

The Tata Power Company Ltd



OPEN TENDER NOTIFICATION

Tender Reference: CC24MSJ064

Document Date: 08th March 2024

OPEN TENDER NOTIFICATION

FOR

Balance of Plant (BOP) work for 110 KV AIS bays and 33KV GIS at Trombay Station-A, Mumbai.

Tender Enquiry No: CC25PJ015

(Please note this reference number must be quoted in all submission pertaining to this tender)

**The Tata Power Company Limited (Tata Power)
Corporate Contracts,**

**Smart Center of Procurement Excellence,
2nd Floor, Sahar Receiving Station, Near Hotel Leela,
Sahar Airport Road, Andheri (E), Mumbai 400 059**

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Procedure for Participating in Tender

Tender Enquiry No.	Work Description	EMD (Rs.)	Tender Participation Fee	Last date and time for Payment of Tender Participation Fee*	Last date and time for bid submission
CC25PJ015	Balance of Plant (BOP) work for 110 KV AIS bays and 33KV GIS at Trombay Station-A, Mumbai	2,00,000/-	Rs. 2000/-	Till 02 nd August 2024	By 16 th August 2024

*** Interested bidders are strongly advised not to wait by above time and purchase the tender immediately to get the link for bid submission. This will enable them to communicate/raise queries against the subject tender in time.**

Procedure for Participating in Tender. Following steps to be done before last date for purchase of tender,

1. Interested Vendors to refer to the Section C of the tender (Prequalification criteria).
2. Eligible and Interested Bidders to submit duly signed and stamped letter on Bidder's letterhead indicating
 - a. Tender Enquiry number
 - b. Name of authorized person
 - c. Contact number
 - d. e-mail id
 - e. Details of submission of Tender Participation Fee
3. Non-Refundable Tender Participation Fee, as indicated in table above, to be submitted in the form of Direct deposit in the following bank account and submit the receipt along with a covering letter clearly indicating the Tender Reference number –

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Beneficiary Name – The Tata Power Co. Ltd.

Bank Name – HDFC Bank Ltd.

Branch Name – Fort Branch, Mumbai

Address – Maneckji Wadia Building, Nanik Motwani Marg, Fort, Mumbai 400023.

Branch Code – 60

Bank & Branch Code – 400240015

Account No – 00600110000763

Account type – CC

IFSC Code – HDFC0000060

E-mail with necessary attachment of 1 and 2 above to be send to pravinkumar.jagtap@tatapower.com with copy to vivek.mittal@tatapower.com before “Last date and time for Payment of Tender Participation Fee”

Interested bidders to submit Tender Participation Fee and Authorization Letter before Last date and time as indicated above after which link from Tata Power E-Tender system (Ariba) will be shared for further communication and bid submission.

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

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

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

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

Also, all future corrigendum’s to the said tender, if any, will be informed on Tender section on website <https://www.tatapower.com>

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*_To be submitted in editable excel format

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Section A: Tender Notice including Instruction to Bidders

1. Tender Details

1.1 Key Tender Specific Details

Reference Number	CC25PJ015
Description	Balance of Plant (BOP) work for 110 KV AIS bays and 33KV GIS at Trombay Station-A, Mumbai.
Type of Tender	Firm Order
Period	Till the completion of work.
Tender Fee	Rs 2,000/-
Earnest Money Deposit (EMD)	Rs 2,00,000/- Rs Two lakhs Only. PLEASE NOTE THAT IT IS MANDATORY TO SUBMIT EMD IN BANK GUARANTEE FORMAT ONLY
Price Basis	Firm Price
Executive Handling this Tender*	Name: Mr. Pravinkumar Jagtap Contact No.: 7208846693 E-Mail ID: pravinkumar.jagtap@tatapower.com

*You may contact the above personnel from Monday to Friday during office hours only.

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1.2 Calendar of Events

(a)	Access to Tender Documents through Tata Power website	25 th July 2024
(b)	Date & Time of Pre-Bid Meeting (if applicable).	Shall be intimated in advance.
(c)	Last date and time for Payment of Tender Participation Fee to get e-tender link for bid submission*	Till 02 nd August 2024
(d)	Last Date of receipt of pre-bid queries, if any.	By 07 th August 2024
(e)	Last Date of Posting Consolidated replies to all the pre-bid queries as received	By 09 th August 2024
(f)	Last date and time of receipt of Bids	By 16 th August 2024

Note: - * Interested bidders are strongly advised not to wait by above time and purchase the tender immediately to get the link for bid submission. This will enable them to communicate/raise queries against the subject tender in time.

These date and time in above calendar of events are as planned and tentative. In case of change the same shall be intimated to Authorized Person of Interested Bidder through E-Tender System.

Please note post submission of Bids relevant communication will be done with Authorized Person of Interested Bidder through E-Tender System.

1.3 Mandatory documents required along with the Bid

- 1.3.1 Bid Guarantee Fee (EMD) of requisite value and validity. PLEASE NOTE THAT BID GUARANTEE ONLY IN FORM OF BANK GUARANTEE WILL BE ACCEPTED.
- 1.3.2 Requisite Documents to ascertain fulfilling of Technical and Commercial Pre-Qualification Requirement as detailed in Tender Enquiry.
- 1.3.3 Technical Submission including Drawings, Type Test details etc. as detailed in Technical Specification.
- 1.3.4 Required Commercial Submission as detailed in Tender Document
- 1.3.5 Technical and Commercial Clarification and Deviations as per the format attached in the Tender Enquiry
- 1.3.6 Proper authorization letter to sign the tender and participate in Tata Power E-Tender system on the behalf of bidder.
- 1.3.7 **For vendor not registered with Tata Power, Duly filled Vendor Registration form with all supporting documents is mandatory to participate in the Tender.**

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

Also please note that whenever editable format are shared it is requested that data be filled in relevant cells. No formatting or addition / deletion of rows / columns to be done. Wherever editable Excel submission are requested the file should be free from references, macros etc.

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Checklist of Document Submission

Stage of Tendering	Document	Type of Format	Mode of submission
Before last date of Pre-Bid Query	Query / Clarification / Deviation (QCD) Format. (F1) Separate Excel sheet to be used for Technical and Commercial Pre-Bid Query	Editable Excel Format	Through message in E-tender system
Bid Submission Envelope 1 (First Part)	Earnest Money Deposit	Original Bank Guarantee	In Sealed Envelope
Bid Submission Envelope 2 (Second Part)	Documents to be uploaded in Ariba only. In case of multiple files, a zipped folder can be attached for the same (size limit of 100 MB per zipped file)		
To be submitted Under Tab 2 in Ariba	Duly filled PQR and supporting documents		
	Duly filled PQR format	Editable Excel Format	E-Tender System
	Backup documents for Technical PQR	Signed and Scanned documents	E-Tender System
To be submitted in Ariba	Duly Filled Vendor Registration Form (for unregistered vendor) and supporting documents. Registered vendor to submit letter indicating Vendor Code in Tata Power and factory/supply address to be used.		
	Duly filled Vendor Registration Form (if vendor is not registered with Tata Power)	Signed and Scanned documents	E-Tender System
	Backup document for Vendor Registration Form (if vendor is not registered with Tata Power)	Signed and Scanned documents	E-Tender System

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To be submitted in Ariba	Technical Submission and Supporting Documents		
	Duly filled Technical Submission Format	Editable Excel Format	E-Tender System
	Technical Submission as required for Technical Specifications	Signed and Scanned documents	E-Tender System
	Duly filled Technical Submission- Type test verification sheet Format	Editable Excel Format	E-Tender System
	Backup documents for Type Test verification	Signed and Scanned documents/ reports	E-Tender System
	Query / Clarification / Deviation (QCD) Format for Deviation if any	Editable Excel Format	E-Tender System
	Duly filled Unpriced Bid Format	Signed and scanned copy of document	E-Tender System
To be submitted in Ariba	Commercial Submission and supporting document		
	Letter of Undertaking (FOR VENDORS NOT REGISTERED WITH TATA POWER)	Scanned Copy of letter of undertaking duly filled, stamped and signed	E-Tender System
	E-auction Undertaking form	Scanned Copy of letter of undertaking duly filled, stamped and signed	E-Tender System
Bid Submission Envelope 3 (Third Part)	Duly filled Priced Bid Format	Duly signed and stamped scanned copy of document. To be entered in E-Tender System	E-Tender System

1.4 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 Query / Clarification / Deviation (QCD) Format. Deviations have to be mandatorily submitted in editable Excel sheet Technical and Commercial deviation have to be submitted separately.

Technical or Commercial Deviation should be mentioned in Deviation Format only. Deviation in any other document or Format will not be considered.

1.5 Right of Acceptance/Rejection

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

1.5.2 Mandatory Documents as listed in 1.3 above

1.5.3 Price Bid as per the Price Schedule mentioned in Tender Document

1.5.4 Receipt of Bid and Response to queries within the due date and time

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

1.6 Qualification Criteria

Qualification Requirement expectation and document are detailed in documents in Section C

1.7 Pre-Bid Queries

Pre-Bid Queries if any has to be sent through message in E-Tender System. Pre-Bid Query has to be sent only in the Query / Clarification / Deviation (QCD) Format. Technical Pre-Bid Query and Commercial Pre-Bid Query have to be submitted in Separate Editable Excel File in Prescribed Format. Pre-Bid Queries sent in any other format or send through any other communication channel will not be accepted and answered. Pre-Bid Query have to be sent in the stipulated timeline as defined in the Tender Document. No Pre-Bid Query will be accepted after the due time and date as specified as "Last Date of receipt of pre-bid queries, if any"

1.8 Marketing Integrity

We have a fair and competitive marketplace. The rules for bidders are outlined in the General Condition of Contracts and other parts of Tender Documents. Bidders must agree to these rules prior to participating. In addition to other remedies available, Tata Power 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 or other part of the Tender Documents. A bidder who violates the marketplace 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
- Submit irrelevant documents or frequently cases of missing documents as part of compliance to Qualifying, Technical or Commercial Requirements causing unnecessary delay in Tender Evaluation

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 Tata Power. This includes all bidding information submitted to Tata Power. All tender documents remain the property of Tata Power and all suppliers are required to return these documents to Tata Power 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 on the compliance to tender terms and conditions.
- The bids will be evaluated commercially on the overall all-inclusive lowest cost for the complete tender BOQ / each line item as calculated in Schedule of Items. Tata Power, however, reserves right to split the order line item wise and/or quantity wise among more than one Bidder. Hence all bidders are advised to quote their most competitive rates against each line item.
- Bidder must mandatorily quote against each item of Schedule of Items. Failing to do so, Tata Power may reject the bids.

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

2.1 Price Variation Clause and Cap:

The prices shall remain firm during the entire contract period and no price variation is applicable.

3. Submission of Bid Documents

3.1 Bid Submission

Bidders are requested to submit their offer in line with this Tender document. Bids shall be submitted in 3 (three) parts:

FIRST PART: "EMD – BANK GUARANTEE" of Value detailed in 1.1 valid for 180 days from the due date of bid submission in the form of Bank Guarantee favoring 'The Tata Power Company Limited'. The EMD must be strictly in the format as mentioned in Tender Document, failing which it shall not be accepted by Tata Power and the bid as submitted shall be liable for rejection.

Note: BG of 180 days validity and further claim period of 180 days is needed. In case the same cannot be issued by your bank then BG valid for 365 days can be provided.

Note: At times bidders have sought Tata Power bank details which is needed by them to make BG. Hence the same is reproduced below. These details are only provided to facilitate making of BG if needed

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Tata Power's Bank Details for submitting EMD BG:
Bank Name & Address – ICICI Bank, 163 HT Marg,
Backbay Reclamation, Churchgate, Mumbai 400 020.
A/c no. - 000451000293
IFSC Code – ICIC0000393

The hard copy of EMD in a sealed envelope should be sent on address mentioned in Tender document.

First Part must be submitted in Sealed Envelope.

SECOND PART: "TECHNICAL / UN-PRICED COMMERCIAL BID" shall contain the following documents:

- a) Documentary evidence in support of Technical, Commercial qualifying criteria
- b) Technical literature/GTP/Type test report/Details of Qualified Manpower Available/ Testing Facility available etc. *(complete in all respect as desired and detailed in Technical Specification and Technical Requirement Section)*
- c) Duly filled Technical and Commercial Deviation Sheets
- d) Duly filled formats like Authorization affidavit form
- e) *Unpriced Commercial Bid*

The technical / un-priced commercial bid shall be properly indexed and is to be submitted in Soft Copy though E-Tender system of Tata Power. Hard Copy of Technical Bids need not be submitted.

Second Part must be submitted through E-Tender System Only.

THIRD PART: "PRICE BID" shall contain only the price details and strictly in Price Bid format along with explicit break up of basic prices and applicable GST. Basic price should include packaging forwarding, freight, transit insurance and any other cost envisaged by the bidder.

Third part must be submitted through E-Tender System Only.

FOR BIDS INVITED THROUGH E-TENDER SYSTEM (TECHNICAL AND UN-PRICED COMMERCIAL BID):

In response to advertisement Bidder has to provide details of person authorized to Bid on behalf of the Bidder. An e-mail will be generated by E-Tender System and the authorized person can download the Tender Documents from the system.

Bidders have to mandatorily submit SECOND and THIRD PART (Technical and Price Bid) only through E-Tender system of Tata Power. Bids submitted through any other form (hard copy) / route shall not be admissible.

FOR BIDS INVITED IN SEALED ENVELOPE PROCESS (FIRST PART):

First Part of the bid shall be sealed in envelope which shall be clearly marked as below:

**EMD BID –
"Please mention Tender Reference No"**

Please mention our Tender Reference No on the Tender and drop the same in our Tender Box located at The Tata Power Company Limited (Tata Power), Corporate Contracts, Smart Center of Procurement Excellence, 2nd Floor, Sahar Receiving Station, Near Hotel Leela, Sahar Airport Road, Andheri (E), Mumbai 400 059.

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The bid shall be addressed to:

Head - Procurement
 The Tata Power Company Limited (Tata Power),
 Smart Center of Procurement Excellence, 2nd Floor, Sahar Receiving Station,
 Near Hotel Leela, Sahar Airport Road, Andheri (E), Mumbai 400 059.

The envelope shall also bear the Name and Address of the Bidder along with our Tender No. and subject.

The Bid prepared by the Bidder, and all correspondence and documents relating to the Bid exchanged by the Bidder and Tata Power, 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.

Bids submitted by Email/Telex/Telegram /Fax will be rejected. No request from any Bidder to Tata Power to collect the proposals from Courier/Airlines/Cargo Agents etc. shall be entertained.

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 the bid.

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

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

3.2 Contact Information

Communication Details: Detailed in 1.1

3.3 Bid Prices

Bidders shall quote for the entire Scope of Supply/ work with a breakup 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 Tata Power. 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.

The quantity breakup 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. It also may be noted that the denomination of Purchase Order / Outline Agreement / Rate Contract and associated Payment to Successful Bidder shall also be in Indian Rupees Only. In case Bidder intends to import any equipment, part etc and supply to Tata Power then all liability and costs related to import will rest with the Bidder. All statutory compliances, payments, expenditure etc. related to importing of equipment will be responsibility of the bidder.

3.5 Period of Validity of Bids

Bids shall remain valid for **180 days** from the due date of submission of the bid. Price submitted as part of E-auction / Negotiation shall remain valid for **90 days** from date of E-auction / Negotiation. Notwithstanding clause above, Tata Power may solicit the Bidder's consent to an extension of the Period of Bid Validity. The request and responses thereto shall be made in writing.

3.6 Alternative Bids

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

3.7 Modifications and Withdrawal of Bids

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

3.8 Earnest Money Deposit (EMD)

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

The EMD shall be in following form:

- Bank Guarantee valid for 180 days after due date of submission with an additional claim period of 180 days from the date of expiry of BG.

The EMD shall be forfeited in case of:

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

Or

- b) In case of a successful bidder, if the Bidder, within 15 days, does not
 - i) accept the purchase order, or
 - ii) furnish the required Contract Performance Bank Guarantee (CPBG)

Original Bank Guarantee submitted as EMD shall be returned only after completion of award process for unsuccessful bidders and issue of Contract Performance Bank Guarantee (CPBG) for successful bidder.

4. Bid Opening & Evaluation process

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

4.2 Technical Bid Opening

Bids will be opened at Corporate Office of Tata Power as per our standard Process. The bids shall be opened internally by Tata Power. Technical bid must not contain any cost information whatsoever.

First the envelope marked "EMD" will be opened. Bids without EMD 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 in E-Tender system.

4.3 Preliminary Examination of Bids/Responsiveness

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

Prior to the detailed evaluation, Tata Power 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 Tata Power and/or the Tata Power 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, Tata Power may, at its discretion, ask the Bidder for a clarification on its Bid for any deviations with respect to the Tata Power 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 Tata Power.

4.5 Price Bid Opening

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 Tata Power without any further correspondence in this regard.

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

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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.

4.6 Reverse Auction and Price Matching Option

Tata Power reserves the right to conduct the reverse auction AND / OR Manual Negotiations for the products/ services being asked for in the tender. Only Technical Qualified Bids will be allowed to participate in e-auction. Date and time of e-auction will be intimated through E-Tender system to Authorized Person of Interested Bidder.

For case where more than one bidder has to be awarded (including Rate Contract / Outline Agreement) Price Matching Option will be exercised. Volume of job allocated to original competitive bidder will be more than bidder who is chosen through Price Matching Option. Tata Power decision regarding work sharing shall be final and no explanation OR clarification shall be given regarding the same.

Tata Power reserves the right to go for Reverse Auction (RA) for price negotiation and discover the most competitive price on ARIBA portal, Tata Power's official e-tendering platform. This will be decided after techno-commercial evaluation of the bids. Bidders need to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case Tata Power decides to go for RA.

Only those bidders who are techno-commercially qualified shall be eligible to participate further in RA process. However, the original H1 bidder (whose price bid is the highest post techno-commercial evaluation) shall not be allowed to participate in further RA process provided minimum three techno-commercially qualified bids are available.

5.0 Award Decision

Tata Power 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 Priced Bid Format subject to any corrections required in line with Clause 4.3 above. The decision to place purchase order/Outline Agreement/ Rate Contract solely depends on Tata Power on the cost competitiveness across multiple lots, quality, delivery and bidder's capacity, in addition to other factors that Tata Power may deem relevant.

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

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

5.1 Rate Contract / Outline Agreement

Rate Contract / Outline Agreement does not guarantee any assured business volume in Rupees or Quantity. Quantities are only indicative and specified for the purpose of readiness as per the request from Purchaser. Supplies shall be only against Firm Purchase Orders placed as per the agreed terms and conditions of Rate Contract / Outline Agreement. Purchaser shall be entitled at its discretion to place firm order for such supplies on "As and When Required Basis" without minimum take-off guarantee.

Rate Contract / Outline Agreement will have list of Items with Unit Rate and applicable Taxes and Duties. There will be a cap on value for which order which can be placed against the Rate Contract / Outline Agreement. Actual quantity ordered for each line item may differ significantly from the tentative quantity indicated in the Tender Document. One / few / all items of Rate Contract / Outline Agreement can be ordered till the Cap Value is reached.

6.0 Order of Preference/Contradiction:

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

1. Outline Agreement/Purchase Order (with Commercial conditions)
2. Special Terms and conditions (if applicable)
3. General Terms and conditions
4. Technical Specifications

In case there is a discrepancy in the BOQ mentioned in tender (to the extent modified through subsequent Corrigendum, if any) and the bid submitted by any bidder, the description as mentioned in the tender (to the extent modified through subsequent Corrigendum, if any) shall prevail.

7.0 Ethics

Tata Power is an ethical organization and as a policy Tata Power 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.

Tata Power work practices are governed by the Tata Code of Conduct. Bidder is requested to refer Tata Code of Conduct Clause in General Terms and Conditions.

8.0 General Condition of Contract and Special Condition of Contracts

Any condition not mentioned above shall be applicable as per General Terms and Conditions and Special Condition of Contracts attached along with this tender.

---XXX---

PQR_CC25PJ015_Balance of Plant (BOP) work for 110 KV AIS bays and 33KV GIS at Trombay Station-A, Mumbai

To be filled by Tata Power				To be filled by Bidder
Sr No	Parameter	Tata Power Requirement	Documents to be submitted by vendor to ascertain meeting of Pre-Qualification Requirement	Bidder response
1	2	3	4	5
1	Supply & Experience	<p>Bidder shall have executed Installation & Commissioning of 110 KV or higher voltage class switchyard equipment's in last 5 years as on the originally scheduled Bid Submission Date involving the following scope of work.</p> <p>i)BOP supply and services for Installation & Commissioning of Power Transformers ii) Installation & Commissioning of Auxiliary Power Supply System iii) Supply of material viz. Control cables, AC and DC Auxiliary Power Supply equipment.</p> <p>In case the bidder has a previous association with any of the Tata Group companies for similar products and services, the performance feedback for that bidder by Tata Group companies shall only be considered for evaluation, irrespective of performance certificates issued by any third organization.</p>	<p>Supply List / Performance Certificates from the utilities / clients.</p> <p>Self-undertaking to be submitted in this regard. TATA Power reserves the right to inspect the said manufacturing facility as a proof of compliance to this parameter.</p>	
2	Infrastructure	<p>Bidder shall have a presence in India for at least last 5 years, meeting requirement as specified below:</p> <p>i)The bidder should have supplied, executed, integrated, and commissioned systems of 2 nos. of projects of Power Transformer and EHV AIS bay (110 kV & above) with minimum 5 no. of bays overall, in last 5 years.</p> <p>iii)Should have experience and infrastructure to execute installation and commissioning BOP scope mentioned in the specification for Power Transformers including liasoning for obtaining statutory approvals from Electrical Inspector.</p> <p>iv)Bidder shall be responsible for the performance of complete services provided by him.</p>	<p>PO Copies /Self-undertaking to be submitted in this regard. Tata Power reserves the right to inspect the said manufacturing facility as a proof of compliance to this parameter.</p>	
3	Type Test	<p>Equipment offered shall have test certificates from accredited laboratory (accredited based on ISO/IEC Guide 25/17025 or EN 45001 by the National accreditation body of the country where laboratory is located) as per IEC / IS / Technical specification, valid for a period of five years from the date of opening of technical bid. Test certificate to be submitted only for clamps and conductors to be supplied</p>	<p>Test certificate to be submitted only for clamps and conductors to be supplied.</p>	

4	Safety	The said package being high risk service job will undergo detailed safety evaluation. Bidder will have to qualify in various aspects like requirement of safety, officer, Tata Power Skilled Development Institute (TPSDI) trained workmen, Certifications etc. 100% workmen shall be L1 & L2 and supervisor should be L3 trained & certified by Tata Power Skill Development Institute (TPSDI).	Safety evaluation requirement will be shared along with detailed RFQ documents. List of TPSDI trained workmen OR undertaking for completion of training.	
5	Commercial Capability	Turnover: Average annual turnover of the Vendor for last three financial years shall not be less than Rs. 120 lakhs	Copy of audited Balance Sheet and P&L Account to be submitted in this regard.	

The Prequalification Criteria (C.1) published along with the tender is the total & complete pre-qualification requirement for the tender and shall prevail over any other/additional pre-qualification requirement mentioned elsewhere in the tender.

Appendix 7: CSM-F-7 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

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.

Appendix 8: CSM-F-8 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	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.

The Tata Power Company Ltd		<i>Contractor's Safety Code of Conduct</i>
<i>Document No. TPSMS/GSP/CSM/015 REV 05</i>		<i>Date of Issue: 30/07/2020</i>

Appendix 9: CSM- F-10 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).

<p>Fall Protection Measures: (Where Work at height cannot be avoided)</p>							
<p>Control Measures for Electrical Hazards</p>							
<p>Others Hazard if any (please provide details)</p>							
<p>Hazardous Substances to be used in job : (Attach MSDS if required)</p>	 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.

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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.
-------------------------------------------------	---------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------	--------------------------------------------------

10.0 First Aid facilities and Nearby Hospitals Details

	First Aid Facilities:	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.

workmanlike manner and shall be free from faults and defects. Said warranties shall be in addition to any warranties of additional scope given by Contractor to Owner. None of said warranties and no other implied or express warranties shall be deemed is claimed or excluded unless evidenced by a change notice or revision issued and signed by Owner's authorized representative.

3. Compliance of Local Laws:

Contractor shall be responsible and shall comply with the provision of all the Statutory Acts Applicable. Special attention of the Contractor is drawn towards the compliance of provision of the following statues: (along with the latest amendments/additions, as applicable):

- a) The Child Labour (Prohibition and Regulation) ACT, 1986.
- b) The Contract Labour (Regulation and Abolition) ACT, 1970.
- c) The Employee's Pension Scheme, 1995.
- d) The Employee's Provident Funds and miscellaneous provisions Act, 1952.
- e) The Employees State Insurance Act, 1948.
- f) The Equal Remuneration Act, 1976.
- g) The Industrial Disputes Act, 1947.
- h) The Maternity Benefit Act, 1961.
- i) The Minimum Wages Act, 1948.
- j) The Payment of Bonus Act, 1965
- k) The Payment of Gratuity Act, 1972.
- l) The Payment of Wages Act, 1936.
- m) The Shops & Establishment Act, 1954.
- n) The Workmen's Compensation Act, 1923.
- o) The Employer's Liability Act, 1938.
- p) and any other applicable statutory act

Site Specific requirements shall be as Annexure at I. The compliance to these Site Specific requirements shall not absolve the Contractor of its obligation to comply with the Owner's Contractor Safety Management Policy.

4. Owner's Obligation:

- 4.1 The order manager (As specified in the 'Commercial Notes') shall have the authority to represent Owner on all day-to-day matters relating to the Contract or arising from the Contract. All notices, instructions, orders, certificates, approvals, and all other communications under the Contract shall be given by the order manager, except as otherwise provided for in this Contract. The order manager may appoint the Engineer-In-Charges for different areas for monitoring the work progress, inspections and signing of bills.

- 4.2 Owner shall ensure the availability of site access, all information and/or data to be arranged/ supplied by Owner to the Contractor for execution of the Work . The terms on which the Contractor shall be allowed access to the site shall be specified by the Owner prior to commencement of the execution of the Work and thereafter shall be governed in accordance with such policies as the Owner may provide in writing to the Contractor from time to time.

5. Contractor's/ Sub-contractor's employees:

- 5.1 The Contractor shall engage appropriately qualified persons to provide the services with the prior approval of Owner. Owner may withhold such approval for any reason whatsoever.
- 5.2 The Contractor hereby represents and warrants that:
 - i) the personnel are duly qualified, and are, and will remain, sufficiently qualified, careful, skilful, diligent and efficient to provide the services to Owner; and
 - ii) the Services will be rendered carefully, skilfully, diligently and efficiently, and to the professional standard reasonably expected by Owner of a contractor qualified and experienced in providing services substantially the same as the Services.
- 5.3 The Contractor must ensure that the Contractor's personnel conduct themselves in a proper manner and comply with the procedures and all policies, regulations and directives of Owner including any occupational, health and safety policies and the relevant prevailing laws and regulations in the Country of operations and specifically in the area where Work is being executed.
- 5.4 Owner may inform the Contractor to immediately remove Contractor's personnel from the relevant premises in the event of misconduct or incompetence on the part of the Personnel. The Contractor shall at all times remain liable for all acts and/or omissions of its Personnel.
- 5.5 It is made clear that no relationship of Owner and employee is created between Owner and the Contractor's resident engineers, employees and no claim for employment of any such personnel shall be tenable or entertained.

6. Title of Property:

- 6.1 Unless otherwise provided in this order or agreed to in writing, property of every description including but not limited to all tooling, tools, equipment and material furnished or made available to Contractor, title to which is

in Owner, and any replacement thereof shall be and remain the property of Owner. Such property other than material shall not be modified without the written consent of Owner. Such property shall be plainly marked or otherwise adequately identified by Contractor as being owned by Owner and shall be safely stored separately and apart from Contractor's property.

6.2 Contractor shall not use such property except for performance of work hereunder or as authorized in writing by Owner. Such property while in Contractor's possession or control shall be listed in writing and kept in good condition, shall be held at Contractor's risk, and shall be kept insured by Contractor, at its expense, in an amount equal to the replacement cost with loss payable to Owner. To the extent such property is not material consumed in the performance of this order, it shall be subject to inspection and removal by Owner and Owner shall have the right of entry for such purposes without any additional liability whatsoever to Contractor. As and when directed by Owner, Contractor shall disclose the location of such property, prepare it for shipment and ship it to Owner in as good condition as originally received by Contractor, reasonable wear and tear excepted.

7. Work Completion schedule:

Contractor shall plan and execute the Work in accordance with a detailed schedule mutually agreed upon by the Parties (Owner and Contractor).

8. Contract Price and Payment:

- 8.1 The Contract Price shall be a firm & fixed Contract Value for the Work inclusive of all the taxes, levies & duties and shall remain firm till the validity of this contract.
- 8.2 Unless Specifically stated elsewhere in the contract, the Contractor is solely liable for payment of , and warrants that it will pay, or ensure the payment of all taxes imposed, assessment made in relation to the Work.
- 8.3 An amount as stated in the table below shall be retained towards Contractor's safety performance against every RA bill:

Contract Value	Retention Amount (%)
Upto Rs. 10 lakhs	2.5
Above Rs. 10 lakhs and below Rs. 50 lakhs	2
Above 50 lakhs and upto Rs. 10 Crores	1.5
Above Rs. 10 Crores	1

Rev. date: 25 Jul 2017

The above mentioned safety retention shall be over and above any other retentions/ deferred payments as may have been specifically agreed in the Contract.

- 8.4 For Contract Price Rs. 1 crores or above and Contract Completion Schedule 12 months or more, the above safety retention will be released half yearly against the Safety Performance Score (methodology for evaluation enumerated in the Safety Terms & Conditions attached as Appendix to this General Terms & Condition) which will be evaluated by the Order Manager every month. For all other contracts, the above said safety retention shall be released along with the final settlement only at the end of the contract period.
- 8.5 The Owner shall have the right to stop any work which in its opinion is not meeting the safety standards/ guidelines of the Owner and good engineering practice. The Contractor shall not be eligible for and shall not be granted any extension in Completion Schedule due to such stoppage of work by the Owner.
- 8.6 The above retention towards safety shall not absolve the Contractor of its liabilities including statutory liabilities towards safety violations, injury or death (whether by accident or otherwise). An amount between Rs. 5 to 50 lakhs as deemed appropriate by Owner's appointed Committee for incident investigation and/ or as determined by statutory authorities (whichever higher), will be payable by the Contractor in case of such severe incidents of injury leading to loss of property or partial/ permanent disablement (e.g. loss of limb/s, vision etc.) or death.
- 8.7 Notwithstanding anything else stated in the Contract, the Contractor shall be liable for termination without any notice and without recourse to Owner in case of three (3) or more severe safety violations. There shall be no termination fees/ compensation payable to Contractor for such termination.
- 8.8 In case the Contractor achieves 100% on the Safety Performance Score, the Contractor shall be awarded a discretionary bonus of 1% of invoiced value subject to a maximum of Rs. 50 lakhs towards Safety Performance.
- 8.9 Payment shall be released within 60 days of submission of error free invoice with supporting documents duly certified by the Order Manager/ Engineer-in-Charge after deducting taxes at source as prescribed under the applicable law, income – tax or other deductions under the state value added tax laws . If such payment release

day falls on a holiday of Owner, payment will be released on the next working day. Against deduction of statutory taxes, tax deduction certificates where ever applicable shall be issued as per the applicable provisions of the statute. The Order Manager may recover any amount wrongly paid in excess in any previous bills certified by him.

8.10 *Mode of Payment:* All payments shall be made direct to the Contractor or his authorized representative in the shape of RTGS or Electronics Transfer method, on certification of the Order Manager/Engineer-in-Charge and on compliance of contractual terms & conditions.

9. **Taxes and Duties:**

9.1 The Contract Price shall be inclusive of all taxes, duties, including but not limited to Customs duty, GST or any local taxes, levies imposed by State/Central/Local governments.

9.2 Taxes as mentioned in the Contract Price or Price Schedule shall be paid to the contractor subject to the Contractor complying with all the statutory requirements and furnishing the relevant documents including error free invoices containing detailed break up of the taxes.

9.3 The tax invoices should contain the details to comply with the GST Law. The supplier shall:

- i) Furnish (electronically) and communicate to the Owner, the details of Goods or Services supplied by the 10th of the month succeeding the said tax period,
- ii) Upon discovery of any discrepancy, rectify it and shall pay the tax and interest thereof,
- iii) Furnish the returns (electronically), for the inward and outward supplies of Goods and/or Services, before the specified dates as per the GST Law,
- iv) Communicate the tax paid, credits etc. as and when credited.
- v) The Invoice should clearly state the description of the goods, quantity, sale price, tax %, and tax amount;
- vi) The Invoice should be signed by an Authorized Signatory.

Bills/Invoices in the name of The Tata Power Company Ltd. with packing lists in triplicate shall be forwarded along with the equipment.

Contractor to furnish GST Registration no. in all invoices as well as Purchaser's (Tata Power's) GST no.

9.4 However the payment of tax shall be restricted to the total amount as indicated in the price schedule.

9.5 Any statutory variation in duties, levies or taxes if applicable and specified in this Contract till the scheduled date for completion of Work and limited to direct invoices of the Contractor shall be to the account of Owner. The Contractor shall have the obligation to provide the necessary documentary evidence / supporting by way of gazetted notifications etc. to prove the change in such levies or taxes between the due date of submission of the Bid and the scheduled date of completion of work to claim the difference.

9.6 The Contractor shall pass on to the Owner all the benefits of either reduction in tax rates, exemptions, concessions, rebate, set off, credits etc. or introduction of new tax rates exemptions, concessions, rebate, set off, credits etc. pertaining to all taxes, duties, imposts, fees and levies in respect of the supplies of Goods or performance of obligations under the contract. This would specifically include reduction of tax rates as a result of statutory changes or judicial rulings.

9.7 Any other taxes, levies and duties not mentioned in Contract Price or Price Schedule but applicable as per any statute (s) or introduction (omission) of new taxes, levies and duties shall be deemed to be included in the Contract Price and shall be to the account of the Contractor.

9.8 For facilitating availment of a credit, set-off, rebate, drawback or like benefit available to the Owner, the Contractor will facilitate the Owner by providing the necessary documentary and/or procedural support. In any process of assessment or re-assessment, of taxes payable by the Owner,

9.9 The Contractor shall bear and pay all the costs, liabilities, levies, interest, penalties in respect of non-compliances of any legal requirements as per various statutory provisions. The contractor shall keep the owner indemnified at all times from any tax liability, interest, penalties or assessments that may be imposed by the statutory authorities for non-compliances or non-observation of any statutory requirements by the Contractor.

9.10 All formalities required under statutes, for availing any concessions under relevant tax laws shall be adhered to by the Contractor.

9.11 Deduction at source: Recovery at source towards income tax calculated at the rate prescribed from time to time under the Income Tax Act 1961 and other relevant sections of Income Tax Act shall be made from the bills of the Contractor and the amount so recovered shall be

deposited with the Income Tax Department. Necessary TDS certificate to this effect will be issued to the Contractor in the prescribed proforma.

- 9.12 If any other taxes / duties / cess etc are to be recovered at source as per government regulations / Legislation from time to time, the same shall be recovered from the bills payable to the Contractor. Necessary receipt to this effect will be issued to the Contractor in this regard as per the applicable legislation.

10. Contract Performance Guarantees (If applicable)

The Contractor shall within 15 days of issuance of this Order/Contract furnish an unconditional irrevocable bank guarantee duly stamped, strictly as per the prescribed format of Owner from any nationalized bank or any scheduled bank having a branch in Mumbai and approved by the Owner for a sum equivalent to 10% of the Total Contract Price valid for the Contract Period and with a claim period of not less than 6 months from the completion of Contract Period. The issuing bank should be advised to send a direct confirmation of issue of bank guarantee to Owner.

In case the Contractor fails to furnish the requisite Bank Guarantee as stipulated above, then the Owner shall have the option to cancel the Contract besides other contractual remedies.

11. Price Reduction:

- 11.1 In case the Contractor fails to deliver the service/ Complete the work as per the agreed Completion Schedule including intermediate milestones (if applicable), the Owner shall recover from Contractor, as ascertained and agreed Liquidated Damages, and not by way of penalty, a sum equivalent to 1% of the Contract Value per week of delay. The Liquidated Damages referred above may be recovered by the Owner as set off against any amounts payable by the Owner to the Contractor or in any other manner in accordance with applicable laws.
- 11.2 The overall cap on liquidated damages shall be limited to 10% of the Contract Price.

12. Insurance

- 12.1 The Contractor agrees to indemnify and protect Owner against all liability, claims or demands for injuries or damages to any person or property growing out of the performance of this order/ Contract.
- 12.2 The Contractor further agrees to furnish evidence of insurance showing that Contractor has and will maintain adequate insurance coverage during the life of this Contract/ order in the opinion of Owner, including but not

limited to comprehensive general liability insurance. Such evidence of insurance must set forth the name of the insurer, policy number, expiration date, and limits of liability. Compliance by Contractor with insurance requirements does not in any way affect Contractor's indemnification of Owner under Indemnification clause

13. Indemnification:

The Contractor shall indemnify, save harmless and defend the Owner and keep the Owner indemnified from and against any and all claims, costs, liabilities (financial), litigations, compensations, judgments, expenses or damages (including attorney's fees and other related expenses) arising out of any breach or alleged breach of any of the conditions of this Contract including compliance to statutory laws of provisioned under clause 3, performance of the obligations hereunder, or any representation or misrepresentation made by the Contractor or by any third party in respect of death or bodily injury or in respect to loss or damage to any property with regard to the subject of this Contract.

14. Indemnity against IPR:

The equipment, system, drawings, and other materials that shall be supplied against the Contract will become the Owner's property. Without limitation of any liability of whatsoever nature, the Owner shall be indemnified and kept indemnified against any claim for infringement or breach of any of the statues, rules & regulations by the use of or sale of any article or material supplied by the Contractor. The indemnity shall include any infringement of patent, trade mark, design, copyright or other property rights whether in Country of Origin, or elsewhere resulting from the Contractor's design, manufacture, use, supply or re-supply & would also cover use or sale of any article or material supplied by the Contractor to the Owner under the Contract. The Indemnity shall cover any claim/action taken by a third party either directly against the Owner or any claim/action made against the Contractor & where under the Purchaser is made liable. The Indemnity shall be for losses, damages, and costs including litigation costs, attorney fees etc incurred by the Owner in relation to the Contract.

15. Free Issue Material:

Wherever contracts envisage supply of Free Issue Material (FIM) by the Owner to the contractor for fabrication/ use in service performance, such Free Issue Material shall be safeguarded by an insurance policy to be provided by the Contractor at his own cost for the full value of such materials and the insurance policy shall cover the following risks specifically and shall be valid for six months beyond the Contract Validity date :

RISKS TO BE COVERED: Any loss or damage to the Owner's materials due to fire, theft, riot, burglary,

strike, civil commotion, terrorist act, natural calamities etc. and any loss or damage arising out of any other causes such as other materials falling on Owner's materials.

The amount for which insurance policy is to be furnished shall be indicated in the respective Contract.

Free Issue material (FIM) will be issued to the Contractor only after receipt of the Insurance Policy from the Contractor. The contractor shall arrange collection of the FIM from the Owner's premises and safe transportation of the same to his premises at his risk and cost. Notwithstanding the insurance cover taken out by the Contractor as above, the Contractor shall indemnify the Owner and keep the Owner indemnified to the extent of the value of free issue materials to be issued till such time the entire contract is executed and proper account for the free issue materials is rendered and the left over/surplus and scrap items are returned to the Owner. The contractor shall not utilize the Owner's free issue materials for any job other than the one contracted out in this case and also not indulge in any act, commission or negligence which will cause/result in any loss/damage to the Owner and in which case, the Contractor shall be liable to the Owner to pay compensation to the full extent of damage/loss. The Contractor, shall be responsible for the safety of the free issue materials after these are received by them and all through the period during which the materials remain in their possession/control/custody. The Free issue materials on receipt at the Contractor's works shall be inspected by them for ensuring safe and correct receipt of the material. The contractor shall report the discrepancies, if any, to the Owner within 5 days from the date of receipt of the material. The contractor shall take all necessary precautions against any loss, deterioration, damage or destruction of the FIMs from whatever cause arising while the said materials remain in their possession/custody or control. The free issue materials shall be inspected periodically at regular intervals by the Contractor for ensuring safe preservation and storage, the Contractor, shall also not mix up the materials in question with any other goods and shall render true and proper account of the materials actually used and return balance remaining unused material on hand and scrap along with the final product and if it is not possible within a period of one month from the date of delivery of the final product/ completion of Service covered by this Contract. The Contractor shall also indemnify the Owner to compensate the difference in cost between the actual cost of the free issue material lost/damaged and the claim settled to the Owner by the insurance company.

16. Relation between parties:

The Contract shall be entered into on a principal-to-principal basis only. The Contract shall not be construed as a partnership or an association of persons. There is no agent and principal relationship between the parties. Each party shall be responsible for its own conduct. The Contractor shall ensure at all times that all the work carried out under this contract

either by its own person or through any of its sub-Vendors shall be always done under its own direct supervision.

17. Safety:

Contractor shall comply with all legal and statutory provisions including all rules and regulations pertaining to Safety, Health and the Environment and will be responsible for all legal liabilities arising due to any of their acts or of their personnel.

The Contractor shall comply with the Owner's Contractor Safety Policy and Safety Terms and Conditions. Any misconduct and/ or violation with respect to the Owner's Contractor Safety Policy and Safety Terms and Conditions or any other legal and statutory provisions pertaining to Safety, Health and Environment shall be dealt with as per the Safety Terms and Conditions.

Prior to commencement of any work at site Contractor shall submit an undertaking in writing to adhere to and comply with all the provisions of Owner's Contractor Safety Code of Conduct.

The Contractor shall have a valid ISO 14001/ OHSAS certification. In absence of the same, the Contractor shall obtain the same within 6 months from the date of the Effective Date of Contract.

18. Suspension of Work

Owner may instruct Contractor at any time to suspend performance of the Work or any part thereof with a notice of 7 days for whatever reason. Provided Contractor is not in default under this Contract subject to Articles 1 and 5 inclusive, the Contractor shall be paid a mutually agreed fee, if any, necessarily incurred by Contractor as a direct consequence thereof of suspension and the Project Completion Schedule may be revised accordingly.

Without prejudice to any other rights Owner may have under this Contract or at law if Contractor is in default under this Contract, Owner may instruct Contractor to suspend performance of the Work or any part thereof by giving 7 days notice till such default has been corrected to the satisfaction of Owner. Also Liquidated Damages in accordance with Clause 11 shall continue to be applicable during such period until the default is cured. The costs incurred by the Contractor for such correction shall be to the Contractor's account, and furthermore no payment shall become due to the Contractor. Any cost incurred due to non - performance of the Contractor by the Owner shall be charged to the Contractor.

19. Change Management:

Owner shall have the right at any time to order any change in the Work in accordance with the following procedure. Contractor shall furnish to Owner upon request as soon as reasonably possible but no later

than five (5) days following the request, a written statement specifying:

- (a) the increase or decrease, as the case may be, in the costs of the Work which will result from a change in the Work as requested by Owner,
- (b) any effect such change in the Work may have on any other provision of this Contract originating from either parties, and
- (c) such other details as Owner may require.

Any change in costs shall be reasonably related to the proportional change in the Work and any other costs incurred by Contractor. If Owner agrees to Contractor's statement Owner shall notify Contractor thereof in writing in the form of a change order, whereupon the change in the Work shall be incorporated in the Work and immediately implemented. In the event that the change relates to a reduction in Work, the work in question shall not be undertaken pending the issue of an appropriate Change Order.

20. Governing Laws

This Contract shall be construed in accordance with and governed by the Laws of India without giving effect to any principle of conflict of law.

21. Jurisdiction

This Contract and the transaction contemplated herein shall be subject to the exclusive jurisdiction of the competent Courts in Mumbai only.

22. Dispute settlement:

Dispute or differences arising out or relating to this Order shall be resolved amicably by the parties. Failing such amicable resolution of dispute / differences either party may refer the matter to arbitration of a Sole Arbitrator to be appointed jointly by both the parties. The award of the Arbitrator shall be final, binding and conclusive on the parties. The venue for arbitration shall be Mumbai. The Arbitration proceedings will be governed and regulated by the provisions of Indian Arbitration and Conciliation Act, 1996 as amended from time to time and the rules framed there under.

23. Force majeure:

23.1 In the event of either party being rendered unable by force majeure to perform any obligation required to be performed by it under this Contract the relative obligation of the party affected by such force majeure shall, after notice under this articles be suspended for the period during which such cause lasts. The term 'Force Majeure' as employed herein shall mean acts of God, wars (declared or undeclared), riots or civil commotion, fire, floods, and acts and regulations of the Government of India or State Government or any of the statutory agencies. Both the party

shall pay to the other party, the amount payable upon the date of the occurrence of such force majeure.

23.2 Upon the occurrence of such cause and upon its termination, the party alleging that it has been rendered unable as aforesaid, thereby shall notify the other party in writing immediately but not later than twenty four (24) hours of the alleged beginning and ending thereof giving full particulars and satisfactory evidence in support of the claims.

23.3 During the period, the obligations of the parties are suspended by force majeure; the contractor shall not be entitled to payment of any rate.

23.4 In the event of the force majeure conditions continuing or reasonably expected to continue for a period more than thirty (30) days, Owner shall have the option of terminating the contract by giving seven (7) days notice thereof to the contractor.

24. Sub letting and Assignment

The contractor shall not, without prior consent in writing of the Owner, sublet, transfer or assign the contract or any part thereof or interest therein or benefit or advantage thereof in any manner whatsoever, provided nevertheless that any such consent shall not relieve the contractor from any obligation, duty or responsibility under the contract.

25. Limitation of Liability:

Notwithstanding anything contained in the Contract, the Contractor's aggregate liability under this Contract shall be limited 100% of the Total Contract value. This shall exclude liability arising pursuant to clause 3- Compliance to Local Laws, clause 9.10, clause 14- Indemnity against IPR, clause 13- Indemnity, clause 26 – Confidentiality, liability arising due to loss of or damage to the Free Issue Material (FIM) issued by Owner to Contractor for completion of the Work and liability arising due to wilful misconduct, gross negligence, third party claims and corrupt acts attributable to the Contractor.

26. Confidentiality:

The Contractor shall use the Confidential Information of the Owner only in furtherance of this Contract and shall not transfer or otherwise disclose the Confidential Information to any third party. The Contractor shall (i) give access to such Confidential Information solely to those employees with a need to have access thereto; and (ii) take the same security precautions to protect against disclosure or unauthorized use of such Confidential Information that the party takes with its own confidential information but, in no event, shall a party apply less than a reasonable standard of care to prevent such disclosure or unauthorized use.

27. Termination:

27.1 The Contract shall be deemed to be terminated on completion of the Contract period.

27.2 Termination of default by Contractor:
Owner may terminate the contract at any time if the Contractor fails to carry out any of his obligations under this Contract. Prior to termination, the Contractor shall be advised in writing of the causes of unsatisfactory performance to be improved upon 15 days of the receipt of notice. In case, if the Contractor fails to bring about the improvement to the satisfaction of the Owner, then the Contract shall be terminated.

27.3 Without prejudice to the rights and remedies available to Owner, Owner may terminate the Contract or part thereof with immediate effect with written notice to the Contractor if:

27.3.1 The Contractor becomes bankrupt or goes into liquidation.

27.3.2 The Contractor makes a general assignment for the benefit of creditors.

27.3.3 A receiver is appointed for any substantial property owned by the Contractor.

27.3.4 The Contractor is in breach of any representation or warranty made to the Owner by the Contractor.

The Contractor shall not be entitled to any further payment under the Contract if the Contract is terminated. If the order is terminated under clause 27.2 and 27.3, the Contractor shall not be entitled to any further payment, except that, if Owner completes the Work and the costs of completion are less than the Contract Price, the Owner shall pay Contractor an amount properly allocable to services fully performed by Contractor prior to termination for which payment was not made to Contractor. In case, the cost of completion of Work exceeds the Contract Price, the additional cost incurred by Owner for such completion shall be paid by the Contractor.

27.4 Owner shall be entitled to terminate the Contract at its convenience, at any time by giving thirty (30) Days prior notice to the Contractor. Such notice of termination shall specify that termination is for Companies convenience and the date upon which such termination becomes effective. Upon receipt of such notice, the Contractor shall proceed as follows:

27.4.1 cease all further work, except for such work as may be necessary and instructed by the Owner/ Owner's representative for the purpose of preserving and protecting Work already in progress and protect

materials, facilities and equipment on the Work Site or in transit;

27.4.2 stop all further sub-contracting or purchasing activity, and terminate Sub-contracts;

27.4.3 handover all Documents, equipment, materials and spares relating to the portion of Work already executed by the Contractor or procured from other sources up to the date of termination for which the Contractor has received payment equivalent to the value thereof; and

27.4.4 handover those parts of the supplies manufactured/ work executed by the Contractor up to the date of termination.

Upon termination pursuant to clause 27.4, the Contractor shall be entitled to be paid (a) all sums properly due to the Contractor under the Contract up to the date of termination; and (b) any direct and substantiated charges already incurred or committed for cancellation of the procurement of third party goods or services which were to have been supplied by the Contractor in connection with this Contract provided that the Contractor shall use its best endeavours to minimise such charges

25.5 The Contractor shall not be released from any of his obligations or liabilities accrued under the Contract on termination. For the avoidance of doubt, the termination of the Contract in accordance with this clause shall neither relieve the Contractor of his accrued obligations for Warranty or his accrued liability to pay (liquidated) damages for Delay nor shall entitle him to reduce the value of Performance Security.

28. Consequential Damages:

Unless otherwise specified, neither Party shall be responsible for and nor shall be liable to the other Party for indirect/consequential losses and damages suffered by such Party including for loss of use, loss of profit whether such liability or claims are based upon any negligence on the part of the other Party or its employees in connection with the performance of the Contract.

29. Environment / ISO 14001 Certification:

The Contractor to confirm whether their organization is ISO 14001 certified. If not, the Contractor must certify that the handling, use and disposal of their product / by-products conform to practices consistent with sound environmental management and local statutes. The Contractor shall ensure that all the wastes are disposed in environmental friendly way with strict compliance to applicable laws including adherence to MoEF guidelines with respect to disposal of batteries, lead waste, copper cables, ash, waste oil, e-waste etc which shall be disposed through MoEF approved

parties only. The Contractor shall also be responsible to collect and recycle all the e-waste generated at the end of the product life cycle at its own costs and risks as per the MoEF guidelines/orders.

30. Non-Exclusive Agreement

This Contract is non-exclusive and Owner reserves the right to engage other contractors to perform similar or identical work. Contractor shall accord such other contractors adequate opportunity to carry out their contracts and shall accomplish the Work in co-operation with those contractors and with Owner, in accordance with such instructions as may be issued by the Owner from time to time.

31. Severability

In the event that any of the provisions, or portions or applications thereof, of this Contract are held to be unenforceable or invalid by any court or arbitration panel of competent jurisdiction, Contractor and Owner shall negotiate an equitable adjustment to the provisions of the Contract with a view towards effecting the purpose of the Contract and the validity and enforceability of the remaining provisions, or portions or applications thereof, shall not be affected thereby.

32. Housekeeping & Removal of scrap:

The Contractor shall be responsible for keeping the areas of his work at site, neat and tidy throughout the period of his work. All excess material/ spares/ consumables taken by Contractor, as well as the scrapped items and wooden logs/ crates/ planks shall be returned, from time to time, to the Stores, and transported/ unloaded by Contractor's personnel at the place shown by Order Manager/Engineer-in charge.

The Contractor shall so arrange that all the scrap generated during the progress of his work, is separated into two categories, viz.

- i) Saleable scrap like steel, copper or other metals, etc., and,
- ii) Others, which have nil or negligible resale value, like insulation material, jute, debris, etc. (or as directed by the Order Manager/Engineer-in charge).

The saleable scrap shall be shifted to and unloaded at a central place as per directions of the Stores-in charge, while the other scraps shall be shifted to other locations as per directions from Order Manager/Engineer-in Charge, or as per terms of the order.

The Contractor shall arrange to remove the scrap on regular basis, or even on daily basis, depending upon the requirement, to keep the area around his workplace neat and tidy. In case, it is observed that the

Contractor is not carrying out regular cleaning of his areas of work, or, is not returning the excess materials/ scrap, etc., to the Stores, Owner reserves the right to arrange the same through other sources, and back-charge the Contractor the cost of doing so, along-with overheads, by deducting the amount from Contractor's bills.

Contractor's final bill will be cleared by Owner only after confirming that proper clearing of his areas of work has been completed by the Contractor, and same is certified by the Order Manager/ Engineer in-charge

33. Tata Code of Conduct

The Owner abides by the Tata Code of Conduct in all its dealing with stake holders and the same shall be binding on the Owner and the Contractor for dealings under this Order/ Contract. A copy of the Tata Code of Conduct is available at our website: <http://www.tatapower.com/aboutus/code-of-conduct.aspx>. The Contractor is requested to bring any concerns regarding this to the notice of our Chief Ethics Officer on the e-mail ID: cecounsellor@tatapower.com.

34. Responsible Supply Chain Management:

The Owner is committed for a cleaner environment and respect of Human rights through its Responsible Supply Chain Management policy. The Contractor is required to comply with all the environment & Human rights related laws, including emission norms, Labour and environmental regulations. The Owner encourages its Vendors/ Contractors/ Business partners to pay more attention to green design, green supply, green production, green logistics and green packaging in performing their business obligations.

The Contractor is required to abide by the Tata Power Corporate Environment policy, Energy Conservation and Corporate Sustainability Policy.

A copy of the Responsible Supply Chain Policy along with Environment policy, Energy Conservation policy, Sustainability policy, Health & Safety policy and Human Rights policy is available at website: <http://www.tatapower.com/sustainability/policies.aspx>.

