide ropes.	3	500/
61.	Using other than 24V lamp inside the confined space/Use of other than 24V lamps.	3	500/
62.	Angular loading/ lifting with Crane or hoist.	3	500/
63.	By passing the limit switch/ Safety Interlock.	3	500/
64.	Housekeeping activities on road without proper barricade.	3	500/
65.	Trying to board or alit from running vehicle.	3	500/
66.	Cylinder Valves of Gas cylinders not closed when not in use.	3	500/
67.	Flash-back arrester not used.	3	500/

68.	Hand Trolley wheel found damaged.	3	500/-
69.	Guy ropes of required length on both sides of object are not used during movement with load.	3	5/ 00/-
70.	Scotch block/wedge not provided, when the vehicle is parked.	3	500/-
71.	Suitable Trolley not provided to hold the cylinders.	3	500/-
72.	Locked First Aid box	3	500/-
73.	Caution boards, danger signs (luminescent /red) along with emergency contact number are not found displayed.	3	500/-
74.	Person found jumping barricading tape	3	500/-
75.	Stacking of pipes, pile casing, drums without chock blocks/wedges	3	500/-
76.	The terrain on which Heavy Equipment/Machinery moves is not reasonably hard.	3	500/-
77.	Without Safety Helmet at working sites	4	250/-
78.	Without Crash Helmet (on bikes)	4	500/-
79.	Without Full body double lanyard Safety Harness (for work at height)	5	5000/-
80.	Without Hand gloves - Material Handling, Welding, Cutting,	4	100/-
81.	Without Safety goggles/ face shield - Welding/Cutting /Grinding	5	5000/-
82.	Handling Chemical without PVC Apron	5	5000/-
83.	Smoking in prohibited area (e.g. Godown / Warehouse / Store of flammable material etc. / Area prone to dust explosion)	5	1000/-
84.	Sleeping at Workplace	3	100/-
85.	Driving beyond speed limit	3	1000/-
86.	Seat Belt While Driving (for front seat passengers and driver)	3	500/-
87.	Driving without license	4	1000/-
88.	Heavy Commercial vehicles without reverse horn	3	500/-
89.	Nonfunctional Head light/ taillight and side indicators	3	100/-
90.	Using Mobile Phone During Driving	5	5000/-
91.	Poor visibility of registration number/ without registration number	3	100/-
92.	Broken/ without Side view mirror	3	100/-
93.	Over speeding above specified limit	3	500/-
94.	Broken/ Without Pressure gauge on Oxygen/ LPG / Acetylene cylinder.	3	500/-
95.	Without Flash back arrestor on Industrial Acetylene & Oxygen cylinders.	5	5000/-
96.	Spillage of hazardous material/chemicals during transportation	4	2000/-
97.	Electrical equipment without Earthing/ ELCB/ Double Insulation Cable.	5	5000/-

98.	Lifting Tools & Tackles used without/ expired Test Certificates.	5	5000/-
99.	Housekeeping repeatedly not maintained		
100.	• First Time	3	Warning
101.	• Second Time	4	1000/-
102.	• Third Time	5	5000/-
103.	Serious Violation of House Keeping (after 1st or 2nd warning to be decided by Project Manager depending on the severity)	5	Rs.10000/- and above
104.	Repeat Violation of same nature	5	5 X Penalty for Violation
105.	Appointment of subcontractor without his Safety Bid Evaluation and/or without the permission of engineer in charge or Order manager.	5	5% of Contract Value

Appendix 5: Process Flow Chart for issuing RFQ and PO



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Appendix 6: CSM-F-6 Safety Competency Form (Template)

Name of the Vendor/Bidder : -

Name of the Sub Vendor (If job is given to Sub Vendor) : -

Description of the Job : -

Request for Quotation (RFQ) No. :-

Vendor/Bidder to mandatorily provide the below safety competency related information.

1. Proposed Manpower Deployment Schedule : -

Category of Manpower Deployed	Minimum Qualification & Experience	Proposed Numbers against each category month-wise			
		Month 1	Month 2	...	Month n
Project Manager					
Site-In-Charge (Site Manager)					
Shift-in-Charge					
Safety Officers					
Supervisors					
Technicians					
a.....					
b.....					
Highly Skilled Workmen					
a.....					
b.....					
Skilled Workmen					
Semi-Skilled Workmen					
Unskilled Workmen					
Total Manpower					

Instructions to Bidder to fill:

- Bidder to provide the overall site manpower deployment schedule as above.
- Bidder to indicate (through colour code mentioned below) their direct and sub-contracted employees

Direct bidder employee

Partly Direct / Partly sub-contracted

Sub-Contracted

- Against each of the category, bidder to indicate the minimum qualification and experience of the proposed manpower.
- Rows can be added to also identify other specialised manpower e.g. specific details to be included for high risk activities operators
- Columns can be extended to the actual duration of Site activities.
- Bidder to note that if operations is in shifts, then Shift-in-charge / safety officers are required for each shift of operation.

2. List of Tools, Tackles, Machines and Equipment: -

Bidder/ Vendor to provide the list of tools, tackles, equipment **to be used during the job / project execution**. Bidder/Vendor to ensure that all the lifting tools and tackles, pressure vessels are duly certified by the competent person authorised by the Chief Inspector of Factories of the respective state prior to start of the job

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Sr. No.	Description of Tools / Tackles	Capacity / Rating	Quantity	Make	Remarks
1					
2					
3					
4					
5					
6					
7					
...					

3. Safety Records:

Bidder to provide the details of fatalities and lost workday cases (LWDC), occurred in last three years (data to be provided for the last completed FY and preceding 2 years).

Description	Safety Data for Last 3 Years		
	Year 1 (Last FY)	Year 2	Year 3
	20 -	20 -	20 -
Fatalities (Nos.)			
Lost Workday Cases (Nos.)			

In case of no fatalities, LWDC during any year, the form may be filled stating NIL against the respective year. Bidders are encouraged to also submit the RCA / incident investigation reports and the learning's implemented out of the above reported incidents

4. Job Safety Plan/ Method Statement:

Bidder to provide / enclose a detailed Site/Job Safety Plan along with a Method statement detailing the execution philosophy (how the bidder intends to execute the Job/Project), identifying all key activities which are required to be performed by the contractor at Site. Bidder to also list down all high-risk activities and provide the Hazard Identification and Risk Assessment (HIRA) for all such high-risk activities involved in the site work.

(Use Method Statement template attached as annexure A and sample as attachment B)

5. Management System Certification: -

Sr.	Certification	Yes / No	If Yes, Year of Certification	If No, Target date for Certification
	ISO 9001			
	ISO 14001			
	OSHAS 18001 / ISO 45001			
	Any other (please specify.....)			

Note: Please attach certificates to support above. In case not accredited for above but applied for, application letters may be attached.

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Appendix 7: CSM-F-7 PPE requirements

The Contractor shall ensure that the following PPE of Approved standards shall be available at all time and shall be used by his employees with no exception whatsoever.

1	All contractor's employees at site	Safety Florescent Jacket (orange color), Safety helmet & safety shoes with Composite or steel toe cap
2	Workers mixing asphalt, cement, lime / concrete	Safety goggle & protective Hand gloves and footwear, Nose mask.
3	Welders / Grinders	Welding screen/goggles, safety shoes, leather hand gloves, aprons, leg guard
4	Stone breaker	Protective goggle, hearing protection, anti-vibration hand gloves and Protective clothing.
5	Electricians/ <u>Line man</u>	Rubber hand gloves & Electrical resistant shoes.
6	Workers engaged in insulation using glass wool etc.	Respiratory mask & leather Hand gloves, goggles.
	Workers engaged in coal handling plant, ash handling plant and working in high dust area.	Dust mask, Hand gloves, protective goggles.
7	Workers working at a height of 1.8 Meter or above.	Double lanyard full body harness, fall arrestor and safety net made of reinforced nylon fiber ropes firmly supported with steel structures

- PPE shall be conforming to BIS/DGMS/DIN specifications, in good condition and shall be comfortable to his employees, when used.

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Appendix 8: CSM- F-8 Site Safety Management Plan / Method Statement

Site Safety Plan / Method Statement (Template)

This Method Statement describes the specific safe working methods which will be used to carry out the described work. It gives details of work procedure with control measures to counter health and safety issues related to this work. The listed content of this Method Statement can be changed/modified subjected to job scope / specifications, but task specific method statement once finalized & approved, that should not be modified during work execution without permission from the approving authority.

