VERY VERY IMPORTANT FOR THE PROSPECTIVE BIDDERS TO NOTE PRIOR TO GOING THROUGH THE TENDER DOCUMENT

1. The bidders have to pay the requisite tender fees prior to submission of Pre-Bid queries (if any). The queries of the bidders who have paid the tender fees will be considered for clarification only. The queries of un-paid bidders shall not be considered for clarification. The queries are to be submitted in editable format of MS-Excel through e-mail only.
2. PLEASE SUBMIT THE FILLED IN BA REGISTRAION FORM WITH COPIES OF ALL RELEVANT DOCUMENTS WITH A SCANNED COPY OF A CANCELLED CHEQUE WITH THE TENDER DOCUMENT. THE FORM IS ATTACHED IN THE TENDER DOCUMENT.

INFORMATION TO THE BIDDERS TO PARTICIPATE IN E-TENDER SYSTEM OF TPCODL

-: Steps for E-tender submission:-

Step 1:

The bidder can get primary information about the tender from the NEWSPAPER advertisement / TPCODL website (in case of open tender) / invitation through e-mail (in case of limited tenders)

Step 2:

First the prospective Bidder who intends to participate in an open tender should deposit the requisite tender fee as mentioned in the tender document trough NEFT/ RTGS in the a/c of TPCODL as mentioned in the tender document. Deposit of the Tender fee should be made within the scheduled time for such deposit as indicated in the Tender document.

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

Account Name: TP Central Odisha Distribution Limited
Bank Name: SBI, IDCO Towers, Bhubaneswar
Bank Account No.: 10835304915
IFSC Code: SBIN0007891

Step 3:

After deposit of the tender fee, the bidder should furnish the following information through e-mail preferably in editable MS_EXCEL format to the contact person indicated in the tender document.

Sl No	Description	Bidder's Response
1	Tender Enquiry No.	
2	Description of materials / Works Tendered	
3	Name of the bidding company	
4	Place & Detail Address of the Company	
5	Postal Code (PIN Code)	
6	Name of the authorized contact person of the Bidder	
7	Contact No./Mobile No. authorized person	
8	E-mail Id of the contact person	
9	Tender Fee details (Bank Name / Amount / NEFT-RTGS UTR No / Date)	
10	GST No.	

Step 4:
After receipt of the above information through e-mail, Vendor will get an invitation e-mail from ARIBA System which is the e-tendering platform of TPCODL. The link will be valid for 48 Hrs. In this mail there will be an online link as Click Here to participate in the tender.

Step 5:

Click "Click Here" to access this event.

Step 6:

If you are bidding first time for TPCODL through ARIBA site then please "Sign UP by creating User Name and password as mentioned in Sign Up page. Please follow the process, as mentioned in the Sign Up page, during creation of User Name and password.

Those who are already having User Name and password for accessing TPCODL events, they can LOGIN using same User Name and password.

Step 7:
Click Continue. The simple one-page registration screen will open for first time user. All * mark mandatory field to be filled in.

Step 8:
You will be able to see the RFQ (i.e Detail Tender document).

Step 9:
After review and downloading of all documents click on "Accept Review Pre-requisites" i.e acceptance of terms and conditions.

Step 10:
Review and accept "Bidder Agreement".

Step 11:
You can see attached tender document in PDF format against clause no 1.1.1 (Introduction).

Step 12:
Vendor has to attach PDF version of technical bid in clause no. 2.1 and 2.2. (In this field do not attach any price document.)

Step 13:

Uploading of Price Bid

(a) Price schedule is attached in envelope.3.1 of ARIBA. Same has to be downloaded and price and tax details to be filled in as per the format given, print to be taken in vendor's letter head and signature and seal to be made by authorised person. PDF version of this price bid to be attached. For Price Bid put all the unit price and taxes and duties in provided field. Put "0" (ZERO) in not applicable field.
(b) In addition, the bidder has to upload the editable form of the price bid in EXCEL format in envelope 3.2 of ARIBA system.

Step 14:
After uploading successfully Techno commercial offer and price part then click on "Submit Entire Response"

Note: Once user ID and password created, bidder can also login to ARIBA site through the following URL:
https://service.ariba.com/Sourcing.aw/124997008/aw?awh=r&awssk=oxt0s1BN&dard=1

TPCODL

Business Associate Registration Form
Corporate Contracts

To be Filled in Block letters By Associate. Note **Annexure 1 - CSM F1** is Mandatory for Service / Composite Associate Registration

MATERIAL ☐ **SERVICE** ☐ **COMPOSITE** ☐ **CONSULTANT** ☐

Category: MSME / OTHERS (If MSME, please provide details as mentioned in Page No-2)

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)-Cancelled cheque to be attached

Name of Bank *			
Bank Details ID *		PAN Number *	
Account No. *		Account Holder *	
Bank Key *		Bank Country *	INDIA
MICR Code * (Attach Cancelled Cheque)			
IFSC Code *			
IBAN *			
Payment thro RTGS/NEFT*			

Quality / Safety Systems (Mandatory for Service and Composite Associate Registration

OHSAS 18001 Certified		Risk Management Process	
ISO 9001 Certified		ISO 14001 / EMS Certified	

Declaration and Associate Authorized Signature

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 TP Central Odisha Distribution Limited.

Name *	
Designation *	
Email *	
Signature & Company Seal *	

TP CENTRAL ODISHA DISTRIBUTION LIMITED
(A Tata Power & Odisha Govt. joint venture)
2nd Floor, IDCO Tower, Janpath Bhubaneshwar, Odisha 751022

Taxation Registration Details				
GST Scheme	Normal		Composite	
GST Registration No.				
GST Classification				
GST Registration Date				
Provident Fund No.				
ESI Registration No.				
MSME / SSI Registration No.				
MSME / SSI Registration Date				
MSME / SSI Registration Valid Upto				

Mandatory For SERVICE & COMPOSITE *(Material + Service)* **Associate 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 Associate)*						
PAN Card Copy	YES		NO		N / A	
GST Registration Certificate	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 **Requistioner** - 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 Associate 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 Associate Purchasing Organization			
Purchasing Organization *		Order Currency *	
Schema Group *		Sales Person *	
ABC Indicator *		Terms of Payment	
Service Based Invoice		GR Based Invoice	

TP CENTRAL ODISHA DISTRIBUTION LIMITED
(A Tata Power & Odisha Govt. joint venture)
2nd Floor, IDCO Tower, Janpath Bhubaneshwar, Odisha 751022

ANNEXURE – 1 **CSM F1 - Safety Category Qualification Form**

Type of Associate - **Service / Composite** *(Material + Service)*

Category - **A / B / C / D** *(Tick any one)*

Name of the Associate -

No	Safety Information	Remarks	Attachments		
1	**Organization is certified /accredited to following systems**				
1A	OHSAS : 18001	Yes / No	No		
1B	ISO : 14001	Yes / No	N0		
1C	ISO : 9001	Yes / No	No		
1D	Any Other	Yes / No			
2	**Safety Statistics for Last Three (03) Years**		Year 1 Current Year	Year 2 Last Year	Year 3 Year Before
2A	LTIFR – Lost Time Injury Frequency Rate	NIL			
2B	LTISR – Lost Time Injury Severity Rate	NIL			
3	Safety Training Process for your Organization	Yes / No	If "Yes", kindly attach Details / Procedures		
4	Safety Organization Structure of your Organization 1. Total No of Employees 2. No of Safety Professional 3. No of Engineers /Supervisor 4. No of Skilled /unskilled work men	Yes / No			
5	Certified /Skilled workers as a percentage of overall workforce ITI Trained, TPSDI Trained, Licensed Electrician, IBR welder, etc.	Yes / No			
6	Name and Address of Sites where work are in Progress or worked earlier	Details of the Site			

Name, Signature & Company Seal

To be filled by the Tata Power Requestor Associate to be registered for CATEGORY **A** **B** **C** **D**

1) **Category A**- Associate eligible to carry out High risk Jobs
2) **Category B**- Associate eligible to carry out technical jobs that are low risk
3) **Category C**- Associate eligible to carry out administrative and office jobs
4) **Category D**- Associate eligible to carry out consultant job/other than above A, B, C category

No	Description	Category A	Category B	Category C	Category D
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?				

OPEN TENDER NOTIFICATION

FOR

RATE CONTRACT FOR A PERIOD OF 1 YEAR FOR SUPPLY OF NEW STAR RATED DISTRIBUTION TRANSFORMERS OF DIFFERENT RATINGS (11 / 0.23 – 0.4 KV, 16 KVA TO 63 KVA, Al.) FROM REPUTED MANUFACTURES HAVING VALID BEE AUTHORISATION TO USE STAR LABEL FOR THEIR OFFERED PRODUCT

Tender Enquiry No.:
TPCODL/P&S/NEW DT-UPTO 63/1000000011/20-21

Due Date for Bid Submission: 03.05.2021 [15:00Hrs.]

The Tata Power Central Odisha Distribution Limited
2nd Floor, IDCO Towers, Janpath, Bhubaneswar-751022

CONTENTS OF THE ENQUIRY

1.0 Event Information

1.1 Scope of work

Open Tenders are invited in E-Tender Bidding Process from interested Bidders for entering into a Rate Contracts valid for a period of **1 Year** as defined below:

Line Item no.	Description	EMD Amount (Rs.)	Tender Fee Including GST (Rs.)
1	Rate Contract for a period of 1 Year for Supply of New Star Rated Distribution Transformers of different ratings (11/0.23-0.4 KV, 16 KVA to 63 KVA, Al.) as per the attached Technical Specification (Annexure-II) & BoQ (Annexure-I) from reputed manufactures having valid BEE authorization to use Star Label.	7,26,000.00	5,000

1.2 Availability of Tender Documents

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

Chief (Procurement & Stores)
Tata Power Central Odisha Distribution Limited
2nd Floor, IDCO Towers, Janpath, Bhubaneswar-751022

Tender documents may be downloaded by interested eligible bidders from TPCODL website www.tpcentralodisha.com with effect from dt. **27.03.2021**. In the event detailed tender documents are downloaded from TPCODL website or are received through email from TPCODL, the Tender Fee shall be compulsorily submitted either online through NEFT/ RTGS or demand draft/ Banker's cheque drawn in favor of "TP Central Odisha Distribution Limited", payable at Bhubaneswar only. Any such bid submitted without this Fee shall be rejected.

Bidders are requested to visit TPCODL website www.tpcentralodisha.com regularly for any modification/clarification to the bid documents.

1.3 Calendar of Events

(a)	Date of sale/ availability of tender documents from TPCODL Website/ARIBA E-Tender Portal	From 27.03.2021
(b)	Last date and time of payment of Tender fees through RTGS/NEFT to get link for participation in E-Tender portal	08.04.2021 up to 15:00 Hours
(c)	Last Date of receipt of Pre-Bid queries in **MS – Excel** format through e-mail, (if any) **after which no queries will be entertained**	13.04.2021 up to 13:00 Hours, **after which no queries will be entertained**
(d)	Last Date of Posting Consolidated replies to all the Pre-Bid queries as received in the TPCODL website	23.04.2021
(e)	Last date and time of receipt of Bids through ARIBA E-Tender portal	03.05.2021 up to 15:00 Hours
(f)	Date & Time of opening of Price of qualified bids	Will be notified to the successful bidders through our website / e-mail.

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

1.4 Mandatory documents required along with the Bid

1.4.1 EMD of requisite value and validity
1.4.2 Tender Fee in case the tender is downloaded from website
1.4.3 Requisite Documents for compliance to Qualification Criteria mentioned in Clause 1.7.
   a. Audited P & L account for last Three Finance Years.
   b. Self under taking confirming production capacity as OEM to meet the tendered quantity.
   c. Valid BEE certification to use star level for offered transformers.
   d. Type Test Report from CPRI/ERDA/ International Accredited Lab (Type Testing Conducted within last 5 Years) For offered transformers.

      In case the manufacturer does not possess Type Test Report for any offered Transformer, but possess the same for higher rated Transformer, then they have to furnish an Undertaking (as per Annexure XI enclosed in this Document) to furnish the said Type Test Report & relevant Drawings matching to our Tender Specification, from any of above mentioned Laboratory within 3 months of placement of RC in their favour)
   e. Copies of the last purchase order executed to meet the minimum supply experience specified in Qualifying Criteria.
   f. Performance certificate from the concerned clients to meet the Qualifying Criteria.
   g. Under taking for availability of in house testing facility to carry out Routine and Acceptance test.
1.4.4 Drawing, Type Test details of each item as specified at Annexure I (as applicable)
1.4.5 Duly signed and stamped 'Schedule of Deviations' as per Annexure III on bidder's letter head.
1.4.6 Duly signed and stamped 'Schedule of Commercial Specifications' as per Annexure IV on bidder's letter head.
1.4.7 Proper authorization letter/ Power of Attorney to sign the tender on the behalf of bidder.
1.4.8 Copy of PAN, GST, PF and ESI Registration (In case any of these documents is not available with the bidder, same to be explicitly mentioned in the 'Schedule of Deviations')

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

1.5 Deviation from Tender

Normally, the deviations to tender terms are not admissible and the bids with deviation are liable for rejection. Hence, the bidders are advised to refrain from taking any deviations on this Tender. Still in case of any deviations, all such deviations shall be set out by the Bidders, clause by clause in the 'Annexure III - Schedule of Deviations' and same shall be submitted as a part of the Technical Bid.

1.6 Right of Acceptance/Rejection

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

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

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

1.7 Qualification Criteria

1. *The bidder should have an average annual turnover of Rs. 25 crores in last three financial years. Copy of audited Balance Sheet and P&L Account to be submitted in this regard.*
2. *Bidder must be a BEE Certified OEM of Distribution Transformer (Oil) of same or Higher Ratings with manufacturing facility / assembly in India. The bidder should have oil filling machine under vacuum. TPCODL reserves the right to inspect the said manufacturing facility as a proof of compliance to this parameter. The bidder has to furnish the Self-undertaking in this regard.*
3. *The bidder should have valid BEE certification with successful Type Test Report (TTR) conducted from CPRI / ERDA/ International Accredited Laboratory and shall furnish the same as a part of the Technical Bid. 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 CPRI/ERDA / International Accredited Lab without any cost implication to the owner and the Type Test reports and relevant drawings duly approved by the Type Testing agency shall be furnished within 3 months from the date issue of RC.*
4. *The bidder should have supplied distribution transformers of same or higher rating with specifications as mentioned above, minimum 50% of the quantity tendered, during any one of the financial year out of the immediate past three financial years.*
5. *The bidder should have In-house routine and acceptance testing facilities for acceptance as per relevant IS/IEC. Self-undertaking to be submitted in this regard. TPCODL reserves the right to inspect the said manufacturing facility as a proof of compliance to this parameter.*
6. *The bid shall be accompanied by user's certificate (preferably issued within immediate last 5 years) from any Distribution Utility/ Reputed Private Organization/ State Govt. / Central Govt. or their undertaking(s) in support of satisfactory performance of the Transformer supplied earlier to them. In case the bidder has a previous association with Tata Power for similar products and services, the performance feedback for that bidder by TPC User Group shall only be considered irrespective of performance certificates issued by any third organization. Copy of performance certificates to be submitted in this regard.*

1.8 Marketing Integrity

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

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

1.9 Supplier Confidentiality

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

2.0 Evaluation Criteria

- First the bids will be evaluated techno-commercially for their responsiveness to our Technical Specification, GTP & other terms and conditions contained in our Tender Document, basing on the documents furnished by the Bidder to meet our Qualifying Requirements & other terms. The bidders, who qualify at this stage, shall only be considered for Price Evaluation. Hence the bidder should take utmost care to submit required documents as specified in our Tender Document to avoid rejection at this stage. TPCODL reserves right to accept any item of better specification with loss level less than the specified value but without any additional cost implication over TPCODL i.e. no cost capitalization towards for offering loss less than the specified values in the tender document is permitted.
- Price bids of all Qualified Bidders shall be evaluated **Line item wise basis so as to arrive at Lowes***t evaluated price for each Line Item separately as per Schedule of items [Annexure I].* TPCODL reserves the right to split the order line item wise and / or quantity wise, among more than one Bidder. Hence all bidders are advised to quote their most competitive rates.
- **Bidder has to mandatorily quote as per schedule of item [Annexure-I]. Failing to do so TPCODL may reject the bid.**

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

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

3.0 Submission of Bid Documents

3.1 Bid Submission

Bidders are requested to submit their offer in line with this Tender document. TPCODL shall respond to the clarification raised by various bidders and the replies will be sent to all participating bidders through e-mail through TPCODL website/ e-tender portal/e-mail.

Bids shall be submitted in 3 (Three) parts:

FIRST PART: "EMD" as applicable shall be submitted. The EMD shall be valid for 210 days from the due date of bid submission in the form of BG/ Bank Draft / Bankers Pay Order (issued from a scheduled Bank) favoring 'TP Central Odisha Distribution Limited". The original EMD has to be strictly in the format attached as **Annexure-XII** of this tender document and the same must reach to the address as mentioned in Cl. No. 1.2 with the tender No and contact person written on the top of the envelope, failing which it shall not be accepted and the bid as submitted shall be liable for rejection. A separate non-refundable tender fee of stipulated amount also needs to be transferred online through NEFT/ RTGS in case the tender document is downloaded from our website.

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

Account Name: TP Central Odisha Distribution Limited
Bank Name: SBI, IDCO Towers, Bhubaneswar
Bank Account No.: 10835304915
IFSC Code: SBIN0007891
In case the EMD is in the form of BG, the original hard copy must reach to the address mentioned in Sl. No.1.2 before opening of the Bid.

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

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

The technical bid shall be properly indexed and is to be submitted though E-Tender portal of TPCODL.

THIRD PART: "PRICE BID" shall contain only the price details and strictly in format as mentioned in Annexure I with explicit break up of basic prices, Taxes & duties, Freight etc. In case any discrepancy is observed between the item description stated in Schedule of Items mentioned in the tender and the price bid submitted by the bidder, the item description as mentioned in the tender document (to the extent modified through Corrigendum issued if any) shall prevail.

FOR BIDS INVITED THROUGH E-PROCUREMENT PORTAL:

The interested bidders are requested to obtain user name and password for purpose of bid submission through e-procurement portal of TPCODL, Bhubaneswar (tatapower.sourcing.ariba.com).
Bids shall be submitted in 3 (Three) parts on the assigned folder of E-Tender site. May please refer the user manual available at (tatapower.sourcing.ariba.com).

Bids have to be mandatorily submitted only through e-procurement portal of TPCODL. Bids submitted through any other form/ route shall not be admissible.

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

EMD
"RATE CONTRACT FOR SUPPLY OF NEW STAR RATED 11/0.23-0.4 KV 16 TO 63 KVA DISTRIBUTION TRANSFORMERS FOR A PERIOD OF 1 YEAR"

Please mention our Enquiry Number:- TPCODL/P&S/NEW DT-UPTO 63/1000000011/20-21
on the Tender and drop the same at Tata Power Central Odisha Distribution Limited, 2nd Floor, IDCO Towers, Janpath, Bhubaneswar-751022.
The envelope shall be addressed to:

Chief (Procurement & Stores)
Tata Power Central Odisha Distribution Limited
2nd Floor, iDCO Towers, Janpath, Bhubaneswar-751022

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 the TPCODL, 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.

The Bidder has the option of sending the Bids in person or by post. **(NOT APPLICABLE TO THIS TENDER)** However late receipt due to postal delay or any other reason will not be entertained. Bids submitted by Email/ Telex/ Telegram / Fax will be rejected. **No request from any Bidder to the TPCODL to collect the proposals from Courier/ Airlines/ Cargo Agents etc. shall be entertained by the TPCODL.**

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

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

Communication Details:

Name :	Mr. Satyajit Sadangi, DGM(Elect.)
Contact No-	8249964994
E-Mail ID:	satyajit.sadangi@tpcentralodisha.com
Name:	Mr. D.P. Das, Sr.GM
Contact No:	9438297571
E-Mail ID:	debaprasad.das@tpcentralodisha.com

3.3 Bid Prices

Bidders shall quote for the entire Scope of Supply / work as per the Technical Specification (Annexure-II) with a break up of prices for individual items and Taxes & duties. The bidder shall complete the appropriate Price Schedules included herein, stating the Unit Price for each item & total price with taxes, duties & freight up to destination at various sites of TPCODL. 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 break up shown else-where other than Price Schedule is tentative. The bidder shall ascertain himself regarding material required for completeness of the entire work. Any items not indicated in the price schedule but which are required to complete the job as per the Technical Specifications/ Scope of Work mentioned in the tender, shall be deemed to be included in prices quoted.

3.4 Bid Currencies

Prices shall be quoted in Indian Rupees Only.

3.5 Period of Validity of Bids

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

Notwithstanding clause above, the TPCODL 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 TPCODL against the risk of bidder's conduct which would warrant forfeiture. The EMD shall be denominate in any of the following form:

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

The EMD shall be forfeited in case of:

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

Or

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

3.9 Type Tests (if applicable)

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

4.0 Bid Opening & Evaluation process

4.1 Process to be confidential

Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process. Any effort by a Bidder to influence the TPCODL's 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 TPCODL Office, Bhubaneswar as per the schedule mentioned in Calendar of Events. In case of limited tenders, the bids shall be opened internally by TPCODL. In case of Open Tenders, the bids shall be opened in the presence of accredited representatives of bidders who may choose to be present at the time of tender opening. Technical bid must not contain any cost information whatsoever.

First the envelope marked "EMD" will be opened. Bids without EMD & cost of tender (if applicable) of required amount/ validity in prescribed format, shall be rejected.

Next, the technical bid of the bidders who have furnished the requisite EMD will be opened, one by one. The salient particulars of the techno commercial bid will be read out at the sole discretion of TPCODL.

4.3 Preliminary Examination of Bids/Responsiveness

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

Arithmetical errors will be rectified on the following basis: If there is a discrepancy between the unit price and the total price per item that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price per item will be corrected. If there is a discrepancy between the Total Amount and the sum of the total price per item, the sum of the total price per item shall prevail and the Total Amount will be corrected.

Prior to the detailed evaluation, TPCODL 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 TPCODL and/or the TPCODL 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, TPCODL may, at its discretion, ask the Bidder for a clarification on its Bid for any deviations with respect to the TPCODL 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 TPCODL. After all techno commercial issues are clarified, the Price Bid of the qualified bidders complying all Techno-Commercial conditions will be opened.

4.5 Price Bid Opening

Opening of Price bids is sole concerned upon the Techno-Commercial Evaluation. 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 TPCODL without any further correspondence in this regard.

4.7 Reverse Auctions

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

5.0 Award Decision

TPCODL will award the contract to the successful bidder whose bid has been determined to be the lowest-evaluated responsive bid as per the Evaluation Criterion mentioned at Clause 2.0. The Cost for the said calculation shall be taken as the all-inclusive cost quoted by bidder in Annexure I (Schedule of Items) subject to any corrections required in line with Clause 4.3 above. The decision to place rate

contract / purchase order/LOI solely depends on TPCODL on the cost competitiveness across multiple lots, quality, delivery and bidder's capacity, in addition to other factors that TPCODL may deem relevant.

TPCODL 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 TPCODL reserves the right to award other suppliers who are found fit.

6.0 Order of Preference/Contradiction:

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

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

7.0 Post Award Contract Administration

7.1 Special Conditions of Contract

- After finalization of tender, Rate Contract shall be issued on successful bidder with a validity period of **One Year**. Prices shall remain "FIRM" till validity of issued rate contract. Within the validity of rate contract and as per requirement of material, release order shall be issued time to time.
- Capacity for order handling within stipulated delivery period, shall be submitted by the bidder and the same shall be utilized and decided by TPCODL for placement of Release Order (RO).
- **Bidder needs to quote mandatorily for each line item of the BoQ**.
- Business Associate (BA) shall submit applicable Performance Bank Guarantee as per GCC within 15 days of issuance of rate contract. PBG applicable shall be 5% of Rate Contract Value. PBG submitted, shall be released after completion of applicable guarantee period plus Three months.
- Guarantee applicable shall be as per technical specifications.
- BA shall submit GTP / Drawing complying our ordered Specification, within 2 weeks from issuance of rate contract for CAT-A approval by TPCODL before issuing clearance for Production to the manufacturer. In case the Manufacturer fails to furnish said required document within stipulated time line, TPCODL reserves the right to cancel the Rate Contract / Release Order with forfeiture of EMD / PBG of concerned BA.
- Delivery period shall be 90 days from date of issue of release order/ CAT-A issuance.
- TPCODL shall short close the issued Release Order / Rate contract, in case of any quality issues.
- Any change in statutory taxes, duties and levies shall be borne by TPCODL. However, in case of delay in work execution owing to reasons not attributable to TPCODL, any increase in total liability shall be passed on the Bidder, whereas any benefits arising owing to such statutory variation in taxes and duties shall be passed on TPCODL.
- All other terms and conditions of TPCODLGCC shall be applicable.

7.2 Drawing Submission & Approval

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

7.3 Delivery Terms

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

7.4 Warranty Period

Guarantee Period of the supplied cable shall be as per the Technical Specifications attached as Annexure II of the tender document.

7.5 Payment Terms

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

7.6 Climate Change

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

7.7 Ethics

- TPCODL is an ethical organization and as a policy TPCODL 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.
- TPCODL work practices are governed by the Tata Code of Conduct which emphasizes on the following:
- We shall select our suppliers and service providers fairly and transparently.
- We seek to work with suppliers and service providers who can demonstrate that they share similar values. We expect them to adopt ethical standards comparable to our own.
- Our suppliers and service providers shall represent our company only with duly authorized written permission from our company. They are expected to abide by the Code in their interactions with, and on behalf of us, including respecting the confidentiality of information shared with them.
- We shall ensure that any gifts or hospitality received from, or given to, our suppliers or service providers comply with our company's gifts and hospitality policy.
- We respect our obligations on the use of third party intellectual property and data.

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

Any ethical concerns with respect to this tender can be reported to the following e-mail ID: pravin.jain@tpcentralodisha.com

8.0 Specification and standards:

Attached separately with tender.

9.0 General Condition of Contract

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

10.0 Safety

Safety related requirements as mentioned in our safety Manual is put in the Company's website and same shall be strictly followed.

http://www.tatapower.com

All Associates shall strictly abide by the guidelines provided in the safety manual at all relevant stages during the contract period.

ANNEXURE I

Schedule for Items

Sr. No.	Description	HSN/SAC CODE	UoM	Qty	Unit Price Excluding GST in (Rs.)	GST in (Rs.)	All inclusive Unit Price in (Rs.)	Total Amount inclusive of all taxes in (Rs.)
				Q	A	B	C=A+B	D=QXC
1	Single phase Star Rated 16 KVA, 11/0.23 KV Transformer (Al. wound)		EA	900				
2	Single Phase Star Rated 25 KVA, 11/0.23 KV Transformer (Al. wound)		EA	50				
3	Three Phase Star Rated 25 KVA, 11/0.4 KV Transformer (Al. wound)		EA	2060				
4	Three Phase Star Rated 63 KVA, 11/0.4 KV Transformer (Al. wound)		EA	1610				

NOTE:

- The overall period of the rate contract shall be for a period of 1 year and prices shall be "FIRM" till the validity of contract. Release order shall be issued as per requirement of TPCODL.
- The Offered Price will be evaluated for each Line item to arrive at the lowest offered Price for each item.
- The unit price with GST in column no. 8, is landed price for TPCODL at their store Bhubaneswar / Cuttack**. Refer CLAUSE 3.3 Bid Price.**
- The bidders are advised to quote prices strictly in the above format. Failing to do so, bids are liable for rejection.
- **Bidder needs to quote mandatorily for each line item of the BoQ**
- The bidder must fill each and every column of the above format. ***Mentioning "extra/inclusive" in any of the column may lead for rejection of the price bid.***
- No cutting/ overwriting in the prices is permissible.
- Quantities mentioned above is for evaluation purpose only, quantities may change as per actual requirements.

ANNEXURE II

Technical Specifications attached separately with the tender.

1. Technical specification for Single Phase Aluminum wound 11/0.25 KV Transformers 16 KVA & 25 KVA
2. Technical specification for Three Phase Aluminum wound 11/0.4 KV Transformers up to 100 KVA

ANNEXURE III

Schedule of Deviations

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

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

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

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

Seal of the Bidder:

Signature:

Name:

ANNEXURE IV

Schedule of Commercial Specifications

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

S. No.	Particulars	Remarks
1.	Prices firm including GST	Yes / No
2.	Delivery	Weeks / months
3.	Guarantee clause acceptable	Yes / No
4.	Terms of payment acceptable	Yes / No
5.	Performance Bank Guarantee acceptable	Yes / No
6.	Liquidated damages clause acceptable	Yes / No
7.	Validity (180days) (From the date of opening of technical bid)	Yes / No
8.	Inspection during stage of manufacture	Yes / No
9.	Rebate for increased quantity	Yes / No (If Yes, indicate value)
10.	Change in price for reduced quantity	Yes / No (If Yes, indicate value)
11.	Covered under Small Scale and Ancillary Industrial Undertaking Act 1992	Yes / No (If Yes, indicate, SSI Reg'n No.)

ANNEXURE V

Checklist of all the documents to be submitted with the Bid

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

S. No.	Documents attached	Yes / No / Not Applicable
1	EMD of required value	
2	Tender Fee as mentioned in this RFQ	
3	Company profile/ organogram	
4	Signed copy of this RFQ as an unconditional acceptance	
5	Duly filled schedule of commercial specifications (Annexure IV)	
6	Sheet of commercial/technical deviation if any (Annexure III)	
7	Audited Balance sheet for the last completed three financial years; mandatorily enclosing Profit & loss account statement	
8	Acknowledgement for Testing facilities if available (duly mentioned on bidder letter head)	
9	List of Machine/tools with updated calibration certificates if applicable	
10	Details of order copy (duly mentioned on bidder letter head)	
11	Order copies as a proof of quantity executed	
12	Details of Type Tests if applicable (duly mentioned on bidder letter head)	
13	All the relevant Type test certificates as per relevant IS/IEC (CPRI/ERDA/International Accredited Lab.) if applicable.	
14	Project/ Supply Completion certificates	
15	Performance certificates	
16	Client Testimonial/Performance Certificates	
17	Credit rating/ Solvency certificate	
18	Undertaking regarding non blacklisting (On company letter head)	
19	List of trained/ Untrained Manpower	
20	Valid BEE certification to use star Level for the offered Transformers	
21	Self declaration in company letter head to furnish TTR within stipulated time as per the format attached in Annexure-XI	
22	Self declaration in company letter head confirming production capacity as OEM to meet the tendered quantity	

Annexure VI

Acceptance Form for Participation In Reverse Auction Event

(To be signed and stamped by the bidder)

In a bid to make our entire procurement process more fair and transparent, TPCODL intends to use the reverse auctions as an integral part of the entire tendering process. All the bidders who are found as technically qualified based on the tender requirements shall be eligible to participate in the reverse auction event.

The following terms and conditions are deemed as accepted by the bidder on participation in the bid event:

1. TPCODL shall provide the user id and password to the authorized representative of the bidder. *(Authorization Letter in lieu of the same shall be submitted along with the signed and stamped Acceptance Form).*
2. TPCODL will make every effort to make the bid process transparent. However, the award decision by TPCODL would be final and binding on the supplier.
3. The bidder agrees to non-disclosure of trade information regarding the purchase, identity of TPCODL, 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 TPCODL.
6. In case of intranet medium, TPCODL shall provide the infrastructure to bidders. Further, TPCODL 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 TPCODL.
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 TPCODL 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 TPCODL.
12. The original price bids of the bidders shall be reduced on pro-rata basis against each line item based on the final all inclusive prices offered during conclusion of the auction event for arriving at Contract amount.

Signature & Seal of the Bidder

Annexure VII

Scope of Work &Service Level Agreement

NA

Annexure VIII

Inspection Test Plan

NA

Annexure IX

Manufacturers Authorization Form

NA

Annexure X

General Conditions of Contract – Attached separately with the tender.

Annexure XI

UNDERTAKING FOR SUBMISSION OF TYPE TEST REPORT

(Applicable for bidders who do not have CPRI/ERDA Type Test Report for offered materials but have Type Test Report for higher sizes/ratings from any other accredited testing laboratory)

Name of the Purchaser: ----------

Tender Specification No: ----------

Sir,

I/we, the undersigned do hereby undertake, that we shall submit the required Type Test report & relevant Design Drawings responding TPCODL Specification & duly approved by CPRI / ERDA/ or any Internationally Accredited Testing Laboratory for our offered materials within 3 months from the date of issue of Rate Contract by TPCODL, failing which TPCODL may cancel the RC issued in our favour forfeiting our E.M.D. The cost towards conducting such Type Testing of the offered materials will be borne by us.

Yours faithfully,

Place-

Date-

Signature of the bidder

With seal

(This Annexure shall be duly filled-up and signed by the bidder & submitted along with the original copy of the Bid.)

Annexure XII

Format of BID BG

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 Bhubaneswar branch and claim will also be payable at Bhubaneswar Branch. **(To be confirmed by Bhubaneswar Branch by a letter to that effect)**

Notwithstanding anything contained hereinabove :

a) Our liability under this Bank Guarantee shall not exceed Rs._____/-(Rupees _____ only).
b) This Bank Guarantee shall be valid upto ---------- 20__.
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 ---------- 20__.