Contractor/Bidder is required to completely fill the attached "Supplier Sustainability Questionnaire" in support of their Green Supply Chain Management initiatives and submit the same with their offer.

The Owner recognizes that diversity in the workplace positively impacts business. The Owner is committed to help people from SC/ST background either by helping them to become entrepreneurs or by engaging workforce from SC/ST community under the contracts agreed herein. To encourage engaging SC/ST community, the owner may consider on the merit to incentivize the Contractor by paying additional 1% of

the service contract portion if the number of SC/ST workforce engaged in the contract exceeds 30% of the total deployed strength and 2%, if the strength goes beyond 50%. While the Contractor will assist the workforce so engaged to become self-reliant in meeting the work expectation, the Owner may also volunteer its training resources to the extent possible to improve their employability. The Contractor shall maintain the proper documentation of such category of the workforce engaged and the owner may consider to pay the incentive after its verification.

The Owner may also consider extending price preference of 5% in the bid evaluation for an order value up to Rs.50 Lacs, provided the company is owned by a person from SC/ST community having minimum 50% holding in the company.

35. Vendor rating:

You are requested to ensure compliance to the terms of the individual orders with regards to timely delivery, provision of all applicable documents / challans / test certificate, quality of the material etc. Your performance with respect to the said factors will be taken into consideration for future business.

36. Vendor Feedback:

34.1 In this dealing Vendors feedback is important for the purchaser to improve its processes. If Contractor have to report any grievance, problem or require any clarification, information, Contractor is requested to contact purchaser at email ID:
CC_CUSTOMERFEEDBACK@tatapower.com

34.2 Contractor is requested to ensure compliance to the terms of the individual orders with regards to timely delivery, provision of all applicable documents / challans / test certificate, quality of the material etc. Contractor performance with respect to the said factors will be taken into consideration for future business.

37. Non-Waiver:

Failure of Owner or its representatives to insist upon adherence to any of the terms or conditions incorporated in the Contract or failure or delay to exercise any right or remedies herein or by law accruing, or failure to promptly notify the Contractor in the event of breach or the acceptance of or the payment of any Material(s) hereunder or approval of any design or Material(s) shall not release the Contractor and shall not be deemed a waiver of any right of Owner to insist upon the strict performance thereof or of any of its rights or remedies as to any

such Material(s) regardless of when the Material(s) are shipped, received or accepted not shall any purported oral modification or revisions of the Contract by Owner or its representative(s) act as waiver of the terms hereof.

ESG FRAMEWORK FOR BUSINESS ASSOCIATES

Tata Power's Sustainability philosophy sits at the core of its Business Strategy. Tata Power Sustainability Model has an overarching objective of 'Leadership with care' with key elements of 'Care for the Environment'; 'Care for the Community'; 'Care for our Customers / Partners' and 'Care for our People'. These sustainability objectives encompass the Environmental, Social and Governance objectives driven as integrated elements.

Tata Power, together with its stakeholders is determined to achieve sustainable growth while creating shared value for all.

As a part of future ready roadmap, Tata Power has targeted following as our Environment, Social and Governance priorities:

- Being Carbon Net Zero before 2045
- Growing Clean capacity (80% by 2030)
- Customer centricity
- Becoming water neutral before 2030
- Achieving zero waste to landfill before 2030
- No net loss of biodiversity before 2030
- Positively impacting 80 million lives by 2027

In order to create a sustainable business ecosystem, Tata Power expects that all its Business Associates (BA) which includes its suppliers, vendors, consultants and service providers to align to its ESG and sustainability commitments.

Tata Power encourages improved efficiencies and scaling up of green initiatives through technology and innovation taking us farther on the journey of reducing carbon emissions and preparing the entire eco-system towards products and services that would have net positive impact on the environment and communities that we operate in.

The Vendors/ bidders wishing to associate with Tata Power are expected to share their own sustainability and ESG journey. We at Tata Power promote all Business Associates to have a sustainable procurement policy for their supplier and service providers to contribute to our integrated approach in achieving a sustainable supply chain. The BA is encouraged to carry out the assessment of their sub-contractors and sub-vendors on sustainability readiness so that they are aware of the expectation/ business requirement.

The Vendor/ Bidder shall fill-in the 'Environment, Social and Governance Compliance Screening Questionnaire for Business Associates' attached at Annexure-I and submit the same along with the Bid in Ariba online platform.

Responsible Supply Chain Management:

Tata Power is committed for a cleaner environment and respect of Human rights through its Responsible Supply Chain Management policy.

Tata Power Business Associate (BA) shall comply with all the environment & Human rights related laws, including emission norms, Labour and environmental regulations.

Tata Power encourages its BA to focus on green design, green supply, green production, green logistics and green packaging in performing their business obligations. The BA is expected to abide by the Tata Power Corporate Environment policy, Energy Conservation and Corporate Sustainability Policy (enclosed with this document as Annexure-II).

The BA is expected to:

- Strive towards Conservation of Energy, Water, Resources and optimize transportation of Men & Materials to minimize environmental impact and reduce carbon footprint.
- Carry out the assessment of materials used for construction, operation & maintenance, consumables and accordingly phase out those materials which are environmentally hazardous.
- Be cognizant that diversity in the workplace positively impacts business.
- Promote affirmative action by supporting people from SC/ ST background by engaging workforce from SC/ ST community under the contracts agreed herein.
- Share the commitment of 'No child labour', 'No forced labour', Non-discrimination on the basis of caste, colour, religion, gender, disability, maternity or pregnancy or any other factor unrelated to the requirements of the job
- Pay the wages or remuneration to the workforce, personnel deployed in compliance to all applicable laws and regulations.
- Provide its employees/ deployed labor with an employment environment that is free of physical or psychological harassment.
- Carry out the assessment of their Sub-contractors on their Sustainability Readiness so that they are aware of the above expectation/ standards
- To ensure usage of suitable package material which is more environmentally sustainable. Further the packing material shall be recycled to the extent possible. The material used for packing is expected to suit the mode of transport and to ensure its safe receipt at point of delivery.

Waste Disposal:

The BA is expected to follow best practices for disposal of waste, few of which are listed below:

- Have a detailed project plan that includes the waste management, segregation of all designated waste material (Recyclable/ Non-Recyclable), collecting, storing, disposing and transferring the same to pre-arranged facility/ destination in timely and safe manner as per environmental legislations. The project plan shall also include the innovative construction practice to eliminate or minimize waste, protect surface/ground water, control dust and other emissions to air and control noise.
- Have purchase policy to encourage the procurement of material with recycled and minimum packaging of goods during delivery and appropriate means for site-to-site transportation of materials to avoid damage and litter generation.
- Ensure that the residents living near the site are kept informed about proposed working schedule and timings/ duration of any abnormal noise full activity that is likely to happen.
- Ensure the regular maintenance and monitoring of vehicles and equipment for efficient fuel use so that emissions and noise are within acceptable limits to avoid air pollution.

Water Management:

The BA is expected to follow best practices for water management, few of which include a management and monitoring system for water withdrawals and consumption, procedures to reduce water usage or reuse/recycle water, and pretreatment of wastewater before disposal.

Compliance to Law:

The BA shall adhere to responsible business practices and comply with the provision of all the Statutory Acts Applicable. Special attention of the BA is drawn towards the compliance of provision of the following statutes: (along with the latest amendments/additions, as applicable):

- The Child Labour (Prohibition and Regulation) ACT, 1986.
- The Contract Labour (Regulation and Abolition) ACT, 1970.
- The Employee's Pension Scheme, 1995.
- The Employee's Provident Funds and miscellaneous provisions Act, 1952.
- The Employees State Insurance Act, 1948.
- The Equal Remuneration Act, 1976.
- The Industrial Disputes Act, 1947.
- The Maternity Benefit Act, 1961.
- The Minimum Wages Act, 1948.
- The Payment of Bonus Act, 1965
- The Payment of Gratuity Act, 1972.
- The Payment of Wages Act, 1936.
- The Shops & Establishment Act, 1954.
- The Workmen's Compensation Act, 1923.
- The Employer's Liability Act, 1938.
- and any other applicable statutory act

Social Accountability (SA 8000):

Tata Power expects its BAs to follow guidelines of SA 8000:2014 on the following aspects

- Child Labour
- Forced or Compulsory Labour
- Health & Safety
- Freedom of Association & Right to Collective Bargaining
- Discrimination
- Disciplinary Practices
- Working Hours
- Remuneration
- Management System

Health and Safety

The BA is expected to ensure the health and safety of his and his Sub-contractor's staff and labour. The BA shall, in collaboration with and according to the requirements of the local health authorities, ensure that medical staff, first aid facilities, sick bay and ambulance service are available at the accommodation and on the Site at all times, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics. The BA shall maintain records and make reports concerning health, safety and welfare of persons deployed, and damage to property, as the Owner's Representative may reasonably require. The BA shall be responsible for the medical treatment / hospitalization of his and his Sub-contractor's staff/ labour.

The BA shall appoint a qualified Safety officer at the Site to be responsible for maintaining the safety, and protection against accidents, of all personnel on the Site. Such Safety officer shall have the authority to issue instructions and take protective measures to prevent accidents.

The BA shall comply in toto with the Tata Power's Contractor Safety Terms & Conditions, Health Safety & Environment Manual while working on Tata Power Site/ Services/ Contracts.

Grievance Mechanism

The BA is expected to have grievance procedures that allow stakeholders to anonymously bring environmental and/or work-related violations and/or concerns to the attention of management. In addition, the BA is expected to have procedures for examining reports of environmental and/or work-related violations or concerns and/or privacy complaints.

Data Protection

The BA is expected to have a formal process to address data security or privacy issues.

ANNEXURE-I



Sr. No.	Question Description	Response (Y/N)	Remarks
Organization			
1	Does your Company have Sustainability Policy at Organization Level? If Yes, Please attach		
2	Do you have sustainable procurement policy in place for your own suppliers? If Yes, Please attach		
3	Does your company do regular assessment of its suppliers on ESG parameters?		
4	Are there ESG risks, or negative impacts identified in your supply chain		
Governance			
1	Is diversity taken into consideration when appointing board members/ senior management? Do you have an independent director/s?		
2	Has your company taken initiatives to ensure ethical practices at workplace? Please share the details, Policies etc.		
3	Does your company have a formal process to address data security or privacy issues? Please share the details, Policies etc.		
4	Does your company have grievance mechanism for stakeholder issues and track resolution?		
Environment/ Planet			
1	Does your company have Environmental Policy? If Yes, Please attach		
2	Do you have a formal process for waste management including solid wastes, liquid wastes and hazardous waste?		
3	Does your company track greenhouse gas emission? Also, what percentage of own consumption comes from the renewable energy?		
4	Does your company have a formal process for water management including monitoring of water consumption and withdrawals, and if applicable, pretreatment of wastewater?		
Green Technology/ Innovation			
1	Are your facility/ Product/ Services provided by you is based on green design, green production, green packaging or green logistics considerations? Please elaborate.		
2	Do your products or services have any environmental or social features or benefits (e.g. environmental/energy certification, ecolabels, fair trade certification, etc.)?		
Social/ People			
1	Does you facility/ Company have written personnel policies in place Are you an equal opportunity employer?		
2	Please describe any formal programme / campaign in place to promote company involvement with the community (volunteering, etc.). What is the percentage of profit spend on community activities?		
3	Does your company have a written Health & Safety Policy or Program? If Yes, Please attach		
Certifications: Does your company have following certifications (valid till date-please mention validity)			
1	ISO9001 accreditation		
2	SA8000 or equivalent		
3	ISO 14001 certification		
4	ISO 18001/45001 or equivalent		
5	ISO/IEC 27001 or equivalent		
6	Any Other (Please specify)		

Signature

Business Associate Name

ANNEXURE-II

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



Supplier Code of Conduct

Tata Power follows the Tata Code of Conduct (TCoC) and the Whistle blower Policy and expect all its Suppliers to adhere to the same principles. **“Supplier”** here means any business, company, corporation, person or other entity that provides, sells or seeks to sell, any kind of goods or services to Tata Power, including the Supplier’s employees, agents and other representatives. The suppliers are expected to adhere to the following Do’s and Don’ts:

Do’s

1. The Suppliers shall be committed to supplying products and services of high quality that meet all applicable standards and laws, including product packaging, labelling and after-sales service obligations.
2. Comply with all applicable laws and regulations, both in letter and in spirit, in all the territories in which it operates.
3. Strive to provide a safe, healthy and clean working environment for its employees.
4. Strive for environmental sustainability, particularly with regard to the emission of greenhouse gases, consumption of water and energy and the management of waste and hazardous materials.
5. The Supplier shall represent our company (including Tata brand) only with duly authorised written permission from our company.
6. Safeguard the confidentiality on the use of intellectual property, information and data of the Company.
7. Gifts and hospitality given or received should be modest in value and appropriate as per Company Policy.
8. The assets of Tata Power shall be employed primarily and judiciously for the purpose of conducting the business for which they are duly authorised.
9. All actual or potential conflicts due to financial or any other relationship with a Tata Power employee shall be disclosed.

Don’ts

1. The Supplier shall not make unfair or misleading statements about the products and services of competitors.
2. Children shall not be employed at workplaces.
3. Forced labour shall not be used in any form.
4. The Suppliers shall neither receive nor offer or make, directly or indirectly, any illegal payments, remunerations, gifts, donations or comparable benefits that are intended, or perceived, to obtain uncompetitive favours for the conduct of its business with Tata Power.

Reporting Violations

The Supplier shall notify the Company regarding any known or suspected improper behaviour of other suppliers or employees relating to its dealings with Tata Power, by email to: cecounsellor@tatapower.com.

The same can also be raised through our 3rd party ethics helpline facility:

1. Email id: tatapower@ethics-line.com ; Website: www.tip-offs.com
2. Helpline numbers: Toll free - 0008001004382 and 0008001008277. Also accessible at normal domestic call rates within India: +91-11-71279005
3. Postal address: Deloitte Touche Tohmatsu India LLP
c/o Arjun Rajagopalan, Partner (Ethics Helpline Services)
19th Floor, 46 - Prestige Trade Tower, Palace Road,
High Grounds, Bengaluru, Karnataka – 560001

Special Terms and Conditions

Item No D.2

1. The information contained in this Tender Document or subsequently provided to Bidder, whether verbally or in documentary or any other form by or on behalf of The Tata Power Company Limited herein referred to as Tata Power, or any of its employees, is provided to Bidder on the terms and conditions set out in this Tender Document and such other terms and conditions subject to which such information is provided.
2. Tata Power also does not accept any liability of any nature whether resulting from negligence or otherwise however caused arising from reliance of any Bidder upon the statements contained in this Tender Document.
3. Tata Power, and its employees make no representation or warranty and shall have no liability to any person including any Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this Tender Document or otherwise, including the accuracy, adequacy, correctness, reliability or completeness of the Tender Enquiry and any assessment, assumption, statement or information contained therein or deemed to form part of this Tender Document or arising in any way in this Selection Process.
4. Tata Power may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumption contained in this Tender Document.
5. Though adequate care taken while issuing this Tender Document, Bidder should satisfy himself for completeness of the document in all respects. Intimation of any discrepancy should be given to Tata Power Concerned Person immediately. If no intimation received by this office within 3 days from the date of issue of the Tender Document, then Tata Power shall consider that the document received by the Bidder is complete and to the satisfaction of the Bidder in all respects.
6. Tata Power reserves the right to change any or all of the provisions of this Tender Document before date of submission. Such changes, if any, would be intimated to Authorized Person of Interested Bidder through E-Tender System only.
7. The issue of this Tender Document does not imply that Tata Power is bound to select a Bidder or to appoint the Selected Bidder, as the case may be, for the Contract and Tata Power reserves the right to reject all or any of the Proposals without assigning any reasons and or making any correspondence on this account whatsoever.
8. Bidder shall bear all costs associated with or relating to the preparation and submission of its Proposal including but not limited to preparation, copying, postage, delivery fees, expenses

associated with any demonstrations or presentations which may be required by Tata Power or any other costs incurred in connection with or relating to its Proposal. All such costs and expenses will remain with the Bidder and Tata Power shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by an Bidder in preparation or submission of the Proposal, regardless of the conduct or outcome of the Selection Process.

Any Bidder wishing to undertake site visits for familiarization with site conditions, may do so. All costs towards site visits, conference and submission of documents shall be borne by the Bidder themselves.

9. No claim shall be entertained on account of disruption of internet services being used by bidders. Bidders are advised to upload their bids well in advance to avoid last minute technical snag.
10. The decision of Tata Power Management regarding the opening of offers, evaluation and acceptance of the offer shall be final and binding on all the Bidders.
11. Tata Power reserves the right to extend the date of uploads/opening of tenders without assigning any reason thereof, and also reserves the right to distribute the work among more than one bidder.
12. Tata Power reserves the right to accept or reject any offer, and to annul the offer process and reject all offers at any time prior to award of Offer, without thereby incurring any liability to the affected Bidder or any obligation to inform the affected Bidder of the grounds for the Tata Power decision.
13. Tata Power reserves the right to invite open or limited tenders and when tenderers are called to accept a tender in whole or in part or reject any tender or all tenders without assigning any reasons for such action.
14. The authority for the acceptance of the tender will rest with the Tata Power. It shall be obligatory on the said authority to accept the most suitable bid or any other bid and no Bidder shall demand neither any explanation for the cause of rejection of his / their tender nor Tata Power undertake to assign reasons for declining to consider or reject any particular tender or tenders.
15. Local Conditions: It will be imperative on each Bidder to fully acquaint himself with all the local conditions and *factors* which would have any effect on the performance of the contract. Tata Power shall not entertain any request for clarifications from the tenderer regarding such local conditions. No request for the change of price, of time schedule of completion of work on account of any local conditions or factor shall be entertained after the offer is accepted by Tata Power.

16. The intending bidder will be deemed to have satisfied himself by actual inspection of the site and locality of the works, that all conditions liable to be encountered during the execution of the works are taken into account and that rates he enters in the tender papers are adequate and all inclusive, for the completion of works to the entire satisfaction of Tata Power.
17. Bidder who is Black listed / Banned / Debarred as on originally scheduled date of this bid opening or whose Agreement / Work order has been terminated on account of performance, or a bidder against whom there is adverse report about its performance under an existing contract or a bidders performance security has been forfeited by any company/organization for non-performance at any time shall not be eligible, within 5 (five) years of originally scheduled date of this bid opening by any State / Central Govt. / Govt. Undertaking / Public sector Undertaking in India for similar type of work, will not be eligible for participating in this tender. The Bidder should submit an affidavit on Letter Head (Format F1) as a proof in this regard.
18. The bidder should provide detailed information on any litigation or arbitration arising out of contracts completed or under execution by it over the last five years. A consistent history of awards involving litigation against the Bidder may result in rejection of Bid.
19. Conditional and incomplete tenders shall not be accepted. Bid must be in conformity with schedules / formats of this tender.
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 - a. have submitted false document for the purpose of qualifying in the tender or non-execution of project as per contract,
 - b. Have not provided relevant details (for example litigation history etc)action as per Law will be taken and the pending payment, Bank Guarantee, EMD, Security amount of the bidder will be forfeited by Tata Power at any stage of execution. Also Bidder will be Blacklisted for future Tenders by Tata Power.
21. Issuance of Tender document does not construe that Bidder will be qualified for award of work.
22. Tata Power reserves the right to verify all statements, information and documents, Submitted by the Bidder in response to Tender Document. Any such verification or the lack of such verification by Tata Power to undertake such verification shall not relieve the Bidder of its obligations or liabilities hereunder nor will it affect any rights of Tata Power there under.

Special Terms and Conditions

Item No D.2

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3. Tata Power, and its employees make no representation or warranty and shall have no liability to any person including any Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this Tender Document or otherwise, including the accuracy, adequacy, correctness, reliability or completeness of the Tender Enquiry and any assessment, assumption, statement or information contained therein or deemed to form part of this Tender Document or arising in any way in this Selection Process.
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19. Conditional and incomplete tenders shall not be accepted. Bid must be in conformity with schedules / formats of this tender.
20. At any stage if it is found that bidder
 - a. have submitted false document for the purpose of qualifying in the tender or non-execution of project as per contract,
 - b. Have not provided relevant details (for example litigation history etc)action as per Law will be taken and the pending payment, Bank Guarantee, EMD, Security amount of the bidder will be forfeited by Tata Power at any stage of execution. Also Bidder will be Blacklisted for future Tenders by Tata Power.
21. Issuance of Tender document does not construe that Bidder will be qualified for award of work.
22. Tata Power reserves the right to verify all statements, information and documents, Submitted by the Bidder in response to Tender Document. Any such verification or the lack of such verification by Tata Power to undertake such verification shall not relieve the Bidder of its obligations or liabilities hereunder nor will it affect any rights of Tata Power there under.

D.3 COMMERCIAL TERMS & CONDITIONS

Tender No: **CC25PJ015**

Tender Name: Balance of Plant (BOP) work for 110 KV AIS bays and 33KV GIS at Trombay Station-A, Mumbai.

1) **GENERAL** - The following **Special Conditions of Contract (SCC)** shall supplement the General Terms and Conditions- Supply & Service.

Wherever there is a conflict, the provisions herein shall prevail over those in the "General Conditions of Contracts- Supply & Service.

2) **CONTRACT PRICE & CONTRACT STRUCTURE** - The Price Bids shall remain valid for 180 days from the due date of submission of the bid.

Price submitted as part of e-Auction / Negotiation shall remain valid for 90 days from date of e-Auction / Negotiation.

Notwithstanding clause above, Tata Power 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.

Bidders to quote for the package on Firm Price basis. The prices and unit rates shall remain firm and fixed till the completion and no price variation is applicable.

3) **COMMENCEMENT / EFFECTIVE DATE** - The bidder will commence work / manufacturing of equipment on issue of Letter of Award (LOA) / Firm Purchase Order by Tata Power and notice to proceed by the Order Manager.

4) **SCOPE OF WORK** - BA (Business Associate) has a clear understanding of the job & confirms to execute the services as per technical specifications / bill of quantity & subsequent confirmations provided by Tata Power User / Engineering team.

5) **CONTRACT PERFORMANCE CUM PERFORMANCE BANK GUARANTEE** - This is as per General Terms & Conditions - Services Cl 10.0

Contractor shall submit a Contract performance bank Guarantee 05% of Contract value valid till the Warranty Period and having a claim period of 06 months beyond the expiry date. An amount equivalent to CPBG shall be retained from Bidder's bills payables till such time CPBG cum PBG is submitted by Bidder. CPBG cum PBG shall be submitted within 15 days from the date of award of work as per approved format. CPBG cum PBG shall be released after successful completion of Warranty Period.

6) **TERMS OF PAYMENT** - This is further to General Terms & Conditions - Services CI 8.0

A. No Advance Payment shall be made.

B. Payment Terms:

i) Monthly running bill (not more than one invoice per month)

shall be paid based on actual completion of work at site duly certified by Engineer in charge.

ii) 05% of the gross value of each Running Account (RA) bill shall be retained as retention money This retention money shall be released after commissioning of 110KV AIS bays along with 33KV GIS and issuance of Work completion certificate by Owner/Project manager.

iii) 100% of the invoice amount after retention and/or recoveries

shall be released within 60 days (For MSME: 45 days) from the date of submission of error free invoice supported by all required documents.

iv) Safety Retention shall be as per safety Terms and Conditions (Enclosed as Annexure to GTC) as applicable.

7) **LIQUIDATED DAMAGES** - In the event of delay, LD shall be levied at 1% of Contract value per week of delay or part thereof subject to maximum of 10% of Contract value.

8) **WORK COMPLETION PERIOD** – Within 15 Months after release PO. Work Commencement on or before receipt of main equipment on site and after confirmation of Order manager.

9) **DEFECT LIABILITY PERIOD** – 12 Months from the completion of work.

10) **TOTAL COMPLIANCE TO TCOC, SHE AND INTERNATIONAL SAFETY STANDARDS** - Tata Power Contractor Safety Management (CSM) checklist is enclosed as Annex CSM format. Bidder shall have to abide fully without any deviation.

11) **REVERSE AUCTION** - Tata Power reserves the right to conduct the reverse auction for the products / services being asked for in the tender. Only Technical Qualified Bids will be allowed to participate in e-auction. Date and time of e-auction will be intimated through E-Tender system to Authorized Person of Interested Bidder.

Tata Power reserves the right to go for Reverse Auction (RA) for price negotiation and discover the most competitive price on ARIBA portal, Tata Power's official e-tendering platform. This

will be decided after techno-commercial evaluation of the bids. Bidders need to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case Tata Power decides to go for RA.

Only those bidders who are techno-commercially qualified shall be eligible to participate further in RA process. However, the original H1 bidder (whose price bid is the highest post techno-commercial evaluation) shall not be allowed to participate in further RA process provided minimum three techno-commercially qualified bids are available.

12) TPSDI TRAINING - To improve work safety and to ensure that all work force deployed at owner premises have the right orientation / induction and skills training before they undertake any work, the bidder shall accordingly plan and enrol his and sub-contractors work force to the respective skills / crafts training (Levels L1/L2/L3) offered by TPSDI.

This is further to General Conditions of Contract Clause 3.54.23.

In order to improve work safety and to ensure that all work force deployed at owner premises have the right orientation / induction and skills training before they undertake any work, the bidder shall accordingly plan and enrol his and sub-contractors work force to the respective skills / crafts training (Levels L1/L2/L3) offered by TPSDI.

13) SPECIAL NOTE FOR STATUTORY REQUIREMENTS RELATED TO CONTRACT WORKMEN - In addition to all prevailing admin / statutory approvals bidder to take special note of following.

All employees should submit medical fitness on Form No 6. ESIC / PF is mandatory for all employees deputed for the project. Police Verification / Indemnity Bond to be produced for all employees working at site.

14) TOTAL COMPLIANCE TO TCOC, SAFETY TERMS & CONDITIONS AND INTERNATIONAL SAFETY STANDARDS-

Tata Power Contractor Safety Terms and Conditions is enclosed as Annexure to the GCC. Bidder shall have to abide fully without any deviation.

D.5 Price bid-BOP work for 110KV AIS bays and 33KV GIS at Trombay Station-A

S.No	Description	Unit	Qty	Bidders Name	
				Rate	Amount
A	110kV 2 Nos of AIS bay along with additional connection to Unit-4 bay				
1	loading, unloading, transportation within Trombay premises, proper preservation at site, storage & handling at site, Assembly, erection, installation, equipment structure installation, testing and commissioning, assistance for testing of Complete 3 nos. 110kV bay equipment / System as per attached FQP, for free issued items as listed below.				
a	110kV Circuit breaker 3 Nos	Lot	1		-
b	110kV Current transformer 9 Nos	Lot	1		-
c	110kV PTs - 6 Nos	Lot	1		-
d	110kV Isolators- 8 Nos	Lot	1		-
e	110kV Lightning arrester- 6 Nos	Lot	1		-
f	110kV Bus Post insulators- 12 Nos	Lot	1		-
g	110kV Cable sealing end structures- 18 Nos	Lot	1		-
h	CRP, RTCC,PAC and metering panels- 15 Nos and ABT meters 3 Nos (including base frame as per site requirement)	Lot	1		-
2	Installation of support structure for all AIS equipments(Above mentioned equipments excluding 2 Nos of isolator for Dt-8 second bay)	Lot	1		-
3	supply and installation of clamps & connectors required for 2 Nos of AIS bays and connection to existing Unit-4 bay (Total - 140)	Lot	1		-
4	Supply of 1.25"Copper IPS tube along with bending, brazing joints, V jumpers & connectors for complete 3 bays	Meter	200		-
4.1	Installation of 1.25"Copper IPS tube along with bending, brazing joints, V jumpers & connectors for complete 3 bays	Meter	200		-
5	Laying & termination services for all required AC/DC supply cables, control cables, Instrumentation Cables and Modbus communication cables, supply of all accessories (along with lugs, glands and HDPE pipes for Control cable & services of splicing of optical fibre cable) required and SCADA integration (Refer Annexure)				
a	3Cx2.5 Sq.mm	Mtr	5000		-
b	7Cx2.5 Sq.mm	Mtr	11200		-
c	14Cx2.5 Sq.mm	Mtr	1800		-
d	7Cx1.5 Sq.mm	Mtr	1600		-
e	14Cx1.5 Sq.mm	Mtr	2000		-
f	4Cx2.5 Sq.mm	Mtr	900		-
g	4Cx4 Sq.mm	Mtr	5000		-
h	4Cx6 Sq.mm	Mtr	8100		-
i	2Cx6 Sq.mm	Mtr	2500		-
6	Supply & Installtion along with bends cable carrier system for above cables 450 mm size. (Size may vary as per ICS prepared by bidder, billing shall be done as per actual qauntity installed)	Meter	200		-
7	Supply & Installtion along with bends cable carrier system for above cables 300 mm size. (Size may vary as per ICS prepared by bidder, billing shall be done as per actual qauntity installed)	Meter	200		-
8	Supply and services of 5 Nos of CT/PT marshaling box (Junction box) along with accessories required for laying and termination of cables (As per site requirement).	Lot	1		-
B	33kV GIS				
1	Unloading of MV GIS switchgear (9 Nos with adoptor panels), shifting to storage at site, Erection and installation of GIS panels,erection, installation and commissioning of automation panels(3Nos), Remote control panels(1 No.)	Lot	1		-
2	Supply, erection and installation of base frames along with modification of false flooring for GIS Bays, automation panel & remote control panels (Total- 4 nos.)	Lot	1		-

3	Supply and installation of 3 nos per feeder 2mm thick, 250x150mm Aluminum nameplates with engraved letters	Lot	1		-
C	Integrated testing of 110 & 33kV Bays along with 2 Nos of 40 MVA transformer	Lot	1		-
D	Supply & installation of effective & solid earthing system along with Pits for 3 nos. of 110kV bays, 2 nos of 40MVA transformers and 33kV GIS				
1	Earth Pit- 3 meter long, 20mm Diameter Solid copper (97% conductivity, hard drawn) Rod	Nos	14		-
2	150 x 150 x 10 mm Cu plates	Nos	20		-
3	Services of installation of earth conductor (0.35 sq inch multi-strand or 2x 0.2 sqinch copper conductor), pits, lugs, (Soldering need to be done), nuts, bolts, etc.	Lot	1		-
E	Dismantling				
1	Existing DT-6 Bay along with all AIS equipments and A2 structure with conductor and insulators and transport to designated location at trombay.	Lot	1		-
2	Dismantling of Existing DT-7 switchgear(ICOG) with Power, control & instrumentation cables with cutting & pot heading & placing in trench or shifting to stores as applicable	Lot	1		-
3	Dismantling of existing old PAC panels and shifting to store.	Lot	1		-
4	Dismantling & reinstatement of existing shed structure, height barriers, fencing & barricades and other equipment transportation/ shifting	Lot	1		-
5	Overhauling of dismantled bay equipment				
	3 Nos Current transformer	Lot	1		-
	1 No. Circuit breaker with mechanism Box	Lot	1		-
	2 Nos of Motor operated isolators with main and earth mechanism box	Lot	1		-
F	Obtaining Electrical Inspector approval for complete project scope of work along with preparation of SLD, EKD, Plan & section drawings etc. - plan layout approval and final charging permission	Lot	1		-
G	Cutting & pot heading of existing Control & instrumentation cables(From dismantled equipment till the trench) & Placing them safely in trench	Lot	1		-
				Total Basic Price	-
Note:	1. Above line items are tentative for costing purpose only, bidder has to carry out the work as per BOP specification 2. Billing shall be done as per actual quantities utilized, whether less or more than the speified quantities			GST-18%	-
				Total All inclusive Price	-

The Tata Power Company Ltd	TPCODL		TPNODL	Appendix 3 to CSCC Safety Terms and Conditions
Document No. TPSMS/GSR/STC/009 REV 05	TPSODL	TATA TATA POWER	TPWODL	Date of Issue: 01/08/2023

Appendix 3: Safety Terms and Conditions

Reason for Change	Date of Last Revision	Prepared By	Reviewed By	Approved by
Inclusion of Odisha Discom and periodic Revision	<u>10-Jan-2021-R4</u>	All Discom and CFT members	Debi Prasad Acharya (Head-Safety-Odisha Discom)	Suresh H Khetwani (Chief safety and Environment)

Clause	Sub-clause	Description	Page No
1.0		Objectives	3
2.0		Scope	3
3.0		Safety Organization & Responsibilities	3
	3.1	Contractor Site Management and Supervision	3
	3.2	Contractor Supervisors and General Staff	4
	3.3	Contractor Workforce	4
	3.4	Vendor/Contractor/sub-contractor	5
4.0		<u>Tools and Tackles(R5)</u>	6
5.0		Site Safety Rules and Procedures	6
6.0		Critical safety Rules and Procedures	6
7.0		<u>General Safety Rules and Procedure(R5)</u>	8
8.0		Training and Capability Building	10
9.0		Pre-Employment and Periodic Medical check-up	12
10.0		Safety performance retention(R5) and Safety Performance Evaluation	12
11.0		<u>Recognition to the Prior Learning in Safety-R5</u>	12
12.0		Other Conditions	13
<u>General Safety Conditions for various contracts Specific to Discom(R5)</u>			
13.0		<u>Safety Conditions for maintenance of STS (Sub Transmission System) Network for Discom(R5)</u>	14
14.0		<u>Safety Conditions for maintenance of 11 KV and LT Network for Discom(R5).</u>	15
15.0		<u>Safety Conditions for the major contract work in Civil Projects for Odisha Discom(R5)</u>	16
16.0		<u>Safety Conditions for the major contract work in Commercial Department like - MMG, RRG, EAG, etc(R5)</u>	17
17.0		<u>Safety Conditions for Major Projects in Distribution Network(R5)</u>	18
18.0		<u>Schedule of Safety Audits by BA Safety Staff(R5)</u>	19

The Tata Power Company Ltd	TPCODL		TPNODL	Appendix 3 to CSCC Safety Terms and Conditions
Document No. TPSMS/GSR/STC/009 REV 05	TPSODL	TATA	TPWODL	Date of Issue: 01/08/2023
TATA POWER				

1.0 Objective:

The Objective of Safety Terms and Conditions is to apprise the Business Associates about various critical procedures of the Tata power Division/Discoms and the expectations from the BA to implement such procedures without fail. Certain terms and conditions are also mentioned to ensure a safe work atmosphere round the year. Refer Contractor’s Safety Code of Conduct- Document no TPSMS/GSP/ CSM/015

2.0 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. This Code of Conduct also applies to all operating and project sites of four Odisha Discoms and New business based on mutually agreed timeline for implementation. R5

3.0 Safety Organization & Responsibilities

3.1 Contractor Site Management and Supervision

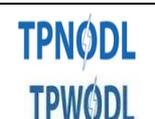
Each Contractor will be responsible for fulfilling all statutory and safety requirements as per the laws of the land and not limited to Factory Act, Electricity Act, Electricity Rules and Regulations, Shop and Establishment Act etc.

Each Contractor shall provide at least one competent full-time safety supervisor for workforce of every 50 workers or less than that. When workforce ranges to 500, the contractor must provide at least one qualified safety officer (This may be subjected to change as per applicable act). Thus, for work force of 500 workers there will be one qualified safety officer and 10 safety supervisors. For every 500 additions in workforce, the contractor must add 1 safety officer and 10 safety supervisors. The Order Manager or Safety Department of the Tata Power Division /Discoms will review and approve the appointment of all safety officers and supervisors. The safety supervisors/officers will work with the guidance from Tata Power Division /Discoms Safety Department and align themselves with Tata power Division/Discom safety requirements.

For O&M related AMC activities, minimum one qualified safety officer to be deployed for each Division of the Discoms.

Qualified safety officer means he or she has completed PDIS or ADIS from a recognized institute.

Site Safety Officer/Safety Supervisor / Safety Coordinator shall be interviewed by the Order Manager/ Safety head of the Tata Power Division/Discom and then gate passes shall be issued if the interview is successful.

The Tata Power Company Ltd				Appendix 3 to CSCC Safety Terms and Conditions
Document No. TPSMS/GSR/STC/009 REV 05				Date of Issue: 01/08/2023

Site Manager of Contractor/Subcontractor is responsible, and will be held accountable, for the safety of their own workforce as well as that of sub-contractors. He should also ensure that all equipment, materials, tools, and procedures remain in safety compliance at job site.

Responsibility of Site manager includes, but not limited to:

- 3.1.1 Holding officer/supervisors accountable for safety and actively promote safe work performance.
- 3.1.2 Participate in and cooperate with all safety program requirements to be implemented to meet Tata Power Division /Discoms safety objectives
- 3.1.3 Ensure timely reporting of safety incidents, near misses, unsafe acts, and conditions.
- 3.1.4 Identify the training needs of BA employees and maintain all safety training documents.
- 3.1.5 Provide Safety Performance Report at an agreed frequency.
- 3.1.6 Stopping of unsafe work (Acts and/or Conditions) immediately. Work to start only after corrective actions are implemented.
- 3.1.7 Ensure and participate in daily toolbox talk for all the jobs.
- 3.1.8 Ensure that only tested and certified tools and equipment are issued to the workers and being used at the site.

3.2 Contractor Supervisors and General Staff.

Contractors' site supervisors and general staff members in charge of job site functions such as field engineering, warehousing, purchasing, costing, and scheduling etc. are responsible for the safe performance of the work of those they supervise. They must set an example for their fellow employees by being familiar with applicable sections of the Site Safety program and ensuring that all site activities are performed with SAFETY as the primary objective.

Each site supervisor is responsible and will be held accountable for identifying, analyzing, and eliminating or controlling all hazards through implementation of an aggressive, pro-active Health, Safety and Environmental Program. Each supervisor will proactively participate in the Safety program by observing, correcting, and recording unsafe acts and conditions at plant / sites.

3.3 Contractor Workforce

- 3.3.1 Contractors shall provide adequate quality and quantity of manpower as mutually agreed. (R5)
- 3.3.2 All the contractor employees shall attend "SHE L0(Other than new business and Odisha Discom)/L1 Foundation Course in Safety". Depending on the critical procedure in job employees shall also be required to attend "SHE L2 course of critical/high risk operations". All Supervisors shall be required to attend "SHE L3 Supervisory Training". All the above trainings will be conducted by TPSDI/Skill development institute of Disco, or other equivalent institute approved by Tata Power.

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- 3.3.3 Contractor employees shall be required to attend any other additional training if suggested by Order manager or Site Safety Head. The cost of such additional training shall be borne by the Vendor.
- 3.3.4 Contractor / Vendor shall mobilize their manpower well in advance to complete the training through TPSDI/Sill development Institute.
- 3.3.5 The Vendor / BA shall arrange or bear the conveyance and food expenses incurred during training of BA employees in Odisha Discom. (R5)
- 3.3.6 The validity of the training L1, L2 and L3 is 3 years. There will be competency assessment as Revalidation test in every three months for Tata Power Division and six months for Odisha Discom till one year from implementation of CSCC.(R5) Those who fail in the competency assessment shall undergo training again.
- 3.3.7 Supervisors/Welder/Electricians/Line man /Fitters /Radiographers/Riggers engaged by the contractor shall have valid competency certificates issued by authorized agency/Institute.
- 3.3.8 Contractor workforce must make safety a part of their job by following safety rules and regulations and by using all safeguards and safety equipment. They must take an active part in the Safety programs for the Site.
- 3.3.9 Every member of the workforce is expected to report for work without influence of any Drug/Alcohol. Failure to comply with this requirement shall result in immediate termination of employees under the influence of drug and alcohol plus show cause notice/penalty to the vendor.
- 3.3.10 All employees shall report hazardous conditions, practices and behaviours in their work areas and correct wherever possible.
- 3.3.11 Workforce is responsible for active participation in safety and health programs, suggestion systems, trainings and reporting of unsafe act/practices, Unsafe conditions incidents and injuries to their supervisors.

3.4 Vendor/Contractor/sub-contractor

- 3.4.1 Vendors/Contractor shall always comply with and ensure that their workforce comply with all site safety rules and regulations. Specifically, with applicable provisions of the Site Safety Management Plan and all statutory safety rules and regulations.
- 3.4.2 After receiving the work order/ purchase order vendor/contractor/bidder shall not appoint Sub-contractor without safety assessment of the sub-contractor through safety concurrence group Under Contractor Safety Code of Conduct. Penalty of 5% of contract value will be applicable to the contractor if subcontractor is appointed without the permission of SCG and without evaluation through CSCC process.

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4.0 Tools and Tackles(R5)

- 4.1 Tools & Tackles used to carry out the job shall be checked and inspected by Order Manager and safety Officer.
- 4.2 Vendor must submit a valid Certificate from Competent person under the Factories Act 1948 and State Factories Rule for all Lifting Tools and Tackles (like Hoist, D Shackles, chain Block, wire ropes etc.).
- 4.3 All Electrical Hand Tools must be tested for leakage of current by a person /agency authorized by Tata Power Division /Discoms. Electrical power must be taken though RCCB of 30mA. Electrical hand tools should not have cord more than 3 meters in length. If power source is at > 3 meters, extension boards with RCCB of 30 mA and ON/OFF switch, shall be used.
- 4.4 Removal or inclusion of tools any new tool /tackles / machinery / equipment at site should only be done with concurrence of the order Manager / Head Safety.

5.0 Site Safety Rules and Procedures:

The work in the safest possible manner can only happen when it has been carefully planned and all applicable procedures are followed. The Tata Power Safety Procedures are derived from Tata Power best practices and the applicable Government acts regulations. In each case, the most stringent regulation is used. All safety rules and procedures developed from time to time shall be mandatorily followed by the vendor and his employees while working at Site.

6.0 Critical safety Rules and Procedures: Following is the list of Tata Power's critical Safety Rules and Procedures. Contractor shall refer to approved Rules and Procedures for detailed requirements and ensure conformance

6.1 Lock Out and Tag Out Procedure.

This procedure is intended to be used for the protection of Personnel while servicing or performing maintenance on distribution network/ equipment / pipeline / vessel / process systems. This is a general procedure that shall be used as the minimum requirements for isolation of equipment, pipelines, machines, system from all possible sources of hazardous energy and / or material such as Steam, Hot Water, Compressed Air, any other process fluid / chemical energy /Mechanical energy or Electrical energy. For complete procedure kindly refer Procedure Document No. **TPSMS/CSP/LOTO/001**

6.2 Excavation Safety (Shoring and Sloping) Procedure

This procedure is developed to cover the safe practices required for shoring and sloping in excavation and trenching jobs. This procedure is developed to establish mandatory requirements for practices to protect personnel, property and equipment from hazards associated with above activities. For complete procedure kindly refer Procedure Document No **TPSMS/CSP/EXS/002**

6.3 Confined Space Entry Procedure:

This procedure outlines the steps required to perform the confined space entry and to protect personnel from the hazards of entering and conducting operations in confined spaces. For complete procedure kindly refer Procedure Document No – **TPSMS/CSP/CSE/003**.

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6.4 Working at Height Procedure:

This procedure describes the rules and procedures to protect employees from the hazards of working at heights. This procedure is developed to cover the safe practices required for Working at Heights. This procedure is developed to establish mandatory requirements for practices to protect personnel from hazards associated in this area. For complete procedure kindly refer Procedure Document No – TPSMS/CSP/WAH/004.

6.5 Heavy Equipment Movement Safety Procedure.

Heavy equipment lifting and movement is an activity involving loading, unloading, storage and movement from one place to another including lifting and erection or repairing of equipment with cranes or hoists. Material, machinery and equipment handling operations are being carried out by large capacity cranes and hoists, which make the job safer and faster. This procedure addresses the hazards and precautions associated with such equipment and their use. For complete procedure kindly refer Procedure Document No – TPSMS/CSP/HEMS/005.

6.6 Mobile Crane Safety Procedure.

Mobile cranes are responsible for many incidents, injuries. Falling loads from mobile cranes pose a severe hazard to operators and nearby workers and property. Many types of cranes, hoists, and rigging devices are used for lifting and moving materials. To maintain safe, appropriate standards must be adhered to and only qualified and licensed individuals shall operate these devices. For complete procedure kindly refer Procedure Document No – TPSMS/CSP/MCS/006.

6.7 Scaffold Safety Procedure.

This procedure is developed to provide information on the safe erection, use, dismantling and maintenance of access scaffolding in the workplace. It is developed to establish mandatory requirements for practices to protect personnel from hazards associated with erection, use and dismantling of scaffolds. For complete procedure kindly refer Procedure Document No – TPSMS/CSP/SCAF/007.

6.8 Permit to Work Procedure.

Given the inherent hazards of the power generation and distribution industry, a significant number of TATA POWER operations and installations are critical. Work Permit (WP) System is an essential element in controlling the workplace risks in an effective manner. For complete procedure kindly refer Procedure Document No – TPSMS/CSP/PTW/008.

6.9 Job Safety Analysis (JSA) Procedure.

This objective of this procedure is to have a task-based risk assessment process in place that identifies, evaluates and controls the risks associated with work activities, and as a result, prevents those involved in the task or those potentially affected by the task, from being harmed. For complete procedure kindly refer Procedure Document No- TPSMS/CSP/JSA/009 REV 01.

6.10 Electrical Safety Procedure.

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The objective of these standards is to specify minimum mandatory requirements and advisory guidance for identifying and controlling hazards to ensure 'Zero Harm' regarding operation maintenance and testing of electrical equipment. For complete procedure kindly refer Procedure Document No- TPSMS/CSP/ELEC/010

6.11 Fire Safety Management Procedure.

Objective of This standard is to specify the minimum mandatory requirements and advisory guidelines to ensure prevention of fire related incidents and managing / controlling their impacts if they do occur. For complete procedure kindly refer Procedure Document No - TPSMS/CSP/ELEC/011

6.12 Hazard Identification & Risk Assessment (HIRA) Procedure(R5):

Objective of this procedure is to define guidelines for Hazard identification, Risk assessment and determination of controls. For complete procedure kindly refer Procedure Document No - TPSMS/CSP/HIRA/012.

6.13 Management Of Change (MOC) Procedure(R5):

The objective of this document is to establish the procedures necessary to ensure that HSE risks are managed to an acceptable level in Tata Power Management of Change (MOC) process. For complete procedure kindly refer Procedure Document No - TPSMS/CSP/MOC/013.

6.14 Pre-Start-up Safety Review (PSSR) Procedure(R5).

Objective of this procedure is to provide guidelines for safe initial startup of a new facility or restart of a modified facility. The PSSR process verifies that the new/modified facility meets the original design and operating parameters. The intent is to prevent incidents caused by inadequate, incomplete, unauthorized design, construction, installation, and/or commissioning. For complete procedure kindly refer Procedure Document No - TPSMS/CSP/MOC/014.

6.15 Road Safety procedure(R5):

To provide Safety Rules for road travel management and safe usage of all types of vehicles viz. passenger/ commercial, owned/ hired by company, driven by employees or contractors. For complete procedure kindly refer Procedure Document No - TPSMS/CSP/RSP/015.

7.0 General safety Rules and Procedure:

7.1 Lift (Elevator) Safety Procedure:

To provide safe operating procedure for taking control of lift car before entering and existing the pit of OTIS make elevators. For complete procedure kindly refer Procedure Document No – TPSMS/GSP/LIFT/001,

7.2 Working on conveyor belt Procedure:

This procedure is developed to cover the safe practices required for Working on live equipment and to protect personnel from hazards associated with it. For complete procedure kindly refer Procedure Document No – TPSMS/GSP/CONV/003

7.3 Batteries Handling & Disposal(R5)

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To provide procedure for recycling and / or safe disposal of used / waste batteries in compliance with all legislation. For complete procedure kindly refer Procedure Document No – **TPSMS/GSP/HAZM/003**

7.4 Material Handling and Storage Procedure:

The purpose of this document is to provide procedures to assist the safe handling of materials (manual handling and mechanical handling). For complete procedure kindly refer Procedure Document No – **TPSMS/GSP/MATL/004**.

7.5 Office Safety Procedure(R5):

The objective is to provide a safe working environment to those working in office premise, who may be exposed to emergency situations and other chronic / cumulative risks that may arise due to various reasons of unsafe act, unsafe condition, fire and or pandemic crisis like COVID-19 etc. For complete procedure kindly refer Procedure Document No - **TPSMS/GSP/OFS/006**

7.6 Earth Leakage Circuit Breaker (ELCB) Testing Procedure(R5):

The objective of this procedure is to define the minimum requirements for testing of Earth Leakage Circuit Breaker (ELCB). For complete procedure kindly refer Procedure Document No - **TPSMS/GSP/ELCB/008**.

7.7 Occupational Health & Safety Legal Compliance Procedure(R5):

Objective of this procedure is provide guidelines for compliance of Occupational Health & Safety (OH&S) legal requirements and all ratified protocols and agreements are incorporated in Tata Power Safety Management System (SMS). For complete procedure kindly refer Procedure Document No - **TPSMS/GSP/LEGL/009**.

7.8 Incident Reporting & Investigation Procedure(R5):

Objective of this procedure is to outline the process for reporting, recording and investigating an incident, recommending corrective and preventive actions and to communicate the lessons learned to prevent recurrence of similar incidents. For complete procedure kindly refer Procedure Document No - **TPSMS/GSP/IRI/011**.

7.9 Contractor Safety Management Procedure.

The purpose of this document is to engage with contractors in a way to create safe work environment for everyone working for Tata Power. For complete procedure kindly refer Procedure Document No – **TPSMS/GSP/CSM/015**.

7.10 Tree Trimming Procedure(R5):

The objective of this procedure is to define guidelines and minimum requirements for Tree trimming. For complete procedure kindly refer Procedure Document No – **TPSMS/GSP/TTRM/017**

7.11 Safe Lone Working Procedure(R5):

Objective of this procedure is to lay down guidelines for reduction and safe managing of any additional risk arising from lone working. For complete procedure kindly refer Procedure Document No – **TPSMS/GSP/LONE/019**.

7.12 Good Housekeeping(5S) Procedure(R5):

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Objective of this procedure is to explain the meaning, importance and provide guidelines for implementation of Good Housekeeping(5S) at workplaces across organization. For complete procedure kindly refer Procedure Document No – **TPSMS/GSP/GHK/022**.

7.13 Personal Protective Equipment(R5):

This procedure describes the basic requirements, applicability, minimum specifications of Personal Protective Equipment (PPE). For complete procedure kindly refer Procedure Document No – **TPSMS/GSP/PPE/023**.

7.14 Process Safety Management Procedure(R5):

The objective of this document is to provide a standardized & uniform guideline to implement Process Safety Management in Tata Power, its JVs, and subsidiaries to prevent or minimize the consequences of releases of toxic, flammable, pressurized or uncontrolled chemicals/Steam/Water or any other material which may result in toxic, fire, explosion, burn or flood like situation. For complete procedure kindly refer Procedure Document No – **TPSMS/GSP/PSM/024**

The above procedures will be updated time to time and the updated version of the procedures as well as any additional critical procedure will be available on official website of Tata Power (www.tatapower.com) for your reference.

8.0 Training and Capability Building.

Safety Training and capability building of workforce is a major component of safety management program. All training required must be provided and documented as specified by Tata Power and Indian Regulations. Tata Power Division /Discoms Safety department will audit contractors training and related documentation to assure its adequacy.

8.1 Tata power Odisha Discom Site Safety Orientation.R5

All Tata Power contractor and subcontractor workforce is required to attend Site Safety Orientation Training to receive a Safety Training Card, which is required to obtain a Gate Pass to the site, prior to entry. This Safety Orientation Course will be for duration of minimum half day. The information provided during the orientation will include, but is not limited to following:

- 8.1.1 Job rules, personal safety, and conduct
- 8.1.2 Hazard's reporting
- 8.1.3 Reporting of injuries
- 8.1.4 Emergency procedures
- 8.1.5 Safety Activities and Program including disciplinary measure and incentives.
- 8.1.6 Critical safety procedure relevant to the job

8.2 Capability Building:

- 8.2.1 All Tata Power contractor and subcontractor workforce is required to attend L1 Training to receive a Safety Training Card, which is required to obtain a Gate Pass to the site, prior to entry.
- 8.2.2 Appropriate practical 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

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- by Tata Power on the list of 15 critical Safety procedures mentioned under safety procedures. Duration of course is as specified by Division/Discom
- 8.2.3** 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 employees who meet the minimum required competency will be provided with Certificate (Card), which will be valid for 3 years, post which the workmen have to reappear for assessment.
- 8.2.4** If the workman is not able to qualify the assessment, he/she will be given 3 additional attempts to clear in 3-month time failing which he/she will not be allowed to work in the Division /Discoms.
- 8.2.5** After expiry of Certificate or Training /Competency Card again one day recertification of L1, L2 and L3 skill training will be provided. R7.
- 8.2.6** Quarterly /Half yearly(For Odisha and New business) Revalidation Test - "SHE L1 Revalidation test" will be conducted for the contractor's employees to revalidate their safety awareness and knowledge.
- 8.2.7** Order Manager and Safety In charge of the Division/Site /Plant will conduct a Competency Assessment of all workforces, going to be deployed at site / plant for high-Risk job.
- 8.2.8** The Contactor shall bear the conveyance and food expenses of his staff for attending training sessions and capability building sessions in new business-like Odisha Discom.
- 8.2.9** The Contactor shall bear the entire cost of L1/L2/L3, the costs towards training, salaries/wages, boarding and lodging of his staff for attending training sessions and capability building sessions. These trainings are offered on nominal chargeable basis payable by Contractor and rates shall be decided by TPSDI from time to time in case of training through TPSDI. Generally, L0 is of one day, L1 is for 2 days for each critical procedure and L3 is for one day. Around Rs 700+GST is approx. cost /Day/Candidate. -R5
- 8.2.10** Competency assessment of all critical workforce to be carried out for all who has taken L2 training. R5

9.0 Recognition to the Prior Learning in Safety-R5

If "Order Manager" recommends and "Head of the Safety Department of Discom" is satisfied with the safety knowledge and competency of the employee of contractor, a test may be conducted by Tata power Skill development Institute/ other recognized institute to assess the prior learning in safety. If employees of the contractors pass in such test, he will be exempted from appearing in SHE L1 training. This assessment is on nominal chargeable basis and rates are decided by TPSDI from time to time.