Project/Job Name			
Scope of work: -			
Drawing References: -			
Detail of Sub contractors involved: -			
Method Statement Prepared By: - Designation: - (e.g. Site Manager)	<u>Signature</u>		<u>Date</u>

1.0 Introduction *(Describe purpose of the work, give details of type and scope of work being carried out);*

--

2.0 Location of Work *(Give site address and precise location on site where work is to be carried out.)*

--

3.0 Safety Document /Specific Approval Required *(Details of any safety documents or specific approval i.e. Client specific approval required to undertake the work)*

--

5.0 Role & Responsibilities of Personnel/Parties Involved in activities: -Clearly define role and responsibilities of all personnel involved in activity i.e. Site management staff including subcontractors' parties- Main contractor Project/Site Manager, Sub Contractor Site Manager, Project Engineer, Safety officer, Competent Supervisory Staff)

6.0 Working/Activity Description: - It is important that all operatives should have clear idea of those operational sequences and responsible supervisor must verify their competency prior to their engagement in operation.

6.1 Pre-Working Checks

6.2 Resources (Equipment, tools including manpower) Details i.e. Equipment and Tools, specific operational equipment, test kits, lifting resources, Details of materials to be used in operation, including any reference to COSHH assessments in case of use of any chemicals, Details of the manpower allocated to the task, e.g. titles, qualifications, competences, direct manpower, contractors. Details of plant, tools and equipment to be used for the work, including the availability of relevant statutory documents, checks or inspections etc. Details of fencing, barriers, cones, chains, dangers notices, warning signs etc.

Tools required for work:

Sr.No	Tools /Equipment /Machine	UOM	Required Qty.	Remark
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				








6.4 Operational Sequence of work: - Full description of the work, setting out the methodology in a sequential manner, including any reference to any identified operational restraints. Also refer here sec. 5.0 responsibilities part for every step of work sequence).

Sr.No	Activity	Details of job sequence	Risk Involved	Control Checks
1.		1.		
2.				
3				
4				
5.				

6.7 Final Checks & restoration of work area after completion of work :- Those checks to be carried out by responsible supervisor in witness of his line hierarchy by use of specific checklist of certain operational checks and once those completed satisfactory, PTW (if applicable) to be closed and isolation arrangements to be restored by removing barricades/cautionary tags.

7.0 Task Specific Hazards: - Refer to Task Specific Risk Assessment and attach in appendix
Attachment: - Specific Risk Assessment

In addition, please provide below control measures in risk assessment (as applicable).

Fall Protection Measures: (Where Work at height cannot be avoided)							
Control Measures for Electrical Hazards							
Others Hazard if any (please provide details)							
Hazardous Substances to be used in job : (Attach MSDS if required)	 Acute Toxic	 Health Hazard	 Corrosive	 Dangerous for the environment	 Oxidising	 Highly Flammable	 Explosives
	Yes /No	Yes /No	Yes /No	Yes /No	Yes /No	Yes /No	Yes /No

7.0 Emergency Provisions: -Relevant operational possibility of a programme in the case of emergency situation i.e. electrical supply restoration. In addition emergency response provisions i.e. first aiders, fire fighting, and first aid arrangements, nearest onsite/offsite emergency response also to be considered during emergency planning.

--


8.0 "5S issues" / Waste Disposal/ Housekeeping and Environmental issues: -*Details waste disposal processes and or housekeeping activities, Details of environmental impacts and control measures.*

--

9.0 Personal Protective Equipment (PPE):- (*Tick on PPE requirements for the task/Job*)

Required Personnel Protective Equipment:	 Safety Boots	 Hard Hats	 Safety Gloves	 Hearing Protection	 Eye Protection	 Respiratory Protection	Other: 1. Hi-Viz 2. Coveralls 3.
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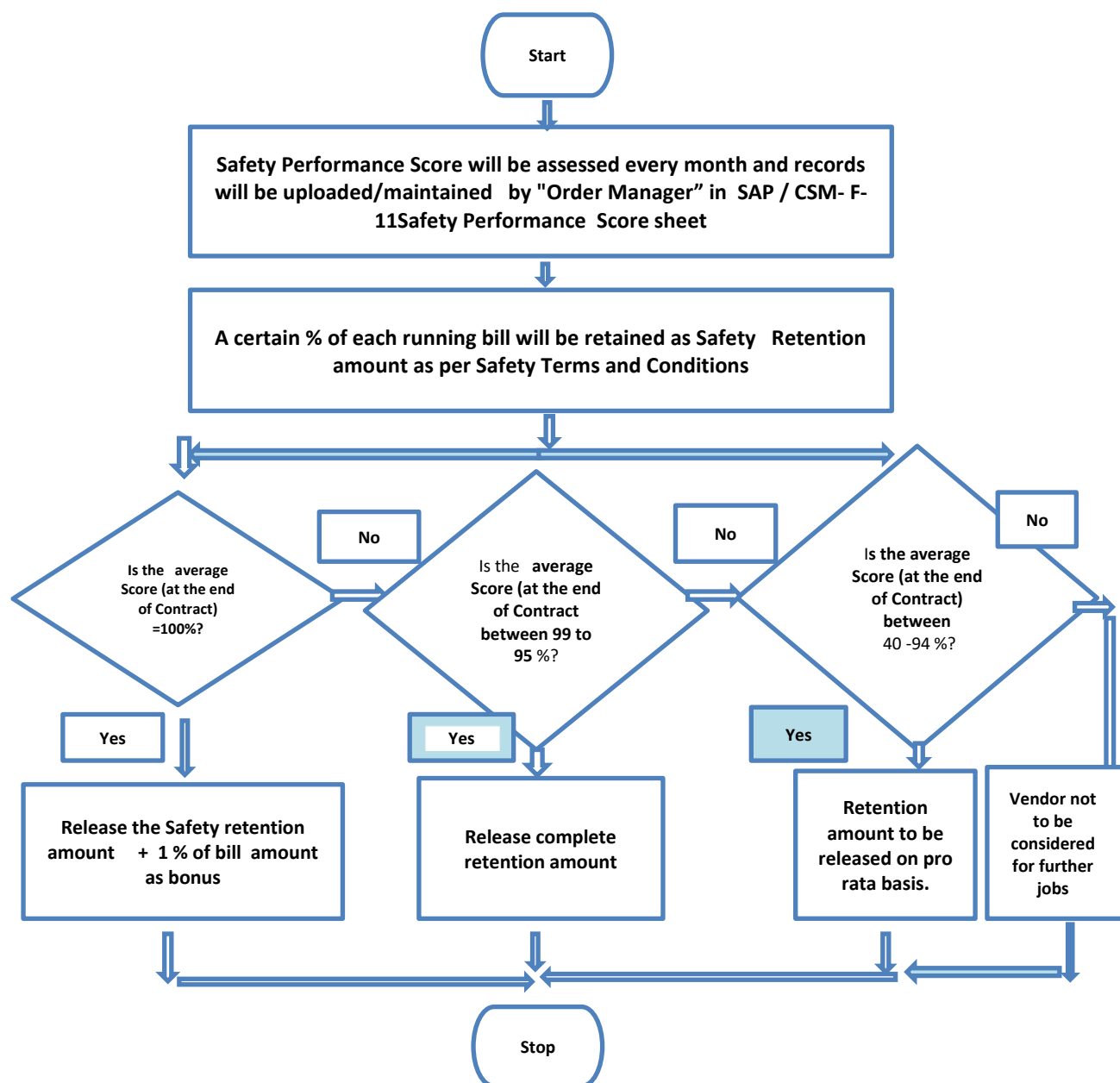
10.0 First Aid facilities and Nearby Hospitals Details

 First Aid	Name of On-Site First Aider:	
	First Aid Box Location:	
	Location of Nearest Hospital:	

11.0 Occupational Health, Fitness and COVID-19 related Preparedness:

1. Please give a brief writeup / methodology of your organization planned to avoid impact of the COVID-19 pandemic at Tata Power working site.
2. Please give brief details of occupational health and hygiene related interventions planned by your organisation to ensure good health and fitness of workforce at Tata Power site.

Appendix 9: Process Flow Chart for Safety Performance Evaluation



Appendix 10: CSM- F-10- Safety Performance Evaluation Criteria

1. A certain percentage of the bill value will be retained against every running bill as safety performance retention. The amount will be released with the last invoice or every six-month based on Safety Performance Score of contractors. The retention amount will be calculated based on contract value as below.