TPCODL TP CENTRAL ODISHA DISTRIBUTION LIMITED	TATA POWER CENTRAL ODISHA DISTRIBUTION LIMITED, ODISHA		
	TECHNICAL SPECIFICATION		
Document Title	Specification of 1-Phase 11kV Aluminum Winding Distribution Transformer up to 16 KVA &25KVA ratings		
Document No.	ENG-HV-008		**Eff. Date: 1.03.2021**
Revision No.	00		**Page 1 of 49**
Prepared By **Suchismita Nayak**	**Reviewed By** **Niranjan Khuntia**	**Approved By** **Khajan C. Bhardwaj**	**Issued By** **Pourush Garg**

CONTENT

1 SCOPE

This specification covers the technical requirements of design, manufacture, testing at manufacturer's works, packing, forwarding, supply and unloading at site/store and performance of oil immersed, non-sealed, naturally cooled, three phase 11 kV/ 0.250 kV, 50 Hz, Aluminium wounded, double wound outdoor type distribution transformers. The equipment covered by this specification shall unless otherwise stated, be designed, manufactured and tested in accordance with the latest editions of the following Indian, International standards and shall conform to the regulations of the local authorities

2 APPLICABLE STANDARDS

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

S.NO	Indian Standard	Title
1	IS-2026:1977(Part 1 to 5)	Specification of Power Transformers
2	IS-5:2007	Specification for colours for ready mixed paints
3	IS-104	Ready mixed paint, brushing zinc chromate, priming
4	IS-2099	Specification of high voltage porcelain bushing
5	IS-649:1997	Testing for steel sheets and strips and magnetic circuits
6	IS-7421: 1988	Specification for Porcelain Bushings for Alternating Voltages including 1000 V
7	IS-9335:1997	Specification for Cellulosic Papers for Electrical Purposes
8	IS-1576: 1992	Solid Pressboard for Electrical Purposes - Specification
9	IS-6600:197	Guide for loading of oil immersed Transformers
10	IS-2362: 1993	Determination of water content in oil by Karl Fischer Method- Test Method
11	IS-5561: 1970	Specification for Electric Power Connectors

			12	IS-6103:1971	Specification for Testing of specific resistance of electrical insulating liquids
			13	IS-6262:1971	Method for test of Power Factor and dielectric constant of electrical insulating liquids.
			14	IS-6792:1992	Method for Determination of Electric Strength of Insulating Oil
			15	IS-10028:1981	Code of Practice for selection, installation and maintenance of transformers
			16	IS-1180:2014 (PART 1)	Outdoor distribution Transformer up to and including 2500 KVA
			17	IS-335:1985	Specification for Transformer Oil
			18	IS-4257	Dimensions for clamping arrangements for bushings
			19	IS-3347	Specification for Outdoor Bushings
			20	IS-5484	Specification for Aluminum wire rods
			21	IS-6160	Rectangular electrical conductors for electrical machines
			22	IS-6162	Paper covered aluminum conductor
			23	IS- 3401	Specification of Silica Gel
			24	IS-3024	Grain Oriented Electrical Steel Sheet and Strip
			19	IS-3347	Specification for Outdoor Bushings
			20	IS-5484	Specification for Aluminum wire rods
			21	IS-6160	Rectangular electrical conductors for electrical machines
			22	IS-6162	Paper covered aluminum conductor
			23	IS- 3401	Specification of Silica Gel
			24	IS-3024	Grain Oriented Electrical Steel Sheet and Strip
	CLIMATIC CONDITIONS OF	Max. Ambient Temperature : 50 deg.C Max. Daily average ambient temp. : 40 deg.C Min Ambient Temp : 0 deg C Maximum Humidity : 95% Minimum Humidity : 10%			

3	**THE INSTALLATION:**	Average No. of thunderstorm days per annum 50 Average Annual Rainfall : 1458 mm Average No. of rainy days per annum 60 Rainy months : June to Oct. Altitude above MSL not exceeding : 300 meters Wind Pressure : 300kg/sq m up to an elevation of10m The atmosphere is generally Saline, laden with salt, acid and dust suspended during dry months and subjected to fog in cold months. The design of the equipment and accessories shall be suitable to withstand saline weather & seismic forces corresponding to an acceleration of 0.1g.
4	**GENERAL TECHNICAL REQUIREMEN TS**	

Sl.no.	Description	Requirement	
1	Application	Outdoor	
2	Continuous rated capacity	16KVA	25KVA
3	Rated voltage	12KV	12KV
4	Service voltage	11KV	11KV
5	Rated voltage LV	250V	250V
6	Line current HV	2.519A	3.94A
7	Line current LV	66.66A	104.17A
8	Frequency	50Hz	50Hz
9	No. of Phases	Single	Single
10	Vector Group	IiO	IiO
11	Type of Cooling	ONAN	ONAN
12	Insulation class	Class-A	Class-A
13	Over fluxing limit (due to combined effect of Voltage & Frequency)	12.5%	12.5%
13	Tap changing arrangement	Not applicable	Not applicable
14	Noise level at rated voltage and frequency	48 db	51 db
16	Permissible temperature rise over ambient. Of top oil measured by thermometer Of winding measured by resistance	35 Deg.C 40 Deg.C	35 Deg.C 40 Deg.C
	Max. Total Losses at 50% loading	82	110

		17	(Watts) at 75 deg C as per Energy efficiency level-II		
		18	Max. Total Losses at 100% loading (Watts) at 75 deg C as per Energy efficiency level-II	224	300
		20	Short circuit impedance voltage at 75□C	4.5%	
		21	Impulse withstand voltage	75 Kvp	
		22	Power frequency withstand voltage	28 kV	
		22	Insulation Class	A	
		23	Voltage fluctuations permissible	+12.5% to -12.5%	
		24A.	Maximum Flux Density (Increase of +/-12.5% of combined voltage & frequency variation from rated voltage & frequency	1.9 Tesla	
		24B	Normal Flux density at rated voltage & Frequency	1.5Tesla	
		25	Maximum Current Density	1.6 Ampere per sq. mm	
		26	Minimum clearances in air for Bushing terminals a) HV phase to phase/ phase to earth (mm) b) LV phase to phase/ phase to earth (mm)		
				a)255mm / 140mm b)75mm / 40mm	
		27	HV Bushing	12KV	
		28	LV Bushing	1KV	
5.0	**GENERAL CONSTRUCTIONS**	The transformer shall be double-wound, Aluminium coil, oil immersed, naturally cooled (ONAN) and sealed type with rectangular tank. The transformer shall be suitable for service with fluctuations in supply voltage up to plus 12.5% to minus 12.5%. The Transformer shall design suitable for service life of 25years.The transformer and accessories shall be designed to facilitate operation, inspection, maintenance and repairs. The design shall incorporate every			

		precaution and provision for the safety of equipment as well as staff engaged in operation and maintenance of equipment. All outdoor apparatus of the Transformer including bushing insulators with their mountings, shall be designed so as to avoid any accumulation of water.
5.1	**CORE**	The core shall be stack type of high grade cold rolled, non-ageing, grain oriented, annealed silicon steel lamination (CRGO), having low loss & good grain properties, coated with hot oil proof insulation, bolted together to the frames firmly to prevent vibration or noise. Scrap CRGO material shall not be used for transformers. The Core thickness should be 0.23mm less or grade of core shall be M3 or better. Only one grade and one thickness of the core shall be accepted & mixing of different The core shall be stress relieved by annealing under inert atmosphere if required. All core clamping bolts (If any) shall be effectively insulated. It should be coated with hot oil proof insulation, bolted together with frames to prevent vibration & noise. The value of the maximum flux density allowed in design & grade of lamination used shall clearly be stated. The vendor shall submit the calculation in support of same. Only one grade and one thickness of core shall be accepted and no mixing of different grades shall be allowed. The complete design of the core must ensure permanency of the core losses with continuous working of the transformers. The Transformer shall be suitable for continuous service without damage under over fluxing where the ratio of voltage over frequency exceeds the corresponding ratio at rated voltage & rated frequency up to 12.5% and the core shall not be saturated. . The successful bidder is required to submit the following documents with regard to the procurement of core material: Invoice of supplier Mill's test certificate Packing list Bill of landing Bill of entry certificate by custom Description of material, electrical analysis, physical inspection certificate for surface defects, thickness and width of the material. The bidder shall offer the core for inspection and approval of the Purchaser during manufacturing stage. TPCODL shall impose heavy penalty or black list the bidders using seconds/defective CRGO sheets. The transformer shall be suitable for continuous service without damage under conditions of 'over fluxing' (due to combined effect of voltage and frequency) where the ratio of voltage over

		frequency exceeds the corresponding ratio at rated voltage and rated frequency up to 12.5% and the core shall not get saturated. The bidder shall furnish necessary design data in support of this situation. No load current shall not exceed 3% of full load current and shall be measured by energising the transformer at rated voltage & frequency. For increase of rated voltage 12.5% the no load current shall not increase beyond 6 % of the full load current. The Bidder shall offer stage inspection & approval of TPCODL during manufacturing Stage. Transformer core assembly shall have enclosed hooks for lifting arrangement.

SL. No	Description	Units	As Furnished by Bidder
1	Magnetizing No Load current		
	90% Voltage	%	
	100% Voltage	%	
	112.5% Voltage	%	
2	Core Grade & Make		
3	Thickness of core	Mm	
4	Core Diameter	Mm	
5	Gross Core Area	Sq. cm	
6	Net Core Area	Sq. cm	
7	Flux density calculated	Tesla	
8	Over fluxing without saturation(BH Curve to be submitted)	Tesla	
9	Mass of Core	Kg	
10	Loss per Kg of core at the above specified flux density	Watt	
11	Core Window height	Mm	
12	Centre to Centre distance of the core	Mm	
13	Mass of Core lamination(Min)	Kg	
14	Make of the core offered		

5.2 LOSSES

The bidder shall individually guarantee No load loss (Iron loss) and Full Load Copper Loss (at 75 deg C) without any positive tolerance.
The bidder shall also guarantee the total loss at 50% and 100% load condition (at rated voltage and frequency and at 75ºC) and these should be within the limits of maximum total losses declared by TPCODL for both 50% and 100% loading values (as per table below).

Description	Units	16 kVA	25 kVA
		82	110

		Maximum Losses at 100% loading at 75ºC | Watt | 224 | 300 No positive tolerance shall be allowed on the losses as mentioned above. However, bidder can offer losses less than specified but no consideration in cost will be given for the same. The successful bidder shall guarantee the quoted losses for at least five years. If losses increase during this period, BA shall be bound to pay a fine of Rs. 250 per watt to the amount by which the losses at 50% loading and 100% loading increases the values given in specification. During testing at Bidder's works if it is found that the actual measured losses are more than the values quoted by the Bidder, TPCODL shall reject the transformer and shall have the right to reject the complete lot. During testing at Bidder's works, if the temperature rise exceeds the specified values, the entire lot shall be rejected by TPCODL. During testing at Bidder's works, if the impedance values differ from the guaranteed values including tolerance, the transformer shall be rejected by TPCODL. The Transformer shall be designed for minimum level of efficiency 99.05% for loading range in between 20% to 60% at unity P.F. Percentage of regulation should be less than 4% at 0.8power factor.
5.3	**WINDINGS**	Primary and secondary windings shall be constructed from high- conductivity, Double Paper Covered (DPC) Aluminium conductor of Grade 2 (Al 99.6 %) as per IS 5484. The winding shall be designed for better voltage regulation and mechanical strength. LV winding shall be such that neutral formation will be at top. The coil shall be circular in shape and their construction shall be such that there is no possibility of any distortion under likely conditions of service. Proper bonding of inter layer insulation with the conductor shall be ensured. Test for bonding strength to be conducted. Inter layer insulation both for HV and LV windings shall be Epoxy dotted Kraft/Kraft paper and pressboard of standard make or any other superior material subject to approval of Purchaser shall be used. All spacers, axial wedges / runners used in windings shall be made of pre-compressed solid press board. In case of cross-over coil winding of HV all spacers shall be properly sheared and dovetail punched to ensure proper locking. All axial wedges/runners shall be properly milled to dovetail shape so that they pass through the designed spacers freely. Insulation shearing, milling and punching operations shall be carried out in such a way, that there should not be any burr and dimensional variations. Proper bonding of inter layer insulation with the conductor shall be ensured. Test for bonding strength shall be conducted as per

		standards. The dimensional tolerances for windings shall be within limits and as specified in the GTP. All turns of windings shall be adequately supported to prevent movement. The core/coil assembly shall be securely held in position to avoid any movement under short circuit conditions. The joints in the winding shall be avoided but if it is necessary then, these shall be properly brazed and the resistance of the joints shall be less than that of parent conductor. The current density for HV and LV winding should not be more than 1.6 Ampere per sq.mm. The insulation between core and bolts and core and clamps shall withstand 2.5 kV for one minute. The bidder shall submit characteristics of insulation paper with the offer.
5.4	**TRANSFORMER TANK**	1)The transformer tank should be round and made of good quality, electrically tested welded milt steel sheet of adequate thickness suitably stiffened to provide sturdy and robust construction to withstand extreme pressure conditions. 2) The Tank shall be fabricated by welding at corners. No Horizontal & vertical joints in Tank side walls& its top& bottom covers shall be allowed. 3) All welding operations should be done by qualified welder (performance qualification certificates to the customer) as prevalent ASME Standards& copy of welding procedure to be submitted to TPCODL at the time of Drawing approvals. 4) The Thickness of the Tank should be as below For Top & bottom plate – 2.5mm Min For sides – 2.25mm Min 5) The Circular bottom plate edges of the tank should be folded upward for at least 25mm to have sufficient overlap with Vertical side wall of Transformer so that oil shall not reach bottom surface to avoid oil leakage. 6) The Tank cover shall have plasticized surfaced at top to guard against Bird fault. Alternatively, suitable UV resistance polymeric insulating shrouds (Height 300mm) to be provided on bushing Terminals. 7) The Tank cover shall be conical shape (Slope at least 15 degree taking Horizontal plane as surface) 8) The Tank cover should be fixed to tank through Anti-Theft/ shear bolt arrangement to prevent Theft. 9)There must be sufficient space from core to Top cover to take care of the oil expansion. The oil volume inside the Tank such that even under extreme operating condition the pressure generated inside the tank does not exceed 0.4kg/sq.cm positive or negative and the Tank should have adequate mechanical strength to withstand it.

		10) The tank shall be capable of withstanding a pressure up to + 0.8 Kg./cm2 and vacuum of 0.7kg/cm2 of mercury for 30minutes without any deformation. The 11)Tank design shall be such that the core and the winding lifted freely without dismantling the bushing. 12)All joints of Tank & fitting shall be oil tight & free from bulging. 13) Minimum oil level mark shall be embossed inside the tank (at 25degree). 14) The Tightening torque chart to be provided for all bolts used in specific rating. This shall be submitted along with drawing.
5.5	**Lifting Lugs & Mounting Lugs**	15) The Transformer shall be provided with two permanent lifting lugs (enclosed type) of M S Plate for transformer body. 16) The location of the lifting lug such that clearance between lifting chain & nearest part shall be at least 100mm. 17) There shall be facilities for lifting the core coil assembly separately. 18) The lifting lug shall be capable of withstanding two times weight of the Transformer. 19) Calculation sheet for lifting lug design to be submitted by bidder. 20) Thickness of MS Plate for lifting lugs shall be minimum 5mm or more as per calculation. 21) The Transformer shall be provided with two mounting lugs (made of steel of 5mm thickness) suitable for fixing the transformer to a single pole by means of 2bolts of 20mm dia as per the calculation. 22) The mounting lug faces should be in one plane. 23) calculation sheet for mounting lug design to be submitted by bidder.
5.6	**GASKET**	Gaskets shall be made of synthetic rubber having high chemical properties and long life to reduce oil leakages, provided with the transformers for making oil tight joints, and there shall be no deleterious effects on either gaskets or oil when the gaskets are continuously in contact with hot oil. The gasket provided in between top cover plate and tank shall be neoprene rubberized oil resistant cork sheets conforming to type V as per IS:11149, to maintain the seal at extremes of operating temperature. The gasket provided for HV, LV bushing terminal box cover shall be conforming to type c, RC Grade 70 as per IS:4253, to maintain the seal at extremes of operating temperature. Joint free Gasket to be used only. Exterior gaskets shall be weatherproof and shall not be affected by strongsunlight.

5.7	**SURFACE PREPARATION AND PAINTING**	**The Transformers are proposed to install in coastal belt of Odisha. The equipment should be designed & painted for saline weather proof**. All paints, when applied in a normal full coat, shall be free from runs, sags, wrinkles, patchiness, brush marks or other defects. All primers shall be well marked into the surface, particularly in areas where painting is evident and the first priming coat shall be applied as soon as possible after cleaning. The paint shall be applied by airless spray. However, where ever airless spray is not possible, conventional spray be used with prior approval of purchaser. After all machining, forming and welding has been completed, all steel work surfaces shall be thoroughly cleaned of rust, scale, welding slag or spatter and other contamination prior to any painting. Steel surfaces shall be prepared by shot blast cleaning (IS: 9954) to grade Sq.2.5 of ISO 8501-1 or chemical cleaning including phosphating of the appropriate quality (IS: 3618). Chipping, scraping and steel wire brushing using manual or power driven tools cannot remove firmly adherent mill-scale. These methods shall only be used where blast cleaning is impractical. Manufacturer to explain such areas in the technical offer. After cleaning and subsequently drying for four hours, they shall be given suitable anti-corrosion protection. Heat resistant (Hot oil proof) paint shall be used for the inside surface and whereas for external surface one coat of thermosetting powder paint or one coat of epoxy primer (zinc chromate) followed by two coats of synthetic enamel/polyurethane base paint. The two coats shall be of oil and weather-resistant nature with final coat as flossy and non-fading paint of shade 631 as per IS 5 or RAL 7032. These paints can either air drying or stoving. The transformer body shall be painted with a circle of 50 mm diameter, centrally placed, just below the radiators. This paint shall be UV resistant, non-fading type. All prepared steel surfaces should be primed before visible re-rusting occurs or within 4 hours, whichever is sooner. Chemical treated steel surfaces shall be primed as soon as the surface is dry and while the surface is still warm. Where the quality of film is impaired by excess film thickness (wrinkling, mud cracking or general softness) the bidder shall remove the unsatisfactory paint coating and apply another coating. As a general rule, dry film thickness shall not exceed the specified minimum dry film thickens by more than 25%. Any damage occurring to any part of a painting scheme shall be made good to the same standard of corrosion protection and appearance as that was originally applied. Any damaged part shall be cleaned to bare metal with an area extending 25 mm around its boundary. A priming coat shall be immediately applied followed by full paint finish equal to that

originally applied and extending 50 mm around the perimeter of the original damage. The repainted surface shall present a smooth surface which shall be obtained by carefully chamfering the paint edges before and after priming.

The coats shall be applied as a continuous film of uniform thickness and free of pores. Overspray, skips, runs, sags and drips shall be avoided. Each coat of paint shall be allowed to harden before the next is applied. The thickness of the film shall not be lesser at the edges.

The requirements for the dry film thickness (DFT) of paint and the materials to be used shall be as given below: & should be guaranteed for any type of damage due to harsh climatic condition for **10Years.** The painted surface shall be tested for paint thickness. The painted surface shall pass the cross hatch adhesion test and impact test as acceptance tests and salt spray test and Hardness test as type test as per relevant ASTM standards. The supplier shall provide the painting performance requirement for a period of not less than **10years**

SL No.	**Paint type**	**Area to be painted**	**No. of Coats**	**Total dry film thickness (min.)(microns)**
	Thermosetting	Inside	01	30
1.	powder paint			
		Outside	01	60
	Liquid paint Epoxy(primer)	Outside	01	30
2.	P.U. Paint	Outside	02	25 each
	(Finish coat) Hot oil paint resistant	Inside	01	35

1. **<u>HT Bushing(12KV/250A)</u>**
2. The Bushings shall be two part and outdoor type external part shall be made of porcelain material and rods and nuts (Tightening Nut along with check Nut) shall be made of Tinned brass material.
3. The HV Bushing shall be fixed to the top covers.
4. The HV Bushing shall have arcing Horns
5. IS to be followed: IS8603(Part-I) & IS 2099
6. The HV Bushing shall be fitted with Polymeric molded heat shrinkable Insulating covers suitable for protection of HT bushing connector.
7. Tinned Brass/Metallic connectors shall be provided connected on HV Bushing rods suitable up to bare dog conductor in horizontal

5.8	**BUSHING & TERMINAL CONNECTORS**	& vertical direction. **2. LT Bushing(1KV/250A)** 1. The Bushings shall be outdoor type external part shall be made of porcelain material and rods and nuts (Tightening Nut along with check Nut) shall be made of Tinned brass material. 2. IS to be followed IS 3347(Part-1) & IS 7421(latest amendment of IS) 3. LV Bushing shall be provided with Cable Box.
5.9	**LV BOX with MCCB**	1. LV Box should have made of Mild steel of 2.2mm thickness with suitable handle and front cover shall have antitheft hinge arrangement with side opening angle of 150degree(min). 2. The Box cover shall be with bend edges such that it shall protect the gasket on three sides. 3. Door in Door system to be provided. Small Door shall be designed for MCCB operation only. Both Door shall have rain shed and Magnetic Latch arrangement with Key –locking arrangement. 4. The Single phase MCCB Shall be provided with suitable size of Al bus bar w.r.t minimum current density (calculated) of 1A/ sq. mm inside for further distribution of supply. 5. LV Box shall be IP55 and proper slope shall be provided so that water does not accumulate on cable box and ensure drainage of water. 6. LV Box shall be fixed on the Tank with minimum 06nuts & bolts with rubberized cork sheet placed in between them, in such a way that they can be completely removed whenever required. 7. The approved make MCCB's are L&T, Havells, ABB, Siemens, Schneider, EATON. 8. Arrangement in the BOX shall be N-Ph from left to right when viewed from front. 9. Neutral Bus bar should be extended and taken out (at least 40mm) of box on a bolt of M10 size and it should be insulated from body. Nuts with bimetallic washers shall be provided on it for earthing. A) 16KVA – 63A, 10KA – 4No's Outgoing B) 25KVA – 125A, 10KA – 8No's outgoing Gland plate shall be mounted separately with nut bolt arrangement and Gasket in

		between them. Gland plate to be provided with half punched / knock out type holes for connecting outgoing cables. Each outgoing cable dia is 20.5mm. Epoxy insulator shall be provided in the LV Box to support LV Bus bae. Painting of the box should be done as per clause 5.14 Insulated flexible Cu wire with Cu lugs to be used to connect MCCB with both Terminals i.e. phase & neutral. Nominal size of the cable is as below 1) 25Sqmm multi strand Cu cable for 16KVA DT 2) 35sqmm multi strand Cu cable for 25KVA DT
5.10	**Make of the Major component & Material**	The BA shall procure the following constituent items from the designated vendors as follows:

Sl.no	Raw material/ Equipment	Make
1	MCCB	ABB, Schneider, GE,L&T, Siemens, Havells, C&S
2	Transformer Raw materials	
A	Copper	M/S Sterlite, M/S Hindustan Copper, M/S Hindalco
B	Core	M/S A K Steels, M/S POSCO, M/S Kawasaki, M/S JFE, M/S Nippon Steel
C	Insulation Paper	Raman Boards- Mysore Senapathy Whiteley- Banglore
D	Transformer Oil	Savita/Apar/Gandhar
E	Gasket & Corks	Nu Cork, Anchor Corks
F	Steel for Tank	M/S Tisco, M/S Sail, M/S Bhusan Steel, M/S ISSCO, M/S RINL, M/S Jindal Steel

5.11	**Equalizing / Equipotential Strip**	1. The Transformer top cover shall be connected at two places (diagonally opposite with each other) with the tank by tinned copper strip (30mm wide, 0.7mm thick). 2. The strip should touch bare surface of tank in order to ensure proper electrical connection of tank with top cover with the strip
5.12	**EARTHING CONNECTIONS**	The provision for earthing connection shall be provided for 25x6 mm GI strip with insulated mounting support. The bolts shall be located on the lower side of the transformer and be of M12 size for Body earthing. LV neutral bushing provided shall be used for neutral earthing. Transformer top cover shall be connected at two diagonal places with the tank by tinned copper strip.
5.13	**Pressure Release Device**	1)The Transformer shall be equipped with a self –sealing pressure release device designed to operate minimum pressure of 8PSI(0.564kg/sq cm). 2) The pressure release device shall be provided in low voltage terminating portion of the tank above top oil level.
5.14	**Overloading capacity**	The Transformer shall be suitable for loading IS6600
5.15	**OIL**	All transformers shall be filled to the required level with new, unused, clean, standard mineral oil in compliance with IS 335/ IEC 296 and shall be free from all traces of polychlorinated biphenyl (PCB) compounds. The use of recycled oil is not acceptable. The specific resistance of the oil shall not be less than 2.5×10^{12} ohm-cm at 27˚C when tested as per IS 6103.Oil shall be filtered and tested for break down Voltage (BDV) and moisture content before filling. Oil shall be filled under vacuum. The design and all materials and processes used in the manufacture of the transformer, shall be such as to reduce to a minimum the risk of the development of acidity in the oil. The Dielectric strength and water content shall meet with given below requirement.

Break Down Voltage (min.)	Water content ppm, (max.)
60	30

5.16	**RADIO INTEREFENCE**	When operated at voltages up to **12.5%** in excess of the normal system rating, transformers shall be substantially free from partial discharges (i.e. corona discharges in either internal or external insulation) which are likely to cause interference with radio or telephone communication.
5.17	**FASTENERS**	All bolts, studs, screw threads, pipe threads, bolt heads and nut bolts shall comply within the appropriate Indian standards for metric threads. Bolts or studs shall not be less than 6mm in diameter except when used for small wiring terminals. All nuts and pins shall be adequately locked. Wherever possible bolts shall be fitted in such a manner that in the event of failure of locking resulting in the nuts working loose and falling off, the bolt shall remain in position. All ferrous bolts, nuts and washers placed in outdoor positions shall be treated to prevent corrosion, by hot dip galvanizing, except high tensile steel bolts and spring washers which shall have electrolytic action between dissimilar metals. Each bolt shall project at least one thread but more than three threads through the nut. If bolts and nuts are placed so that they are inaccessible by means of ordinary spanners, special spanners shall be provided. The length of the screwed portion of the bolts shall be such that no screw thread may form part of a shear plane between members. Taper washers shall be provided where necessary. Protective washers of suitable material shall be provided on front and back of the securing screws. .
5.18	**PACKING**	Transformers shall be delivered filled with oil and supplied with all accessories mounted. Screws and bolts shall be thoroughly tightened to ensure no leakage of oil. bidder shall ensure that all the equipment covered under this specification shall be prepared for rail/road transport in a manner so as to protect the equipment from damage in transit.
5.19	**FITTINGS**	The following standard fittings shall be provided: a) Two Earthing terminals with the earthing symbol and with lugs - 2 Nos. b) Lifting lugs 2No's for complete Transformer. c) HV Side Neutral Earthing Strip. d) LV Side earthing arrangement. e) HV Bushing with arcing Horns- 1No's(12KV/250A)

		f) LV bushing -1No g) Pressure relief Device. h) Top cover fixing clamp i) Mounting lugs(2No's) & mounting provision for Transformer. j) MCCB with Distribution Box k) Terminal connector for HT & Palm connector for LT Side.
6.0	**NAME PLATE AND MARKING**	The Name Plate shall be strictly as per IS 1180:2014. Additionally, following points shall be displayed: 1. Actual no load loss of the transformer 2. Actual Total losses of transformer at 50% load & 100% load 3. Standard Mark (BIS certification) 4. "PROPERTY OF TPCODL" shall be written in bold letters 5. PO number with date has to be mentioned
6.1	**RATING PLATE**	A stainless steel rating plate, of at least 1 mm thickness, shall be fitted to each transformer in a visible position and shall carry all the information as specified in the standards. The letters on the rating plate shall be engraved black on the white/silver back ground. Fixing screws for outdoor use shall be of stainless steel or any other corrosion resistant metals. Danger notice shall have red lettering on a white background or they may be pictorial as approved by the Purchaser. The name plate shall contain following information: a) Type of transformer **b)** Relevant standard**.** c) Manufacturer's Name a) Manufacturer's Serial No. b) Year of Manufacture f) No. of phases g) Rated kVA h) Rated frequency i) Rated Voltage j) Rated current k) Connection symbol l) Percentage impedance voltage at rated current m) Type of cooling n) Total mass o) Mass and volume of insulating Oil p) BIL In addition to the above information the rating plate shall also contain the following:

		a) Guaranteed values of no load losses and full load losses at 50% & 100 % load b) Temperature rise c) Table giving the tapping voltage, tapping current and tapping power of each tap. d) Indication of winding which is fitted with tapings e) Value of short circuit impedance on extreme tapping and on principal tapping and indication of winding to which impedance is related. g) Actual losses of transformer h) Overall dimensions
7.0	**TESTS**	**All routine, acceptance & type tests shall be carried out in accordance with the relevant IS/IEC. All routine & type tests shall be witnessed by the purchaser/his authorized representative. All the components shall also be type tested as per the relevant standards. Following tests shall be necessarily conducted on the Distribution Transformers in addition to others specified in IS/IEC standards.**
7.1	**TYPE TEST**	a. Lightning Impulse Test [As per IS 2026]. b. Temperature Rise Test [As per IS 2026]. NOTE: Maximum measured total loss (No load at Rated excitation load loss at maximum current tap converted to 75°C reference temperature) at 100 percent loading shall be supplied during temperature rise test. c. Short Circuit Withstand test [As per IS 2026]. NOTE: Routine tests before and after short circuit test shall be conducted as per IS 2026(Part 1). d. Pressure Test [As per IS 1180]. e. Oil leakage Test. f. Determination of sound levels [IS 2026 (part 10)]. g. No load current at 112.5% voltage h. BDV and moisture content of oil in transformer (IS 335). i. Magnetic balance test. j. Measurement of Zero-phase sequence impedance. k. Measurement of Harmonics of no-load current. l. Test to verify IP 55 for cable boxes m. Salt Spray Test for 1000hrs
		Note: - Out of the above mention type test, the tests under sl. No. **a, b, c,d** shall be conducted at CPRI /ERDA labs and the balance shall be acceptable as in- house tests.