10.0 Safety performance retention(R5) and Safety Performance Evaluation: 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. This is as per CSCC Document no TPSMS/GSP/ CSM/015

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This safety retention shall be waived for Contractors who have either submitted a Contract Performance Bank Guarantee or have a retention from each running bill for an amount not less than 10% of each bill subject to the express undertaking / understanding that if there are any deductions required to be made for safety non-performance as per the Safety Performance Score, then Tata Power shall recover any such deductions against safety non-performance directly from the monthly bills / final settlement as the case may be failing which it shall be within its right to recover such sum from accounts payable or the CPBG or the retention of the Contractor available with Tata Power for the said contract or any other contract between the Contractor and Tata Power.

11.0 Pre-Employment and Periodic Medical check-up:

Contractor shall arrange to conduct a pre-employment and periodic medical check-up for its entire workforce by Tata Power medical officer or Tata Power authorized medical officer. The contractor shall be able to produce the certificate prior to the employment. The contractor shall also organize to conduct periodical medical checkup (six monthly) for the following category of employees:

- Drivers (Check for Vision & Hearing)
- HEM Equipment Operators (Check for Vision & Hearing)
- Workforce working at Height (Check for Vision, Hearing, Vertigo & Height Phobia)
- Workforce Handling the hazardous substances - Coal, ash and chemicals (Chest X-ray and Lung Function T)
- Workforce in high Noise area (> 90 Decibel), Check for Hearing
- Workforce handling radiography equipment for conducting NDT.
- Workforce, working in specific areas requiring specific medical attention should conduct the medical tests test as laid down in the respective Site Safety Management Plan.

12.0 Other Conditions:

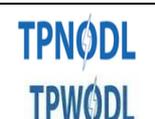
- 12.1. The manpower/vehicles/Tools & Tackles/Equipment provided shall be as per mutually agreed SLA.
- 12.2. No Supervision No work policy should strictly be followed.
- 12.3. Test Before Touch must be ensured every time a job is being carried out in electrical network.
- 12.4. HIRA /JSA as per the job scope must be prepared in detail and submitted along with Site Safety Plan by the successful bidder.
- 12.5. Personal protective equipment (PPE) must always be checked before use to ensure that they are in good condition and clean. Replace them if necessary.
- 12.6. All relevant PPE shall be provided by the vendor while working at the site.
- 12.7. Housekeeping shall be maintained all the time while execution of work. All the unwanted material shall be removed from the site at the end of the day's work. Old/damaged parts if taken out of the system shall be kept at

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identified placed and it shall be shifted to scrap yard or disposed of as per instruction of order manager.

- 12.8. Site Safety Plan shall be prepared by successful bidder along with order manger. Appendix 1 to be filled by successful bidder and submitted to Tata Power safety in-charge, before mobilization of team at site and start of the work.
- 12.9. The Owner or Proprietor of BA must visit worksite at least once in a month and meet Order Manager every month. In case of incidents, the Owner or Proprietor of BA is required to attend Time Out Meetings to understand the gaps that contributed to the incident.

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General Safety Conditions for various contracts Specific to Odisha Discom(R5)

13.0. Safety Conditions for maintenance of STS (Sub Transmission System) Network.

A BA awarded a major contract work of maintenance of sub – transmission network in area of a power system will be required to fulfil the following conditions:

- Availability of Discharge Rods - Minimum 6 Nos. in each maintenance vehicle, fit for purpose and in good conditions and defective rods are removed from service.
- Availability of Neon tester - Minimum one Neon Tester in each Maintenance Vehicle, in good and working condition and defective or non-standard neon testers are removed from service.
- Electrical hand Gloves - Minimum two sets of 33 KV and two sets of 11 KV in maintenance vehicles.
- The BA linemen must be having required ELBO certification for the voltage level involved.
- BA shall provide Safety Policy, Safety Objectives, Organogram showing structure and responsibility of Safety management of his company and shall document the work practices and procedures in terms of Safety Management.
- BA shall comply with all statutory requirements like applicable acts, regulations, codes of practice, OHSAS Standards, Labour laws, etc.
- The BA shall participate in Safety promotional activities like celebration of Lineman day on 4th March, National Fire Service Day on 14th April and Theme based safety campaigns undertaken by the Discoms every month.
- BA shall abide by Safety manuals and guidelines of Discom issued from time to time.
- BA shall ensure safety training and induction program for the employees. The BA employees must carry safety training card / competency card to the worksite and produce the card on demand.
- All BA employees must be given valid ID card issued by BA cell of Discom who will check statutory compliances before issuing ID cards.
- BA shall not employ a new workman without training and issue of ID card.
- BA shall conduct safety audits & inspections as per Discom procedures.
- BA shall provide proper PPEs as per CSM F-8 ensure periodic inspection of PPE, Tools and tackles to ensure their serviceability.
- BA shall ensure the adherence to standard operating procedures or guidelines laid down by the Discoms.
- BA shall ensure that no job shall be carried out without efficient supervision.
- BA shall ensure reporting of any unsafe act, unsafe conditions, near miss, incident, or accident to engineer in-charge and SAFETY team of the Discom.
- BA shall provide safety performance and Safety MIS to engineer in-charge and Discom SAFETY group periodically. Based on any non-confirmation to the safety procedures and guidelines, BA is liable to be negatively marked for his performance and suitable penalty will be imposed.
- BA safety staff shall work as per the guidance of the Discom safety department and functionally report Safety Head of Discom. Any leaves by safety staff of the BA shall have to approved by Discom Safety Department.
- BA shall ensure to depute Safety Staff for managing safety in worksites. In case the BA has been awarded work in more than one area power system, then the following safety structure will be adopted.
- Safety manager and Safety engineer must be having PDIS or ADIS.

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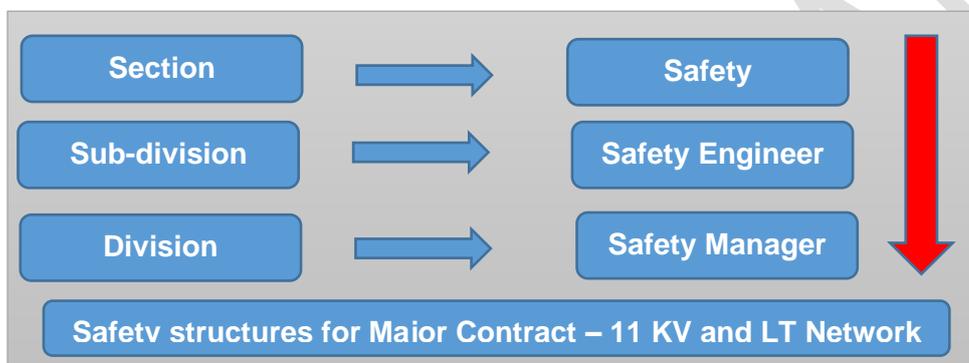
14.0 Safety Conditions for maintenance of 11 KV and LT Network.

A BA awarded a major contract work of maintenance of 11 KV and LT Network in area of a power system will be required to fulfil the following conditions:

- Availability of Discharge Rods - Minimum 6 Nos. in each PSS/FCC and maintenance vehicle, fit for purpose and in good conditions and defective rods are removed from service.
- Availability of Neon tester - Minimum one Neon Tester in each PSS/FCC/ Maintenance Vehicle, in good and working condition and defective or non-standard neon testers are removed from service.
- Electrical hand Gloves - Minimum two sets of 33 KV and two sets of 11 KV in each PSS/Maintenance vehicles and two sets of LT hand gloves at each FCC.
- The BA linemen must be having required ELBO certification for the voltage level involved.
- BA shall provide Safety Policy, Safety Objectives, Organogram showing structure and responsibility of Safety management of his company and shall document the work practices and procedures in terms of Safety Management.
- BA shall comply with all statutory requirements like applicable acts, regulations, codes of practice, OHSAS Standards, Labour laws, etc.
- BA shall abide by Safety manuals and guidelines of Discom issued from time to time.
- BA shall ensure safety training and induction program for the employees. The BA employees must carry safety training card / competency card to the worksite and produce the card on demand.
- All BA employees must be given valid ID card issued by BA cell of Discom who will check statutory compliances before issuing ID cards.
- BA shall not engage new workman without training and issue of ID card.
- PSS operator shall not be involved in maintenance activities.
- BA shall conduct safety audits & inspections as per Discom procedures.
- BA shall provide proper PPEs as per CSM F-8 ensure periodic inspection of PPE, Tools and tackles to ensure their serviceability.
- The BA shall participate in Safety promotional activities like celebration of Lineman day on 4th March, National Fire Service Day on 14th April and Theme based safety campaigns undertaken by the Discoms every month.
- BA to ensure that all LT complaints are routed through Call Centre and recorded in FCC. Rectification of fault shall be done only after call centre logging and with the knowledge of BA supervisor.
- No one will work alone or unsafely under public pressure or otherwise.
- BA shall ensure the adherence to standard operating procedures or guidelines laid down by the Discoms.
- BA shall ensure that no job shall be carried out without efficient supervision.

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- BA shall ensure reporting of any unsafe act, unsafe conditions, near miss, incident, or accident to engineer in-charge and SAFETY team of the Discom.
- BA shall provide safety performance and Safety MIS to engineer in-charge and Discom SAFETY group periodically. Based on any non-confirmation to the safety procedures and guidelines, BA is liable to be negatively marked for his performance and suitable penalty will be imposed.
- BA safety staff shall work as per the guidance of the Discom safety department and functionally report Safety Head of Discom. Any leaves by safety staff of the BA shall have to approved by Discom Safety Department.
- BA shall ensure to depute Safety Staff - One safety supervisor per section, One safety engineer per sub-division and one safety manager per Division Safety manager and Safety engineer must be having PDIS or ADIS.



15.0 Safety Conditions for the major contract work in Civil Projects:

A BA awarded a major contract work of / in civil project will be required to fulfil the following safety conditions:

- BA shall provide Safety Policy, Safety Objectives, Organogram showing structure and responsibility of Safety management of his company and shall document the work practices and procedures in terms of Safety Management.
- BA shall comply with all statutory requirements like applicable acts, regulations, codes of practice, OHSAS Standards, Labour laws, etc.
- BA shall abide by Safety manuals and guidelines of Discom issued from time to time.
- BA shall ensure safety training and induction program for the employees. The BA employees must carry safety training card / competency card to the worksite and produce the card on demand.
- All BA employees must be given valid ID card issued by BA cell of Discom who will check statutory compliances before issuing ID cards.
- BA shall not employ a new workman without training and issue of ID card.
- BA shall conduct safety audits & inspections as per Discom procedures.
- BA shall provide proper PPEs as per CSM F-8 ensure periodic inspection of PPE, Tools and tackles to ensure their serviceability.
- BA shall ensure the adherence to standard operating procedures or guidelines laid down by the Discoms.
- BA shall ensure that no job shall be carried out without efficient supervision.
- BA shall ensure reporting of any unsafe act, unsafe conditions, near miss, incident, or accident to engineer in-charge and SAFETY team of the Discom.

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- The BA shall participate in Safety promotional activities like celebration of Lineman day on 4th March, National Fire Service Day on 14th April and Theme based safety campaigns undertaken by the Discoms every month.
- BA shall provide safety performance and Safety MIS to engineer in-charge and Discom SAFETY group periodically. Based on any non-confirmation to the safety procedures and guidelines, BA is liable to be negatively marked for his performance and suitable penalty will be imposed.
- BA safety staff shall work as per the guidance of the Discom safety department and functionally report Safety Head of Discom. Any leaves by safety staff of the BA shall have to approved by Discom Safety Department.
- BA shall refer Construction Safety Manual of the Discom for details.
- BA shall ensure to depute a Safety Supervisor (for workforce up to 100 at site) / a safety engineer (for workforce up to 250 at site) / safety manager (for more than two safety engineers) for managing safety at the project site. In case the BA has been awarded more than one major contracts, then the following safety structure will be adopted.
- Safety Engineers and Safety Managers must be having PDIS or ADIS.



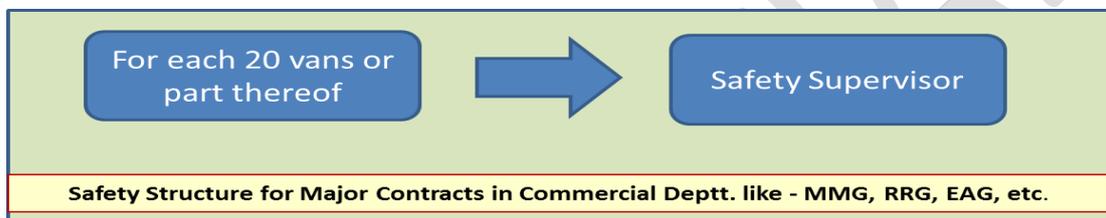
16.0 Safety Conditions for the major contract work in Commercial Department like - MMG, RRG, EAG, etc.:

A BA awarded a major contract work in meter management group & energy auditing group will be required to fulfil the following safety conditions:

- BA shall provide Safety Policy, Safety Objectives, Organogram showing structure and responsibility of Safety management of his company and shall document the work practices and procedures in terms of Safety Management.
- BA shall comply with all statutory requirements like applicable acts, regulations, codes of practice, OHSAS Standards, Labour laws, etc.
- BA shall abide by Safety manuals and guidelines of Discom issued from time to time.
- BA shall ensure safety training and induction program for the employees. The BA employees must carry safety training card / competency card to the worksite and produce the card on demand.
- All BA employees must be given valid ID card issued by BA cell of Discom who will check statutory compliances before issuing ID cards.
- BA shall not employ a new workman without training and issue of ID card.
- BA shall conduct safety audits & inspections as per Discom procedures.
- The BA shall participate in Safety promotional activities like celebration of Lineman day on 4th March, National Fire Service Day on 14th April and Theme based safety campaigns undertaken by the Discoms every month.
- BA shall provide proper PPEs as per CSM F-8 ensure periodic inspection of PPE, Tools and tackles to ensure their serviceability.

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- BA shall ensure the adherence to standard operating procedures or guidelines laid down by the Discoms.
- BA shall ensure that no job shall be carried out without efficient supervision.
- BA shall ensure reporting of any unsafe act, unsafe conditions, near miss, incident, or accident to engineer in-charge and SAFETY team of the Discom.
- BA shall provide safety performance and Safety MIS to engineer in-charge and Discom SAFETY group periodically. Based on any non-confirmation to the safety procedures and guidelines, BA is liable to be negatively marked for his performance and suitable penalty will be imposed.
- BA safety staff shall work as per the guidance of the Discom safety department and functionally report Safety Head of Discom. Any leaves by safety staff of the BA shall have to be approved by Discom Safety Department.
- BA shall ensure to depute a Safety Supervisor for managing safety at worksite.
- The BA for the RRG work shall depute one Safety supervisor.



17.0 Safety Conditions for Major Projects in Distribution Network

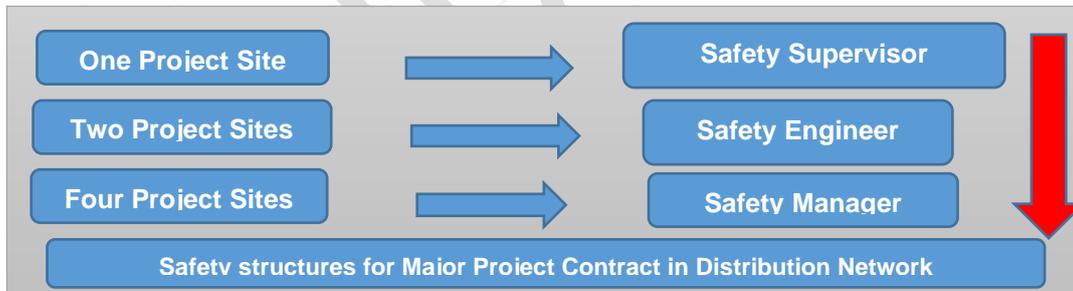
A BA awarded a major Projects in Distribution Network shall be required to fulfil the following conditions:

- Availability of Discharge Rods - Minimum 6 Nos. for each project site, fit for purpose and in good conditions and defective rods are removed from service.
- Availability of Neon tester - Minimum one Neon Tester in each project site, in good and working condition and defective or non-standard neon testers are removed from service.
- Electrical hand Gloves - Minimum one sets of 33 KV, 11 KV and LT in each project site.
- The BA linemen must be having required ELBO certification for the voltage level involved.
- BA shall provide Safety Policy, Safety Objectives, Organogram showing structure and responsibility of Safety management of his company and shall document the work practices and procedures in terms of Safety Management.
- BA shall comply with all statutory requirements like applicable acts, regulations, codes of practice, OHSAS Standards, Labour laws, etc.
- BA shall abide by Safety manuals and guidelines of Discom issued from time to time.
- BA shall ensure safety training and induction program for the employees. The BA employees must carry safety training card / competency card to the worksite and produce the card on demand.
- The BA shall participate in Safety promotional activities like celebration of Lineman day on 4th March, National Fire Service Day on 14th April and Theme based safety campaigns undertaken by the Discoms every month.
- All BA employees must be given valid ID card issued by BA cell of Discom who will check statutory compliances before issuing ID cards.
- BA shall not employ a new workman without training and issue of ID card.
- BA shall conduct safety audits & inspections as per Discom procedures.
- BA shall provide proper PPEs as per CSM F-8 ensure periodic inspection of PPE, Tools and tackles to ensure their serviceability.

- BA shall ensure the adherence to standard operating procedures or guidelines laid down by the Discoms.
- BA shall ensure that no job shall be carried out without efficient supervision.

Sr. No	Type of Audit	Frequency
1	Tool Bag and PPE audit	Weekly
2	First Aid Box Maintenance Record	Fortnightly
3	Fire Extinguisher Record (Applicable for the BA involved in major construction works and have storage of flammable material at worksite)	Monthly
4	Safety Talk Register	Weekly
5	Site Safety Audit	Daily

- BA shall ensure reporting of any unsafe act, unsafe conditions, near miss, incident, or accident to engineer in-charge and SAFETY team of the Discom.
- BA shall provide safety performance and Safety MIS to engineer in-charge and Discom SAFETY group periodically. Based on any non-confirmation to the safety procedures and guidelines, BA is liable to be negatively marked for his performance and suitable penalty will be imposed.
- The BA shall participate in Safety promotional activities like celebration of Lineman day on 4th March, National Fire Service Day on 14th April and Theme based safety campaigns undertaken by the Discoms every month.
- BA safety staff shall work as per the guidance of the Discom safety department and functionally report Safety Head of Discom. Any leaves by safety staff of the BA shall have to approved by Discom Safety Department.
- BA shall ensure to depute Safety Staff for managing safety in worksites. One safety supervisor per project site or 100 persons, one safety engineer for 2 project sites of 250 persons, and one safety manager for four project sites or 500 persons.
- Safety manager and Safety engineer must be having PDIS or ADIS.



18.0 Schedule of Safety Audits by BA Safety Staff

Safety Undertaking of BA by way of Affidavit

I _____ s/o _____ R/o _____ (AUTHORIZED REPRESENTATIVE/PARTNER/DIRECTOR/PROPRIETOR) of M/S _____ (name of company/firm) having its office at (Complete address of Company), authorized vide power

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of attorney dated -----/Board resolution dated----/letter of authority dated----, hereinafter referred to as **Contractor [or Business Associate (BA)]** which expression shall, unless it be repugnant to or inconsistent with the meaning or context thereof, be deemed to include its heirs, executors, administrators, and assigns do hereby affirm and undertake as under :

1. The present undertaking shall remain in force from the date of execution of contract and shall be valid till the date of termination of the said contract by either party. The undertaking is binding on me (contractor) as well as my sub-contractor and its employees, representatives etc.
2. That I (the contractor) will be responsible and liable to comply and abide by all the safety rules, instructions and regulations as may be specified and laid down by the Discom to achieve its goal of Zero for on-site incidences.
3. That the Contractor shall be fully responsible for ensuring occupational health and safety of its employees, representatives, agents as well as of its subcontractor's employees, at all times during the discharge of their respective obligations under the contract including any methods adopted for performance of their tasks / work.
4. That Contractor shall ensure ,at its own expense to arrange for and procure, implement all requisite accident prevention tools, first aid boxes, personal protective equipment, fire extinguisher, safety training, Material Safety Data Sheet, pre-employment medical test, etc. for operations & activities including as & when so specified by Discom specifically. , failing which Discom shall be entitled, but not obliged, to provide the same and recover the actual cost thereof from the Contractor's payments.
5. That the Contractor shall engage adequate and competent Safety – Supervisor / Engineer / Manager / Skilled persons at site as per the Para 5 (Qualification and experience of safety personnel) and Annexure 3 of Contract Safety Management.
6. That the Contractor shall engage the competent Site – Supervisor with each group of workers for safe and correct workmanship, proper co-ordination of material and site work as per contract.
7. That the Contractor shall immediately replace supervisor in case it is found to be not up to the level of skill and experience required, but any such replacement shall be only with the prior concurrence of the Discom representative.

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8. That the Contractor and its subcontractors shall abide by all the safety guidelines as per Safety Manual, Contract Safety Management and other guidelines issued from time to time by Discom during the contract period.
9. That in case the Contractor and/or any of its Subcontractor fail to ensure the compliance as required in terms of this undertaking the Contractor shall keep and hold Discom / its directors / officers / employees indemnified against any / all losses / damage / expense / liability / fines / compensation / claims / action / prosecutions or the like which might be suffered by Discom or to which Discom might get exposed to as a result of any breach /wilful negligence /deliberate default on the part of the Contractor /Subcontractor in complying with the same. Contractor shall also furnish any press release, clarification etc. if sought by Discom for any near miss or safety violations, accidents, which are attributable to fault of Contractor.

DEPONENT

VERIFICATION

Verified aton this _Day of _____ 20__ that the contents of the above affidavit are true and correct and nothing material has been concealed therefrom

CONFIDENTIAL

ANNEXURE TO
Appendix 3: Safety Terms and Conditions
(Document No - TPSMS/GSR/STC/009 REV 05)

***(Excerpts of Tata Power Safety Code of Conduct as relevant for
Safety Terms & Conditions)***

(A) Definitions

- **Order Manager/Engineer in charge:** Order Manager/Engineer in charge is the Tata Power-Division /DISCOM representative, who has the ownership of the given job.
- **Site Safety Management Plan:** It is the safety plan agreed between Contractor and Tata Power-Division/DISCOM. It will contain the entire job specific safety requirement and will be signed by the contractor.
- **Contractor/Business Associate/Vendor (BA):** An individual or a company that provides services to Tata Power-Division/DISCOM under a signed contract.
- **Emergency:** It is a serious, unexpected, or dangerous situation requiring immediate action, which may result in *loss of life*, 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 and approved by adequate authority of MB level or above.
- **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 AI-ML, expert for transmission and distribution network, expert for civil works, expert on transformers, expert for PSCC, expert for equipment overhaul etc.
- **CEO/Chief/Head of division/Unit/Utility:** Business in charge who is overall custodian of the Tata Power-Division/DISCOM.
- **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 14 of this document.
- **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.
- **Low Risk Jobs:** Any job or its activities are considered as Low or Very low risk while Order manager calculated it by applying “Tata Power Hazard Identification and Risk Analysis” procedure and found it under Low or Very Low category.

(B) Safety performance retention(R7):

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. (R7)

Risk Category-(R7)	Contract Value	Retention Amount (%)
<i>Very high/High risk job/ Medium Risk jobs</i>	Up to 10 Lakhs	2.5
<i>Very high/High risk job/ Medium Risk jobs</i>	10 – 50 Lakhs	2
<i>Low/Very Low Risk jobs</i>	10 – 50 Lakhs	1
<i>Very high/High risk job</i>	0.5 to 10 Cr	2
<i>Medium Risk jobs</i>	0.5 to 10 Cr	1.5
<i>Low/Very Low Risk jobs</i>	0.5 to 10 Cr	1
<i>Very high/High risk job</i>	>10 Cr	1.5
<i>Medium Risk jobs</i>	>10 Cr	1

This safety retention shall be waived for Contractors who have either submitted a Contract Performance Bank Guarantee or have a retention from each running bill for an amount not less than 10% of each bill subject to the express undertaking / understanding that if there are any deductions required to be made for safety non-performance as per the Safety Performance Score, then Tata Power shall recover any such deductions against safety non-performance directly from the monthly bills / final settlement as the case may be failing which it shall be within its right to recover such sum from accounts payable or the CPBG or the retention of the Contractor available with Tata Power for the said contract or any other contract between the Contractor and Tata Power.

(C) Safety Performance Evaluation & Responsibility of Business Associate / Contractor:

During the time of job execution, regular site inspection will be carried out by the Tata Power-Division / DISCOM officials to evaluate monthly safety performance of the contractor and monthly score will be maintained by the Order Manager. Violations will be dealt as per **CSM F12 Safety Violation Penalty Criteria**.

1. During the progress of the work, concerned site Supervisor/Engineer/Safety representative will visit and inspect the work site regularly and evaluate the safety performance of the contractor based on matrix **Appendix 13** and apply the Consequence management policy/Penalty criteria as applicable.
2. The evaluation criteria include Lead Indicators such as percentage of workers trained in TPSDI, inspection of critical equipment. Lag indicators such as Fatalities, LWDC and man-days lost.
3. In case of job stoppage due to safety violations / unsafe observations at the site, no time extension from PO completion date shall be given to the contractor, if such delays are attributable to contractor.
4. 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 by Division Chief/CEO. This charge is over and above the retention amount. The committee will finalize penalty amount based on factors such as advice by statutory authorities, contract value and impact of accident etc.

5. Order Manager, Head of Business and functional Chief have the authority to terminate the contract as per **CSM F12 Safety Violation Penalty Criteria** Through contract department.

(D) Other Appendices are attached,

Appendix 6: CSM F6 - Safety Competency Assessment Form (Template).

(This is to be filled by Bidder and submit to Tata Power as part of bid submission).

Appendix 8: CSM F8 - PPE requirements-(R7)

Appendix 9: CSM F9 - Site Safety Management Plan / Method Statement (Template)

Appendix 12: CSM F12 - Safety Violation Penalty Criteria

Appendix 13: Checklist To Be Used During Site Visit

Appendix 14: Indicative List of High-Risk Jobs

---XXX---XXX---XXX---

Appendix 6: CSM F6 - Safety Competency Assessment 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 :-

Type of manpower	Qualification	Experience	Month 1	Month 2	Month 3
<u>Project /AMC Manager(R7)</u>						
Site In Charge						
Safety Manager						
Safety Officer						
Supervisors						
Technicians						
High Skilled workmen						
Skilled workmen						
Semiskilled workmen						
Lineman						
Helpers						
Drivers						
Unskilled						
<u>Others(R7)</u>						

Instruction to Bidders:

- i. Indicate the overall site manpower deployment schedule as above
- ii. Indicate direct or subcontracted employees by using color code given below:

Direct Bidder Employee – Green

Partly Direct / partly Subcontracted – Yellow

4.3.5 **Subcontracted – Red** *If subcontractor detail is not available at stage of Bid evaluation, then this can be agreed with Order manager or Engineer in charge before deployment Ensure that all sub-contractors follow the Tata Power Safety Procedure and agreed CSM F9 Site Safety Management Plan.R7*

- iii. Against each category, indicate minimum educational qualification and work experience

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- iv. Add rows to include other specialized manpower, if any.
- v. Extend columns to cover the entire duration of the proposed contract.
- vi. If the operation is in shifts, then indicate shift in charge and / or safety officers required for each shift 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

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

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 current and Last 3 Years			
	Current Year	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.

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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 Appendix 9)

5. PPE Requirement -R7

Division/DISCOM Requirement	Bidders Response
The Bidder/Vendor shall ensure that all PPE of Approved standards as per CSM F8 – PPE Requirements shall be always available and shall be used by his employees with no exception whatsoever. Bidders to also ensure Standard PPE matrix of Tata Power to be followed for all activities.	
10% Buffer stock of PPEs to be provided by bidders at each circle to meet any contingency	
Bidder will ensure that sample PPEs to be submitted/approved by Safety Department along with EIC at the time of submission of Safety bids for evaluation In case bidder manpower found using substandard or any PPEs which are not approved by the Tata Power-Division /DISCOM representative, then Tata Power-Division /DISCOM will provide the same to manpower deployed at the cost of bidders.	

6. Vehicle Deployment: Bidders to provide details of all vehicles deployed during execution of work-(R7)

S. No.	Vehicle No.	Vehicle Type	Location	EV/CNG/Diesel/Petrol	Year	Whether CNG endorsed on RC

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7. Crane Deployment-(R7): Bidders to provide details of crane to be deployed during the execution of work as and when required. Bidders to provide approved new gen crane ACE Model SX150, ACE FX150 and Escorts Model TRX 1550.

SI No	Crane No	Location	Year

8. Training Records-(R7): Bidders to provide training records of employees deployed for the execution of work during last one year. These training includes OHS (Occupational Health and Safety) Training, Training on SOP/Work Procedures and Medical Emergency trainings imparted at their own facility, cost, and expenses. Bidders to provide the following details:

Tata Power-Division /DISCOM Requirement	Bidders Response
Training records of employees at their own facility, cost, and expenses for last one year	
Training facility available with Bidders	
Future road map for enhancing the competency of workforce	

9. Rewards and Recognition-(R7): Bidders to provide the details of process deployed in their organization for sharing and resolution of safety concerns raised by their employees. Also, bidders to provide the details of Rewards and Recognition process in their organization for safety to encourage the morale of their workforce.

10. Management System Certification: -

Sr.No	Certification	Yes / No	If Yes, Year of Certification	If No, Target date for Certification
1	ISO 9001			
2	ISO 14001			
3	ISO 45001			
4	Any other (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 8: CSM F8 - PPE requirements-(R7)

The Contractor shall ensure that the following PPE of Approved standards shall be always available and shall be used by his employees with no exception whatsoever. • PPE shall be conforming to BIS/DGMS/DIN specifications, in good condition and shall be comfortable to his employees, when used. This is indicative. For better clarification refer PPE procedure-TPSMS/GSP/PPE/023. as per safety terms and condition Appendix 3 CFM 3 in detail. R7

PPE Requirement

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/Gas cutters	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 / Linemen	Rubber hand gloves <i>with correct voltage rating and expiry date normally one year from Manufacturing date-(R7)</i> & Electrical resistant shoes, Safety helmet with induction strip to alert about presence of voltage for those linemen who climb the poles or work on electrical equipment
6	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, Work positioning attachment

PPE Type and Testing Frequency

Sl. No.	Name of PPE	IS / EN Standard	Testing Frequency	Remarks
01	Leather Safety Shoes (Color – Black) with PU toe cap.	IS:15298 (Part-2)	Monthly and visual check every day for any crack or damage in the leather or sole.	

02	HDPE Safety helmet with chin strap and ratchet type for adjustment for non-Electrical work	IS:2925-1984	Monthly and visual check every day for any crack in shell.	
03	Full body harness (Safety belt)	EN 361	Monthly and visual check every day of the bends and the harness.	
04	Electrical Safety Gloves	EN: 60903 CE marked	Weekly and visual check for any crack and blow test before every work.	Manufactured not beyond 12 months.
05	Full face visor with safety helmet	EN: 166 CE marked (Visor)	Monthly and visual check every day for any crack in shell.	Clear acrylic visor attached with safety helmet.
06	Fireproof jacket for chest protection		Monthly and visual check every day.	
07	Safety helmet with induction Strip for linemen and working for electrical work-Class E	EN 397/2012	Monthly and visual check everyday	Induction Strip alerts presence of voltage
08	Shorting clamps, crocodile clamps, Discharge Rod and Neon tester		Monthly and visual check everyday	For discharging the residual voltage and test before touch

Pictorial View of PPEs for reference purpose

Sl. No.	Name of PPE	IS / EN Standard	Picture
01	Leather Safety Shoes (Color – Black) with PU toe cap.	IS:15298(Part-2) and with test report of electrical resistance.	

02	<p>HDPE Safety helmet with chin strap and ratchet type for adjustment for Nonelectrical work and electrical work</p>	<p>IS:2925-1984/ EN 397/2012</p>	
03	<p>Full body harness (Safety belt) The straps at shoulder and thigh shall have full pad for comfort. The back shall be so designed that harness straps do not tangle with each other.</p>	<p>EN 361:2002 EN 358 : 2000 IS: 3521:1991/2002</p>	
04	<p>Electrical Safety Gloves – Composite type Soft electrical gloves as per size of individual.</p>	<p>EN: 60903 CE marked</p>	
05	<p>Full face visor with safety helmet</p>	<p>EN: 166 CE marked (Visor)</p>	
06	<p>Fireproof jacket for chest protection</p>		
08	<p>Reflective jacket to each workman</p>	<p>As per Tata Power standard</p>	

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These pictures are indicative. Actual product may vary.

Note:

1. Any other Personal Protection Equipment required beyond above list will be according to BIS or EN Standards.
2. All Personal Protection Equipment will be checked by the engineer in-charge or SAFETY group of company.
3. Safety Representative of the BA must maintain the record of the availability, condition and checking of the PPEs.
4. All tools required as per the contract must be according to respective IS / EN standards.
5. Company may revise or add the above list of PPE and their specifications as and when feel necessary. The information about new specifications /models will be circulated by the Engineer In-charge (EIC), which shall adhere by the business associated in the shortest possible time. The EIC shall issue a memo / instruction to BA with timeline for implementation. Any delay will be treated as non- compliance / safety violations.

Appendix 9: CSM F9 - 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>

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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 roles and responsibilities of all personnel involved in activity i.e., Site management staff including subcontractors' staff, Project Manager/Site Manager of principal contractor, Sub Contractor Site Manager, Project Engineer, Safety officer, Competent Supervisory Staff etc.)*

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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).*

S. No	Activity	Details of job sequence	Risk Involved	Control Checks
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)	

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Hazardous Substances to be used in job: (Attach MSDS if required)	 Acute Toxic	 Health Hazard	 Corrosive	 Dangerous For the environment	 Oxidising	 Highly flammable	 Explosives
	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N

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, firefighting, 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*

Safety Helmet / Hard Hats		Safety Shoe / Safety Boots	
Gum Boot		Double Lanyard Safety Harness with work positioning attachment	
Electrical Hand gloves		Other hand gloves	
Eye protection		Respiratory protection	
Ear Protection		Electrical Arc flash suit	
Chemical resistant suit		Reflective Jackets	
Any Other		Any Other	

10.0 First Aid facilities and Nearby Hospitals Details

- Name of On Site First Aider
- First Aid Box Location
- Location of nearest hospital

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

- Please give a brief writeup / methodology of your organization's plan to avoid impact of the COVID-19 pandemic at Tata Power working site.
 - 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 12: CSM F12 - Safety Violation Penalty Criteria

Major Violations and Escalation matrix--(R7)

Consequence of safety violation observed not related to incidents or accidents		Violations				
Sl. No.	Safety Violation	1st	2nd	3rd	4th	Subsequent violation
1	Working without required PPE such as Helmet/gloves/safety shoes/Safety harness etc.	A	B	C	D	Will Attract the same penalty as 4th violation
2	Working without proper tools and tackles	A	B	C	D	
3	Poor or bad condition of Crane/Hydra/Vehicle and/or Incompetent driver and/or helper).	B	C	D	E	Termination of Contract and blacklisting after repetition of violations (3 to 4 times as the case may be)
4	Improper Working at Height	B	C	D	E	
5	Untrained /unauthorized workman engaged in high-risk jobs	B	C	D	E	
6	Violation of SOP or WI or LOTO	C	D	E		
7	Working without PTW or LC / Without authorization / Without creating Safe Zone	C	D	E		

Legend	Action to be Taken	Responsibility	Penalty (INR)	Repeat Violations
A	Levy of Penalty	Order manager / EIC	5000	The no. of repeat violations shall be calculated cumulative during the contract period, not on a monthly basis
B	Memo to BA and Levy of Penalty	Order manager / EIC	10000	
C	Memo to BA and Levy of Penalty	Order manager / EIC	25000	
D	Memo to BA and Levy of Penalty	Order Manager / EIC	50000	
E	Memo to BA, Levy of Penalty, Termination of Contract, Blacklist	Order Manager / EIC	100000	

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Other Violations and Penalty

Penalty shall be imposed on the contractors under the following circumstances for breaching the contractual agreements. The list is not exhaustive, but indicative.

Sl. No	Description of Violation	Severity	Penalty (INR)
1.	Unhygienic/Bad condition of PPE	2	500
2.	Unsafe Act/Condition of Severity 4	4	4000
3.	Unsafe Act/Condition of Severity 5	5	5000
4.	No Earthing of Electrical equipment	5	5000
5.	Working without efficient supervision	4	4000
6.	Non-reporting of incidents	3	3000
7.	Starting the job without Toolbox Talk	4	4000
8.	Electric cable tied with metal wire / Use of damaged electrical cable / Use of two core cable	3	3000
9.	Rubber mat not available in front of electrical panels.	3	3000
10.	Inserting naked wire into the socket instead of a plug	5	5000
11	Inflammable materials stored inside PSS/FCC/Distribution Room	5	5000
12	Water accumulation found near electrical panels / equipment	5	5000
13	Grinding wheel/ Coupling/ Piling winch/other rotating parts without guard	4	4000
14	Inadequate illumination of working area	3	3000
15	Bringing inside PSS/FCC or any other work area any chemicals without approval.	5	5000
16	Loose materials in work area which can fall down or fly during a storm	5	5000
17	Misusing emergency facilities like fire hydrant line/ hose box/ spray system/ eye wash etc.	3	3000
18	Entering restricted areas like switch yard, hazardous material storage room etc. without authorization	3	3000
19	Not using 24 V lamp inside confined spaces	3	3000
20	Bypassing/overriding safety interlocks	5	5000
21	Working besides road without proper barricading and monitoring of traffic	5	5000

22	Smoking in prohibited area (Closed Go-downs, Storage of flammable material, Storage of Gas cylinders, PSS , Offices etc.)	3	3000
23	Improper stacking of materials in Storage Yard	4	4000
24	Sleeping at workplace	3	3000
25	First aid box not available / in locked condition	2	2000
26	Appointment of subcontractor without his Safety Bid Evaluation and/or without the permission of engineer in charge or Order manager.	5	5% of order value
27	Bad Housekeeping with respect to TPSMS/GSP/GHK/022 <ul style="list-style-type: none"> • 1st Instant • 2nd instant • 3rd instant • 4th instant • Subsequent instants 	2	<ul style="list-style-type: none"> • 1000 • 2000 • 5000 • 10000 • 10000
28	Violations related to vehicles with respect to TPSMS/CSP/RSP/015. <ul style="list-style-type: none"> • Parking without wheel choke • Parking in undesignated area • Heavy vehicle without helper or co-driver • Seat belt not available / not used • Driver without license • Heavy vehicles without reverse horn • Using mobile phone while driving • Lights/mirrors not working /broken 	3	1000 per each violation
28	Violation in Gas cutting and Gas cylinder handling <ul style="list-style-type: none"> • Cylinder valve without guard • No flashback arrester • Leaky DA/Oxygen hose • Cylinders not kept in secured manner • Cylinder trolley not available • Cylinders are transported by manual rolling 	5	2000 per each violation
29	Violations in Lifting Operations w.r.t. to TPSMS/CSP/HEMS/005 <ul style="list-style-type: none"> • Hook latch missing • Load raised or swung over people or occupied areas of building • Persons standing within the swing area of the crane • No barricading of crane working area • Use of damaged lifting tools and tackles 	5	2000 per each violation

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	<ul style="list-style-type: none"> Lifting tools and tackles not tested / Test certificate expired Crane operator without proper license Angular loading Lifting / shifting heavy material without guide rope Using mobile phone during loading and unloading jobs 		
30	<p>Violation in Scaffolding work w.r.t. to TPSMS/CSP/SCAF/007</p> <ul style="list-style-type: none"> Unstable scaffolding/nonstandard Scaffolding in use Handrails/mid rails/toe guards missing Safety harness not anchored on fixed structure Opening found in working platform 	5	2000 per violation
31	<p>Violation in Excavation Work w.r.t. to TPSMS/CSP/EXS/002</p> <ul style="list-style-type: none"> Loose material falling into excavated pit Water logging in excavated pits / trenches Inadequate or no barricading Undercut / cave in found on sides of excavated pits 	4	2000 per violation
32	Caution boards, danger signs (luminescent /red) along with emergency contact number are not found displayed.	3	3000
34	Spillage of hazardous material/chemicals during transportation	4	4000

Penalty for Incidents / Accidents-(R7)

Consequence of incident / Accident		Incident / Accident				Action Required
Sr.No.	Type of Injury	1st	2nd	3rd	4th	
1	Major Injury (Bone injury or burn or hospitalization >48 hrs.) Non-fatal	F	F	G	G	Intolerable
2	Major Injury (Bone injury or burn or hospitalization >48 hrs.) Non-Fatal (Two or more non-Fatal in one event)	G	G	H		
3	Single fatality	G	H			
4	Multiple fatalities (Two or more fatalities in one event). Anywhere in Tata power.	H				

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Legend	Action to be taken	Responsibility	Penalty (INR)	The no. of violations shall be calculated cumulative during the contract period for all contracts in SBU, not on a monthly basis
F	Memo to BA and Levy of Penalty	Order Manager/Engineer in charge	200000	
G	Memo to BA and Levy of Penalty	Order Manager/Engineer in charge	500000	
H	Memo to BA, Levy of Penalty, Termination of Contract and Blacklisting the BA	Order Manager/Engineer in charge	1000000	

Appendix -13: CHECKLIST TO BE USED DURING SITE VISIT

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.

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Appendix 14: Indicative List of High-Risk Jobs

Indicative high-risk jobs are given below. This is not an exhaustive list. This is only indicative.

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	Maintenance / Testing and Replacement of High Voltage (33 KV etc.) Switchyard equipment
6	Installation of Lifts
7	Installation of EOT Cranes
8	Tower Dismantling
9	Working on H Frame /Pole mounted Transformers
10	Excavation in operational Area having power cables in receiving station
11	Identification and spiking of cable / disconnection of cables from poles
12	Working on Electrical Panels
13	Working on live electrical switch yard, Material handling and equipment repair/installation.
14	All activities that require climbing on a pole/structures/Towers/Transformers
15	Cable laying and termination jobs
16	Excavation beyond 5 feet near existing building and structures
17	Working in confined Spaces
18	Stringing of new conductors over poles

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.



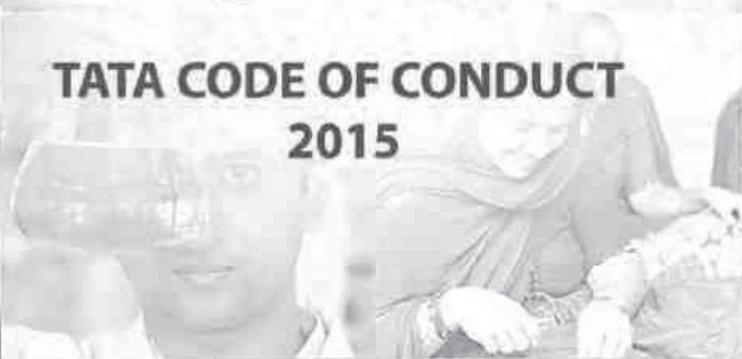
(Praveer Sinha)
CEO & Managing Director

Date: 15th June, 2018





**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:



INTEGRITY

We will be fair, honest, transparent and ethical in our conduct; everything we do must stand the test of public scrutiny.

UNITY

We will invest in our people and partners, enable continuous learning, and build caring and collaborative relationships based on trust and mutual respect.

RESPONSIBILITY

We will integrate environmental and social principles in our businesses, ensuring that what comes from the people goes back to the people many times over.

PIONEERING

We will be bold and agile, courageously taking on challenges, using deep customer insight to develop innovative solutions.

EXCELLENCE

We will be passionate about achieving the highest standards of quality, always promoting meritocracy.

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-authorized, 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.)







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

TECHNICAL SPECIFICATION

BPCL 110 kV Supply Extension Project

PROJECT ID –TE00517

Document Title: BoP for installation & commissioning of 3 Nos of 110kV AIS Bays and 22kV GIS along with related items.

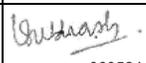
(Document no. – TE/SP/0066/FY24)

TATA POWER

The Tata Power Company Limited

Engineering T&D, Antop Hill Station, Samadhan Road,
Antop Hill, Mumbai 400 037.

Registered Office Bombay House 24 Homi Mody Street Mumbai 400 001

Revision	Date	Revision History	Approvals		
			Prepared by	Checked by	Approved by
R0	05/01/2024	Original	NPT	SKV	SKV
R1	05/04/2024	After scope change & comments	PSM	NPT	SKV
					 060524

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CHECK LIST FOR DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID

<u>SN</u>	<u>Document Name</u>	<u>Submitted by Bidder</u>			
		<u>(Please <input checked="" type="checkbox"/> in the Box)</u>			
1.	Signed copy of bid document as a token of acceptance	YES		NO	
2.	Duly filled in schedules, listed in section 'C'. i.e. Schedule C1 to C9	YES		NO	
3.	Qualifying Requirement in Annexures E1 in excel format	YES		NO	
4.	Quality Assurance Plan (QAP), Manufacturing Quality Plan (MQP), Field Quality Plan (FQP) as applicable	YES		NO	
5.	General Arrangement Drawings for equipment offered	YES		NO	
6.	Filled up Data Sheets in Section B1(Standard Specs)	YES		NO	
7.	Type Test Reports as applicable.	YES		NO	

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A.1 INTENT OF SPECIFICATION

The Tata Power Company Limited (Tata Power) hereinafter called the "OWNER" or "PURCHASER", proposes 110kV supply extension to BPCL through installation of 110 kV, 2 Nos of 40 MVA transformer at Tata power Trombay station-A receiving station along with new 110kV 3 Bays with related equipment and 22kV, 9 Bay GIS along with related equipment.

A.2 PROJECT INFORMATION

1. Location: : Trombay - A Thermal Power Station
Mahul road, Chembur, Mumbai-400074
2. Altitude : Not more than 60 meters above sea level.
3. a) Maximum ambient air temperature : 50 Deg. C
- b) Daily Average Maximum : 40 Deg. C
4. Min. ambient air temperature : 10 Deg. C
5. Climatic conditions : Atmosphere is generally hot, humid and is conducive to pollution, rust and fungus growth. It is laden with salt sprays, chemical fumes, steam and dust. Relative humidity is over 95% during 4 months in a year when about 3000 mm (total) rainfall takes place. The equipment offered shall be suitable for satisfactory operation under these conditions and polluted atmosphere.
6. Auxiliary power supply:

Auxiliary electrical equipment to be supplied against this specification shall be suitable for operation on the following system:

DC solenoids, DC alarm control and protection, SCADA Panels	220 V DC, 2-wire unearthed DC supply from Station Battery / Battery Charger. 48V DC, 2-wire unearthed DC supply from Station Battery / Battery Charger
AC control & protective devices	220 V DC, 1 phase, 2 wire, 50 Hz AC supply with one lead earthed.
Uninterrupted power supply	220 V, 1-phase, 50 Hz, 2-wire, AC supply from UPS System for I&C
Lighting fixtures and space heaters	240V, 1 phase, 2 wire, 50Hz AC supply

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Construction supply with neutral lead earthed.
 415V, 3 phase, 3 wire, 50Hz AC supply
 with resistance earthed.

7. The above voltages may vary as follows:
 All devices shall be suitable for continuous operation over the entire range of voltage and frequency indicated below without any change in their performance.

AC supply	Voltage variation ± 10%
	Frequency variation ± 5%
	Combined voltage & frequency variation 10%

8. Seismic data (as per IS-1893) latest issue.

- a) Zone : Zone III
- b) Coefficient : 0.04
- c) Importance factor (I) : 2.5 for electrical equipment and 1.5 for others.

9. Earthing : Effectively earthing for 22 kV system and solidly earthed for all 415 V system mentioned in the scope of work.

10. Tropicalization.

The equipment shall be given tropical and fungicidal treatment in view of the above mentioned climatic conditions. Tropical protection shall conform to BS: CP 1014:963 entitled “Protection of Electrical Power Equipment against climatic condition”

A.3 SCOPE OF WORK

3.1 110kV, 3 Nos of AIS Bays-

- 1. Loading, unloading, transportation of equipment within Trombay premises, proper preservation at site, storage & handling at site, assembly, erection, installation, equipment structure installation, testing and commissioning, assistance for testing of 2 nos. of 110kV bays and additional bay connection for DT-8 transformer using existing Unit-4 Bay space, along with necessary accessories.

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Installation and commissioning along with connection & Integration with Protection, Automation & communication system required. Termination along with equipment's to be considered. Below listed equipment are freely issued by Tata power.

a	110kV Breakers 3 Nos
b	110kV Current transformer 9 Nos
c	110kV PTs - 6 Nos
d	110kV Isolators 8 Nos (WO ES-6 and WES-2)
e	110kV Lightning arrester 6 Nos
f	110kV Bus Post insulators 12 Nos
g	110kV Cable sealing end structures 18 Nos
i	CRP, RTCC,PAC and metering panels 15 Nos, 3 Nos of ABT meters (including base frame as per site requirement)

2. Installation of Support structures for above mention switchyard AIS equipment (Excluding 2 Nos of isolators for DT-8 second bay).
3. Dismantling of existing DT-6 bay including existing A2 structure with conductor and insulator, Current transformer, Circuit breaker, isolators & related equipment and transport to the designated location in Trombay is in bidder's scope. Overhauling of dismantled bay equipment (Current transformer, Circuit breaker with mechanism Box and Motor operated isolators with main and earth mechanism box) is in bidder's scope.
4. Installation of DT-8 second bay by utilizing existing unit-4 bay location and dismantled DT-6 bay equipment (quantity already covered in above table). Isolators for this bay to be installed in existing isolator structures with necessary modifications. (Refer annexure SLD)
5. Dismantling of existing old PAC panels, transport to the designated location in Trombay and installation of new PAC and metering panels is in bidder's scope.
6. Supply and services of 5 Nos of CT/PT marshaling box (Junction box) along with accessories required for laying and termination of cables (As per site requirement).
7. Laying & termination services for all required AC/DC supply cables, control cables (between Equipment CRP, relay Panels, RCP, metering panels and JB/BMK for both 110kV & 22kV system etc.) instrumentation Cables, Modbus communication cables and accessories required for SCADA integration. End to end cable termination up to SCADA systems is in bidder's scope. Bidder shall consider supply & installation of all accessories required for laying & termination of cables (eg. Glands, lugs, ferrules, clamps, tie belts etc.), including modification & cutout to gland plate. Bidder must visit the site & estimate the LT control & Power cables quantity required, which will be free issued by Tata power. (ICS to be prepared by bidder)

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a	3Cx2.5 Sq.mm	Mtr	5000
b	7Cx2.5 Sq.mm	Mtr	11200
c	14Cx2.5 Sq.mm	Mtr	1200
d	7Cx1.5 Sq.mm	Mtr	800
e	14Cx1.5 Sq.mm	Mtr	2000
f	4Cx4 Sq.mm	Mtr	900
g	4Cx6 Sq.mm	Mtr	6600
h	2Cx6 Sq.mm	Mtr	2500

8. Supply and installation of jumpers, Clamps & connectors along with accessories required for all AIS equipment is in bidder's scope.
9. Supply & installation of 1.25" IPS Cu tube and required bending, brazing, fabrication, along with clamps-connectors & other related accessories is in bidder's scope.
10. Supply & Installation of 0.2 sq inch ACSR conductor overhead & Jumpers for complete two bays till transformers as applicable.
11. Supply & installation along with all related accessories of cable carrier system for LT Power and control cables as applicable, as mentioned in BOQ.
12. Supply of structural steel and fabrication of base frame for indoor/outdoor junction boxes, panels etc. as applicable.
13. Dismantling of Existing DT-7 switchgear and shifting to store, dismantling of existing power, control & instrumentation cables with cutting & pot heading (From dismantled equipment till the trench) & placing them safely in trench.
14. As per site requirement dismantling, modification & reinstatement of existing shed structure, height barriers, fencing & barricades and other equipment transportation/ shifting to store is in bidder's scope.

3.2 33kV GIS(to be operated at 22kV level)-

1. Unloading of MV GIS switchgear, shifting to storage at site then shifting from place of storage to erection location of GIS panels under supervision of GIS OEM.

GIS will be free issue to bidder from Tata Power. The details of GIS are as follows,

Table-3.2.1

Sr. no.	Parameter	Rating
1.	Incomer feeders - 900x1600x2800 mm	2500A, max weight – 2 Ton
2.	Outgoing feeders - 600x1600x2800 mm	1250A, max weight – 2 Ton

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2. Erection and installation of GIS panels under the supervision of GIS OEM as per standard operating procedure and field quality plan.
 Unloading, shifting to storage at site and then shifting from place of storage to erection location along with erection, installation and commissioning of automation panels, remote control panels at site. Please refer below table 3.2.2 for quantity of panels.

Table-3.2.2.