<u>Contract Value</u>	<u>Retention Amount (%)</u>
-----------------------	-----------------------------

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<u>Very high/High risk job</u>	<u>2.5</u>
<u>Medium Risk jobs</u>	<u>2</u>
<u>Low/Very Low Risk jobs</u>	<u>1.0</u>

2. The evaluation criteria include Lead Indicators such as CFSA (Contractor Field safety Audit) score, percentage of workers trained in TPSDI, inspection of critical equipment. Lag indicators such as Fatalities, LWDC and man days lost.
3. The retention amount saved will go to a separate Safety Improvement Fund. Division can use this fund for safety intervention project, process improvement, skill development other than L1, L2, L3 training. This retention amount will be auto released as soon as contract will be closed by order manager
4. For the contract value of more than Rs 1 Cr or contract duration more than 12 months, the retention amount shall be released half yearly based on safety performance. For all remaining contracts, the retention amount will be released with the final bill.
5. In case of job stoppage due to safety violations / unsafe observations at the site, no time extension shall be given to the contractor, if such delays are attributable to contractor.
6. In case of fatality, limb loss or loss of property, vendor must pay for liability, legal, statutory and additional mutually agreed settlement charges imposed by the appointed committee. This charge is over and above the retention amount.
7. The committee will finalize an amount between 5 -50 lakhs based on factors such as advise by statutory authorities, contract value and impact of accident etc.
8. Safety performance bonus 1% (limiting to 50 lakhs) of the invoice value will be considered at the end of the job if the contractual safety performance score 100%.
9. During the progress of the work, concerned Supervisor/Engineer will visit and inspect the work site regularly and evaluate the safety performance of the contractor based on matrix attached herewith and apply the Consequence management policy as applicable.
10. Order Manager, divisional chief and SBU head have the authority to terminate the contract in case of three consecutive serious violations.

Appendix 11: CSM- F-11 Safety Performance Score

Sr. No	Parameter	Unit of Measurement	Target	Weight age	Actual Performance	Actual Score
Lead Indicator						
1	% of Employee certified in TPSDI/Authorized agency	Number	100%	20		
2	Monthly inspection completed for Critical Equipment, lifting Tools & Tackles and hand tools used at site <u>by contractor</u>	Number	80%	15		
3	Condition of critical tools, tackles and equipment <u>to</u>	Number	100%	10		

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	<u>be checked by order manager</u>					
<u>4</u>	<u>Safe (designated way) Disposal of Waste generated</u>	-				
<u>5</u>	<u>Records of waste (Hazardous Waste – Oily cotton waste – E- waste etc.) generation</u>			<u>10</u>		
<u>6</u>	<u>No Effluents to drain</u>					
<u>7</u>	<u>No effluents/discharges to ground</u>					
Lag Indicator						
1	Number of Fatalities	No	0	<u>15</u>		
2	Number of Lost workday case (LWDC) (reportable)	No	0	10		
3	<u>Numbers of total reportable cases</u>	<u>No</u>	<u>0</u>	<u>10</u>		
4	Man-days Lost	Man-days	0	10		
					Final Score	
					Invoice Value	
					Amount to be released	

Safety Performance Evaluation Criteria

Lead Indicators

	Target		
% of Employee certified in TPSDI/Authorized agency	50%	100%	Less than 100%
Score		20	Pro-Reta
	Target		
Monthly inspection completed for Critical Equipment, lifting Tools & Tackles and hand	>=80%	79 to 50%	<50%

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tools used at site <u>by contractor</u>			
Score	15	7	0
	Target		
Condition of critical tools, tackles and equipment <u>to be checked by order manager</u>	100%	<100%	
Score	10	0	
	Target		
<u>Safe (designated way) Disposal of Waste generated</u> <u>Records of waste (Hazardous Waste – Oily cotton waste – E-waste etc.) generation</u> <u>No effluents/discharges to ground</u>	100%	<100%	
Score	10	0	

Lag Indicators

Number of Fatalities	0	>0	
Score	15		0
Number of LWDC (reportable)	0	>0	
Score	10		0
<u>Numbers of total reportable cases</u>	<u>10</u>		<u>0</u>
<u>Score</u>	<u>0</u>		<u>≥0</u>
Number of man days lost	0	1 to 5	>5
Score	10	5	0

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Appendix 12: CSM-F-12 Safety Potential Evaluation Criteria for Vendor Registration

At the time of vendor registration, vendor will be registered under 3 categories

- 1) **Category A**- Vendors eligible to carry out High risk Jobs
- 2) **Category B**- Vendors eligible to carry out technical jobs that are low risk
- 3) **Category C**- Vendors eligible to carry out administrative and office jobs
- 4) **Category D**- Outsourced Jobs / Consultants /Medical Practitioners / Suppliers etc

For vendors to be registered under **Category A**, a safety potential evaluation will be carried out based on following parameters.

Sr. No	Description			Remarks
		Weight age (%)	Actual Score	
1	Does the contractor have a valid ISO 45001/ OHSAS 18001/ Certification?	30		
2	During site visit check for safety adequacy at site	30		Annexure - 12.1
3	Check the Safety statistics of Contractor	10		Annexure - 12.2
4	Check the Safety orientation & training process of Contractor	15		Annexure 12.3
5	Check the organizational structure for safety professionals & engineers / supervisors.	10		Annexure - 12.4
6	Certified/skilled workers as a percentage of overall workforce	5		
	Total	100		

Evaluation Criteria for Category B

Sr. No	Description			Remarks
		Weight age (%)	Actual Score	

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1	Does the contractor have a valid ISO 9001 certification?	30		
2	During site visit check for safety adequacy at site	30		Annexure -12.1
3	Check the Safety statistics of Contractor	10		Annexure -12.2
4	Check the Safety orientation & training process of Contractor	15		Annexure -12.3
5	Check the organizational structure for safety professionals & engineers / supervisors.	10		Annexure -12.4
6	Certified/skilled workers as a percentage of overall workforce	5		
	Total	100		

Evaluation Criteria for Category C

Sr. No	Description			Remarks
		Weight age (%)	Actual Score	
1	Does the contractor have a valid ISO 9001 certification?	40		
2	Check the Safety statistics of Contractor	40		Annexure - 12.2
3	Check the Safety orientation & training process of Contractor	20		Annexure - 12.3
	Total	100		

Annexure 12.1: Evaluation Criteria for Category D:

Category D does not require any evaluation as it is for outsourced job outside the Tata Power company premise.

Annexure 12.2

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Check List – Adequacy of Safety Statistics of Service Provider				Actual Marks obtained	Remarks
1	Check the safety statistics for last 3 years (LTIFR and LTISR)	Statistics available	Marks 5		
Statistics not available		0			
2	Check the trend LTIFR for last 3 years	LTIFR value	Marks		
0 to 0.2		5			
0.21 to 0.3		2.5			
>0.3		0			
3	Check the trend of LTISR last 3 years	LTISR value	Marks		
0 to 2		5			
2 to 3		2.5			
>3		0			
4	Has there been any Prosecution/Conviction for any contravention with regard to Safety & Health provisions under the Factories Act /Electricity Act/ BOCW Act and Rules framed there under?		Marks		
No Prosecution		10			
Prosecution		0			
To be provided in written on letter head					
	Total		25		

Annexure 12.3

Check List – Adequacy of Safety orientation & training process of Service provider				Actual Marks obtained	
1	Records of safety trainings provided to safety officer/supervisor/workmen during last 1 year as percentage(%) of total employed by service provider	Safety Officer		Marks	
		≥80% of employees		5	
		50 to 79 % of employee		2.5	
		<50%		0	
		Safety Supervisor		Marks	
		≥80% of employees		10	
		50 to 79 % of employee		6	
		<50%		0	
		Workmen		Marks	
		≥80% of employees		10	
		50 to 79 % of employee		6	
		<50%		0	
	Total	25			

Annexure 12.4

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Check List – Adequacy of organizational structure for safety professionals & engineers / supervisors.				Actual Marks obtained
1	Check availability of number of safety officers from government recognized institute as per workforce strength.		Marks	
		1 in 50 employees	10	
		1 in 100 employee	6	
		Any other	0	
3	Check availability of qualified workforce from government recognized institute/TPSDI.		Marks	
		100% of safety officers qualified	5	
		50 – 99% of safety officers qualified	3	
		<50	0	
	Total	15		

Appendix 13: CSM-F-13 Safety Bid Evaluation Criteria.

The User must select whether the job is high risk/ long duration at time of raising the PR.