7.2	**ROUTINE TEST**	a. Ratio, polarity, phase sequence and Vector group. b. Load losses at rated current and normal frequency. c. Induced over voltage withstand test. d. Resistance of windings at each tap. e. Insulation resistance. f. Impedance Voltage / Short circuit impedance test. g. Separate source voltage withstand test. h. Neutral current measurement – The value of the zero sequence current in the neutral of the star winding shall not be more than 2% of the full load current. i. Oil samples (two sample per lot) to comply with IS 335. j. Measurement of no load losses and magnetizing current at rated frequency and 90%, 100% and 112.5% of rated voltage. k. Measurement of no load loss current and neutral current. l. Oil Leakage test at 0.35 kg/sq. cm for 8 hrs. m. Pressure Test and vacuum test for checking deflection. n. Separate source voltage withstand test.
7.3	**ACCEPTANCE TEST**	a. At least 10% transformer of the offered lot (minimum of one) shall be subjected to all the tests mentioned under the section 'ROUTINE in presence of purchaser's representative at the place of manufacture before dispatch without any extra charges. The testing shall be carried out in accordance with IS: 1180 and IS: 2026. b. Oil leakage test for acceptance shall be conducted at pressure of 0.35kg/sq. cm for one hour. c. Checking of weights, Dimensions, fitting and accessories, tank sheet thickness, oil quantity, material, finish and workmanship, Physical verification of core coil assembly and measurement of flux density on one unit of each rating of the offered lot with reference to the GTP and contract drawings. d. Temperature rise test shall be conducted on one unit of every lot offered for inspection for each rating.
8.0	**TYPE TEST CERTIFICATES**	The Bidder shall furnish the type test certificates of the Distribution Transformer for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at CPRI as per the relevant standards. Type tests should have been conducted in certified Test laboratories during the period not exceeding 5 years from the date of opening the bid. In the event of any discrepancy in the test reports, i.e. any test report not acceptable, same shall be carried out without any cost implication to TPCODL

9.0	**PRE-DESPATCH INSPECTION**	9.2 In respect of raw material such as core stampings, winding conductors, insulating paper and oil, bidder shall use materials manufactured/supplied by standard manufacturers and furnish the manufacturers' test certificate as well as the proof of purchase from these manufacturers (excise gate pass) for information of the purchaser. The bidder shall furnish following documents along with their offer in respect of the raw materials: i. Invoice of supplier. ii. Mill's certificate iii. Packing List. iv. Bill of Landing v. Bill of entry certificate by custom
		9.3 To ascertain the quality of the transformer oil, the original manufacturer's tests report shall be submitted at the time of inspection. Arrangements shall also be made for testing of transformer oil, after taking out the sample from the manufactured transformers and tested in the presence of purchaser's representative. 9.4 To ensure about the quality of transformers, the inspection shall be carried out by the purchaser's representative at following two stages; - a) Online anytime during receipt of raw material and manufacture/assembly whenever the purchaser desires. b) At finished stage i.e. transformers are fully assembled and are ready for dispatch. 9.5 The stage inspection shall be carried out in accordance with Annexure-I. 9.6 After the main raw-material i.e. core and coil material and tanks are arranged and transformers are taken for production on the shop floor and a few assemblies have been completed, the Bidder shall intimate the purchaser in this regard, so that an officer for carrying out such inspection could be deputed, as far as possible within seven days from the date of intimation. The inspection shall be done as per the Proforma given in Annexure – II. During inspection the bidder shall also furnish the information regarding various components as per Annexure – III. During the stage inspection a few assembled core shall be dismantled (only in case of CRGO material) to ensure that the CRGO laminations used are of good quality. Further, about the readiness of the

		transformers, for final inspection for carrying out tests as per relevant IS/IECs shall be sent by the Bidder along with routine test certificates. The inspection shall normally be arranged by the purchaser at the earliest after receipt of offer for pre-delivery inspection. 9.7 In case of any defect/ defective workmanship observed at any stage by the purchaser's Inspecting officer, the same shall be pointed out to the Bidder in writing for taking remedial measures. Further processing shall only be done after clearance from the inspecting officer / purchaser. 9.8 All tests and inspection shall be carried out at the place of manufacture unless otherwise specifically agreed upon by the manufacturer and purchaser at the time of purchase. The manufacturer shall offer the inspector representing the Purchaser all reasonable facilities, without charges, to satisfy him that the material is being supplied in accordance with this specification. This will include Stage Inspection during manufacturing stage as well as Active Inspection during Acceptance Tests. 9.9 The bidder shall provide all services to establish and maintain quality of workmanship in his works and that of his sub-contractors to ensure the mechanical / electrical performance of components, compliance with drawings, identification and acceptability of all materials, parts and equipment as per latest quality standards of ISO 9000. 9.10 The Purchaser has the right to have the test carried out at his own by an independent agency wherever there is a dispute regarding the quality. supplied. Purchaser has right to test 1% of the supply selected either from the stores or field to check the quality of the product. In case of any deviation purchaser have every right to reject the entire lot or penalize the bidder, which may lead to blacklisting, among other things
	INSPECTION AFTER	10.1 The material received at TPCODL store shall be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre- dispatch inspection and one copy of the report shall be sent to Project Engineering department. 10.2 In case the transformers proposed for supply against the order are not exactly as per the tested design, the Bidder shall be required to carry out the short circuit test and impulse voltage withstand test at its own cost in the presence of the representative of the Purchaser. 10.3 The supply shall be accepted only after such test is done successfully,

10.0	**RECEIPT AT STORE**	as it confirms on successful withstand of short circuit and healthiness of the active parts thereafter on un-tanking after a short circuit test. 10.4 Apart from dynamic ability test, the transformers shall also be required to withstand thermal ability test or thermal withstand ability will have to be established by way of calculations. 10.5 The Purchaser reserves the right to conduct all tests on Transformer after arrival at site / stores and the manufacturer shall guarantee test certificate figures under actual service conditions. 10.6 The Purchaser reserves the right to conduct short circuit test and impulse voltage withstand test in accordance to IS, afresh on each ordered rating at purchaser cost, even if the transformer of the same rating and similar design are already tested. This test shall be carried out on a transformer to be selected by the purchaser either at the manufacturer's works when they are offered in a lot for supply or randomly from the supplies already made to purchaser's stores. The findings and conclusions of these tests shall be binding on the bidder.
11.0	**GUARANTEE:**	Bidder shall stand guarantee towards design, materials, workmanship & quality of process/ manufacturing of items under the contract for due and intended performance of the same, as an integrated product delivered under this contract. In the event any defect is found by the Purchaser up to a period of 48 months from the date of commissioning or 60 months from the date of last supplies made under the contract, whichever is later. Bidder shall be liable to undertake to replace/rectify such defects at his own costs. within mutually agreed timeframe, and to the entire satisfaction of the Purchaser, failing which the Purchaser will be at liberty to get it replaced/rectified at Bidder's risks and costs and recover all such expenses plus the Purchaser's own charges (@ 20% of expenses incurred), from the Bidder or from the "Security cum Performance Deposit" as the case may be. In case of Distribution transformer fails within the guarantee period the purchaser will immediately inform the Bidder who shall take back the failed Distribution Transformer within 15 days from the date of intimation at his own cost and replace / repair the transformer within forty-five days of date of intimation with a roll over replaced shall not be counted for arriving at the guarantee period. Bidder shall further be responsible for 'free replacement' for another period of THREE years from the end of the guarantee period for any 'Latent Defects' if noticed and reported by the Purchaser guarantee. The outage period i.e. period from the date of failure till unit is repaired **/**
12.0	**PACKING**	Bidder shall ensure that all the equipment covered under this specification shall be prepared for rail/road transport in a manner so as to protect the equipment from damage in transit.

13.0	**TENDER SAMPLE**	NA
14.0	**QUALITY CONTROL**	**T**he bidder shall submit with the offer Quality assurance plan indicating the various stages of inspection, the tests and checks which will be carried out on the material of construction, components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. The Purchaser's engineer or its nominated representative shall have free access to the manufacturer's/sub-supplier's works to carry out inspections. The Bidder shall invariably furnish following information along with his bid, failing which the bid shall be liable for rejection. Information shall be separately given for individual type of equipment offered. a) Statement giving list of important raw materials, names of sub-suppliers for the raw materials, list of standards according to which the raw materials are tested. List of tests normally carried out on raw materials in the presence of Bidder's representative, copies of test certificates. b) Information and copies of test certificates as in (a) above in respect of bought out accessories. c) List of manufacturing facilities available. d) Level of automation achieved and list of areas where manual processing exists. e) List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such tests and inspection. f) List of testing equipment available with the bidder for final testing of equipment along with valid calibration reports shall be furnished with the bid. Manufacturer shall possess 0.1 class instruments for measurement of losses. g) Quality Assurance Plan (QAP) withholds points for purchaser's inspection. 4.2 The successful Bidder shall within 30 days of placement of order, submit following information to the purchaser.

		i) List of raw materials as well as bought out accessories and the names of sub- Suppliers selected from those furnished along with offer. ii) Type test certificates of the raw materials and bought out accessories. iii) The successful Bidder shall submit the routine test certificates of bought out accessories and central excise passes for raw material at the time of routine testing
15.0	**MINIMUM TESTING FACILITIES**	Bidder shall have adequate in house testing facilities for carrying out all routine tests, acceptance tests and pre-dispatch inspection as per relevant International/ Indian standards**.**
16.0	**MANUFACTURING ACTIVITIES**	The successful bidder will have to submit the bar chart for various manufacturing activities clearly elaborating each stage, with quantity. This bar chart should be in line with the Quality assurance plan submitted with the offer. This bar chart will have to be submitted within 15 days from the release of the order.
17.0	**SPARES, ACCESSORIES AND TOOLS**	Bidder shall provide a list of recommended spares with quantity and unit prices for 5 years of operation after commissioning. The Purchaser may order all or any of the spare parts listed at the time of contract award and the spare parts so ordered shall be supplied as part of the definite works. The Purchaser may order additional spares at any time during the contract period at the rates stated in the Contract Document.
		Bidder shall give an assurance that spare parts and consumable items will continue to be available through the life of the equipment which shall be 25 years minimum. However, the Purchaser shall be given a minimum of 12 months' notice in the event that the Bidder or any sub-vendor plans to discontinue manufacture of any component used in this equipment. Any spare apparatus, parts or tools shall be subject to the same specification, tests and conditions as similar material supplied under the Contract. They shall be strictly interchangeable and suitable for use in place of the corresponding parts supplied with the plant and must be suitably marked and numbered for identification.
		Following drawings and documents shall be prepared based on TPCODL 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 for Transformer d) Foundation plan e) Bill of material

18.0 DRAWINGS AND DOCUMENTS

f) Experience List
g) Type test certificates

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

All the documents & drawings shall be in English language.
After the receipt of the order, the successful bidder will be required to furnish five copies of all relevant drawings for TPCODL approval.
Instruction Manuals: Bidder shall furnish two softcopies (CD) and four (4) hard copies of nicely bound manuals (In English language) covering erection and maintenance instructions and all relevant information and drawings pertaining **to the main equipment as well as auxiliary devices.**

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

19.0 General Technical Parameters

Sl. No.	Description	Unit	As Specified by TPCODL	As furnished by Bidder
1	Continuous Rating	kVA	16/25	
2	Type of Transformer		Conventional	
3	Name of Manufacturer		To be furnished by Bidder	
4	Place of Manufacture		To be furnished by Bidder	
5	Voltage ratio	kV	11/0.250	
7	Type of cooling		ONAN	
8	Class of Insulation		Class A	
9	Winding Material		Aluminium	
10	Core material used and grade			
a)	Thickness		To be furnished by Bidder	
b)	Grade		M3 or better	
c)	Flux Density at normal voltage	Wb/mm^2	1.6	
10	Over fluxing without saturation (Curve to be furnished by the manufacture in support of his claim)	Wb/mm2	To be furnished by Bidder	
11	Maximum temperature rise of:			
a)	Windings by resistance method	Deg.C	40°C	
b)	Oil by thermometer	Deg.C	35°C	
12	Magnetizing (no-load) current at:			
a)	90% Voltage	%	To be furnished by Bidder	

b)	100% Voltage	%	3.	
c)	112.5% Voltage	%	6	
13	Resistance of windings at 20 deg.C			
a)	HV windings	Ohms/ph.	To be furnished by Bidder	
b)	LV windings	Ohms/ph.	To be furnished by Bidder	
14	No Load losses	W	To be furnished by Bidder	
15	Load losses at 50% loading at 75 deg.C	W	To be furnished by Bidder	
16	Load losses at 100% at 75 deg Cel	W	To be furnished by Bidder	
17	Total losses at 50% load at 75 deg.C(in w)	25 KVA	63 kVA	100 kVA
		190	340	475
18	Total losses at 100% load at 75 deg.C in W)	635	1140	1650
19	Current density used for :			
a)	HV winding	Amp./	1.6	
b)	LV winding	Amp./	1.6	
20	Clearances :			
a)	Core and LV	mm	To be furnished by Bidder	
b)	LV and HV	mm	To be furnished by Bidder	
c)	HV Phase to phase	mm	To be furnished by Bidder	
d)	Between HV and Yoke	mm	To be furnished by Bidder	
e)	Between LV winding and Yoke	mm	To be furnished by Bidder	
f)	Between yoke and inside of tank to cover	mm	To be furnished by Bidder	
g)	Between yoke and bottom	mm	To be furnished by Bidder	

h)	Any point of winding to tank	mm	To be furnished by Bidder	
21	Efficiency at 75 deg.C			
a)	Unity P.F.	%	To be furnished by Bidder	
1)	125% load	%	To be furnished by Bidder	
2)	100% load	%	To be furnished by Bidder	
3)	75% load	%	To be furnished by Bidder	
4)	50% load	%	To be furnished by Bidder	
5)	25% load		To be furnished by Bidder	
b)	0.8 P.F.	%	To be furnished by Bidder	
1)	125% load	%	To be furnished by Bidder	
2)	100% load	%	To be furnished by Bidder	
3)	75% load	%	To be furnished by Bidder	
4)	50% load	%	To be furnished by Bidder	
5)	25% load	%	To be furnished by Bidder	
22	Regulation at :			
a)	Unity P.F.	%	To be furnished by Bidder	
b)	0.8 P.F. at 75 deg. C	%	To be furnished by Bidder	
23	% Impedance at 75 deg.C	%	25 KVA	16 KVA
			4.5%	4.5%
24	Power frequency voltage withstand test:			
1)	HV for 1 minute	kV	28	
2)	LV for 1 minute	kV	3	
25	(i) Over potential Test (Double voltage and double frequenc y for 1 minute)	V	86 6	

	(ii) Impulse voltage withstand test (HV)	kVP	75	
26	Mass of :			
a)	Core lamination (minimum)		To be furnished by Bidder	
b)	Windings (minimum)	Kg	To be furnished by Bidder	
c)	Tank and fittings	Kg	To be furnished by Bidder	
d)	Oil	Kg	To be furnished by Bidder	
e)	Oil quantity (minimum)	Litre	To be furnished by Bidder	
f)	Total weight	Kg	To be furnished by Bidder	
27	Oil Data :			
	Quantity for first filling (minimum)	Litre	To be furnished by Bidder	
2)	Grade of oil used		To be furnished by Bidder	
3)	Maker's name		To be furnished by Bidder	
4)	BDV at the time of filling	kV	To be furnished by Bidder	
28	Transformer :			
1)	Overall length × Breadth × Height	mm × mm × mm	To be furnished by Bidder	
2)	Tank length × breadth × height	mm × mm × mm	To be furnished by Bidder	
3)	Thickness of plates for			
a)	Side plate (min)	mm	5	
b)	Top and bottom plate (min)	mm	6	
c)	Conservator Dimensions	mm	To be furnished by Bidder	

29	Radiation :			
1)	Heat dissipation by tank walls excluding Top & bottom		To be furnished by Bidder	
2)	Heat dissipation by cooling radiator		To be furnished by Bidder	
3)	Size and thickness of sheet		To be furnished by Bidder	
4)	No of bank/ fins		To be furnished by Bidder	
	Calculation sheet for selecting cooling area to ensure that the transformer is capable of giving continuous rated output without exceeding temperature rise		To be furnished by Bidder	
30	Inter layer insulation provided in design for :			
1)	In between all layer		To be furnished by Bidder	
31	Insulation materials provided			
a)	For conductors			
1)	HV		To be furnished by Bidder	
2)	LV		To be furnished by Bidder	
3)	Core		To be furnished by Bidder	
32	Material and size of the wire used			
1)	HV Conductor			
a)	Size	mm	To be furnished by Bidder	
b)	Area of cross section	Sq mm	To be furnished by Bidder	
2)	LV Conductor			
a)	Strip size	mm	To be furnished by Bidder	
b)	No. of conductors in parallel	No.s	To be furnished by Bidder	

c)	Total area of cross section	sq.mm	To be furnished by Bidder	
33	Whether the name plate gives all particulars as required in specifications	YES/NO	To be furnished by Bidder	
34	Particulars of bushings HV			
1)	Manufacturer's Name		To be furnished by Bidder	
2)	Compliance to standard IS 8603		To be furnished by Bidder	
3)	Rating as per IS		To be furnished by Bidder	
4)	Dry power frequency Voltage withstand test		To be furnished by Bidder	
5)	Wet power frequency voltage withstand test		To be furnished by Bidder	
35	Particulars of bushings LV			
1)	manufacturer's name		To be furnished by Bidder	
2)	Compliance to standard IS - 3347		To be furnished by Bidder	
3)	Rating as per IS		To be furnished by Bidder	
4)	Dry power frequency voltage withstand test		To be furnished by Bidder	
5)	Wet power frequency voltage withstand test		To be furnished by Bidder	
36	Whether the offer conforms to the limits of impedance mentioned in the Specification	YES/NO	To be furnished by Bidder	
37	Whether the offer conforms to the limits of temperature rise mentioned in the Specification	YES/NO	To be furnished by Bidder	
38	Whether the losses of the transformers offered are within the limits specified	YES/NO	To be furnished by Bidder	

39.	Whether the transformer offered is already type tested for the design and test report enclosed.	YES/NO	To be furnished by Bidder	

ADDITIONAL DETAILS

Sl. No.	Description	Unit	As Specified by TPCODL	As furnished by bidder
1.	Core grade			
	Thickness of core	mm		
2.	Core diameter	mm		
3.	Gross core area	Sq.cm		
4.	Net core area	Sq.cm		
5.	Flux density (calculated)	Tesla		
6.	Mass of core	Kg		
7.	Loss per Kg of core at the above specified flux density	Watt		
8.	Core window height	mm		
9.	Center to center distance of the core	mm		
10.	No. of LV Turns			
11.	No. of HV Turns			
12.	Size of LV conductor bare/covered	mm		
13.	No. of parallels			

	14.	Size of HV conductor bare/covered	mm			
	15.	Current density of LV winding(calculated)	A/sq.mm			
	16.	Current density of HV winding(calculated)	A/sq.mm			
	17.	Wt. of the LV winding	Kg			
	18.	Wt. of the HV winding	Kg			
	19.	No. of LV coils/phase				
	20.	No. of HV coils/phase				
	21.	Height of LV winding	mm			
	22.	Height of HV winding	mm			
	23.	ID/OD of HV winding	mm			
	24.	ID/OD of LV winding	mm			
	25.	Thickness of the duct in LV winding	mm			
	26.	Thickness of the duct in HV winding	mm			
	27.	Thickness of the duct between HV and LV	mm			
	28.	Calculated Impedance	%			
	29.	HV to earth creep age distance in oil	mm			
	30.	LV to earth creep age distance in oil	mm			

20.0 SCHEDULE OF DEVIATIONS

(TO BE ENCLOSED WITH THE BID)

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

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

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

Seal of the Company:

Signature

Designation

ANNEXURE – I

PROFORMA FOR STAGE INSPECTION OF DISTRIBUTION TRANSFORMER

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

a) At least 50% quantity has been tanked and

b) Core coil assembly of further at least 30% of the quantity offered has been completed.

c) Rest of quantity shall be in form of core assembly & coils.

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

Sl.no.	Particul	As offered	As observed	Deviation and Remarks
(C)	**Inspection of Core :**			
	(I) Core Material			
	1) Manufacturer's characteristic certificate in respect of grade of lamination used. (Please furnish test certificate)			
	2) Thickness of core lamination			
	3) Remarks regarding Rusting and smoothness of core.			
	4) Whether laminations used for top and bottom yoke are in one piece.			
	(II) Core Construction :			
	(1) No. of steps			
	(2) Dimension of steps			
	Step No. 1 2 3 4	5		6
	As offered :			
	W mm			
	T mm			
	As found :			
	W mm			
	T mm			
	(3) Core Dia (mm)			
	(4) Total cross sectional area of core			
	(5) Effective cross sectional area of core			
	(6) Whether top yoke is cut for LV connection.			
	(7) If yes, at 6 above, whether			

	Reinforcement is done.			
	(8) Core length (leg center to leg center)			
	(9) Window height.			
	(10) Core height			
	(11) Core weight only			
(D)	**INSPECTION OF WINDING**			
	(I) Winding material			
	(1) Material used for			
	a) HV winding			
	b) LV winding			
	(2) Grade of material for			
	a) HV winding			
	b) LV winding			
	(3) Test certificate of manufacturer (enclosed copy) for winding material of:			
	a) HV			
	b) LV			
	(II) Construction Details 1) Size of Cross sectional area of conductor for :			
	a) HV winding			
	h) LV winding			
	2)	Type of insulation for conductor of :		
	a) HV winding			
	b) LV winding			
	3)	Diameter of wire used for delta formation (mm)		
	4)	Diameter of coils in:		
	a) LV winding			
	a) Internal Dia (mm)			
	ii) Outer dia (mm)			
	b) HV winding			
	j) Internal dia (mm)			
	ii) Outer dia (mm)			

	5) Current density of winding material used for:			
	a) HV			
	b) LV			
	6) Whether neutral formation on top.			
	7)	HV coils / Phase		
	a) Number			
	b) Turns/coil			
	c) Total turns			
	8)	LV coils /Phase		
	a) Number			
	b) Turns / coil			
	c) Total turns			
	9)	Total weight of coils of		
	a) LV winding (Kg)			
	b) HV winding (Kg)			
(E)	**INSULATION MATERIALS**			
	(I) Material			
	1) Craft paper			
	a) Make			
	b) Thickness (mm)			
	c) Test certificate of manufacturer (enclose copy)			
	2) Press Board			
	a) Make			
	a) Thickness (mm)			
	b) Test certificate of manufacturer (enclose			
	copy)			
	3) Material used for top and bottom yoke and insulation			
	(II) Type and Thickness of material used : (mm)			
	a) Between core and LV			
	b) Spacers			
	c) Interlayer			
	d) Between HV and LV winding			
	e) Between phases			
(F)	CLEARANCES: (mm)			

	(I) Related to core and winding			
	1) LV to core (radial)			
	2) Between Hv and LV (Radial)			
	3) (i) Phase to phase between HV conductor			
	(ii) Whether two nos. press board each of minimum 1mm thick provided to cover the tie rods.			
	4) Thickness of duct between HV and LV coil mm			
	(II) Between core – coil assembly and tank:			
	1) Between winding and body			
	a) Tank length wise			
	b) Tank breadth wise			
(G)	TANK : (I) Construction Details: 1) Rectangular shape 2) Thickness of side wall (mm) 3) Thickness of top and bottom plate (mm) 4) Provision of sloping top cover towards HV bushing. 5) Tank internal dimensions (mm)			
	a) Length			
	b) Breadth			
	c) Height			
	i) On HV side			
	ii) On LV side			
	(II) General Details :			
	1) Inside painted by oil corrosion resistant paint (please specify which type of coating done)			
	2) Gasket between top cover and tank			
	a) Material			

	i) Thickness (mm)			
	ii) Jointing over laps (mm)			
	3) Provision of lifting lugs:			
	a) Numbers			
	b) Either reinforced by welded plates edge wise below the lug up to re- enforcing angle of the tank done.			
	4) Pulling lug of MS plate			
	a) Nos.			
	b) Thickness (mm)			
	c) Whether provided on breadth side or length side			
	5) Provision of air release plug			
	6) Provision of hot dip galvanized GI Nuts Bolts with 1no. plain and 1no. spring washer.			
	7) Deformation of length wise side wall of tank when subject to:			
	a) Vacuum of (-) 0.7 Kg/sq.cm for 30 minutes.			
	b) Pressure of 0.8 Kg/sq.cm. for 30 minutes.			
(H)	**RADIATORS:**			
	1) Fin radiators of 1.25 mm thick sheet			
	a) Dimension of each fin (L × B × T)			
	b) Fins per radiator			
	c) Total No. of radiators bank			
	2) Verification of manufacturer's test certificate regarding Heat dissipation (excluding Top			

	and Bottom) in w/sq.m			
	3) Verification of position of radiator with respect to bushing.			
(I)	**CONSERVATOR**			
	1) Dimensions (L ×D) (in mm.)			
	2) Volume (m3)			
	3) Inside dia. of conservator tank pipe (mm)			
	4) Whether conservator outlet pipe is projected approx. 20 mm inside the conservator tank.			
	5) Whether arrangement made so that oil does not fall on active parts.			
	6) Whether die cast metal			
	oil level gauge indicator having three positions at (-5 deg C , 30 deg. C and 98 deg.C)			
	7) Whether drain plug and filling hole with cover is provided.			
	8) Inner side of the conservator Tank painted with -			
(J)	**BREATHER:**			
	1) Whether UV protected seamless acrylic body breather for silica gel provided.			
	2) Make			
	3) Capacity			

(K)	**TERMINALS:**			
	1) Material whether of Brass Rods/Tinned Copper.			
	a) HV			
	b) LV			
	2) Size (dia. In mm)			
	a) HV			
	b) LV			
	3) Whether SRBP tube / insulated paper used for formation of Delta on HV.			
(L)	**BUSHINGS**			
	1) Whether HV bushings mounted on top cover/ side walls.			
	a) HV			
	b) LV			
	2) Whether arrangement for studs for fitting of HV Bushing are in diamond shape (so that arcing hornsare placed vertically).)			
	3) Position of mounting of LV bushings			
	4) Bushing Clearance: (mm)			
	a) LV to Earth			
	b) HV to Earth			
	c) Between LV bushings			
	d) Between HV bushings			
(M)	**TANK BASE CHANNEL/ ROLLERS:**			
	1) Size of channel (mm)			
	2) Whether channels welded across the length of the tank			
(N)	**OIL:**			
	1) Name of supplier			
	2) Breakdown voltage of oil: (kV)			
	a) Filled in tanked transformer			
	b) In storage tank (to be tested by Inspecting officer).			
	3) Supplier's test certificate			

	(enclose copy)			
(O)	**ENGRAVING:**			
	1)	Engraving of Sl. No. and name of firm.		
	a)	On bottom of clamping channel of core-coil assembly.		
	b)	On Top cover of tank		
(P)	i) MS Plate of size 125× 125 mm welded on width side of stiffner.			
	ii) Following details engraved (as per approved GTP):			
	a) Serial Number			
	b) Name of firm			
	c) Order No. and date			
	d) Rating			
	e) Date of dispatch			
(Q)	**NAME PLATE DETAILS:**			
	Whether Name Plate is as per approved drawing			
(R)	**COLOUR OF TRANSFORMER**			
	1) Tank body with			
	2) Conservator with			
(S)	**CHECKING OF TESTING FACILITIES:**			
	(Calibration certificate also to be checked for its validity)			
	TESTS:			
	1) No Load Current			
	2) No Load Loss			
	3) % Impedance			
	4) Load losses			
	5) Insulation Resistance test			
	6) Vector group Test (phase relationship)			
	7)	Ratio and Polarity test relationship		
	8) Transformer oil Test (Break Bown Voltage)			
	9)	Magnetic Balance		
	10) Measurement of winding resistance (HV and LV both)			

	11) Induced over voltage withstand test (Double voltage and Double frequency			
	12) Separate source power frequency withstand test at 28kV for HV and 3kV (One minute).			
	13) Air, pressure/oil leakage Test			
	14) Vacuum Test			
	15) Unbalanced current test			
	16) Temperature rise (Heat run) test.			
(T)	**We have specifically checked the following and found the same as per G.T.P/ deviations observed as mentioned against each:**			
	(i) Rustlessness of CRGO laminations used			
	ii) Core steps			
	iii) Core area			
	iv) Core weight			
	v)Core lamination thickness			
	vi) Winding cross sectional area			
		a)	LV	
		b)	HV	
	vii) Weight of windings			
	viii) Clearance between winding and wall of tank (mm)			
		a)	Length-wise	
		b)	Breadth-wise	
	ix) Clearance between top yoke/ top most live part of tap changer to tank cover.			
	x) Details of Neutral formation			
	xi) Connections to Bushings:			
		a)	LV	
		b)	HV	
	xii) Slope of tank top			

	xiii) Position of mounting of bushings			

PURCHASER'S OFFICER BIDDER'S REPRESENTATIVE

DATE OF INSPECTION

ANNEXURE-II

PERFORMA FOR PRE-DELIVERY INSPECTION OF DISTRIBUTION TRANSFORMERS

1.	Name of the firm		
2.	Details of offer made		
	(i) Order No. and date		
	(ii) Rating		
	(iii) Quantity		
	(iv) Sl. No. of transformers		
3.	Date of stage inspection of the lot		
4.	Reference of stage inspection clearance		
5.	Quantity offered and inspected against the order prior to this lot		
	ACCEPTANCE TESTS TO BE CARRIED OUT		
S No.	**PARTICULARS**	**OBSERVATIONS**	

1.	(a) Ratio Test	AB/an	
		BC/bn	
		CA/cn	
	(b) Polarity Test		
2.	No load loss measurement		
		W1	
		W2	
		W3	
	TOTAL		
	Multiplying factor		
	CT		
	Watt meter		
	Total × MF		
	NET LOSS		
3.	Load loss measurement		
		W1	
		W2	
		W3	
	Total		
	Multiplying factors:-		
	CT		
	Watt meter		
	PT		
	Total × MF		
	Loss at ambient temperature (Watt)		
	Loss at 75 deg C (with calculation sheet) (Watt)		
S No.	**PARTICULARS**	**OBSERVATIONS**	
4.	Winding Resistance :		
	H.V. (in Ohms)		
	At ambient temperature of _____deg.C	A-B	
		B-C	
		C-A	
	Resistance at 75 deg.C	A-B	
		B-C	

		C-A	
	L.V. (in Ohms)		
	At ambient temperature of _____deg.C	a-b	
		b-c	
	Per Phase resistance at 75	a-b	
	deg.C		
		b-c	
		c-a	
5.	Insulation resistance (M	HV-LV	
	ohm)		
		HV-E	
		LV-E	
6.	Separate source Voltage		
	withstand test voltage:		
	HV	28 kV for 60 secs.	
	LV	3 kV for 60 secs.	
7.	Induced over-voltage	100 Hz, 866 volts for 60 seconds.	
	withstand test at double		
	voltage and double		
	frequency		
8.	No load current at		
	90% volts		
	100%		
	112.5% volts		
9.	Unbalance current		
10.	Vector group test	Diagram and readings be shown in separate sheet	
11.	Percentage Impedance at		
	75 deg.C (Please furnish		
	calculation sheet)		
12.	Transformer oil test (Break		
	down voltage)		
13.	Oil leakage test		
14.	Heat run test		
15.	Bushing clearance (mm)		

	a)	Phase to Phase	
	b)	Phase to earth	
16	Comments on compliance by the firm on the modifications done as per stage inspection clearance letter issued.		
17.	Whether fittings of the order have been verified .		
18.	Whether UV protected seamless acrylic tube silica gel breather is fitted on the transformers offered.		
19.	Whether engraving of Sl.no. and name of firm on core clamping channel, side wall and top cover of tank has been verified.		
20.	Whether MS Plate of size 125 × 125 mm welded on with side of stiffner.		
21.	Whether engraving of name of firm, S No., rating of transformer, Order No. and date and Date of Dispatch on MS Plate.		
22.	Copy of calibration certificates of metering equipment be enclosed.		
	POINTS TO BE SEEN / DIMENSIONS TO BE NOTED AT THE TIME OF DISMANTLING OF TRANSFORMERS :		
S No.	**PARTICULARS**		
1.	Details of the transformer dismantled for physical verification		
	a)	Rating (kVA)	

	b)	Sl. No.	
2.	Whether Hot dip galvanized Nuts and Bolts with one spring one plain washer provided for tightening the tank cover.		
3.	Details of Gasket used between top cover and tank Material		
	a)	Thickness (mm)	
	b)	Type of joints	
4.	Whether core is earthed properly with copper strip (one end should be tightened in between the core laminations and other end bolted on coreclamping channel).		
5.	Connections from winding to bushings (describe the manner in which it has been done)		
	a)	HV	
	b)	LV	
6.	Winding wire dia. and cross sectional area		
	a)	HV	
	I)	Dia. (mm)	
	II)	Area (sq.mm)	
	b)	LV	
	I) L × W × Nos. of layer		
	II)	Area (sq.mm)	
7.	Thickness of pressboard (s) provided between HV coils to cover the tie rods		
8.	Whether painted with oil and corrosion resistant paint		
	a)	Inside the tank	
	b) Inside the conservator tank		
	c) Core clamping and core base channels		
	d)	Tie rods	
	e)	Core bolts	
9.	Whether tie rods and core bolts insulated, if yes,		

	material of insulation.		
10.	Whether flap on inner side of top cover provided to prevent direct falling of oil on core – coil assembly.		
11.	Method of joints		
	a)	Between HV coils	
	b)	Between tap coils	
	c)	For tap changer	
12.	Whether engraving of Sl. No. and name of firm done on the bottom channel of core coil assembly.		
13.	Diameter of Aluminium wire, used for formation of delta (should not be less than 1.5 times the dia. Of conductor). (mm)		
14.	Whether empire sleeves provided up to the end portion of HV winding jointing to bushing		
15.	HV coils :		
	a)	Inner dia. (mm)	
	b)	Outer dia. (mm)	
16.	LV coils :		
	c)	Inner dia. (mm)	
	d)	Outer dia. (mm)	
17.	Core dia.		
18.	Core height including base channel and insulation in between (mm)		
19.	Leg Center of core		
20.	Clearances between		
	a)	Core and LV (mm)	
	b)	HV and LV (mm)	
	c)	Phase to Phase of HV coils (mm)	
	d) Core coil assembly and tank body (mm)		

	I)	Length wise	
	II)	Width wise	
	e)	Top of yoke and top cover (mm)	
	f)	Top most live part of tap changer and top cover	
21.	Weight of core only (Kg.)		
22.	Weight of windings (Kg.)		
	a)	LV	
	b)	HV	
23.	Whether core laminations are in one piece, used for		
	a)	Bottom yoke	
	b)	Top yoke	
24.	Specific remarks regarding smoothness and rusting of core used.		
25.	Volume of oil filled (to be done once against the order)		
	a)	In conservator tank	
	b)	In tank of the transformer	
26.	Weight of transformer (inclusive of all fittings, accessories, oil etc. complete)		
27.	Inner dimensions of the tank		
	a)	Length	
	b)	Width	
	c)	Height	
	I)	LV side	
	II)	HV side	
28.	Remarks, if any :		

Note: Please ensure that complete details have been filled in the Performa and no column has been left blank.