Panel Name	No. of Panels
Automation panels - 800x800x2315 mm	3
RCP - 1000x1000x2315 mm	1

3. For unloading, and shifting of any material, bidder shall arrange the cranes as per Tata Power standard safety procedures.
4. Supply, erection and installation of base frames along with modification of false flooring for panels specified in table-3.2.2. All these base frames shall comply with highest quality and shall be of non-corrosive and durable type.
5. Laying and termination of following control cables between AIS, GIS, RCP, protection panel, Automation panel, metering panel etc. as per interconnecting cable schedule. Gland plate cutout, supply and installation of glands, lugs, ferrules as per Tata Power standard practice shall be in bidder's scope. Provision of control cable tags (steel plate with engraving) at both ends of control cables shall be in bidder's scope.
6. Any additional control cables services required for completion of BoP works shall be in bidder's scope of work. Laying, splicing and termination of fiber & communication cables as per automation and communication requirement (Between GIS, automation panel etc.)
7. Gland plate cutout, supply and installation of glands, lugs, ferrules as per Tata Power standard practice shall be in bidder's scope.
8. Supply and installation of 3 nos per feeder 2mm thick, 250x150mm Aluminum nameplates with engraved letters as per Tata Power standard requirement. These nameplates shall be installed at front, back of GIS panel and cable compartment for each feeder. The nameplate shall be clearly readable from a distance of at least 10m. Background of nameplate shall be blue powder coated with letters in bold silver color Arial font. Edges of nameplate shall be rounded curved type and nameplate shall have silver color border.
9. Supply of following ISI marked insulating mats as per IS 15652,

Details of insulating mat	Tentative length x width (m)
33kV, 3mm thickness, Class C	20X1

10. Fire retardant paint for following 33 kV Cables:

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Details of cable	Tentative length (meter)
33kV, 1C, 630 sqmm, XLPE	500
33kV, 3C, 400 sqmm, XLPE	500

- 3.3 After erection of 2 Nos of 40 MVA transformers by Tata power, Control cables laying termination along with all required accessories for SCADA & Protection, Also integrated testing of HV-LV shall be in bidder's scope.
- 3.4 Extension of existing earthing and lightning protection system for 3 nos. of 110kV bays, 2 nos of 40MVA transformers and 33kV GIS. Supply & installation of Earth conductor is in bidder's scope.
- 3.5 Preparation of SLD, EKD, Plan-section drawings & Earthing Layouts for entire projects scope is in bidder's scope.
- 3.6 Obtaining plan approvals for all equipment installations and equipment charging approvals from electrical inspector is in Bidder's scope, including preparation of all required drawings and documents etc.
- 3.7 Provide support services for integration of new equipment with existing SCADA.
- 3.8 Cable tray and proper dressing of cables is in scope of bidder's.
- 3.9 Complete individual equipment & integrated commissioning testing with arrangement of all testing equipment/kit, accessories required for successful equipment field testing is in Bidder's scope.
- 3.10 Bidder shall visit site to understand the detailed scope of work before bid submission. Any cost implication due to site constraint or ambiguity will not be considered during detailed engineering. Bidder to visit site and envisaged all required arrangement or modification required for successful commissioning of project.
- 3.11 Although most of the systems are covered here, any other equipment/system required for successful completion of the works shall form part of this contract and shall be deemed to be included in the Contractor's scope of works.
- 3.12 All equipment shall be suitable for smooth, efficient, and trouble-free operation for the site conditions and power supply variations as mentioned in Project Information Memorandum of this specification.
- 3.13 The equipment shall be designed to give efficient and reliable performance in a heavily Polluted atmosphere. Further, equipment and their housing under the scope of this contract shall be suitable for operation in Seismic Zone-3 (as per IS).
- 3.14 All equipment shall comply with the specification requirement indicated in this section and associated Data Sheet.
- 3.15 Contractor to follow the "Wrench System" for submission of documents and inspections/ document review.

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3.16 It is not the intent to completely specify herein all details of design and construction of the equipment/systems. However, all equipment/systems shall conform in all respects to high standards of engineering, design and workmanship and shall be capable of performing continuous operation up to the Contractor's guarantees in a manner acceptable to the Purchaser who will interpret the meaning of drawings and specifications and shall have the power to reject any work or material which in their judgment are not in full accordance with the requirements. All the major equipment shall be installed tested and commissioned under supervision of representative of original manufacturer of respective equipment.

3.17 SPECIAL NOTES TO BIDDERS:

3.17.1 The above is only a brief indicative scope of work which helps the bidder to understand the nature of works involved in this project. The bidder is advised to thoroughly refer the above scope of work along with detailed technical specifications and tender purpose drawings before submitting the bid documents to the OWNER. The tender purpose drawings are indicative and may undergo changes during the detailed engineering phase of the project. In addition to this, BIDDER shall assume whatever is necessary for successful completion and commissioning of the project. Such assumptions must be clearly mentioned in the bid.

3.17.2 Bidders are requested to carefully examine and understand the specifications and seek clarifications, if required, to ensure a clear understanding of the specification and requirement. Before submitting the offer, the Bidder is required to visit the project site for accessing the feasibility & layout of the system.

3.17.3 Project shall be based on a single point responsibility, completely covering the following activities and services in respect of all the equipment specified and covered under the specifications and read in conjunction with Technical Specifications.

- a. Compliance with statutory requirement and obtaining clearance from statutory authorities, whenever and wherever required.
- b. Packing and transportation from manufacturer's work to the site, excluding transformers.
- c. Reliability tests, performance, and guarantee tests after successful completion of facilities.

3.17.4 Insurance and other requirement for the complete transmission Package in accordance with the provisions of general conditions of contract of the bidding document.

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3.17.5 Bidders to confirm any Technical Deviations in the Technical deviation sheet only. Any deviations mentioned anywhere else in the bid submission will not be considered. Bidder shall also confirm on his letter head if he has not opted for any technical deviation. Bidder to note that after confirmation of no technical deviation, bidder shall meet the requirements as per the bid documents during detailed engineering.

3.17.6 Cable glands provide shall be of M/s Comet make and Lugs shall be of M/s Dowells make.

3.18 GENERAL REQUIREMENT

3.18.1 The Bidder shall submit the technical requirements, data and information as per the technical data sheets provided in bid documents.

3.18.2 The Bidder shall furnish catalogues, engineering data, technical information, design documents, drawings etc., fully in conformity with the technical specification.

3.18.3 It is recognized that the Bidder may have standardized on the use of certain components, materials, processes, or procedures different from those specified herein. Alternate proposals offering similar equipment based on the manufacturer's standard practice will also be considered provided such proposals meet the specified designs, Standard Qualifying performance requirements and are acceptable to the Owner's. Unless brought out clearly, the Bidder shall be deemed to conform to this specification scrupulously.

3.18.4 All deviations from the specification including Quality requirements and Standard Quality Plan shall be clearly brought out in the respective schedule of deviations. Any discrepancy between the specification and the catalogues or the bid, if not clearly brought out in the specific requisite schedule, will not be considered as valid deviation.

3.18.5 Equipment furnished shall be complete in every respect with all mountings, fittings, fixtures, and standard accessories normally provided with such equipment and/or needed for erection, completion and safe operation of the equipment as required by applicable codes though they may not have been specifically detailed in the Technical Specifications unless included in the list of exclusions. Materials and components not specifically stated in the specification, but which are necessary for commissioning and satisfactory operation of the switchyard/substation unless specifically excluded shall be deemed to be included in the scope of the specification and shall be supplied without any extra cost. All similar standard components/parts of similar standard equipment provided, "shall be interchangeable with one another and with existing parts in Tata Power system".

3.19 STANDARDS

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- 3.19.1 The works covered by the specification shall be designed, engineered, manufactured, built, tested, and commissioned in accordance with the CEA guidelines and other Acts, Rules, Laws and Regulations of India.
- 3.19.2 The equipment to be furnished under this specification shall conform to latest issue with all amendments (as on the date of bid opening) of standard specified in technical specification, unless specifically mentioned in the specification.
- 3.19.3 The Bidder shall note that standards mentioned in the specification are not mutually exclusive or complete in themselves but intended to complement each other.
- 3.19.4 The Bidder shall also note that list of standards presented in this specification is not complete. Whenever necessary the list of standards shall be considered in conjunction with specific IS, IEC.
- 3.19.5 When the specific requirements stipulated in the specifications exceed or differ than those required by the applicable standards, the stipulation of the specification shall take precedence.
- 3.19.6 Other internationally accepted standards which ensure equivalent or better performance than that specified in the standards specified in individual sections for various equipment's may be accepted, however the salient points of difference shall be clearly brought out in additional information schedule, along with English language version of such standard. The equipment conforming to standards other than specified in the individual sections for various equipment's shall be subject to Owner's approval.
- 3.19.7 The Bidder shall clearly indicate in his bid the specific standards in accordance with which the works will be carried out.

3.20 SERVICES TO BE PERFORMED BY THE EQUIPMENT BEING FURNISHED

- 3.20.1 All equipment's shall also perform satisfactorily under various other electrical, electromechanical, and meteorological conditions of the site of installation.
- 3.20.2 All equipment shall be able to withstand all external and internal mechanical, thermal and electromechanical forces due to various factors like wind load, temperature variation, ice & snow, (wherever applicable) short circuit etc. for the equipment.
- 3.20.3 The Bidder shall design terminal connectors of the equipment considering various forces that are required to withstand.
- 3.20.4 The equipment shall also comply to the following: To facilitate erection of equipment, all items to be assembled at site shall be "match marked".

3.21 ENGINEERING DATA AND DRAWINGS

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- 3.21.1 The engineering data shall be furnished by the Contractor in accordance with the Schedule for each set of equipment as specified in the Technical Specifications.
- 3.21.2 The Documents shall be submitted through Document management system 'WRENCH'. Necessary training on Wrench Software will be provided to Bidders representative by Consultant. Master Document List (MDL) shall be prepared by contractor and submitted for Owners approval.
- 3.21.3 The drawings will be approved in four categories as follows:
- Code I: Approved
 - Code II: Approved subject to incorporation of comments as marked. Resubmit for formal approval
 - Code III: Not Approved. Incorporate comments as marked. Resubmit for review / approval.
 - Code IVA: Retain for Information.
 - Code IVR: Resubmit after incorporation of comments.
- 3.21.4 It is responsibility of the Bidder to handover all project related drawings in Auto Cad formats only. The pdf version of above drawings / documents shall be routed through Wrench for formal approval process.
- 3.21.5 The Bidder shall submit 6 (six) sets of code I & code IVA approved drawings / design documents / data / test reports to the Owner.

3.22 DRAWINGS

- 3.22.1 All drawings submitted by the Bidder including those submitted at the time of bid shall be with sufficient detail to indicate the type, size, arrangement, material description, Bill of Materials, weight of each component, break-up for packing and shipment, dimensions, internal & the external connections, fixing arrangement required and any other information specifically requested in the specifications.
- 3.22.2 Each drawing submitted by the Bidder shall be clearly marked with the name of the Owner, the unit designation, the specifications title, the specification number and the name of the Project. If standard catalogue pages are submitted, the applicable items shall be indicated therein. All titles, noting, markings and writings on the drawing shall be in English. All the dimensions should be in metric units.
- 3.22.3 Further work by the Bidder shall be in strict accordance with these drawings and no deviation shall be permitted without the written approval of the Owner, if so required.
- 3.22.4 The review of these data by the Owner will cover only general conformance of the data to the specifications and documents interfaces with the equipment provided under the specifications, external connections and of the dimensions which might affect plant layout. This review by the

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Owner may not indicate a thorough review of all dimensions, quantities and details of the equipment, materials, any devices or items indicated, or the accuracy of the information submitted. This review and/or approval by the Owner shall not be considered by the Contractor, as limiting any of his responsibilities and liabilities for mistakes and deviations from the requirements, specified under these specifications and documents.

3.22.5 All manufacturing and fabrication work relating to the equipment prior to the approval of the drawings shall be at the Bidders risk. The Bidder may make any changes in the design, which are necessary to make the equipment conform to the provisions and intent of the Contract and such changes will again be subject to approval by the Owner. Approval of Bidders drawing or work by the Owner shall not relieve the Bidder of any of his responsibilities and liabilities under the Contract.

3.22.6 All engineering data submitted by the Bidder after final process including review and approval by the Owner shall form part of the Contract Document and the entire works performed under these specifications shall be performed in strict conformity, unless otherwise expressly requested by the Owner in Writing.

3.23 APPROVAL PROCEDURE:

3.23.1 The scheduled dates for the submission of the drawings as well as for, any data/information to be furnished by the Owner would be discussed and finalized at the time of award. The following schedule shall be followed for approval and for providing final documentation.

i)	Approval/comments/ by Owner on initial submission	As per agreed schedule
ii)	Resubmission (whenever required)	Within 1 (one) week from date of Comments through Wrench
iii)	Approval or comments	Within 1 week of receipt of resubmission.
iv)	Furnishing of distribution copies in bound volume (3 copies)	2 weeks from the date of final approval
v)	Furnishing of distribution copies of test reports	
	a) Type test reports (3 copies)	2 weeks from the date of final approval
	b) Routine Test Reports (one copy each)	As per agreed schedule

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vi)	Furnishing of instruction/operation manuals (two copies)	As per agreed schedule
vii)	Hard copy of approved RFC drawings (two sets)	As per agreed schedule
viii)	As built drawings (Three sets)	On completion of entire works
ix)	CD / DVD for all as built drawings	On completion of entire works

3.24 NOTE:

- 3.24.1 The Bidder may please note that all resubmissions must incorporate all comments given in the earlier submission by the Owner or adequate justification for not incorporating the same must be submitted failing which the submission of documents is likely to be returned.
- 3.24.2 The list of drawings which are required to be referred during execution shall be finalized with the Bidder at the time of Award.
- 3.24.3 All as build drawings should be submitted in the latest AutoCAD Version.
- 3.24.4 The instruction Manuals shall contain full details of drawings of all equipment being supplied under this contract, their exploded diagrams with complete instructions for storage, handling, erection, commissioning, testing, operation, trouble shooting, servicing and overhauling procedures.
- 3.24.5 If after the commissioning of the project, the instruction manuals require any modifications/ additions/changes, the same shall be incorporated and the updated final instruction manuals shall be submitted by the Contractor to the Owner.
- 3.24.6 The Bidder shall furnish to the Owner catalogues of spare parts.
- 3.24.7 For unloading, and shifting of any material or equipment bidder shall arrange the cranes and derrick erection for equipment installation, as per Tata Power standard safety procedures.

3.25 MATERIAL / WORKMANSHIP

- 3.25.1 Where the specification, does not contain references to workmanship, equipment, materials and components of the covered equipment, it is essential that the same must be new, of highest grade of the best quality of their kind, conforming to best engineering practice and suitable for the purpose for which they are intended.
- 3.25.2 In case where the equipment, materials or components are indicated in the specification as “similar” to any special standard, the Owner shall decide upon the question of similarity. When required by the specification or when required by the Owner the Bidder shall submit, for approval, all the information concerning the materials or components to be used in manufacture.

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Machinery, equipment, materials, and components supplied, installed or used without such approval shall run the risk of subsequent rejection, it being understood that the cost as well as the time delay associated with the rejection shall be borne by the Contractor.

- 3.25.3 The design of the Works shall be such that installation, future expansions, replacements, and general maintenance may be undertaken with a minimum of time and expenses. Each component shall be designed to be consistent with its duty and suitable factors of safety, subject to mutual agreements. All joints and fastenings shall be devised, constructed, and documented so that the component parts shall be accurately positioned and restrained to fulfil their required function. In general, screw threads shall be standard metric threads. The use of other thread forms will only be permitted when prior approval has been obtained from the Owner.
- 3.25.4 Whenever possible, all similar part of the Works shall be made to gauge and shall also be made interchangeable with similar parts. All spare parts shall also be interchangeable and shall be made of the same materials and workmanship as the corresponding parts of the Equipment supplied under the Specification. Where feasible, common component units shall be employed in different pieces of equipment to minimize spare parts stocking requirements. All equipment of the same type and rating shall be physically and electrically interchangeable.
- 3.25.5 All materials and equipment shall be installed in strict accordance with the manufacturer's recommendation(s). Only first-class work in accordance with the best modern practices will be accepted. Installation shall be considered as being the erection of equipment at its permanent location. This, unless otherwise specified, shall include unpacking, cleaning and lifting into position, grouting, levelling, aligning, coupling of or bolting down to previously installed equipment bases/foundations, performing the alignment check and final adjustment prior to initial operation, testing and commissioning in accordance with the manufacturer's tolerances, instructions and the Specification. All factory assembled rotating machinery shall be checked for alignment and adjustments made as necessary to re- establish the manufacturer's limits suitable guards shall be provided for the protection of personnel on all exposed rotating and / or moving machine parts and shall be designed for easy installation and removal for maintenance purposes. The spare equipment(s) shall be installed at designated locations and tested for healthiness.
- 3.25.6 All oil, grease and other consumables used in the Works/ Equipment shall be purchased in India unless the Bidder has any special requirement for the specific application of a type of oil or grease not available in India. In such is the case he shall declare in the proposal, where such oil or grease is available. He shall help Owner in establishing equivalent Indian make and Indian Contractor. The same shall be applicable to other consumables too.

3.26 DESIGN IMPROVEMENTS / CO-ORDINATION

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- 3.26.1 The Bidder shall note that the equipment offered by him in the bid only shall be accepted for supply. However, the Owner or the Bidder may propose changes in the specification of the equipment or quality thereof and if the Owner & contractor agree upon any such changes, the specification shall be modified accordingly.
- 3.26.2 If any such agreed upon change is such that it affects the price and schedule of completion, the parties shall agree in writing as to the extent of any change in the price and/or schedule of completion before the Bidder proceeds with the change. Following such agreement, the provision thereof shall be deemed to have been amended accordingly.
- 3.26.3 The Bidder shall be responsible for the selection and design of appropriate equipment's to provide the best co-ordinate performance of the entire system. The basic design requirements are detailed out in this Specification. The design of various components, sub-assemblies and assemblies shall be so done that it facilitates easy field assembly and maintenance.
- 3.26.4 The Bidder must coordinate with the agencies (if any) who are Consultants/Contractor for the Owner for all work. The names of agencies shall be intimated to the successful bidders.
- 3.26.5 The contractor should submit monthly progress report to the owner. The format of the report shall be mutually agreed between Owner and Contractor after award of contract.
- 3.26.6 The Bidder will be called upon to attend co-ordination meetings with the Owner, other Bidders and the Consultants of the Owner (if any) during the period of Contract. The Bidder shall attend such meetings at his own cost at mutually agreed venue as and when required and fully cooperate with such persons and agencies involved during those discussions.

3.27 QUALITY ASSURANCE REQUIREMENT

- 3.27.1 To ensure that the equipment and services under the scope of this Contract whether manufactured or performed within the Bidders Works or at his Sub-contractor's premises or at the Owner's site or at any other place of Work are in accordance with the specifications, the Bidder shall adopt suitable quality assurance program to control such activities at all points necessary.
- 3.27.2 Bidder to refer specifications for Quality Assurance requirements.

3.28 TYPE AND ACCEPTANCE TESTS (NA)

- 3.28.1 Bidder to refer specifications for Type and Acceptance Requirement.
- 3.28.2 Type Tests shall mean those tests, which are to be carried out to prove the process of manufacture and general conformity of the material to this Specification. These tests shall be

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carried out on samples prior to commencement of commercial production against the order. The Bidder shall indicate his schedule for carrying out these tests.

- 3.28.3 Acceptance Tests shall mean those tests, which are to be carried out on samples taken from each lot offered for pre-dispatch inspection, for the purposes of acceptance of that lot.
- 3.28.4 Routine Tests shall mean those tests, which are to be carried out on the material to check requirements, which are likely to vary during production.
- 3.28.5 Tests during Manufacture shall mean those tests, which are to be carried out during the process of manufacture and end inspection by the Contractor to ensure the desired quality of the product to be supplied by him.

3.29 QUALITY ASSURANCE, INSPECTION, TESTING AND INSPECTION CATEGORIZATION

- 3.29.1 Bidder shall refer General QAI issued with the bid document.
- 3.29.2 The inspection of the equipment's shall be carried out as per the Inspection Categorization Plan (ICP) given in the bid document.
- 3.29.3 Bidder to also refer specific FQP, MQP & guidelines provided in respective specification.

3.30 PACKAGING AND PROTECTION

- 3.30.1 All the equipment's shall be suitably protected, coated, covered or boxed and crated to prevent damage or deterioration during transit, handling and storage at Site till the time of erection. On request of the Owner, the Contractor shall also submit packing details/associated drawing for any equipment/material under his scope of supply, to facilitate the Owner to repack any equipment/material later, in case the need arises. While packing all the materials, the limitation from the point of view of availability of Railway wagon sizes in India should be considered. The Contractor shall be responsible for any loss or damage during transportation, handling and storage due to improper packing. Any demurrage, wharf age and other such charges claimed by the transporters, railways etc. shall be to the account of the Contractor. Owner takes no responsibility of the availability of the wagons.
- 3.30.2 All coated surfaces shall be protected against abrasion, impact, dis-coloration and any other damages. All exposed threaded portions shall be suitably protected with either a metallic or a non-metallic protecting device. All ends of all valves and piping's and conduit equipment connections shall be properly sealed with suitable devices to protect them from damage.

3.31 FINISHING OF METAL SURFACES

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3.31.1 All metal surfaces shall be subjected to treatment for anti-corrosion protection. All ferrous surfaces for external use unless otherwise stated elsewhere in the specification or specifically agreed, shall be hot-dip galvanized after fabrication. High tensile steel nuts & bolts and spring washers shall be electro galvanized to service condition 4. All steel conductors including those used for earthing/grounding (above ground level) shall also be galvanized according to IS: 4826/2629.

3.32 HANDLING STORING AND INSTALLATION

3.32.1 In accordance with the specific installation instructions as shown on manufacturer's drawings or as directed by the Owner or his representative, the Contractor shall unload, store, erect, install, wire, test and place into commercial use all the equipment included in the contract. Equipment shall be installed in a neat, workman like manner so that it is level, plumb, square and properly aligned and oriented.

3.32.2 Contractor may engage manufacturer's Engineers to supervise the unloading, transportation to site, storing, testing and commissioning of the various equipment being procured by them separately. Contractor shall unload, transport, store, erect, test and commission the equipment as per instructions of the manufacturer's supervisory Engineer(s) and shall extend full cooperation to them.

3.32.3 In case of any doubt/misunderstanding as to the correct interpretation of manufacturer's drawings or instructions, necessary clarifications shall be obtained from the Owner. Contractor shall be held responsible for any damage to the equipment consequent to not following manufacturer's drawings/instructions correctly.

3.32.4 Where assemblies are supplied in more than one section, Contractor shall make all necessary mechanical and electrical connections between sections including the connection between buses. Contractor shall also do necessary adjustments/alignments necessary for proper operation of circuit breakers, isolators and their operating mechanisms. All components shall be protected against damage during unloading, transportation, storage, installation, testing and commissioning. Any equipment damaged due to negligence or carelessness or otherwise shall be replaced by the Contractor at his own expense.

3.32.5 Bidder shall be responsible for examining all the shipment and notify the Owner immediately of any damage, shortage, discrepancy etc. for Owner's information only. The Bidder shall submit to the Owner every week a report detailing all the receipts during the weeks. However, the Bidder shall be solely responsible for any shortages or damages in transit, handling and/or in storage and erection of the equipment at Site. Any demurrage, wharf age and other such charges claimed by the transporters, railways etc. shall be to the account of the Contractor.

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- 3.32.6 The Bidder shall be fully responsible for the equipment/material until the same is handed over to the Owner in an operating condition after commissioning. Contractor shall be responsible for the maintenance of the equipment/material while in storage as well as after erection until taken over by Owner, as well as protection of the same against theft, element of nature, corrosion, damages etc.
- 3.32.7 The Bidder shall be responsible for making suitable indoor storage facilities, to store all equipment which requires indoor storage.
- 3.32.8 The words 'erection' and 'installation' used in the specification are synonymous.
- 3.32.9 Exposed live parts shall be placed high enough above ground to meet the requirements of electrical and other statutory safety codes.
- 3.32.10 The design and workmanship shall be in accordance with the best engineering practices to ensure satisfactory performance throughout the service life. If at any stage during the execution of the Contract, it is observed that the erected equipment(s) do not meet the above minimum clearances as given in clause
- 3.32.11 The Contractor shall immediately proceed to correct the discrepancy at his risks and cost.

3.33 TOOLS AND TACKLES

- 3.33.1 The work shall be performed using tools designed and approved for the purpose.
- 3.33.2 The contractor shall be responsible for arranging all tools and tackles, instruments, etc. that are required for erection, testing and commissioning of the equipment and materials.
- 3.33.3 List of complete set of tools and tackles with pricing, which are required for carrying out routine and normal maintenance, shall be furnished along with the Tender in the Bidding Schedules. The price of tools and plants shall not be considered for evaluation. TATA Power reserves the right to procure the tools and tackles as deemed fit.

A.4 TERMINAL POINTS

- a) Outgoing terminal (Marshaling box of 40MVA Transformers).
- b) 110kV AIS foundations.
- c) Construction power supply terminal point source for all electrical works shall be provided at the plot boundary. Bidder to install ELCB/RCCB (30mA) for construction power supply. Contractor to consider the same for design and execution of electrical works. Power to be provided from existing station supply system distance approx. 800 Meter.
- d) Water supply terminal point source for all water supply and plumbing works shall be provided at the plot boundary. Contractor to consider the same for design and execution of plumbing works.

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- e) Vendor to carry out site visit to finalize the cable carrier system before bid submission and finalized cable route in consultation with Trombay division.
- f) The terminal points shall be further specified to the bidders during site visit and pre-bid discussion

A.5 EXCLUSIONS

1. Supply and installation of 40MVA Transformer up to marshaling box.
2. 110kV AIS Equipment supply
3. Supply of 33 kV GIS bays, related meters, automation panels, remote control panels are excluded from bidder's scope.
4. Supply of equipment structure.
5. Installation of isolator structures in DT-8 second bay.
6. Supply of Protection & Automation Panels (Installation, on site rearranging of existing & new panels, leveling & other related activities are in bidder's scope)
7. Foundation of AIS equipment, Cable trench related CIVIL jobs (On site modification on structures an in Trench, Tray is in bidders' scope)

A.6 CODES AND STANDARDS

- i. The works covered by the specification shall be designed, engineered, manufactured, built, tested, and commissioned in accordance with the Acts, Rules, Laws and Regulations of India.
- ii. The equipment to be furnished under this specification shall conform to latest issue with all amendments (as on the date of bid opening) of standard specified in Section - B, unless specifically mentioned in the specification.
- iii. The Contractor shall note that standards mentioned in the specification are not mutually exclusive or complete in themselves but intended to complement each other.
- iv. The Contractor shall also note that list of standards presented in this specification is not complete. Whenever necessary the list of standards shall be considered in conjunction with specific IS, IEC.
- v. When the specific requirements stipulated in the specifications exceed or differ than those required by the applicable standards, the stipulation of the specification shall take precedence.

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- vi. Other internationally accepted standards which ensure equivalent or better performance than that specified in the standards specified in individual sections for various equipment's may be accepted, however the salient points of difference shall be clearly brought out in additional information schedule, along with English language version of such standard. The equipment conforming to standards other than specified in the individual sections for various equipment's shall be subject to Owner's approval.
- vii. The Contractor shall clearly indicate in his bid the specific standards in accordance with which the works will be carried out.

A.7 BIDDER'S QUALIFICATION REQUIREMENTS

Bidder to refer specifications for Pre-Qualification requirements and Quality Assurance requirements.

- a. Bidder should perform BoP function and shall have a presence in India for at least last 5 years.
- b. The Balance of Plant (BoP) bidder should have supplied, executed, integrated, and commissioned systems of 2 nos. of projects of Power Transformer and MV & LV GIS / AIS (Up to 110kV) with minimum 5 no. of bays overall, in last 5 years.
- c. Bidder should supply Switchgear equipment from TATA Power approved vendors as per approved vendor list.
- d. Bidder should have experience and infrastructure to execute installation and commissioning BoP scope mentioned in the specification for equipment's including liasoning for obtaining statutory approvals from Electrical Inspector.
- e. BoP vendor shall be responsible for the performance of complete services provided by him. All equipment offered must be sourced from vendors who have manufacturing facilities in India.
- f. Tata Power's preferred list of vendor / sub vendor / OEM, which will be shared as part of Technical Specifications will be accepted by the EPC Contractor. However, if Contractor introduces additional vendor/sub vendor the same will be evaluated separately as per clauses mentioned below.
- g. If Contractor introduces additional vendor, Contractor must agree to offer and supply the equipment / systems from the new vendor which meets / complies all qualifying requirements mentioned for individual equipment / systems and submit supporting documents to establish the same along with the bid.
- h. This vendor/sub vendor evaluation / assessment shall inter-alia include (i) document verification; (ii) Contractors work / manufacturing facilities visit (iii) manufacturing capacity, details of works executed, works in hand, anticipated in future and the balance capacity available for present scope of works; (iv) details of plant and machinery,

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manufacturing and testing facilities, manpower and financial resources; (v) details of quality systems in place; (vi) past experience and performance; (vii) customer feedback; (viii) response to complaint.

- i. In the event the Contractor proposes to introduce new vendor, Contractor will be loaded at the rate of Rs. 2 lakhs per vendor towards resources required to be provided by Tata Power for evaluation of new vendor.
- j. Contractor shall agree to comply with minimum quality requirements and Contractor Safety Code of Conduct, defined in bid documents.
- k. Contractor must meet / comply all qualifying requirements mentioned for individual equipment and submit supporting documents along with the bid.
- l. Owner's interpretation of the clauses & owner's decision is final.

A.8 PROJECT SCHEDULE / MILESTONES

The complete scope should be completed as per project requirement from effective date of contract. Contractor shall submit with the bid, detailed Project Schedule covering Major milestone and activities.

A.9 SUBMISSIONS BY BIDDERS

A. GENERAL DOCUMENTS for all System

Contractor shall submit the following information along with the Technical Bid.

- i. Acknowledgement of Bid receipt by duly signing all the pages of the bid documents.
- ii. Bid Guarantee in the format enclosed.
- iii. Site visit attendance certificate duly acknowledged by Owner or Owners Representative.
- iv. Organization Chart
- v. List of Projects executed with Reference List.
- vi. Guaranteed schedule of all the material to be supplied duly filled in with all technical parameters etc.
- vii. Testing Facility
- viii. All Schedules along with the deviations.
- ix. Duly signed un-priced copy of price schedule along with technical bid.
- x. Project Schedule to be prepared and submitted by the Contractor along with the bid documents
- xi. General Arrangement Drawings for crane and elevator

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- xii. Supporting documents for bid qualification criteria
- xiii. Systems write up.
- xiv. Signed and stamped copy of project specification.
- xv. Erection methodology.

B. After Award of Contract

- i. Master Document list (MDL) will be finalized along with the Contractor to cover the whole project which should cover the following but not limited to.
- ii. Technical data sheets of all equipment's covered under this specification.
- iii. GA drawings of all equipment's.
- iv. Layout drawings of each system
- v. Hydraulic calculation of system,
- vi. Quality Assurance Plan (QAP), Manufacturing Quality Plan (MQP), Field Quality plan (FQP), Inspection categorization plan (ICP)
- vii. Contractor to submit Operation and maintenance manual (5 copies)
- viii. Contractor shall submit all the demanded in the individual.
- ix. Control cable schedule
- x. Auto-cad copies of each drawings

A.10 DETAILED TECHNICAL SPECIFICATIONS (Pls refer the standard specifications)**A. CABLE CARRIER SYSTEM**

- a) As per site requirement, supply & installation of completely new Cable carrier system inclusive of new cable Trays with covers and related accessories is bidder scope of work.
- b) Bidder to visit site and check cable route. This cable route shall be finalised in consultation with owner site team and as per specification. Bidder shall envisage all required cable trenches, elevated cable route,
- c) Bidder shall check to use existing structure and cable carrier system.
- d) Cable tray cover for entire run of vertical cable trays is not necessary however cover shall be provided in dust, hazardous and acid prone area for all type of cable trays.

B. EARTHING AND LIGHTNING PROTECTION SYSTEM

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Bidder should refer to standard specifications section-B for earthing system. Earth ring shall be formed surrounding the transformers as per IEEE and IS3043 standards. The details of earthing system are mentioned in the following table.

Sr No.	Description of parameters	Value																								
1.	Conductor material	Flexible Multi strand Copper annealed soft drawn																								
2.	Conductor size	2 x 0.35 sq inch																								
3.	Earth Pit																									
	(a) Earth Rod	Cu annealed hard drawn of 20 mm diameter rod and 3 meters in length																								
	Following Earth Pits shall be provided along with connection to equipment by 2x0.35 sq.inch multi strand copper conductor																									
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Sr No.</th> <th style="text-align: center;">Equipment</th> <th style="text-align: center;">Number of pits</th> <th style="text-align: center;">Type of pit</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.</td> <td>Transformer Neutral</td> <td style="text-align: center;">4(2 each)</td> <td style="text-align: center;">Treated</td> </tr> <tr> <td style="text-align: center;">2.</td> <td>Transformer Body (tank, cooler control system, marshalling box, cable box, etc.)</td> <td style="text-align: center;">4(2 each)</td> <td style="text-align: center;">Non-treated</td> </tr> <tr> <td style="text-align: center;">3.</td> <td>LA neutral</td> <td style="text-align: center;">6(1 per LA)</td> <td style="text-align: center;">Treated</td> </tr> </tbody> </table>	Sr No.	Equipment	Number of pits	Type of pit	1.	Transformer Neutral	4(2 each)	Treated	2.	Transformer Body (tank, cooler control system, marshalling box, cable box, etc.)	4(2 each)	Non-treated	3.	LA neutral	6(1 per LA)	Treated									
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3.	LA neutral	6(1 per LA)	Treated																							
4.	Interconnection with existing Earthing Grid by 2x0.35 sq inch multi strand copper conductor																									
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Sr No.</th> <th style="text-align: center;">Interconnection</th> <th style="text-align: center;">Number of Connections</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.</td> <td>Treated pits of Transformer neutral to earth ring</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">2.</td> <td>Non-treated earth pits of Transformer Body, tank, cooler control system, marshalling box, cable box, etc. to earth ring</td> <td style="text-align: center;">2 each</td> </tr> <tr> <td style="text-align: center;">3.</td> <td>Earth ring of Transformer to existing station earth grid</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">4.</td> <td>Fence of Transformer</td> <td style="text-align: center;">2 each</td> </tr> <tr> <td style="text-align: center;">5.</td> <td>110kV CT, PT, Breaker, Isolator, etc. - equipment body earthing to existing switchyard earth grid</td> <td style="text-align: center;">2 each</td> </tr> <tr> <td style="text-align: center;">6.</td> <td>110kV CT, PT, Breaker, Isolator and any metallic structure - equipment structure earthing to existing switchyard earth grid</td> <td style="text-align: center;">2 each</td> </tr> <tr> <td style="text-align: center;">7.</td> <td>All protection and automation panels to</td> <td style="text-align: center;">2 each</td> </tr> </tbody> </table>	Sr No.	Interconnection	Number of Connections	1.	Treated pits of Transformer neutral to earth ring	2	2.	Non-treated earth pits of Transformer Body, tank, cooler control system, marshalling box, cable box, etc. to earth ring	2 each	3.	Earth ring of Transformer to existing station earth grid	2	4.	Fence of Transformer	2 each	5.	110kV CT, PT, Breaker, Isolator, etc. - equipment body earthing to existing switchyard earth grid	2 each	6.	110kV CT, PT, Breaker, Isolator and any metallic structure - equipment structure earthing to existing switchyard earth grid	2 each	7.	All protection and automation panels to	2 each	
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	existing switchyard earth grid	
8.	33kV GIS	2 per each Bus section
9.	Porta-cabin for 33kV GIS	2
10.	Cable carrier system, base frames	2 at each 10 meters
5.	All joints shall be done through brazing welding. Bidder has to depute certified brazing welders on site. 150x150x10 mm Cu plates shall be used for each brazed joint.	

C. CLAMPS AND CONNECTORS

Bidder should refer standard specifications section-B for Clamps and connectors.

D. CT and PT Marshalling/Junction Box

- a) As per site requirement, supply and installation of CT and PT marshalling box along with services for cable termination is bidder's scope of work.
- b) Bidder to visit site and check the feasibility of installation of marshalling boxes for both CT and PT.
- c) Marshalling boxes shall be of IP55 ingress protection, monsoon protection canopies made of Aluminium/ GI shall be provided in such a way that it covers the junction boxes from all sides and top thereby avoiding water ingress.
- d) All terminal blocks shall be ELMEX make, disconnecting type terminals and only round lugs shall be used.
- e) All control cable entry for CT and PT shall be from bottom side. Side entry of cables not allowed.
- f) All marshalling boxes shall be made from (3mm thick) stainless steel material.
- g) All the Marshalling boxes shall be mounted considering safe working access.

A.11 LAYOUT REQUIREMENTS

10.1 Proposed layout has been provided. The bidder to review and confirm the required space for accommodating their equipment after site visit. Bidder supposed to prepare and submit final detailed layout.

10.2 Layout requirements for all equipment shall be as per IS/IEC Standards.

A.12 QUALITY REQUIREMENTS

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- i. To ensure that the equipment and services under the scope of this Contract whether manufactured or performed within the Contractors Works or at his Sub-contractor's premises or at the Owner's site or at any other place of Work are in accordance with the specifications, the Contractor shall adopt suitable quality assurance program to control such activities at all points necessary.
- ii. Reference individual specification in Section – B.
- iii. Please refer General QA&I requirements chapter enclosed separately. Also, refer SQP (Standard Quality Plans) as minimum inspection requirements base on which bidder will submit detailed MQPs.

A.13 PERFORMANCE REQUIREMENTS

A13.1 TEST PROCEDURE

- i. Shop and site inspections shall be carried out as per Owner approved Manufacturing Quality Plans (MQP) and Field Quality Plans (FQP).
- ii. Minimum Testing and inspection requirements are defined in attached Standard Quality Plans (SQP & SFP) of Tata Power with respective specifications. Successful Contractor to prepare MQP and FQP in-line of these documents and submit for Owner approval post award of contract.
- iii. Inspection & QA process is defined in General Quality Assurance and Inspection Section-B. PRE-COMMISSIONING AND COMMISSIONING TESTS.
- iv. PRE-COMMISSIONING TESTS
 - a. On completion of erection of the equipment and before charging, each item of the equipment shall be thoroughly cleaned and then inspected jointly by the Owner and the Contractor for correctness and completeness of installation and acceptability for charging, leading to initial pre-commissioning tests at Site. The list of pre-commissioning tests to be performed are given in respective chapters and shall be included in the Contractor's Quality Assurance program
 - b. Inspection and testing shall be carried out to ensure that the material and equipment has been installed as required and/ or recommended by the equipment manufacturer and as per the latest relevant Indian Standards Specifications, codes, Indian Electricity Rules, requirement of Electrical Inspector and any other authorities having jurisdiction. The installation must pass all inspection and will subject to the approval of the Owner, Electrical Inspector.

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- c. The Owner reserves the right to witness all tests and he shall be notified two weeks before tests are to take place. Owner reserves the right to approve all test results before circuits or equipment is energized for the first time. All results of the tests shall be recorded on test data sheet. Test report shall include for each test, the date of performance and name of the person in charge of the test.
- d. Before starting the tests, a visual inspection of the material and equipment is to be made to determine that all components are installed as per drawing and in a neat and workman like manner and that in general, the equipment is ready for testing.

v. **COMMISSIONING TESTS**

- a. Any special equipment, tools and tackles required for the successful completion of the Commissioning Tests shall be provided by the Contractor, free of cost.
- b. The specific tests requirements on equipment have been brought out in the Quality Plan.
- c. The Contractor shall be responsible for obtaining statutory clearances from the concerned authorities for commissioning the equipment and the switchyard.

A13.2 PERFORMANCE GUARRANTEE PARAMETERS AND LD CLAUSES FOR NON PERFORMANCE

All equipment’s supplied under this scope shall comply with standard specifications clause.

A.14 MAINTAINANCE REQUIREMENTS:

- A. General
 - i. General layout of the station shall be developed considering the proper utilization of space, functional requirements, future extensions and considering requirements of space during construction stage.
 - ii. All equipment's considered in the scope shall be decided with due consideration to statutory safety requirements, ease of erection and maintenance etc. Safety clearances shall be maintained in accordance with the Central Electricity Authority (Measures relating to Safety and Electricity Supply) Regulations as and when these are notified by the Authority. Reference document for clearances shall be clearly mentioned in the relevant drawings.
 - iii. The clearances shall be adequate for moving portable equipment for maintenance and maneuvering personnel for carrying out maintenance. Clearances from adjacent live parts shall be maintained for safety.
- B. Electrical Panels

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- i. Distance between any electrical panel and wall shall be more than 750 mm.
 - ii. A clear space of 1500 mm shall be available in front of an electrical panel for O & M requirements. In case the panel is a duplex panel 1500 mm of clear space shall be available both in front and back of the panel.
- C. Transformers
Clearances shall be maintained as per IEC/IS standard.

A.15 TOOLS AND TACKLES FOR ERECTION AND COMMISSIONING

- (a) The Contractor shall supply with the equipment one complete set of all special tools and tackles for the erection, assembly, dis-assembly and maintenance of the equipment. However, these tools and tackles shall be separately, packed and brought on to Site.
- (b) The work shall be performed using tools designed and approved for the purpose.
- (c) Contractor shall be responsible for arranging all tools and tackles, instruments, etc. that are required for erection, testing and commissioning of the equipment and materials.
- (d) A complete set of tools and tackles, which are required for carrying out routine and normal maintenance, shall be furnished along with the Tender in the Bidding Schedules. The price of tools and plants shall not be considered for evaluation.

A.16 SPARES

Spares shall be provided for all equipment’s supplied under the scope, as per the spares mentioned in attached Standard specifications.

Bidder needs to include competitive price for Mandatory Spare parts against the specified list and schedules.

Bidder shall include list of spares with quantities as recommended by him required for three years trouble free operation of equipment.

< Clearance of Engineering Disciplines (as under) shall be taken on office copy for records. The concurrence signatures shall not be printed on document being sent outside of Project Engineering>

Rev No	Date	Originator	Reviewed By	Cleared By		Approved By (HOD)
				HOD	Signature	
				Mechanical		
				Civil		
				Piping &		

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				Layout		
				C & I		
				Automation		
				Electrical		

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B – Standard Specification

B.1	STANDARD SPEC FOR CABLE CARRIER SYSTEM
B.2	STANDARD SPEC FOR EARTHING & LIGHTNING
B.3	STANDARD SPEC FOR CLAMPS & CONNECTORS
B.4	GENERAL REQUIREMENTS OF QA&I

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C1 - SCHEDULE OF QUANTITIES AND PRICES

Seal of the Company

Signature

Designation

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	BoP for installation & commissioning of 3 Nos of 110kV AIS Bays and 22kV GIS along with related items	

C2- PROJECT TIME SCHEDULE

Bidder to develop the detailed schedule as per the project schedule requirements specified under Section A.

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Designation

Note: The bidder shall indicate schedule of milestones and also attach/furnish a detailed bar chart identifying customer inputs.

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C3- SCHEDULE OF DEVIATIONS FROM TECHNICAL SPECIFICATIONS

All deviations from this specification, shall be set out by the Bidders, indicating clause no and page in this schedule. Unless **specifically** mentioned in this schedule, the tender shall be deemed to conform to the purchaser’s specifications:

Sr. No.	Reference Clause No.	Details of deviation with justifications
-----	-----	-----

We confirm that there are no deviations apart from those detailed above.

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Designation

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C4- SCHEDULE OF DEVIATIONS FROM GENERAL & SPECIAL CONDITIONS OF CONTRACT

All deviations from this specification, shall be set out by the Bidders, indicating clause no and page in this schedule. Unless **specifically** mentioned in this schedule, the tender shall be deemed to conform to the purchaser’s specifications:

Sr. No.	Reference 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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C5- SCHEDULE OF DRAWINGS & DOCUMENT SUBMISSION

As part of the proposal, the BIDDER shall furnish the schedule of drawing/document submission as follow:

Sr. No.	Title of Drawing/Document	Target Date of submission	For Information/Review/Approval	Remarks
1.0				
1.1				
1.2				
2.0				
2.1				
2.2				
3.0				
3.1				
3.2				
4.0				
4.1				
4.2				
5.0				
5.1				
5.2				

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Note: The titles of drawings / documents listed out in the schedule. The bidder shall list out all relevant drawings / documents of the project under master document list which shall be finalised in agreement with owner's engineer. The master document list for the documents /drawings required during detailed engineering shall be decided after finalization of contract at the discretion of owner/ owner's engineering team. The WRENCH system shall be followed for submission of drawings & documents etc during detailed engineering.

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C7 - SCHEDULE OF SPECIAL ERECTION/MAINTENANCE TOOLS & TACKLES

As part of the proposal, the BIDDER shall indicate below, the list of erection/maintenance tools & tackles offered by him.

Sr. No.	Description of spare	Quantity recommended per unit of equipment	Unit price	Total price	Delivery period from date of LOI	Remarks

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C8 - SCHEDULE OF PLACES OF MANUFACTURE, TESTS AND INSPECTION

For major equipment / systems, the Bidder shall indicate the name of the Manufacturer / SUBCONTRACTOR and place of test and inspection.

ITEM OF EQUIPMENT	Manufacturer / SUBCONTRACTOR	PLACE OF TESTING & INSPECTION

Seal of the Company

Signature

Designation

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D1 TENDER PURPOSE

- Bidder shall submit the following information along with the Technical Bid.
- Dully filled in schedules, listed in section 'C'.
- Quality Assurance Plan (QAP), Manufacturing Quality Plan (MQP), Field Quality Plan (FQP)
- General Arrangement Drawings for equipment offered
- Project specification with company stamp & authorized signature
- All the Type Test Reports as per SQP in last 5 years from date of bid submission (If applicable)
- Confirmation on technical support for next 5 years.
- Schedule of Technical Deviations

D2 AFTER AWARD OF CONTRACT

- General outline dimension drawing of Switchyard layout and side elevation, views showing all accessories, mounting arrangement on steel structures, spacing and along with component details, terminal arrangement etc.
- Name and rating plate (If required as per site)
- Guaranteed Technical particulars
- Schematic / Wiring drawings
- Manufacturing Quality Plan & Field Quality Plan
- O&M Manual & Recommended Commissioning checklist

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ANNEXURES

- E1. Technical Pre-Qualifying Requirements
- E2. BOQ
- E3. Proposed Layout for BPCL 110 & 22kV bays in Trombay Station
- E4. Proposed SLD for 110 kV Trombay with BPCL bays
- E5. Interconnecting cable schedule (Tentative)

THE TATA POWER COMPANY LIMITED

STANDARD TECHNICAL SPECIFICATION FOR CABLE CARRIER SYSTEM

(DOCUMENT NO - ENGG/ ELEC/STD-SPEC/2017/28)



Tata Power

Engineering T&D

Rev. No	Date	Revision History	Prepared By	Checked By	Approved By
R0	11-10-2017	Final Specifications	PSA	AAB	AM
R1	20-11-2019	List of drawings and format updated	PSA	SVD	RS
R2	06-04-2020	PQR updated	PSA	SVD	AM
D	29-03-2021	DCDR inputs updated	PSA	SVD	AM

Adarsh

Adarsh

Adarsh

30.03.2021

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1. INTRODUCTION :

The document covers the specific requirements for complete design, detailed engineering, manufacture, supply, inspection & testing at Bidder's work, packing, transportation, loading and unloading, delivery to site, storage at site, handling at site, erection, testing, commissioning, performance testing and handing over of Cable Carrier System.

All equipment, system and services covered under this specification shall comply with all current applicable statutory regulations and safety codes in the locality where the equipment is proposed to be installed. The equipment and systems shall also conform to the latest version of applicable codes and standards on the date of offer made by the Bidder unless otherwise indicated. Nothing in this specification shall be construed to relieve the Bidder of this responsibility

2. APPROVED VENDOR LIST & BIDDER'S QUALIFICATION REQUIREMENTS

2.1 QUALIFICATION REQUIREMENTS

- 1.1.1. Bidder must be an OEM of Cable carrier system with manufacturing in India
- 1.1.2. The Bidder shall have supplied at least 10 no's of Cable carrier systems for Power plant or Receiving stations of any of the major utilities/SEB for last 5 years as on date of bid submission. Out of which at least 5 no's shall be in successful operation for more than two (2) years as on date of bid submission.

Indian Subsidiaries of global companies having plant in India are also eligible to bid if the qualification requirements stated above are met independently or in combination with the parent company. Declaration from parent company needs to be submitted.

- 1.1.3. The bidder shall submit Type test reports obtained from NABL/ International Accredited Lab for the equipment / material offered. The type tests should have been conducted on the equipment / material of the same design. The type tests should have been conducted within 5 years prior to the date of bid opening. Time period for type test can be extended by another 5 years as a special case, if there is no change in design / material of construction (MOC). In case the type test reports furnished are not for the quoted equipment / material but for the equipment / material with higher voltage class and/or different capacity, then type test shall be carried out for the offered equipment / material from NABL / International Accredited Lab without any cost implication to the owner and the Type Test reports shall be submitted before despatch of the equipment / material.
- 1.1.4. In case the package involves installation & commissioning of the equipment / material, then the bidder shall have the following experience:

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- a) He should have successfully completed one single order of value (80% of estimated value of similar work in last three years) OR
- b) He should have successfully completed two single orders of value (50% of estimated value of similar work in last three years) OR
- c) He should have successfully completed three single orders of value (40% of estimated value of similar work in last three years).

2 SYSTEM DESCRIPTION AND SCOPE:

Design, manufacture, testing at manufacturer's works, packing, forwarding, supply and unloading at site/store, erection and commissioning of cable carrier system.

This part covers specific requirements of the cable carrying system:

- 3.1 Section – I - Cable Tray Mountings Requirements
- 3.2 Section – II - Cable Trays - Construction Requirements
- 3.3 Section – III - Cable Trays - Installation Requirements
- 3.4 Section – IV - Cable Installation Requirements
- 3.5 Section – V - Conduit Installation Requirements

4. CODES AND STANDARDS

Given below are the acceptable code and standards. The Bidder shall take Owners approval for use of other codes & standards

Sr. no.	Brief Title	Ref. No. of Standard
1.	Code of practice for fire safety of bldgs.	IS: 1646
2.	Guide for safety procedures and practices in electrical work	IS:5216
3.	Accessories for rigid steel conduits	IS:3837
4.	Fittings for rigid steel conduits	IS:2667
5.	Fittings for rigid non-metallic conduits	IS:3419
6.	Adaptors for flexible steel conduits	IS:4649
7.	Code of practice for structural steel	IS:800
8.	Code of practice for installation and maintenance of power cables up to and including 33 kV rating.	IS:1255
9.	Electrical wiring installation (system voltage not exceeding 650 V).	IS:732

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10.	Structural steel (Standard Quality).	IS 226
11.	Code of practice for use of metal arc welding for general construction in mild steel.	IS:316
12.	Hexagonal bolts, nuts and screws.	IS:1363
13.	Electroplated coatings of cadmium on iron and steel.	IS:1572
14.	Code of practice for hot dip galvanizing for iron and steel.	IS:2629
15.	Method of testing uniformity of coating on zinc coated articles.	IS:2633
16.	Indian Electricity Act.	

5. **DESIGN REQUIREMENTS :**

- a. For cable laying in outdoor areas it is proposed to use trenches (Cable laying shall be through cable trays), cable duct banks and overhead cable racks. Direct burial of cable will be avoided as far as possible.
- b. For cable laying in indoor areas, it is proposed to use cable trenches (Cable laying shall be through cable trays), duct banks, conduits, cable trays.
- c. Cables from switchgear, PMCCs and control panels will be routed on prefabricated ladder type galvanized steel cable trays supported on site fabricated tray supports inside station and ancillary buildings. Separate cable trays will be used for power, and control and instrumentation cables.
- d. Cable trays and tray supporting structures in chemically corrosive areas like battery rooms and water treatment plant will be mild steel painted trays finished with chlorinated rubber based paint / epoxy paint.
- e. Duct bank using Hume pipe/ GI pipe shall be used for road crossing.
- f. Perforated cable trays shall be considered for control and instrumentation cables.
- g. All cable trays will be earthed at minimum two places by GS flats to plant earthing system. The distances between the earthing points will not exceed 10 meters.
- h. Separate trays shall be provided for HV Power/LV Power (AC&DC)/Control & Instrumentation cables. HV cable shall be laid in topmost tray, then LV cable and control and instrumentation cables to be laid in bottom most trays.
- i. In case of buried cables, armoured cables (with aluminium wire/strip armour for single core cables and galvanised steel wire/strip armour for multi-core cables) will be used.

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5.1 SECTION – I : CABLE TRAY MOUNTINGS REQUIREMENTS

Unless otherwise specifically mentioned on the relevant layout drawings, all cable tray mounting works shall be carried out as per following:

- 5.1.1. Cable tray mounting arrangement shall be as per layout drawings prepared by the contractor and approved by owner.
- 5.1.2. Assembly of cable tray mounting structure shall be fabricated, supplied, erected and painted by the electrical contractor.
- 5.1.3. Plate inserts for cable tray mounting structure will be provided by civil contractor in floor slabs at 1000 mm spacing. Cable tray mounting structure shall be welded to the plate inserts or to steel structural beams/members. Welding of cable tray mounting structure to steel structural beams/members shall be done with prior approval of owner.
- 5.1.4. Wherever embedded plates or steel structural beams/members are not available for welding the cable tray mounting structure, electrical contractor shall supply the M.S. plate and fix it to floor slab by four anchor fasteners of minimum 16 mm dia. with holding power of at least 5000 kg.
- 5.1.5. Spacing between cable tray mounting structures shall be 1000 mm for horizontal straight run of cable trays unless otherwise noted.
- 5.1.6. Loading on a horizontal support arm shall not exceed 120kg / metre run of cable/ tray.
- 5.1.7. Width of the horizontal arms of the mounting structures shall be same as the tray widths required in the cable layout drawings plus length required for welding to the vertical supports except where shown otherwise in the layout drawings.
- 5.1.8. The length of the vertical supporting members for horizontal cable tray runs shall be to suit the number of cable tray tiers indicated in the cable tray layout drawings.
- 5.1.9. Spacing between horizontal support arms of vertical cable tray runs shall be 600 mm unless otherwise specified.
- 5.1.10. Cable trays shall be welded to tray mounting supports.
- 5.1.11. All welds for cable tray mounting steel structure shall be as indicated in cable tray mounting arrangement drawings.
- 5.1.12. Minimum clearance between top most tray tier and structural member/ceiling shall be 300 mm.
- 5.1.13. Minimum vertical clearance below the bottom of the lowest cable tray tier & any structural member shall be 200 mm and 300 mm in case of process pipe lines.
- 5.1.14. All structural steel supplied by the contractor and exposed surfaces of embedded steel for cable tray mountings shall be painted as follows unless otherwise noted:
 - 5.1.14.1 For indoor installations: One shop coat of red oxide zinc chromate primer (site coat for exposed surfaces of embedded steel) and two site coats of aluminium alkylid paint.
 - 5.1.14.2 For outdoor installations: Painting with a two pack epoxy coating.