- 1) The decision whether job is “**high risk**” or not has to be made by order manager based on Risk involved (Risk Priority Number in HIRA) of the Jobs. An indicative list of high-risk jobs is attached as annexure
- 2) If a technical job is of low risk with estimated duration of the contract is 1 year or more the job should be treated as “**long duration**”.
- 3) All Safety bids will be evaluated by Safety Concurrence Group. Structure of SCG will be declared by Corporate safety. Corporate safety team will audit bid evaluation process of a few selected jobs and Quality of evaluated safety Bids.
- 4) Records of jobs sent by for Safety Bid evaluation shall be maintained by Corporate Contract team in existing tracing sheet along with other jobs.
- 5) For Safety Bid Evaluation will be based on following parameters.

		Minimum Requirement	Weight age (%)	Score Obtained
Manpower	Safety Officer (1 per 500 workers)	Qualification- Officer shall possess Advance Diploma In Industrial Safety by state technical board. Experience- Minimum 1-year experience in relevant field as mentioned in the job in PR.	5	
	Safety Supervisor (1 per work site up	Qualification- Supervisor shall possess ITI/ Diploma in relevant field.	5	

	to max. 50 workers)	Experience- Minimum 2-year experience in relevant field as mentioned in the job in PR. Training – Trained and certified by TPSDI or equivalent institute in applicable safety training. Note: On request of the contractor/Users -TPDSI should vet & certify the skilled & experienced Technician if Technical Qualification is not adequate.		
	Technician (Skilled workers as electrician, rigger, fitter, welder, cable jointer, line men etc.)	Experience- Minimum 2-year experience in relevant field as mentioned in the job in PR. Training – Trained and certified by TPSDI or equivalent institute in basic and relevant safety procedures training.	5	
Tools & Tackles	Equipment / Machines/ Tools & Tackles (lifting and shifting tools)	The list of Equipment /Machines / Tools and tackles to be used for job to be submitted by the contractor. Evaluation of the list will be carried out based on <ol style="list-style-type: none"> 1) Suitability as per the relevant job 2) Make and age of the tools from authorized agencies defined by the user. 3) Certification by the competent authority of respective state. 	30	
Safety Records	Safety Records	Safety Records for last 3 years (as per vendor or as per our knowledge) – Recommendation?	15	
Safety Plan	HIRA/Contract Job Safety Plan	Adequacy of HIRA and Job Safety Plan with respect to relevant job. More weight age will be given to vendor for using mechanized work and advanced tools and equipment	20	
Accredited Bodies certificate	ISO-9001	ISO-9001	2	
	ISO-14001	ISO-14001	3	

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	OHSAS 18001 ISO 45000	OHSAS 18001/ISO 45000	15	
		Total Score		

- 6) Vendor entitled to carry out the job only when qualified for the safety evaluation as follows:

Contractor is qualified in safety bid only if his total score is more than 70% in all category 1 jobs such as high risk/long duration.

- 7) The Corporate Contract has to ensure that the vendor provides the filled "Safety Competency Form" along with the quotation.
- 8) Corporate Contract will forward the Safety Competency Form received from the contractor to the Safety Concurrence Group for evaluation.
- 9) In case SCG wants to visit the site, the Safety Competency will be based on evaluation at the time of site visit Annexure 13.1

Annexure -13.1:

Checklist to be used: During site visit to check the adequacy Safety systems.			
		Observation	Score* (1-5)
1	Check the adequacy of safety policy and Safety Management system of the contractor.		
2	Does the contractor have written down safety procedures?		
3	Check the records of Near miss, unsafe act, unsafe conditions and incidents.		
4	Check the organization setup to implement the safety systems at site (safety officer, safety supervisor)		
5	Check whether safety meeting and toolbox talk carried out regularly and records maintained or not.		
6	Is the process of incident investigation adequate or not?		
7	Verify incident reporting and recording system		
8	Check the usage of equipment/tools and tackles.		
9	Check for housekeeping at site		
10	Check the use of PPEs and general behavior of workforce towards safety		
	Total Score		
	Site Visit Score		

Score*- rating on the scale of 1-5 to be given based on the observations on site. Score of 1 is the lowest and core of 5 is the highest.

Appendix 14: Indicative List of High-Risk Jobs

To access the exhaustive list of High-risk jobs, please refer the following documents

- 1) High Risk Jobs- Generation
- 2) High Risk Jobs- T&D
- 3) High Risk Jobs- Renewable

Indicative List of High-Risk Jobs -Generation Cluster

Sl. No.	Jobs				
1	Demolition / Painting of Chimney				
2	Survey Sounding Jobs in Sea				
3	Dredging at Coal Birth Jetty				
4	Maintenance / Testing and Replacement of Extra High Voltage (132 KV etc.) Switchyard equipment				
5	Maintenance of EOT Cranes				
6	Deep excavation (5 feet or more) near existing buildings /Structure s				
7	Working inside confined spaces (entry through manhole)				
8	Operation Maintenance of elevators				
9	Working on Live control Circuits for identification of faults				
10	Cable laying and termination Jobs				

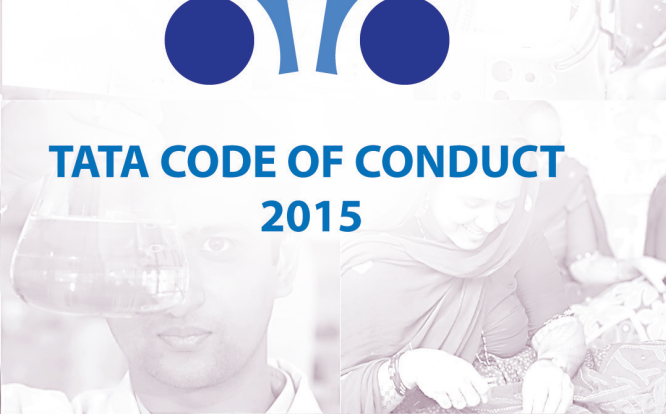
Indicative List of High-Risk Jobs - T&D Cluster

Sl. No.	Jobs				
1	Transmission Line Tower Erection on columns, near live lines, In congested areas, In creeks, In the Sea				
2	Conductor Stringing on Tower Using Tensioner & Puller in the area such as Line Crossing, Near Live lines, Congested Areas, Road Crossing, Bridge Crossing, Railway line Crossing, In creeks ,In the Sea				
3	Cable Pulling by Using winch Machine in City and Rural Areas				
4	Hot Washing of HT and Extra HT lines, Towers and switchyards equipment				
5	Installation of Lifts				
6	Installation of EOT Cranes				
7	Tower Dismantling				
8	Working on H Frame /Pole mounted Transformers				
9	Excavation in operational Area heaving power cables in receiving station				
10	Identification and spiking of cable / disconnection of cables from poles				

Indicative List of High-Risk Jobs - Renewable Cluster

Sl. No.	Jobs				
1	Working on Electrical Panels				
2	Hi Potting of Equipment				

3	Battery commissioning and maintenance					
4	Working on the nasal of Wind Turbine					
5	Working on live electrical switchyard, material Handling and Equipment installation					
6	Roof Top Solar Panels Installation and maintenance					
7	Working in live Electrical Switchyard, Material Handling, equipment installation					
8	All maintenance activities that requires climbing on Towers /Structures / Transformer/ GODs					
9	Loading and Unloading of Solar Panels on trucks					
10	Structural Repair /Dismantling work at height.					



**TATA CODE OF CONDUCT
2015**



LEADERSHIP THAT INSPIRES

For over 100 years, the Tata group has been led by visionaries who have stayed true to the vision of the founder, Jamsetji Tata.

A vision that placed the greater good of society at par with business growth.

A vision that put into practice pioneering social initiatives that changed the way responsible business was run.

And a vision that brought into the group a strong social conscience.



We do not claim to be more unselfish, more generous or more philanthropic than other people. But we think we started on sound and straightforward business principles, considering the interests of the shareholders our own, and the health and welfare of the employees, the sure foundation of our success.

Jamsetji Tata
Founder of the Tata group
Chairman (1868 – 1904)

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FOREWORD

Tata companies have consistently adhered to the values and ideals articulated by the Founder for over 150 years. The Tata Code of Conduct was first formalized by Mr Ratan Tata. It articulates the Group's values and ideals that guide and govern the conduct of our companies as well as our colleagues in all matters relating to business. Today, the Code is a bedrock on which we base our individual, as well as leadership commitments to core Tata values.

The Tata Code of Conduct outlines our commitment to each of our stakeholders, including the communities in which we operate, and is our guiding light when we are sometimes faced with business dilemmas that leave us at ethical crossroads. The Code is also dynamic in that it has been periodically refreshed in order to remain contemporary and contextual to the changes in law and regulations. However it remains unaltered at its core.