SIGNATURE OF PURCHASER'S INSPECTING OFFICER

(Name and designation)

SIGNATURE OF BIDDER'S REPRESENTATIVE

(Name and designation)

ANNEXURE - III

SOURCE OF MATERIAL/PLACES OF MANUFACTURE, TESTING AND INSPECTION

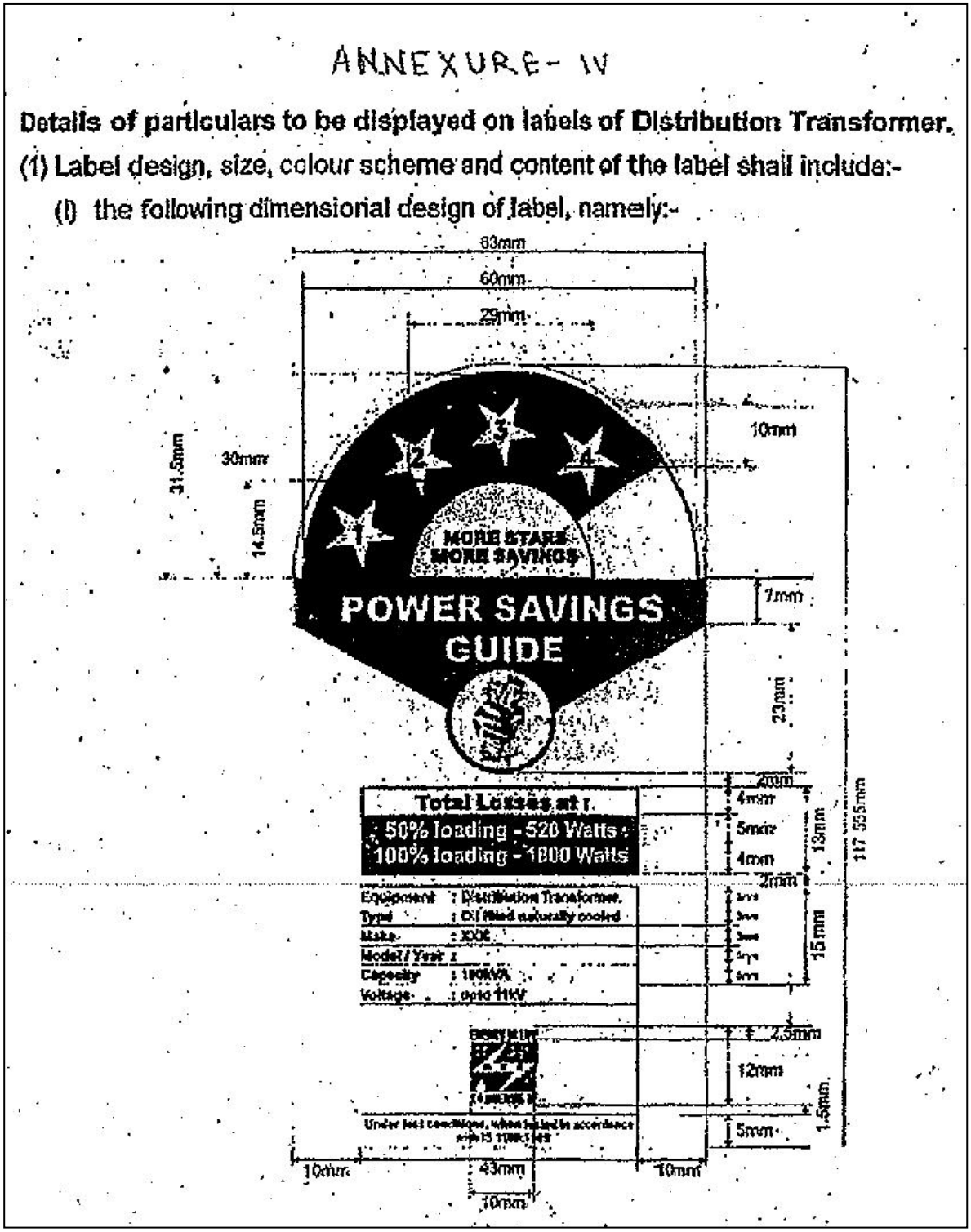
S No.	Item	Source of Material	Place of Manufacture	Place of testing and Inspection
1.	Laminations			
2.	Aluminium Conductor			
3.	Insulating winding wires			
4.	Oil			
5.	Press Boards			
6.	Kraft paper			
7.	MS Plates/ Angles/Channels			
8.	Gaskets			
9.	Bushing HV/LV			
10.	Paints			

ANNEXURE- IV

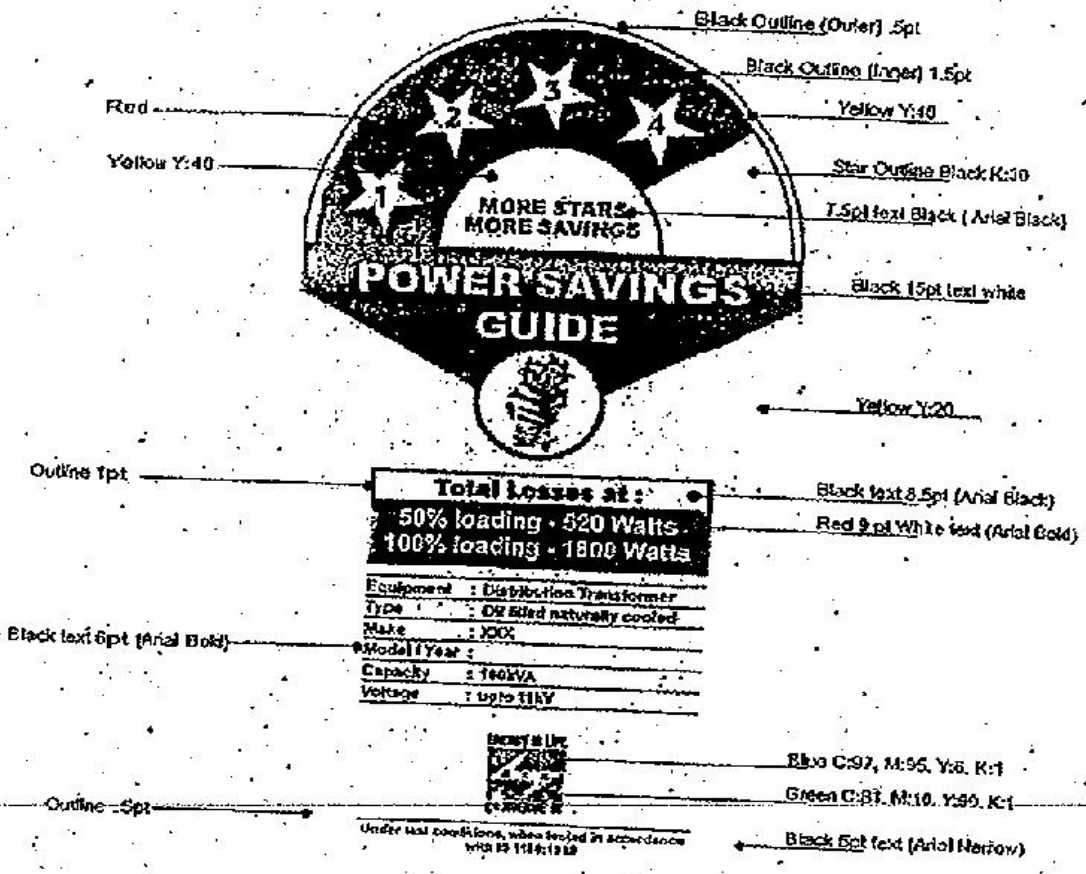
Details of particulars to be displayed on labels of Distribution Transformer.

(1) Label design, size, colour scheme and content of the label shall include:-

(I) the following dimensional design of label, namely:-



(ii) the following colour scheme for the label, namely:-



(iii) the following colour scheme for Bureau's logo, namely:-

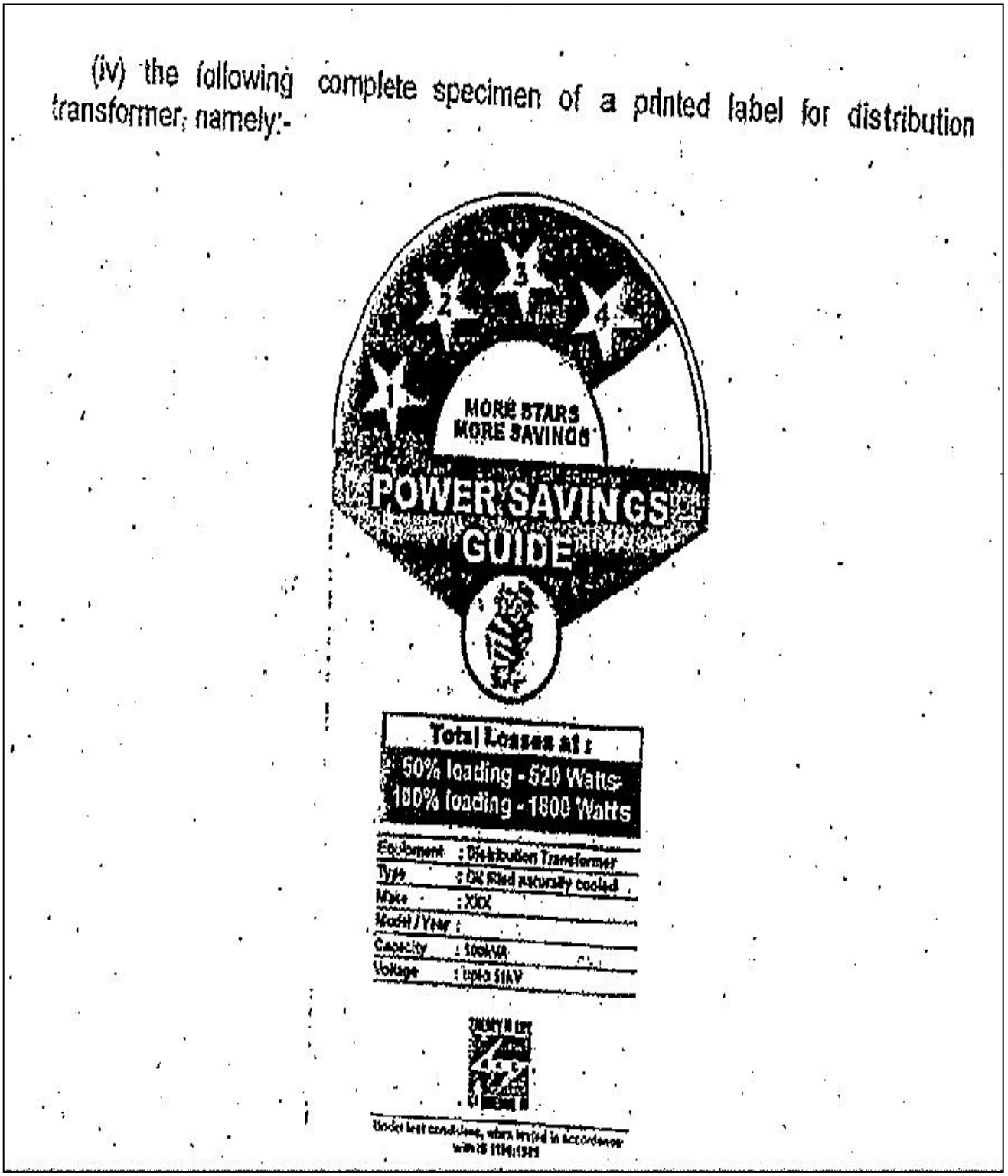
BLUE –

Hue(H)-239° Saturation(S):64% Brightness(B):59%
Luminance or lightness(L) :28, chromatic components -a:24 b:54
Red(R):54 Green(G):55 Blue(B):151
Cyan(C):97% Magenta(M):95% Yellow(Y):6% Black(K):1%
Web colour code - #363797

GREEN –

Hue(H)-150° Saturation(S):10% Brightness(B):67%
Luminance or lightness(L) :61, chromatic components -a:-53 b:32
Red(R):0 Green(G):170 Blue(B):87
Cyan(C):81% Magenta(M):10% Yellow(Y):90% Black(K):1%
Web colour code - #00AA56;

(iv) the following complete specimen of a printed label for distribution transformer, namely:-



TPCODL

TPCODL TP CENTRAL ODISHA DISTRIBUTION LIMITED	TATA POWER CENTRAL ODISHA DISTRIBUTION LIMITED, ODISHA		
	TECHNICAL SPECIFICATION		
Document Title	Specification of 3-Phase 11kV Aluminium Winding Distribution Transformer up to 100 KVA ratings		
Document No.	ENG-HV-001		Eff. Date: 1.03.2021
Revision No.	00		Page 1 of 49
Prepared By Priyanka Dash	Reviewed By Niranjan Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg

CONTENT

TPCODL TP CENTRAL ODISHA DISTRIBUTION LIMITED	TATA POWER CENTRAL ODISHA DISTRIBUTION LIMITED, ODISHA		
	TECHNICAL SPECIFICATION		
Document Title	Specification of 3-Phase 11kV Aluminium Winding Distribution Transformer 100 KVA ratings		
Document No.	ENG-HV-001		Eff. Date: 6.03.2021
Revision No.	00		Page 2 of 48
Prepared By Priyanka Dash	Reviewed By Niranjan Khuntia	Approved By Khajan C. Bhardwaj	Issued By Pourush Garg

1 SCOPE

This specification covers the technical requirements of design, manufacture, testing at manufacturer's works, packing, forwarding, supply and unloading at site/store and performance of oil immersed, non-sealed, naturally cooled, three phase 11 kV/ 0.433 kV, 50 Hz, Aluminium wounded, double wound outdoor type distribution transformers. The equipment covered by this specification shall unless otherwise stated, be designed, manufactured and tested in accordance with the latest editions of the following Indian, International standards and shall conform to the regulations of the local authorities

2 APPLICABLE STANDARDS

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

S.NO	Indian Standard	Title
1	IS-2026:1977(Part1 to 5)	Specification of Power Transformers
2	IS-5:2007	Specification for colours for ready mixed paints
3	IS-104	Ready mixed paint, brushing zinc chromate, priming
4	IS-2099	Specification of high voltage porcelain bushing
5	IS-649:1997	Testing for steel sheets and strips and magnetic circuits
6	IS-7421: 1988	Specification for Porcelain Bushings for Alternating Voltages including 1000 V
7	IS-9335:1997	Specification for Cellulosic Papers for Electrical Purposes
8	IS-1576: 1992	Solid Pressboard for Electrical Purposes -Specification
9	IS-6600:197	Guide for loading of oil immersed Transformers
10	IS-2362: 1993	Determination of water content in oil by Karl Fischer Method- Test Method
11	IS-5561: 1970	Specification for Electric Power Connectors
12	IS-6103:1971	Specification for Testing of specific resistance of electrical insulating liquids
13	IS-6262:1971	Method for test of Power Factor and dielectric constant of electrical insulating liquids.
14	IS-6792:1992	Method for Determination of Electric Strength of Insulating Oil
15	IS-10028:1981	Code of Practice for selection, installation and maintenance of transformers
16	IS-1180:2014 (PART 1)	Outdoor distribution Transformer up to and including 2500 kVA
17	IS-335:1985	Specification for Transformer Oil
18	IS-4257	Dimensions for clamping arrangements for bushings

		19	IS-3347	Specification for Outdoor Bushings
		20	IS-5484	Specification for Aluminum wire rods
		21	IS-6160	Rectangular electrical conductors for electrical machines
		22	IS-6162	Paper covered aluminum conductor
		23	IS- 3401	Specification of Silica Gel
		24	IS-3024	Grain Oriented Electrical Steel Sheet and Strip

3	**CLIMATIC CONDITIONS OF THE INSTALLATION:**	a) Max. Ambient Temperature : 50 deg.C b) Max. Daily average ambient temp. : 40 deg.C c) Min Ambient Temp : 0 deg C d) Maximum Humidity : 95% e) Minimum Humidity : 10% f) Average No. of thunderstorm days per annum 50 g) Average Annual Rainfall : 1458 mm h) Average No. of rainy days per annum 60 i) Rainy months : June to Oct. j) Altitude above MSL not exceeding : 300 meters k) Wind Pressure : 300kg/sq m up to an elevation of10m The atmosphere is **generally Saline**, laden with salt, acid and dust suspended during dry months and subjected to fog in cold months. The design of the equipment and accessories shall be suitable **to withstand saline weather** & seismic forces corresponding to an acceleration of 0.1g.

4	**GENERAL TECHNICAL REQUIREMEN TS**	**S No.**	**Description**		**Requirement**	
		1	**Application**		**Outdoor**	
		2	Continuous rated capacity	25 kVA	63 kVA	100 KVA
		3	Rated voltage	12 kV	12 kV	12kV
		4	Service voltage	11 kV	11 kV	11kV
		5	Rated voltage LV	433 - 250 V	433 - 250 V	433-250 V
		6	Line current HV	1.312 A	3.306 A	5.25 A
		7	Line current LV	33.33 A	84.01 A	133.34 A
		8	Frequency	50 Hz +/- 5%	50 Hz +/- 5%	50 Hz ±5 %
		9	No. of Phases	Three	Three	Three
		10	Connection HV	Delta	Delta	Delta
		11	Connection LV	Star (Neutral brought out)	Star (Neutral brought out)	Star (Neutral brought out)
		12	Vector group	Dyn-11	Dyn-11	Dyn-11
		13	Type of Cooling	ONAN	ONAN	ONAN

TPCODL TP CENTRAL ODISHA DISTRIBUTION LIMITED	TATA POWER CENTRAL ODISHA DISTRIBUTION LIMITED, ODISHA		
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Document Title	Specification of 3-Phase 11kV Aluminium Winding Distribution Transformer 100 KVA ratings		
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		14	Tap changing arrangement	Not applicable	Not applicable	Not applicable	
		15	Noise level at rated voltage and frequency	48 db	51 db	51 db	
		16	Permissible temperature rise over ambient. Of top oil measured by thermometer Of winding measured by resistance	35 Deg.C 40 Deg.C	35 Deg.C 40 Deg.C	35 Deg.C 40 Deg.C	
		17	Max. Total Losses at 50% loading (Watts) at 75 deg C	190	340	475	
		18	Max. Total Losses at 100% loading (Watts) at 75 deg C	635	1140	1650	
		20	Short circuit impedance voltage at 75□C	4.5%			
		21	Impulse withstand voltage	75 kVP			
		22	Power frequency withstand voltage	28 kV			
		22	Insulation Class	A			
		23	Voltage fluctuations permissible	+12.5% to -12.5%			
		24.	Maximum Flux Density	1.9 Tesla			
		25	Maximum Current Density	1.6 Ampere per sq. mm			
		26	Minimum clearances in air for Bushing terminals a) HV phase to phase/ phase to earth (mm) b) LV phase to phase/ phase to earth (mm)	a)255mm / 140mm b)75mm / 40mm			
		27	Minimum clearances in cable Box a) HV phase to phase/ phase to earth (mm) b) LV phase to phase/ phase to earth (mm)	a) 130mm / 80mm b) 25mm / 20mm			
5.0	GENERAL CONSTRUCTIONS	The transformer shall be double-wound, Aluminium coil, oil immersed, naturally cooled (ONAN) and non-sealed type with plain rectangular tank. The transformer shall be suitable for service with fluctuations in supply voltage up to plus 12.5% to minus 12.5%. The transformer and accessories shall be designed to facilitate operation, inspection, maintenance and repairs. The design shall incorporate every precaution and provision for the safety of equipment as well as staff engaged in operation and maintenance of equipment. All outdoor apparatus, including bushing insulators with their mountings, shall be designed so as to avoid any accumulation of water.					
		The core shall be stack type of high grade cold rolled, non-ageing, grain oriented, annealed silicon steel lamination (CRGO), having low loss & good grain properties, coated with hot oil proof insulation, bolted together to the frames firmly to prevent vibration or noise. Scrap CRGO					

5.1 CORE

material shall not be used for transformers. The grade of core shall be M3 or better. The core shall be stress relieved by annealing under inert atmosphere if required. All core clamping bolts (If any) shall be effectively insulated. Only one grade and one thickness of core shall be accepted and no mixing of different grades shall be allowed. The complete design of the core must ensure permanency of the core losses with continuous working of the transformers. The value of the maximum flux density allowed in the design & grade of laminations used shall be clearly stated in the offer. The successful bidder is required to submit the following documents with regard to the procurement of core material:

a) Invoice of supplier
b) Mill's test certificate
c) Packing list
d) Bill of landing
e) Bill of entry certificate by custom
f) Description of material, electrical analysis, physical inspection certificate for surface defects, thickness and width of the material.

The bidder shall offer the core for inspection and approval of the Purchaser during manufacturing stage.

TPCODL shall impose heavy penalty or black list the bidders using seconds/defective CRGO sheets. The transformer shall be suitable for continuous service without damage under conditions of 'over fluxing' (due to combined effect of voltage and frequency) where the ratio of voltage over frequency exceeds the corresponding ratio at rated voltage and rated frequency up to 12.5% and the core shall not get saturated. The bidder shall furnish necessary design data in support of this situation.

No load current shall not exceed 3% of full load current and shall be measured by energising the transformer at 433V, 50 Hz on the secondary. For increase in voltage at 433 V by 12.5% the no load current shall not increase beyond 6 % of the full load current.

5.2 LOSSES

1. The bidder shall individually guarantee No load loss(Iron loss) and Full load Copper Loss(at 75 deg C) without any positive tolerance.
2. The bidder shall also guarantee the total loss at 50% and 100% load condition (at rated voltage and frequency and at 75ºC) and these should be within the limits of maximum total losses declared by TPCODL for both 50% and 100% loading values (as per table below).

Description	Units	25 kVA	63 kVA	100 KVA
Maximum Losses at 50% loading at 75ºC	Watt	**190**	**340**	**475**
Maximum Losses at 100% loading at 75ºC	Watt	**635**	**1140**	**1650**

No positive tolerance shall be allowed on the losses as mentioned above. However, bidder can offer losses less than specified but no consideration in cost will be given for the same.

3. **The successful bidder shall guarantee the quoted losses for at least five years. If losses increase during this period, BA shall be bound to pay a fine of Rs. 250 per watt to the amount by which the losses at 50% loading and 100% loading increases the values given in specification.**
4. During testing at Bidder's works if it is found that the actual measured losses are more than the values quoted by the Bidder, TPCODL shall reject the transformer and shall have the right to reject the complete lot.
5. During testing at Bidder's works, if the temperature rise exceeds the specified values, the entire lot shall be rejected by TPCODL.

		6. During testing at Bidder's works, if the impedance values differ from the guaranteed values including tolerance, the transformer shall be rejected by TPCODL.
5.3	**WINDINGS**	Primary and secondary windings shall be constructed from high- conductivity, Double Paper Covered (DPC) Aluminium conductor of Grade 2 (Al 99.6 %) as per IS 5484. The winding shall be designed for better voltage regulation and mechanical strength. LV winding shall be such that neutral formation will be at top. The coil shall be circular in shape and their construction shall be such that there is no possibility of any distortion under likely conditions of service. Inter layer insulation both for HV and LV windings shall be Epoxy dotted Kraft/Kraft paper and pressboard of standard make or any other superior material subject to approval of Purchaser shall be used. All spacers, axial wedges / runners used in windings shall be made of pre-compressed solid press board. In case of cross-over coil winding of HV all spacers shall be properly sheared and dovetail punched to ensure proper locking. All axial wedges/runners shall be properly milled to dovetail shape so that they pass through the designed spacers freely. Insulation shearing, milling and punching operations shall be carried out in such a way, that there should not be any burr and dimensional variations. Proper bonding of inter layer insulation with the conductor shall be ensured. Test for bonding strength shall be conducted as per standards. The dimensional tolerances for windings shall be within limits and as specified in the GTP. All turns of windings shall be adequately supported to prevent movement. The core/coil assembly shall be securely held in position to avoid any movement under short circuit conditions. The joints in the winding shall be avoided but if it is necessary then, these shall be properly brazed and the resistance of the joints shall be less than that of parent conductor. The current density for HV and LV winding should not be more than 1.6 Ampere per sq.mm. The insulation between core and bolts and core and clamps shall withstand 2.5 kV for one minute. The bidder shall submit characteristics of insulation paper with the offer.
5.4	**TRANSFORMER TANK**	The transformer tank shall be of robust construction, rectangular in shape and shall be built up of electrically tested welded mild steel plates of thickness 6 mm (minimum) for bottom and top and not less than 5 mm (minimum) for the sides. Tolerances as per IS 1852 shall be applicable. The tank shall be fabricated by welding at corners. No horizontal or vertical joints in tank side walls and its bottom or top cover shall be allowed. In addition the cover of the main tank shall be provided with an air release plug. The tank plates shall be of such strength that the complete transformer when filled with oil may be lifted bodily by means of the lifting lugs provided. The top cover shall have no cut at point of lifting lug. The transformer tank covers shall be bolted/clamped alternatively welded with tank rim so as to make a leak proof joint. The transformer tank shall be of adequate mechanical strength to withstand positive and negative pressure built up inside the tank while the transformer is in operation. The tank design shall be such that the core and windings can be lifted freely. Under operating conditions, the pressure generated inside the tank should not exceed 0.4 kg/sq.cm positive or negative. The tank shall be reinforced by welded flats on all the outside walls on the edge of the tank. The permanent deflection when the tank without oil is subjected to a vacuum of 525mm of mercury for rectangular tank shall not be more than 5mm up to 750mm horizontal length of flat plate and 6.5mm up to 1250mm horizontal length of flat plate. Pressure test shall be performed carefully at the time of 1st stage inspection only to confirm the adequacy of reinforcement angle & gauge of the tank. The tank shall be further capable of withstanding a pressure of 0.8 kg/sq.cm (g) and a vacuum of 0.7 kg/sq.cm(g) without any deformation. The internal clearance of tank shall be such, that it shall facilitate easy lifting of core with coils from the tank without dismantling LV bushings. All joints of tank and fittings shall be oil tight and no bulging shall occur during service. Inside of tank shall be painted with hot oil resistant paint. The top cover of the tank shall be slightly sloping to drain rain water approximately 5˚ to 10˚ towards HV bushing. The tank plate and the lifting lugs shall be of such strength that the

		complete transformer filled with oil may be lifted by means of lifting shackle. Bidder shall carry out all welding operations as per relevant ASME standards and submit a copy of the welding procedure and welder performance qualification certificates to the Purchaser. All matching faces of joints to be made oil tight with a smooth surface finish ensuring that the gasket material shall make a satisfactory joint. Bolts shall be spaced at sufficiently close intervals to avoid buckling of either flange or covers and provide reasonably uniform compression of the gasket. The transformer shall be provided with a minimum of two welded heavy duty closed lifting lugs of MS plate of 8mm thickness suitably reinforced by vertical supporting flat welded edgewise below the lug on the side walls up to reinforcing angle. They shall be so extended that cutting bend plate is not required. The lifting lugs shall be capable of withstanding the total weight of the transformer, fully filled with oil. The transformer shall be provided with four pulling lugs of MS plate of 8mm thick to pull the transformer horizontally. For hermetically sealed tank, a) The transformer tank shall be of robust construction, round in shape and shall be built up of electrically tested welded mild steel plates of thickness 2.5mm (min.) for top and bottom and 2.2mm for sides. The tolerances as per IS 1852 shall be applicable. The circular bottom plate edges of the tank should be folded upward, for at least 25 mm, to have sufficient overlap with vertical side wall of the transformer. b) The tank cover shall have plasticized surface at the top to guard against birds faults. Alternately, suitable insulating shrouds shall be provided on the bushing terminals. The tank cover shall be conical shape and top cover shall be fixed to the tank through shear bolt arrangement to prevent theft. c) The transformer tank shall be of adequate mechanical strength to withstand positive and negative pressures built up inside the tank while the transformer is in operation.
5.5	**RADIATORS**	Radiators of pressed steel type conforming to the design requirement should be used in vertical formation without any bending. Thickness of sheet for radiators shall be 1.20 mm .The mounting of the radiators shall be non-detachable. These radiators should be individually tested for leakage and pressure test etc. before welding with the main tank. The number / cross section / length / fixing arrangement of radiators shall be indicated in the general assembly drawing.
5.6	**GASKET**	Gaskets shall be made of synthetic rubber having high chemical properties and long life to reduce oil leakages, provided with the transformers for making oil tight joints, and there shall be no deleterious effects on either gaskets or oil when the gaskets are continuously in contact with hot oil. The gasket provided in between top cover plate and tank shall be neoprene rubberized oil resistant cork sheets conforming to type C as per IS:4253, Part III to maintain the seal at extremes of operating temperature. Exterior gaskets shall be weatherproof and shall not be affected by strong sunlight.
5.7	**SURFACE PREPARATION AND PAINTING**	**The Transformers are proposed to insrall in coastal belt of Odisha.The equipment should be designed & painted for saline weather proof**. All paints, when applied in a normal full coat, shall be free from runs, sags, wrinkles, patchiness, brush marks or other defects. All primers shall be well marked into the surface, particularly in areas where painting is evident and the first priming coat shall be applied as soon as possible after cleaning. The paint shall be applied by airless spray. However, where ever airless spray is not possible, conventional spray be used with prior approval of purchaser. After all machining, forming and welding has been completed, all steel work surfaces shall be thoroughly cleaned of rust, scale, welding slag or spatter and other contamination prior to any painting. Steel surfaces shall be prepared by shot blast cleaning (IS: 9954) to grade Sq.2.5 of ISO 8501-1 or chemical cleaning including phosphating of the appropriate quality (IS: 3618). Chipping, scraping and steel wire brushing using manual or power driven tools cannot remove firmly adherent mill-scale. These methods shall only be used where blast cleaning is impractical.

TPCODL TP CENTRAL ODISHA DISTRIBUTION LIMITED	TATA POWER CENTRAL ODISHA DISTRIBUTION LIMITED, ODISHA		
	TECHNICAL SPECIFICATION		
Document Title	Specification of 3-Phase 11kV Aluminium Winding Distribution Transformer 100 KVA ratings		
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Manufacturer to explain such areas in the technical offer.
After cleaning and subsequently drying for four hours, they shall be given suitable anti-corrosion protection. Heat resistant (Hot oil proof) paint shall be used for the inside surface and whereas for external surface one coat of thermosetting powder paint or one coat of epoxy primer (zinc chromate) followed by two coats of synthetic enamel/polyurethane base paint. The two coats shall be of oil and weather-resistant nature with final coat as flossy and non-fading paint of shade 631 as per IS 5 or RAL 7032. These paints can either air drying or stoving. The transformer body shall be painted with a circle of 50 mm diameter, centrally placed, just below the radiators. This paint shall be UV resistant, non-fading type.

All prepared steel surfaces should be primed before visible re-rusting occurs or within 4 hours, whichever is sooner. Chemical treated steel surfaces shall be primed as soon as the surface is dry and while the surface is still warm. Where the quality of film is impaired by excess film thickness (wrinkling, mud cracking or general softness) the bidder shall remove the unsatisfactory paint coating and apply another coating. As a general rule, dry film thickness shall not exceed the specified minimum dry film thickens by more than 25%.
Any damage occurring to any part of a painting scheme shall be made good to the same standard of corrosion protection and appearance as that was originally applied. Any damaged part shall be cleaned to bare metal with an area extending 25 mm around its boundary. A priming coat shall be immediately applied followed by full paint finish equal to that originally applied and extending 50 mm around the perimeter of the original damage. The repainted surface shall present a smooth surface which shall be obtained by carefully chamfering the paint edges before and after priming.
The coats shall be applied as a continuous film of uniform thickness and free of pores. Overspray, skips, runs, sags and drips shall be avoided. Each coat of paint shall be allowed to harden before the next is applied. The thickness of the film shall not be lesser at the edges.