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- 5.1.1.3 For installations in corrosive atmospheres both indoors and outdoors. Same as per (b) above.
- 5.1.1.4 Where any cuts or holes are made or painted surfaces are damaged or welding is done on finished steel work, these shall be touched up with paints specified above.

5.2 SECTION – II : CABLE TRAYS - CONSTRUCTION REQUIREMENTS

- 5.2.1 Cable trays of ladder and perforated types and the associated accessories such as coupler plates, tees, elbows etc., shall be **pre-fabricated** from 14 gauge (2.0 mm thick) mild steel sheets. Cable tray covers shall be **pre-fabricated** from 16 gauge perforated (1.60 mm thick) M.S. sheets.
- 5.2.2 All cable trays will be galvanised and cable tray supporting structures will be fabricated from standard galvanised steel sections and will be touched up with cold galvanisation paint. Cable trays and tray supporting structures in chemically corrosive areas like battery rooms and water treatment plant will be with mild steel painted trays finished with chlorinated rubber based paint / epoxy paint.
- 5.2.3 The cable trays shall be supplied in standard lengths of 2500 mm and clear inside widths of trays shall be as follows:
- a. Perforated type trays : 150, 300, 450 and 600 mm.
 - b. Ladder type trays : 300, 450, 600 and 750 mm.
- 5.2.4 Cable trays, accessories and covers shall be either galvanised or made of aluminium as specifically mentioned in the layout drawings.
- 5.2.5 For use in corrosive atmospheres both indoors and outdoors, the cable trays, accessories and covers shall be as per note no. 1.3 above.
- 5.2.6 The spacing of rungs for ladder type of trays shall be 250 mm unless otherwise noted.
- 5.2.7 All finished cable trays and accessories shall be free from sharp edges, corners, burrs and unevenness.
- 5.2.8 Depth of cable tray shall be 100 mm minimum

5.3 SECTION – III : CABLE TRAYS - INSTALLATION REQUIREMENTS

- 5.3.1 Cable trays shall be installed generally at the elevations shown in respective cable tray layout drawings. If any major modifications in the drawings are envisaged in the field, these shall be carried out after getting approval from owner. It shall be the responsibility of the electrical contractor to mark up all the field modifications on the latest issues of the drawings and return two copies of all such “ as constructed ” drawings to consultants design office for updating the relevant tracings.
- 5.3.2 When cable trays are used in trenches and tunnels, the carrier structure for mounting the trays shall be supplied and installed as per applicable standards.

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- 5.3.3 The type and size of tray to be used shall be as mentioned in the individual layout drawings.
- 5.3.4 The maximum size of cable tray when used in trenches and tunnels shall be of 600 mm width.
- 5.3.5 Cable trays shall be welded to the mounting/carrier structures.
- 5.3.6 Vertical trays (raceways) and all outdoor cable trays shall be provided with removable 16 guage GI sheet covers.
- 5.3.7 Each continuous laid out length of cable tray shall be earthed at minimum two places by M.S. flats of minimum size 25x3 mm (unless otherwise noted) to the purchaser's earthing system.
- 5.3.8 The following shall be checked before laying the cables on trays.
- 5.3.8.1 Check for proper painting and identification nos. of the trays.
- 5.3.8.2 Check for continuity of cable trays over the entire route.
- 5.3.8.3 Check that all sharp corners, burrs and waste materials have been removed from the tray.
- 5.3.8.4 Obtain clearances from piping contractor / engineer that no piping will be taken in the way of cable trays.
- 5.3.8.5 Check for earth continuity & earth connection of cable trays.
- 5.3.9 Cable tray installation work shall comply with all currently applicable statutes, regulations and safety codes in the locality/country where the installation is to be carried out.

5.4 SECTION – IV : CABLE INSTALLATION REQUIREMENTS

- 5.4.1 Installation of cables upto and including 33 kV grade shall be as follows:
- 5.4.1.1 Electrical installation work shall comply with all currently applicable statutes, regulations and safety codes in the locality/country where the installation is to be carried out.
- 5.4.1.2 Installation of cables shall be carried out generally as per IS:1255 or relevant applicable standards and as per the instructions mentioned in project drawings.
- 5.4.1.3 Installation of cables shall include unloading, storing, laying, fixing, jointing, termination and all other work necessary for completing the job. Supply of glands and lugs whenever specified, together with other necessary materials for jointing and termination shall also be included in contractor's scope.
- 5.4.1.4 Cables shall be installed in trenches, trays, racks, tunnels, conduits, duct banks or directly buried. The cable layouts drawings shall be prepared by contractor and approved by owner.
- 5.4.1.5 Cables to each circuit shall be laid in one continuous length to the extent possible.
- 5.4.2 **OUTDOOR CABLE INSTALLATION**
- 5.4.2.1 Directly buried cables shall be laid as per applicable latest standards and cable markers shall be provided. At least, one cable marker shall be provided if the length of the buried

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cable is less than 15 metres. Buried single core cables laid in trefoil formation shall be tied by plastic tapes or 3 mm dia. nylon cord every 750 mm.

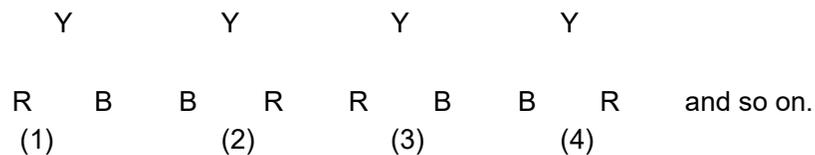
- a. Joints in directly buried cables shall be identified by joint markers at each joint location. In each outdoor cable run greater than 60 metres, some extra cable length shall be kept at a suitable point to enable a straight through joint to be made, should the cable develop fault at a later date.
- b. Where cables cross roads and water/oil/gas/ sewage pipes, the cables shall be laid in hume or steel pipes. For road crossings, the pipe for the cable shall be buried at not less than 1000 mm depth unless otherwise noted in the drawings. Hume pipes shall be preferred to steel pipes from the point of view of corrosion.
- c. Control cables and small power cables in trenches, tunnels and racks shall be run in ladder type cable trays (maximum tray width 600 mm) supported on trench/tunnel/rack carrier arms. The cables shall be tied to tray rungs by means of 3 mm dia. Nylon cord or cable ties at an interval not exceeding 5000 mm and also at bends.
- d. For good sealing arrangement at entry points, suitable pipe sleeves, adequate in number and of adequate sizes shall be provided in building walls/slabs for passage of cables into a building from cable trays/racks/cable trenches located outside the buildings. Details of sleeves and exact locations of such entry points will be available on relevant project drawings.

5.4.3 CABLES IN TRAYS / ON RACKS

5.4.3.1 Different voltage grade cables shall be laid in separate trays when trays are arranged in tiers. H.V. cables shall be laid in top trays and cables of subsequent voltage grade in lower tier of trays.

5.4.3.2 The HV power cables of 33kV, 11kV and above shall be laid in trays/on racks as follows:

- a. In single layer only without exception.
- b. 3 core cables shall be laid in touching formation.
- c. Single core cables shall be laid in tre-foil groups with a spacing equal to diameter of the cable between edges of the trefoils.
- d. Cables in trefoil groups of the same circuit shall be laid as indicated below so as to ensure balanced current distribution:



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5.4.3.3 1100V grade power cables of 120 mm² size and above shall normally be laid in single layer in trays/on racks. In exceptional cases, these may be laid in double layer, if shown on the drawings or with the permission of the purchaser.

5.4.3.4 1100V grade power cables below 120 mm² may be run in double layers in case of space restrictions.

5.4.3.5 Control and instrumentation cables can be laid upto a maximum of three layers in each tray/rack.

5.4.3.6 Single core power cables for 3 phase AC circuits laid in trays/racks/ trenches in tre-foil groups shall be held in trefoil clamps placed at an interval not exceeding 3 metres. The tre-foil groups of cables shall be additionally tied by means of 3 mm dia. Nylon cord or cable ties as follows:

- a. At an interval not exceeding 1 metre when laid in cable trays/racks.
- b. At an interval not exceeding 750 mm when laid in trenches without cable trays.

5.4.3.7 Cables in vertical raceways shall be clamped by saddle type cleats to the horizontal slotted angles. Cleats shall be fabricated from 3 mm aluminium strip at site by the electrical contractor to suit cable groups.

5.4.4 BENDING RADII FOR CABLES

5.4.4.1 The bending radii for various types of cables shall not be less than those specified below, unless specifically approved by the purchaser / manufacturer:

Type and voltage grade of cable	Minimum bending radius	
	Single core	Multi core
a) PVC & XLPE insulated upto 1.1kV.	15D	12D
b) PVC & XLPE insulated above 1.1 kV & upto 11 kV	15D	15D
c) XLPE insulated above 11 kV.	20D	15D
d) XLPE insulated 132 kV.	25D	-

-- where " D " is the overall diameter of cable.

(for other types of cables, recommendations of manufacturers shall be followed.)

5.4.4.2 The above values may be reduced to the extent of 70% when making only one bend such as in the case of installing an end termination.

5.4.5 TERMINATIONS, CLAMPING & MISCELLANEOUS DETAILS

5.4.5.1 Cable entry to motors, push button stations and other electrical devices shall be from the bottom as far as possible or from the sides. Top entry shall be avoided particularly for outdoor equipment.

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5.4.5.2 Identification tags made from aluminium sheet shall be attached to each end of each cable by means of GI binding. Tags shall be additionally put at an interval of 30 metres on long runs of cables and in pull boxes.

5.4.5.3 All cable terminations shall be solder-less crimping type. Whenever lugs are required to be supplied, adequate size pre-insulated crimping lugs of approved make shall be used by the contractor. The crimping tools shall be adequate for the lug sizes.

5.4.5.4 Saddle type clamps shall be provided to suit number of cables to be clamped at a particular location shall be used for clamping cables running along walls, ceilings, structures etc. The interval between adjacent clamps shall be as shown on the relevant enclosed drawings.

5.4.5.5 Metallic/ Fibre Cleats when required for supporting vertical runs of one or more single core cables per phase, such as near transformer cable boxes, and shall be painted with two coats of fire retarding paint of approved quality.

5.4.6 EARTHING

5.4.6.1 Metallic sheaths, screens and armour of all multicore cables shall be earthed at both equipment and switchgear end.

5.4.6.2 Sheath and armour of single core power cables shall be earthed at switchgear end only. If specifically indicated in project specification/drawings, for long lengths of cables, multiple earthing may have to be adopted to safeguard against the presence of standing voltages under normal as well as under fault conditions.

5.4.6.3 Earthing of CT and PT neutral lead shall be done at one end only, as indicated in respective control wiring drawings.

5.5 SECTION – V: CONDUIT INSTALLATION REQUIREMENTS

5.5.1 Conduits are diagrammatically shown on the project drawings and locating dimensions will be indicated only for embedded conduits. Minor changes if required shall be made in the field after obtaining prior approval of the purchaser. All such changes shall be clearly marked-up by the contractor on relevant drawings and forwarded to consultant's design office for finalisation.

5.5.2 Civil works such as embedding conduits/pipes in concrete/masonry and construction of duct banks shall be normally excluded from electrical contractor's scope. However, if the same is to be done by the electrical contractor, it shall be carried out as per the instructions/notes on relevant project drawings, BOQ of installation specification and as per the notes given here.

- a. All conduits to be embedded in concrete shall be inspected to ensure continuity and accuracy of placement before concrete is poured.

5.5.3 Conduits embedded in concrete floor shall have a minimum 50 mm concrete cover.

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- 5.5.4 All embedded pipes/conduits, sleeves, long radii bends etc. shall have at least 50 mm long threaded extension beyond the embedded part for extension of the same or for providing end plugs. If any embedded conduit is not required, it shall be plugged/sealed as per latest applicable standards.
- 5.5.5 All conduit ends shall be closed with caps/plugs/bushings/blank discs during construction and till cables are pulled through them.
- 5.5.6 Conduit/pipe and duct installation shall be rendered completely water tight. The open ends of conduits/pipes, wall and floor sleeves shall be sealed by cold setting compound after cables are pulled through them to prevent entry of vermin and ingress of water.
- 5.5.7 All galvanised, rigid steel conduits cut in the field shall be reamed and freed of burrs before installation. When two lengths of conduits are joined together through coupling, threads twice the length of coupling shall be provided on any one length to facilitate easy dismantling of the two conduits. The threads cut at site shall be painted with zinc rich paint.
- 5.5.8 All conduits installed outdoors shall be sloped towards pull boxes, handholes / manholes for drainage. Low points of conduits not terminating in pull boxes, handholes/manholes shall be provided with weep holes for drainage. Care shall be taken to see that no rough edge is left around the weep hole. Where provision cannot be made for drainage, both ends of conduit shall be sealed after cable is laid through. Minimum slope of 1 in 400 shall be provided.
- 5.5.9 Conduits/pipes of non-magnetic material such as aluminium or asbestos cement shall be used if required for laying single core cables of AC circuits when not in trefoil formation.
- 5.5.10 The internal area of the conduit/pipe, unless otherwise specified, shall be two and half times the total area of cable/cables to be laid through the conduit/pipe.
- 5.5.11 Each conduit length shall be permanently connected to earth by means of approved type of earthing clamp efficiently fastened to the conduit at both ends.

5.6 DUCT BANKS – INSTALLATION NOTES

- 5.6.1 All duct banks should be as straight as practicable avoiding interference with other structural foundations. Branch runs of a duct bank to individual equipment should be made with 45 degree or longer radii bends in preference to 90 degree bends.
- 5.6..2 Proper couplings should be used to join two sections of conduits in a duct bank in order to avoid leakage of cement in the conduit during pouring of cement in the duct bank. Locations of couplings for adjacent pipes/conduits shall be suitably staggered.
- 5.6.3 Duct bank manholes/handholes shall be of RCC construction. Manhole top and cable free side shall be constructed after laying of cables. Termination of conduits/ pipes in manholes/handholes shall be made with end bells/couplings as shown on enclosed typical drawings.

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5.6.4 Just prior to installing cables in a duct bank, a swab that fits into each conduit tightly shall be pulled through each conduit in order to remove/locate blocks caused inside the conduits during pouring of concrete

6 LAYOUT REQUIREMENTS FOR THE EQUIPMENT / SYSTEM

- 6.1 Cable tray layout shall be as per the specification given in the preceding sections.
- 6.2 Cable carrier system and cable installation shall be carried out as per the cable layout drawings approved by the owner.

7 SAFETY REQUIREMENTS

Cable trays shall be earthed at every 10 m at minimum two places by M.S. flats of minimum size 25x3 mm (unless otherwise specified) to the purchaser's earthing system.

8 OPERATIONAL AND MAINTENACE REQUIRMENT

8.1 OPERATIONAL REQUIRMENT

The cable carrier system shall be designed considering the following:

- 8.1.1 Facility for easy laying of cables.
- 8.1.2 Access to maintenance.
- 8.1.3 Neat and aesthetic appearance.
- 8.1.4 Safety of equipment & personnel.
- 8.1.5 Drainage system for oil and water

7.2 MAINTENACE REQUIRMENT

- 8.1.6 Identification labels as per cable layout drawings shall be provided on each cable tray. Also cable tags shall be provided on each cable.
- 8.1.7 The allocation of cables to cable trays shall be done considering future requirement.

8 TECHNICAL PARAMETERS OF EQUIPMENT

Cable tray:

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Sr.no.	Description	Tata Requirement	Power Bidder specification
1.	Name of the Manufacturer		
2.	Place of the manufacture		
3.	Material	M.S. Sheet confirming to IS: 1079 of	
4.	Type of tray	Ladder and perforated	
5.	Length of cable tray	2500MM	
6.	Thickness of cable tray	2.0MM	
7.	Width of cable tray	As per BOQ	
8.	Finish	Hot dip galvanised as per IS 2629 and IS 4759	
9.	Tolerance	As per IS 1852	
10.	Galvanisation Uniformity of zinc coating	As per IS 2633	
11.	Average zinc coating thickness	Minimum 87 Microns	
12.	Purity of zinc	Confirming to ISIS 209	
13.	Coupler plate and hardware	As per project requirement	

9 QUALITY REQUIREMENTS, INSPECTION & TESTING (INCL. SQP & SFP)

- 9.1 The Quality Control Plan shall list and define in sequential order all process control activities, inspection and tests proposed to be performed on the equipment/material starting from component procurement and from testing stages to product dispatch. The Quality Control Plan shall indicate and identify the applicable standards, detailed description with diagram the procedure, acceptance criteria, extent of check and record

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to be generated. This QAP shall be submitted by bidder and approved by Tata Power co. Ltd.

- 9.2 All erection and installation activities shall be performed in line of approved FQP by Tata Power.
- 9.3 All test routine test, performance test, special tests and acceptance test as per the relevant standards specified in this specification and approved MQP shall be carried out . Minimum shop testing requirements are specified in the attached Standard Quality Plans. All applicable Type test report shall be submitted with the bid and shall not be older than 5 years.

PI refer following standard quality plan and field quality plan:

Standard Quality plan FOR CABLE TRAY: TPQAIT-QAXX-00-EX-SQP-123-REV0

Field Quality plan FOR CABLE INSTALLATION: TPQAIT-QAXX-00-EX-FQP-161-REV0

Field Quality plan FOR CABLE TRAY: TPQAIT-QAXX-00-EX-FQP-130-REV0

10 PERFORMANCE REQUIREMENTS

- 10.1 Cable carrier system shall be designed to suitably withstand the static loading of all cables and accessories.
- 10.2 Cable carrier system shall be designed so that adequate cooling shall be available for cables to carry full load current without exceeding specified temperature rise limits.

11 SPARES AND SPECIAL TOOLS & TACKLES

11.1 MANDATORY SPARES (NA for this package)

The spares supplied shall be strictly interchangeable with parts for which they are intended for replacement.

The spares shall be treated and packed for long storage (minimum 5 years) under the climatic conditions prevailing at the site.

The start-up spares shall be delivered at the site well in time before the start-up and commissioning of the plant.

11.1.1 Start-Up Spares

The start-up spares are those spares which will be required during start-up and commissioning of the equipment/systems, and until Final Take Over. It is the responsibility of the bidder to supply all the necessary spares as required until the equipment/systems are handed over to the Owner. An adequate stock of start-up spares shall be available at the site such that the start-up and commissioning of the equipment/systems, performance testing and handing over the equipment/systems to the Owner will be carried out without hindrance and delay. All start-up spares which remain unused after the taking over the

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sub-station shall remain the property of the Owner. The Bidder shall furnish the Schedule of Start-up Spares.

11.1.2 Essential Spares

Essential spares are those considered necessary by the owner for first three (5) years of normal sub-station operation. A list of such spares has been listed in the below mentioned table and the same shall be included in bidder's scope. When a particular item of spares is indicated as 'percentage', it shall be considered as percentage of total number of that item of spares in the single equipment/system, unless specified otherwise and the fraction shall be rounded-off to the next higher whole number. Whenever the item of spares has been indicated as 'set' the same shall mean the supply for a single equipment/system. One set of spares for the particular equipment shall mean the total quantities of that particular spares for a single equipment e.g., 'set' of Server, set of Gateway, shall include HMI, keyboard, mouse etc. The 'set' shall however include all components required to replace that item of spares. The Owner reserves the right to buy any of the essential spare parts as considered necessary.

In case during start-up and commissioning certain essential spares are used up, the same shall be replaced within one (1) month without any commercial implications.

VENDOR shall furnish details for all essential spares as per the approved vendor document list.

11.1.3 Recommended Spares

In addition to the spares mentioned above, the Bidder shall also furnish in his bid a list of recommended spares with unit prices. The Owner reserves the right to buy any of the recommended spare parts as considered necessary by him. The prices of recommended spares shall be consistent with those of start-up/essential spares. Purchase of these spare parts will be covered by a separate order or an amendment to the contract.

The Bidder shall provide a list of recommended spares for a period of five years from the date of Site Acceptance Test (SAT) and confirm that the shelf-life of these spares is such as to last for at least 7 years from the date of SAT.

The Bidder shall provide the MTBF of various components, sub-assemblies, assemblies etc. (recommended as spares) and the relationship between MTBF and spare quantities recommended.

The Bidder shall submit the product life cycle details of the all hardware offered under this RFP.

The table below indicate the minimum requirement of the owner, bidder to include the spares, which are not part of this table, but required for maintenance and upkeep of the system

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11.2 SPECIAL TOOLS & TACKLES

NA

12 DATA SUBMISSION BY BIDDER:**12.1 ALONGWITH BID**

Following drawings and documents shall be prepared based on Tata Power specifications and statutory requirements and shall be submitted with the bid:

Bidder shall submit following Data sheets / information along with the Technical Bid.

- 12.1.1 Guaranteed Technical Parameters (GTP) (in attached Excel format – Excel soft file to be sent with Technical Bid) & in PDF
- 12.1.2 Quality Assurance Plan
- 12.1.3 General Arrangement Drawing
- 12.1.4 Confirmation on technical support for next 25 years.
- 12.1.5 Schedule of Technical Deviations
- 12.1.6 Project Schedule / Manufacturing & Delivery schedule
- 12.1.7 Valid Type Test Reports (Should not be older than 5 years of same design)

12.2 AFTER AWARD OF CONTRACT

Sr. No.	List of Drawings & Documents	Approval (A) / Information (I)	Submission Format	
			ACAD	Pdf
1	Overall cable Tray Layout	A	Yes	Yes
2	Cable Tray Section drawings with all details	A	Yes	Yes
3	Guaranteed Technical Parameters	A		Yes
4	Manufacturing Quality Plan	A		Yes
5	Field Quality plan	A		Yes

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13 ANNEXURES:

Annexure-1: Standard Quality plan FOR CABLE TRAY: TPQAIT-QAXX-00-EX-SQP-123-REV0

Annexure-2: Field Quality plan FOR CABLE INSTALLATION: TPQAIT-QAXX-00-EX-FQP-161-REV0

Annexure-3: Field Quality plan FOR CABLE TRAY: TPQAIT-QAXX-00-EX-FQP-130-REV0

THE TATA POWER COMPANY LIMITED

STANDARD TECHNICAL SPECIFICATION FOR

EARTHING AND LIGHTNING PROTECTION SYSTEM

(DOCUMENT NO - ENGG/ ELEC/STD-SPEC/2017/29)



Tata Power

Engineering T&D

Rev. No	Date	Revision History	Prepared By	Checked By	Approved By
R0	11-10-2017	1 st Issue	PSA	VAS	AM
R1	17-05-2018	Revised specifications	PSA	VAS	AM
A	22-04-2020	Incorporation of Safety & PQR requirements and lesson learnt from recent projects	VK	PBT	AM
B	03-11-2022	Requirement for electronic earthing and earth pit electrode details	SB	VK	AM/UGP
C	05-05-2023	Requirement of conductor material and exothermic welding included	SB <i>snehal</i>	VK <i>VishalK</i>	SKV <i>Subhash</i> 050523

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3.0	System Description and Scope
4.0	Codes & Standards
5.0	Design Requirements
6.0	Layout Requirements for the Equipment / System
7.0	Safety Requirements
8.0	Operational & Maintenance Requirements
9.0	Technical Parameters of Equipment (incl. Data Sheet)
10.0	Quality Requirements, Inspection and Testing (incl. SQP & SFP)
11.0	Performance Requirements
12.0	Mandatory Spares and Special Tools & Tackles
12.1	Start-up spares
12.2	Mandatory Spares
12.3	Recommended Spares
12.4	Special Tools & Tackles
13.0	Data Submission by Bidder
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	Annexures
Ann - I	Pre-Qualification Requirement (PQR)
Ann - II	Standard Quality Plan for Earthing Materials
Ann - III	Standard Field Quality Plan for Earthing Materials

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1. **INTRODUCTION**

This specification covers technical requirements for safety earthing system and lightning protection system for of the plant / substation including associated building, structures and equipment. For more details of plant / substation equipment and facilities, please refer Section-A.

2. **QUALIFYING REQUIREMENTS INCLUDING TYPE TEST REPORTS**

Refer Annexure-1.

3. **SYSTEM DESCRIPTION AND SCOPE**

3.1 The scope covers site survey, planning, design, engineering, transportation to site, insurance, supply at site, un-loading, handling, installation, integration, testing and commissioning of the complete earthing and lightning protection of the plant / substation.

3.2 Scope of work includes:

- a) Carrying out earthing & lightning protection design including
 - i. Collection of all relevant data such as soil, lightning area, existing grid details or any other data required for carrying out the design.
 - ii. Calculate sizes and ratings of the all earth conductors, risers etc.
 - iii. Simulate site condition and design the complete earth grid as per relevant standards.
 - iv. Determination of number of earth pits, its location and its design.
 - v. Determine Touch & step potentials within the project location including fencing / boundary and gate.
 - vi. Determination of Total Ground Potential Rise (TGPR) and Very Fast Transient Overvoltage (VFTO) as per relevant standards for GIS substations.
 - vii. Calculation of earth Grid Impedance, Ground Potential Rise, touch potential and step potential.
 - viii. Risk assessment for lightning protection system.
 - ix. Prepare design calculation / simulation, layout drawings, Bill of quantities etc.
- b) Supply and erection of earthing conductors, treated and non-treated pits, risers, clamps, accessories and Electronic earthing.

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- c) Laying of earthing & lightning protection system conductors in cable trenches, floor slabs at the time of floor concreting, burry in ground, along the structures, walls, columns etc.
 - d) Clamping of conductors along walls, columns, beams, ceiling structures, foundations, structural steel members etc., including supply of necessary hardware like clamps, bolts, nuts, welding rods and any other consumable materials required for installation of the earthing and lightning protection system.
 - e) Making equipment earthing connection, including supply of lugs, clamps, connectors, flexible braids, bolts, nuts, screw, washers and any other hardware or consumable as necessary for completing the work.
- 3.3 Complete Earthing System which includes Main Earthing grid, Auxiliary earthing grid, earthing of EHV system up to 400kV AIS switchyard/ GIS, power plant equipment's, Control room building, Gantry structure, EHV cable system, Power Transformer, Station Transformer, all primary / secondary equipment's covered under the project, Protection, Automation and Control panels, ACDB, DCDB, Motors, Pumps, Structural steel, Cable trays, and all other substation equipment's. Connection of existing earthing system with new earthing system shall be done with minimum two connection of suitable size at Substation.
- 3.4 Complete Lightning Protection System for EHV system upto 400kV AIS switchyard / GIS Building, power plant equipment's, Control room building, Gantry structure, EHV cable system, Power Transformer, Station Transformer, area up to complete boundary of substation under construction / modification and Line Termination Area. The Lightning system shall include Air Terminations, down comers, Link boxes and connection to earthing pit.
- 3.5 Submission of technical documentation related to design, installation, testing, operation & maintenance of the equipment for owner's review & approval.
- 3.6 Submission of earthing layouts, lightning system to the electrical inspector and obtaining its approval
- 3.7 Submission of type test report for Earthing and Lightning system as per relevant IS/ IEC standards. The type test report shall not be more than 5 years old from the date of bid.
- 3.8 Adherence to General requirements of Quality Assurance & Inspection (attached with the specifications).
- 3.9 Prior to the submission of the bid, the bidder shall visit site and make surveys and assessments as deemed necessary for proposal submission.

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- 3.10 The bidder shall co-ordinate earthing and lightning related activities with the various other equipment SUPPLIERS / Contractors, Project Manager / Site Engineer who will be present at site at the time of erection, testing and commissioning.

It is not the intent of this specification to specify completely herein, all details of design, construction of Earthing & Lightning protection system. However, the equipment shall conform in all respects to high standards of engineering, design & workmanship.

4. **CODES AND STANDARDS**

- 4.1 The design, manufacture, performance testing and inspection of equipment shall comply with all currently applicable statutory regulations and safety codes in the locality, where the equipment will be installed. Nothing in this specification shall be construed to relieve the vendor of this responsibility.
- 4.2 Unless otherwise specified the equipment shall conform to the latest applicable IS / IEC / IEEE.

Standard Number	Title
IEEE 80 (latest revision)	Guide for safety in AC substation grounding
IEEE 81	Guide for Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials of Ground Systems
IS 3043	Code of practice for Safety Earthing
BS 7430	Code or Practice for Protective Earthing of Electrical Installations
IS / IEC 62305	Protection against Lightning Part 1: General Principles Part 2: Risk Management Part 3: Physical Damage to Structure and Life Hazard Part 4: Electrical and Electronic Systems within Structures
IS 732	Code of practice for electrical installations
IS 2629	Hot Dip Galvanising on Iron and steel
IS 816	Codes for welding
IS 12444	Copper Conductors
IS 3975	Galvanised round steel wire

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Standard Number	Title
IS 2633	Methods of testing uniformity of coating of zinc coated articles
CBIP 339	Manual on earthing of AC power system.
IEEE 1050	Guide for Instrumentation and Control Equipment Grounding in Generating Stations
IEEE 1100	Recommended Practice for Powering and Grounding Electronic Equipment
IEEE 142	Recommended Practice for Grounding of Industrial and Commercial Power Systems
CIGRE 44	Earthing of GIS - An Application Guide prepared by CIGRE Working Group 23.10.
IEC 517	Gas Insulated Metal Enclosed Switchgear for Rated Voltages 72.5 kV and above.
--	CEA Regulation 2010 (Measures relating to Safety and Electric Supply) including Amendments, Central Electricity Authority, New Delhi, 2016

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5. DESIGN REQUIREMENTS

5.1. Earthing:

- 5.1.1. The earthing system for the entire plant areas including buildings, associated equipment and structures, area up to boundary under construction / modifications, line / cable termination etc. shall be designed in accordance with IEEE 80 latest revision. Complete system shall be designed to ensure safety of equipment and personnel, and correct operation of protective devices during earth faults in electric systems, lightning strikes on equipment / structures, and occurrence of induced voltages and currents on equipments, conductors, cables, structures etc. by providing Main Earthing grid, Auxiliary earthing grid, earthing of equipment, structural steel, Cable trays, Cable joint box and all other equipment as applicable.
- 5.1.2. The earthing system for plant under consideration shall be designed for a life expectancy of at least forty (40) years. The selection of conductor, design of earthing system for Main earthing grid and auxiliary earthing grid shall be considered based on the specified fault level and time.
- 5.1.3. Soil resistivity shall be measured using Wenner method (4 point) with 0.5 to 30 meters spacing between the spikes subject to physical site condition and space availability, in all 8 directions from centre of the location. Complete area under scope work shall be covered during Soil Resistivity Test. The measured resistance 'R' value shall be derived to calculate the resistivity using the formula given in IEEE-81.
- 5.1.4. Following requirements, parameters / factors shall be considered for designing of earthing system unless otherwise specified in project requirement (specified in section A).
- a) The maximum values of earth fault current for the various system voltage levels:
 - 400 kV system: 63kA for 3 sec
 - 220 kV system: 50 kA for 3 sec
 - 110 kV system: 40 kA for 3 sec
 - 33kV/22 kV system: 40 kA for 3 sec
 - 11kV/6.6 kV system: 40 kA for 3 sec
 - 415V system: 50 kA for 1 sec
 - b) Design Ambient Temperature: 50 °C
 - c) Duration of Grid Fault current for conductor Sizing:
 - 3.0 second for 400kV
 - 3.0 second for 220kV & 110kV

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- 3.0 second for 33kV, 22 kV, 11kV & 6.6 kV
 - 1.0 seconds for 415V
- d) Fault clearing time for calculating the maximum allowable step and touch potentials: one (1) second.
- e) Thickness of Crushed Gravel: 150 mm
- f) Surface resistivity of Crushed Gravel: 5000 Ohm-m
- g) Depth of Earth Grid: 600 mm
- h) Body weight for touch and step potentials calculation: 50Kgs and 70Kgs.
- i) Maximum allowable temperature rise shall be 40% of fusing temperature of material or thermal allowable temperature for welded joints, whichever is lower as per CBIP manual.
- j) Overall earthing resistance: less than 1.0 ohms
- k) Conductor materials are proposed for the earthing system.

SI.NO	ITEM	MATERIAL
1	Main grid conductor below ground	Multi-strand copper conductor (99% conductivity, Copper annealed soft drawn) material for horizontal conductors and solid copper (97% conductivity, hard drawn) for vertical rods
2	GIS building floor	Multi-Stranded conductor CU
3	Earth conductor above ground	Multi-Stranded conductor CU
4	Cable junction box, Cable trenches and along cable trays	CU
5	Electrodes	CU
6	Lightning protections air terminations and downstream conductors for building	CU
7	Transformer Body and neutral	CU
8	Electrical Equipment earthing	CU
9	All electronic equipment: i. Battery chargers, UPS, Protection, Automation and	

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	Communication panels, Metering panels, panels with electronic IEDs & components etc. ii. Between electronic equipment and earth termination box, between earth termination box and electronic earth pit, etc.	Armoured stranded CU insulated cable
10	48V DC Battery grounding	Unarmoured stranded CU cable

- l) Split factor for calculation / simulation and actual design shall be taken as 1.
- m) The earthing design of the plant / substation and cable junction box shall be carried out considering multilayer (3 or more layer) soil modelling for best accuracy through a software (like CDEGS or equivalent) as per IEEE 80 latest revision and software simulation / design reports shall be submitted to Owner for review and approval during detailed design station.
- n) Following aspects shall be covered in the Earthing design for Air Insulated Substation
- Soil Modeling
 - Safe Touch & Step Potential
 - TGPR and VFTOs
 - Transfer Potential
- o) Following aspects shall be covered in the Earthing design for Gas Insulated Substation
- Soil Modeling
 - Safe Touch & Step Potential
 - TGPR and VFTOs
 - Transfer Potential
 - Metal to Metal Touch Voltage
 - Circulating Current

5.1.5. Size of Conductors

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- a) Main Earthing Conductors: The size for earthing conductors shall be calculated as per IEEE Std 80 latest revision. Corrosion factor shall be considered as per applicable standard.
- b) Rod Electrodes: Based upon the recommendation of IS-3043-1987, 3500mm long, 20mm dia, heavy-duty type (Class-C) solid Cu rod electrodes shall be provided for all earth pits. Electrodes installed in the earth pits shall have disconnecting facilities. For treated earth pits, 25mm diameter HDPE pipe with 12 mm diameter holes shall be provided along the solid Cu rod electrode for watering and maintenance.
- c) Equipment Earthing Leads: The size of the earthing leads depends upon the type of equipment and structure to be earthed and are provided generally as per IS: 3043. The equipment shall be connected to the Main earthing grid through risers.
- d) Conductors for Lightning Protection System: The sizes of the conductors for lightning protection system shall be decided based on mechanical strength point of view as per IEC 62305.

5.1.6. Earthing system installation work:

- a) The Earthing System shall comprise a meshed earthing grid buried in the ground and a set of spur connections to all Electrical equipment, all metallic framework and concrete reinforcement to form an equipotential bonding system capable of carrying the fault current resulting from short circuits. The fault current while designing the Earth grid to be as mentioned above.
- b) The earthing system consists of main earth grid under the raft, auxiliary grid around the building and earthing conductor on GIS floor, cable gantry, Cable junction box, Switchgear room, Relay room, Outdoor gantries, outdoor equipment structures, Battery room, Pump room, DG set room etc. and all other equipment not covered above but which are in the scope of the project. Wherever there is need of interconnection between copper and GI/GS/any other material, bimetallic strip shall be provided for connection.
- c) Metallic frames of all current carrying equipment, structures supporting and adjacent to current carrying conductors, lightning protection system conductors, metallic structures, metallic stairs, hand rails, fences and neutral points of various systems will be connected to a single earthing system. Two earthing leads shall be used for all metallic equipments.

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- d) The concrete reinforcements shall be earthed by means earth plates as indicated in IS 3043.
- e) Backfilling material to be placed over buried conductor shall be free from stones and other harmful mixtures. Backfill shall be placed in layers of 150 mm, uniformly spread along the ditch, and tampered utilizing pneumatic tampers or other approved means, If the excavated soil is found unsuitable for backfilling, the Bidder shall arrange for suitable soil from outside.
- f) Earth connection leads to equipment and risers on steel structures/walls shall include laying the conductors, cleating at specified intervals, and exothermic welding to the main earth grids, risers, bolting at equipment terminals and coating welded joints by bitumastic paint. Galvanised conductors shall be touched up with zinc rich paint where holes are drilled at site for bolting to equipment/structure.
- g) Wherever main earthing conductor crosses cable trenches, they shall be buried 300mm below the trench floor.
- h) Earth leads between earthing riser and equipment earthing terminals shall follow as direct and as short a path as possible.
- i) Connection of new earthing system with existing earthing system shall be carried out at minimum two strategic locations using selected size of Earth conductor.
- j) Shield wire in switchyard shall be connected to the earthing grid through test links at every alternate tower
- k) All joints shall be made such that contact resistance is negligible.
- l) All bimetallic connections shall be treated with suitable compound to prevent moisture ingression.
- m) Earthing mat comprising of closely spaced (150 mm approximately) conductors shall be provided below the operating handles of H.V. isolator and breaker operating kiosk. Operating handles shall be properly bonded to the supports with flexible conductors and connected to the above mat. The local earth mat in turn shall be connected to main earthing grid.
- n) Flexible earthing leads shall be provided for earthing the equipment on moving platforms. Every alternate post of the fence and each gate post shall be connected to earthing grid by one lead, while gates shall be earthed by flexible braids connected to the post. Barbed wire upon the boundary wall shall be connected to Main earth grid at every 30M of interval.

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5.1.6.1 Main earthing grid

- a) A main ground mesh of stranded Copper conductor of size as per IEEE80 shall be laid at a depth of 100 mm below the bottom of Basement floor/ raft foundation.
- b) Suitable connection point's risers shall be brought above the floor having length at least 1000 mm for making connection. This mesh shall relate to periphery conductor of auxiliary conductor.
- c) All interconnections of the earthing grid conductors shall have exothermic welded type joints.
- d) All indoor earthing grids will be suitably interconnected to the outdoor earthing grid at 2 distinct locations. There shall be at least 2 risers from Main earth grid to each floor earth ring.
- e) In case of minor obstructions, the conductor may be rerouted suitably.

5.1.6.2 Earthing Grid Outside Buildings

- a) Main earthing conductors will be buried in earth around each building at a minimum depth of 600mm at 1500 mm from the outer boundary of the building. Additional rod electrodes will be provided wherever required to limit the ground grid resistance.
- b) The earth grid of different areas will be interconnected through test pits to the main plant area earth grid to enable measurement of ground resistance of each area separately.

5.1.6.3 Auxiliary Earthing grid

- a) The auxiliary earthing system shall comprise of a continuous stranded Cu conductor laid outside the periphery of the substation site at 1500 mm from building wall and arranged to utilize fully the available site area.
- b) The conductor shall Cu conductor and be laid at a depth of 600 mm below the soil surface, which shall be connected to earth electrodes.
- c) The grid shall be routed below the foundation, pipes, trenches, etc. in case of interference. Wherever steel/concrete structure interferes, the conductor shall be laid 500 mm below the structure.
- d) In case of minor obstructions, the conductor may be rerouted suitably.

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5.1.6.4 Indoor earthing grid:

- a) Suitable size as per IEEE80 stranded copper conductor shall be embedded in GIS floor slab for GIS earthing.
- b) A separate suitable size as per IEEE80 copper conductor shall be embedded in the GIS floor slab for Local Control panel (LCP) earthing and shall be interconnected with GIS earthing conductor to form a grid. The earthing grid shall be connected to the auxiliary earthing grid at least two distinct locations.
- c) Connection of GIS earthing points specified by GIS vendor shall be connected to the GIS earthing conductor with suitable size copper conductor (as per IEEE80). The conductor size that can be connected to GIS earthing terminal is specified by GIS vendor. Suitable connector to be considered for the same.
- d) Main earthing conductors shall be buried in earth around the building. Min two tap-off from this earthing loop shall be taken inside the building and connected to the earthing grid embedded in the floor slab with min 50 mm concrete floor above the conductor.
- e) In case, the building has more than one floor, each floor shall be provided with earth grid to which the floor equipment can be connected. Floor earthing grids will be inter-connected. Steel column of the building shall be interconnected to the floor earthing grid in the ground floor. Cable trays, steel pipes / conduits, steel columns, etc. will not be used as earth continuity conductors.
- f) In cable gantry and cable junction box, Cu conductor shall be laid above slab and covered with cement mortar. Suitable risers to be provided for cable support earthing, cable tray earthing, sump pump earthing, etc.
- g) Earthing strip shall be provided all along the cable trays / runners up to the equipment location, which in turn shall be connected to the earthing grid.
- h) In the Relay room and LV AC/DC room, conductor (suitable size as per IEEE80) is laid below the false flooring covered with cement mortar, for panel earthing. Suitable size flat conductor shall be used for connections from panel to the main conductor.
- i) The reinforced concrete floor slab of the GIS building shall be maintained at earth potential by connecting concrete reinforcement bars to the earth grid at least four

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points. The foundation reinforcement of at least two extreme columns shall be earthed by earthing pads as indicated in IS 3043.

- j) Crane and track rails shall be bonded with the railboards and connected to the earthing system. Adjacent railway tracks shall be bonded across fish plates
- k) For all utility systems, viz. ventilation, fire hydrant system, lifts etc. the earthing strip shall be provided up to incoming of utility control panels.
- l) Wherever earthing conductor passes through walls and concrete floor, 100 mm dia HDPE pipe sleeves shall be provided for the passage of earthing conductor. The pipe ends shall be sealed using suitable water-proof compound.

5.1.6.6 Electronic Earthing

- a) Earth termination boxes for electronic earthing shall be installed in GIS floor, relay room at a height of 600mm and 900mm above the respective finished floor level.
- b) Dedicated electronic earthing junction box (ETB) for all electronic equipments specified in the point 5.1.4 shall be supplied. Each end of panel board shall be connected to this junction box via unarmoured insulated Copper cable of suitable size.
- c) Two separate treated pits shall be created and two insulated Cu cables from ETB to these earthing pits shall be connected. The treated earth pits shall be connected to main earth grid.
- d) 150 sq.mm round armoured, PVC insulated Cu cable for electronic earthing i.e. connection between equipment to earth termination box (ETB) to Electronic earth Pit shall be used.

5.1.6.7 Equipment Earthing Connections

- a) Transformers: Earth leads of transformer neutral will be connected to ground grid by earthing flats through two separate treated earth pits starting from neutral bushing. The tanks or frames will be connected to the grounding grid by separate grounding conductors. For resistance earthing, the neutral point of grounding resistor shall be connected to ground grid by earthing conductor through two separate treated earth pits. Two treated earth pits for Neutral earthing and two non-treated earth pits for Body earthing.

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- b) Switchgears: MCC/switchgear earth buses will be connected to the building earth grid by two connections.
- c) Gas insulated switchgear (GIS): GIS earthing shall be done as per the recommendations by supplier of GIS.
- d) Cables: The shields or armor of three core power cables will be earthed at both ends whereas the same for single core cables will be done at supply end only. The HV Cable Sheath Earthing shall be as follows:
- Three Core Cables: The shields of solid type cables are earthed at terminations provided cable sheaths are bonded at joints.
 - Single core cables: The sheaths of the single core cables shall be earthed at the trifurcating box. In case of single core mains, earthing shall be done at the end of trefoil formation and the cable glands at sealing ends.
- e) Lightning Arrestors: Lightning Arrestors, shield wires of the incoming lines (from disconnecting test links), each down comer of lightning protection system and communication circuits will be directly connected to independent earth electrodes. These electrodes in turn will be connected to station earthing system. Also no intermediate earthing connection shall be made from support structure of lightning arrester.
- f) Cable carrier system: cable carriers system comprising of cable tray, cable supporting structure shall be earthed.

5.1.6.6 Joints:

- a) All interconnections of the earthing grid conductors shall have exothermic welded type joints except at electrodes with disconnecting facility and at equipment with bolted connections.
- b) Suitable bi-metallic strip for CU-GS or other material connection shall be provided.
- c) All bolted type connections shall be done through tinned copper lugs.

5.1.6.7 Earth Pits:

- a) Earth pits with rod electrode shall be used for connection of lightning down comers, neutral of the transformers, lightning arresters, etc. and shall be provided as per specification. The location of earth pits shall be suitably located based on site layout.

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- b) All the pits both treated and untreated shall be connected to the main earthing grid at 2 points.
- c) The earthing pits shall be located with a minimum clearance of 6 meters from other pits.
- d) Size of Earth rods for treated as well as non-treated earth pits shall be as per point 5.1.5. These earth pits shall be treated as per IS: 3043. Electrodes installed in the test pits will have disconnecting facility.
- e) For treated earth pits, 25mm diameter HDPE pipe with 12 mm diameter holes shall be provided along the solid Cu rod electrode for watering and maintenance. Funnel type of arrangement shall be provided over HDPE pipe for treatment of the earth pit.
- f) Inspection chamber shall be constructed using cement concrete for each earth pit.
- g) Plate cover of earth pit shall be designed to handle vehicular load and shall be light in weight so that the same can be lifted by normal person.
- h) Measurement of isolated earth pit resistance shall be done and measured value shall be painted on earth pit plate cover.
- i) Rods shall be fitted with hardened tips, caps and coupling pieces to facilitate driving by power hammer.
- j) Treated earthing pits shall be used for LA earthing, electronic earthing and transformer Neutral earthing.
- k) For Lightning Protection (Down conductor, Horizontal & vertical Air termination, lightning mast, ground wires), each Lightning protection down conductors shall be terminated in a separate untreated earth pit with test link.
- l) The reinforcements shall be earthed by means of earth plates as indicate in IS: 3043.
- m) Chemicals used for earth pit treatment shall not cause ground water pollution and shall not be corrosive.
- n) Test pits between grids of different areas shall be treated earth pits. Additional earth electrodes used in small plants when buried grid does not provide required earth grid resistance, shall be treated earth pits.
- o) Number and type of earth pits at Point of Supply shall be as per the requirement of Electric Utility Company (Electricity Board) & Local Electrical Inspectorate.

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5.1.7. Whether specifically shown in drawings or not, building columns, hand-rails, miscellaneous items such as marshalling boxes, field switches, cable boxes, etc. shall be earthed. The Bidder shall install Earthing conductors, braids etc. required for the system and individual equipment earthing. All work such as cutting, bending, supporting, painting/coating, drilling, exothermic welding, clamping, bolting and connecting on to structures, equipment frames, terminals, rails or other devices shall be in the bidder's scope of work. All incidental hardware and consumables such as fixing cleats/clamps, anchor fasteners, lugs, bolts, nuts, washers, bitumastic compound, welding rods, anti-corrosive paint as required for the complete work shall be deemed to be included by the bidder in scope work.

5.2. Lightning protection system

- 5.2.1. Lightning protection for the entire plant areas including buildings, associated equipment and structures, area up to boundary under construction / modifications, line / cable termination etc. shall be provided in accordance with IS / IEC 62305. Complete system shall be designed to eliminate physical damage to the plant due to lightning flashes by providing an air-termination system, a down-conductor system, an earth-termination, the lightning equipotential bonding, Surge Protection devices (SPDs).
- 5.2.2. Risk of Lightning on the plant structures confirming to the risk management of IS/IEC 62305-2 and check the adequacy of the proposed LPS protecting the structure as per the risk level confirming to IS/IEC 62305-3 shall be carried out. Lightning protection level shall be selected to design measures according to the applicable set of lightning current parameters. Highest safety lightning protection of Level-I shall be provided. Bidder to design complete LPS along with necessary calculations and submit the same to the owner for review / approval during detailed engineering.
- 5.2.3. Lightning masts/overhead ground wires shall be provided for outdoor equipment protection as per IEC62305.
- 5.2.4. Installation of horizontal, down conductor and air termination to each air rod shall be as per IS and Earthing and lightning protection system installation work.
- 5.2.5. Air Termination System
- a) An air termination system comprising of horizontal roof conductors is recommended for the buildings. The roof conductors will be as laid out such that no part of the roof

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will be more than 9 metres away from the nearest horizontal protective conductor as recommended in IEC 62305.

- b) Air termination system will be connected to the earth electrodes by down conductors fixed along the outer surfaces of the building and structures.
- c) Air termination conductors shall be fixed in such a way that they remain in their installed position even during severe weather conditions. The necessary accessories such as cleats, clamps, welding materials, bolts, nuts, shall be provided.
- d) Copper Material shall be used for air-termination conductors, air termination rods and down conductors unless otherwise stated. Configuration and cross-sectional area of components shall be as per relevant standards.

5.2.6. Down Conductors

- a) Down-comers with disconnecting links, directly terminated on earth pits to be provided on the building, cleated at every 750 mm along the run.
- b) The down conductors shall follow a direct path to earth. There shall not be any sharp bends, turns and kinks in the down conductors.
- c) Number and layout of the down conductors will be as per IEC 62305 part 3 clause 5.3 and 6.3.
- d) Lightning down comer shall be connected to common grid underground and proper isolation shall be provided between equipment and lightning earth strip whenever lightning earth strip run above ground.
- e) All joints in the down conductors shall be of exothermic welded type. Anti-Corrosion Paint at exposed bolted shall be provided. All metallic structures within 2 metres from down conductors shall be bonded to lightning protection system.

5.2.7. Lightning Protection Earthing System

- a. The earth-termination system shall comply with IEC 62305-3 and type-B earthing arrangement. A ring conductor external protected structure shall be in contact with the soil for at least 80 % of its total length. The ring earth electrode (type B arrangement) should preferably be buried at a depth of at least 0.5 m and at about 1 m away from the external walls.
- b. Each down conductor will be connected to a rod electrode which in turn will be connected to the station earthing system.

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- c. Each down conductor will be provided with a test link at a height of 1000mm above ground level to facilitate disconnection of that earth termination from the system and measure the resistance.
- d. Equipotential bonding of all metal equipments and structures shall be achieved as per relevant standards for safe lightning protection.
- e. Equipotential Bonding shall be provided by interconnection of all the metallic structures and earth electrodes in a premise to achieve uniform earth potential rise by equipotential bonding in the case of any lightning or abnormal voltage conditions.
- f. The acceptable earth resistance value for the LPS system shall be $<10 \Omega$ (for the interconnected earth system of LPS) as per NFC 17-102 & IS/IEC 62305-3. To meet this criterion required number of earth pits shall be provided.

5.2.8. The lightning protection system shall not be in direct contact with underground metallic service ducts, cables, cable conduits and metal enclosures of electrical equipment. However all metal projections, railings, vents, tanks etc. above the roof shall be bonded together to form a part of roof grid. Any holes/openings made in the roof slab shall be made adequately waterproof after the installation work. All metal projections, railings, vents, tanks, etc., above the main surface of the roof shall be bonded together to form a part of the roof grid.

5.2.9. All joints in the run of main earthing conductors and joints between earth leads and main earthing conductor will be exothermic welded type for copper material. Joints between earth leads and equipment will be of bolted type to facilitate disconnection whenever required.

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6. LAYOUT REQUIREMENTS FOR THE EQUIPMENT / SYSTEM

- 6.1 The design of earthing and lightning system shall be carried out by the Bidder based on site layout.
- 6.2 Installation of Earthing and Lightning system shall be carried out by the bidder as per Layout drawings approved by the Owner.

7. SAFETY REQUIREMENTS

- 7.1 All the earthing and lightning system shall be designed in such a way that it absolutely aims at zero unsafe working conditions. Bidder shall consider highest safety criterias during design of the system.

8. OPERATIONAL AND MAINTENANCE REQUIREMENTS

- 8.1 Test pits (treated) shall be provided for measurement of earth grid resistivity for maintenance purpose.
- 8.2 Provision for isolation of earthing rod to be designed for measurement of earth rod resistance during maintenance.
- 8.3 Down comer shall be provided with disconnecting links.
- 8.4 The earthing and lightning protection system shall be capable of satisfactory operation under the severe climatic conditions that would prevail at site as described in project specification.

9. TECHNICAL PARAMETERS OF EQUIPMENT (INCL. DATA SHEET)

Sr No	Item Description	Unit	Bidder Response
1.0	General		
1.1	Soil Resistivity	Ohmmeter	
1.2	Type of soil	--	
2.0	Earthing System		
2.1	Applicable standards		IEEE 80 latest revision
2.2	Conductors to be embedded in Concrete		
2.2.1	Material		

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2.2.2	Size		
a)	Round conductor	sq. inch	
b)	Flat conductor	mm x mm	
2.3	Conductors buried in Earth		
2.3.1	Material		
2.3.2	Size	-	
a)	Round conductor	sq. inch	
b)	Flat conductor	mm x mm	
2.3.3	Depth of burial	mm	
2.4	Conductors above ground and up to Equipment terminals		
2.4.1	Material	-	
2.4.2	Size		
a)	Round conductor	sq. inch	
b)	Flat conductor	mm x mm	
c)	Round wire	SWG	
2.5	Earth Electrodes		
a)	Material		
b)	Size		
c)	Length	mm	
d)	Type of Electrode (Rod / Pipe)		
2.6	Jointing	--	Exothermic welding
3.0	Lightning Protection		
3.1	Applicable standards	-	IS 62305
3.2	Roof conductors/down comers		
a)	Material		
b)	Size		
c)	Special coating/paint required		
3.2	Air Termination Rods		
a)	Material	-	

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b)	Length	mm	
3.4	Test links in enclosures mounted above Ground		
a)	Size	mm x mm	
b)	Material	-	

10. **QUALITY REQUIREMENTS, INSPECTION & TESTING (INCL. SQP & SFP)**

10.1 To ensure that a well-engineered and contractually compliant system is produced, **Bidder shall adhere to Approved Tata power Quality Plan** for the preparation of all contract deliverables. The program shall provide for early detection of actual or potential deficiencies, timely and effective corrective action, and a method of tracking all such deficiencies.

10.2 **QUALITY REQUIREMENTS:** Bidder to prepare and submit Manufacturing Quality Plan (MQP) and Field Quality Plan (FQP) for approval of Owner to ensure that a well-engineered and contractually compliant system is produced. The program shall provide for early detection of actual or potential deficiencies, timely and effective corrective action, and a method of tracking all such deficiencies.