Our stellar reputation and success as a business entity has been defined by the powerful commitment and adherence to the core values and principles expressed in this Code, by all our employees, directors and partners. I trust every Tata colleague and Tata company will continue to not only comply with the laws and regulations that govern our business interests around the world, but will continue to set new standards of ethical conduct that will generate deep respect and inspire emulation by others.

N. Chandrasekaran

21st February, 2017



A. OUR VALUES

TATA has always been values-driven. The five core values that underpin the way we conduct our business activities are:



These universal values serve as the foundation for the Tata Code of Conduct. They find expression within the value system of every Tata company.

B. SCOPE AND PURPOSE OF THIS CODE

1. This Code sets out how we behave with:
 - our employees, or those who work with us;
 - our customers;
 - the communities and the environment in which we operate;
 - our value-chain partners, including suppliers and service providers, distributors, sales representatives, contractors, channel partners, consultants, intermediaries and agents;
 - our joint-venture partners or other business associates;
 - our financial stakeholders;
 - the governments of the countries in which we operate; and
 - our group companies.
2. In this Code, “we or us” means our company, our executive directors, officers, employees and those who work with us, as the context may require.
3. The term “our group companies” in this Code typically means companies Tata Sons intends for this Code to apply to, and / or to whom Tata Sons has issued this Code.
4. This Code sets out our expectations of all those who work with us. We also expect those who deal with us to be aware that this Code underpins everything we do, and in order to work with us they need to act in a manner consistent with it.

REMEMBER...

It is our commitment to protect our reputation and our brand equity by adhering to the values and principles set out in this Code. By doing so, we strengthen our unique culture and identity.

OUR CORE PRINCIPLES



The Tata philosophy of management has always been, and is today more than ever, that corporate enterprises must be managed not merely in the interests of their owners, but equally in those of their employees, of the consumers of their products, of the local community and finally of the country as a whole.

J.R.D. Tata

Chairman, Tata Sons (1938 – 1991)

C. OUR CORE PRINCIPLES

1. We are committed to operating our businesses conforming to the highest moral and ethical standards. We do not tolerate bribery or corruption in any form. This commitment underpins everything that we do.
2. We are committed to good corporate citizenship. We treat social development activities which benefit the communities in which we operate as an integral part of our business plan.
3. We seek to contribute to the economic development of the communities of the countries and regions we operate in, while respecting their culture, norms and heritage. We seek to avoid any project or activity that is detrimental to the wider interests of the communities in which we operate.
4. We shall not compromise safety in the pursuit of commercial advantage. We shall strive to provide a safe, healthy and clean working environment for our employees and all those who work with us.
5. When representing our company, we shall act with professionalism, honesty and integrity, and conform to the highest moral and ethical standards. In the countries we operate in, we shall exhibit culturally appropriate behaviour. Our conduct shall be fair and transparent and be perceived as fair and transparent by third parties.
6. We shall respect the human rights and dignity of all our stakeholders.
7. We shall strive to balance the interests of our stakeholders, treating each of them fairly and avoiding unfair discrimination of any kind.
8. The statements that we make to our stakeholders shall be truthful and made in good faith.
9. We shall not engage in any restrictive or unfair trade practices.
10. We shall provide avenues for our stakeholders to raise concerns or queries in good faith, or report instances of actual or perceived violations of our Code.
11. We shall strive to create an environment free from fear of retribution to deal with concerns that are raised or cases reported in good faith. No one shall be punished or made to suffer for raising concerns or making disclosures in good faith or in the public interest.
12. We expect the leaders of our businesses to demonstrate their commitment to the ethical standards set out in this Code through their own behaviour and by establishing appropriate processes within their companies.
13. We shall comply with the laws of the countries in which we operate and any other laws which apply to us. With regard to those provisions of the Code that are explicitly dealt with under an applicable law or employment terms, the law and those terms shall take precedence. In the event that the standards prescribed under any applicable law are lower than that of the Code, we shall conduct ourselves as per the provisions of the Code.

REMEMBER...

"Good faith" means having a reasonable belief that the information you have provided is truthful. It does not mean having 'all the evidence' about the potential violation or case reported.

OUR EMPLOYEES



Once you got the best people, the people who shared our values and ideals, we left them free to act on their own. We do not fetter them. We encourage them and give them opportunities for leadership.

J.R.D. Tata

Chairman, Tata Sons (1938 – 1991)

D. OUR EMPLOYEES

Equal opportunity employer

1. We provide equal opportunities to all our employees and to all eligible applicants for employment in our company. We do not unfairly discriminate on any ground, including race, caste, religion, colour, ancestry, marital status, gender, sexual orientation, age, nationality, ethnic origin, disability or any other category protected by applicable law.
2. When recruiting, developing and promoting our employees, our decisions will be based solely on performance, merit, competence and potential.
3. We shall have fair, transparent and clear employee policies which promote diversity and equality, in accordance with applicable law and other provisions of this Code. These policies shall provide for clear terms of employment, training, development and performance management.

Q&A

A job requirement entails extensive travel. One of the candidates has excellent relevant experience and qualifications. However, this candidate is a single parent. As a result, I feel such a situation would significantly hinder this candidate's ability to cope with the job requirement. What should I do?

In accordance with the Code, the decision to recruit an employee should be based upon merit. We cannot make a presumption that the candidate would not be able to meet the travel requirements of the job. All eligible candidates should be provided with equal opportunity to demonstrate or justify that they can cope with the travel requirements of the job. Being a single parent cannot be a ground to be discriminated against at any stage of recruitment or ongoing employment in our company.

REMEMBER...

We do not tolerate harassment in any form and therefore we expect every employee to discourage such misdemeanours in the workplace.

Dignity and respect

4. Our leaders shall be responsible for creating a conducive work environment built on tolerance, understanding, mutual cooperation and respect for individual privacy.
5. Everyone in our work environment must be treated with dignity and respect. We do not tolerate any form of harassment, whether sexual, physical, verbal or psychological.
6. We have clear and fair disciplinary procedures, which necessarily include an employee's right to be heard.
7. We respect our employees' right to privacy. We have no concern with their conduct outside our work environment, unless such conduct impairs their work performance, creates conflicts of interest or adversely affects our reputation or business interests.

Human rights

8. We do not employ children at our workplaces.
9. We do not use forced labour in any form. We do not confiscate personal documents of our employees, or force them to make any payment to us or to anyone else in order to secure employment with us, or to work with us.

Bribery and corruption

10. Our employees and those representing us, including agents and intermediaries, shall not, directly or indirectly, offer or receive any illegal or improper payments or comparable benefits that are intended or perceived to obtain undue favours for the conduct of our business.

REMEMBER...

Violation by even a single employee of any law relating to anti-bribery, anti-corruption, anti-competition, data privacy, etc. could result in severe financial penalties and cause irreparable reputational damage to the company.

Gifts and hospitality

11. Business gifts and hospitality are sometimes used in the normal course of business activity. However, if offers of gifts or hospitality (including entertainment or travel) are frequent or of substantial value, they may create the perception of, or an actual conflict of interest or an 'illicit payment'. Therefore, gifts and hospitality given or received should be modest in value and appropriate, and in compliance with our company's gifts and hospitality policy.

Freedom of association

12. We recognise that employees may be interested in joining associations or involving themselves in civic or public affairs in their personal capacities, provided such activities do not create an actual or potential conflict with the interests of our company. Our employees must notify and seek prior approval for any such activity as per the 'Conflicts of Interest' clause of this Code and in accordance with applicable company policies and law.

REMEMBER...

As a general rule, we may accept gifts or hospitality from a business associate, only if such a gift:

- has modest value and does not create a perception (or an implied obligation) that the giver is entitled to preferential treatment of any kind;
- would not influence, or appear to influence, our ability to act in the best interest of our company;
- would not embarrass our company or the giver if disclosed publicly.

The following gifts are never appropriate and should never be given or accepted:

- gifts of cash or gold or other precious metals, gems or stones;
- gifts that are prohibited under applicable law;
- gifts in the nature of a bribe, payoff, kickback or facilitation payment*;
- gifts that are prohibited by the gift giver's or recipient's organisation; and
- gifts in the form of services or other non-cash benefits (e.g. a promise of employment).

(*Facilitation payment is a payment made to secure or speed up routine legal government actions, such as issuing permits or releasing goods held in customs.)

Working outside employment with us

13. Taking employment, accepting a position of responsibility or running a business outside employment with our company, in your own time, with or without remuneration, could interfere with your ability to work effectively at our company or create conflicts of interest. Any such activity must not be with any customer, supplier, distributor or competitor of our company. Our employees must notify and seek prior approval for any such activity as per the 'Conflicts of Interest' clause of this Code and in accordance with applicable company policies and law.