The requirements for the dry film thickness (DFT) of paint and the materials to be used shall be as given below: & should be guaranteed for any type of damage due to harsh climatic condition for **10Years.**

SL No.	Paint type	Area to be painted	No. of Coats	Total dry film thickness (min.) (microns)
1.	Thermosetting powder paint	Inside	01	30
		Outside	01	60
2.	Liquid paint (a) Epoxy (primer)	Outside	01	30
	(b) P.U. Paint (Finish coat)	Outside	02	25 each
	(c) Hot oil paint resistant	Inside	01	35

The painted surface shall be tested for paint thickness. The painted surface shall pass the cross hatch adhesion test and impact test as acceptance tests and salt spray test and Hardness test as type test as per relevant ASTM standards. The supplier shall provide the painting performance requirement for a period of not less than **10 years**

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5.8	CONSERVATOR	The conservator shall be provided on all transformers. The oil conservator shall be fitted with oil level indicator with minimum level marked. The oil level gauge shall be prismatic type. The connecting pipe of the conservator shall be so fitted to transformer tank that the pipe can be detached from the tank. The conservator shall be supported / fixed on the main body of the transformer tank. The conservator shall be provided with oil gauge and the plain or dehydrating breathing device shall be fixed to the conservator which shall also be provided with a drain plug and a fitting hole with cover. The conservator shall be provided with detachable end plate on one side, preferably on the side on which the gauge glass is fitted, to enable the maintenance staff to periodically clean the inside of the conservator tank. The oil gauge glass shall be removable and so embodied in the end plate so as to prevent oil leakage. In addition, the cover of the main tank shall be provided with an air release plug. Conservator shall be provided with drain and oil filling hole with plugs. The diameter of the oil filling hole shall be 32mm.The capacity of the conservator tank shall be designed keeping in view the total quantity of oil and its contraction and expansion due to temperature variations. The total volume of conservator shall be such as to contain 10% quantity of the oil. Normally 3% quantity of the oil shall be contained in the conservator. The cover of the main tank shall be provided with an air release plug to enable air trapped within to be released, unless the conservator is so located as to eliminate the possibility of air being trapped within the main tank. The inside diameter of the pipe connecting the conservator to the main tank shall be within 25 to 50 mm and it shall be projected into the conservator so that its end is approximately 20mm above the bottom of the conservator so as to create a sump for collection of impurities. The minimum oil level corresponding to -5°C should be above the sump level.
5.9	BUSHINGS	The transformer shall be fitted on high voltage and low voltage sides with outdoor type bushings of appropriate voltage and current ratings .The bushing shall be made in two parts. The outer bushings shall conform to the relevant standards specified and shall be of outdoor type made of porcelain material. The metal portion of the internal HV & LV bushing inside the tank shall remain dipped in oil in all operating condition. For HV, 12kV bushings shall be used and for 433 Volts, 1.1kV terminal bushings shall be used. The bushing rods and nuts shall be made of brass material 12 mm diameter for both HV and LV. The dimensions of bushings and clamping arrangement shall conform to specified standards. All the bushings of the same voltage class, shall be interchangeable with plain shed as per IS 3347(Part-I) for LV and IS 8603(Part-I) for HV. The HV bushings shall be mounted on the top cover of the tank. And the high voltage bushings (3 Nos.) shall confirm to IS 2099.The low voltage bushings (4 Nos.) shall be tested as per IS 7421 along with their latest amendments. Suitable terminal connectors shall be provided on the bushing & bidder shall submit the drawings for Purchaser's approval. On LV Side 1 kV class bushing shall be provided with appropriate current carrying capacity as per the rating of the transformer and shall be on sideways of the transformers. The transformer shall be provided with the cable box up to 100 kVA on LV side. .
5.10	TERMINAL CONNECTORS	The HV bushing stems shall be provided with tinned brass connectors suitable for the specified cable sizes and current, as per IS 5082 so as to connect the jumper without disturbing the bushing stem. Connectors shall be with eyebolts so as to receive conductor for HV. Terminal connectors shall be type tested as per IS 5561.
5.11	CABLE BOXES	The transformer shall be fitted with suitable LV cable box having non-magnetic material gland plate with appropriate sized single compression brass glands on LV side to terminate 1.1kV four core XLPE armoured cable. The LV cable box shall be made of Mild Steel (M.S.) Sheet**.** LV Cable Box shall be provided up to 100 kVA transformer. The cable box shall have removable cover with handle. Suitable gasket of non-deteriorating rubber cork of similar material shall be provided at all

		joints to ensure tightness. The bottom plate of the LV dividing box shall be cut into two parts to facilitate removal of cables. The covers on the cable boxes shall be provided with suitable handles. The LV cable box shall be provided with tinned brass palm connector with Aluminium busbar and shall be fitted with brass glands for LV cable. The LV busbar shall be supported using epoxy insulators from the top side inside the LV dividing box. The neutral terminals of LV windings shall be brought out on LV phase terminals to form four wire system. Length of the LV bus bar shall be sufficient for terminating 4R1CX185sqmm and 4C x 185 sq mm, aluminum conductor, 1.1 kV class, XLPE cable.
5.12	**TERMINAL MARKING**	All transformers shall have the primary and secondary terminal markings plainly and indelibly marked on the transformer adjacent to the relevant terminal. High voltage phase windings shall be marked both in the terminal boards inside the tank and on the outside with capital letter 1U, 1V, 1W and low voltage winding for the same phase marked by corresponding small letter 2u, 2v, 2w. The neutral point terminal shall be indicated by the letter 2n. Neutral terminal shall be brought out and connected to local grounding terminal by the earthing strip.
5.13	**EARTHING CONNECTIONS**	The provision for earthing connection shall be provided for 50x6 mm GI strip. The bolts shall be located on the lower side of the transformer and be of M12 size for Body earthing. LV neutral bushing provided shall be used for neutral earthing. Transformer top cover shall be connected at two diagonal places with the tank by tinned copper strip.
5.14	**OIL**	All transformers shall be filled to the required level with new, unused, clean, standard mineral oil in compliance with IS 335/ IEC 296 and shall be free from all traces of polychlorinated biphenyl (PCB) compounds. The use of recycled oil is not acceptable. The specific resistance of the oil shall not be less than 2.5×10^{12} ohm-cm at 27°C when tested as per IS 6103.Oil shall be filtered and tested for break down Voltage (BDV) and moisture content before filling. Oil shall be filled under vacuum. The design and all materials and processes used in the manufacture of the transformer, shall be such as to reduce to a minimum the risk of the development of acidity in the oil. The Dielectric strength and water content shall meet with given below requirement. **Break Down Voltage (min.)** | **Water content ppm, (max.)** 60 | 30
5.15	**RADIO INTEREFENCE**	When operated at voltages up to **12.5%** in excess of the normal system rating, transformers shall be substantially free from partial discharges (i.e. corona discharges in either internal or external insulation) which are likely to cause interference with radio or telephone communication.
5.16	**OVERLOAD CAPACITY**	The transformer shall be suitable for loading as per IS 6600.
5.17	**PRESSURE RELIEF VALVE**	Explosion vent shall be provided on the top cover. Double diaphragm with oil observation gauge (Prismatic Type) shall be provided on explosion vent pipe.
5.18	**DRAIN VALVE**	The drain valve shall be of mild steel (M.S.) with gate type of valve. The drain valve and filter valve shall be provided with embossed name plate stating drain valve and filter valve. The valves shall be covered with a MS box by welding on tank. Locking rod shall be provided to stop movement of hand wheel.
5.19	**DEHYDRATING BREATHER**	The volume of breather shall be 500g of Silica gel upto 160kVA DT's conforming to IS 3401. The breather pipe shall enter the conservator from the upper side of the conservator. The silica gel shall be blue colored and shall be as per IS: 3401 – 1992. The silica gel shall be 3-4 Mesh size. The body of the breather shall be UV protected seamless acrylic tube. The top cover shall be of die cast aluminum and powder coated or polyurethane painted. The oil cup shall be of UV protected acrylic or polycarbonate.

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5.20	**OIL TEMPERATURE INDICATOR**	Suitable Dial Type Oil temperature indicator shall be provided on the top cover of the transformer. Dial size shall be 4" of stainless steel, range 0- 120 deg C, accuracy ± 2 deg C & suitable for outdoor mounting with maximum indicator pointer. Fixing union shall be of female thread.
5.21	**FASTENERS**	All bolts, studs, screw threads, pipe threads, bolt heads and nut bolts shall comply within the appropriate Indian standards for metric threads. Bolts or studs shall not be less than 6mm in diameter except when used for small wiring terminals. All nuts and pins shall be adequately locked. Wherever possible bolts shall be fitted in such a manner that in the event of failure of locking resulting in the nuts working loose and falling off, the bolt shall remain in position. All ferrous bolts, nuts and washers placed in outdoor positions shall be treated to prevent corrosion, by hot dip galvanizing, except high tensile steel bolts and spring washers which shall have electrolytic action between dissimilar metals. Each bolt shall project at least one thread but more than three threads through the nut. If bolts and nuts are placed so that they are inaccessible by means of ordinary spanners, special spanners shall be provided. The length of the screwed portion of the bolts shall be such that no screw thread may form part of a shear plane between members. Taper washers shall be provided where necessary. Protective washers of suitable material shall be provided on front and back of the securing screws. .
5.22	**PACKING**	Transformers shall be delivered filled with oil and supplied with all accessories mounted. Screws and bolts shall be thoroughly tightened to ensure no leakage of oil. bidder shall ensure that all the equipment covered under this specification shall be prepared for rail/road transport in a manner so as to protect the equipment from damage in transit.
5.23	**FITTINGS**	The following standard fittings shall be provided: a) Rating and terminal marking plates non-detachable. b) Separate plate for guarantee period & date of dispatch. c) Two Earthing terminals with the earthing symbol and with lugs - 2 Nos. d) Lifting lugs for main tank & top cover. Lifting lugs for the complete transformer as well as for core and winding assembly. e) Terminal connectors on the HV/LV bushings (for bare terminations only) f) Thermometer pocket with cap - 1 No. g) Air release device h) HV bushings - 3 Nos. i) LV bushings - 4 Nos. j) Pulling lugs - 4 Nos. k) Stiffener angle l) Radiators. m) Arcing horns n) Oil filling hole having p. 1-1/4 "thread with plug and drain plug on conservator. o) Top filter valve p) Silica gel Breather q) Explosion Vent or Pressure relief device. r) An extended pipe connection on upper end with welded cover to enable use of a refilling/siphon connection. s) Cable box and Al. lugs t) Prismatic Oil level gauge indicating the positions of oil on tank marked as follows: Min: (-5 deg.C) Normal: (30 deg.C) Max: (98 deg.C) u) Drain cum sampling valve and filter with locking arrangement v) Base channel – 2 nos. w) Inspection Cover x) Conservator

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		y) Unit directional flat rollers z) MS plate of size 125 mm x 125 mm for identification as per annexure-I aa) 4 No. rollers for transformers of 250 kVA and above.
6.0	**NAME PLATE AND MARKING**	
6.1	**RATING PLATE**	A stainless steel rating plate, of at least 1 mm thickness, shall be fitted to each transformer in a visible position and shall carry all the information as specified in the standards. The letters on the rating plate shall be engraved black on the white/silver back ground. Fixing screws for outdoor use shall be of stainless steel or any other corrosion resistant metals. Danger notice shall have red lettering on a white background or they may be pictorial as approved by the Purchaser. The name plate shall contain following information: a) Type of transformer **b)** Relevant standard**.** c) Manufacturer's Name a) Manufacturer's Serial No. b) Year of Manufacture f) No. of phases g) Rated kVA h) Rated frequency i) Rated Voltage j) Rated current k) Connection symbol l) Percentage impedance voltage at rated current m) Type of cooling n) Total mass o) Mass and volume of insulating Oil p) BIL In addition to the above information the rating plate shall also contain the following: a) Guaranteed values of no load losses and full load losses at 50% & 100 % load b) Temperature rise c) Table giving the tapping voltage, tapping current and tapping power of each tap. d) Indication of winding which is fitted with tapings e) Value of short circuit impedance on extreme tapping and on principal tapping and indication of winding to which impedance is related. g) Actual losses of transformer h) Overall dimensions

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7.0	**TESTS**	All routine, acceptance & type tests shall be carried out in accordance with the relevant IS/IEC. All routine & type tests shall be witnessed by the purchaser/his authorized representative. All the components shall also be type tested as per the relevant standards. Following tests shall be necessarily conducted on the Distribution Transformers in addition to others specified in IS/IEC standards.
7.1	**TYPE TEST**	a. Lightning Impulse Test [As per IS 2026]. b. Temperature Rise Test [As per IS 2026]. NOTE: Maximum measured total loss (No load at Rated excitation load loss at maximum current tap converted to 75°C reference temperature) at 100 percent loading shall be supplied during temperature rise test. c. Short Circuit Withstand test [As per IS 2026]. NOTE: Routine tests before and after short circuit test shall be conducted as per IS 2026(Part 1). d. Pressure Test [As per IS 1180]. e. Oil leakage Test. f. Determination of sound levels [IS 2026 (part 10)]. g. No load current at 112.5% voltage h. BDV and moisture content of oil in transformer (IS 335). i. Magnetic balance test. j. Measurement of Zero-phase sequence impedance. k. Measurement of Harmonics of no-load current. l. Test to verify IP 55 for cable boxes m. Salt Spray Test for 1000hrs n. Transformer tank shall be subjected to specified vacuum. The tank designed for vacuum shall be tested at vacuum of .7 kg per sq. cm for 30 minutes The permanent deflection of flat plates after the vacuum has been released shall not exceed the values specified below:

	Horizontal length of flat plate (in mm)	Permanent Deflection (in mm)	
	Up to and including 750	5.0	
	751 to 1250	6.5	
	1251 to 1750	8.0	
	1751 to 2000	9.5	
	2001 to 2250	11.0	
	2251 to 2500	12.0	
	2501 to 3000	16.0	
	Above 3000	19.0	

		k. Transformer tank together with its radiator and other fittings shall be subjected to pressure 0.8 Kg / sq.cm, measured at the base of the tank and maintained for 30 minutes. The permanent deflection of the flat plates after the excess pressure has been released, shall not exceed the figures for vacuum test. **Note:** - Out of the above mention type test, the tests under sl. No. **a, b, c,d** shall be conducted at CPRI /ERDA labs and the balance shall be acceptable as in- house tests.
7.2	**ROUTINE TEST**	a. Ratio, polarity, phase sequence and Vector group. b. Load losses at rated current and normal frequency. c. Induced over voltage withstand test. d. Resistance of windings at each tap. e. Insulation resistance. f. Impedance Voltage / Short circuit impedance test. g. Separate source voltage withstand test. h. Neutral current measurement – The value of the zero sequence current in the neutral of the star winding shall not be more than 2% of the full load current. i. Oil samples (two sample per lot) to comply with IS 335. j. Measurement of no load losses and magnetizing current at rated frequency and 90%, 100% and 112.5% of rated voltage. k. Measurement of no load loss current and neutral current. l. Oil Leakage test at 0.35 kg/sq. cm for 8 hrs. m. Pressure Test and vacuum test for checking deflection. n. Separate source voltage withstand test.

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7.3	**ACCEPTANCE TEST**	a. At least 10% transformer of the offered lot (minimum of one) shall be subjected to all the tests mentioned under the section 'ROUTINE in presence of purchaser's representative at the place of manufacture before dispatch without any extra charges. The testing shall be carried out in accordance with IS: 1180 and IS: 2026. b. Oil leakage test for acceptance shall be conducted at pressure of 0.35kg/sq cm for one hour. c. Checking of weights, Dimensions, fitting and accessories, tank sheet thickness, oil quantity, material, finish and workmanship, Physical verification of core coil assembly and measurement of flux density on one unit of each rating of the offered lot with reference to the GTP and contract drawings. d. Temperature rise test shall be conducted on one unit of every lot offered for inspection for each rating.
8.0	**TYPE TEST CERTIFICATES**	The Bidder shall furnish the type test certificates of the Distribution Transformer for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at CPRI as per the relevant standards. Type tests should have been conducted in certified Test laboratories during the period not exceeding 5 years from the date of opening the bid. In the event of any discrepancy in the test reports, i.e. any test report not acceptable, same shall be carried out without any cost implication to TPCODL
9.0	**PRE-DESPATCH INSPECTION**	9.1 Equipment shall be subject to inspection by a duly authorized representative of the TPCODL. Inspection may be made at any stage of manufacture at the option of the purchaser and the equipment if found unsatisfactory as to workmanship or material, the same is liable to rejection. Bidder shall grant free access to the places of manufacture to TPCODL's representatives at all times when the work is in progress. Inspection by the TPCODL or its authorized representatives shall not relieve the supplier of his obligation of furnishing equipment in accordance with the specifications. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by TPCODL. Following documents shall be sent along with material: a) Test reports b) MDCC issued by TPCODL c) Invoice in duplicate d) Packing list e) Drawings & catalogue f) Guarantee / Warrantee card g) Delivery Challan h) Other Documents (as applicable)
		9.2 In respect of raw material such as core stampings, winding conductors, insulating paper and oil, bidder shall use materials manufactured/supplied by standard manufacturers and furnish the manufacturers' test certificate as well as the proof of purchase from these manufacturers (excise gate pass) for information of the purchaser. The bidder shall furnish following documents along with their offer in respect of the raw materials: i. Invoice of supplier. ii. Mill's certificate

iii. Packing List.
iv. Bill of Landing
v. Bill of entry certificate by custom.

9.3 To ascertain the quality of the transformer oil, the original manufacturer's tests report shall be submitted at the time of inspection. Arrangements shall also be made for testing of transformer oil, after taking out the sample from the manufactured transformers and tested in the presence of purchaser's representative.

9.4 To ensure about the quality of transformers, the inspection shall be carried out by the purchaser's representative at following two stages;-

a) Online anytime during receipt of raw material and manufacture/assembly whenever the purchaser desires.
b) At finished stage i.e. transformers are fully assembled and are ready for dispatch.

9.5 The stage inspection shall be carried out in accordance with Annexure-I.

9.6 After the main raw-material i.e. core and coil material and tanks are arranged and transformers are taken for production on the shop floor and a few assembly have been completed, the Bidder shall intimate the purchaser in this regard, so that an officer for carrying out such inspection could be deputed, as far as possible within seven days from the date of intimation. The inspection shall be done as per the proforma given in Annexure – II. During inspection the bidder shall also furnish the information regarding various components as per Annexure – III. During the stage inspection a few assembled core shall be dismantled (only in case of CRGO material) to ensure that the CRGO laminations used are of good quality. Further, about the readiness of the transformers, for final inspection for carrying out tests as per relevant IS/IECs shall be sent by the Bidder along with routine test certificates. The inspection shall normally be arranged by the purchaser at the earliest after receipt of offer for pre-delivery inspection.

9.7 In case of any defect/ defective workmanship observed at any stage by the purchaser's Inspecting officer, the same shall be pointed out to the Bidder in writing for taking remedial measures. Further processing shall only be done after clearance from the inspecting officer / purchaser.

9.8 All tests and inspection shall be carried out at the place of manufacture unless otherwise specifically agreed upon by the manufacturer and purchaser at the time of purchase. The manufacturer shall offer the inspector representing the Purchaser all reasonable facilities, without charges, to satisfy him that the material is being supplied in accordance with this specification. This will include Stage Inspection during manufacturing stage as well as Active Inspection during Acceptance Tests.

9.9 The bidder shall provide all services to establish and maintain quality of workmanship in his works and that of his sub-contractors to ensure the mechanical / electrical performance of components, compliance with drawings, identification and acceptability of all materials, parts and equipment as per latest quality standards of ISO 9000.

9.10 The Purchaser has the right to have the test carried out at his own by an independent agency wherever there is a dispute regarding the quality

		supplied. Purchaser has right to test 1% of the supply selected either from the stores or field to check the quality of the product. In case of any deviation purchaser have every right to reject the entire lot or penalize the bidder, which may lead to blacklisting, among other things.
10.0	**INSPECTION AFTER RECEIPT AT STORE**	10.1 The material received at TPCODL store shall be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection and one copy of the report shall be sent to Project Engineering department. 10.2 In case the transformers proposed for supply against the order are not exactly as per the tested design, the Bidder shall be required to carry out the short circuit test and impulse voltage withstand test at its own cost in the presence of the representative of the Purchaser. 10.3 The supply shall be accepted only after such test is done successfully, as it confirms on successful withstand of short circuit and healthiness of the active parts thereafter on un-tanking after a short circuit test. 10.4 Apart from dynamic ability test, the transformers shall also be required to withstand thermal ability test or thermal withstand ability will have to be established by way of calculations. 10.5 The Purchaser reserves the right to conduct all tests on Transformer after arrival at site / stores and the manufacturer shall guarantee test certificate figures under actual service conditions. 10.6 The Purchaser reserves the right to conduct short circuit test and impulse voltage withstand test in accordance to IS, afresh on each ordered rating at purchaser cost, even if the transformer of the same rating and similar design are already tested. This test shall be carried out on a transformer to be selected by the purchaser either at the manufacturer's works when they are offered in a lot for supply or randomly from the supplies already made to purchaser's stores. The findings and conclusions of these tests shall be binding on the bidder.
11.0	**GUARANTEE:**	Bidder shall stand guarantee towards design, materials, workmanship & quality of process/ manufacturing of items under the contract for due and intended performance of the same, as an integrated product delivered under this contract. In the event any defect is found by the Purchaser up to a period of 48 months from the date of commissioning or 60 months from the date of last supplies made under the contract, whichever is later. Bidder shall be liable to undertake to replace/rectify such defects at his own costs. within mutually agreed timeframe, and to the entire satisfaction of the Purchaser, failing which the Purchaser will be at liberty to get it replaced/rectified at Bidder's risks and costs and recover all such expenses plus the Purchaser's own charges (@ 20% of expenses incurred), from the Bidder or from the " Security cum Performance Deposit" as the case may be. In case of Distribution transformer fails within the guarantee period the purchaser will immediately inform the Bidder who shall take back the failed Distribution Transformer within 15 days from the date of intimation at his own cost and replace / repair the transformer within forty five days of date of intimation with a roll over guarantee. The outage period i.e. period from the date of failure till unit is repaired /

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		replaced shall not be counted for arriving at the guarantee period. Bidder shall further be responsible for 'free replacement' for another period of THREE years from the end of the guarantee period for any 'Latent Defects' if noticed and reported by the Purchaser.
12.0	**PACKING**	Bidder shall ensure that all the equipment covered under this specification shall be prepared for rail/road transport in a manner so as to protect the equipment from damage in transit.
13.0	**TENDER SAMPLE**	**N.A.**
14.0	**QUALITY CONTROL**	The bidder shall submit with the offer Quality assurance plan indicating the various stages of inspection, the tests and checks which will be carried out on the material of construction, components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. The Purchaser's engineer or its nominated representative shall have free access to the manufacturer's/sub-supplier's works to carry out inspections. The Bidder shall invariably furnish following information along with his bid, failing which the bid shall be liable for rejection. Information shall be separately given for individual type of equipment offered. a) Statement giving list of important raw materials, names of sub-suppliers for the raw materials, list of standards according to which the raw materials are tested. List of tests normally carried out on raw materials in the presence of Bidder's representative, copies of test certificates. b) Information and copies of test certificates as in (a) above in respect of bought out accessories. c) List of manufacturing facilities available. d) Level of automation achieved and list of areas where manual processing exists. e) List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such tests and inspection. f) List of testing equipment available with the bidder for final testing of equipment along with valid calibration reports shall be furnished with the bid. Manufacturer shall possess 0.1 class instruments for measurement of losses. g) Quality Assurance Plan (QAP) withholds points for purchaser's inspection. 4.2 The successful Bidder shall within 30 days of placement of order, submit following information to the purchaser. i) List of raw materials as well as bought out accessories and the names of sub-Suppliers selected from those furnished along with offer. ii) Type test certificates of the raw materials and bought out accessories.

		14.3 The successful Bidder shall submit the routine test certificates of bought out accessories and central excise passes for raw material at the time of routine testing.
15.0	**MINIMUM TESTING FACILITIES**	Bidder shall have adequate in house testing facilities for carrying out all routine tests, acceptance tests and pre-dispatch inspection as per relevant International / Indian standards.
16.0	**MANUFACTURING ACTIVITIES**	The successful bidder will have to submit the bar chart for various manufacturing activities clearly elaborating each stage, with quantity. This bar chart should be in line with the Quality assurance plan submitted with the offer. This bar chart will have to be submitted within 15 days from the release of the order.
17.0	**SPARES, ACCESSORIES AND TOOLS**	Bidder shall provide a list of recommended spares with quantity and unit prices for 5 years of operation after commissioning. The Purchaser may order all or any of the spare parts listed at the time of contract award and the spare parts so ordered shall be supplied as part of the definite works. The Purchaser may order additional spares at any time during the contract period at the rates stated in the Contract Document. Bidder shall give an assurance that spare parts and consumable items will continue to be available through the life of the equipment which shall be 25 years minimum. However, the Purchaser shall be given a minimum of 12 months' notice in the event that the Bidder or any sub-vendor plans to discontinue manufacture of any component used in this equipment. Any spare apparatus, parts or tools shall be subject to the same specification, tests and conditions as similar material supplied under the Contract. They shall be strictly interchangeable and suitable for use in place of the corresponding parts supplied with the plant and must be suitably marked and numbered for identification.
18.0	**DRAWINGS AND DOCUMENTS**	Following drawings and documents shall be prepared based on TPCODL 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 for Transformer d) Foundation plan e) Bill of material f) Experience List g) Type test certificates **Drawings / documents to be submitted after the award of the contract are as under**:

S No.	Description	For Approval	For Review Information	Final Submission
1	Technical Parameters	√		√

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		2	GA Drawing of Transformer	√		√
		3	HV and LV bushing internal view with terminal connector	√		√
		4	Internal coil arrangement with dimensions	√		√
		5	Breather Drawing	√		√
		6	Rating Plate	√		√
		7	Cooling calculation with no. of radiators and fins mentioned specifically	√		√
		8	Prismatic oil level gauge drawing	√		√
		9	Foundation Plan		√	√
		10	Installation Instruction		√	√
		11	Transport / Shipping dimension drawing		√	√
		12	QA & QC Plan	√	√	√
		13	Test Certificates	√	√	√

All the documents & drawings shall be in English language.
After the receipt of the order, the successful bidder will be required to furnish five copies of all relevant drawings for TPCODL approval.
Instruction Manuals: Bidder shall furnish two softcopies (CD) and four (4) hard copies of nicely bound manuals (In English language) covering erection and maintenance instructions and all relevant information and drawings pertaining to the main equipment as well as auxiliary devices.

S.No.	Description	Unit	As Specified by TPCODL	As furnished by Bidder
1	Continuous Rating	kVA	25/40/63/100	
2	Type of Transformer		Conventional	
3	Name of Manufacturer		To be furnished by Bidder	
4	Place of Manufacture		To be furnished by Bidder	
5	Voltage ratio	kV	11/0.433	
6	Vector group		Dyn-11	

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19.0	GUARANTEED TECHNICAL PARTICULARS		7	Type of cooling		ONAN	
			8	Class of Insulation		Class A	
			9	Winding Material		Aluminium	
			10	Core material used and Grade			
			a)	Thickness		To be furnished by Bidder	
			b)	Grade		M3 or better	
			c)	Flux Density at normal voltage	Wb/m m²	1.6	
			10	Overfluxing without saturation (Curve to be furnished by the manufacture in support of his claim)	Wb/mm2	To be furnished by Bidder	
			11	Maximum temperature rise of:			
			a)	Windings by resistance method	Deg.C	40°C	
			b)	Oil by thermometer	Deg.C	35°C	
			12	Magnetizing (no-load) current at:			
			a)	90% Voltage	%	To be furnished by Bidder	
			b)	100% Voltage	%	3.	
			c)	112.5% Voltage	%	6	
			13	Resistance of windings at 20 deg.C			
			a)	HV windings	Ohms/ph	To be furnished by Bidder	
			b)	LV windings	Ohms/ph	To be furnished by Bidder	
			14	No Load losses	W	To be furnished by Bidder	
			15	Load losses at 50% loading at 75 deg.C	W	To be furnished by Bidder	
			16	Load losses at 100% loading at 75 deg.C	W	To be furnished by Bidder	

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17	Total losses at 50% load at 75 deg.C(in w)	25 KVA	63 kVA	100 kVA		
		190	340	475		
18	Total losses at 100% load at 75 deg.C in W)	635	1140	1650		
19	Current density used for :					
a)	HV winding	Amp./ sq.mm	1.6			
b)	LV winding	Amp./ sq.mm	1.6			
20	Clearances :					
a)	Core and LV	mm	To be furnished by Bidder			
b)	LV and HV	mm	To be furnished by Bidder			
c)	HV Phase to phase	mm	To be furnished by Bidder			
d)	Between HV and Yoke	mm	To be furnished by Bidder			
e)	Between LV winding and Yoke	mm	To be furnished by Bidder			
f)	Between yoke and inside of tank to cover	mm	To be furnished by Bidder			
g)	Between yoke and bottom	mm	To be furnished by Bidder			
h)	Any point of winding to tank	mm	To be furnished by Bidder			
21	Efficiency at 75 deg.C					
a)	Unity P.F.	%	To be furnished by Bidder			
1)	125% load	%	To be furnished by Bidder			
2)	100% load	%	To be furnished by Bidder			
3)	75% load	%	To be furnished by Bidder			
4)	50% load	%	To be furnished by Bidder			
5)	25% load	%	To be furnished by Bidder			

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		b)	0.8 P.F.	%	To be furnished by Bidder			
		1)	125% load	%	To be furnished by Bidder			
		2)	100% load	%	To be furnished by Bidder			
		3)	75% load	%	To be furnished by Bidder			
		4)	50% load	%	To be furnished by Bidder			
		5)	25% load	%	To be furnished by Bidder			
		22	Regulation at :					
		a)	Unity P.F.	%	To be furnished by Bidder			
		b)	0.8 P.F. at 75 deg. C	%	To be furnished by Bidder			
		23	% Impedance at 75 deg.C	%	25 KVA	63 KVA	100 KVA	
					4.5%	4.5%	4.5%	
		24	Power frequency voltage withstand test:					
		1)	HV for 1 minute	kV	28			
		2)	LV for 1 minute	kV	3			
		25	(i) Over potential Test (Double voltage and double frequenc y for 1 minute)	V	866			
			(ii) Impulse voltage withstand test (HV)	kV P	75			
		26	Mass of :					
		a)	Core lamination (minimum)	Kg	To be furnished by Bidder			
		b)	Windings (minimum)	Kg	To be furnished by Bidder			
		c)	Tank and fittings	Kg	To be furnished by Bidder			
		d)	Oil	Kg	To be furnished by Bidder			

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		e)	Oil quantity (minimum)	Litre	To be furnished by Bidder		
		f)	Total weight	Kg	To be furnished by Bidder		

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			27	Oil Data :			
			1)	Quantity for first filling (minimum)	Litre	To be furnished by Bidder	
			2)	Grade of oil used		To be furnished by Bidder	
			3)	Maker's name		To be furnished by Bidder	
			4)	BDV at the time of filling	kV	To be furnished by Bidder	
			28	Transformer :			
			1)	Overall length × Breadth × Height	mm × mm × mm	To be furnished by Bidder	
			2)	Tank length × breadth × height	mm × mm × mm	To be furnished by Bidder	
			3)	Thickness of plates for			
			a)	Side plate (min.)	mm	5	
			b)	Top and bottom Plate (min.)	mm	6	
			c)	Conservator Dimensions	mm	To be furnished by Bidder	
			29	Radiation :			
			1)	Heat dissipation by tank walls excluding top and bottom		To be furnished by Bidder	
			2)	Heat dissipation by cooling Radiator		To be furnished by Bidder	
			3)	Size and thickness of sheet		To be furnished by Bidder	
			4)	No of bank/fins		To be furnished by Bidder	
			5)	Calculation sheet for selecting cooling area to ensure that the transformer is capable of giving		To be furnished by Bidder	

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				continuous rated output				

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				without exceeding temperature rise.			
			30	Inter layer insulation provided in design for :			
			1)	In between all layer		To be furnished by Bidder	
			31	Insulation materials provided			
			a)	For conductors			
			1)	HV		To be furnished by Bidder	
			2)	LV		To be furnished by Bidder	
			3)	Core		To be furnished by Bidder	
			32	Material and size of the wire used			
			1)	HV Conductor			
			a)	Size	mm	To be furnished by Bidder	
			b)	Area of cross section	Sq mm	To be furnished by Bidder	
			2)	LV Conductor			
			a)	Strip size	mm	To be furnished by Bidder	
			b)	No. of conductors in parallel	Nos.	To be furnished by Bidder	
			c)	Total area of cross section	sq.mm	To be furnished by Bidder	
			33	Whether the name plate gives all particulars as required in Specifications	YES /NO	To be furnished by Bidder	
			34	Particulars of bushings HV			
			1)	manufacturer's name		To be furnished by Bidder	
			2)	Compliance to standard IS 8603		To be furnished by Bidder	
			3)	Rating as per IS		To be furnished by Bidder	
			4)	Dry power frequency voltage withstand test		To be furnished by Bidder	
			5)	Wet power frequency voltage withstand test		To be furnished by Bidder	

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		35	Particulars of bushings LV		

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			1)	manufacturer's name		To be furnished by Bidder	
			2)	Compliance to standard IS-3347		To be furnished by Bidder	
			3)	Rating as per IS		To be furnished by Bidder	
			4)	Dry power frequency voltage withstand test		To be furnished by Bidder	
			5)	Wet power frequency voltage withstand test		To be furnished by Bidder	
			36	Whether the offer conforms to the limits of impedance mentioned in the specification	YES/ NO	To be furnished by Bidder	
			37	Whether the offer conforms the limits of temperature rise mentioned in the specification	YES/ NO	To be furnished by Bidder	
			38	Whether the losses of the transformers offered are within the limits specified.	YES/ NO	To be furnished by Bidder	
			39	Whether the transformer offered is already type tested for the design and test reports enclosed.	YES/ NO	To be furnished by Bidder	

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ADDITIONAL DETAILS:

Sl. No.	Description	Unit	As Specified by TPCODL	As furnished by bidder
1.	Core grade			
	Thickness of core	mm		
2.	Core diameter	mm		
3.	Gross core area	Sq.cm		
4.	Net core area	Sq.cm		
5.	Flux density (calculated)	Tesla		
6.	Mass of core	Kg		
7.	Loss per Kg of core at the above specified flux density	Watt		
8.	Core window height	mm		
9.	Center to center distance of the core	mm		
10.	No. of LV Turns			
11.	No. of HV Turns			
12.	Size of LV conductor bare/covered	mm		
13.	No. of parallels			
14.	Size of HV conductor bare/covered	mm		
15.	Current density of LV winding(calculated)	A/sq.mm		
16.	Current density of HV winding(calculated)	A/sq.mm		
17.	Wt. of the LV winding	Kg		
18.	Wt. of the HV winding	Kg		
19.	No. of LV coils/phase			
20.	No. of HV coils/phase			
21.	Height of LV winding	mm		
22.	Height of HV winding	mm		
23.	ID/OD of HV winding	mm		
24.	ID/OD of LV winding	mm		
25.	Thickness of the duct in LV winding	mm		
26.	Thickness of the duct in HV winding	mm		
27.	Thickness of the duct between HV and LV	mm		
28.	Calculated Impedance	%		
29.	HV to earth creep age distance in oil	mm		
30.	LV to earth creep age distance in oil	mm		

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

S No.	Particulars	Details
(A)	**GENERAL INFORMATION:**	
1	Name of firm	
2	Order No. and Date	
3	Details of offer	
a)	Rating	
b)	Quantity	
c)	Serial Numbers	
4	Details of last stage inspected lot:	
a)	Total quantity inspected	
b)	Serial Numbers	
c)	Date of stage inspection	
d)	Quantity offered for final inspection of (a) above with date	
(B)	**Position of manufacturing for the offered quantity:**	
a)	Complete tanked assembly	
b)	Core and coil assembly ready	
c)	Core assembled	
d)	Coils ready for assembly	
	i) HV coils ii) LV coils	

20.0	**SCHEDULE OF DEVIATIONS**	**(TO BE ENCLOSED WITH THE BID)** All deviations from this specification shall be set out by the Bidders, clause by Clause in this schedule. Unless specifically mentioned in this Schedule, the tender shall be deemed to confirm the purchaser's specifications: We confirm that there are no deviations apart from those detailed above. Seal of the Company: Signature Designation **ANNEXURE – I** **PROFORMA FOR STAGE INSPECTION OF DISTRIBUTION TRANSFORMER** Note : i) The stage inspection shall be carried out in case :- a) At least 50% quantity has been tanked and b) Core coil assembly of further at least 30% of the quantity offered has been completed.

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c) Rest of quantity shall be in form of core assembly & coils.