Annexure – II: Standard Quality Plan for Earthing Materials

Annexure – III: Standard Field Quality Plan for Earthing Materials

11. **INSPECTION, TESTING AND PERFORMANCE REQUIREMENTS ALONG WITH WARRANTY**

- a) Bidder should follow owner approved MQP and specification requirements.
- b) Type test reports as per SQP shall be submitted for purchaser review along with technical bid.

Warranty

- a) Bidder shall warrant that the equipment hardware is free of defects in material and workmanship or faults in design, in so far as the equipment fails to meet the requirements of this technical specification, for a period of 60 months from the date of final acceptance by the purchaser after completion of 30 days trouble free operation.
- b) With respect to defects in equipment part, Bidder's liability is to make good by replacing the faulty equipment. It is the responsibility of the Bidder to replace the faulty equipment within 30 working days.

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- c) The Bidder will cover the cost associated with the shipping of defective or failed items during warranty period. The new equipment, parts shall be delivered free of charge.
- d) Bidder shall extend all warranties / guarantees to the purchaser, provided by sub-Vendors, of duration longer than that in this specification

The Quality Control Plan shall list and define in sequential order all process control activities, inspection and tests proposed to be performed on the material starting from raw material procurement and from testing stages to product dispatch. The Quality Control Plan shall indicate and identify the applicable standards, detailed description with diagram the procedure, acceptance criteria, extent of check and record to be generated. This QAP shall be submitted by bidder and approved by Owner.

All erection and installation activities shall be performed in line of approved FQP by Owner. All test routine test and acceptance test as per the relevant standards and approved MQP shall be carried out. Minimum shop testing requirements are specified in the attached Standard Quality Plans.

PERFORMANCE REQUIREMENTS

- a. Earthing system shall be designed such that overall earth resistance shall be less than 1 ohm.
- b. Software calculated step potential, touch potential and ground potential shall be less than tolerable limits in accordance with IEEE-80 latest revision. Bidder to submit the design calculations for the above performance requirements during detailed engineering.

12. SPARES AND SPECIAL TOOLS & TACKLES

12.1 START-UP SPARES

Not Applicable

12.2 MANDATORY SPARES

Not Applicable

12.3 RECOMMENDED SPARE

Not applicable

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12.4 SPECIAL TOOLS & TACKLES

Not applicable

13. DATA SUBMISSION BY BIDDER

13.1 ALONGWITH BID

The bidder shall submit the following documents along with the bid.

- a) Filled up Technical datasheet and Technical Deviations of Specifications
- b) Stamped copy of this specification
- c) Manufacturing Quality Plan (MQP)
- d) Field Quality Plan / Commissioning Check list
- e) Type Test Reports wherever applicable
- f) Bid Qualifying Data.
- g) Technical Literature of Product offered with all details

13.2 AFTER AWARD OF CONTRACT

- a) Overall Earthing layout plan (pdf and auto-cad copy) furnishing front and side elevation, top and bottom plan, views showing all accessories, spacing details, MOC, make of components, and other associated items along with technical details.
- b) Overall Lightning layout plan (pdf and auto-cad copy) furnishing front and side elevation, top and bottom plan, views showing all accessories, spacing details, MOC, make of components, and other associated items along with technical details.
- c) Detailed Earthing layout plan for each area/system (pdf and auto-cad copy) furnishing front and side elevation, top and bottom plan, views showing all accessories, spacing details, MOC, make of components, and other associated items along with technical details.
- d) Detailed Lightning layout plan for each area/ system (pdf and auto-cad copy) furnishing front and side elevation, top and bottom plan, views showing all accessories, spacing details, MOC, make of components, and other associated items along with technical details.

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- e) Design calculation for earthing and lightning system along with support documents
- f) Data sheets of equipment / components / devices.
- g) Technical Literature of Product offered with all details.
- h) Type Test Reports wherever applicable.
- i) Manufacturing quality plan & Field Quality plan.
- j) O&M Manual & Recommended Commissioning checklist.

All above drawings / documents shall be submitted within 7 days of PO issue.

Bidder must agree for handing over, to Purchaser, all project related drawings in PDF version. The pdf versions of above drawings shall be submitted through Wrench for formal approval process.

ANNEXURES

Annexure - I Pre-Qualification Requirement (PQR)

Annexure - II Standard Quality Plan for Earthing Materials

Annexure - III Standard Field Quality Plan for Earthing Materials

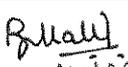
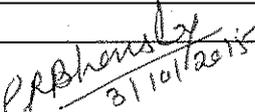
Annexure-1

Bidders Prequalification Requirement Earthing and Lightning system			
S No	Parameter	Tata Power Requirement	Documents To be submitted by Bidder to ascertain meeting of Pre-qualification requirement
1	Infrastructure	Bidder must have competent engineering facility with enough engineers in India or abroad working on internationally accredited licensed softwares for simulation, design and calculation of earthing and lightning system.	Self-undertaking to be submitted in this regard. TATA Power reserves the right to inspect the said engineering facility as a proof of compliance to this parameter.
2	Supply and Experience	<p>The Bidder shall have designed, manufactured, supplied, erected and Commissioned Earthing and Lightning systems for min 5 no's of 400 / 220 / 110 kV AIS or GIS Projects in past 5 years. Minimum 2 nos of Earthing and Lightning protection systems shall be in satisfactory service for a period of 2 years.</p> <p>Indian Subsidiaries of global companies having services in India are also eligible to bid if the qualification requirements stated above are met independently or in combination with the parent company. Declaration from parent company needs to be submitted.</p>	<p>Supply List & Performance Certificates from the utilities / clients</p> <p>Self-undertaking to be submitted in this regard. TATA Power reserves the right to inspect the said facility as a proof of compliance to this parameter.</p>
3	Type Test	<p>The bidder shall submit Type test reports obtained from NABL/ International Accredited Lab for the equipment / material offered. The type tests should have been conducted on the equipment / material of the same design.</p> <p>The type tests should have been conducted within 5 years prior to the date of bid opening. Time period for type test can be extended by another 5 years as a special case, if there is no change in design / material of construction (MOC).</p> <p>In case the type test reports furnished are not for the quoted equipment / material but for the equipment / material with higher voltage class and/or different capacity, then type test shall be carried out for the offered equipment / material from NABL / International Accredited Lab without any cost implication to the owner and the Type Test reports shall be submitted before despatch of the equipment / material.</p>	<p>Type Test Report.</p> <p>Undertaking that there is no change in design / material of construction (MOC) if Type Test Report older than 5 years but less than 10 years prior to date of bid opening has to be considered (if applicable)</p> <p>Undertaking that type test shall be carried out for the offered equipment / material from NABL / International Accredited Lab without any cost implication to the owner and the Type Test reports shall be submitted before despatch of the equipment / material, in case type test reports furnished are not for the quoted equipment / material but for the equipment / material with higher voltage class and/or different capacity, (if applicable)</p>
4	Commercial Capability		Copy of audited Balance Sheet and P&L Account to be submitted in this regard.
5	Installation & Commissioning for same equipment	--	--

TATA POWER	The Tata Power Company Limited Corporate Engineering-Quality Assurance Inspection & Testing	
TPQAIT-QAXX-00-EX-SQP-131 REV.0	STANDARD QUALITY PLAN FOR EARTHING MATERIAL	Issue date 08/10/2015

Sr. No	COMPONENT / OPERATION		CHARACTERISTICS CHECKED	TYPE / METHOD	REMARKS
1	2		3	4	5
1.0	MATERIAL:	(All material shall be as per approved drawing/ data sheet).			
1.1	Aluminium Rod, Al flat, Al air termination rod, Al alloy material Carbon steel / MS steel Earthing spike, GI / MS flat,	1	Chemical composition, Mechanical properties,	TC Verification (IS:5082)	Corelated MTC review
1.3	Copper Rod, CU plate, flat, air termination rod	1	Chemical Composition, Electrical conductivity, Copper purity, Tinning.	TC Verification (IS: 191)	
2.0	INPROCESS INSPECTION: (Generally in line with manufacturer standard)				
2.1	Fabrication of sheet	1	Welding Procedure Specification (WPS), Procedure Qualification Record (PQR), Welder Performance Qualification (WPQ), Weld visual	Review and checking of documents	Welding shall be done by qualified welder, where applicable.
2.2	PRE Galvanizing	1	Cleaning by seven tank process	Testing & Measurement on each lot.	Verification of test records by customer at the Time of Final Inspection
3.0	FINAL TESTS: (as per IS 2633, IS 2629, IS 4759, IS 6745 Approved drawing, Datasheets & BOM)				
3.1	Routine Tests.	1	Dimensional checks	Testing & Measurement on 10% of random sample	CHP (Customer hold point) To be witnessed by Customer
		2	Visual for appearance & surface condition		
		3	Galvanizing test- Thickness & uniformity of zinc coating as per IS 2629 & 6745		
		4	Free from defects, zinc lumps and discoloration		
		5	Adhesion test (Kniff test or pivote hammer test)		
4.0	Document review & Issuance of IRN				
4.1	Document review & Issuance of IRN		Review of Quality dossier & Inspection report	Review	
NOTE	A) STATUTORY REQUIREMENTS WILL BE COMPLIED BY THE CONTRACTOR.				
	B) ALL MATERIAL SHALL BE AS PER APPROVED DRAWINGS / DATA SHEET.				
	C) TATA POWER / ITS REP IDENTIFICATION STAMP ON MATERIALS WILL BE PRESERVED, IF REQD, SAME SHALL BE TRANSFERRED BY TATA POWER / ITS REP ONLY.				
	D) MAUFACTURER TO SUBMIT ROUTINE TEST RESULTS. FINAL INSPECTION OF THE MAJOR ACTIVITIES ARE WITNESSED BY CLIENT AND IT IS HOLD POINT (AT THE DISCRETION TATA POWER)				
	E) MANUFACTURER SHALL PREPARE AND SUBMIT COMPLETE MANUFACTURING QUALITY PLAN IN PRESCRIBED FORMAT OR THEIR REGULAR FORMAT INDICATING THEIR REGULAR PRACTICES, TAKING CARE OF MINIMUM REQUIREMENT AS INDICATED ABOVE INCLUDING ADDITIONAL TESTING REQUIREMENTS AS PER CONTRACT SPECIFICATION.				
	F) SPARES SHALL BE MANUFACTURED & INSPECTED AS PER APPLICABLE CLAUSES OF THIS QUALITY PLAN. SPARES OFFERED FOR INSPECTION SHALL BE PREFERRED ALONG WITH MAIN ITEMS (IF ORDERD).				
	G) CALIBRATION CERTIFICATES OF THE EQUIPMENT USED FOR TESTING SHALL BE PROVIDED FOR REVIEW.				
	H) AS PER SEPCIFICATION PROPER PAINTING & PACKING SHALL BE ENSURED BY VENDOR BEFORE SHIPMENT TO AVOID ANY TRANSIT DAMAGE.				
	I) TATA POWER RESERVES THE RIGHT TO DEMAND / VERIFY/ AUDIT/ WITNESS ANY OF THE CHECK POINTS MENTIONED IN THE SCOPE OF SUPPLIER.				

Meant for (Internal Circulation / External – Stakeholders Circulation)

		 RR Patil 08/10/2015	 CR Bhonslay 31/10/2015	 S. Simlai
R0				
Rev No	Reason for Revision	Prepared By & Date	Checked By & Date	Approved By & Date

TATA POWER		The Tata Power Company Limited Corporate Engineering-Quality Assurance & Inspection.		TATA				
TPQA&I-QAXX-00-EX-SFP-270 REV.0		STANDARD FQP FOR EARTHING INSTALLATIONS.				Date of Issue: March 2017.		
Sr. No	COMPONENT / OPERATION	CHARACTERISTICS CHECKED	CLASS OF CHECK	TYPE OF CHECK	EXTENT / FREQUENCY OF CHECK	REFERENCE DOCUMENTS / ACCEPTANCE NORM	FORMAT OF RECORD	REMARKS
1	2	3	4	5	6	7	8	9
1.1	1.0 MATERIAL RECEIPT & STORAGE:	Check physical receipt of all cases, bundles & loose materials.	Major	Physical	At the Time of Receipt.	MDCC, packing list & BOM.	Site Log Book.	
1.2		Verify physical receipt of full quantity as per packing list.	Major	Physical		MDCC, packing list & BOM.	Site Log Book.	Any shortfall/ damage shall be analysed & reported through joint protocol with FQC.
1.3		Storage of material.	Major	Physical		Storage Type 1.	Site Log Book.	
1.4		Ensure proper identification of all material.	Major	Physical		MDCC, packing list & BOM.	Site Log Book.	
2.1	2.0 ERECTION:	Check availability of all tools, tackles etc. required for installation works are available.	Major	Visual	100% Before erection.	Manufacturer's Instruction Manual.		
2.2		Ensure earth grid will not interfere or obstruct with any other piping, cables, trays, structures or construction activities.	Major	Visual		Installation drawing.	Site Log Book.	
2.3		Check for availability of WPS/BPS, PQR. Welder/ Brazor qualification to be established at site.	Major	Physical		Approved WPS/BPS, PQR, Welder qualification & ASME sec.IX.		
2.4		Ensure arrangement of Earth pit.	Major	Visual		Approved layout drawing.	Erection protocol.	
2.5		Check for arrangement to water the earth pit.	Major	Measurement		Incase of treated earth pit.	Site Log Book.	
2.6		Check for use of correct conductor size.	Major	Physical				



The Tata Power Company Limited
Corporate Engineering-Quality Assurance & Inspection.

Date of Issue:
March 2017.

TATA POWER

TPQA&I-QAXX-00-EX-SFP-270 REV.0

STANDARD FQP FOR EARTHING INSTALLATIONS.

Sr. No	COMPONENT / OPERATION	CHARACTERISTICS CHECKED	CLASS OF CHECK	TYPE OF CHECK	EXTENT / FREQUENCY OF CHECK	REFERENCE DOCUMENTS / ACCEPTANCE NORM	FORMAT OF RECORD	REMARKS
1	2	3	4	5	6	7	8	9
	2.7	Check for overlapping (1.5 to 2 times) of joints for welding of earthing connection.	Major	Visual	100%	Approved drawing.	Erection protocol.	
	2.8	Ensure welding at all sides of joint & application of bitumen for welded portion of earthing connection.	Major	Visual	100%			
	2.9	Check the earthing scheme and ensure that tappings are brought out from grid earth mat and connected to all structures, equipments, rails, gates, yard, fencing etc.	Minor		100%	Approved layout drawing.	Erection protocol.	
	2.10	Ensure that earthing links are properly connected and tightened.	Major		100%	GA drawing.		
	2.11	Check for tightness of the earthing shield wire clamps for cable earthing.	Major	Physical.	100%			
	2.12	Measure grid earth resistance and check the interconnection of station earthing to main line earthing.	Major		100%	Installation drawing.	Erection protocol.	
	2.13	Check for marking earth pit with resistance value and the completion of masonry work and fixing of cover on pit and identification.	Major		100%			
3.0	PRE-COMMISSIONING.	3.1	Critical	Testing & Physical.	100%	Approved drawing, data sheet & Mfr. Installation manual.	Site Test Report	
		3.2	Critical					
		3.3	Critical					
4.0	COMMISSIONING.	Ensure that all links are connected.	Critical	Measurement.			Commissioning Protocol.	
5.0	Handing Over.	Submission of document dossier.	Critical					

Handwritten signature



The Tata Power Company Limited
Corporate Engineering-Quality Assurance & Inspection.

Date of Issue:
March 2017.

STANDARD FQP FOR EARTHING INSTALLATIONS.

TPQA&I-QAXX-00-EX-SFP-270 REV.0

Sr. No	COMPONENT / OPERATION	CHARACTERISTICS CHECKED	CLASS OF CHECK	TYPE OF CHECK	EXTENT / FREQUENCY OF CHECK	REFERENCE DOCUMENTS / ACCEPTANCE NORM	FORMAT OF RECORD	REMARKS
1	2	3	4	5	6	7	8	9
N O T E		A) STATUTORY REQUIREMENTS WILL BE COMPLIED WITH BY THE CONTRACTOR. B) FOR STAGES WITNESSED / DOCUMENTS REVIEWED BY TATA POWER, COPIES OF RELEVANT DOCUMENTS WILL BE FURNISHED TO TATA POWER. C) TATA POWER / ITS REP. IDENTIFICATION STAMP ON MATERIALS WILL BE PRESERVED / GOT TRANSFERRED BY TATA POWER / ITS REP AT APPROPRIATE STAGES (IF REQUIRED). D) THE EXTENT INDICATED IN COLUMN 6 IS IN CONTRACTOR'S SCOPE.TATA POWER MAY INSPECT AS PER THIS COLUMN OR RANDOM SAMPLES AT ITS DISCRETION. E) COLUMN 7 WILL BE AS PER TATA POWER APPROVED DRAWINGS / DATA SHEETS / CONTRACT DOCUMENTS WHEREVER APPLICABLE. F) INSTRUMENTS FOR LEAK TESTS AND PERFORMANCE TESTS WILL HAVE VALID CALIBRATION CERTIFICATE WITH TRACEABILITY TO NATIONAL LEVEL.						
		This activity required inspection / Verification & acceptance by inspection authority responsible for this stage before further processing is permitted., 24 Hrs advance notice to be given to TATA POWER FQC. Contractor /sub contractor shall not process activity beyond HOLD point without written permission by TATA POWER FQC. This activity shall be performed by Main & Sub- Contractor (Execution + FQC) & witnessed jointly by TATA POWER (Execution + FQC). (Surveillance by Head FQC / Project Head).						
		This activity required inspection / Verification & acceptance by inspection authority responsible for this stage before further processing. 24 Hrs advance notice to be given to TATA POWER (Execution) . Contractor /sub contractor shall not process activity beyond Witness point without written permission by TATA POWER (Execution). This activity shall be performed by Main and Sub- Contractor (Execution + FQC) & witnessed by TATA POWER Execution & Surveillance by FQC.						
		This activity required review of documents by TATA POWER for the compliance & acceptance. However 24 Hrs advance intimation to be given to TATA power (Execution). This activity shall be performed by Main and Sub- Contractor (Execution +FQC). (Surveillance by Execution / Project Head).						
		TATA POWER reserves the right to carryout surveillance at any point of time through FQC.						

STORAGE TYPE:

- TYPE-1: OPEN AREA & ABOVE GROUND ON WOODEN PLANK WITH SLOPE FOR WATER DISPOSITION.
- TYPE-2: OPEN AREA & ABOVE GROUND ON WOODEN PLANK (WITH SLOPE FOR WATER DISPOSITION) AND COVERED WITH TARPAULIN.
- TYPE-3: OPEN SHED WITH FULLY FORMED FLOORING/CEMENT FLOORING.
- TYPE-4: COVERED SHED/STORE ROOM ON RACKS & IDENTIFIED LOCATION.
- TYPE-4A: CLOSED CHAMBER WITH TEMPERATURE & HUMIDITY CONTROL.

NOTE: Items/equipments having shelf life like paints, alumina, desiccant etc. are to be stored separately for identification purpose.

Rev. No	Reason for Revision	Prepared By & Date	Checked By & Date	Approved By & Date	Issued By.
RO	ISSUE FOR USE	SR / 15.03.2017	CB / 15.03.2017	SS	

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THE TATA POWER COMPANY LIMITED

STANDARD
TECHNICAL SPECIFICATION
FOR
Clamps and Connectors

(DOCUMENT NO - ENGG/STD-SPEC/94/20)



Tata Power
Engineering (T&D)

Rev. No	Date	Revision History	Prepared By	Checked By	Approved By (HOD)
A	21.07.2020	Final	PSA	RKS/SVD	AM

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6. Layout Requirements for the equipment
7. Safety Requirements
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9. Technical Parameters of Equipment including data sheet and make list for bought out items.
10. Quality Requirements (including SQP and FQP)
11. Inspection, Testing and Performance Requirements along with Warranty
12. Mandatory Spares
13. Data Submission by Bidder
 - 13.1 With the Bid (including list of key drawings with dates/period which are part of commercial compliance)
 - 13.2 After award of contract

ENGG/ELECT/STD-SPEC/ 94/20 Rev: A Date: 21.07.2020	Standard Specification	Page 3 of 7
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1. Introduction

The document covers the specific requirements for complete design, detailed engineering, manufacture, supply, inspection & testing at Bidder's work, packing, transportation, loading and unloading, delivery to site, storage at site, handling at site, erection, testing, commissioning, performance testing and handing over of Clamps and Connectors.

All equipment, system and services covered under this specification shall comply with all current applicable statutory regulations and safety codes in the locality where the equipment is proposed to be installed. The equipment and systems shall also conform to the latest version of applicable codes and standards on the date of offer made by the Bidder unless otherwise indicated. Nothing in this specification shall be construed to relieve the Bidder of this responsibility

2. Pre-Qualifying Requirements including TTR

Refer attached Annexure 1 - PQR

3. System Description and Scope

The scope includes Engineering, design, manufacture, supply, transport to site, installation of tinned Cu clamps for connection of Lightning Arrestor, Bus Post Insulator, , Isolators, CT, CVT, Line Termination jumpers, Copper / Stranded conductor bus and Cable Sealing end.

It is not the intent of this specification to specify completely herein, all details of design & technical requirements of clamps & connectors. However, the equipment shall conform in all respects to high standards of engineering, design & workmanship.

4. Codes & Standards.

The design, manufacture, performance testing and inspection of equipment shall comply with all currently applicable statutory regulations and safety codes in the locality, where the

ENGG/ELECT/STD-SPEC/ 94/20 Rev: A Date: 21.07.2020	Standard Specification	Page 4 of 7
	Clamps and Connectors	

equipment will be installed. Nothing in this specification shall be construed to relieve the vendor of this responsibility.

IS 5561-1970 or updated version

Unless otherwise specified the equipment shall conform to the latest applicable IS, BS or IEC Standards.

5. Design Requirements

- 5.1. Plain washers should be made of mild steel and spring washers shall be made of Electro galvanized.
- 5.2. All casting shall be free from shrinking, blow holes, surface blisters, cavities and other such defects and quality of clamps should be uniform throughout. All sharp corners should be blurred and rounded off.
- 5.3. Assembly should be designed in such a way so as to have minimum contact resistance.
- 5.4. Fittings offered should be inherently resistant from atmospheric corrosion and suitably protected against corrosion during storage and in service.
- 5.5. All clamps should be with proper locking arrangement to provide less vibration and loosening.
- 5.6. Clamps should be so designed that the post insulator shall not be subjected to abnormal stress due to thermal changes in conductor.
- 5.7. The clamps shall be able to handle continuous current of 1600 amps or as specified in the drawing.
- 5.8. The clamps should be able to withstand temperature rise of 45^o C above the ambient temperature.
- 5.9. All ferrous metal parts intended for outdoor use, except those made of stainless steel, shall be protected by hot dip galvanizing in accordance with IS 2633 – 1964 or latest revision.
- 5.10. The threads of nuts and tapped holes shall be cut after galvanizing and shall be well oiled or greased. All other threads shall be cut before galvanizing.
- 5.11. The design should be such that it should be able to withstand the specified mechanical stresses and carry the rated current without exceeding the specified temperature rise. Minimum factor of safety should be taken as 2.
- 5.12. The connectors shall be indelibly marked with rated current or any identification mark to enable full particulars of the clamp to be supplied.
- 5.13. The following chemical composition should be maintained:

ENGG/ELECT/STD-SPEC/ 94/20 Rev: A Date: 21.07.2020	Standard Specification	Page 5 of 7
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Copper Alloy of following composition:

Sn – 0.6 to 1.5 %

Pb – 2.0 to 2.5 %

Zn – 2.0 to 3.0 %

Fe – 0.5 to 1.0 %

Cu – Balance.

Impurities should not exceed below mentioned limits :

Ni – 0.3 % max

Sb – 0.3 % max

Mn – 0.04 % max

Si – 0.04 %

P – 0.04 %

6. Layout Requirements for the equipment

NA

7. Safety Requirements

NA

8. Operational Requirements

NA

9. Technical Parameters of Equipment including data sheet and make list for bought out items.

S. No.	Description	Unit	Specific Requirements	Bidder's Response
1.0	GENERAL			
1.1	Material		Tinned Copper	
1.2	Copper Alloy of following composition: Sn – 0.6 to 1.5 % Pb – 2.0 to 2.5 % Zn – 2.0 to 3.0 % Fe – 0.5 to 1.0 %			

ENGG/ELECT/STD-SPEC/ 94/20 Rev: A Date: 21.07.2020	Standard Specification	Page 6 of 7
	Clamps and Connectors	

	Cu – Balance			
1.2	Impurities should not exceed below mentioned limits Ni – 0.3 % max Sb – 0.3 % max Mn – 0.04 % max Si – 0.04 % P – 0.04 %		Parallel redundant with Servo Control Voltage stabilizer with Static by-pass	
1.4	Continuous current carrying capacity		1400 A	
1.6	Minimum factor of safety		2	

10. Quality Requirements (including SQP and FQP)

PI refer attached Annexure 3 – Standard Quality Plan for Quality Requirements

11. Inspection, Testing and Performance Requirements along with Warranty

11.1. Inspection and Testing

PI refer attached Annexure 3 – Standard Quality Plan for Inspection and Testing Requirements.

Bidder to carry out all the type tests as per the clause no. 3.3 mentioned in the attached SQP.

11.2. Performance Requirements

11.2.1. The clamps shall be able to handle continuous current of 1400 amps or as specified in the drawings.

11.2.2. The temperature rise while carrying full load current shall not exceed 45°C above site ambient temperature.

11.2.3. Minimum factor of safety should be 2

12. Mandatory Spares

NA

ENGG/ELECT/STD-SPEC/ 94/20 Rev: A Date: 21.07.2020	Standard Specification	Page 7 of 7
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13. Data Submission by Bidder

13.1 With the Bid (including list of key drawings with dates/period which are part of bidder's commercial compliance)

Following drawings and documents shall be prepared based on Owner specifications and statutory requirements and shall be submitted with the bid:

- a. Completely filled in Technical Particulars
- b. General description of the equipment and all components including brochures.
- c. General arrangement
- d. Bill of material
- e. Experience List
- f. Type test certificates

13.2 After award of contract

Sr. No	Descriptions	For Approval	For Review Information	Final submission
1.	Technical parameters	√		√
2.	Cross section Drawing		√	√
3.	QA & QC Plan	√	√	√
4.	Test Certificates	√	√	√

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Assurance
Inspection & Testing



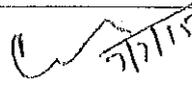
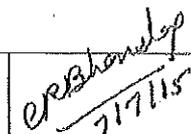
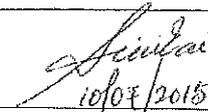
TPQAIT-QAXX-00-EX-SQP-116
REV.0

STANDARD QUALITY PLAN
FOR TRANSMISSION LINE
CLAMPS & CONNECTORS

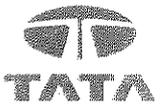
Date of Issue:

13/7/15

Document Title
**STANDARD QUALITY PLAN
FOR
TRANSMISSION LINE CLAMPS & CONNECTORS**

		 7/7/15	 7/7/15	 10/07/2015	13/7/15
0	Initial Submission	RG	CRB (Head QA-I-E)	SS Head (QA&I)	RG
Revision No.	Reason for revision	Prepared By & Date	Checked By & Date	Approved By & Date	Issued by & Date

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TATA POWER		The Tata Power Company Limited Corporate Engineering-Quality Assurance Inspection & Testing			 Date of Issue: 13/12/15		
TPQAIT-QAXX-00-EX-SQP-116 REV.0		STANDARD QUALITY PLAN FOR TRANSMISSION LINE CLAMPS & CONNECTORS					
Sr. No.	COMPONENT / OPERATION	CHARACTERISTICS CHECKED		TYPE / METHOD OF CHECK	Remarks		
1	2	3		4	7		
1	MATERIAL:	(All material shall be as per approved drawing/ data sheet/ Specifications)					
1.1	Aluminium Alloy/ Copper / Cast Iron (as applicable)	i	Mechanical, Chemical & Electrical properties as per relevant Standards & Specifications	MTC Review			
1.2	Hardware (Included Bolt, Nut, Plain	i	Galvanising Test & Mechanical Tests as per relevant Standards & Specifications	MTC Review			
2	INPROCESS INSPECTION: (Generally in line with manufacturer standard)						
3	FINAL INSPECTION - (IS 5561)						
3.1	Routine Tests	i	Visual Checks	Testing and Measurement	100%		
		ii	Dimension Checks				
3.2	Acceptance Test	i	Tensile Strength Test on Assembly	Testing and Measurement	CHP (On sample basis as per IS)		
		ii	Resistance Test				
		iii	Dimension Checks				
		iv	Slip Test (IS 2486 Part 1)				
		v	DP Test (on thinner section of load bearing part)				
		vi	Galvanising Test (if applicable)				
3.3	Type tests	i	Temperature Rise	Testing and Measurement	Review of valid/ approved type test reports during final inspection		
		ii	Short Time Current Test				
4	PACKING, PRE-SHIPMENT & DISPATCH:						
4.1	PACKING	i	Nos. of pieces & Weight.				
		ii	Completeness of accessories & fittings.				
4.2	DISPATCH	Issue of Inspection Release note / MDCC.			CHP		
N O T E	A) ALL MATERIAL SHALL BE AS PER APPROVED DRAWING/ DATA SHEET/ TECHNICAL SPECIFICATIONS.						
	B) STATUTORY REQUIREMENTS WILL BE COMPLIED BY THE CONTRACTOR.						
	C) TATA POWER / ITS REP IDENTIFICATION STAMP ON MATERIALS WILL BE PRESERVED, IF REQD, SAME SHALL BE TRANSFERRED BY TATA POWER / ITS REP ONLY FOR MATERIAL TRACEABILITY.						
	D) FINAL INSPECTION OF THE MAJOR ACTIVITIES ARE WITNESSED BY CLIENT AND IT IS HOLD POINT (AT THE DISCRETION TATA POWER)						
	E) MANUFACTURER SHALL PREPARE AND SUBMIT COMPLETE MANUFACTURING QUALITY PLAN IN PRESCRIBED FORMAT OR THEIR REGULAR FORMAT INDICATING THEIR REGULAR PRACTICES, TAKING CARE OF MINIMUM REQUIREMENT AS INDICATED ABOVE.						
	F) INSPECTION OF THE MAINTAINCE SPARES SHALL BE OFFERED ALONG WITH THE MAIN SUPPLY AS PER THE INSPECTION STAGES OF 1 TO 4.						
	G) CALIBRATION CERTIFICATES OF THE EQUIPMENT USED FOR TESTING SHALL BE PROVIDED FOR REVIEW.						
	H)TATA POWER RESERVES THE RIGHT TO DEMAND / VERIFY/ AUDIT/ WITNESS ANY OF THE CHECK POINTS MENTIONED IN THE SCOPE OF SUPPLIER.						
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13/12/15

TATA POWER

GENERAL REQUIREMENTS OF QUALITY ASSURANCE & INSPECTION

[SHALL BE A PART OF GENERAL TECHNICAL CONDITION]

Document No.: TPQAIT-QAXX-00-GN-QSP-214



Rev 02 Dated 19/05/2017	DP /RP/RG/PU <i>al</i>	SKJ/ RM/CRB <i>SD 19/05/17</i>	SS <i>Singhai 19/05/17</i>
Rev 01 Dated 21/07/2016	SKJ / DP	RG	SS
Rev 00 Dated 21/04/2015	RG / SKJ / PU	SS	SS
Revision no. & Date	Prepared By	Reviewed By	Approved by

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1.0 PURPOSE

Purpose of these requirements is to provide uniform general requirements for implementation of Quality Management System for projects being executed by OWNER.

2.0 SCOPE

2.1 Scope of these requirement covers pre-requisites of the Bidder's/ Supplier's/ Contractor's Quality Management System (QMS) applicable for all phases of contract execution including design, procurement, manufacture, testing, erection and commissioning, applicable other services and further to establish specific factors for which control shall be carried and put into continuing operation by the Bidder/ Supplier /Contractor to ensure that all supplies and services comply with the contract requirements.

2.2 The required/specified reliability & other characteristics of quality should initially be "designed in" and then "built in". It is emphasized that satisfactory product and system performance can be achieved only through strict control of all design, manufacturing and erection/installation processes as well as test and inspection.

2.3 During bid stage itself, BIDDER shall submit requisite documents to demonstrate that as a supplier/ contractor they have well defined and implemented QMS. They shall also establish that their QMS is taking care of their sub-supplier/agencies, and continually improve its effectiveness in accordance with the requirements of their QMS as per ISO 9001, or any other quality standard.

BIDDER shall submit a project specific organization chart defining the permanent positions responsible for QMS accompanied by a brief description of each position's function and responsibility.

3.0 DEFINITION

- **OWNER**

Tata Power or its subsidiaries/ JV partners.

- **Bidder**

An organization/ agency, who propose to submit their offer against RFQ/enquiry floated by OWNER. Only successful bidder will be converted to supplier/ contractor on award of contract by OWNER.

- **Supplier / Contractor**

An organization referred as Supplier/ contractor, who execute the contract awarded by Contracts department of OWNER. It also covers the Agency involved in execution of site/ field activities or provides services (as a contractor) when awarded by Contracts department of OWNER. A Supplier can also be a manufacturer for part of supply for his in-house products.

- **Sub-Supplier/ Sub-vendor**

An organization, who manufactures, supplies the system or equipment or item and provides services to the supplier. It also covers manufacturer who manufactures and supplies the equipment or its components or items to the sub-suppliers to complete the system supply. It

should also cover the agencies which also support execution of main supplier by providing qualified manpower/ services.

- **Third Party Inspection Agency (TPIA)**
An third party organization or any neutral agency mutually agreed, deputed for conducting inspection or quality surveillance activities on case to case basic.
- **Inspection Agency (IA)**
An organization or any agency deputed by OWNER for conducting inspection or quality surveillance activities on behalf of OWNER on case to case basic.
- **Inspection Categorization Plan (ICP)**
This document shall categorize the Quality Plan and Inspection scope of all equipment/ items in the package. This will also include the schedule for submission and approval of all Quality related documents.
- **Standard Quality Plan (SQP)/ Standard Field Quality Plan (SFP)**
SQP shall comprise of minimum basic requirements of all tests/checks to be carried out during manufacturing to meet/ conform technical requirement. SQP may be in the form of Inspection & Test Plan (ITP)/ Technical Specification as part of Bid Document.
Similarly SFP shall comprise of minimum basic requirements of all field tests/checks to be carried out during execution of the project.
- **Manufacturing Quality Plan (MQP)**
MQP shall comprise of all tests/ checks indicated in standard Quality Plan (SQP) and tech specifications. It shall also include any additional quality checks/ tests required as per discussions (pre & post bid) to be followed during manufacturing of particular item/ equipment.
- **Field Quality Plan (FQP)**
FQP shall detail out the activities and steps to be performed at project site and shall be followed from receipt of material to pre-commissioning stage. FQP shall be prepared by contractor and to be submitted to OWNER at post award stage of contract for owner's approval.
- **Hold Point/ Customer hold point (CHP)**
A check point for an activity mentioned in approved MQP/ FQP, which requires inspection/ verification, and acceptance by the OWNER or its representative for this stage before any further work is permitted.
Supplier shall not process beyond a CHP without written acceptance & clearance of that activity by OWNER in writing
- **Witness Point**
A check point for an activity mentioned in the approved MQP/ FQP, which will be witnessed by OWNER or its representative.
Supplier will obtain consent from OWNER to proceed for further work, in case OWNER or its representative is not able to attend the activity within notification period.

- **Review / Verification Point**
A check point for an activity mentioned in the approved MQP/ FQP that requires review of document/ test record by OWNER or its representative performed by the Supplier for acceptance.
- **Test Report Record**
Such reports / record are document prepared by Supplier/ Sub-Supplier for test/ check conducted indicating details / types of test including test results, relevant codes etc.
- **Inspection Report (IRT)**
Such report which covers details of all the checks / activities carried out as per approved MQP. It also covers details of the observations and NCRs during those checks / inspection.
- **Inspection Release Note (IRN)**
IRN is a document issued on standard format after successful quality checks/inspection and confirming to compliances of all observations and NCs if any).
- **Non Conformity Report (NCR)/ Quality Correction Action Report (QCAR)**
It is a report on deviation/ non-compliance with respect to the requirements laid down in the PO/ Technical Specification, MQP, Codes & standards. NCR shall be applicable during inspection at Shop as well during site Audits and QCAR shall be applicable for site inspection / surveillance.

4.0 QUALITY ASSURANCE PROGRAMME

To ensure that the equipment and services under the scope of contract whether manufactured or performed within the Bidder/ Supplier /Contractor's works or at his sub-vendor's premises or at site or at any other place of work are in accordance with the specifications, the Bidder/ Supplier/ Contractor shall adopt suitable project specific QMS based on his organization's Quality Management System, regular practice, statutory requirements and as specified for this specific contract and submit the same for approval of OWNER, to control such activities at all points, as necessary. Such program shall be outlined by the Bidder/ Supplier/ contractor. Any deviation with respect to all above requirements (as specified in SQP, SFP, Technical specification as minimum quality requirements) shall be brought out clearly in the bid stage by bidder.

5.0 SUPPLIER QUALITY MANAGEMENT SYSTEM (QMS)

- 5.1 All materials, components and equipment covered under the contract including bought outs shall be procured, manufactured and tested at all the stages, as per a comprehensive Quality Assurance Programme. It is the Bidder/ Supplier / Contractor's responsibility to draw up and implement such program duly approved by the OWNER.
- 5.2 All items/equipment in the scope of the contract shall be classified into categories according to the criticality or other attributes of items/ equipment. A detailed proposal addressing vendor approvals and quality control of all such items/ equipment shall be proposed to OWNER for approval.
- 5.3 The detailed quality plans for shop manufactured items and for field activities including civil works (if applicable) shall be drawn up by the Bidder/ Supplier / Contractor separately.

All shop quality plans and field quality plans shall be submitted to OWNER for approval prior to start of manufacturing activities and site activities respectively.

- 5.4 Manufacturing quality plans shall detail out various tests/ inspections to be carried out as per the requirement of the specification, standards mentioned therein, quality practices and procedures followed by Supplier's/ his sub vendor's quality control department. MQP shall be prepared by manufacturer and submitted through supplier post award stage of contract for owner's approval. OWNER approved MQP to be referred during manufacturing & shop inspection. Typical format of Manufacturing Quality Plan is enclosed as **Exhibit A**.
- 5.5 Field quality plans shall detail out for all equipment, the quality practices and procedures etc. to be followed by the execution agency, during various stages of site activities right from receipt of materials/ equipment at site to commissioning stage covering receipt, storage, erection & pre-commissioning tests. It shall comprise of all tests / checks indicated in SFP & Technical Specification including any additional quality checks / tests required as per discussions (pre & post bid). It shall also take care of minimum basic requirement of OEM/manufacturer (as the execution agency may not be part of OEM/manufacturer). OWNER approved FQP is to be referred during execution of work. FQP shall have 5 stages: Receipt, Storage, Pre-erection/ pre fabrication, Erection/ Execution and pre commissioning checks with categorization of checks as Critical (Cr), Major (Mj) and Minor (Mn). Typical format of Field Quality Plan is enclosed as **Exhibit B**.
- 5.6 In these approved manufacturing and field quality plans, OWNER shall identify "Customer Hold Points" & "Witness Points". "Customer Hold Points" are test/checks which shall be carried out in presence of the OWNER's Engineer or its authorized representative and beyond which the work shall not proceed without consent of OWNER/ its authorized representative in writing. "Witness Points" are tests/checks which shall be carried out in presence of the OWNER's Engineer or its authorized representative but the work can proceed to next operation/ stage in case OWNER's Engineer doesn't attend on the mutually agreed date. The above procedure shall be applicable to the Bidder/ Supplier / Contractor's bought out equipment/ items also.
- 5.7 All the critical & major items shall be procured from the sub-vendors approved by OWNER by supplier/vendor/contractor. Detailed list of such sub-vendors offered by supplier/vendor/contractor shall be submitted not later than 7 days after the LOI/ Placement of order whichever is earlier and shall be frozen within 15 days of submission. Request for additional sub-vendors shall not be entertained from the Bidder/ Supplier / Contractor after the sub-vendor list is finalized and frozen. Only in case of Force Majeure Condition, Supplier/ contractor shall establish such condition and propose new/ alternative source. Contractor / supplier shall provide requisite documents for consideration of OWNER. OWNER has right to accept/ reject based on review of details. If required, physical assessment shall be made before conveying such decision. Delays arising out of such exercises shall be entirely to the account of Supplier/ Contractor and shall not relieve him from any obligation, duty or responsibility under the contract. For intended manufacturer/ sub-vendors/ sub-suppliers, details to be submitted are indicated below:
- i. Rating, Range / type etc. of equipment/ item for proposed approval.
 - ii. Organisational structure including QA/QC inspection dept with man power & qualification details.
 - iii. In house design / R&D capability.
 - iv. List of sub-vendors for critical/ major bought out items.

- v. In-coming material inspection plan and Manufacturing Quality Plan.
- vi. In house manufacturing facilities, including process flows.
- vii. In house Testing facilities (including Type testing).
- viii. Experience (Past Track Record) list for last 3 yrs for similar product.
- ix. Performance certificates issued by other customers.
- x. Certification of/ by reputed agencies (ISO/ ASME/ CE/ UL/API/ etc) & also approval certificates from other customers etc.
- xi. Quality Manual.
- xii. Assessment report by contractor/ supplier and their own experience.

5.8 **Non Conformance Report (NCR) / Quality Correction Action Report (QCAR)**

Wherever the non-conformity is found during inspection either by Supplier or OWNER or its representatives, NCR / QCAR shall be issued in prescribed format. Manufacturer /Supplier shall indicate the Correction / CAPA and submit these NCRs/QCARs to OWNER or its representative for their review & resolution. Till such time identified item/equipment will be kept under quarantine. Upon satisfactory completion of the rectification work, final acceptance of the item/equipment shall be documented on the NCR/QCAR format.

Supplier has to close all NCR / QCAR in systematic & time bound manner including all corrective and preventive actions. Job shall progress only after effective resolution of NCR / QCAR.

Note: If OWNER observes that any material or equipment is unacceptable with respect to potential safety, reliability, interchangeability or workmanship, OWNER shall issue a non-conformance report NCR / QCAR in this regard to the Supplier/ Contractor. Such NCR/QCAR shall be dealt as above.

- 5.9 No material shall be dispatched from the Bidder's/ Supplier's/ Contractor's /manufacturer's works before the dispatch instruction is given in writing by the owner. subsequent to pre-dispatch inspection including verification of records of all previous tests/ inspections by OWNER/ authorized representative. Any such item/material dispatched by party without clearance from OWNER shall be at suppliers risk & cost only. No IRN/ dispatch clearance shall be issued for the same as post facto.
- 5.10 OWNER or its nominated representative reserves the right to carry out quality audit/ quality surveillance of the systems and procedures of the Bidder/ Supplier/ Contractor's or their sub-vendor's Quality Management System and control activities without prior intimation. The Bidder/ Supplier/ Contractor shall provide all necessary assistance to OWNER or its nominated representative to carry out such audit/ surveillance.
- 5.11 The Bidder/ Supplier/ Contractor shall be responsible for providing, controlling, calibrating, and maintaining the 'measuring & test equipment' required by them for demonstrating compliance of supplies within contract requirements at shop and at site. All the measuring instruments shall be calibrated at periodic intervals determined by Bidder/ Supplier/ Contractor/ sub-vendor on the basis of his suitability, purpose and usage as per the system adopted by him for calibration of such measuring and test equipment. However, in no case, shall the interval between successive calibrations be more than 12 months. All measuring and test instruments shall have valid calibration certificates and calibration data shall be made available to OWNER or its nominated representative on demand.

- 5.12 Quality surveillance/ approval of the results of the tests and inspection shall not, however, prejudice the right of the OWNER to reject the equipment if it does not comply with the specification when erected or does not give complete satisfaction in service and the above shall in no way limit the liabilities and responsibilities of the Bidder/ Supplier / Contractor in ensuring complete conformance of the materials/ equipment supplied to relevant specification, standard, data sheets, drawings etc.
- 5.13 For all spares and replacement items, the quality requirements as agreed for the main equipment supply shall be applicable. Inspection of all mandatory spares and commissioning spares shall be in line with the approved MQP of respective equipment/ item. Interchangeability Certificate shall also be part of quality records for all spares.
- 5.14 **Statutory Inspection**
Supplier to ensure that Equipment/ items which fall under statutory requirements of country where the equipment will be installed, shall be inspected by statutory authority like IBR etc. In case of imported items, statutory inspection will be carried out by the agency as nominated by Statutory Authority or Statutory authority of the country of origin. Original certificates endorsed by statutory authorities shall be submitted to project manager as identified in the contract.
Such items shall also be offered to OWNER for inspection irrespective of country of origin.
- 5.15 **Failure to Pass Tests**
If any item/ equipment fail to pass any test, the Bidder/ Supplier shall rectify or replace the same and, unless OWNER agrees to dispense with repetition of the test, shall repeat the test following a further notice. The cost and expense of any such retest shall be fully borne by the Bidder/ Supplier only.
- 5.16 Major repair/rectification procedures to be adopted to make the job acceptable shall be subject to the approval of the OWNER/ its authorized representative.
- 5.17 All tests shall be carried out to the satisfaction of the OWNER/ its authorized representative either in their presence or as agreed by OWNER. All reports/ protocols, site and shop inspection reports shall be developed specific to the requirements of the project which is acceptable to OWNER. The same shall be applicable to erection testing and pre-commissioning reports and protocols also.
- Only tested, inspected and accepted (by owner) material as listed in PO / ICP shall be dispatched to project site.** Any diversion of such accepted material without any prior approval shall be considered as deviation/ breach of contract and a minimum penalty of 5 times the cost of inspection will be levied.
- 5.18 Approval of any concession shall be the prerogative of the OWNER and approval of concession for a particular case shall not be set as a precedent.

- 5.19 All the equipment shall be of proven design and type tested. Valid type test reports shall be furnished to engineering for review and acceptance prior to offering equipment for inspection.
- 5.20 All documents/ reports/ records shall be issued either in English language or bilingual with English.

6.0 INSPECTION CATEGORIZATION PLAN, WELDING & NDT REQUIREMENT

6.1 Inspection Categorization Plan (ICP)

This document shall be prepared by supplier and to be submitted to OWNER for approval in attached standard format for all package items within 15 days of award of contract.

The schedule shall be prepared considering that all MQP should be approved at-least 15 days prior to start of any manufacturing activity and FQP with related procedures shall be finalized at least 15 days prior to dispatch schedule/ site mobilization.

ICP, MQP, FQP and related procedures shall form part of Master Drawing List (MDL)

All the items/equipment in the scope of the contract shall be classified into categories (A/ B/ C) according to the criticality or other attributes of items / equipment. A detailed proposal addressing vendor approvals and quality control of all such items /equipment shall be proposed to OWNER by the Supplier/ Contractor for approval.

Category “A”: Manufacturing Quality Plan (MQP) shall be approved by TATA POWER. Stage &/ or Final Inspection including document review by EPC Contractor and TATA POWER (or its appointed Inspection Agency) as per approved MQP.

Category “B”: Manufacturing Quality Plan (MQP) shall be approved by Tata Power. Stage &/ or Final Inspection including document review by EPC contractor or Tata Power (in case no EPC Contractor) as per approved MQP. Inspection report of EPC contractor/ Supplier with supporting documents review by Tata Power.

Category “C”: Supplier shall carry out inspection as per their regular practice/ standard manufacturing quality plan. Supplier shall submit test report and COC to EPC Contractor/ Tata Power for approval/acceptance. COC shall be in standard format of Tata Power.

6.2 Welding & Non-Destructive Testing (applicable for shop as well project site)

- 6.2.1 Bidder / Supplier/ Contractor shall submit the following documents in requisite copies for review and approval of OWNER/ its authorized representative at least FOUR weeks prior to commencing fabrication/ manufacturing and finalize before start of job. All such submissions shall be made in ENGLISH language only.
- i. Welding procedures together with the relevant procedure qualification records.
 - ii. Non-destructive testing procedures.
 - iii. Heat treatment procedures.
 - iv. Any other special procedure (as applicable) proposed to be used during project execution
- Welding procedures and welders’ qualifications in accordance with the latest revision of ASME Boiler & Pressure Vessels Code, Section IX, (structural welding as per AWS D1.1)

- or equivalent standard covering all essential & non- essential variables shall be acceptable to OWNER.
- 6.2.2 Only qualified welders shall be deployed. Welders shall be qualified as per approved WPS in presence of OWNER/ its authorized representative. Electrode/ welding rod used at project site shall be of owners approved. Supplier/ Contractor shall take prior approval.
- 6.2.3 Weld repair procedures are subject to approval of the OWNER. No welding is permitted on C.I. Castings. OWNER reserves the right to examine and witness acceptance tests, prior to and following weld repairs and subsequent post weld heat treatment, mechanical tests etc, at the material manufacturer/ Supplier works.
- 6.2.4 Should any of these welds prove to be defective on inspection, the number of welds to be tested in that system shall be twice that of originally selected. Should any of the second incremental welds prove to be defective, then 100 % of the welds in that system/ group shall be tested.
- 6.2.5 NDT operators shall be qualified in accordance with an agreed nationally accredited scheme such as the Personnel Certification in Non-destructive testing (PCN) scheme and shall be certified to level II or higher of that system.
- 6.2.6 Plate thickness $\geq 32\text{mm}$ (for structure), Plate thickness $\geq 25\text{mm}$ (for pressure vessel), Forging / Bar dia. $\geq 40\text{mm}$ (finished) shall be UT tested.

7.0 INSPECTION AT SHOP

7.1 Inspection Scope

The scope of inspection shall be as per Witness/ Hold Point as defined in approved MQP/ SQP. Supplier has to ensure that all applicable and agreed approved Drawings, Data Sheet etc. are available for any inspection and equipment used for measurement are calibrated. Supplier shall intimate all such cases in advance (as inspection rolling plan) and also through inspection call as per contract agreement.

7.2 Inspection Coordination

Supplier has to identify single point contact for coordination of the entire inspection activities on behalf of Supplier/ sub-supplier. Supplier to ensure that monthly and 3 monthly rolling inspection plan are prepared and submitted in advance to OWNER by 1st working day of each month for effective inspection coordination.

7.3 Inspection Request

7.3.1 Depending upon the stages of inspection as agreed in manufacturing quality plan, supplier to send Inspection Requests (in OWNER standard format & through system) to OWNER Project Manager for inspection activities to be attended at supplier's / sub-supplier's premises. Supplier to submit all relevant approved reference documents (MQP, Drawings/ Data Sheet etc.) along with inspection request. Supplier has to give sufficient advance notice, as defined below for inspection of any stage. The date of receipt of inspection call by OWNER will hold good.

7.3.2 The minimum advance notice period for inspection shall be given below:

- i. Inspection within INDIA : 7 Days
- ii. Overseas (Outside India) Inspection : 30 Days

Supplier to strictly adhere the above mentioned minimum advance notice period.

7.3.3 Supplier shall plan the inspection visits required in a manner so as to achieve maximum inspection stages attended with minimum possible inspection visits/ time where-in more than one external inspection agencies are involved for single inspection activity, inspection by all agencies may be done concurrently.

7.4 Inspection Methodology

7.4.1 Suppliers shall ensure internal inspection before offering inspection to OWNER or its representative. Internal test certificates and previous stage inspection reports to be made available during inspection.

7.4.2 During inspection, Supplier to produce copies of the latest revision of the approved MQP along with drawings, Data Sheet, Standard and accepted type test reports as indicated in approved MQP / agreement to ensure that the inspection is carried out as per the latest revision and approved documents. **If required, Supplier to arrange the necessary codes and standards for reference purposes.**

In case inspection cannot be completed or undertaken due to reasons such as non-readiness of material, back up documents, false inspection call etc. then such reason shall be recorded in Inspection Report. **If Supplier fails to offer the item / equipment for inspection as per the agreed date, he is liable to pay for the time and expenses for the abortive visit of the OWNER or its representative.**

7.4.3 All inspection related documents i.e. mill test reports, Supplier inspection/ tests reports, all inspection/ tests carried out including other records such as stress relieving charts, radiographic reports and other non-destructive testing records in accordance with provision of contract shall be submitted in original form. All such reports shall be duly endorsed/ certified by the main supplier.

7.4.4 Results of Tests and copies of Inspection Report, Test reports, original material test certificates (MTCs), calculations, performance curves etc. shall be promptly made available to the OWNER or its appointed representative by the Supplier, in accordance with this document and shall form part of the subsequent Manufacturers Test Record Book in accordance with the requirements of this document.

7.4.5 Supplier to ensure that all the materials are properly identified/ coded to confirm traceability and correlation purposes.

7.4.6 Supplier shall take special care including packing to protect the final painting and finish product (equipment / item) during handling, transportation, storage and execution stage so that there is no damage occur. In case of any such damage, joint inspection to be carried out at site and necessary action to be taken.

7.4.7 Supplier to ensure finish product is properly identified after completion of inspection and are suitably recorded in Inspection Report by inspection engineer.

7.5 **Inspection Report & Clearance**

7.5.1 **Inspection Report (IRT)**

All inspection visits by OWNER or its appointed agency shall be supported by an inspection report as per the standard format (sample enclosed). Any shortcoming observed w.r.t. approved MQP/ Drawing/ Data Sheet / specification etc. shall be recorded as NCR. IRT shall have detail references of all such NCRs. All such inspection report / NCR shall be jointly signed by supplier and Inspection Engineer. IRT shall be issued to all concern including Supplier and Sub-supplier/ Manufacturer.

7.5.2 **Inspection Release Note (IRN)**

IRN shall be issued only after satisfactory completion of Inspection by OWNER as defined below IRN shall be issued by Tata Power (QA&I dept) thru system in the standard format as closure of particular inspection.