Integrity of information and assets

14. Our employees shall not make any wilful omissions or material misrepresentation that would compromise the integrity of our records, internal or external communications and reports, including the financial statements.
15. Our employees and directors shall seek proper authorisation prior to disclosing company or business-related information, and such disclosures shall be made in accordance with our company's media and communication policy. This includes disclosures through any forum or media, including through social media.
16. Our employees shall ensure the integrity of personal data or information provided by them to our company. We shall safeguard the privacy of all such data or information given to us in accordance with applicable company policies or law.
17. Our employees shall respect and protect all confidential information and intellectual property of our company.
18. Our employees shall safeguard the confidentiality of all third party intellectual property and data. Our employees shall not misuse such intellectual property and data that comes into their possession and shall not share it with anyone, except in accordance with applicable company policies or law.
19. Our employees shall promptly report the loss, theft or destruction of any confidential information or intellectual property and data of our company or that of any third party.

Q&A

I am an accountant in the finance department of my company. Due to my artistic skills, I received an offer to pen cartoons for a children's publication for which I would receive compensation. I plan to undertake this activity during week-ends. What should I do before accepting this offer?

Before accepting the offer, you should ascertain whether the company policies and rules require you to make a disclosure to your supervisor so that the company may determine whether your undertaking this activity adversely affects our company's interests. On confirmation from the company that it does not do so, you would be free to take up the activity. It is also your duty to bring to the attention of the company whenever there is any change in the situation you have disclosed.

20. Our employees shall use all company assets, tangible and intangible, including computer and communication equipment, for the purpose for which they are provided and in order to conduct our business. Such assets shall not be misused. We shall establish processes to minimise the risk of fraud, and misappropriation or misuse of our assets.
21. We shall comply with all applicable anti-money laundering, anti-fraud and anti-corruption laws and we shall establish processes to check for and prevent any breaches of such laws.

Insider trading

22. Our employees must not indulge in any form of insider trading nor assist others, including immediate family, friends or business associates, to derive any benefit from access to and possession of price sensitive information that is not in the public domain. Such information would include information about our company, our group companies, our clients and our suppliers.

Q&A

Our company has recently announced the launch of a new business initiative. In connection with this, your friend who is a journalist with a leading business newspaper has asked you to provide some information that he could cover in his forthcoming article. He has promised not to quote you, or reveal your identity. Should you be giving him this information?

No. You should not be sharing information of this nature with the media, even if it is assured that the source would remain anonymous. Only authorised personnel in the company are permitted to speak to the media and provide information of this nature.

Our company has a “Use of Social Media” policy that lays down the “dos and don’ts” for use of social media even if you may access such media on your own time. Why is there such a policy?

External communication is a serious matter. It must be carefully managed because information put out with reference to our company or its businesses needs to be clear, truthful and not violate any undertakings we have given to other parties. In each business there are managers nominated to authorise and make different types of statements to the outside world. These managers should be consulted about any request for information you may receive or information you think we should give out.

In using social media, in particular blogs or social networking sites, you should exercise great caution while talking about our company or the business we do. It may feel like you are chatting with friends or expressing a personal opinion but even while doing so you cannot share any confidential information of our company.

REMEMBER...

We must respect the property rights of others by never misusing their assets, intellectual property or trade secrets, including the copying or downloading of unauthorised software, trademarks, copyrighted material or logos. We should never make unauthorised copies of computer software programs or use unlicensed personal software on company computers.

Prohibited drugs and substances

23. Use of prohibited drugs and substances creates genuine safety and other risks at our workplaces. We do not tolerate prohibited drugs and substances from being possessed, consumed or distributed at our workplaces, or in the course of company duties.

Conflicts of interest

24. Our employees and executive directors shall always act in the interest of our company and ensure that any business or personal association *including close personal relationships* which they may have, does not create a conflict of interest with their roles and duties in our company or the operations of our company. Further, our employees and executive directors shall not engage in any business, relationship or activity, which might conflict with the interest of our company or our group companies.

25. Should any actual or potential conflicts of interest arise, the concerned person must immediately report such conflicts and seek approvals as required by applicable law and company policy. The competent authority shall revert to the employee within a reasonable time as defined in our company's policy, so as to enable the concerned employee to take necessary action as advised to resolve or avoid the conflict in an expeditious manner.
26. In the case of all employees other than executive directors, the Chief Executive Officer / Managing Director shall be the competent authority, who in turn shall report such cases to the Board of Directors on a quarterly basis. In case of the Chief Executive Officer / Managing Director and executive directors, the Board of Directors of our company shall be the competent authority.

Q&A

You are responsible for maintaining our company's customer database. One of your friends is starting a business venture and requests you to share a few particulars from this database for marketing purposes of his business. He assures you that he would keep the data as well as his source confidential. Should you do so?

No. You should respect the confidentiality of customer information and not share any part of the database with any person without due authorisation.

You have access to revenue numbers of different business units of our company. While having a conversation with you over evening drinks, your friend enquires about the financial performance of our company. You do not share detailed information with your friend, but share approximate revenue figures. Is this conduct of yours correct?

No, it is not. You are not permitted to share financial information of our company with others who do not need to know this information. Financial information should always be safeguarded and disclosed only on a need-to-know basis after obtaining requisite approvals. Sharing of any price sensitive information that is not generally available with the public could also lead to violation of applicable insider trading laws.

27. Notwithstanding such or any other instance of conflict of interest that exists due to historical reasons, adequate and full disclosure by interested employees shall be made to our company's management. At the time of appointment in our company, our employees and executive directors shall make full disclosure to the competent authority, of any interest leading to an

actual or potential conflict that such persons or their immediate family (including parents, siblings, spouse, partner, children) or persons with whom they enjoy close personal relationships, may have in a family business or a company or firm that is a competitor, supplier, customer or distributor of, or has other business dealings with, our company.

REMEMBER...

A conflict of interest could be any known activity, transaction, relationship or service engaged in by an employee, his/her immediate family (including parents, siblings, spouse, partner, and children), relatives or a close personal relationship, which may cause concern (based upon an objective determination) that the employee could not or might not be able to fairly perform his/her duties to our company.

Examples of Potential Conflicts of Interest

A conflict of interest, actual or potential, arises where, directly or indirectly, an employee or executive director:

- (a) engages in a business, activity or relationship with anyone who is party to a transaction with our company;
- (b) is in a position to derive an improper benefit, personally or for any family member or for any person in a close personal relationship, by making or influencing decisions relating to any transaction;
- (c) conducts business on behalf of our company or is in a position to influence a decision with regard to our company's business with a supplier or customer where a relative of, or a person in close personal relationship with, an employee or executive director is a principal officer or representative, resulting in a personal benefit or a benefit to the relative;
- (d) is in a position to influence decisions with regard to award of benefits such as increase in salary or other remuneration, posting, promotion or recruitment of a relative or a person in close personal relationship employed in our company or any of our group companies;
- (e) undertakes an activity by which the interest of our company or our group companies can be compromised or defeated; or
- (f) does anything by which an independent judgement of our company's or our group companies' best interest cannot be exercised.

28. If there is a failure to make the required disclosure and our management becomes aware of an instance of conflict of interest that ought to have been disclosed by an employee or executive director, our management shall take a serious view of the

matter and consider suitable disciplinary action as per the terms of employment. In all such matters, we shall follow clear and fair disciplinary procedures, respecting the employee's right to be heard.

Examples of activities normally approved (post-disclosure) as per applicable company policy

Acceptance of a position of responsibility (whether for remuneration or otherwise) in the following cases would typically be permitted, provided the time commitments these demand do not disturb or distract from the employee's primary duties and responsibilities in our company, and are promptly disclosed to the relevant competent authority:

- (a) Directorships on the Boards of any of our group companies, joint ventures or associate companies.
- (b) Memberships/positions of responsibility in educational/professional bodies, where such association will promote the interests of our company.
- (c) Memberships or participation in government committees/bodies or organisations.

Q&A

You are in a relationship with a colleague who has been recently moved into your team and would now be reporting to you. What should you do?

Romantic or close personal relationships with another employee where a reporting relationship exists and one is responsible for evaluating the other's performance, is likely to create a conflict of interest. In such a situation, you would need to report the potential conflict to your supervisor.

Your company is submitting a proposal to a company in which you were previously employed. You have confidential information pertaining to your previous employer, which you believe will help your present employer in winning the contract. Should you share this information?