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

S No.	Particulars	As offered	As observed	Deviation and Remarks
(C)	**Inspection of Core :** (I) Core Material 1) Manufacturer's characteristic certificate in respect of grade of lamination used. (Please furnish test certificate)			
	2) Thickness of core lamination			
	3) Remarks regarding Rusting and smoothness of core.			
	4) Whether laminations used for top and bottom yoke are in one piece.			
	(II) Core Construction :			
	(1) No. of steps			
	(2) Dimension of steps			
	Step No. 1 2 3 4 5 6 7 8 9 10 11			
	As offered :			
	W mm			
	T mm			
	As found :			
	W mm			
	T mm			
	(3) Core Dia (mm)			
	(4) Total cross sectional area of core			
	(5) Effective cross sectional area of core			
	(6) Whether top yoke is cut for LV connection.			
	(7) If yes, at 6 above, whether Reinforcement is done.			
	(8) Core length (leg center to leg center)			
	(9) Window height.			
	(10) Core height			
	(11) Core weight only			
(D)	**INSPECTION OF WINDING**			
	(I) Winding material			
	(1) Material used for			
	a) HV winding			
	b) LV winding			
	(2) Grade of material for			
	a) HV winding			

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				b) LV winding				
				(3) Test certificate of manufacturer (enclosed copy) for winding material of:				
				a) HV				
				b) LV				
				(II) Construction Details 1) Size of Cross sectional area of conductor for :				
				a) HV winding				
				h) LV winding				
				2)	Type of insulation for conductor of :			
				a) HV winding				
				b) LV winding				
				3)	Diameter of wire used for delta formation (mm)			
				4)	Diameter of coils in:			
				a) LV winding				
				a) Internal Dia (mm)				
				ii) Outer dia (mm)				
				b) HV winding				
				j) Internal dia (mm)				
				ii) Outer dia (mm)				
				5) Current density of winding material used for:				
				a) HV				
				b) LV				
				6) Whether neutral formation on top.				
				7)	HV coils / Phase			
				a) Number				
				b) Turns/coil				
				c) Total turns				
				8)	LV coils /Phase			
				a) Number				
				b) Turns / coil				
				c) Total turns				
				9)	Total weight of coils of			
				a) LV winding (Kg)				
				b) HV winding (Kg)				
			(E)	**INSULATION MATERIALS**				
				(I) Material				
				1) Craft paper				
				a) Make				
				b) Thickness (mm)				
				c) Test certificate of manufacturer (enclose copy)				
				2) Press Board				
				a) Make				
				a) Thickness (mm)				

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				b) Test certificate of manufacturer (enclose				
				copy)				
				3) Material used for top and bottom yoke and insulation				
				(II) Type and Thickness of material used : (mm)				
				a) Between core and LV				
				b) Spacers				
				c) Interlayer				
				d) Between HV and LV winding				
				e) Between phases				
			(F)	CLEARANCES: (mm)				
				(I) Related to core and winding				
				1) LV to core (radial)				
				2) Between Hv and LV (Radial)				
				3) (i) Phase to phase between HV conductor				
				(ii) Whether two nos. press board each of minimum 1mm thick provided to cover the tie rods.				
				4) Thickness of duct between HV and LV coil mm				
				(II) Between core – coil assembly and tank:				
				1) Between winding and body				
				a) Tank length wise				
				b) Tank breadth wise				
			(G)	TANK : (I) Construction Details: 1) Rectangular shape 2) Thickness of side wall (mm) 3) Thickness of top and bottom plate (mm) 4) Provision of sloping top cover towards HV bushing. 5) Tank internal dimensions (mm)				
				a) Length				
				b) Breadth				
				c) Height				

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				i) On HV side				
				ii) On LV side				
				(II) General Details :				
				1) Inside painted by oil corrosion resistant paint (please specify which type of coating done)				
				2) Gasket between top cover and tank				
				a) Material				
				i) Thickness (mm)				

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				ii) Jointing over laps (mm)			
				3) Provision of lifting lugs:			
				a) Numbers			
				b) Either reinforced by welded plates edge wise below the lug up to re- enforcing angle of the tank done.			
				4) Pulling lug of MS plate			
				a) Nos.			
				b) Thickness (mm)			
				c) Whether provided on breadth side or length side			
				5) Provision of air release plug			
				6) Provision of hot dip galvanized GI Nuts Bolts with 1no. plain and 1no. spring washer.			
				7) Deformation of length wise side wall of tank when subject to:			
				a) Vacuum of (-) 0.7 Kg/sq.cm for 30 minutes.			
				b) Pressure of 0.8 Kg/sq.cm. for 30 minutes.			
			(H)	**RADIATORS:**			
				1) Fin radiators of 1.25 mm thick sheet			
				a) Dimension of each fin (L × B × T)			
				b) Fins per radiator			
				c) Total No. of radiators bank			
				2) Verification of manufacturer's test certificate regarding Heat dissipation (excluding Top and Bottom) in w/sq.m			
				3) Verification of position of radiator with respect to bushing.			
			(I)	**CONSERVATOR**			
				1) Dimensions (L ×D) (in mm.)			
				2) Volume (m3)			
				3) Inside dia. of conservator tank pipe (mm)			
				4) Whether conservator outlet pipe is projected approx. 20 mm inside the conservator tank.			
				5) Whether arrangement made so that oil does not fall on active parts.			
				6) Whether die cast metal			

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				oil level gauge indicator having three positions at (-5 deg C , 30 deg. C and 98 deg.C)			
				7) Whether drain plug and filling hole with cover is provided.			
				8) Inner side of the conservator Tank painted with -			
			(J)	**BREATHER:**			
				1) Whether UV protected seamless acrylic body breather for silica gel provided.			
				2) Make			
				3) Capacity			
			(K)	**TERMINALS:**			
				1) Material whether of Brass Rods/Tinned Copper.			
				a) HV			
				b) LV			
				2) Size (dia. In mm)			
				a) HV			
				b) LV			
				3) Whether SRBP tube / insulated paper used for formation of Delta on HV.			
			(L)	**BUSHINGS**			
				1) Whether HV bushings mounted on top cover/ side walls.			
				a) HV			
				b) LV			
				2) Whether arrangement for studs for fitting of HV Bushing are in diamond shape (so that arcing hornsare placed vertically).)			
				3) Position of mounting of LV bushings			
				4) Bushing Clearance: (mm)			
				a) LV to Earth			
				b) HV to Earth			
				c) Between LV bushings			
				d) Between HV bushings			
			(M)	**TANK BASE CHANNEL/ ROLLERS:**			
				1) Size of channel (mm)			
				2) Whether channels welded across the length of the tank			
			(N)	**OIL:**			
				1) Name of supplier			
				2) Breakdown voltage of oil: (kV)			

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				a) Filled in tanked transformer		
				b) In storage tank (to be tested by Inspecting officer).		
				3) Supplier's test certificate (enclose copy)		
			(O)	**ENGRAVING:**		
				1) Engraving of Sl. No. and name of firm.		
				a) On bottom of clamping channel of core-coil assembly.		
				b) On Top cover of tank		
			(P)	i) MS Plate of size 125× 125 mm welded on width side of stiffner.		
				ii) Following details engraved (as per approved GTP):		
				a) Serial Number		
				b) Name of firm		
				c) Order No. and date		
				d) Rating		
				e) Date of dispatch		
			(Q)	**NAME PLATE DETAILS:**		
				Whether Name Plate is as per approved drawing		
			(R)	**COLOUR OF TRANSFORMER**		
				1) Tank body with		
				2) Conservator with		
			(S)	**CHECKING OF TESTING FACILITIES:**		
				(Calibration certificate also to be checked for its validity)		
				TESTS:		
				1) No Load Current		
				2) No Load Loss		
				3) % Impedance		
				4) Load losses		
				5) Insulation Resistance test		
				6) Vector group Test (phase relationship)		
				7) Ratio and Polarity test relationship		
				8) Transformer oil Test (Break Bown Voltage)		
				9) Magnetic Balance		
				10) Measurement of winding resistance (HV and LV both)		
				11) Induced over voltage withstand test (Double voltage and Double frequency		
				12) Separate source power frequency withstand test at 28kV for HV and 3kV (One minute).		

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	13) Air, pressure/oil leakage Test			
	14) Vacuum Test			
	15) Unbalanced current test			
	16) Temperature rise (Heat run) test.			
(T)	**We have specifically checked the following and found the same as per G.T.P/ deviations observed as mentioned against each:**			
	(i) Rustlessness of CRGO laminations used			
	ii) Core steps			
	iii) Core area			
	iv) Core weight			
	v)Core lamination thickness			
	vi) Winding cross sectional area			
	a) LV			
	b) HV			
	vii) Weight of windings			
	viii) Clearance between winding and wall of tank (mm)			
	a) Length-wise			
	b) Breadth-wise			
	ix) Clearance between top yoke/ top most live part of tap changer to tank cover.			
	x) Details of Neutral formation			
	xi) Connections to Bushings:			
	a) LV			
	b) HV			
	xii) Slope of tank top			
	xiii) Position of mounting of bushings			

PURCHASER'S OFFICER BIDDER'S REPRESENTATIVE

DATE OF INSPECTION

ANNEXURE-II

PERFORMA FOR PRE-DELIVERY INSPECTION OF DISTRIBUTION TRANSFORMERS

1.	Name of the firm	:	
2.	Details of offer made	:	
	(i) Order No. and date	:	
	(ii) Rating	:	
	(iii) Quantity	:	
	(iv) Sl. No. of transformers	:	

3.	Date of stage inspection of the lot	:
4.	Reference of stage inspection clearance	:
5.	Quantity offered and inspected against the order prior to this lot	:

ACCEPTANCE TESTS TO BE CARRIED OUT

S No.	PARTICULARS	OBSERVATIONS
1.	(a) Ratio Test	AB/an
		BC/bn
		CA/cn
	(b) Polarity Test	
2.	No load loss measurement	
		W1
		W2
		W3
	TOTAL	
	Multiplying factor	
	CT	
	Watt meter	
	Total × MF	
	NET LOSS	
3.	Load loss measurement	
		W1
		W2
		W3
	Total	
	Multiplying factors:-	
	CT	
	Watt meter	
	PT	
	Total × MF	
	Loss at ambient temperature (Watt)	
	Loss at 75 deg C (with calculation sheet) (Watt)	
S No.	**PARTICULARS**	**OBSERVATIONS**
4.	Winding Resistance :	
	H.V. (in Ohms)	
	At ambient temperature of _____deg.C	A-B
		B-C
		C-A
	Resistance at 75 deg.C	A-B
		B-C
		C-A
	L.V. (in Ohms)	
	At ambient temperature of _____deg.C	a-b
		b-c
		c-a

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			Per Phase resistance at 75 deg.C	a-b	
				b-c	
				c-a	
		5.	Insulation resistance (M ohm)	HV-LV	
				HV-E	
				LV-E	
		6.	Separate source Voltage withstand test voltage:		
			HV	28 kV for 60 secs.	
			LV	3 kV for 60 secs.	
		7.	Induced over-voltage withstand test at double voltage and double frequency	100 Hz, 866 volts for 60 seconds.	
		8.	No load current at		
			90% volts		
			100%		
			112.5% volts		
		9.	Unbalance current		
		10.	Vector group test	Diagram and readings be shown in separate sheets	
		11.	Percentage Impedance at 75 deg.C (Please furnish calculation sheet)		
		12.	Transformer oil test (Break down voltage)		
		13.	Oil leakage test		
		14.	Heat run test	To be carried out against the every offered lot	
		15.	Bushing clearance (mm)	HV	LV
			a) Phase to Phase		
			b) Phase to earth		
		16	Comments on compliance by the firm on the modifications done as per stage inspection clearance letter issued.		
		17.	Whether fittings of the order have been verified .		
		18.	Whether UV protected seamless acrylic tube silica gel breather is fitted on the transformers offered.		
		19.	Whether engraving of Sl.no. and name of firm on core clamping channel, side wall and top cover of tank has been verified.		
		20.	Whether MS Plate of size 125 × 125 mm welded on with side of stiffner.		

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		21.	Whether engraving of name of firm, S No., rating of transformer, Order No. and date and Date of Dispatch on MS Plate.	
		22.	Copy of calibration certificates of metering equipment be enclosed.	

POINTS TO BE SEEN / DIMENSIONS TO BE NOTED AT THE TIME OF DISMANTLING OF TRANSFORMERS :

S No.	PARTICULARS	
1.	Details of the transformer dismantled for physical verification	
	a) Rating (kVA)	
	b) Sl. No.	
2.	Whether Hot dip galvanized Nuts and Bolts with one spring one plain washer provided for tightening the tank cover.	
3.	Details of Gasket used between top cover and tank Material	
	a) Thickness (mm)	
	b) Type of joints	
4.	Whether core is earthed properly with copper strip (one end should be tightened in between the core laminations and other end bolted on core clamping channel).	
5.	Connections from winding to bushings (describe the manner in which it has been done)	
	a) HV	
	b) LV	
6.	Winding wire dia. and cross sectional area	
	a) HV	
	I) Dia. (mm)	
	II) Area (sq.mm)	
	b) LV	
	I) L × W × Nos. of layer	
	II) Area (sq.mm)	
7.	Thickness of pressboard (s) provided between HV coils to cover the tie rods	
8.	Whether painted with oil and corrosion resistant paint	
	a) Inside the tank	
	b) Inside the conservator tank	
	c) Core clamping and core base channels	
	d) Tie rods	
	e) Core bolts	
9.	Whether tie rods and core bolts insulated, if yes, material of insulation.	
10.	Whether flap on inner side of top cover provided to prevent direct falling of oil on core – coil assembly.	
11.	Method of joints	
	a) Between HV coils	
	b) Between tap coils	

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		c) For tap changer	
12.	Whether engraving of Sl. No. and name of firm done on the bottom channel of core coil assembly.		
13.	Diameter of Aluminium wire, used for formation of delta (should not be less than 1.5 times the dia. Of conductor). (mm)		
14.	Whether empire sleeves provided up to the end portion of HV winding jointing to bushing		
15.	HV coils :		
	a) Inner dia. (mm)		
	b) Outer dia. (mm)		
16.	LV coils :		
	c) Inner dia. (mm)		
	d) Outer dia. (mm)		
17.	Core dia.		
18.	Core height including base channel and insulation in between (mm)		
19.	Leg Center of core		
20.	Clearances between		
	a) Core and LV (mm)		
	b) HV and LV (mm)		
	c) Phase to Phase of HV coils (mm)		
	d) Core coil assembly and tank body (mm)		
	I) Length wise		
	II) Width wise		
	e) Top of yoke and top cover (mm)		
	f) Top most live part of tap changer and top cover		
21.	Weight of core only (Kg.)		
22.	Weight of windings (Kg.)		
	a) LV		
	b) HV		
23.	Whether core laminations are in one piece, used for		
	a) Bottom yoke		
	b) Top yoke		
24.	Specific remarks regarding smoothness and rusting of core used.		
25.	Volume of oil filled (to be done once against the order)		
	a) In conservator tank		
	b) In tank of the transformer		
26.	Weight of transformer (inclusive of all fittings, accessories, oil etc. complete)		
27.	Inner dimensions of the tank		
	a) Length		
	b) Width		
	c) Height		
	I) LV side		
	II) HV side		
28.	Remarks, if any :		

Note: Please ensure that complete details have been filled in the Performa and no column has been left blank.

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SIGNATURE OF PURCHASER'S
INSPECTING OFFICER
(Name and designation)

SIGNATURE OF BIDDER'S
REPRESENTATIVE
(Name an designation)

DATE OF INSPECTION: _____

ANNEXURE - III

URCE OF MATERIAL/PLACES OF MANUFACTURE, TESTING AND INSPECTION

S No.	Item	Source of Material	Place of Manufacture	Place of testing and Inspection
1.	Laminations			
2.	Aluminium Conductor			
3.	Insulating winding wires			
4.	Oil			
5.	Press Boards			
6.	Kraft paper			
7.	MS Plates/ Angles/Channels			
8.	Gaskets			
9.	Bushing HV/LV			
10.	Paints			

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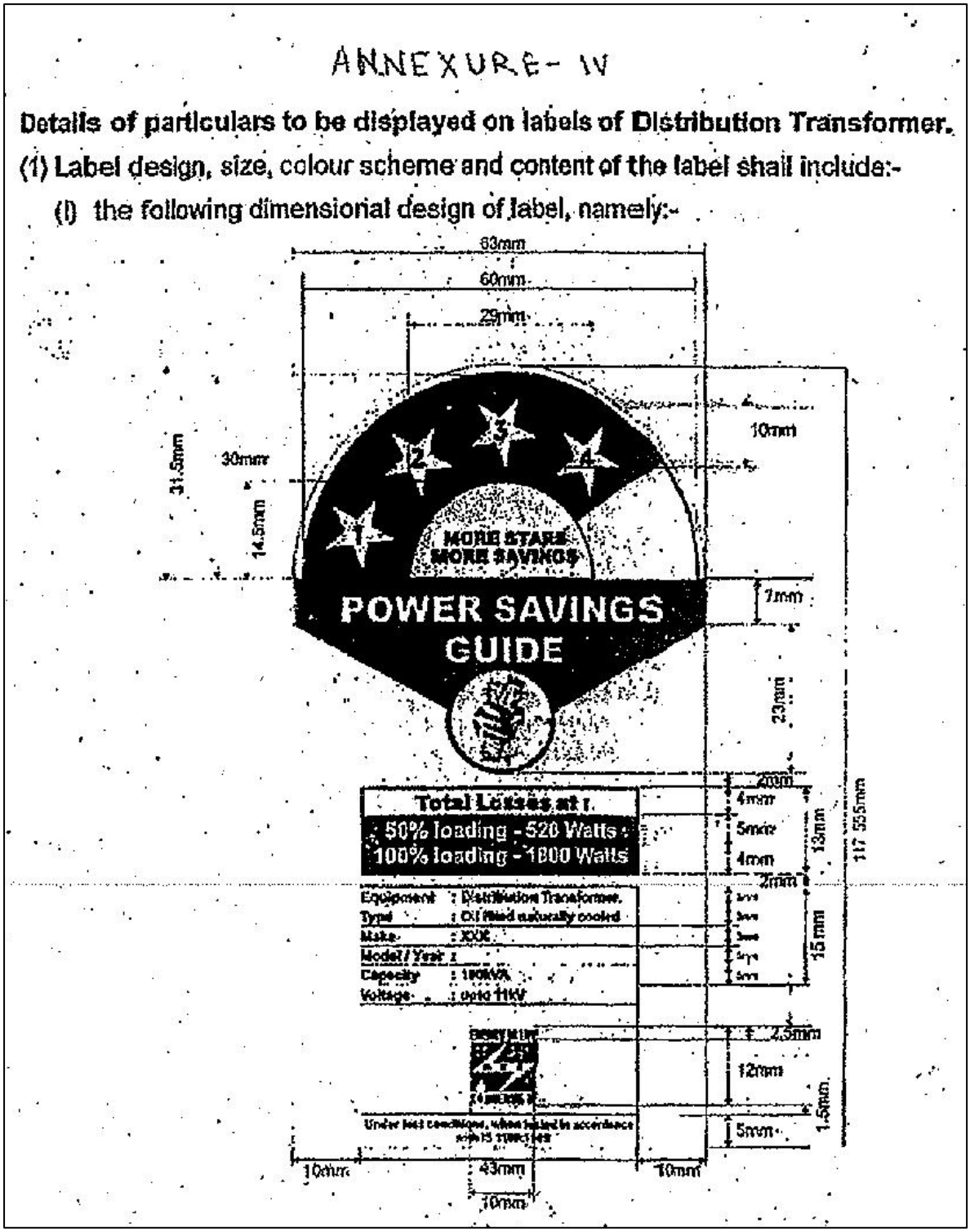
ANNEXURE- IV

Details of particulars to be displayed on labels of Distribution Transformer.

(1) Label design, size, colour scheme and content of the label shall include:-

(I) the following dimensional design of label, namely:-



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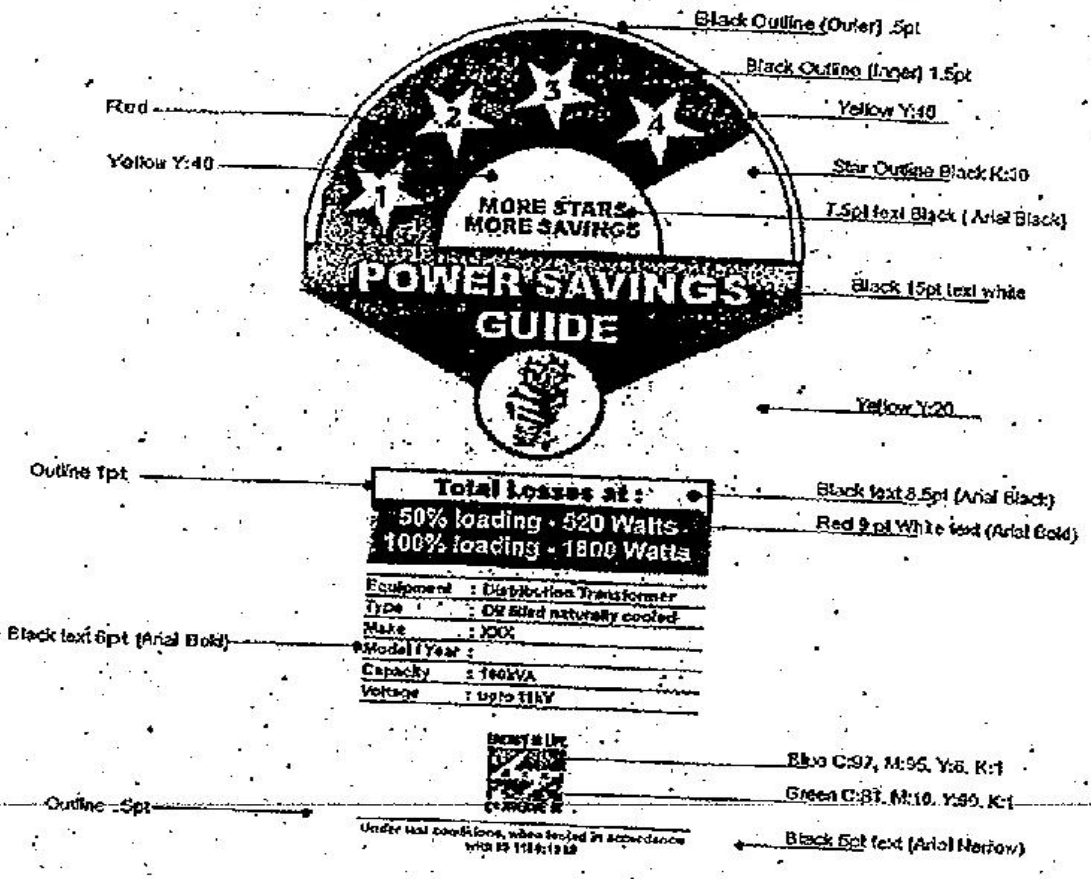
(ii) the following colour scheme for the label, namely:-



(iii) the following colour scheme for Bureau's logo, namely:-

BLUE –

Hue(H)-239° Saturation(S):64% Brightness(B):59%
Luminance or lightness(L) :28, chromatic components -a:24 b:54
Red(R):54 Green(G):55 Blue(B):151
Cyan(C):97% Magenta(M):95% Yellow(Y):6% Black(K):1%
Web colour code - #363797

GREEN –

Hue(H)-150° Saturation(S):10% Brightness(B):67%
Luminance or lightness(L) :61, chromatic components -a:-53 b:32
Red(R):0 Green(G):170 Blue(B):87
Cyan(C):81% Magenta(M):10% Yellow(Y):90% Black(K):1%
Web colour code - #00AA56;

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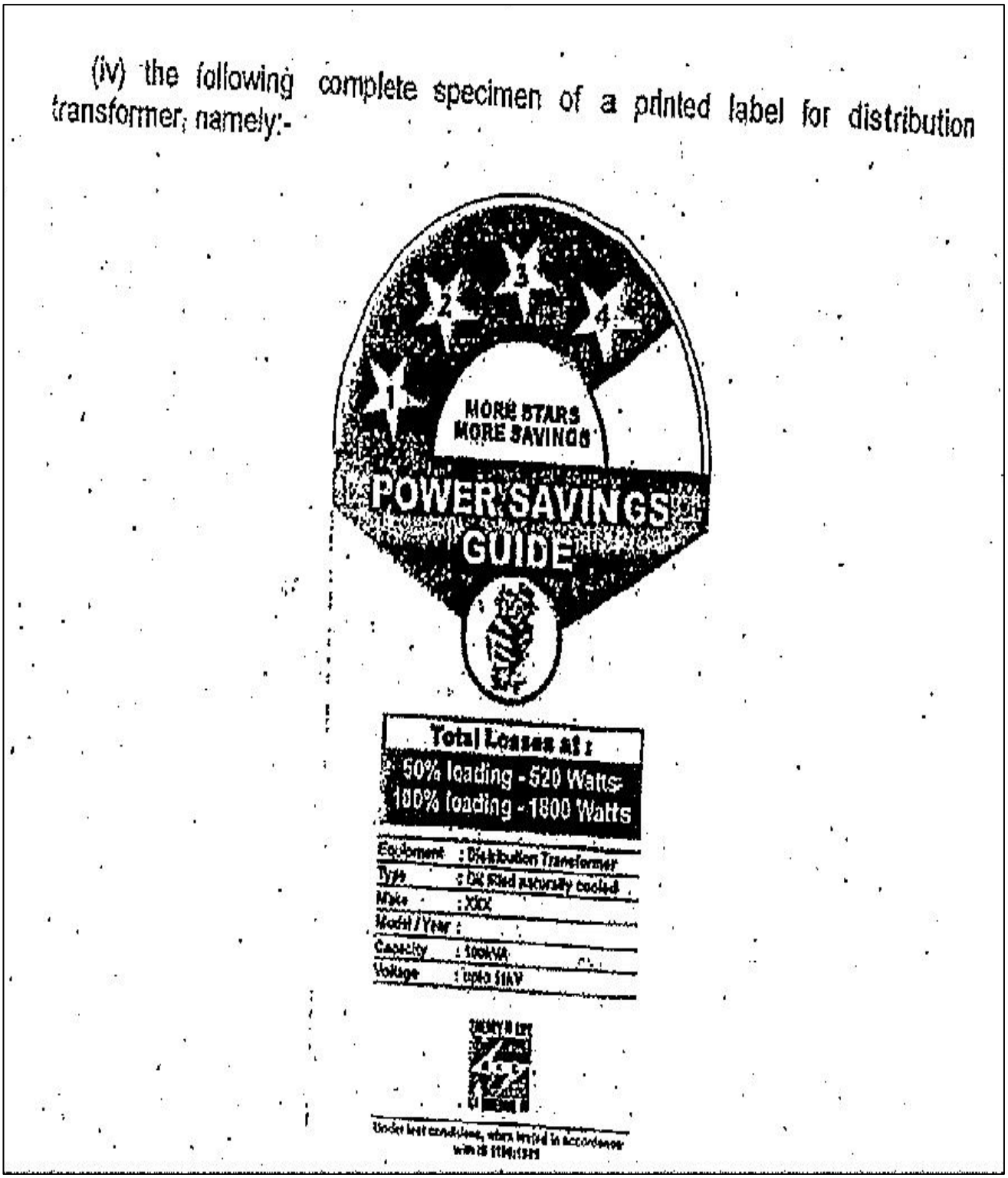
(iv) the following complete specimen of a printed label for distribution transformer, namely:-



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CONTENTS

CONTENTS	
CLAUSE NO.	**DESCRIPTION**

1.0 ORGANIZATIONAL VALUES

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

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

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

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

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

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

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

2.0 ETHICS

In our effort towards Excellence and in Management of Business Ethics at TPCODL, an Ethics Management Team is constituted.

The main objective of the Ethics Management Team is to:

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

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

3.0 CONTRACT PARAMETERS

3.1 Issue/Award of Contract

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

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

3.2 Contract Commencement Date

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

3.3 Contract Completion Date

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

3.4 Contract Period/Time

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

3.5 Contract Execution Completion Date

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

3.6 Contract Price /Value

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

3.7 Contract Document

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

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

3.8 Contract Language

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

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

3.9 Reverse Auction

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

4.0 SCOPE OF WORK

All the activities that are to be undertaken by the Associate to realize the contractual deliverables in completeness form Scope of Work. Following clauses list, but not limited to, major requirements of the scope of work.

The associate shall satisfy himself and undertake fully the technical/commercial requirements of items to be supplied as listed in the Schedule of Quantities together with the tests to be performed /test reports to be furnished before dispatch, arrangement of stage and final inspections during manufacturing as per terms and conditions of contract, technical parameters & delivery terms and conditions including transit insurance to be met in order to fully meet TPCODL's requirements.

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

TPCODL have the right, during the performance of the Contract, to change the scope and/or technical character of the Project and/or of the supplies and services stipulated in the Contract by submitting a request in writing to the Associate. The Associate shall, within fifteen days of receipt of such request from the TPCODL, provide Purchaser with a reasonably detailed estimate of the cost of the change outlined in the request.

In the event, TPCODL requests a change, the Contract price and time shall be adjusted upwards or downwards, as the case may be and shall be mutually agreed to. The associate shall not be entitled to any extension of time unless such changes adversely affect the time schedule.

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

5.0 PRICES/RATES/TAXES

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

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

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

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

5.1 Changes in Statutory Tax Structure

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

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

6.0 TERMS OF PAYMENT

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

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

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

6.1 Quantity Variation

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

6.2 Full and Final Payment

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

7.0 MODE OF PAYMENT

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

8.0 SECURITY CUM PERFORMANCE DEPOSIT

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

(a) 5% of the PO value if purchase order value is more than Rs 5 Crores.
(b) 10% of the PO value if purchase order value is less than Rs 5 Crores.
This shall remain valid till the end of the Guarantee Period of contract, plus Three months.

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

- For PO/RC values less than Rs. 5 lacs, Associate may request for deduction of amount equivalent to SPBG value from their first invoice. Such amount shall be withheld by TPCODL while processing the invoice and shall be released after completion of Guarantee Period plus Three months.
- For PO/RC values less than Rs. 3 lacs, the clause (8.0) for Security cum Performance Bank Guarantee (SPBG) shall not be applicable.
- In case of RC (Rate Contract) after the expiry of RC validity, Associate shall have to submit SPBG. However, the Associate has the option to re-submit the SPBG as per actual RO
  (Release Order) value issued against the RC, valid for Guarantee Period plus one month. The Guarantee Period shall be considered as per the last RO issued against the said RC. The original SPBG as submitted against the RC shall be released on submission of the new SPBG to TPCODL. Alternatively, Associate may extend the validity of original SPBG only till the requisite period, i.e. Guarantee Period plus Three months.

9.0 STATUTORY COMPLIANCE

9.1 Compliance to Various Acts

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

9.2 SA 8000

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

1. Child Labour
2. Forced or Compulsory Labour
3. Health & Safety
4. Freedom of Association & Right to Collective Bargaining
5. Discrimination
6. Disciplinary Practices
7. Working Hours
8. Remuneration
9. Management System

9.3 Affirmative Action

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

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

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

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

S. No	Initiative	for SC/ ST BA's	Guideline Document
1	Tender Fees	100% waiver for SC/ST community	All Open Tenders
2	Earnest Money Deposit	50 % relaxation of estimated EMD value	All limited and Open Tenders
3	Performance Bank Guarantee	50% relaxation in PBG for order value above 50 lacs else 25% relaxation	All limited and Open tenders
4	Turnover	25% relaxation in company turnover under qualifying requirement criteria	All Open Tenders

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

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

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

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

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

10.0 QUALITY

10.1 Knowledge of Requirements

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

10.2 Material/Equipment/Works Quality

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

10.3 Adherence to Rules & Regulations

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

10.4 Specifications and Standards

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

Brand names mentioned in the Contract documents are for the purpose of establishing the type and quality of products to be used. The Associate shall not change the brand name and

qualities of the bought out items without the prior written approval of the TPCODL. All such products and equipment shall be used or installed in strict accordance with original manufacturer's recommendations, unless otherwise directed by the TPCODL. In any circumstances the codes, specimen and standards prescribed by any government agency should not be violated.

11.0 INSPECTION/PARTICIPATION

11.1 Right to Carry Out Inspection

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

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

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

11.2 Facilitating Inspection

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

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

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

The Associate and TPCODL shall jointly document all the observations, comments and action points after completion of inspection and it shall be binding on the Associate to provide

compliance on all the points requiring compliance and furnish the compliance report to the designated authority of TPCODL for receiving clearance for dispatch of materials

11.3 Third Party Nomination

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

11.4 Waiver of Inspections

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

11.5 Incorrect Inspection Call

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

12.0 MDCC & DELIVERY OF MATERIALS

12.1 Material Dispatch Clearance Certificate

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

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

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

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

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

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

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

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

Timelines for inspection and MDCC is as below:

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

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

12.2 Right to Rejection on Receipt

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

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

12.3 Consignee

Unless otherwise specified in the Contract Document, Materials/Goods/Equipment shall be consigned to “Stores-In-Charge”, Stores Sub-Division, TPCODL, Bhubaneswar/Choudwar/ TPCODL site within the jurisdiction of TPCODL.

12.4 Submission of mandatory documents on Delivery

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

S. No.	Documents	Requisite
1	Invoice copy in original	With all consignments
2	LR copy	Wherever required
3	Packing list	With all consignments
4	MDCC	With all consignments
5	Purchase order / Release order	Signed copy
6	Test certificates	With all consignments
7	Inspection/JVR report	In case pre-dispatch inspection is conducted

8	Device data in CD as per template for metering items	Wherever applicable

12.5 Dispatch and Delivery Instructions

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

13.0 GUARANTEE

13.1 Guarantee of Performance

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

13.2 Guarantee Period

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

13.3 Failure in Guarantee Period (GP)

If the equipment and material supplied under the contract fails to perform its due, rated & intended quality performance, during the Guarantee period, the associate is liable to undertake repair/rectify/replace the equipment and material supplied within time frame specified in the

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

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

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

13.4 Cost of repairs on failure in GP

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

13.5 Guarantee period for Goods Outsourced

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

13.6 Latent Defect

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

13.7 Support beyond the Guarantee Period

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

14.0 LIQUIDATED DAMAGES

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

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

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

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

14.1 LD Waiver Request

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

15.0 UNLAWFUL ACTIVITIES

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

16.0 CONFIDENTIALITY

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

16.1 Documents

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

16.2 Geographical Data

Maps, layouts and photographs of the unit/plant including its surrounding regions showing vital installation for national security of country or those of TPCODL shall not be published or

disclosed to the third parties or taken out of the country without prior written approval of the TPCODL and upon execution of confidentiality agreements satisfactory to the TPCODL with such third parties prior to disclosure.