IRN for Category 'A' item (as defined in ICP) shall be issued only after ensuring inspected Equipment / Item meets the requirements of the applicable documents and all NCs have been closed to the satisfaction of Owner. IRN shall be issued in the standard format as closure of particular inspection.

Similarly for Category 'B' items (as defined in ICP) IRN shall be issued after review of inspection report, compliance report and required applicable documents as per approved MQP & Closure of NCs if any are verified and accepted to the satisfaction of Tata Power.

For Category 'C' items (as defined in ICP), IRN shall be issued after review of original manufacturer test certificates, Certificate of Conformance (CoC) from supplier/contractor in Tata Power standard format and required applicable documents as per MQP approved by main supplier / as per their standard procedure are verified and accepted

7.6 **Material Dispatch Clearance Certificate (MDCC)**

Supplier shall obtain dispatch clearance (MDCC) from Project / Plant based on IRN prior to dispatch of any billable material / equipment/ item from manufacturer place to our project site / plant. One set of Quality Dossier (hard copy) for which MDCC has been issued, shall be sent to project site along with material / equipment/ item.

MDCC is not required for material / equipment/ item/ Part supply which are dispatched from one sub-supplier works to another sub-supplier/ supplier works for further assembly and testing (to make it billable). However, clearance in the form of Inspection Report (IRT) is needed in this regard.

8.0 **QUALITY DOSSIER (FOR SUPPLY PORTION) [Package wise]**

Supplier shall compile and submit all stage and final inspection reports as per approved MQP, duly reviewed and endorsed by inspection engineer for reference and records of OWNER. Documents shall be submitted with-in 4 weeks of issuance of final MDCC

Dossier shall consist of following documents, as minimum:

- i. Index Sheet
- ii. Approved bill of material of package.

- iii. All Approved documents (MQP, Drawings & Data Sheet etc.)
- iv. MDCC, IRN & IRT along with all closed NCR of all items.
- v. Factory Acceptance Test (FAT) reports.
- vi. Raw material and bought out item MTC's
- vii. Test Reports corresponding to IRT & MQP.
- viii. Supplier internal inspection reports as per MQP.
- ix. Copy of Statutory and IBR certificates as applicable.

Note:

- 1. Each package compilation shall be done on the basis of unit wise and common systems.
- 2. Each volume/ dossier shall be spiral/ hard bounded. Each sheet of dossier to have running numbers.
- 3. One hard copy (in addition to the dossier dispatch with material / equipment/ item) and 2 Soft copies of documents to be submitted as final dossier.

9.0 FQC DURING CONSTRUCTION AND PRE-COMMISSIONING.

- 9.1 Supplier Quality Management System is applicable for field activities also and for his further sub agencies deputed at project / plant. Refer clause no: 5.0 (applicable part). Supplier/ Contractor shall deploy sufficient no of QA/ QC persons to take care of daily activities as per agreed/ approved Quality documents. Some of such activities are detailed below. Also QA/ QC head shall regularly co-ordinate with OWNERs FQC team.
- 9.2 Raising of inspection calls on regular basis for various activities as indicated in approved FQP/ other document, carrying out inspection activities along with OWNER's execution / FQC department and maintaining the records duly signed by all concerned.
- 9.3 Various inspection/ quality assurance procedures/ methods at different stages of erection and pre-commissioning will be as per OWNERs approved field quality plans/ codes/ IBR and other statutory provisions and as per OWNER's engineer's instructions.
- 9.4 Preparation of quality assurance log sheets and protocols, welding logs, NDE and post weld heat treatment records, testing & calibration records and other quality assurance documentation as per OWNER's engineer's instructions is within the scope of work/ specification. These records shall be submitted to OWNER for approval from time to time.
- 9.5 A daily logbook of all measurements and testing/ calibration should be maintained by contractor on the job inspection details for various equipment.
- 9.6 All the workers of contractor / sub contractor/it's agencies shall carry identity cards as per the Performa prescribed by OWNER. Only workers duly authorized by OWNER shall be engaged on the work.
- 9.7 Contractor shall provide all the measuring and monitoring devices (MMD) required for completion of the work satisfactorily. These MMDs shall be calibrated & conform to job requirement in respect of measurement range, accuracy level & any other specification.

- 9.8 Re-work necessitated on account of use of invalid MMD shall be entirely to the contractor's account. Contractor shall be responsible to take all corrective actions, including resource augmentation if any, as specified by OWNER to make-up for the loss of time.

OWNER's FQC team / QAI representative will have the right to carry out Surveillance Audit of supplier/contractor and their agencies including their store without any prior intimation.

- 9.9 Regular Internal audit shall be conducted by supplier/ contractor QA/QC team of their agencies and their other dept. Such audit reports shall be made available whenever ask for by OWNER FQC team. OWNERs FQC/ QA&I have the right to carryout 2nd party audit of supplier/ contractor and their agencies as per predefined Audit schedule.

In course of work OWNER may counter/ finally check the measurements with their own MMDs. Contractor shall render all assistance in conduct of such counter check/ final measurements.

9.10 **Communication**

Direct, formal communication between the SUPPLIER's field QC and OWNER's field QC representative is mandatory. All inspection activities as per field quality plan shall be intimated to OWNER in the form of Request for Inspection (RFI) at least 24 hrs. in advance with intimation to OWNER execution group.

Whenever any major issues / deviations related to design or fabrications are noticed, the same shall be immediately informed to OWNER's field QC by supplier's field QC/ Supplier Project Head. On completion of above activity, joint inspection reports/ protocol shall be made and circulated to concern agencies. Any part of work at the site shall not be **covered up or made inaccessible** without the OWNER Representative's prior approval in the form of joint protocol or otherwise.

SUPPLIER/ Contractor's in-progress inspection reports, log book, follow up/ punch out sheets; records of all DT & NDT etc. shall be made available to OWNER field QC during the course of the work. At the end of the work, SUPPLIER/ Contractor's standard inspection reports, check off sheets, radiographs, master copy of loop diagrams, electrical testing data sheets, etc. shall be handed over to OWNER in an organized and agreed format. SUPPLIER/ Contractor shall verify that all of the required documentation of the equipment has been received and placed in the equipment files. The SUPPLIER/ Contractor is responsible for obtaining any outstanding documentation from his sub-supplier/ agencies.

9.11 **Dealing with open Punch Points NCR/QCAR:**

All open points in the form of observations, non-conformities (NCR, QCAR etc.) that are not responded / closed in time as well as, those were not put up by supplier/ Contractor for resolution/ agreement to OWNER, the same will be considered as violation of contractual obligations and will be dealt suitably during closure of contract. Penalty clauses (if any) shall be applicable as per contract.

Supplier/ Contractor's Performance rating will be impacted as per prevailing policy of OWNER in this regard.

10.0 ATTACHMENT

1. Exhibit A – MQP Format
2. Exhibit B – FQP Format
3. Exhibit C – Shop Inspection Request Format
4. Exhibit D – ICP Format
5. Exhibit E – IRN Format
6. Exhibit F – Suggested MDCC Format
7. Exhibit G – RFI Format (For Site Inspection Request)
8. Exhibit H – NCR Format
9. Exhibit I – QCAR Format
10. Exhibit J – Weekly Progress Report format

Exhibit - A

Supplier Logo	THE TATA POWER COMPANY LIMITED	 TATA TATA POWER Document No Page 1 of 1
Supplier Document No	PROJECT NAME Supplier Name & Address	

Document Title: MANUFACTURING QUALITY PLAN (MQP)

Document No:

Consultant:

EPC Contractor:

Manufacturer Name & Address:

R1					
R0					
Revision	Date	Reason for Revision	Prepared By	Checked By	Approved By



Supplier Logo	Manufacturing Quality Plan for					Document No. <i>(As given by PDM, Tata Power)</i>		
Supplier Document No	Manufacturer Name & Address					Date & Revision		
PACKAGE NAME						Page .. of		
SR. NO.	COMPONENT Description / Activity	CHARACTERISTICS	TYPE OF CHECK	EXTENT OF CHECK	REF. DOCUMENT / ACCEPTANCE NORM	FORMAT OF RECORD	AGENCY	REMARKS
1	2	3	4	5	6	7	M S/C O	9
	1.0 MATERIAL:						P R R	
	2.0 IN-PROCESS INSPECTION:							
	3.0 FINAL INSPECTION:							
	4.0 ISSUANCE OF IRN (BY REVIEWING OF QUALITY DOSSIER)							
<p>N O T E</p> <p>a). Statutory requirements will be complied by the contractor/ Supplier.</p> <p>b). Material samples drawn for check testing will be witnessed by TATA POWER or its representative.</p> <p>c). For stage inspections, copies of relevant documents will be furnished to TATA POWER for review.</p> <p>e). The extent of check for manufacturer shall be 100%.</p> <p>f). Column 6 will be as per TATA POWER approved drawings / data sheets / contract documents wherever applicable.</p> <p>g). All instruments shall have valid calibration certificate with traceability to national level.</p>								
<p>Legends: M – Manufacturer, S – Supplier C – EPC Contractor, O – Owner (Tata Power), P – Perform, W – Witness, R – Documents Review, H – Hold point, Rw (%) – Random Witness</p>								

Exhibit - B

	TATA POWER CO. LTD. (QA, I & T DEPARTMENT)	DIVISION:
	FIELD QUALITY PLAN	Document No. :-
		Rev : Date :

Document Title: FIELD QUALITY PLAN (FQP)

Document No:

Consultant:

EPC Contractor:

Contractor's Name & Address:

Rev No.	Date	Reason for Revision	Approvals		
			Prepared By	Checked By	Approved By





Doc. No.:

STANDARD FQP FOR

Date of Issue:

Sr. No	COMPONENT / OPERATION	CHARACTERISTICS CHECKED	CLASS OF CHECK	TYPE OF CHECK	EXTENT / FREQUENCY OF CHECK	REFERENCE DOCUMENTS / ACCEPTANCE NORM	FORMAT OF RECORD	REMARKS
1	2	3	4	5	6	7	8	9
<p>N O T E</p> <p>A) STATUTORY REQUIREMENTS WILL BE COMPLIED WITH BY THE CONTRACTOR. B) FOR STAGES WITNESSED / DOCUMENTS REVIEWED BY TATA POWER, COPIES OF RELEVANT DOCUMENTS WILL BE FURNISHED TO TATA POWER. C) TATA POWER / ITS REP. IDENTIFICATION STAMP ON MATERIALS WILL BE PRESERVED / GOT TRANSFERRED BY TATA POWER / ITS REP AT APPROPRIATE STAGES. (IF REQUIRED). D) THE EXTENT INDICATED IN COLUMN 6 IS IN CONTRACTOR'S SCOPE. TATA POWER MAY INSPECT AS PER THIS COLUMN OR RANDOM SAMPLES AT ITS DISCRETION. E) COLUMN 7 WILL BE AS PER TATA POWER APPROVED DRAWINGS / DATA SHEETS / CONTRACT DOCUMENTS WHEREVER APPLICABLE F) INSTRUMENTS FOR LEAK TESTS AND PERFORMANCE TESTS WILL HAVE VALID CALIBRATION CERTIFICATE WITH TRACEABILITY TO NATIONAL LEVEL.</p>								
<p>Critical Category is HOLD point.</p> <p>This activity required inspection / Verification & acceptance by inspection authority responsible for this stage before further processing is permitted., 24 Hrs advance notice to be given to TATA POWER FQC. Contractor /sub contractor shall not process activity beyond HOLD point without written permission by TATA POWER FQC. (Surveillance by Head FQC / Project Head).</p>								
<p>Major Category is Witness point.</p> <p>This activity required inspection / Verification & acceptance by inspection authority responsible for this stage before further processing. 24 Hrs advance notice to be given to TATA POWER (Execution) . Contractor /sub contractor shall not process activity beyond Witness point without written permission by TATA POWER (Execution). This activity shall be performed by Main and Sub- Contractor (Execution + FQC) & witnessed by TATA POWER Execution & Surveillance by FQC.</p>								
<p>Minor Category is Review point.</p> <p>This activity required review of documents by TATA POWER for the compliance & acceptance. However 24 Hrs advance intimation to be given to TATA power (Execution). This activity shall be performed by Main and Sub- Contractor (Execution +FQC) . (Surveillance by Execution / Project Head).</p>								
<p>TATA POWER reserves the right to carryout surveillance at any point of time through FQC.</p>								



Doc. No.:

STANDARD FQP FOR

Date of Issue:

Sr. No	COMPONENT / OPERATION	CHARACTERISTICS CHECKED	CLASS OF CHECK	TYPE OF CHECK	EXTENT / FREQUENCY OF CHECK	REFERENCE DOCUMENTS / ACCEPTANCE NORM	FORMAT OF RECORD	REMARKS
1	2	3	4	5	6	7	8	9

STORAGE TYPE:

TYPE-1: OPEN AREA & ABOVE GROUND ON WOODEN PLANK WITH SLOPE FOR WATER DISPOSITION.

TYPE-2: OPEN AREA & ABOVE GROUND ON WOODEN PLANK (WITH SLOPE FOR WATER DISPOSITION) AND COVERED WITH TARPAULIN.

TYPE-3: OPEN SHED WITH FULLY FORMED FLOORING/CEMENT FLOORING.

TYPE-4: COVERED SHED/STORE ROOM ON RACKS & IDENTIFIED LOCATION.

TYPE-4A: CLOSED CHAMBER WITH TEMPERATURE & HUMIDITY CONTROL.

NOTE: Items/equipments having shelf life like paints, alumina, desiccant etc. are to be stored seperately for identification purpose.

Rev. No	Reason for Revision	Prepared By & Date	Checked By & Date	Approved By & Date	Issued By.
R0	ISSUE FOR USE				

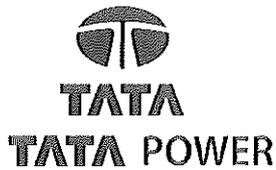
Confidential and Proprietary – The Tata Power Company Limited

Exhibit - C

Tata Power QA&I

Request No:

Date:



Corporate Engineering – QA&I

Factory Inspection Request Format

Project Name:	
Main Supplier	
Package Name:	
Tata Power P. O. / LOI No.	Date
Item / Equipment offered for inspection:	
Inspection Category:	A / B / C
Sub-supplier (Manufacturer) name & PO Number:	
Type of Inspection: (Please mention the stage number of MQP which will be completed during this inspection)	Stage / Final
Proposed Date of Inspection:	
Place of Inspection: (Please give completed address where material will be inspected, attach route map if required)	
Contact Person for this Inspection along with Mobile No.:	
MQP Doc. No. : Rev. No.: MQP Approval Status:	Yes / No
Inspection Reference Document No: (Drawing/ Data Sheet etc.) approval status	Yes / No
Tata Power PO Item numbers / Billing Breakup No./ Tag No. (as applicable) and quantity to be inspected: (Please attach separate list if necessary)	
Current Manufacturing Status (in brief) of item / equipment being offered in this Inspection:	

We hereby confirm that the items have been fully inspected / tested by us, all stages of inspection as per approved MQP have been done and all material test certificates, Q.C. records, approved Drawing / Data Sheet, test reports and valid calibration reports of measuring / testing instruments with traceability are ready with us.

(Signature)

[Name & Designation of Contractor's Representative]

Supplier Logo Supplier Document No.	THE TATA POWER COMPANY LIMITED	 TATA TATA POWER Document No Page 1 of 1
	PROJECT NAME	
	Supplier Name & Address	
	ICP - PACKAGE NAME	

Document Title: INSPECTION CATEGOROZATION PLAN (ICP)

Document No:

Consultant:

EPC Contractor:

Supplier:

R1					
R0					
Revision	Date	Reason for Revision	Prepared By	Checked By	Approved By

Document No: Given as per procedure of Tata Power



Supplier Logo Supplier Document No.	THE TATA POWER COMPANY LIMITED	 TATA TATA POWER Document No Page 1 of 1
	PROJECT NAME	
	Supplier Name & Address	
	ICP - PACKAGE NAME	

Sl. No.	Item Description	Imported / Domestic	Manufacturing / Bought Out	Manufacturing Quality Plan No. (No. given as per TATA Power Procedure)	Inspection Category	First Schedule Submission Date*	Final Approval Date*
1	Example: PUMP				A / B / C		
2							
3							
4							
5							
6							

*Dates indicated are for monitoring purposes of Tata Power Quality Team.

Category "A"	Definition: Manufacturing Quality Plan (MQP) shall be approved by TATA POWER. Stage &/ or Final Inspection including document review by EPC Contractor and TATA POWER (or its appointed Inspection Agency) as per approved MQP.
Category "B"	Definition: Manufacturing Quality Plan (MQP) shall be approved by Tata Power. Stage &/ or Final Inspection including document review by EPC contractor or Tata Power (in case no EPC Contractor) as per approved MQP. Inspection report of EPC contractor/ Supplier with supporting documents review by Tata Power.
Category "C"	Definition: Supplier shall carry out inspection as per their regular practice/ standard manufacturing quality plan. Supplier shall submit test report and COC to EPC Contractor/ Tata Power. COC shall be in standard format of Tata Power.
Note:	<ol style="list-style-type: none"> Any item which is not appearing in above list, however, identified during detailed engineer, same need to be categorized as above. If supplier is not able to submit test report for any Category "C" item, same needs to be finalize during ICP approval.

Document No: Given as per procedure of Tata Power





THE TATA POWER COMPANY LIMITED

MATERIAL DISPATCH CLEARANCE CERTIFICATE

TATA POWER

MDCC REFERENCE:			DATE:		
PROJECT					
P.O. REF.					
PACKAGE			QAI&T "Clearance For MDCC" REF No.		
SUPPLIER			SUB-SUPPLIER		

Dispatch clearance is hereby given for following equipment/ items:

Sr. No	PO Item No./ BBU	Item Description	Unit	Quantity	Identification/ S. No./ Remarks

PACKING AND DISPATCH INSTRUCTIONS			SUBMIT FOLLOWING TO TATA POWER		
1	Complete assembly with drive, base plate, accessories etc.	1	Quality Dossier	7	As built drawings.
2	Protect machined surfaces against corrosion.	2	Erection, O&M manual.	8	Calibration reports.
3	Blank nozzles and other openings.	3	T.C. for performance / leak tightness / balancing.		
4	Complete painting, affix name plates, tag no., sr. no., etc.	4	Performance calculations, curves.		
5	Pack to prevent damage/ deterioration in handling, transit & storage	5	Guarantee certificates.	9	Dispatch details.
6	Paint dispatch markings and weight.	6	Manufacturing Test Records/ Test Certificates/ COC		

(Please tick above Packing & Dispatch instructions and Documents Requirements as applicable)

Special Dispatch Instructions (If any):

	Prepared By:	Approved By:
Signature		
Name		
Designation		
Date		

NOTES:

- Acceptance / release of the above items is without prejudice to the terms and conditions of the contract and does not relieve the CONTRACTOR/ SUPPLIER of his guarantees and responsibilities to supply the items in accordance with the specifications, approved drawings, data sheets and other relevant contract documents / conditions.
- CONTRACTOR/ SUPPLIER shall comply with the packing and dispatch instructions and documentation requirements given above.

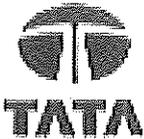
	Field Inspection Requisition		Requisition No.:
	Project :		Date:
	Name of package & Unit No:		
	Agency:		
	Sub Agency:		
INSPECTION/ TEST REQUISITION DETAILS			
1. FQP No. with Rev. & Category of Approval			
2. Test reference of FQP			
3. Category of Test nas per FQP			
4. Applicable Drawing No. with Rev:			
5. Location			
Date and time for inspection / test			
7. Open QCAR/NCR No. (if any) & date against this item/equipment			
It is hereby certified that all previous tests / checks are cleared and no QCAR other than above is pending against this item / equipment			
(Signature) Agency Representative		(Signature) OWNER (Execution)	
8. Post Inspection/ Test (Joint Protocol) : ACCEPTED / NOT ACCEPTED / ACCEPTED WITH CONDITION			
Brief Description:			
(Signature) Agency Representative	(Signature) OWNER (Execution)	(Signature) OWNER (FQC)	



	TATA POWER COMPANY LIMITED	Corporate Engineering - QAIT
	Non Conformity Report	NCR No: Date
Project / Plant:		
Tata Power PO No.		Package/Equipment:
Supplier:		Location:
Inspection Report Reference:		Date of issuance of NCR:
Reference Documents: (QA Manuals, Specification, Procedure, Drawing, etc.)		
Requirements as per approved documents, codes and standards:		
Details of NC (Provide complete description, i.e. what, where, how many , item no. etc):		
Root Cause Analysis:		
Corrective Action Proposed:		Preventive Action Proposed:
Supplier Representative Sign. / Date		Tata Power / TPIA Representative Sign. / Date
Engineering Review & Approval for proposed corrective action:		
Engg. Representative Sign. / Date		
Corrective Action Taken:		
Supplier Representative Sign. / Date		
Verification of Correction Action:		
Tata Power / TPIA Representative Sign. / Date		



Exhibit - I

	TATA POWER COMPANY LIMITED	Corporate Engineering-QAI&T
	Quality Corrective Action Report (QCAR)	Doc No.: QAI & T /QCAR Rev.0 Date : 10/09/12

Project / Plant:		Report No.:	
Supplier/Package/Equipment:		EPC Contractor:	
Date of observation:		Date of issuance of QCAR:	
Discipline: Mechanical		Mechanical/Electrical /Civil/C&I: Civil (Structural Work's)	
From		Email ID	
To		Email ID	

Quality Observations :

Supplier Sign /Date & Time	EPC Contractor Sign /Date & Time		TATA POWER COMPANY LTD	
	Construction Rep	QA/QC Rep	Construction Rep	QC Rep.

Root Cause Analysis :

Corrective Action Proposed :	Preventive Action Proposed :

Supplier Sign /Date & Time	EPC Contractor Sign /Date & Time		TATA POWER COMPANY LTD	
	Construction Rep	QA/QC Rep	Construction Rep.	QC Rep.

Engineering Review & Approval for proposed corrective action: (Applicable: YES/NO)

Tata Power Engg. Rep.
Sign. / Date & Time

Corrective Action Taken:

Supplier Sign /Date & Time	EPC Contractor Sign /Date & Time		TATA POWER COMPANY LTD	
	Construction Rep	QA/QC Rep	Construction Rep.	QC Rep.

Verification of Correction & Preventive Action:

Tata Power Head- Construction.
Sign. / Date & Time

Tata Power Head- QC
Sign. / Date & Time

Copy to HOD -QAI&T, Mumbai.





Name of the Project
FQC Team

Weekly Field Quality Report (00/00/2015 - 00/00/2015)

FIELD QUALITY REPORT (CIVIL/ MECH./ELECT.)

A. FIELD INSPECTIONS

Sl. No.	Contractor/ Dept.	Work Area	FQ Activity/Test	UOM	Recd.	Acc.	Rep/Rej	Hold	Observations/Remarks

B. RA BILLS / GRN CLEARANCES

Sl. No.	Contractor/ Dept.	Package	Description	UOM	Recd.	Acc.	Rep/Rej	Hold	Observations/Remarks

C. QCAR'S RAISED / AUDIT / DELTAS

Sl. No.	Contractor/ Dept.	Package	Description	Date	Observations/Remarks

D. MEETINGS - INTERNAL AND WITH CONTRACTORS

Sl. No.	Contractor/ Dept.	Package	Date of meeting	Description

E. AREAS OF CONCERN

Sl. No.	Contractor/ Dept.	Package	Description

F. OTHER ACTIVITIES

Sl. No.	Contractor/ Dept.	Package	Description

Note: Areas of concern/highlights shall also include long pending and critical non-conformities.

Job No/ICS/XX/YY Rev 0 Date: 28/06/2021		Interconnecting Cable Schedule												
BPCL DT8 & 9														
Sr. No.	Cable No.	Cable Size	Length	Purpose		Emanating from			Colour Code/ core no.	Terminating at			Ferrule at prewired end	Remarks
				Cable description	Details	Equipmen t (Panel No)	Terminal Block	Terminal No		Equipme nt (Panel No)	Terminal Block	Terminal No		
PROTECTION ICS (KEEP UNUSED BCT CORES SHORTED AND GROUNDED IN MB)														
1	1	4Cx6 Sq.mm	200	BCT: 22KV 64REF	CT-S2	TRF MB	X2	62	RED	1R2B	TB1	6	TRF MB-X2-62-(33KV REF)--1R2B-TB1-6	Loop X2- 63, 71, 79, 87 Loop X2 - 62, 70, 78, 86 For High impedance REF
				CT-S1	63			BLACK	7			TRF MB-X2-63-(33KV REF)--1R2B-TB1-7		
2	2	4Cx6 Sq.mm	200	NCT: 22KV 51N SEF	CT-S1	TRF MB	X2	90	RED	1R2B	TB1	24	#REF!	
				CT-S3	91			BLACK	25			#REF!		

3	3	4Cx6 Sq.mm	200	BCT: 22KV OLTS	CT-A PH(C1)	TRF MB		83	RED	1R2B	TB1	1	TRF MB--83--1R2B-TB1-1	Loop X2- 82, 74, 66 For star formation	
					CT- B PH(C2)			75	YEL			2	TRF MB--75--1R2B-TB1-2		
					CT-C PH(C3)			67	BLUE			3	TRF MB--67--1R2B-TB1-3		
		5P20			CT-N PH(C0)			66	BLACK			4	TRF MB--66--1R2B-TB1-4		
4	4	14Cx1.5 Sq.mm	200	Trafo Trouble Alarm	+ve common	TRF MB	X1	30	C1	1R2B	TB3	10	TRF MB-X1-30-(+ VE)-1R2B-TB3-10	Loop X1-30, 48, 56	
					Buchholz Alarm			31	C2			11	TRF MB-X1-31-(BZ ALM)-1R2B-TB3-11		
					WTI HV ALARM			49	C4			12	TRF MB-X1-49-(WTI HV ALM)-1R2B-TB3-12		
					WTI LV ALARM			57	C3			13	TRF MB-X1-57-(WTI LV ALM)-1R2B-TB3-13		
					+ve Common			64	C5			14	TRF MB-X1-64-(+ VE)-1R2B-TB3-14		Loop X1-64, 40, 42, 46
					OTI ALarm			65	C6			15	TRF MB-X1-65-(OTI AL)-1R2B-TB3-15		
					Oil Level Low (Main tank and OLTC tank)			43	C7			16	TRF MB-X1-43-(OIL LOW)-1R2B-TB3-16		Loop X1-41, 43 (Common Alarm for MOG & OLTC tank OLL)
					Rapid Pressure Alarm			47	C8			17	TRF MB-X1-47-(SPRR)-1R2B-TB3-17		
					+veCommon			44	C9			19	TRF MB-X1-44-(+ VE)-1R2B-TB3-19		Loop X1-44, X2-1, 4, 9, 12
					Aircell Rupture alarm			45	C10			20	TRF MB-X1-45-(AIRCELL RUP)-1R2B-TB3-20		
					Breather failure			14	C11			21	TRF MB-X2-14-(BREATHER FAIL)-1R2B-TB3-21		Loop X2-3, 6, 11, 14
5	5	14Cx1.5 Sq.mm	200	Trafo Trouble Trip	TRF MB	X1	32	C1	1R2B	TB3	24	TRF MB-X1-32--(+ve)1R2B-TB3-24	Loop X1- 32, 58		
							BZ TRIP	33			C2	25		TRF MB-X1-33--(BZ TRIP)1R2B-TB3-25	
							LV WTI TRIP	59			C3	26		TRF MB-X1-59-(MOG OLTC ALM)-1R2B-TB3-26	
							SPARE				C4	27			
							+ve common	50			C5	21		TRF MB-X1-50-(+VE)-1R2B-TB3-21	Loop X1- 50, 66, 26, 28
							HV WTI TRIP	51			C6	22		TRF MB-X1-51-(B/Z TRIP)-1R2B-TB3-22	
							OTI TRIP	67			C7	28		TRF MB-X1-67-(+VE)-1R2B-TB3-28	
							PRV TRIP	29			C8	23		TRF MB-X1-29-(PRV TRIP)-1R2B-TB3-23	Loop X1-27, 29
							+ve common	34			C9	29		TRF MB-X1-34-(+VE)-1R2B-TB3-29	Loop X1- 34, 36, 38
							OSR TRIP	39			C10	30		TRF MB-X1-39-(WTI TRIP)-1R2B-TB3-30	
							+ve common				C11	31		TRF MB-X1--(+ VE)-1R2B-TB3-31	Loop X1- 35, 37, 39
							SPARE				C12	32		TRF MB-X1--(CABLE BOX PRV TRIP)-1R2B-TB3-32	

Job No/CS/XX/YY Rev 0 Date: 28/06/2021			Interconnecting Cable Schedule									
			BPCL DT8 & 9									
Sr. No.	Cable No.	Cable Size	Length	Purpose Cable description	Emanating from			Terminating at			Ferrule at Both end	Remarks
					Equipment (Panel No)	Terminal Block	Terminal No	Equipment (Panel No)	Terminal Block	Terminal No		
6	6	4Cx6 Sq.mm	400	AC Source 1	ACDB	***	***	TRF MB	X1	1	1-X1-TRF MB-AC Source 1-ACDB-***	
				AC Source 1	ACDB	***	***		X1	2	2-X1-TRF MB-AC Source 1-ACDB-***	
				AC Source 1	ACDB	***	***		X1	3	3-X1-TRF MB-AC Source 1-ACDB-***	
				AC Source 1	ACDB	***	***		X1	4	4-X1-TRF MB-AC Source 1-ACDB-***	
7	7	4Cx6 Sq.mm	400	AC Source 2	ACDB	***	***	TRF MB	X1	5	5-X1-TRF MB-AC Source 2-ACDB-***	
				AC Source 2	ACDB	***	***		X1	6	6-X1-TRF MB-AC Source 2-ACDB-***	
				AC Source 2	ACDB	***	***		X1	7	7-X1-TRF MB-AC Source 2-ACDB-***	
				AC Source 2	ACDB	***	***		X1	8	8-X1-TRF MB-AC Source 2-ACDB-***	
8	8	4Cx4 Sq.mm	400	AC Source	ACDB	**	**	RTCC	RX1	1	1-RX1-RTCC-AC Source -ACDB-**-**	
				AC Source	ACDB	**	**	RTCC	RX1	2	2-RX1-RTCC-AC Source -ACDB-**-**	
9	9	14Cx1.5 Sq.mm	400	WTI-4-20mA HV	TRF MB	X2	18	RTCC	RX1	7	7-RX1-RTCC -WTI-4-20mA HV-TRF MB-X2-18	HV WTI
				WTI-4-20mA HV	TRF MB	X2	19	RTCC	RX1	8	8-RX1-RTCC -WTI-4-20mA HV-TRF MB-X2-19	
				WTI-4-20mA LV	TRF MB	X2	20	RTCC	RX1	9	9-RX1-RTCC -WTI-4-20mA LV-TRF MB-X2-20	LV WTI
				WTI-4-20mA LV	TRF MB	X2	21	RTCC	RX1	10	10-RX1-RTCC -WTI-4-20mA LV-TRF MB-X2-21	
				OTI-4-20mA	TRF MB	X2	22	RTCC	RX1	11	11-RX1-RTCC -OTI-4-20mA-TRF MB-X2-22	OTI
				OTI-4-20mA	TRF MB	X2	23	RTCC	RX1	12	12-RX1-RTCC -OTI-4-20mA-TRF MB-X2-23	
				MT BRETHR-4-20mA	TRF MB	X2	7	RTCC	RX2	46	46-RX2-RTCC -MT BRETHR-4-20mA-TRF MB-X2-7	Main tank breather
				MT BRETHR-4-20mA	TRF MB	X2	8	RTCC	RX2	47	47-RX2-RTCC -MT BRETHR-4-20mA-TRF MB-X2-8	
				OLTC BRETHR-4-20mA	TRF MB	X2	15	RTCC	RX2	48	48-RX2-RTCC -OLTC BRETHR-4-20mA-TRF MB-X2-15	OLTC breather
OLTC BRETHR-4-20mA	TRF MB	X2	16	RTCC	RX2	49	49-RX2-RTCC -OLTC BRETHR-4-20mA-TRF MB-X2-16					
10	10	4Cx4 Sq.mm	400	COMM	TRF MB	X1	68	RTCC PANEL	RX1	14	14-RX1-RTCC PANEL-COMM-TRF MB-X1-68	
				STANDBY ON	TRF MB	X1	69	RTCC PANEL	RX1	15	15-RX1-RTCC PANEL-STANDBY ON-TRF MB-X1-69	
				AC SUPPLU FAIL	TRF MB	X1	70	RTCC PANEL	RX1	16	16-RX1-RTCC PANEL-AC SUPPLU FAIL-TRF MB-X1-70	
11	11	7Cx1.5 Sq.mm	400	OLTC UP LMT	RTCC PNL	RX1	21	DM BOX	TB2	39	39-TB2-DM BOX-OLTC UP LMT-RTCC PNL-RX1-21	
				OLTC UP LMT	RTCC PNL	RX1	22	DM BOX	TB2	40	40-TB2-DM BOX-OLTC UP LMT-RTCC PNL-RX1-22	
				OLTC LOW LMT	RTCC PNL	RX1	23	DM BOX	TB2	41	41-TB2-DM BOX-OLTC LOW LMT-RTCC PNL-RX1-23	
				OLTC LOW LMT	RTCC PNL	RX1	24	DM BOX	TB2	42	42-TB2-DM BOX-OLTC LOW LMT-RTCC PNL-RX1-24	
				OLTC MN AC FAIL	RTCC PNL	RX1	25	DM BOX	TB2	27	27-TB2-DM BOX-OLTC MN AC FAIL-RTCC PNL-RX1-25	
				OLTC MN AC FAIL	RTCC PNL	RX1	26	DM BOX	TB2	28	28-TB2-DM BOX-OLTC MN AC FAIL-RTCC PNL-RX1-26	
12	12	7Cx1.5 Sq.mm	400	L / R / AVR	RTCC PNL	RX2	16	DM BOX	TB2	34	34-TB2-DM BOX-L / R / AVR-RTCC PNL-RX2-16	
				L / R / AVR	RTCC PNL	RX2	17	DM BOX	TB2	35	35-TB2-DM BOX-L / R / AVR-RTCC PNL-RX2-17	
				L / R / AVR	RTCC PNL	RX2	18	DM BOX	TB2	36	36-TB2-DM BOX-L / R / AVR-RTCC PNL-RX2-18	
				L / R INDICN	RTCC PNL	RX2	21	DM BOX	TB2	31	31-TB2-DM BOX-L / R INDICN-RTCC PNL-RX2-21	
				L / R INDICN	RTCC PNL	RX2	22	DM BOX	TB2	32	32-TB2-DM BOX-L / R INDICN-RTCC PNL-RX2-22	
				L / R INDICN	RTCC PNL	RX2	23	DM BOX	TB2	33	33-TB2-DM BOX-L / R INDICN-RTCC PNL-RX2-23	
13	13	14Cx1.5 Sq.mm	400	I/C RTCC	DM BOX	TB1	1	RTCC	LX1	1	1-LX1-RTCC-I/C RTCC -DM BOX-TB1-1	INTERCONNECTION BETWEEN OLTC AND RTCC
				I/C RTCC	DM BOX	TB1	2	RTCC	LX1	2	2-LX1-RTCC-I/C RTCC -DM BOX-TB1-2	
				I/C RTCC	DM BOX	TB1	3	RTCC	LX1	3	3-LX1-RTCC-I/C RTCC -DM BOX-TB1-3	
				I/C RTCC	DM BOX	TB1	4	RTCC	LX1	4	4-LX1-RTCC-I/C RTCC -DM BOX-TB1-4	
				I/C RTCC	DM BOX	TB1	5	RTCC	LX1	5	5-LX1-RTCC-I/C RTCC -DM BOX-TB1-5	
				I/C RTCC	DM BOX	TB1	6	RTCC	LX1	6	6-LX1-RTCC-I/C RTCC -DM BOX-TB1-6	
				I/C RTCC	DM BOX	TB1	7	RTCC	LX1	7	7-LX1-RTCC-I/C RTCC -DM BOX-TB1-7	
				I/C RTCC	DM BOX	TB1	8	RTCC	LX1	8	8-LX1-RTCC-I/C RTCC -DM BOX-TB1-8	
				I/C RTCC	DM BOX	TB1	9	RTCC	LX1	9	9-LX1-RTCC-I/C RTCC -DM BOX-TB1-9	
				I/C RTCC	DM BOX	TB1	10	RTCC	LX1	10	10-LX1-RTCC-I/C RTCC -DM BOX-TB1-10	
				I/C RTCC	DM BOX	TB1	11	RTCC	LX1	11	11-LX1-RTCC-I/C RTCC -DM BOX-TB1-11	
				I/C RTCC	DM BOX	TB1	12	RTCC	LX1	12	12-LX1-RTCC-I/C RTCC -DM BOX-TB1-12	
				I/C RTCC	DM BOX	TB1	13	RTCC	LX1	13	13-LX1-RTCC-I/C RTCC -DM BOX-TB1-13	
				I/C RTCC	DM BOX	TB1	14	RTCC	LX1	14	14-LX1-RTCC-I/C RTCC -DM BOX-TB1-14	

14	14	7Cx1.5 Sq.mm	400	I/C RTCC	DM BOX	TB1	15	RTCC	LX1	15	15-LX1-RTCC-I/C RTCC -DM BOX-TB1-15
				I/C RTCC	DM BOX	TB1	16	RTCC	LX1	16	16-LX1-RTCC-I/C RTCC -DM BOX-TB1-16
				I/C RTCC	DM BOX	TB1	17	RTCC	LX1	17	17-LX1-RTCC-I/C RTCC -DM BOX-TB1-17
				I/C RTCC	DM BOX	TB1	26	RTCC	LX1	26	26-LX1-RTCC-I/C RTCC -DM BOX-TB1-26
				I/C RTCC	DM BOX	TB1	27	RTCC	LX1	27	27-LX1-RTCC-I/C RTCC -DM BOX-TB1-27
				I/C RTCC	DM BOX	TB1	28	RTCC	LX1	28	28-LX1-RTCC-I/C RTCC -DM BOX-TB1-28
				I/C RTCC	DM BOX	TB1	29	RTCC	LX1	29	29-LX1-RTCC-I/C RTCC -DM BOX-TB1-29

	Mtr	Runs
3Cx2.5 Sq.mm	0	0
5Cx2.5 Sq.mm	0	0
7Cx2.5 Sq.mm	0	0
10Cx2.5 Sq.mm	0	0
14Cx2.5 Sq.mm	0	0
7Cx1.5 Sq.mm	800	4
14Cx1.5 Sq.mm	800	4
2Cx4 Sq.mm	0	0
4Cx4 Sq.mm	800	4
4Cx6 Sq.mm	800	4
2Cx6 Sq.mm	0	0
TOTAL	3200	16

INTERCONNECTING CABLE SCHEDULE				
BPCL DT8 & 9				
Cable Size	Purpose		Cable length(M)	Remarks
	Cable description	Details		
4Cx6 Sq.mm	Differential/Impedance 21R protection Breaker-1 Main-1	CT-A PH (Core-1)	300	Star formation at panel end: (check star formation to be done towards reactor side)
		CT-B PH (Core-1)		
		CT-C PH (Core-1)		
		CT-N (Core-1)		
4Cx6 Sq.mm	Differential/Impedance protection 21R Breaker-1 Main-2	CT-A PH (Core-2)	300	Star formation at panel end (check star formation to be done towards reactor side)
		CT-B PH (Core-2)		
		CT-C PH (Core-2)		
		CT-N (Core-1)		
4Cx6 Sq.mm	Differential/Impedance 21R protection Breaker-2 Main-1	CT-A PH (Core-1)	300	Star formation at panel end: (check star formation to be done towards reactor side)
		CT-B PH (Core-1)		
		CT-C PH (Core-1)		
		CT-N (Core-1)		
4Cx6 Sq.mm	Differential/Impedance protection 21R Breaker-2 Main-2	CT-A PH (Core-2)	300	Star formation at panel end (check star formation to be done towards reactor side)
		CT-B PH (Core-2)		
		CT-C PH (Core-2)		
		CT-N (Core-1)		
4Cx6 Sq.mm	TCSS CT Input	CT-A PH (Core-3)	300	Star formation at panel end (check star formation to be done towards reactor side)
		CT-B PH (Core-3)		
		CT-C PH (Core-3)		
		CT-N (Core-3)		
4Cx6 Sq.mm	TCSS CT Input	CT-A PH (Core-3)	300	Star formation at panel end (check star formation to be done towards reactor side)
		CT-B PH (Core-3)		
		CT-C PH (Core-3)		
		CT-N (Core-3)		
4Cx6 Sq.mm	87B Bay-1	CT-A PH (Core-5)	300	Star formation at BAY Panel end
		CT-B PH (Core-5)		
		CT-C PH (Core-5)		
		CT-N (Core-5)		
4Cx6 Sq.mm	87B Bay-2	CT-A PH (Core-5)	300	Star formation at BAY Panel end
		CT-B PH (Core-5)		
		CT-C PH (Core-5)		
		CT-N (Core-5)		

INTERCONNECTING CABLE SCHEDULE				
BPCL DT8 & 9				
Cable Size	Purpose		Cable length(M)	Remarks
	Cable description	Details		
14Cx2.5 Sq.mm	TRIP COIL-1 PROTECTION TRIP AND TRIP COIL SUPVN Breaker-1	COMMON (+VE)	300	
		PRE CLOSE SUPVN		
		CLOSING INTERLOCK		
		REMOTE MANUAL CLOSE REMOTE MANUAL TRIP-1		
		SPARE		
14Cx2.5 Sq.mm	TRIP COIL-2 PROTECTION TRIP AND TRIP COIL SUPVN breaker-1	PROTN TRIP/POST CLOSE SUPVN	300	
		PRE CLOSE SUPVN		
		REMOTE MANUAL TRIP-2		
		COMMON (+VE)		
		GCB OPEN		
		GCB CLOSE SPARE		
14Cx2.5 Sq.mm	TRIP COIL-1 PROTECTION TRIP AND TRIP COIL SUPVN Breaker-2	COMMON (+VE)	300	
		PRE CLOSE SUPVN		
		CLOSING INTERLOCK		
		REMOTE MANUAL CLOSE REMOTE MANUAL TRIP-1		
		SPARE		
14Cx2.5 Sq.mm	TRIP COIL-2 PROTECTION TRIP AND TRIP COIL SUPVN breaker-2	PROTN TRIP/POST CLOSE SUPVN	300	
		PRE CLOSE SUPVN		
		REMOTE MANUAL TRIP-2		
		COMMON (+VE)		
		GCB OPEN		
		GCB CLOSE SPARE		
7Cx2.5 Sq.mm	DT-8 CRP to Transfer breaker- 1	Trip transfer	300	
		Trip transfer		
7Cx2.5 Sq.mm	DT-9 CRP to Transfer breaker- 2	Trip transfer	300	
		Trip transfer		
7Cx2.5 Sq.mm	DT-8 CRP to DT-6 old bkr panel DC1	Trip transfer	300	
		Trip transfer		
7Cx2.5 Sq.mm	DT-8 CRP to DT-6 old bkr panel DC2	Trip transfer	300	
		Trip transfer		

INTERCONNECTING CABLE SCHEDULE				
BPCI DT8 & 9				
Cable Size	Purpose		Cable length(M)	Remarks
	Cable description	Details		
4Cx6 Sq.mm	METERING SEL CT-1 : 1000/1 A	CT-A PH (Core-3)	300	DT-8 (From terrate CT)
		CT-B PH (Core-3)		
		CT-C PH (Core-3)		
		CT-N (Core-3)		
4Cx6 Sq.mm	METERING SEL CT-2 : 1000/1 A	CT-A PH (Core-3)	300	DT-9 (From terrate CT)
		CT-B PH (Core-3)		
		CT-C PH (Core-3)		
		CT-N (Core-3)		
4Cx6 Sq.mm	METERING SEL CT-1 : 1000/1 A	CT-A PH (Core-3)	300	DT-7 (From terrate CT)
		CT-B PH (Core-3)		
		CT-C PH (Core-3)		
		CT-N (Core-3)		
4Cx6 Sq.mm	METERING SEL CT-2 : 1000/1 A	CT-A PH (Core-3)	300	DT-7 (From terrate CT)
		CT-B PH (Core-3)		
		CT-C PH (Core-3)		
		CT-N (Core-3)		
4Cx6 Sq.mm	METERING SEL CT-1 : 1000/1 A	CT-A PH (Core-3)	300	DT-8 (From terrate PT)
		CT-B PH (Core-3)		
		CT-C PH (Core-3)		
		CT-N (Core-3)		
4Cx6 Sq.mm	METERING SEL CT-2 : 1000/1 A	CT-A PH (Core-3)	300	DT-9 (From terrate PT)
		CT-B PH (Core-3)		
		CT-C PH (Core-3)		
		CT-N (Core-3)		

1800

INTERCONNECTING CABLE SCHEDULE				
BPCI DT8 & 9				
Cable Size	Purpose		Cable length(M)	Remarks
	Cable description	Details		
4Cx6 Sq.mm	Busbar panel to CT DT-8	CT-A PH (Core-1)	100	Star formation at panel end: (check star formation to be done towards reactor side)
		CT-B PH (Core-1)		
		CT-C PH (Core-1)		
		CT-N (Core-1)		
4Cx6 Sq.mm	Busbar panel to CT DT-8	CT-A PH (Core-2)	100	Star formation at panel end (check star formation to be done towards reactor side)
		CT-B PH (Core-2)		
		CT-C PH (Core-2)		
		CT-N (Core-1)		
4Cx6 Sq.mm	Busbar panel to CT DT-9	CT-A PH (Core-1)	100	Star formation at panel end: (check star formation to be done towards reactor side)
		CT-B PH (Core-1)		
		CT-C PH (Core-1)		
		CT-N (Core-1)		
4Cx6 Sq.mm	Busbar panel to CT TRF BKR1	CT-A PH (Core-2)	100	Star formation at panel end (check star formation to be done towards reactor side)
		CT-B PH (Core-2)		
		CT-C PH (Core-2)		
		CT-N (Core-1)		
4Cx6 Sq.mm	Busbar panel to CT TRF BKR1	CT-A PH (Core-3)	100	Star formation at panel end (check star formation to be done towards reactor side)
		CT-B PH (Core-3)		
		CT-C PH (Core-3)		
		CT-N (Core-3)		
7Cx2.5 Sq.mm	TRIP COIL- Bus bar to CRP	COMMON (+VE)	5000	With reference to total 25 no of bays
		PRE CLOSE SUPVN		
		CLOSING INTERLOCK		
		REMOTE MANUAL CLOSE		
		REMOTE MANUAL TRIP-1		
7Cx2.5 Sq.mm	TRIP COIL- Bus bar to CRP	COMMON (+VE)	5000	With reference to total 25 no of bays
		PRE CLOSE SUPVN		
		CLOSING INTERLOCK		
		REMOTE MANUAL CLOSE		
		REMOTE MANUAL TRIP-1		
3Cx2.5 Sq.mm	Busbar panel to CT TRF BKR1	CT-A PH (Core-3)	5000	With reference to total 25 no of bays
		CT-B PH (Core-3)		
		CT-C PH (Core-3)		
		CT-N (Core-3)		
7Cx2.5 Sq.mm	TRIP COIL- Bus bar to CRP	COMMON (+VE)	500	With reference to total 10 no of bays having CRP in switchyard (New CRP room)
		PRE CLOSE SUPVN		
		CLOSING INTERLOCK		
		REMOTE MANUAL CLOSE		
		REMOTE MANUAL TRIP-1		
7Cx2.5 Sq.mm	TRIP COIL- Bus bar to CRP	COMMON (+VE)	500	With reference to total 10 no of bays having CRP in switchyard (New CRP room)
		PRE CLOSE SUPVN		
		CLOSING INTERLOCK		
		REMOTE MANUAL CLOSE		
		REMOTE MANUAL TRIP-1		
3Cx2.5 Sq.mm	Busbar panel to CT TRF BKR1	CT-A PH (Core-3)	500	With reference to total 10 no of bays having CRP in switchyard (New CRP room)
		CT-B PH (Core-3)		
		CT-C PH (Core-3)		
		CT-N (Core-3)		

#REF!	INTERCONNECTING CABLE SCHEDULE					
BPCI DT8 & 9						
CABLES BETWEEN WITHIN CONTROL ROOM						
Cable No.	Cable Size	Purpose		Cable length(M)	EMANATING FROM	Remarks
		Cable description	Details		Equipment (Panel No)	
206	4Cx4 Sq.mm	AIS BUS-1 VT CORE	PT-A PH (Core-1)	25	2RBC	
			PT-B PH (Core-1)			
			PT-C PH (Core-1)			
			NEUTRAL			
206	4Cx4 Sq.mm	BUS-2 VT CORE	PT-A PH (Core-1)	25	2RBC	
			PT-B PH (Core-1)			
			PT-C PH (Core-1)			
206	4Cx4 Sq.mm	BUS-1 VT CORE	PT-A PH (Core-1)	25	2RBC	
			PT-B PH (Core-1)			
			PT-C PH (Core-1)			
			NEUTRAL			
206	4Cx4 Sq.mm	BUS-2 VT CORE	PT-A PH (Core-1)	25	2RBC	
			PT-B PH (Core-1)			
			PT-C PH (Core-1)			
			NEUTRAL			

4

100

SHORT LOOP AT BAY-6 LCP
 END
 T6: 7 TO 17.
 T6: 27 TO 39.

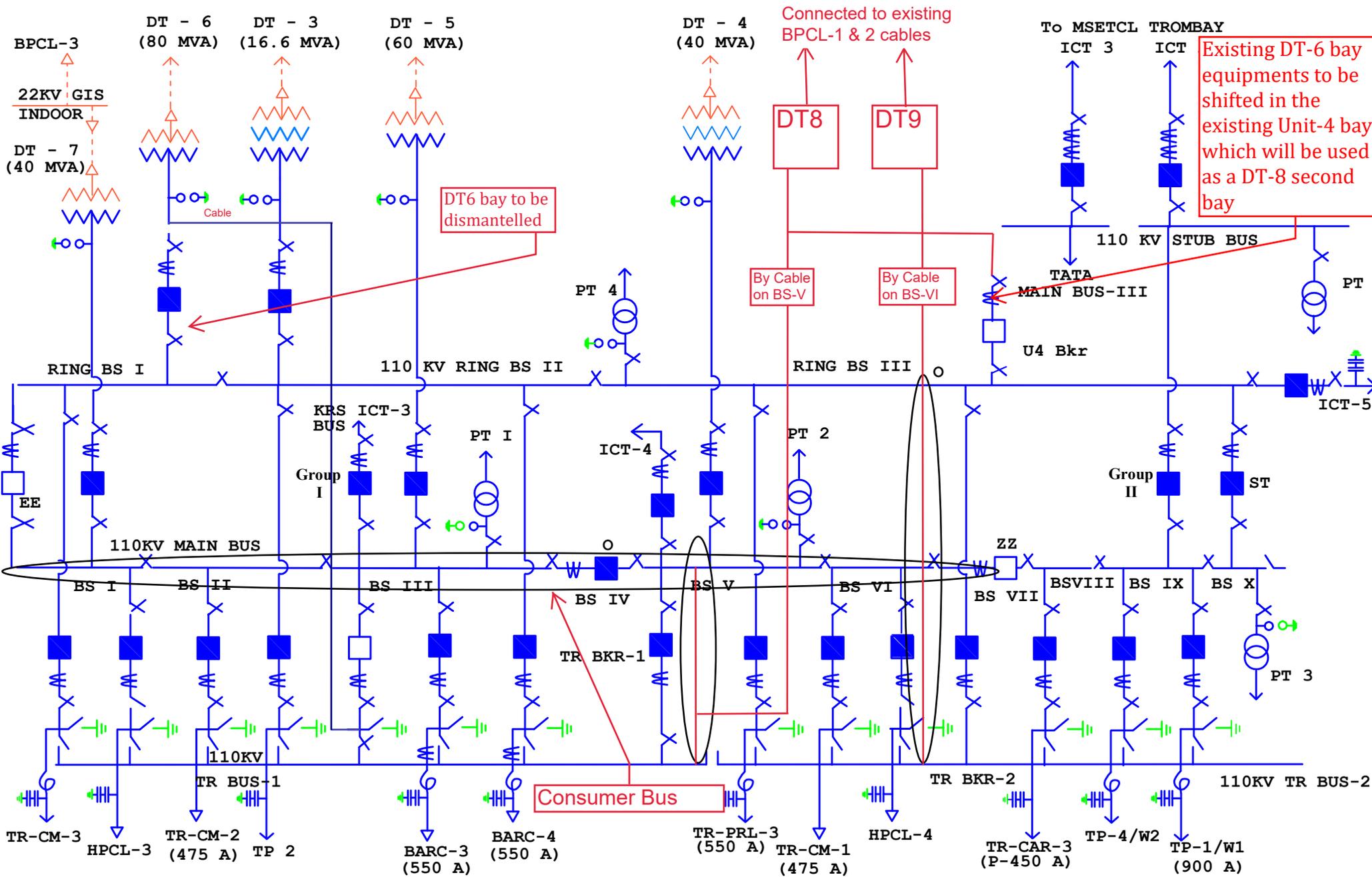
INTERCONNECTING CABLE SCHEDULE					
BPCI DT8 & 9					
Cable Size	Purpose		Cable length(M)	EMANATING FROM	Remarks
	Cable description	Details		Equipment	
				(Panel No)	
14Cx1.5 Sq.mm	MISC RTU SIGNALS	COMMON (+VE)	400	RTU	
		I/C DC-1 MCB TRP			
		I/C DC-2 MCB TRIP			
		RET670 FAULTY			
		P650 FAULTY			
		7UT633 FAULTY			
		86A RESET			
		CB OPEN-1			
		CB OPEN-2			
		CB CLOSE			
14Cx1.5 Sq.mm	MISC RTU SIGNALS	86 B RESET	400	RTU	
		SPARE			

INTERCONNECTING CABLE SCHEDULE				
BPCL DT8 & 9				
Cable Size	Purpose		Cable length(M)	Remarks
	Cable description	Details		
2Cx6 Sq.mm	220V DC SOURCE-1	POSITIVE	500	
		NEGATIVE		
2Cx6 Sq.mm	220 V DC SOURCE-2	POSITIVE	500	
		NEGATIVE		
2Cx6 Sq.mm	220 V DC SOURCE-1	POSITIVE	500	
		NEGATIVE		
2Cx6 Sq.mm	220 V DC SOURCE-2	POSITIVE	500	
		NEGATIVE		
2Cx6 Sq.mm	230 V 3-PH SUPPLY	P	500	AC SUPPLY TO AIS equipment
		N		
4Cx6 Sq.mm	440 V 3-PH SUPPLY	R	500	AC SUPPLY TO Trafor MB
		Y		
		B		
		N		
4Cx6 Sq.mm	440 V 3-PH SUPPLY	R	500	AC SUPPLY TO Isolator
		Y		
		B		
		N		

3500

		THE TATA POWER COMPANY LIMITED								Date:
										Prepared by:
Sl. No.	Cable size	Unit	DT-8 BAY			GLAND				
			Qty	Runs		Qty (Nos)				
	3Cx2.5 Sq.mm	Mtr	5000	35		70				
	7Cx2.5 Sq.mm	Mtr	11200	78		156				
	14Cx2.5 Sq.mm	Mtr	1200	8		16				
	7Cx1.5 Sq.mm	Mtr	800	4		8				
	14Cx1.5 Sq.mm	Mtr	2000	12		24				
	4Cx4 Sq.mm	Mtr	900	8		16				
	4Cx6 Sq.mm	Mtr	6600	38		76				
	2Cx6 Sq.mm	Mtr	2500	5		10				
			30200	188						

Length:	30200	TRUE
Runs:	188	TRUE



TATA POWER CO. LTD.
PSCC

TROMBAY STATION 'A' 110 KV LAYOUT

Drawing No. 48	DATE 02.03.22	Prepared by MGT	Checked by SSB	Approved by MLG
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FORMAT F.1

AFFIDAVIT (ON LETTER HEAD)

I, S/o Director of M/s.....
..... having its registered office at do hereby solemnly affirm and
declare as follows:

1. That I have been authorized to execute this affidavit on behalf of this company by the Board of Directors vide its resolution passed on
2. That Tata Power vide advertisement published in had invited offers for Tender Reference No _____.
3. That in response to the said advertisement as stated in paragraph (2) above, our firm has submitted its proposal to Tata Power.
4. That the proposals of our firm M/s containing necessary information and particulars furnished as response to the Tender Document.
5. That our firm have neither failed to perform on any contract, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against our firm, nor our firm have been expelled from any project or contract by any public authority or private firm nor have had any contract terminated by any public authority or private firm for breach of our part.
6. That our firm during the last three years, neither failed to perform on any agreement, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against us.