No. You should not share this information with your company since it relates to confidential information of a third party. Your company respects its employees' duty to protect confidential information that they may have relating to their previous employers.

You are the purchasing manager in the procurement department of your company. You receive an invitation from a supplier to attend a premier sporting event as her guest. This particular supplier is one of the vendors who has submitted a proposal for an open tender issued by your company. Should you accept the invitation?

No. You should not accept the invitation in this instance. Since you are in a key decision-making role for the tender, any unusual benefit that you receive could be perceived as an inducement that could compromise your objectivity.

OUR CUSTOMERS



We have continued to enjoy prosperity, even with adverse times to fight against. Our relations with all concerned are the most friendly. We have maintained the same character for straight-forward dealing with our constituents and customers. Our productions have continued to be of the same high quality, and therefore command the best reputation and realise the highest prices. ... I mention these facts only to point out that with honest and straight-forward business principles, close and careful attention to details, and the ability to take advantage of favourable opportunities and circumstances, there is a scope for success.

Jamsetji Tata

Founder of the Tata group
Chairman, Tata Sons (1868 – 1904)

E. OUR CUSTOMERS

Products and services

1. We are committed to supplying products and services of world-class quality that meet all applicable standards.
2. The products and services we offer shall comply with applicable laws, including product packaging, labelling and after-sales service obligations.
3. We shall market our products and services on their own merits and not make unfair or misleading statements about the products and services of our competitors.

Export controls and trade sanctions

4. We shall comply with all relevant export controls or trade sanctions in the course of our business.

Fair competition

5. We support the development and operation of competitive open markets and the liberalisation of trade and investment in each country and market in which we operate.
6. We shall not enter into any activity constituting anti-competitive behaviour such as abuse of market dominance, collusion, participation in cartels or inappropriate exchange of information with competitors.
7. We collect competitive information only in the normal course of business and obtain the same through legally permitted sources and means.

Dealings with customers

8. Our dealings with our customers shall be professional, fair and transparent.
9. We respect our customers' right to privacy in relation to their personal data. We shall safeguard our customers' personal data, in accordance with applicable law.

Q&A

You are the Regional Sales Manager of our company. You have become a member of an “informal group”, on an instant messaging service, whose members are the regional sales heads of our company’s competitors. The administrator of the group has requested an in-person meeting to informally discuss market conditions and brainstorm on “pricing strategy” from an industry perspective. What should you do?

Any meeting with competitors, especially to discuss “pricing strategy”, could be an attempt to promote an anti-competitive practice or manipulate prices. You should respond by declining this invitation and exiting the “informal group”. You should also report this incident to your supervisor and your Legal department.

You are attending a customer meeting with a colleague, and your colleague makes an untruthful statement about the company’s services. What should you do?

You should assist your colleague in correcting the inaccuracy during the meeting if possible. If this is not possible, raise the issue with your colleague after the meeting to enable him/her or the company to correct any misrepresentation made to the customer.

While working on a customer project, you receive a call from your colleague. He used to manage that customer account before you took over his role. He recalls that he had worked with the customer on developing a new ordering system which he thinks would be beneficial for another customer and requests you to send him the project details. What should you do?

You must not share this information without specific approval of the customer; you are not permitted to use a customer’s assets, including software, for another customer or for any personal use.

REMEMBER...

Striving for excellence in the standards of our work and in the quality of our goods and services is a core Tata value. It is the unwavering practice of this value that builds and sustains customer trust in our brand.

OUR COMMUNITIES AND THE ENVIRONMENT



In a free enterprise, the community is not just another shareholder in business but is in fact the very purpose of its existence.

Jamsetji Tata

Founder of the Tata group
Chairman, Tata Sons (1868 – 1904)

F. OUR COMMUNITIES AND THE ENVIRONMENT

Communities

1. We are committed to good corporate citizenship, and shall actively assist in the improvement of the quality of life of the people in the communities in which we operate.
2. We engage with the community and other stakeholders to minimise any adverse impact that our business operations may have on the local community and the environment.
3. We encourage our workforce to volunteer on projects that benefit the communities in which we operate, provided the principles of this Code, where applicable, and in particular the 'Conflicts of Interest' clause are followed.

The environment

4. In the production and sale of our products and services, we strive for environmental sustainability and comply with all applicable laws and regulations.
5. We seek to prevent the wasteful use of natural resources and are committed to improving the environment, particularly with regard to the emission of greenhouse gases, consumption of water and energy, and the management of waste and hazardous materials. We shall endeavour to offset the effect of climate change in our activities.

OUR VALUE-CHAIN PARTNERS



If we had done some of the things that some other groups have done, we would have been twice as big as we are today.
But we didn't, and I would not have it any other way.

J.R.D. Tata

Chairman, Tata Sons (1938 – 1991)

(on the pace of expansion of the Tata group in the 1960s and 70s)

G. OUR VALUE-CHAIN PARTNERS

1. We shall select our suppliers and service providers fairly and transparently.
2. 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.
3. Our suppliers and service providers shall represent our company only with duly authorised 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.
4. 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.
5. We respect our obligations on the use of third party intellectual property and data.

Q&A

You head the procurement function in our company. You have tight budgetary constraints for a project that you are working on. In order to complete the project within the targeted costs, you intend to request your supplier to provide you an exceptional discount on this project order on the understanding that you would “make it up to him” in future orders. Would you be violating the Code?

Yes, you would. Inducement in any form, including future benefits to the supplier, could compromise your ability to act objectively and in the best interests of the company and therefore must be avoided.

REMEMBER...

Our value-chain partners would include our suppliers and service providers, distributors, sales representatives, contractors, channel partners, consultants, intermediaries and agents; joint-venture partners and other business associates.

OUR FINANCIAL STAKEHOLDERS



Ethical behaviour in business – in every sphere and with all constituents – has been the bedrock on which the Tata group has built, and operates, its enterprises. This has been an article of faith for the group ever since its inception, a fundamental element of our cherished heritage and the essence of our way of life.

Ratan Tata

Chairman, Tata Sons (1991 – 2012)

H. OUR FINANCIAL STAKEHOLDERS

1. We are committed to enhancing shareholder value and complying with laws and regulations that govern shareholder rights.
 2. We shall inform our financial stakeholders about relevant aspects of our business in a fair, accurate and timely manner and shall disclose such information in accordance with applicable law and agreements.
 3. We shall keep accurate records of our activities and shall adhere to disclosure standards in accordance with applicable law and industry standards.
-

GOVERNMENTS



Business, as I have seen it, places one great demand on you; it needs you to impose a framework of ethics, values, fairness and objectivity on yourself at all times. It is not easy to do this; you cannot impose it on yourself forcibly because it has to become an integral part of you.

Ratan Tata

Chairman, Tata Sons (1991 – 2012)

I. GOVERNMENTS

Political non-alignment

1. We shall act in accordance with the constitution and governance systems of the countries in which we operate. We do not seek to influence the outcome of public elections, nor to undermine or alter any system of government. We do not support any specific political party or candidate for political office. Our conduct must preclude any activity that could be interpreted as mutual dependence/favour with any political body or person, and we do not offer or give any company funds or property or other resources as donations to any specific political party, candidate or campaign.

Any financial contributions considered by our Board of Directors in order to strengthen democratic forces through a clean electoral process shall be extended only through the Progressive Electoral Trust in India, or by a similar transparent, duly-authorised, non-discriminatory and non-discretionary vehicle outside India.

Government engagement

2. We engage with the government and regulators in a constructive manner in order to promote good governance. We conduct our interactions with them in a manner consistent with our Code.
3. We do not impede, obstruct or improperly influence the conclusions of, or affect the integrity or availability of data or documents for any government review or investigation.

OUR GROUP COMPANIES



I do not think anyone was on par with Jamsetji as an industrial visionary. But that is not the sole reason why I have been an admirer of Jamsetji. The major reason was his sense of values, sterling values, which he imparted to this group. If someone were to ask me, what holds the Tata companies together, more than anything else, I would say it is our shared ideals and values which we have inherited from Jamsetji Tata.

J.R.D. Tata

Chairman, Tata Sons (1938 – 1991)

J. OUR GROUP COMPANIES

1. We seek to cooperate with our group companies, including joint ventures, by sharing knowledge, physical resources, human and management resources and adopting leading governance policies and practices in accordance with applicable law including adherence to competition law, where relevant.
2. We shall strive to achieve amicable resolution of any dispute between us and any of our group companies, through an appropriate dispute resolution mechanism so that it does not adversely affect our business interests and stakeholder value.
3. We shall have processes in place to ensure that no third party or joint venture uses the TATA name/brand to further its interests without proper authorisation.
4. Our Board of Directors shall consider for adoption policies and guidelines periodically formulated by Tata Sons and circulated to group companies.