16.3 Associate's Processes

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

16.4 Exclusions

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

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

16.5 Violation

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

17.0 INTELLECTUAL PROPERTY RIGHTS

If, in the course of performance of its functions and duties as envisaged by the scope of the present GCC, the Associate acquires or develops, any unique knowledge or information which would be covered, or, is likely to be covered within the definition of a trademark, copyright, patent, business secret, geographical indication or any other form of intellectual property right, it shall be obliged, under the terms of this present GCC, to share such knowledge or information with the TPCODL. All rights, with respect to, or arising from such intellectual property, as afore mentioned, shall solely vest in TPCODL.

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

18.0 INDEMNITY

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

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

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

19.0 LIABILITY & LIMITATIONS

19.1 Liability

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

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

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

19.2 Limitation of Liability

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

20.0 FORCE MAJEURE

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

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

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

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

Time being the essence of the Contract, if either party is prevented from the performance of its obligations in whole or in part due to an event of Force Majeure, then provided Notice of happening of any event by the Affected Party is given to the other party within seven (7) days from the date of occurrence of such event, which DIRECTLY has impact on works and submitted details and quantum of resulting effect, but at the same time had made all possible efforts to mitigate and overcome effects thereof, the Affected Party’s performance under this Contract shall be suspended until such event ceases and the Scheduled Completion shall be delayed accordingly.

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

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

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

21.0 SUSPENSION OF CONTRACT

21.1 Suspension for Convenience

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

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

- Immediately discontinue further supply of material/goods specified in the suspension notice for supply contracts

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

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

21.2 Suspension for Breach of Contract conditions.

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

21.3 Compensation in lieu of Suspension

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

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

22 TERMINATION OF CONTRACT

22.1 Termination for Default/Breach of Contract

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

In the event of such termination, TPCODL may finish the Work by whatever method it may deem expedient, including the hiring of services and /or purchase of material equipment from such third parties as TPCODL may deem fit or may itself provide any labor or materials and perform any part of the Work. The associate undertakes to bear the incremental costs if any paid by TPCODL in such a case attributable to failure on the part of the associate. The Associate in such a case shall not be entitled to receive any further payments and any sums found payable to it may be adjusted by TPCODL against the amount recoverable from him on this ground. The same shall be without prejudice to other rights available to TPCODL under law against the associate.
Upon the termination of any of the contract due to occurrence of any circumstances provided in clauses stated above and constituting repeated breach or misconduct , TPCODL shall be entitled to bar the associates its agents , affiliates from undertaking any negotiation / tendering, bidding , participation activities concerning TPCODL for a period of two years from date of such termination. The same shall be without prejudice to other rights available to TPCODL.

22.2 Termination for Convenience of Associate

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

22.3 Termination for Convenience of TPCODL

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

23.0 DISPUTE RESOLUTION & ARBITRATION

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

23.1 Governing Laws and Jurisdiction

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

24.0 ATTRIBUTES OF GCC

24.1 Cancellation

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

24.2 Severability

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

24.3 Order of Priority

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

25.0 ERRORS AND OMISSIONS

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

26.0 TRANSFER OF TITLES

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

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

27.0 INSURANCE

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

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

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

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

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

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

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

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

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

28.0 SUGGESTIONS & FEEDBACK

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

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

- Suggestions for us
- Feedback form
- Knowledge Sharing/ Experience with TPCODL

• Any issues with TPCODL.

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

29.0 CONTACT POINTS

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

30.0 LIST OF ANNEXURES

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

ANNEXURE-A

PROFORMA FOR BID SECURITY BANK GUARANTEE

The Tata Power Company Limited
Bhubaneswar

WHEREAS, (Name of the Bidder) _____

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

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

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

The CONDITIONS of this obligation are**:**

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

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

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

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

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

WITNESS …… **SEAL** ……..

(Signature, Name & Address) (At least 2 witnesses)

ANNEXURE- B

PROFORMA FOR PERFORMANCE BANK GUARANTEE (CP cum EP)

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

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

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The TP Central Odisha Distribution Limited

Bhubaneswar

CP cum EP BG No.……

Order/Contract No……dated……

1. You have entered into a Contract No _____ with M/s._____ (hereinafter referred to as "the Vendor") for the supply cum erection / civil work of _____ (hereinafter referred to as" the said Equipment") for the price and on the terms and conditions contained in the said contract.
2. In accordance with the terms of the said contract, "the Vendor" agreed to furnish you with an irrevocable, unconditional and acceptable bank guarantee for 10% of the value of contract and to be valid till the end of Guarantee period plus one month towards "Contract cum Equipment performance". For this purpose you have agreed to accept the guarantee.
3. In consideration thereof, we, _____ hereby irrevocably and unconditionally guarantee to pay to you on demand but in any case before the end of five working days from the date of the claim and without demur and without reference to "the Vendor" such amount or amounts not exceeding the sum of Rs._____ (Rupees _____ only) being _____% (_____ percent) of the total value of the contract on receipt of your intimating that "the

Vendor" has not fulfilled his contractual obligations. You shall be the sole judge for such non-fulfillment and "the Vendor" shall have no right to question such judgment.

4. You shall have the right to file / make your claim on us under the guarantee for a **further period of one month** from the date of expiry.

5. This guarantee shall not be revoked without express consent and shall not be affected by your granting time or any other indulgence to "the Vendor", which shall include but not be limited to, postponement from time to time of the exercise the same in you or any right which you may have against "the Vendor" and to exercise the same in any covenant contained or implied in the said contract or any other course or remedy or security available to you, and our Bank shall not be released from its obligations under this guarantee by

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

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

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

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

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

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

Dated at_____ this_____ day of _____ 20__

Bank’s rubber stamp

1. Banks full address

Designation of Signatory

2. Bank official number

ANNEXURE-C

PROFORMA FOR "NO DEMAND CERTIFICATE" BY ASSOCIATE

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

(Certificate No. CCP/002)

Name of the Project Order/

Contract No.

Dated

Name of the Associate Scheme

No. / Job No.

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

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

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

Place **Name**

(Company Seal)

ANNEXURE-D

PROFORMA FOR APPLICATION FOR ISSUANCE OF CONSOLIDATED TDS CERTIFICATE

To be printed on the letterhead

To,

The Tata Power Company Limited,

Bhubaneswar

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

Dear Sir,

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

Signature

Name

Address

Contact No. (Land Line)

(Mobile)

PAN #

Assessing authority

ATTACH THE COPY OF PAN CARD

ANNEXURE-E

BUSINESS ASSOCIATE FEEDBACK FORM

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

You are associated with us as

☐ OEMs ☐ Service Contractor ☐ Material Suppliers ☐ Material & Manpower Supplier

You are associated with us for

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

Your office is located at

☐ Bhubaneswar ☐ Within 200 kms from Bhubaneswar ☐ More than 200 kms from Bhubaneswar

Your nearly turnover with TPCODL

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

Additional Information

Your Name	
Your Designation	
Your Organization	
Contact Nos.	
Email	

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

SECTION – A

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

S. No.	Parameters	1 Do Not Agree	2 Slightly in Agreement	3 In Fair Agreement	4 Mostly in Agreement	5 Fully Agree	Remarks/ Suggestion
1	You receive all relevant queries / tenders from us in timely manner.						
2	We provide you enough lead time to respond to our queries / tenders.						
3	We provide you adequate support (drawings, documents, clarifications, briefing etc.) to enable you meet our requirements.						
4	All following elements of our contract / purchase order are rational :						
4.1	Scope of Work						
4.2	Delivery / Execution Schedule						
4.3	Payment Terms						
4.4	Liquidated Damages						
4.5	Performance Guarantee						
5	Our purchase orders / contracts are simple, specific & easy to understand						
6	TPCODL demonstrate willingness to be flexible in administration of Contract / Purchase Order						
7	We provide timely responses / clarifications to your queries						
8	TPCODL representative you interact / coordinate with is adequately empowered to support you in meeting contractual obligations						
9	TPCODL provide you all necessary infrastructure support for timely and quality completion of work (including AMC)						
10	TPCODL Engineer-in-Charge timely certifies the jobs executed/ material supplied						
11	TPCODL Engineer-in-Charge efficiently supervises the job execution for timely completion of job						
12	BIRD (Bill Inward Receipt Desk) initiative has improved payment disbursement process						

S. No.	Parameters	1 Do Not Agree	2 Slightly in Agreement	3 In Fair Agreement	4 Mostly in Agreement	5 Fully Agree	Remarks/ Suggestion
13	Our approach for Inspection and Quality Assurance effective to expedite project completion?						
14	TPCODL never defaults on contractual terms						
15	In TPCODL Contracts closure is done within set time limit						
16	Our material receiving procedures are well defined and efficiently deployed to reduce mutual inconvenience						
17	Bank Guarantees are released in time bound manner						
18	Our processes related to payment / account settlement are effective.						
19	You get payments on time						
20	TPCODL Employees follow Ethical behaviour						

SECTION – B

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

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

SECTION – C

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

S. No.	Parameters	Certainly No	Probably No	Certainly Yes	Probably Yes	Remarks/ Suggestion
1	Based on your experience with TPCODL, would you like to continue your relationship with TPCODL?					
2	If someone asks you about TPCODL, would you talk “positively” about					

	TPCODL?					
3	Would you refer TPCODL name to others in your community, fraternity and society as a professional & dynamic organization?					

SECTION - D

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

1	2	3	4	5	6	7	8	9	10

SECTION – E

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

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

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

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

5	*Inspection & quality assurance support for timely job completion*	

We thank you for your time and courtesy!!

ANNEXURE-F

ACCEPTANCE FORM FOR PARTICIPATION IN REVERSE AUCTION EVENT

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

In a bid to make our entire procurement process more fair and transparent, TPCODL intends to use the reverse auctions through SAP-SRM tool as an integral part of the entire tendering process. All the bidders who are found as technically qualified based on the tender requirements shall be eligible to participate in the reverse auction event.

The following terms and conditions are deemed as accepted by the bidder on participation in the bid event:

1. TPCODL shall provide the user id and password to the authorized representative of the bidder. (Authorization Letter in lieu of the same shall be submitted along with the signed and stamped Acceptance Form).
2. TPCODL will make every effort to make the bid process transparent. However, the award decision by TPCODL would be final and binding on the supplier.
3. The bidder agrees to non-disclosure of trade information regarding the purchase, identity of TPCODL, 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 TPCODL.
6. In case of intranet medium, TPCODL shall provide the infrastructure to bidders. Further, TPCODL has sole discretion to extend or restart the auction event in case of any glitches in infrastructure observed which has restricted the bidders to submit the bids to ensure fair & transparent competitive bidding. In case an auction event is restarted, the best bid as already available in the system shall become the start price for the new auction.
7. In case the bidder fails to participate in the auction event due any reason whatsoever, it shall be presumed that the bidder has no further discounts to offer and the initial bid as submitted by the bidder as a part of the tender shall be considered as the bidder's final no regret offer. Any offline price bids received from a bidder in lieu of non-participation in the auction event shall be out rightly rejected by TPCODL.
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 TPCODL 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 TPCODL.
12. The original price bids of the bidders shall be reduced on pro-rata basis against each line item based on the final all inclusive prices offered during conclusion of the auction event for arriving at Contract amount.

Signature & Seal of the Bidder

ANNEXURE-G

To,

DGM (Finance)
The Tata Power Company Limited
Bhubaneswar

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

Dear Sir,

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

Vendor Code :

Title of Account in the Bank :

Account Type :

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

Bank Account Number :

Name & Address of Bank :

Bank Contact Person's Names :

Bank Tele Numbers with STD Code :

Bank Branch MICR Code :

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

Bank Branch IFSC Code :

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

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

Name of the Authorized Signatory: :

Contact Person's Name:

Official Correspondence Address:

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

Thanking you,

For _____

(Authorised Signatory)

(Signature with Rubber Stamp)

Certification from Bank:

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

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

(Manager's/ Officers Signature under Bank Stamp)

ANNEXURE-H

VENDOR APPRAISAL FORM

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

		DOCUMENTS (CHECK WHETHER THESE ARE LATEST/CURRENT	
	8.5	TECHNICAL SUPPORT, BACK-UP GUARANTEE, SUPERVISION, QUALITY CONTROL BY COLLABORATOR (WHEREVER ESSENTIAL). (THIS CLAUSE IS RELEVANT WHEN VENDOR'S EXPERIENCE IS INADEQUATE)	:
	8.6	QUALITY OF DRAWINGS	:
9.0	**MANUFACTURE**		
	9.1	SHOP SPACE, LAYOUT LIGHTING, VENTILATION, ETC.	:
	9.2	POWER (KVA)	:
		MAINS INSTALLED	:
		UTILIZED	:
		STANDBY POWER SOURCE	:
	9.3	MANUFACTURING FACILITIES (ATTACH LIST OF EQUIPMENT AS APPLICABLE)	:
		9.3.1 MATERIAL HANDLING	:
		9.3.2 MACHINING	:
		9.3.3 FABRICATION	:
		9.3.4 HEAT TREATMENT	:
		9.3.5 BALANCING FACILITY	:
		9.3.6 SURFACE TREATMENT PRIOR TO PAINTING/ COATING, POLISHING, PICKLING, PASSIVATION, PAINTING, ETC.	:
	9.4	SUPERVISORY STAFF	:
	9.5	ADEQUACY OF SKILLED LABOURS (MACHINISTS, WELDERS, ETC.)	:
	9.6	NO. OF SHIFTS	:
	9.7	TYPE OF MATERIAL HANDLED (SUCH AS CS, SS, ETC.)	
	9.8	WORKMANSHIP	:
	9.9	MATERIAL IN STOCK AND VALUE	:
	9.10	TRANSPORT FACILITIES	:
	9.11	CARE IN HANDLING	:
10.0	**INSPECTION / QC / QA / TESTING**		
	10.1	NUMBER OF PERSONNEL (INDICATE NO. OF YEARS OF EXPERIENCE)	:
	10.2	INDEPENDENCE FROM PRODUCTION	:

	10.3	AVAILABILITY OF PROCEDURAL WRITE UP/QUALITY PLAN	:
	10.4	INCOMING MATERIAL CONTROL AND DOCUMENTATION	:
	10.5	RELIABILITY/REPUTATION OF SUPPLY SOURCES	:
	10.6	STAGE INSPECTION AND DOCUMENTATION	:
	10.7	SUB-ASSEMBLY & DOCUMENTATION	:
	10.8	FINAL INSPECTION AND DOCUMENTATION	:
	10.9	PREPARATION OF FINAL DOCUMENTATION PACKAGE	:
	10.10	TYPE TEST FACILITIES	:
	10.11	ACCEPTANCE TEST FACILITIES	:
	10.12	CALIBRATION OF INSTRUMENTS AND GAUGES (WITH TRACEABILITY TO NATIONAL STANDARDS) (ATTACH LIST)	:
	10.13	STATUTORY APPROVALS LIKE BIS, IBR, ETC.(AS APPLICABLE)	:
	10.14	SUB-VENDOR APPROVAL SYSTEM AND QUALITY CONTROL	:
	10.15	DETAILS OF TESTS CARRIED OUT AT INDEPENDENT RECOGNIZED LABORATORIES	:
		i) FURNISH LIST OF TESTS CARRIED OUT AND THE NAME OF THE LABORATORY WHERE THE TESTS WERE CONDUCTED	:
		ii) CHECK AVAILABILITY OF CERTIFICATES AND REVIEW THESE WHEREVER POSSIBLE	:
11.0	**EXPERIENCE (INCLUDING CONSTRUCTION / ERECTION / COMMISSIONING) TO BE FURNISHED IN THE FORMAT INDICATED IN APPENDIX)**		:
12.0	**SALES, SERVICE AND SITE ORGANIZATIONAL DETAILS**		:
13.0	**CERTIFICATE FROM CUSTOMERS (ATTACH COPIES OF DOCUMENTS)**		:
14.0	**POWER SITUATION**		:
15.0	**LABOUR SITUATION**		:
16.0 *	**APPLICABILITY OF SC/ST RELAXATION (Y/N) IF YES, SUPPORTING DOCUMENTS TO BE ATTACHED**		
17.0	**ORGANIZATIONAL DETAILS** 1. PF NO 2. ESI NO 3. INSURANCE FOR WORK MAN COMPENSATION ACT NO 4. ELECTRICAL CONTRACT LIC NO 5. ITCC / PAN NO 6. SALES TAX NO 7. WC TAX REG. NO		:
18.0	**DOCUMENTS TO BE ENCLOSED:**		

	1. FACTORY LICENSE 2. ANNUAL REPORT FOR LAST THREE YEARS 3. TYPE TEST REPORT FOR THE ITEM 4. PAST EXPERIENCE REPORTS 5. ISO CERTIFICATE –QMS, EMS, OHAS, SA 6. REGISTRATION OF SALES TAX 7. COPY OF TIN NO. 8. COPY OF SERVICE TAX NO. 9. REGISTRATION OF CENTRAL EXCISE 10. COPY OF INCOME TAX CLEARANCE. 11. COPY OF PF REGISTRATION 12. COPY OF ESI REGISTRATION 13. COPY OF INSURANCE FOR WORK MAN COMPENSATION ACT NO 14. COPY OF ELECTRICAL CONTRACT LIC NO 15. COPY OF PAN NO 16. COPY OF WC TAX REGISTRATION 17. DOCUMENTS IN SUPPORT OF SC/ST RELAXATION AT S.NO.16.0 18. GSTN CERTIFICATE	

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

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

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

ANNEXURE-I

MANUFACTURER AUTHORIZATION FORM

(To be submitted on OEM's Letter Head)

Date: …….

Tender Enquiry No.: ……..

To,

Chief (Procurement & Stores)

The Tata Power Company Limited,
Bhubaneswar

Sir,

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

……and to subsequently negotiate and sign the Contract.

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

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

Yours Sincerely,

For ……..

Authorized Signatory

CONTENTS

TERMS & CONDITIONS OF CONTRACT

1. SCOPE OF WORK:

1.1 The scope of work under this Contract includes all activities required to complete the Works in accordance with the Specifications, drawings & BOQ which are part of Contract.

1.2 Supply of all resources inclusive of, but not limited to, men, materials and machinery, equipment, tools & tackles, scaffolding, formwork, consumables, all enabling activities etc., complete required for above works at each and every stage in time, to adhere to the completion date are included in scope of work unless otherwise specifically stated elsewhere in this agreement.

1.3 All temporary facilities required for the Works like site office, stores, employee welfare facilities, labour accommodation & transportation etc are in Contractor's scope of work.

1.4 The entire scope of Contract Works shall be carried out strictly in accordance with the true intent and meaning of the scope of Contract Works, specifications, drawings and BOQ taken together, so that the Contract Works when completed are fit for the intended purposes. All documents comprising the scope of Contract Works and all parts of each of these documents or document mentioned therein are supplementary and complimentary to each other and shall be construed accordingly.

2. COORDINATION WITH OTHER CONTRACTORS:

Contractor shall be required to co-operate and co-ordinate with the other Contractors and/or Subcontractor's working simultaneously at Site at the same premises, and shall maintain harmonious and cordial relations at all times. There shall be no exclusive access for the Contract works, a proper coordination is required from other trade works. Contractor shall take necessary steps to ensure that the equipment and works of Owner, third parties, other contractors including other utility services like water supply pipeline, telephone cables etc are not damaged during execution of Contract Works or otherwise by Contractor or Contractor's employees, subcontractors, suppliers etc. Contractor shall be responsible for all such damages and shall have to repair/replace and/or compensate for such damages at its own cost and indemnify the Owner for any losses suffered by the Contractor as a result of such damages caused by the Contractor.

3. TIME OF COMPLETION:

Time is of the essence in this Contract.

The starting and completion date of the Work in all respects shall be as per the construction schedule provided elsewhere in the Contract. The Contractor shall strictly adhere to the program and the Owner's representative(s) shall review the same periodically.

Contractor shall start his mobilization activities within 7 working days from the date of this agreement/Notice to proceed and intimate the progress to Owner's representative time to time.

4. COMPLETION OF THE WORKS:

Completion of the works shall be on the issuance of a Completion Certificate by the Owner to the Contractor. Following minimum criteria shall be fulfilled before issuance of completion certificate.

4.1 Completion Criteria

4.1.1 The Contract Works shall be Complete when the following criteria have been satisfied:

i) Completion of the Works and successful completion of all tests to the satisfaction of Owner in accordance the scope, technical specifications and Contract documents
ii) Rectification of all punch list items and certification of the same by Owner
iii) Submission of all As-Built Drawings

5. CONFIDENTIALITY:

Contractor shall not, without the previous written consent of Owner's representative, use, copy, publish, disclose or otherwise deal with, nor cause nor permit its sub-contractors, agents, employees, directors, advisors or any persons for whom it is contractually or otherwise responsible for, to use, copy, publish, disclose or otherwise deal with any confidential information, otherwise than for the performance of its obligations under the under the Contract, disclosure to advisors or otherwise as required under the applicable laws or local laws.

6. CODES AND STANDARDS:

The work shall be carried out as per the specifications laid down by the consultant. In the absence of the relevant code of practices also, the instructions of the authorized Owner's Representatives and or standard engineering practice shall be adopted. In case of contradictions/conflicts between the specifications, the interpretation of the Owner's representative shall be final and binding on both parties.

7. PRICE & PAYMENT TERMS:

7.1 **Price:** The agreed Contract Price and rates as per the price schedule given elsewhere in Contract shall remain fixed till the completion of works.

7.2 **Payment Terms**

i) Monthly running bill shall be paid based on actual completion of work at site duly certified by Engineer in charge.
ii) Retention: 10% of the gross value of each Running account (RA) shall be retained as retention money. This retention money shall be released after satisfactory completion of defect liability period.

iii) Income tax and any other statutory recoveries as applicable shall be recovered from Contractor monthly running bills and TDS certificate for the deductions shall be furnished.

iv) All payments shall be made by the Owner to the Contractor within 45 days from the date of receipt of Contractor's error free invoice along with all the back-up documents complete in all respects.

v) All payments are subject to signing of Contract Agreement and submission of an unconditional EMD cum Contract Performance bank guarantee.

7.3 Where mode of measurement is not specified in Contract documents/specification, the measurements will be taken at site as per relevant I.S. Code of Practice for Measurements.

7.4 The Owner/Owner's representative may from time to time intimate to the Contractor that they require the works to be measured and the Contractor shall attend or send a qualified agent to assist the Owner's representative in taking such measurements and calculations and to furnish all particulars or to give all assistance required by either of them. The Contractor shall give all assistance for taking measurements like steel measuring tapes, scaffolds, ladder and including surveyors with surveying instruments for checking and confirming levels.

7.5 The final bill shall be submitted by the Contractor within 45 days of the date of the certificate of completion furnished by the Owner, otherwise Owner's representative's certificate of the measurement and the total amount payable for the work accordingly shall be final and binding on all parties.

8. EXTRA/DEVIATED ITEMS:

8.1 No extra item shall be carried out without the prior approval from the Owner in writing. Any change in the specification/design resulting in additional expenditure shall be carried out only with the prior approval of the Owner in writing.

8.2 Extra items approved by Owner shall be paid on the basis of vouchers of cost of materials and labour produced by the Contractor. Vouchers produced for materials, labour, machinery etc. shall be accepted only if such vouchers are as per the prevailing market rates. The Contractor shall be paid 20 percent of the cost of materials, labour and operation of plant and machinery etc. required to execute the item, towards his profit and overhead charges. For such extra work, the Contractor shall maintain time sheets of personnel engaged and machinery used for execution of same and get them certified by the Owner. Only such labour and plant cost based on above records, which in the opinion of the Owner is justified, shall be taken into account to determine the extra item rate.

9. TAXES & DUTIES:

9.1 The price & rates quoted by Contractor and as mentioned in the schedule of price shall be inclusive of all taxes, Octroi, statutory clearances, duties, levies etc. Complete for each item.

9.2 Contractor shall submit an Income Tax Clearance certificate from the Income Tax department for the period including the past three (3) years.

9.3 Contractor shall provide a valid Provident Fund registration number; VAT and service tax registration number and evidence of the same shall be enclosed.

9.4 Failure to submit the evidence for the above will entitle the Owner to deduct appropriate tax liability values, Provident Fund values at the applicable rates from approved billing values. Such deductions shall not be refundable to the Contractor.

9.5 Any statutory variation in rate of applicable Indian taxes, duties, levies etc., any variation in applicable taxes or interpretation/enforcement of the same or introduction of new taxes or the introduction/amendment of any exemptions (other than Direct taxes i.e. Income Tax, corporate tax etc), levied in India, starting from 2 (two) Days prior to the Closing Date for submission of Bid but within the Guaranteed Completion Date of Works, shall be to the account of the OWNER/PROJECT MANAGER. Such adjustment shall be limited to direct transactions between the OWNER/PROJECT MANAGER and the Contractor and no amounts shall be payable on account of variation on taxes, duties and levies between the Contractor and its sub vendors/Sub-contractors/suppliers.

10. LABOUR LAWS & INDEMNIFICATION:

10.1 All employees and personnel engaged by the Contractor and approved sub-contractors shall be the employees of the Contractor or such approved sub-contractors, as the case may be and shall not, under any circumstances, be deemed to be the employees or agents or contractors of the Owner. Contractor shall comply with all the applicable laws, including labour related laws of the State Government, Central Government and local authorities as applicable to the place of work. All records to be maintained under these laws shall be maintained by Contractor and produced to the concerned authorities and the Owner as and when directed to do so. No extra payment will be made by the Owner to comply with such laws.

Contractor shall bear the entire responsibility, liability and risk relating to coverage of his workforce under different statutory regulations including Workmen's Compensation Act, The Employees Provident Fund Act, The Employees State Insurance Act, Factories Act 1948, the Contract labour Regulation Act 1970 and any other relevant regulations as applicable.

Contractor shall be solely responsible for the payment of all employee and worker related benefits such as provident fund, bonus etc as applicable as per the various statutory regulations and shall keep Owner indemnified in this regard against any claim by its employees or workmen or sub-contractors.

[10.2 The Contractor shall be fully responsible for the due compliance by him and his sub-contractors with all statutory requirements and with all applicable labour laws including Contract Labour Abolition and Regulation Act, Workmen's Compensation Act, P.F./E.S.I., Labour welfare fund, Act as may be applicable to the Contractor, the sub-contractors and their employees. The Contractor shall fully indemnify and save harmless the Owner from and against all claims, demands, expenses, losses, liabilities, charges, actions, suits and proceedings whatsoever including claims under aforesaid Acts and laws which may be brought or made against the Owner, its Officers or servants by reason or in consequence of any matter or thing done or omitted to be done by the Contractor and/ or its sub-contractors and all costs, charges and expenses which may become payable by the Owner in respect thereof.

10.3 Contractor shall fully indemnify, save harmless and defend the Owner & it's Representative/s from and against any and all claims, including reasonable legal costs, (collectively the "Damages"), including by third parties in respect of death or bodily injury or in respect to loss or damage to any property (other than the Works, Plant or part thereof not yet taken over) which arises out of or in consequence of the Services whilst the Contractor has responsibility for the care of the Works to the extent resulting from Contractor's or any Sub-Contractor's or their agents or employees act, negligence, or strict liability or omission in the performance of the Services hereunder; provided that the foregoing obligation shall not apply to the extent such damages are caused by the intentional acts or omissions of the Owner or Owner's representative/s.

11. QUANTITIES:

11.1 The quantities against various items of work furnished in the Schedule of Quantities are only approximate and are based on preliminary designs. They are meant only for the purpose of having a common base of comparison of various tenders.
Prices and rates quoted shall be firm for a variation in the total Contract price by ± 25% (plus or minus twenty five percent) with the provision that quantity of individual items of work may vary to any extent. No additional financial compensation will be payable in this regard.
BIDDER shall furnish percentage extra/rebate over the Contract Price in case variation in the contract price exceeds ± 25%. In case BIDDER does not specify this, the quoted price shall be deemed to remain unaltered for any variation beyond ±25%. No extension of time will be granted in case of increase /decrease of quantities/Contract Price beyond ± 25% due to additional quantities of work to any extent for any or all items of work.

11.2 The quantities of the various kinds of work to be done and materials to be furnished under this Contract which have been estimated and are set forth in the proposal or the Agreement or the Schedule of Quantities and Rates are the best available, but may not be accurate in any or all particulars and are only for the purpose of comparing on a uniform basis the bids offered for the work under this Contract

11.3 The CONTRACTOR agrees that neither the OWNER/PROJECT MANAGER nor the ENGINEER nor any of the employees or agents thereof shall be held responsible if any of the said estimated quantities should be found to be not even approximately correct in the construction of the work and that he will not at any time dispute or complain of such statement nor assert that there was any misunderstanding in regard to the character, size and type of work to be done or the kind or amount of the materials to be furnished or work to be done. Further, the CONTRACTOR shall make no claim for anticipated profits, for loss of profit or for damage because of a difference between the quantities of the various kinds of work to be done or materials actually delivered and the estimated quantities set forth by the OWNER/PROJECT MANAGER or the ENGINEER

11.4 The rates/prices quoted by the CONTRACTOR in the schedule of rates/prices shall be fixed irrespective of any variation in the quantities of individual items of work and/or in the total Contract Price unless otherwise specified in the Contract.

12. RISK AND INSURANCE:

12.1 Contractor shall maintain with respect to the Work to be done under the Contract, in each applicable jurisdiction, all statutory insurance benefits and other insurances required by law.
Contractor shall be responsible for suitably insuring his entire work force , tools, plant, third party liability at the project site, all risk comprehensive insurance including CAR policy for entire Works under the Contract and any such risk, till the works are complete and handed over. Copies of all such insurances shall be submitted by Contractor to Owner's representative for review. Owner shall be fully indemnified in this respect.

12.2 **Liability Limitation**: The Contractor's total liability to the Owner for all matters under or arising out of this Contract, other than the Excluded Matters, is limited to 100% of the Total Contract Value in aggregate. For the purpose of this clause 12.2, "Excluded Matters" shall mean liabilities arising on the Contractor on account of fraud, willful default, reckless misconduct by the Contractor or any regulatory penalties / third party claims that are made on the Owner on account of a breach of this Contract by the Contractor.

13. MATERIAL STORAGE, LABOUR ACCOMMODATION AND PROTECTION OF THE WORKS:

13.1 Contractor shall take all necessary steps to protect the Contract Works until fully taken over by the Owner. Completion shall be acknowledged by the issuance of a Completion Certificate issued by the Owner.

13.2 If available at site, space for material storage may be provided to Contractor, otherwise Contractor to arrange separately for the storage of materials at his own cost.

13.3 Contractor shall make all necessary arrangements for the accommodation of Contractor's labourers and personnel outside the site at no cost to the Owner.

13.4 Contractor shall make all necessary arrangements for transporting labours and workers from the accommodation to the work place at no charge to the Owner.

14. CONSTRUCTION WATER , POWER AND STAGING:

14.1 Water and Electricity required for the execution of the works shall be aranged by the Contractor at his own cost.

14.2 It shall be ensured by the CONTRACTOR that work shall proceed uninterrupted even in the event of power failures with the help of DG Sets and Diesel compressors. As such, adequate number of diesel operated machinery (such as boring rigs, concrete mixers, vibrators, welding sets, etc.) shall be provided by the CONTRACTOR it its cost as an alternative arrangement in case electrically operated machinery are proposed to be brought to site.

14.3 Necessary scaffolding for the work is in the scope of the Contractor.

15. SAFETY & QUALITY:

15.1 SAFETY RULES & REGULATIONS

15.1.1 Contractor shall abide by Health, Safety & Environment policy of Tata Power as mentioned in clause 15.3 below. Also Contractor and his personnel shall follow all safety standards, specifications and practices in construction as per applicable laws and also as instructed by Owner's Safety In charge. Any violation shall attract penalty as determined by the Owner. All safety appliances and personal protective equipment required such as, but not limited to, safety helmets, safety footwear, safety belts, goggles, hand gloves etc. shall be arranged by Contractor at Contractor's cost. All Contractor works shall be monitored by the Safety engineer of the Owner. If the Owner is aware of any non compliance thereto, then the Owner will not only be entitled to make alternate arrangements for the same but also recover costs and damages for the same plus the Owner's own charges as deemed fit by the Owner.
Contractor and all Contractors' personnel shall abide by all safety standards, specifications and practices in construction and also as instructed by Owner's representative. Contractor is responsible for the safety of Contractor's staff and workmen. Contractor shall be subject to Safety audit at regular intervals.

15.1.2 Contractor shall indemnify the Owner against all claims, proceedings, legal actions etc whatsoever which arise due to Contractor's failure of following safety rules & regulations as mentioned above.