That the statements made in paragraph 1 to 6 of the foregoing affidavit as above are true to my knowledge and belief and if anything is found contrary, I stand liable to be prosecuted under appropriate Act / laws in force.

Stamp:

Sign:

Name:

Place and date:

Note: In case of any arbitration / judicial proceeding / legal litigation initiated against or by the bidder in last three years then the same have to Annexed to this Affidavit

FORMAT F.2

**PROFROMA OF LETTER OF UNDERTAKINGS
(To be submitted by the Bidder along with his Bid)**

ON BIDDER'S LETTER HEAD

Ref..... Date.....

To

Head – Procurement

The Tata Power Company Limited, Smart Center of Procurement Excellence, 2nd Floor, Sahar Receiving Station, Near Hotel Leela, Sahar Airport Road, Andheri East, Mumbai-400059

Dear Sir,

I / We have read and examined the entire Tender Document to the (Full scope of work)

I / We hereby submit our Bid and undertake to keep our Bid Valid for a period of 180 days from the date of bid opening i.e. up to

I / We hereby further undertake that during said period.

I / We shall not vary/alter or revoke my / our Bid.

This undertaking is in consideration of Tata Power agreeing to open my Bid and consider and evaluate the same for the purpose of award of work in terms of provision of tender specifications.

Should this Bid be accepted, **I / We** also agree to abide by and fulfill all the terms & conditions of provision of the above mentioned bid documents.

Signature along with Seal of Co.....

(Duly authorized to sign the Tender on behalf of the Bidder)

Name

Designation

E-mail (used in E-Tender):

Name of Co.

(In Block Letters.)

FORMAT F.3

ACCEPTANCE FORM FOR PARTICIPATION IN REVERSE AUCTION EVENT

(To be signed and stamped by the bidder)

In a bid to make our entire procurement process more fair and transparent, Tata Power intends to use the reverse auctions through E-Tender system 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. Tata Power shall log-in to the authorized representative of the bidder.
2. Tata Power will make every effort to make the bid process transparent. However, the award decision including sharing of work would be final and binding on the supplier.
3. The bidder agrees to non-disclosure of trade information regarding the purchase, identity of Tata Power, 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 Tata Power.
6. Tata Power has sole discretion to extend or restart the auction event in case of any glitches in infrastructure observed which has restricted the bidders to submit the bids to ensure fair & transparent competitive bidding. In case of an auction event is restarted, the best bid as already available in the system shall become the start price for the new auction.
7. In case the bidder fails to participate in the auction event due any reason whatsoever, it shall be presumed that the bidder has no further discounts to offer and the initial bid as submitted by the bidder as a part of the tender shall be considered as the bidder's final no regret offer. Any offline price bids received from a bidder in lieu of non-participation in the auction event shall be out-rightly rejected by Tata Power.
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 Tata Power 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 Tata Power.
12. Detailed price split of E-auction price will be submitted within 24 hours from completion of E-auction. If not submitted, 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

FORMAT F.4

Format of BID BG / EMD

Whereas (Name of the Contractor), a Company incorporated under the Indian Companies Act 1956, having its Registered office at _____, (hereinafter called the "BIDDER") has in response to your Invitation to Bid against Enquiry No. _____ dated _____, for (name of work), offered to supply and/or execute the works as contained in Employers letter dated _____.

AND WHEREAS BIDDER is required to furnish to you a Bank Guarantee for the sum of Rs. _____/-(Rupees ____ only) as Earnest Money against Bidder's offer as aforesaid.

AND WHEREAS we, (name of the bank) having our Registered Office at _____ and Branch office at _____, have at the request of Bidder, agreed to give you this Guarantee as hereinafter contained.

NOW THEREFORE, in lieu of earnest money deposit, we, the undersigned, hereby covenant that the aforesaid Bid of the BIDDER shall remain open for acceptance by you during the period of validity as mentioned in the Bid Document or any extension thereof as requested by you and if Bidder shall for any reason back out, whether expressly or impliedly, from this said Bid during the period of its validity or any extension thereof as aforesaid, we hereby guarantee to you the payment of the sum of Rs. _____/- (Rupees ____ only) on demand and without demur and notwithstanding the existence of any dispute between you and the BIDDER in this regard and we hereby further agree as follows:

- (a) You shall have the right to file/make a claim on us under the Guarantee for a further period of six months from the said date of expiry.
- (b) That this guarantee shall not be revoked during its currency without your written express consent.
- (c) That you may without affecting this guarantee grant time or other indulgence to or negotiate further with BIDDER in regard to the conditions contained in the said Bid

document and thereby modify these conditions or add thereto any further conditions as may be mutually agreed upon between you and BIDDER.

- (d) That the guarantee hereinbefore contained shall not be affected by any change in the constitution of our Bank or in the constitution of BIDDER.
- (e) That any account settled between you and BIDDER shall be conclusive evidence against us of the amount due hereunder and shall not be questioned by us.
- (f) That this guarantee commences from the date hereof and shall remain in force till BIDDER, if his Bid is accepted by you, furnishes the Contract Performance Guarantee as required under the said specifications and executes formal Contract Agreement as therein provided or till ____Days (__ days) from the date of submission of the Bid by the BIDDER i.e. (expiry date), whichever is earlier.
- (g) That the expression, BIDDER and Bank, and OWNER herein used shall, unless such an interpretation is repugnant to the subject or context, include their respective successors and assignees.
- (h) 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 and shall be extended from time to time for such period or periods as may be desired by you. Unless a demand or claim under this Guarantee is received by us in writing within six months from (expiry date), i.e. on or before (claim period date), we shall be discharged from all liabilities under this guarantee thereafter.
- (i) Any claim/extension under the guarantee can be lodgeable at issuing outstation bank or at Mumbai branch and claim will also be payable at Mumbai Branch. **(To be confirmed by Mumbai Branch by a letter to that effect)**

Notwithstanding anything contained herein above:

- a) Our liability under this Bank Guarantee shall not exceed Rs. _____ /-(Rupees _____ only).
- b) This Bank Guarantee shall be valid upto ----- 200.
- c) Our Liability to make payment shall arise and we are liable to pay the guaranteed amount or any part there of under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before ----- 200.

FORMAT F.5

FORMAT OF PERFORMANCE BANK GUARANTEE

- Note:** a) Format shall be followed in toto
b) Claim period of six months must be kept up
c) The guarantee to be accompanied by the covering letter from the bank confirming the signatories to the guarantee on the Bank's letter head.
-

The Tata Power Co Ltd
34, Sant Tukaram Road
Carnac Bunder,
Mumbai 400 009

Our Letter of Guarantee No.....

Contract/Purchase Order No.....dated.....

- 1.0 You have entered into a Contract No..... with.....
.....(hereinafter referred to as " the Vendor") for
the supply and delivery of (hereinafter
referred to as "the said equipment") for the price and on the terms and
conditions contained in the said contract.
- 2.0 In accordance with the terms of the said contract, " the Vendor" has
agreed to furnish you with an irrevocable and unconditional bank guarantee
in a form and from a bank acceptable to you as security for the due
performance by " the Vendor" of all his contractual obligations under the
said contract in an amount equal to 10% (ten percent) of the total value of
the contract to be valid from the date of contract and up to __ months from
the date of satisfactory commissioning of the said equipment into service or
__ months from the date of delivery whichever is earlier.
- 3.0 In consideration thereof, we, hereby irrevocably and
unconditionally guarantee to pay to you on demand and without demur and
without reference to " the Vendor" such amount or amounts not exceeding
the sum of Rs.....(Rupees
only) being 10% (ten 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-fulfilment and " the
Vendor" shall have no right to question such judgement.

- 4.0 You shall have the right to file/make your **claim** on us under the guarantee for a **further period of six months** from the said date of expiry.
- 5.0 This guarantee shall not be revoked without your 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 of any powers vested in you or any right which you may have against “ the Vendor” and to exercise the same in any manner at any time and either to enforce or forbear to enforce 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 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.
- 6.0 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.
- 7.0 This guarantee shall not be affected by any change in the constitution of our Bank or “ the Vendor” or for any other reason whatsoever.
- 8.0 Any claim/extension under the guarantee can be lodged at issuing outstation branch or at Mumbai branch and also become payable at our issuing outstation bank or at the Mumbai branch as per confirmatory letter/letters of the concerned bank branches as attached. **(This Confirmatory letter is to be obtained from Mumbai Branch by the vendor and submitted along with the Performance Bank Guarantee and is applicable for PBG submitted from Banks located outside Mumbai).**
- 9.0 Notwithstanding anything herein contained, our liability under this guarantee is limited to Rs..... (Rupees only) and the guarantee will remain in force up to and including(Date) and shall be extended from time to time for such period or periods as may be desired by “ the Vendor” .
- 10.0 Unless a demand or claim under this guarantee is received by us in writing within six 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 of199 .



Vendor Registration Form

Corporate Contracts

To be Filled in Block letters By Vendor. Note **Annexure 1 - CSM F1** is Mandatory for Service / Composite Vendor Registration

MATERIAL
SERVICE
COMPOSITE
CONSULTANT

Title (M/S., Mr., Mrs., Dr.) *							
Company Name (35 Char) *							
Country code - Mobile No *							
Country Code - Tel. No *							
Country Code - Fax No							
Email ID *							
Street / House No *							
Country *		State *		District *			
City *		Pin code *		Language			
Category	General		MOEF		SC / ST		
	Related Party		MSME / SSI		OBC/Others		
Bank Details (all details to be filled for enabling NEFT Transfer)							
Name of Bank *							
Bank Details ID *		PAN Number *					
Account No. *		Account Holder *					
Bank Key *		Bank Country *					
MICR Code * (Attach Cancelled Cheque)							
IFSC Code *							
IBAN *							
Payment thro RTGS/NEFT*							
Quality / Safety Systems (Mandatory for Service and Composite Vendor Registration)							
OHSAS 18001 Certified		Risk Management Process					
ISO 9001 Certified		ISO 14001 / EMS Certified					
Declaration and Vendor Authorized Signature							
<p>I / We certify that the information furnished above is correct and complete to the best of my/our knowledge and belief. If at any time, I / We are found to have concealed any material information or given any false details, my/our registration shall be liable to summary termination without notice or compensation. I / We are not related to any employee of Tata Power .</p> <p>We have also received a copy of your Tata Code Of Conduct. We hereby confirm that we have read the same and understand the need to follow the same in Spirit and Letter. If we have any concerns we shall bring the same to the notice of your Chief Ethics Officer. Email: cecounsellor@tatapower.com, * Copy also available on our website http://www.tatapower.com/aboutus/code-of-conduct.aspx</p>							
Name *							
Designation *							
Email *							
Signature & Company Seal *							



ERP Vendor India Requirement - Taxation Registration Details

LST / VAT Registration No.	
LST / VAT Registration Date	
CST / TIN Registration No.	
CST / TIN Registration Date	
Service Tax Registration. No.	
Service Tax Registration Date	
Excise Registration No.	
Excise Registration. Date	
Provident Fund No.	
ESI Registration No.	
MSME / SSI Registration No.	
MSME / SSI Registration Date	

Mandatory For SERVICE & COMPOSITE (Material + Service) Vendor Registration

Annexure 1 - CSM F1-'Safety Category Qualification Form	YES		NO		N / A	
OSHAS 18001 Certificate	YES		NO		N / A	
ISO 9001 Certificate	YES		NO		N / A	
ISO 14001 / EMS Certificate	YES		NO		N / A	
Safety Organization Structure	YES		NO		N / A	
Safety Training Process	YES		NO		N / A	
Safety Policy	YES		NO		N / A	
Safety Statistics	YES		NO		N / A	
Address of sites where WIP	YES		NO		N / A	

Check List of Documents enclosed (To be filled by the Vendor)

PAN Card Copy	YES		NO		N / A	
VAT / CST / TIN Registration Certificate	YES		NO		N / A	
Service Tax Registration Certificate (for services)	YES		NO		N / A	
Certificate of Incorporation / Partnership Deed etc	YES		NO		N / A	
Signed Conflict of Interest Declaration	YES		NO		N / A	
MSME Industry Registration (Mandatory if applicable)	YES		NO		N / A	



Evaluation Sheet

(To be filled by **Requisitioner** - After Checking & Verifying Page 1 to 2 and Annexure 1 - CSM F1 Form)

Whether mandatory requirements are filled/attached and verified?	YES		NO		If No, explain reason for waiver in evaluation area	
If registration is for Services also, whether CSM F1 Form has been completed? Documents attached CSM F1 - Safety Category Qualification Form	YES		NO		N / A	
OHSAS 18001/ ISO 9001 / ISO 14001 Certificate	YES		NO		N / A	
Safety Organization Structure	YES		NO		N / A	
Safety Training Process	YES		NO		N / A	
Safety Policy	YES		NO		N / A	
Safety Statistics	YES		NO		N / A	
Evaluation Process Report	YES		NO		N / A	
Company Code & Description -						

Requested By		Approved by (HOD)	
Name		Name	
Signature		Signature	
Department		Department	
ERP Vendor Company Codes			
Company Code *		Sort Key *	
Reconciliation A/C *		Check Double Invoice	
With Holding Tax Country		With Hold Tax	
Terms of Payment		Payment Methods	
ERP Vendor Purchasing Organization			
Purchasing Organization *		Order Currency *	
Schema Group *		Sales Person *	
ABC Indicator *		Terms of Payment	
Service Based Invoice		GR Based Invoice	



ANNEXURE – 1 (CSM F1 - Safety Category Qualification Form)

Type of Vendor - Service / Composite (Material + Service)

Name of the Vendor -

No	Safety Information	Remarks	Attachments		
1	Certificate				
1A	OHSAS : 18001	Yes / No			
1B	ISO : 14001	Yes / No			
1C	ISO : 9001	Yes / No			
2	Safety Statistics for Last Three (03) Years		Year 1	Year 2	Year 3
2A	LTIFR – Lost Time Injury Frequency Rate	Yes / No			
2B	LTISR – Lost Time Injury Severity Rate	Yes / No			
3	Safety Training Process	Yes / No			
4	Safety Organization Structure	Yes / No			
5	Safety Policy	Yes / No			
6	Name and Address of Sites where work are in Progress or worked earlier	Yes / No			

Name, Signature & Company Seal

To be filled by the Tata Power Requestor

Vendor to be registered for CATEGORY

A

B

C

- 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

No	Description	Category "A"	Category "B"	Category "C"
1	Does the Contractor have OHSAS 18001 Certificate?	√		
2	During site visit check for safety adequacy at site	√	√	
3	Check the safety statistics of Contractor	√	√	√
4	Check the safety orientation & training process of contractor	√	√	√
5	Check the organization structure for safety professionals / engineers / supervisors	√	√	
6	Certified / skill workers as a percentage overall work force	√	√	
7	Does the Contractor have ISO 9001 Certificate?		√	√



ANNEXURE – 2 (Conflict of Interest Certification)

Objective

The intent of this disclosure is NOT to prevent an aspirant supplier from making an application, but rather to provide the decision making authorities with information on which Tata Power can make its own judgements and ensure that dealing with such parties is done fairly and transparently by ensuring that people / parties in conflict of interests are involved in the transactions / decision making process.

While requesting a registration, a supplier MUST disclose any actual or potential conflict of interest by giving the details of the person/s within the supplier's company (whether a director or an employee) who may be in actual or potential conflict of interest as per the above referred clause 20 of Tata Code of Conduct.

Conflict of Interest

An actual or potential conflict of interest with supplier's may arise where, directly or indirectly.

- a. A proprietor or partner or director or employee (who is party to a transaction) of the supplier is also a member of family or relative of a Tata Power employee.
- b. A proprietor or partner or director or employee (who is party to a transaction) of the supplier is also a director of family or relative of a Tata Power or Tata Group of companies or a person of influence within Tata Power.
- c. A proprietor or partner or director of the company is also a proprietor or partner or director in another company already registered with Tata Power and competing for similar products and / or services.
- d. A company has subsidiary or associate companies already registered with Tata Power and competing for similar products and / or purpose.

For detailed explanation on when an actual or potential conflict of interest may arise, please refer to the clause 20 of Tata Code of Conduct available on the Tata Power website

www.tatapower.com/aboutus/code-of-conduct.aspx

Format for declaration

Supplier's willing to register with Tata Power need to print the enclosed form which should be printed on the Letter Head of their company and be signed by proprietor / partner / executive directors / person authorized by the company for giving such declaration affixing his name, designation below the signature along with seal of the company.



To

Corporate Contracts
The Tata Power Company Ltd
Technopolis Knowledge Park, CENTEC,
Mahakali Caves Road, Chakala,
Andheri (E), Mumbai 400 093

Declaration on Conflict of Interest

This is to certify that we, M/s _____ are having the following entities / persons in actual or potential conflict of interest while dealing with Tata Power within the spirit of Clause 20 of Tata Code of Conduct.

Name & Designation of the entity / person in conflict of interest	Name of Tata Power person to whom related to	Nature of relationship / conflict

Note – In case there is no conflicts to be declared, please clarify state as NIL in the first row and strike out the balance lines)

This is to further certify that, we M/s _____

- a. Are not dealing with Tata Power under any other name or through any other subsidiary / associate companies other than the list disclosed above.
- b. None of our other directors / partners / other proprietors is dealing with Tata Power under any other company name.
- c. None of the other directors / partners / proprietors / employees holding a position of responsibility and / or authorized to transact with Tata Power has any significant financial interest or other relationship i.e., (Father, Mother, Brother, Sister or any other close family relationship) with any other Tata Power employee or directors of Tata Power or directors of Tata group of companies.

We further declare that as and when there is any change to the above certification, we shall intimate to Tata Power about such changes in the status. We also declare that we have read and understood the Tata Code of Conduct – latest version hosted on Tata Power website www.tatapower.com/aboutus/code-of-conduct.aspx and shall abide by all the provisions of the same and will bring any concerns regarding this to the notice of your chief ethics officer on the email id cecounsellor@tatapower.com

This is to certify that the above said information is true to the best of my knowledge and that I have the requisite authority to sign above said declaration in my capacity as _____ (ID No. _____)

Regards,

Name, Signature and Company Seal

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!



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

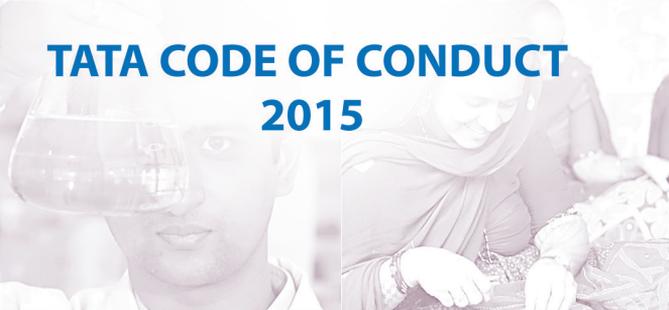
The management will commit all the necessary resources required to meet the goals of Corporate Sustainability.



(Praveer Sinha)
CEO & Managing Director

Date: 15th June, 2018





**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:



INTEGRITY

We will be fair, honest, transparent and ethical in our conduct; everything we do must stand the test of public scrutiny.

UNITY

We will invest in our people and partners, enable continuous learning, and build caring and collaborative relationships based on trust and mutual respect.

RESPONSIBILITY

We will integrate environmental and social principles in our businesses, ensuring that what comes from the people goes back to the people many times over.

PIONEERING

We will be bold and agile, courageously taking on challenges, using deep customer insight to develop innovative solutions.

EXCELLENCE

We will be passionate about achieving the highest standards of quality, always promoting meritocracy.

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-authorized, 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.)



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



**SUPPLIER MANUAL ANSWERING
TO
E-BIDDING & E-AUCTION**

CELEBRATING 100 YEARS OF INVISIBLE GOODNESS

TATA POWER

Company Confidential	Version 1.1
	DEC - 2016

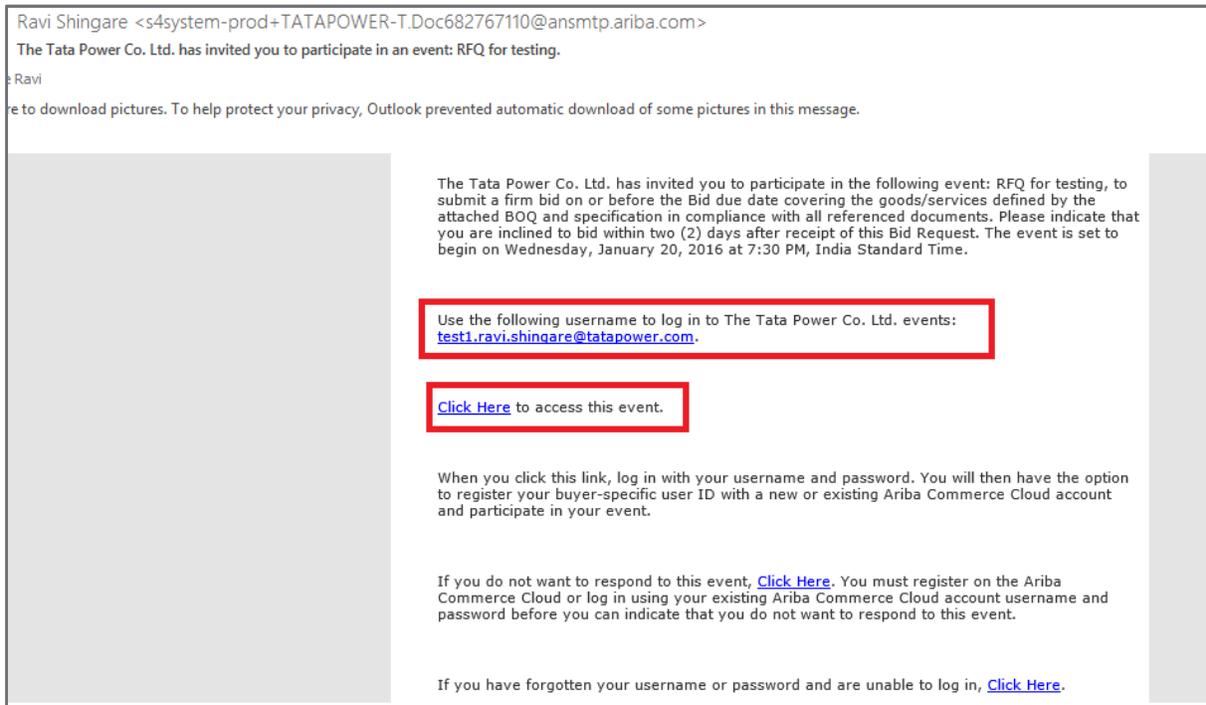
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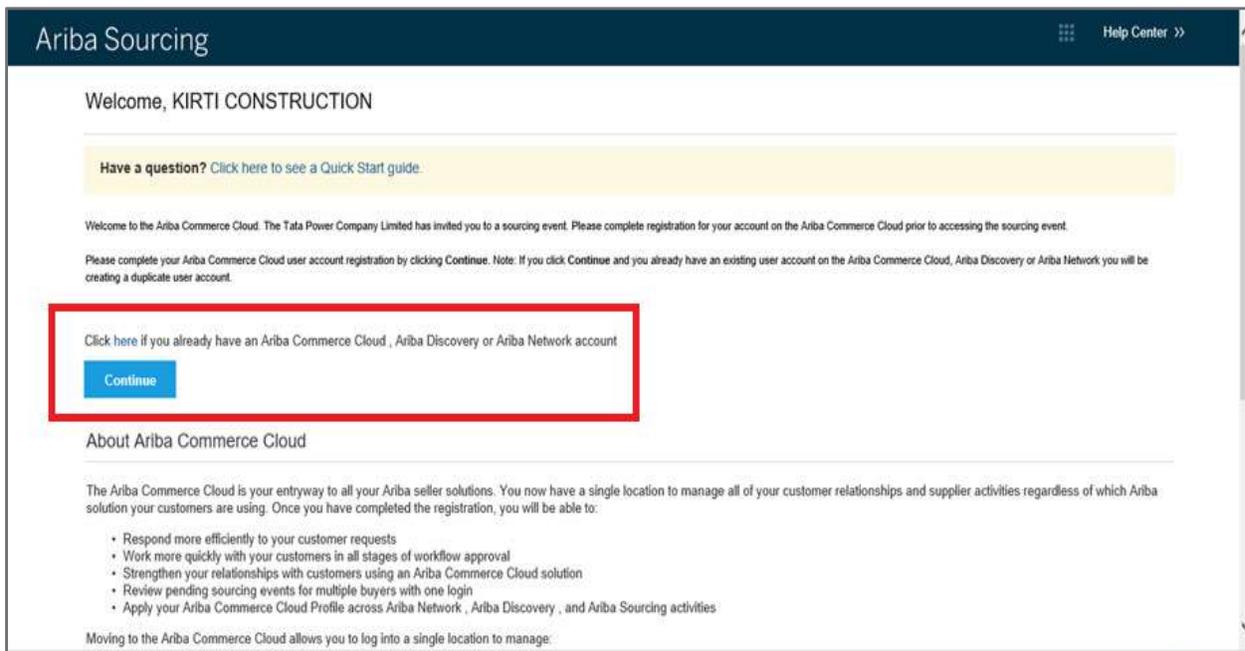
1- Accessing Ariba Sourcing

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

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



Step 3: Supplier has to click on "Continue"



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

* Indicates a required field

Company Name*

Country* If your company has more than one office, enter the main office address. You can enter more addresses such as your shipping address, billing address or other addresses later in your company profile.

Address*

City*

State

Postal Code*

Product and Service Categories* -or-

Ship-to or Service Locations* -or-

Tax ID: Enter your Company Tax ID number.

DUNS Number: Enter the nine-digit number issued by Dun & Bradstreet. ⓘ

Supplier has to fill the form

 **ARIBA*** SPEND MANAGEMENT Help | Logout

Welcome USER_TEST2 - UPM-Kymmene Corporation

Expired Password

Your password has expired. Follow these instructions to complete this step: Create a new password and confirm. Select a secret question and answer it so ...

Passwords are case-sensitive, and must be between 8 and 16 characters long. They can include any Latin characters and punctuation marks, and must include at least one numeral between the first and last character. They must also include at least one letter. For example, goZenba.

The current secret answer that you have entered is different from the one that has been recorded for this user.

New Password*

New Password (confirm)*

Secret Question* ⓘ

Secret Answer*

(* indicates a required field)

You expressly agree and understand that your data entered into this system may be transferred outside of the European Union or other jurisdiction where you are located, as further described in the Arriba Data Policy [Data Policy](#)

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

Secret Question*
 The answer to your secret question must be atleast 5 characters.

Language: The language used when Arriba sends you configurable notifications. This is different than your web b...

Arriba will make your company profile, which includes the basic company information, available for new business opportunities to other companies. If you want to hide your company profile, you can do so anytime by editing the profile visibility settings on the Company Profile page after you have finished your registration. By clicking the Submit button, you expressly acknowledge and give consent to Arriba for your data entered into this system to be transferred outside the European Union, Russian Federation or other jurisdiction where you are located to Arriba and the computer systems on which the Arriba services are hosted (located in various data centers globally), in accordance with the Arriba Privacy Statement, the Terms of Use, and applicable law.

You have the right to access and modify your personal data from within the application, by contacting the Arriba administrator within your organization or Arriba, Inc. This consent shall be in effect from the moment it has been granted and may be revoked by prior written notice to Arriba. If you are a Russian citizen residing within the Russian Federation, You also expressly confirm that any of your personal data entered or modified in the system has previously been captured by your organization in a separate data repository residing within the Russian federation.

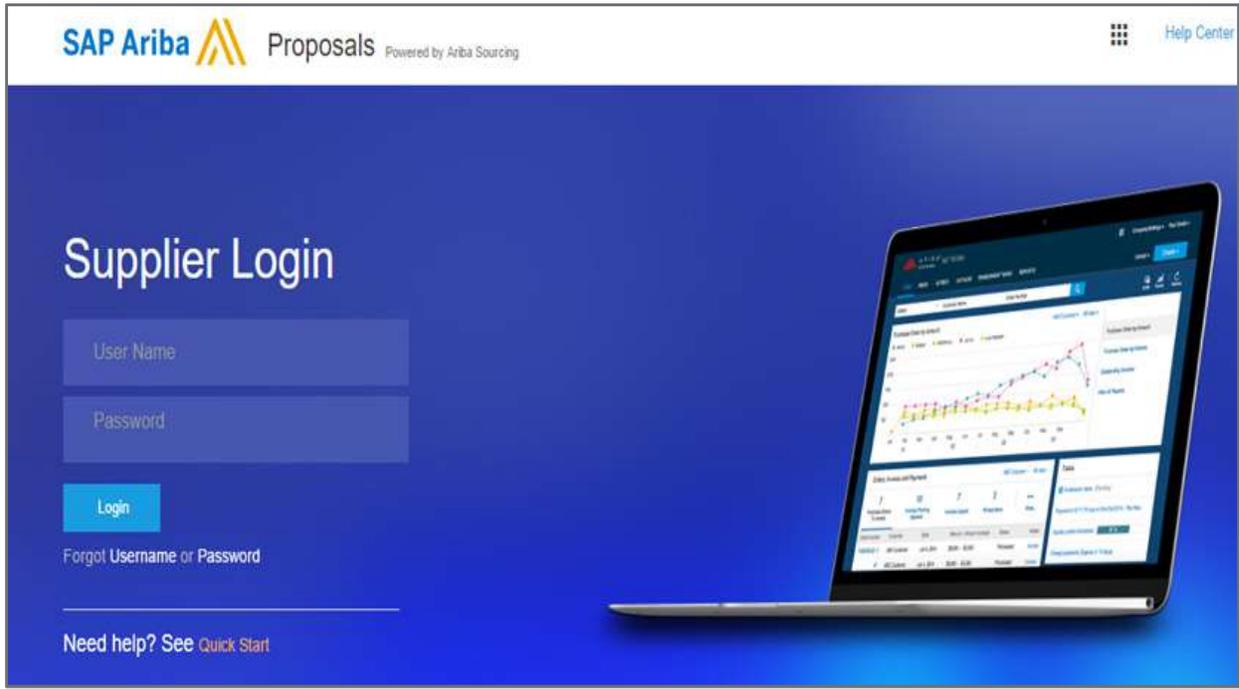
I have read and agree to the Terms of Use and the Arriba Privacy Statement

2 Vendor Screen

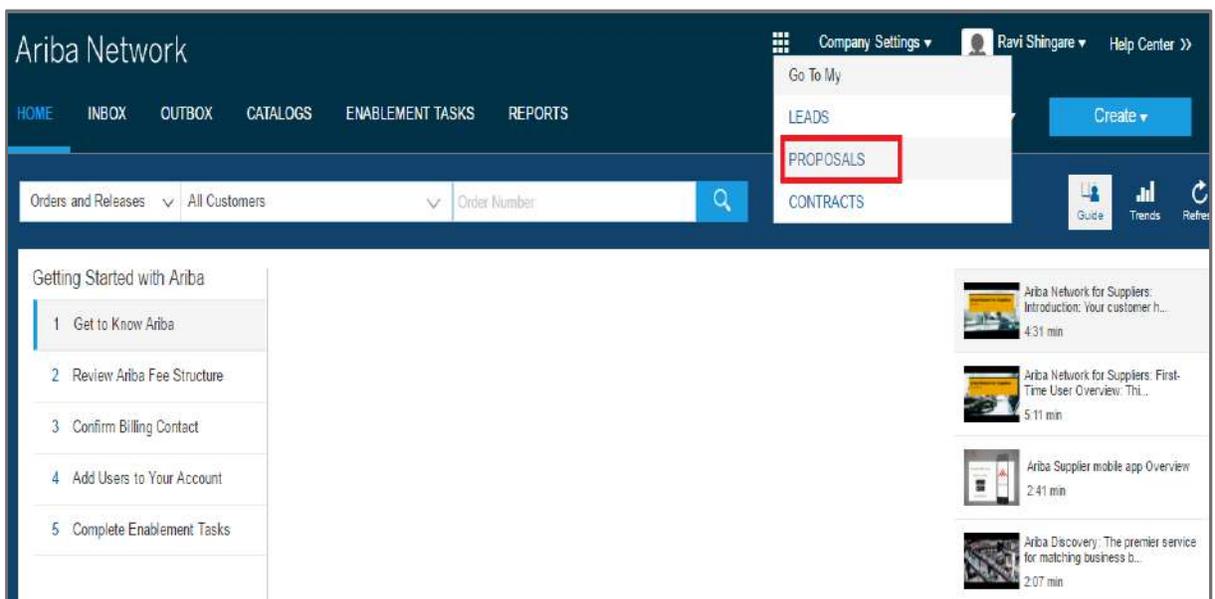
2.1.1 If vendor goes through mail invitation then directly Screen 3.1.1 will appear, but if you have used Ariba before and have already accessed an event for the buyer-specific account with your current log in ID, click the **Login** button to continue. Log in with your Ariba username and password in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

Step 1 - Log on supplier.ariba.com

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



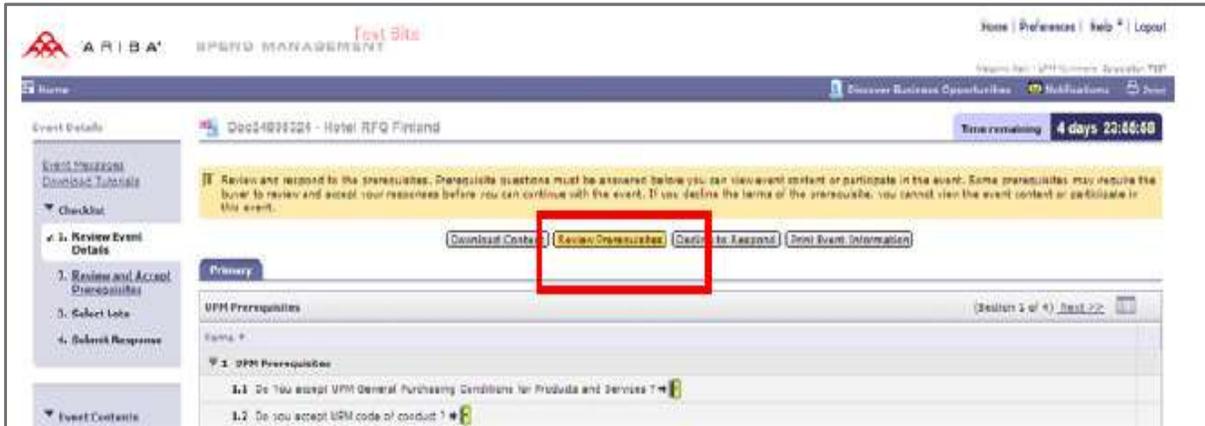
Step 3 - Go to ARIBA APPS  and click on Proposals.



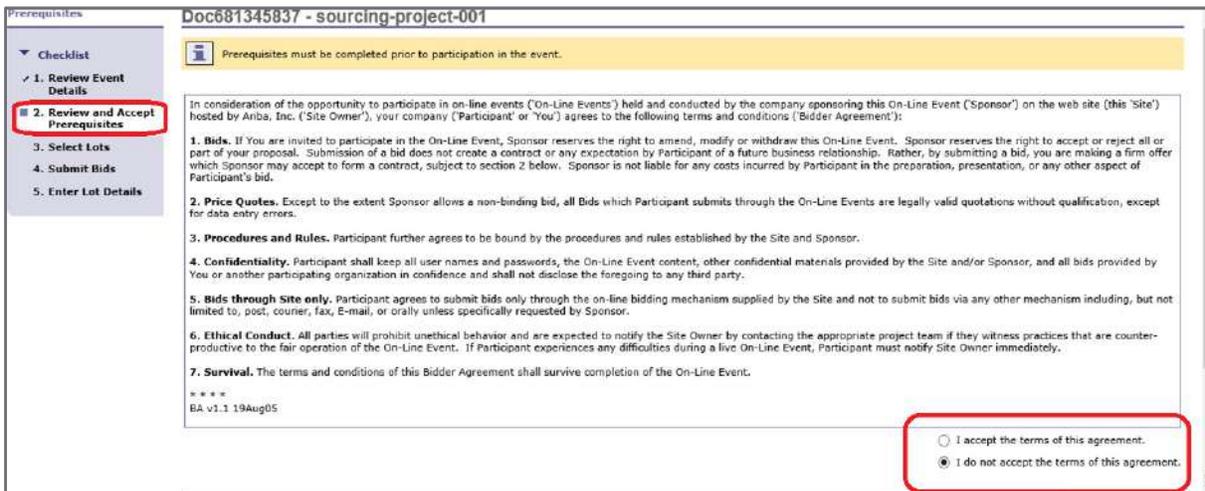
3 Submitting Your Answers / Proposal

3.1.1 Review and Approve “Prerequisites”

Step 1: Review and download all documents & then Click on “Review Prerequisites”



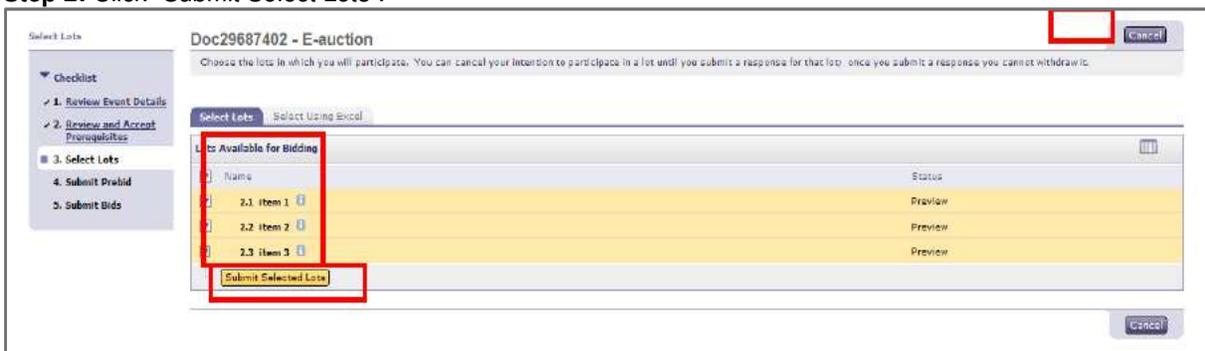
Step 2: Review and accept “Bidder Agreement”.



3.1.2 Select Items or Lots

Step 1: Select Items. - If you do not want to quote for any items/lots then you do not select that lot / items and then go ahead for select and submit lot.

Step 2: Click “Submit Select Lots”.



3.1.3 Entering your offer for RFQ

Step 1: as per following screen Vendor Dashboard will appear where RFQ from TATA Power will be visible.

Step 2 - Follow all the steps of 3.1.1 to 3.1.3

Step 3 - Vendor has to submit their techno commercial offer in 2.1. In this field Do No attach any price content. For Price Bid put all the unit price and taxes and duties in provided field. Put "0" (ZERO) in not applicable field.

Step 4 - After successfully putting Techno commercial offer and price part then click on "Submit Entire Response"

3.1.4 Entering Your Prebid for e-auction

Before participation to the e-auction you must place a pre-bid. If you haven't placed a Prebid in the Prebid time you won't be able to participate to the auction itself.

Step 1: Populate Your Answers.

Step 2: Click "Submit Entire Response".

The screenshot shows the 'Tata Power Company Limited-TEST Dashboard' for document Doc681345837 - sourcing-project-001. A yellow banner at the top right indicates 'Time remaining in preview 1 day 04:05:05'. A message states: 'The event owner has requested that you submit a prebid before the end of the preview period. You have not yet submitted a prebid.' The left sidebar contains a checklist with '4. Submit Bids' highlighted in red. The main content area shows a table with columns 'Name' and 'Extended Price'. The table includes sections for '1 Introduction', '2 Commercial Terms' (with sub-item '2.1 lot-1' for '4 core cable' at a price of 5000 INR), and '3 Pricing' (with sub-item '3.1 FOR SITE DELIVERY P&F INCLUSIVE'). At the bottom, the 'Submit Entire Response' button is highlighted in red.

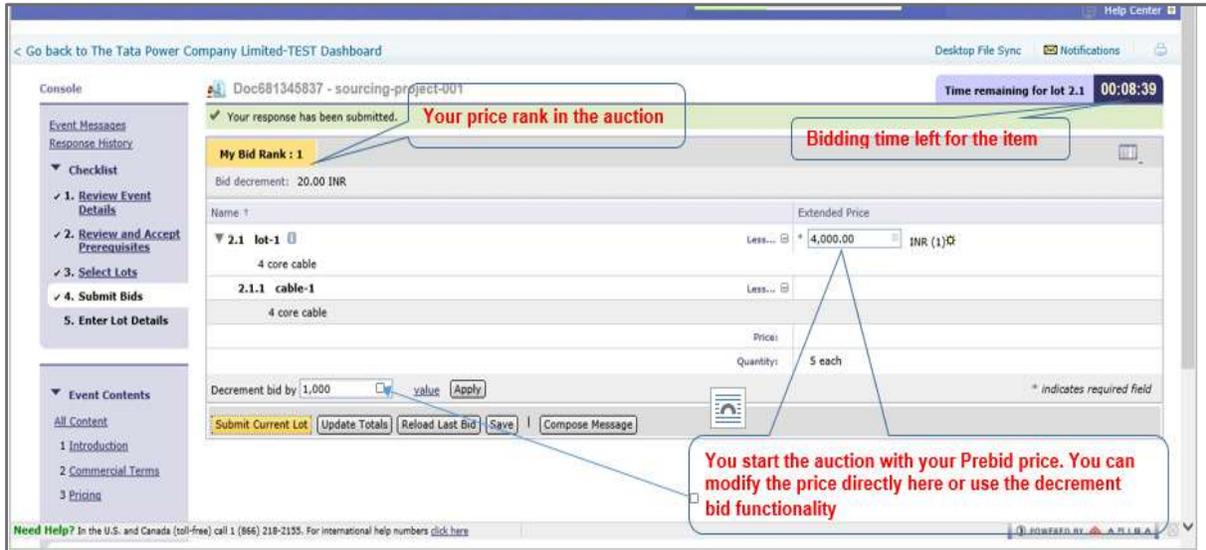
When the Prebid time is still open you can still modify your Prebid:

Click on "revise Prebid" and repeat in step 1 and step 2.

The screenshot shows the same dashboard after a prebid has been submitted. A green banner at the top right indicates 'Time remaining in preview 1 day 04:02:39'. A message states: 'Your prebid has been submitted. You will be notified when the event is open for bidding.' The left sidebar checklist now has '4. Submit Bids' highlighted in red. The main content area table is updated with 'Extended Price' values of 5,000.00 INR for the lot and 5,000.00 INR for the pricing section. The 'Revise Prebid' button is highlighted in red.

3.1.5 Participate to the e-auction

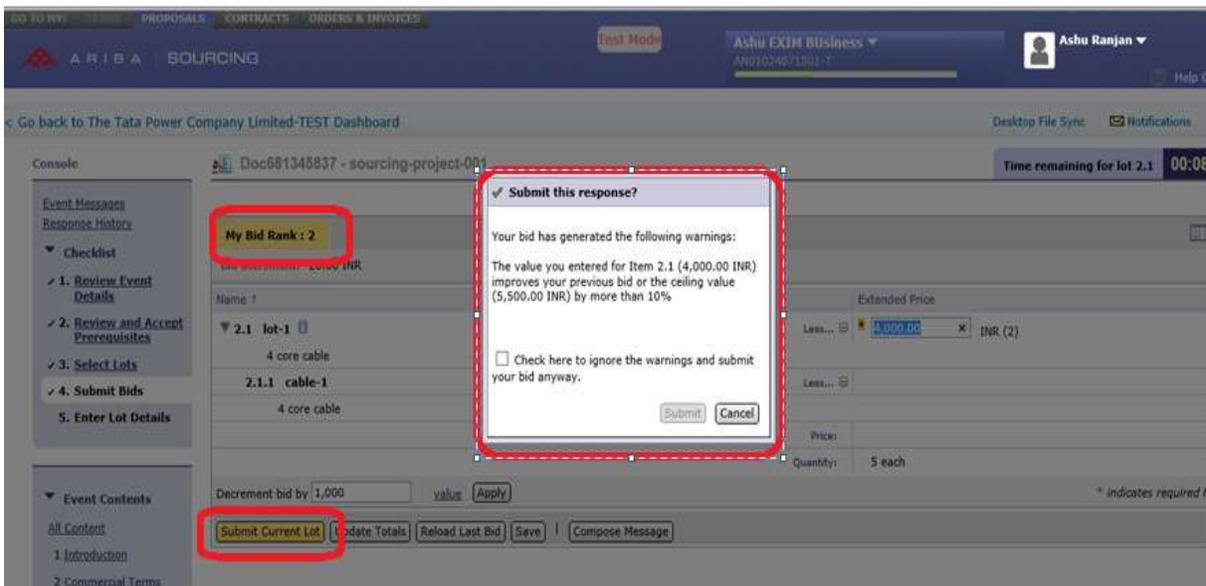
If you have placed a bid in the Prebid time you will be able to participate to the e-action. E-auctions are rather sort in time (usually less than 20 min per item). Once the time is closed you won't be able to bid anymore.



When you want to submit your price presses "submit current lot"

In case the new price you submit is lower by 10% of the starting price (Prebid Price) the following warning Message will be displayed.

To submit the new price, check the box and press submit. If you made a mistake press cancel so that you Mistake would not be submitted.



3.1.5.2 What to do if you have a problem during the e-auction?

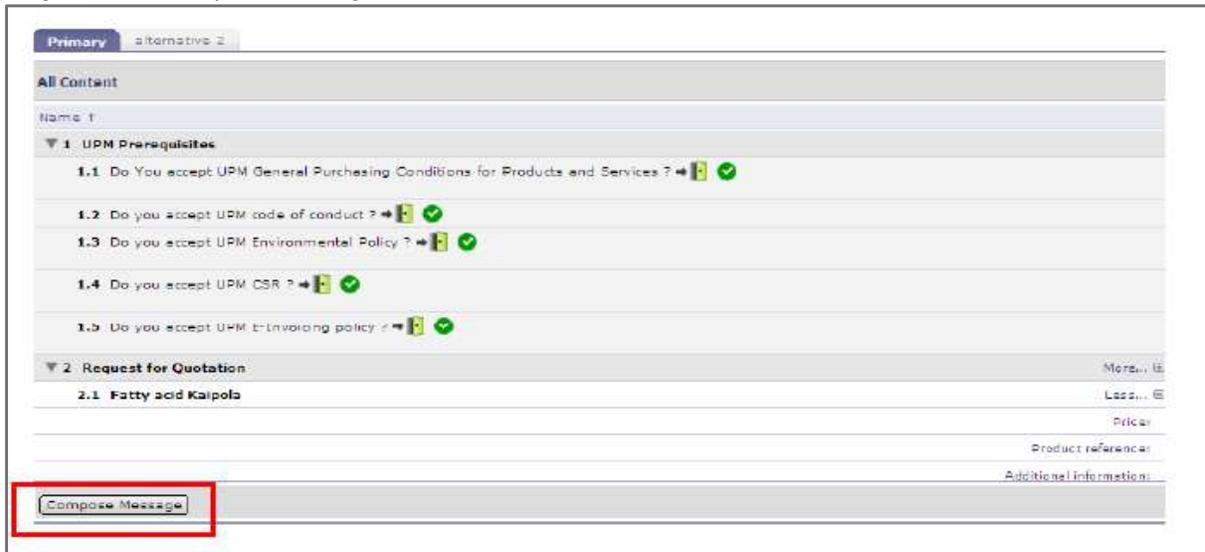
If you have any problem related the system: - **Call first Tata Power e- Bidding / Auction Cell**

➤ **e- Bidding /Auction Cell details:-**

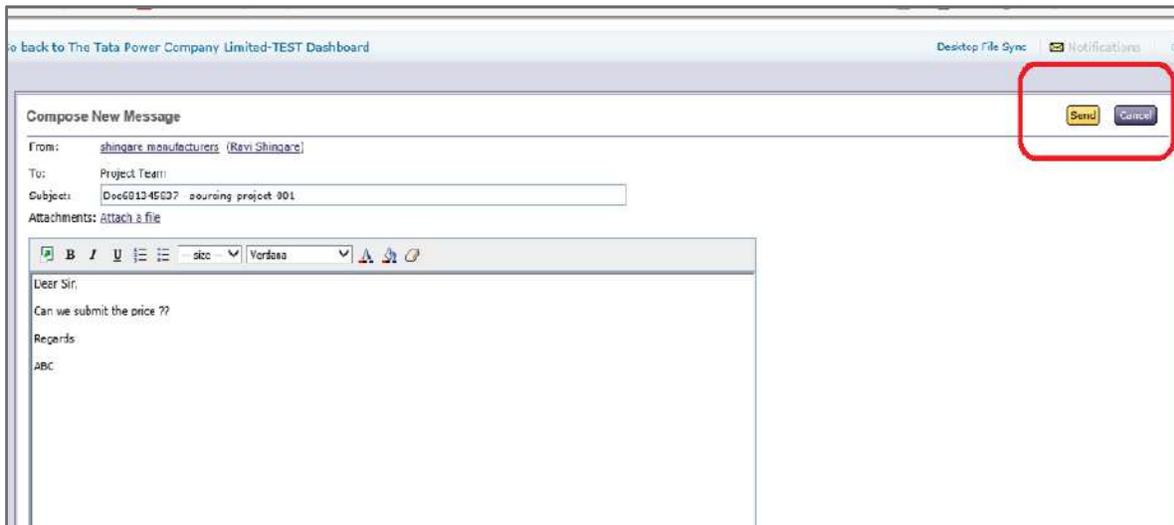
Core team		
Contact Person	E-Mail Id	Contact Details
Ravi Shingare	ravi.shingare@tatapower.com	9029004168
Himanshu Ranjan	himanshur@tatapower.com	9820339961
Escalation Matrix		
Paresh Bhatt	pareshbhatt@tatapower.com	
C T Prakash	ctprakash@tatapower.com	9223545185

4 Communicating with Tata Power Buyer & Auction team during auction / e- bidding

Step 1: Click “Compose Message”.



Step 2: Compose Your Message and click “Send”.



SUPPLIER FREQUENTLY ASKED QUESTIONS

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

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

What is the Ariba Commerce Cloud?

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

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

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

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

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

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

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

Do I need to enter a D-U-N-S number when I register?

Answer: - No; this is an optional field. You are only required to complete the fields marked with an asterisk (*). If you enter a D-U-N-S number, and you get a message that the value is already in use, leave the field blank, as D-U-N-S numbers must be unique within the Ariba Commerce Cloud. Your company can have multiple Ariba accounts, but only one account can use the D-U-N-S number.

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

Do I need to enter a Tax ID when I register?

Answer: - No, the Tax ID is an optional field. You are only required to fill in the fields marked with an asterisk (*).

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

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

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

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

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

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

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

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

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

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

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

Can my company have multiple accounts?

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

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

Additional Information

Consider the following items when deciding whether to have more than one account:

- **Administrators:** For each account, you can have only one account administrator, but the account administrator can provide access to multiple users. All users from your company have their own **Username** and **Password** to access the account.
- **DUNS** (data universal numbering system) **numbers:** You can add your company's DUNS number to only one account. If you plan to have multiple accounts, leave the DUNS number blank during registration.

How do I complete registration if my username already exists?

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

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

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

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

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

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

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

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

Solution: -

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

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

Where is my password reset email?

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

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

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

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

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

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

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

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

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