Q&A

You are in the process of selecting potential vendors for an IT project in our company. In the final shortlist of two companies, one is a new start-up with limited references and a lower price-quotation, while the other is a Tata company with thirty years of implementation experience and good references, but a marginally higher quote for the same job. With all other parameters of choice being nearly equal, which company should you select for the job?

While price is undoubtedly an important criterion for decision making, it is clearly not the only one to be evaluated. You may also need to consider good customer references, proven track record and shared value systems in order to decide on your IT partner.

You are in the process of selecting potential vendors for a project. One of the three finalists is a group company. In reviewing the final proposals, you rank the group company second out of the three proposals based on pricing and total cost of ownership, and select the first-ranked vendor. Is this the right decision?

Yes. You should select the vendor that, on its own merits, is the vendor that is most appropriate for your company's requirements. You should not select a group company only because of its affiliation.

RAISING CONCERNS

We encourage our employees, customers, suppliers and other stakeholders to raise concerns or make disclosures when they become aware of any actual or potential violation of our Code, policies or law. We also encourage reporting of any event (actual or potential) of misconduct that is not reflective of our values and principles.

Avenues available for raising concerns or queries or reporting cases could include:

- immediate line manager or the Human Resources department of our company
- designated ethics officials of our company
- the 'confidential reporting' third party ethics helpline (if available)
- any other reporting channel set out in our company's 'Whistleblower' policy.

We do not tolerate any form of retaliation against anyone reporting legitimate concerns. Anyone involved in targeting such a person will be subject to disciplinary action.

If you suspect that you or someone you know has been subjected to retaliation for raising a concern or for reporting a case, we encourage you to promptly contact your line manager, the company's Ethics Counsellor, the Human Resources department, the MD/CEO or the office of the group's Chief Ethics Officer.

Q&A

My supervisor has asked me to do something which I believe may be illegal. I am afraid if I do not do what I am told, I could lose my job. Should I do it?

No. Breaking the law is never an option. Discuss the situation with your supervisor to be certain that you both understand the facts. If your concerns are not resolved, contact a higher level supervisor, the Ethics Counsellor, the Legal department or report them via the company's confidential reporting system, if available.

I feel that my supervisor is treating me unfairly for reporting a concern to the Ethics Counsellor. What should I do?

Retaliation against anyone who raises a concern is a violation of the Code. You should therefore promptly report this action of your supervisor to the Ethics Counsellor or the MD/CEO of your company or via the company's confidential reporting system, if available.

ACCOUNTABILITY

This Code is more than a set of prescriptive guidelines issued solely for the purpose of formal compliance. It represents our collective commitment to our value system and to our core principles.

Every person employed by us, directly or indirectly, should expect to be held accountable for his/her behaviour. Should such behaviour violate this Code,

they may be subject to action according to their employment terms and relevant company policies.

When followed in letter and in spirit, this Code is *'lived'* by our employees as well as those who work with us. It represents our shared responsibility to all our stakeholders, and our mutual commitment to each other.

SPEAK UP...

If you are unsure whether a particular action you are about to take is consistent with the principles set forth in the Code, ask yourself:

- Could it directly or indirectly endanger someone or cause them injury?
- Is it illegal/unlawful or out of line with our policies and procedures?
- Does my conscience reject it? Does it conflict with my personal values?
- Would I feel uncomfortable if the story appeared in the media? Would it shame my company, spouse, partner, parent or child?
- Does it 'feel' wrong?

If the answer to any of these questions is "Yes", please stop and consult your reporting manager, the Ethics Counsellor, the Human Resource department, the Legal department or any member of the senior management team, to assist you in making the decision.

When faced with a dilemma: Stop, Think, Act Responsibly

NOTE

The Code does not provide a comprehensive and complete explanation of all expectations from a company standpoint or obligations from a stakeholder standpoint.

Our employees have a continuing obligation to familiarise themselves with all applicable law, group-level advisories and policies, company-level policies, procedures and work rules as relevant. For any guidance on interpretation of the Code, we may seek support from our company's Ethics Counsellor or from the group's Chief Ethics Officer, as appropriate.

All joint ventures are encouraged to adopt the Tata Code of Conduct (TCOC) or a code of conduct that incorporates all elements of the TCOC.

This version of the Tata Code of Conduct supersedes all earlier versions and associated documents and stands effective from 29th July, 2015.

For any query or clarification on the Code, please contact the office of the group's Chief Ethics Officer via email at: ethicsoffice@tata.com.

TATA CODE OF CONDUCT – 2015

I acknowledge that I have received the Tata Code of Conduct.

I have read the Tata Code of Conduct and I acknowledge that as a Tata employee, I am required to comply with the guidelines described therein and failure to do so may subject me to action as per my employment terms and relevant company policies.

If I have a concern about a violation, or a potential violation of the Tata Code of Conduct, I understand that there are channels available to me in my company to report such concerns. By making use of these channels when necessary, I will play my part in maintaining the high ethical standards to which we hold ourselves.

Signature: _____

Date: _____

Name: _____

Department: _____

Address: _____

(Please submit this declaration to your Ethics Counsellor or the Human Resource department of your company.)



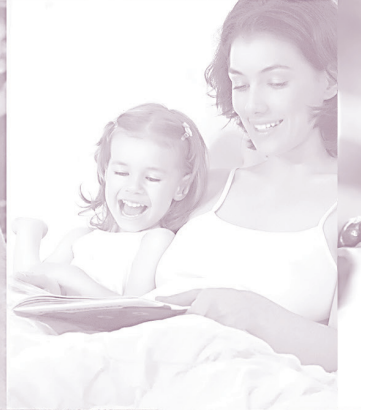


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NOTES

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For further information on the Code please contact:
The Ethics Office,
Tata Sons Ltd.,
Bombay House,
24, Homi Mody Street,
Mumbai – 400001, India.
Email: ethicsoffice@tata.com

CORPORATE ENVIRONMENT POLICY

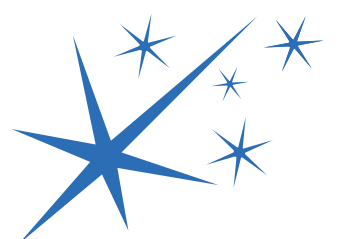
Tata Power is committed to a clean, safe and healthy environment, and we shall operate our facilities in an environmentally sensitive and responsible manner. Our commitment to environmental protection and stewardship will be achieved by:

- Complying with the requirements and spirit of applicable environmental laws and striving to exceed required levels of compliance wherever feasible
- Ensuring that our employees are trained to acquire the necessary skills to meet environmental standards
- Conserving natural resources by improving efficiency and reducing wastage
- Making business decisions that aim towards sustainable development
- Engaging with stakeholders to create awareness on sustainability



(Praveer Sinha)
CEO & Managing Director

Date: 15th June, 2018



CORPORATE SUSTAINABILITY POLICY

At Tata Power, our Sustainability Policy integrates economic progress, social responsibility and environmental concerns with the objective of improving quality of life. We believe in integrating our business values and operations to meet the expectations of our customers, employees, partners, investors, communities and public at large

- We will uphold the values of honesty, partnership and fairness in our relationship with stakeholders
- We shall provide and maintain a clean, healthy and safe working environment for employees, customers, partners and the community
- We will strive to consistently enhance our value proposition to the customers and adhere to our promised standards of service delivery
- We will respect the universal declaration of human rights, International Labour Organization's fundamental conventions on core labour standards and operate as an equal opportunities employer
- We shall encourage and support our partners to adopt responsible business policies, Business Ethics and our Code of Conduct Standards
- We will continue to serve our communities:
 - By implementing sustainable Community Development Programmes including through public/private partnerships in and around our area of operations
 - By constantly protecting ecology, maintaining and renewing bio-diversity and wherever necessary conserving and protecting wild life, particularly endangered species
 - By encouraging our employees to serve communities by volunteering and by sharing their skills and expertise
 - By striving to deploy sustainable technologies and processes in all our operations and use scarce natural resources efficiently in our facilities
 - We will also help communities that are affected by natural calamities or untoward incidence, or that are physically challenged in line with the Tata Group's efforts

The management will commit all the necessary resources required to meet the goals of Corporate Sustainability.



(Praveer Sinha)
CEO & Managing Director

Date: 15th June, 2018