15.2 QUALITY OF THE WORKS

15.2.1 The works carried out by the Contractor shall be of best quality as per industry standard and specifications issued by the Owner. Wherever required, Contractor shall submit

relevant test certificates for the materials/equipment/machinery/tools supplied/usage. If in any case the material used by the Contractor for the intended work is found defective, then the Contractor must replace the materials within 7 days of such defect notice. If the Works carried out by Contractor are not as per specification or relevant standards, the same shall be entrusted to some other agency at Contractor's risk and cost. The Contractor shall deploy sufficient numbers of dedicated full time quality assurance/quality control engineers at work place.

15.3 TOTAL COMPLIANCE TO TCOC, SHE AND CSM:

The Contractor shall abide and comply with Owner Safety, Health & Environment policies, Contract Safety Management (CSM), Sustainability and TCOC manuals / documents as enclosed, in totality.

15.4 CONSEQUENCE MANAGEMENT FOR SAFETY

In addition to CSM manual, following to be complied by the Contractor

i) All Contractors working with Tata Power are to be ISO 14001 / OSHAS certified. In case it is not, Contractor shall obtain ISO 14001 / OSHAS within 6 months of the Effective Date of the Contract.

ii). Contractors who have obtained OHSAS certification and have achieved 100% safety audit score for compliance will be eligible for 0.25% of the contract value as incentive which shall be payable at the time of closure of the Contract based on overall safety audit score.

iii). 2% of monthly invoice value shall be retained towards safety assessment. The said payment will be released after the safety audit / performance score is calculated by the Company for the respective month provided there are no safety incidents / violations reported for the Contractor for the respective month after deduction of LDs as enumerated below:

a) 1st time violation of safety with severity 4 and 5 (highest severity) – Rs.10,000/- per incident

b) 2nd time violation of safety with severity 4 and 5 (highest severity) – Rs.25,000/- per incident

c) 3rd time onwards violation of safety with severity 4 and 5 (highest severity) – Rs.100,000/- per incident

iv). For multiple incidents (more than 5 incident during contract), Project Manager / Site Manager to be changed by the Contractor.

v). In case of fatality, LD of Rs.5,00,000/- shall be payable by the Contractor.

vi). The above LDs shall be over and above liabilities including 3rd party claims & liabilities / statutory liabilities arising out of bodily injury or including death whether by accident or otherwise.

vii). Contractor shall submit list of tools & tackles with details of make, year of manufacturing, valid certification to the Project Manager/ User for their approval

viii). Project Manager may during the execution of project inspect & verify that the tools & tackles are as per the qualification requirements approved by him and will have right to seek replacements in case of any discrepancies. The Contractor shall always comply with such directives.

ix). Safety Committee at Site shall be the sole authority and shall have the sole right to assess the safety performance / audit of the Contractor and their decision on rewards / LDs shall be final and binding on the Contractor. Contractor to note that in case of repeated safety violations / gross violations of Company's Safety Policy, the Contract may be terminated without notice and the Contractor delisted from Tata Power / associates / group companies.

16. SERVICES AND FACILITIES BY THE OWNER/PROJECT MANAGER:

The following facilities and services will be provided by the OWNER/PROJECT MANAGER to the Contractor:

i) Only a base line and one permanent benchmark would be furnished to the Contractor near the site. Surveying and laying out of all works shall be in Contractor's scope. Contractor shall maintain without disturbance during the course of execution of the work the reference line and the workbench mark.

ii) The Owner will hand over to the Contractor within one week from the date of issue of Letter of Intent some areas, as available at site to enable Contractor to make arrangements for stores, site office, etc. at his own cost. If space provided for storage facilities is not sufficient, the Contractor has to make his own arrangement for space at his own cost outside the plant.

17. CONTRACTOR'S PERSONNEL:

Contractor shall engage a Project Manager at site at all times who will be single point of contact for the Works. Contractor shall also engage qualified & experienced Engineers & supervisors at site at all times. Contractor shall also engage a separate Safety officer and Quality inchage and adequate safety stewards for the entire duration of Contract.

18. PROGRESS OF WORK:

18.1 Within 7 days upon award, the Contractor shall submit an detailed Contract Works program containing all the important milestones in the project to the Owner for approval. The work program shall fulfill the time requirements as stipulated elsewhere in Contract. Such program shall be supported with details of resource deployment.

18.2 Contractor has to provide weekly and monthly progress report and progress photographs to the Owner. Contractor shall also submit a resources schedule to the Owner and augment the workforce of equipment as and when required to attain requisite progress of works without any extra cost to Owner.

19. WORK IN MONSOON & DEWATERING:

19.1 The construction and erection work may entail working in monsoon also. The CONTRACTOR must maintain a minimum labour force as may be required for the job and plan and execute the construction and erection during monsoon according to the prescribed schedule. No extra rate will be considered for such work in monsoon.During monsoon and other period it shall be the responsibility of the Contractor to keep the construction site free from accumulating of water, at his own cost.

19.2 During inclement weather, rains, CONTRACTOR shall suspend concreting for such time as the Owner may direct and shall protect from damage all works already in progress or completed just then. All such temporary protective measures shall be at Contractor's cost and any damage to works shall be made good by the Contractor at his own expense.

20. DELAYS AND EXTENSION OF TIME:

20.1 The time allowed for carrying out the work as mentioned in the Contract shall be strictly observed by the Contractor.

20.2 If the Contractor shall desire an extension of time for completion of work on the grounds of his having been unavoidably hindered in its execution or any other ground, he shall apply in writing to the Owner within 5 days of the date of hindrance on account of which he desires such extension as aforesaid. This application must be accompanied by sufficient documentation giving reasons for seeking such extension. No application for such extension shall be entertained if it is not received in sufficient time to allow the Owner to consider it and the Contractor shall be responsible for the consequences arising out of such negligence. Upon receipt, Owner may accept or reject such application.

In the event of a disruption (other than suspension by Owner) to the Schedule and if in the opinion of Contractor it is not the responsibility of Contractor or its any Sub-contractor and which might have been caused due to action of any third parties which CONTRACTOR might not have reasonably prevented, and that Contract entitles Contractor to time extension and/ or other relief from Owner, the Contractor shall notify the Owner within twenty four (24) hours and provide a written report (to the best of Contractor's knowledge at the time) of the disruption within 72 (Seventy Two) Hours of Contractor's learning of the disruption and such report shall be supplemented on a prudent, informative and timely basis thereafter not later than 14 (Fourteen) Days from the date of Contractor's first learning of such disruption. In such an event the Contractor may modify and resubmit for approval to Owner, computer based network schedule and modifications if any required to the Schedule. Upon receipt, Owner shall take reasonable action in accordance with the Contract.

Contractor in any case has to inform to Owner immediately upon learning of any possible hindrances to the Works which have caused or may cause delay or other impact to the Works to enable Owner take suitable action.

20.3 The OWNER/PROJECT MANAGER shall have the right to order discontinuance/suspension of the work, in whole or in part, for such time as may be necessary in the opinion of OWNER. In such an event, the OWNER/PROJECT MANAGER will grant such extension of time for completion of the Contract which in its opinion is proper and/or other relief in accordance with Contract in consequence of such delay.

21. LIQUIDATED DAMAGE:

In the event that the works are delayed beyond the interim milestone completion date / contractual completion date, Liquidated damage to the extent of 1% of the contract value per week of delay shall be levied, subject to a maximum of 10 % of the total contract value.

22. STEP IN PROVISION:

22.1 Should the progress or quality of the works be found to be persistently lesser than that required to complete the works by the Completion Date, following due notification to the Contractor of such progress deficiencies, Owner reserves the right to:

a) Supplement the resources of the Contractor at Contractor's cost
b) Remove a part of, or all remaining works from, the Contractor's scope and have the works completed by others at Contractor's risk and cost.

22.2 The Owner shall incur no cost greater than the Contract value in supplementing the Contractor, or completing the works by other means. All cost beyond that of the Contract value shall be borne by the Contractor.

23. ASSIGNMENT & SUBCONTRACTING:

Contractor shall not assign or subcontract in part or otherwise any portion of this Contract without prior written approval of Owner.

24. DEFECTS & WARRANTY:

Contractor is responsible for defects in the Works for a period of 12 (Twelve) months from the date of Issuance of the Completion certificate issued by the Owner/Project Manager to the Contractor for the Works.

25. TERMINATION OF CONTRACT:

If the Contractor (being an individual or a firm) commit any 'Act of Insolvency', or shall be adjudged as insolvent, or shall make an assignment or composition for the greater part in number or amount of his creditors, or shall enter into a Deed of Assignment with his creditors, or (being an Incorporated Company) shall have an order made against him or pass an effective Resolution for winding up either compulsorily or subject to the supervision of the Court or voluntarily, or if the Official Assignee of the Contractor shall repudiate the Contract, or if the Contractor shall assign or sublet the Contract without the consent in writing of the Owner first obtained, or if the Owner's representative shall certify in writing to the Owner that in his opinion the Contractor,

i. Has abandoned the Contract, or

ii. Has failed to commence the works, or has, without any lawful excuse under these conditions suspended the progress of the works for fourteen days after receiving from the Owner written notice to proceed, or

iii. Has failed to proceed with the works with such due diligence and failed to make such due progress as would enable the works to be completed within the time agreed upon, or

iv. Has neglected or failed persistently to observe and perform all or any of the acts, matters or things required by this Contract to be observed and performed by the Contractor for seven days after written notice shall have been given to the Contractor requiring the Contractor to observe or perform the same, or

Then and in any of the said causes the OWNER/PROJECT MANAGER with the written consent of the ENGINEER may, notwithstanding any previous waiver, after giving seven days notice in writing to the Contractor, terminate the Contract. Notwithstanding any such termination, the Contractor shall continue to be responsible for all liabilities that have accrued under this Contract prior to the date of such termination. And further, the OWNER/PROJECT MANAGER with the consent of the ENGINEER by his agents or servants may enter upon and take possession of the works and all plant, tools, scaffolding, sheds, machinery, steam and other power, utensil and materials, lying upon premises or the adjoining lands or roads, and use the same as his own property or may employ the same by means of his own servants and workmen in carrying on and completing the works or by employing any other Contractor's or other persons or person to complete the works and the Contractor shall not in any way interrupt or do any act, matter or thing to prevent or hinder such other Contractor or other person or persons employed for completing and finishing or using the materials and plant for the works.

The Owner shall thereafter ascertain and certify in writing under his hand what (if anything) shall be due or payable to the Contractor by the Owner, for the value of the said plant and materials so taken possession of by the Owner, and the expense or loss which the Owner shall have been put to in getting the works to be so completed, and the amount, if any owing to the Contractor and the amount which shall be so certified shall, thereupon, be paid by the Owner to the Contractor or by the Contractor to the Owner as the case may be, and the certificate of the Owner shall be final and conclusive between the parties.

26. DISPUTES & ARBITRATION:

26.1 In case any dispute or difference shall arise between the OWNER/PROJECT MANAGER or the ENGINEER on his behalf and the CONTRACTOR arising out of or in relation to or concerning this Contract or the construction, meaning, operation or effect hereof or of any clause herein contained or as to the rights, duties or liabilities of the parties hereto respectively or of the ENGINEER under or by virtue of these presents or otherwise or in connection with the subject matter of these presents or arising out of or in relation thereto (except as to matters left to the sole discretion of the ENGINEER) the same shall be referred to the arbitration of a single arbitrator in case the parties can agree upon one, otherwise, to two arbitrators, one to be appointed by each party and an umpire to be appointed by the two arbitrators before entering upon the references and in either case in accordance with and subject to the provisions of the Indian Arbitration and Reconciliation Act 1996 or any statutory modification or re-enactment thereof for the time being in force. All arbitration proceedings shall be conducted in English language only and the decision of the arbitration tribunal constituted in accordance with the above shall be final and binding upon the parties. Each party to the dispute shall bear its own costs, unless otherwise specified by the arbitration tribunal in its order. The seat and venue of all arbitration proceedings under this Contract shall be Mumbai.

26.2 Work under the Contract shall continue during the arbitration proceedings and no payments due or payable by the Owner shall be withheld on account of such proceedings.

27. LAW, LANGUAGE & MEASUREMENTS

27.1 Applicable law to this Contract shall be the Indian Law. The respective rights, privileges, duties and obligations of the Owner and the Contractor under this Contract shall be governed and determined by the Laws of State , where the project is located and of the Republic of India.

27.2 All correspondence and documentation pertaining to this Contract shall be in the English language only. The official text of this Contract shall be English, regardless of any translation that may be made for the convenience of the Parties. All correspondence, information, literature, data, manuals, definitive documents, notices, waivers and all other communication, written or otherwise, between the Parties in connection with this Contract shall be in English.

27.3 All measurements shall be in metric system

28. FORCE MAJEURE:

28.1 **Definition of Force Majeure**

"Force Majeure" shall mean an event or circumstance beyond the reasonable control of the Owner/Project Manager or the Contactor which could not have been foreseen, prevented or mitigated by such Party using its reasonable diligence and which makes it impossible for such Party to perform the whole or in part its obligations under the Contract, including but not limited to:

a) Act of God.

b) An act of war, (whether declared or undeclared) hostilities invasion, armed conflict or an act of foreign enemies, blockade, embargo, revolution, military action, or sabotage.

c) Contamination by radio-activity from any nuclear fuel, or form any nuclear waste from the combustion of nuclear fuel, radioactive toxic explosive, or other hazardous properties.

d) Riot, civil commotion, terrorism or disorder, unless solely restricted to employees of the Contractor or of his Sub-contractors.

e) Natural or regional industrial disputes or targeted disputes which are part of national or regional campaign and which is not reasonably within the powers of a Party to prevent, or which is not specific to the Party or any of his Contractors or Subcontractors.

f) Operation of the forces of nature such as earthquake, hurricane, lightning, tidal wave, tsunami, typhoon or volcanic activity.

28.2 **Excused Performance**

If either Party is rendered wholly or partially unable to perform its obligations under this Contract because of a Force Majeure Event, that party will be excused from whatever performance is affected by the Force Majeure event to the extent so affected provided that:

a) The affected Party gives the other Party Written Notice of the occurrence of the Force Majeure Event as soon as practicable after the occurrence of the Force Majeure Event and also gives the other Party Written Notice describing in reasonable detail the particulars of such occurrence, including an estimation of its expected duration and probable impact on the performance of such Party's obligations hereunder, and thereafter continues to furnish thereto timely regular reports with respect to continuation of the Force Majeure Event;

b) The suspension of performance shall be of no greater scope and of no longer duration than is reasonably required by the Force Majeure;

c) No liability of either Party which arose before the occurrence of the Force Majeure Event causing the suspension of performance shall be excused as a result of the occurrence;

d) The affected Party shall exercise all reasonable efforts to mitigate or limit Damages to the other Party;

e) The affected Party shall use its best efforts to continue to perform its obligations hereunder and to correct or cure the event or condition excusing performance;

f) When the affected Party is able to resume performance of its obligations under this Contract, that Party shall give the other Party Written Notice to that effect and shall promptly resume performance hereunder.

28.3 **Limitations**

Notwithstanding anything to the contrary contained herein:

a) any act, event, or occurrence listed above or asserted as a Force Majeure Event that results materially from the negligence or intentional acts of the affected party (including in the case of Contractor or any Sub-contractor thereof) shall not constitute a Force Majeure Event; and

b) The affected Party shall not be relieved from obligations under this Contract to the extent that the negligence or wilful misconduct of the affected Party (or in the case of Contractor or any Sub-Contractor thereof) contributes to or aggravates the Force Majeure Event.

28.4 **Effect of Force Majeure Event**

Neither the Owner/Project Manager nor the Contractor shall be considered in default or in Contractual breach to the extent that performance of obligations is prevented by a Force Majeure Event, which arises after the Effective Date. Except as otherwise provided in a Change Order, an extension of time shall be granted to Contractor only to the extent Contractor proves to Owner/Project Manager:

a) The performance of the Work or supply of Goods is actually and necessarily delayed by an event of Force Majeure; and

b) The effect of such event of Force Majeure could not have been prevented or avoided or removed despite exercise of reasonable due diligence whether before, after or during the event of Force Majeure.

28.5 **Payment to Contractor**

If, in consequence of Force Majeure, the Plant or any part thereof shall suffer loss or damage, the Contractor shall be entitled to claim and receive payment for the cost of Work or supply of Goods executed in accordance with the Contract, prior to the event of Force Majeure.

28.6 **Optional Termination, Payment and Release**

Irrespective of any extension of time, if a Force Majeure Event occurs and its effect continues for a continuous period of [180 days], the Owner/Project Manager may give to the other a Notice of termination, which shall take effect 30 (thirty) Days after the giving of the Notice. If, at the end of the 30 (thirty) Day period, the effect of the Force Majeure Event continues, the Contract shall terminate. If the Contract is so terminated, the Owner/Project Manager shall determine the work done and pay to the Contractor all amounts due and payable for such work.

29. CHANGE:

A Change Order shall be issued by the Owner in accordance with this clause, when Owner proposes to make any change in the Scope, Services, the Contract Price, the Performance Guarantees and/or the Schedule.

29.1 Further detailing not a Change Order

Contractor's performance of Services shall be subject to further detailing from time to time and Contractor shall receive no additional compensation for such detailing to the extent that such detailing does not constitute a Change Order.
No change made necessary because of any default of the Contractor in the performance of its obligations under the Contract shall be deemed to be a Change, and such change shall not result in any adjustment of the Contract Price or the Time for Completion.

29.2 Right to Change Order

Change Orders may be initiated by the Owner/Project Manager/Owner's Representative at any time during the Contract Period, either by instruction or by a request (the "Change Order Notice") to the Contractor to submit a proposal. If the Owner/Project Manager/Owner's Representative requests the Contractor to submit a proposal and subsequently elects not to proceed with the change, the Contractor shall not be reimbursed for the Cost incurred for proposal.
The Contractor shall not make any alteration and/or modification of the Services unless and until the Owner/Project Manager/Owner's Representative instructs or approves a Change Order in Writing.

29.3 Change Order Procedure

If the Owner/Project Manager/Owner's Representative issues a Change Order Notice, the Contractor shall submit a proposal addressing proposed design and/or work to be performed with supporting details, any modification to the schedule as a result of the change and adjustment in Contract price, within fifteen (15) Days or any other period as mutually agreed:

29.3.1 The Owner/Project Manager/Owner's Representative shall respond with approval, rejection or comments within a period to be mutually agreed after receipt of such proposals.

29.3.2 If the Owner/Project Manager/Owner's Representative instructs or approves in Writing a Change Order, he shall proceed with adjustments to the Contract Price, Schedule of Payments, Performance Guarantees as required.

29.3.3 Contractor shall not suspend performance of this Contract during review and negotiation of any Change Order, except as may be directed by Owner/Project Manager or required by Applicable Law.

29.4 Payment in respect of the approved Change Orders shall be released by Owner/Project Manager to the Contractor on satisfactory completion of such Change Order and its certification by the Owner's Representative in the same manner as applicable to corresponding milestone payments under the Contract.

30. MISCELLENIOUS:

30.1 Site conditions has been made clear to the Contractor during tendering stage and the Contractor has understood the scope of work, hence, no claims of whatsoever nature shall be entertained by the Owner on account of any such reason cited by the Contractor at later date. It also understood that the Contractor has inspected the site of work, has fully acquainted himself with site conditions and has obtained for himself on his own responsibility and at his own expenses all information which may be necessary for execution of work.

30.2 In case work is nearly or is anticipated to be suspended by Contractor, or in case only unimportant progress is being made, or in case it is apparent that the CONTRACTOR is about to forfeit his Contract or that the money yet due to him will not complete his Contract, the Owner may, at his discretion, withhold any payment which may be due to the CONTRACTOR.

30.3 No claims shall be entertained on account of idle time charges.

30.4 The work shall be carried out with due diligence and all work shall be executed in a workman like manner subject to the approval of the Owner (or any other duly authorized representative of the Owner) whose decision as to rate of progress and quality of work or material shall be final and binding.

30.5 The Owner shall have right to omit or cancel, add or alter any items of work without assigning any reason whatsoever and no claim for compensation for damage will be entertained for such omissions, alterations, additions and cancellations.

30.6 The Contractor has to maintain the pollution limits to the minimum. The Contractor shall in advance intimate to Owner and other related Contractors about the areas of work which may be subjected to pollution, dust or noise and shall take proper pollution and dust control measures to prevent dust from rising as a result of pile boring or other such activities

30.7 Upon completion of work, the Contractor shall promptly demobilise from the site and leave the place in a manner as directed by the Owner, including cleaning of the area. CONTRACTOR shall start demobilisation only after the successful completion of the contract. No equipment, plant material or personnel shall be de-mobilised from the site unless with the express consent of the OWNER's Project Manager. The OWNER reserves the right to disallow in de-mobilisation if works under this scope of this contract are not completed to his satisfaction.

30.8 The Contractor is normally expected to work during daytime only and is required to complete the work in all respects as stipulated elsewhere. However, night work or working on Holidays may be stipulated by the Owner or permitted in exigencies with

prior approval of the Owner. Sufficient lights shall be provided by the CONTRACTOR to safeguard the workmen and the public when the night work is in progress.

30.9 No claims for extra works shall be entertained unless such extra works are agreed to in writing by the Contractor's Representative.

30.10 The Contractor is responsible for safety and security of the works executed by him under the Contract.

30.11 The Contractor to obtain at his own cost all Material entry permits to the state (Road Permits), statutory work permits and responsible for safe working procedures at sites, safety of men and machineries.

30.12 Day to Day debris cleaning and housekeeping is in the scope of the Contractor and no extra charges shall be paid for the same.

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

Date: 15th June, 2018

(Praveer Sinha)
CEO & Managing Director

TATA POWER
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Safety Terms and Conditions

1. Definitions

1.1 **Order Manager**: Order Manager is the Tata Power representative, who has the ownership of the given job under the signed contract.

1.2 **Service Provider/Contractor/vendor:** An individual or an organization that provides services to Tata Power under a signed contract.

1.3 **Site Safety Management Plan:** It is the safety plan agreed between Contractor /service provider & Tata Power. It will contain the entire job specific safety requirement and will be signed by the service provider.

1.4 **High Risk Job:** Any job which has significant health and safety risk associated to it. The list of high risk jobs has been identified at Tata Power level.

1.5 **Emergency:** a serious, unexpected, business discontinuity and often dangerous situation resulting loss of revenue/property and requiring immediate action.

2. Safety Policy

HEALTH AND SAFETY POLICY

Tata Power is committed to provide safe and healthy working environment for the prevention of work related injuries and ill-health. Safety is one of our core values. We strive to be a leader in safety excellence in the global power and energy business. In pursuit of this, we are committed to the following:

- Maintain and continually improve our management systems to eliminate hazards and reduce health & safety risks to all our stakeholders.
- Incorporate appropriate health & safety criteria into business decisions for selection of plant and technology, performance appraisal of individuals and appointments in key positions.
- Comply and endeavour to exceed all applicable health & safety legal and other requirements
- Integrate health & safety procedures and best practices into every operational activity with assigned line-functional responsibilities at all levels.
- Involve our employees and business associates in maintaining a safe and healthy work environment through consultation and participation
- Inculcate safety culture by visible leadership and empowerment.
- Ensure required competency to enable our employees and business associates for working safely.
- Promptly report incidents, investigate, share crucial learnings and prevent recurrences.
- Influence our business associates in enhancing their health and safety standards and align with Tata Power's health & safety codes and practices.
- Set safety & health metrics as indicators of excellence, monitor progress and continually improve health and safety performance.

We shall ensure the availability of appropriate resources at all times to fully implement and 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: 11th March, 2019

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3. Safety Organization & Responsibilities

4.1 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 less than 100 numbers. When workforce ranges from 100 to 1000, the contractor has to provide at least one qualified safety officer and safety supervisors (reporting to the safety officer) in the ratio 1:100. For every 1000 addition in workforce, the contractor has to add 1 safety officer. The Tata Power Project Safety Manager will review and approve the appointment of all safety supervisors. Contractor/Subcontractor safety supervisors/officers will work with Tata Power Safety Managers and align themselves with Tata Power safety requirements.

Each Contractors'/Subcontractors' Site Manager is responsible, and will be held accountable, for the safety of their sub contractors and workforce and for ensuring that all equipment, materials, tools and procedures remain in safety compliance at job site, including:

4.1.1 Holding officer/supervisors accountable for safety and actively promote safe work performance.
4.1.2 Participate in and cooperate with all safety program requirements to be implemented in order to meet Tata Power safety objectives.
4.1.3 Ensure timely reporting of safety incidents, near misses, unsafe acts and conditions.
4.1.4 Identify the training needs of its employees and maintain all safety training documents.
4.1.5 Provide safety performance report at an agreed frequency.
4.1.6 Stopping of unsafe work (acts and/or conditions) immediately, until corrective action be taken.

4.2 Contractor Supervisors and General Staff

Contractors' site supervisors and general staff members in charge of job site functions such as field engineering, warehousing, purchasing, cost 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 from project inception through project completion. Each supervisor will proactively participate in the SHE program by observing, correcting unsafe acts, and recording these observations.

4.3 Contractor Workforce

Contractor workforce must make safety a part of their job by following safety rules and regulations and by using all safeguards and safety equipments. They must take an active part in the Site Safety program to ensure their own safety and injury-free employment as well as being alert to unsafe practices of their fellow employees.

Every member of the workforce is expected to report for work without influence of any Drug/Alcohol. All employees are expected to report any hazardous conditions practices and behaviors in their work areas and correct where ever possible.

Workforce is responsible for active participation in safety and health programs, suggestion systems, trainings and in immediate reporting of all injuries, any unsafe practices, conditions or incidents to their supervisors.

4.4 Vendor/Contractor

Vendors/Contractor shall at all times comply with, and ensure that their workforce comply with all site safety rules and regulations. Specifically, with applicable provisions of the Tata Power Site Safety Management Plan, and all statutory safety rules and regulations.

4. 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.

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.

5.1 Lock Out and Tag Out Procedure

This procedure is intended to be used for the protection of Personnel while servicing or performing maintenance on 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 REV 01 available on official website of Tata Power (www.tatapower.com)

5.2 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 REV 01 available on official website of Tata Power (www.tatapower.com)

5.3 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 REV 01 available on official website of Tata Power (www.tatapower.com)

5.4 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 REV 01 available on official website of Tata Power (www.tatapower.com)

5.5 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 REV 01 available on official website of Tata Power (www.tatapower.com)

5.6 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 has to 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 REV 01.

5.7 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 REV 01 available on official website of Tata Power (www.tatapower.com)

5.8 Electrical Safety Procedure

The objective of these standards is to specify minimum mandatory requirements and advisory guidance for identifying and controlling hazards to ensure 'Zero Harm' with regard to operation maintenance and testing of electrical equipment. For complete procedure kindly refer Procedure Document No- TPSMS/CSP/ELEC/010 REV 01 available on official website of Tata Power (www.tatapower.com)

5.9 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 available on official website of Tata Power (www.tatapower.com)

5.10 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/FSM/011 REV 01

5.11 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 REV 01 available on official website of Tata Power (www.tatapower.com)

5.12 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 REV 01 available on official website of Tata Power (www.tatapower.com)

5.13 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/002 REV 01 available on official website of Tata Power (www.tatapower.com)

5.14 Handling Hazardous Materials Procedure

This Procedure is developed 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 REV 01 available on official website of Tata Power (www.tatapower.com)

5.15 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 REV 01 available on official website of Tata Power (www.tatapower.com)

5.16 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 REV 01 available on official website of Tata Power (www.tatapower.com)

The above procedures will be updated periodically 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.

5. 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 Safety Manager will audit contractors training and related documentation to assure its adequacy.

6.1 Tata Power Site Safety Orientation

All Tata Power contractor and subcontractor workforce is required to attend Tata Power 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:

1. Job rules, personal safety and conduct
2. Hazards reporting
3. Reporting of injuries
4. Emergency procedures
5. Safety Activities and Program including disciplinary measure and incentives.
6. Critical safety procedure relevant to the job

6.2 Capability Building

Appropriate training such as L1, L2 & L3 is given to ensure that a jobholder, either supervisor or worker, is competent to do his/her job safely. The skill training is provided through TPSDI and other agencies authorized by Tata Power on the list of 15 procedures mentioned under safety procedure.

Contractor shall ensure that concerned workmen are provided with adequate training before he/she is allowed to execute the work.

An evaluation test will be conducted after the completion of the training. Those workmen employee who meet the minimum required competency will be provided with Gold Card which is valid for 3 years, post which the workmen has to reappear for the assessment. If the workman is not able to qualify the assessment, he/she will be given 3 additional attempts to clear in 3 month timeframe failing which he/she will not be allowed to work on high risk jobs.

6. 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)
- 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)
- Workforce in high decibel area (> 90 Decibel, Check for Hearing)
- Workforce, working in specific areas requiring specific medical attention should conduct the medical test as laid down in the respective Site Safety Management Plan.

7. Safety Performance Evaluation and Penalties

8.1 A certain percentage of the bill value will be retained against every running bill as safety performance retention. The amount will be released with the last invoice based on "Safety Performance score" attached in CSM-F-3 of CSM procedure. The amount is based on following table

Contract Value	Retention Amount(%)
Upto 10 Lakhs	2.5
10 – 50 lakhs	2
0.5 to 10 Cr	1.5
>10 Cr	1

8.2 Safety performance Score will be monitored by the Order Manager every month.

8.3 For the contract value of more than Rs 1 Cr or contract duration more than 12 months, the retention amount shall be released half yearly based on safety performance. For all remaining contracts, the retention amount will be released with the final bill.

8.4 In case of job stoppage due to safety violations/ unsafe observations at the site, no time extension shall be given to the contractor, if such delays are attributable to contractor.

8.5 In case of fatality, limb loss or loss of property, vendor has to pay for liability, legal, statutory and additional mutually agreed settlement charges imposed by the appointed committee. This charge is over and above the retention amount.

8.6 The committee will finalize an amount between 5 -50 lakhs based on factors such as advise by statutory authorities, contract value and impact of accident etc.

8.7 Safety performance bonus 1% (limiting to 50 lakhs) of the invoice value will be considered at the end of the job if the contractual safety performance score is 100%.

8.8 During the progress of the work, concerned Supervisor/Engineer will visit and inspect the work site regularly and evaluate the safety performance of the contractor based on matrix attached herewith.

8.9 Order Manager, divisional chief and SBU head have the authority to terminate the contract in case of three consecutive serious violations.

Safety Performance Evaluation - CSM-F-3

	Lead Indicators	**Unit Of measurement**	**Target**	**weight age**
1	% of Employee certified in TPSDI/Authorized agency	%	50	10
2	CFSA score (Annexure 6.1)	Average Severity of Violations	1.49	20
3	Monthly inspection completed for Critical Equipments, lifting Tools & Tackles and hand tools used at site	%	80	5
4	Condition of tools, tackles and equipments	%	100	15
	Lag Indicators			
1	Number of Fatalities	No.	0	30
2	Number of Lost work day case (LWDC)	No.	0	10
3	Man-days Lost	No.	0	10

In addition to above evaluation criteria, for specific violations penalty shall be imposed on the contractors under following circumstances:

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

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

Sr No	Description of violation	Severity	Penalty /
65.	Trying to board or alit from running vehicle.	3	500/
66.	Cylinder Valves of Gas cylinders not closed when not in use.	3	500/
67.	Flash-back arrester not used.	3	500/
68.	Trolley wheel found damaged.	3	500/
69.	Guy ropes of required length on both sides of object are not used during movement with load.	3	500/
70.	Scotch block/wedge not provide when the vehicle is parked.	3	500/
71.	Suitable Trolley not provided to hold the cylinders.	3	500/
72.	Locked First Aid box	3	500/
73.	Caution boards, danger signs (luminescent /red) along with emergency contact number are not found displayed.	3	500/
74.	Person found jumping barricading tape	3	500/
75.	Stacking of pipes, pile casing , drums without chock blocks/wedges	3	500/
76.	The terrain on which Heavy Equipment/Machinery moves is not reasonably hard.	3	500/
77.	Without Safety Helmet at working sites	4	250/-
78.	Without Crash Helmet (on bikes)	4	500/-
79.	Without Full body double lanyard Safety Harness (for work at height)	5	5000/-
80.	Without Hand gloves - Material Handling, Welding, Cutting,	4	100/-
81.	Without Safety goggles/ face shield - Welding/Cutting /Grinding	5	5000/-
82.	Handling Chemical without PVC Apron	5	5000/-
83.	Smoking in prohibited area (Closed Go-downs, Storage of flammable material, Storage of Gas cylinders)	5	1000/-
84.	Sleeping at Work Place	3	100/-
85.	Driving beyond speed limit	3	1000/-
86.	Seat Belt While Driving (for front seat passengers and driver)	3	500/-
87.	Driving without license	4	1000/-
88.	Heavy Commercial vehicles without reverse horn	3	500/-
89.	Non functional Head light/ tail light and side indicators	3	100/-
90.	Using Mobile Phone During Driving	5	5000/-
91.	Poor visibility of registration number/ without registration number	3	100/-
92.	Broken/ without Side view mirror	3	100/-
93.	Over speeding above specified limit	3	500/-
94.	Broken/ Without Pressure gauge on Oxygen/ LPG / Acetylene cylinder.	3	500/-

Sr No	Description of violation	Severity	Penalty /
95.	Without Flash back arrestor on Industrial Acetylene & Oxygen cylinders.	5	5000/-
96.	Spillage of hazardous material/chemicals during transportation	4	2000/-
97.	Electrical equipment without Earthing/ ELCB/ Double Insulation Cable.	5	5000/-
98.	Lifting Tools & Tackles used without/ expired Test Certificates.	5	5000/-
99.	Housekeeping repeatedly not maintained		
100.	• First Time	3	Warning
101.	• Second Time	4	1000/-
102.	• Third Time	5	5000/-
103.	Serious Violation Of House Keeping (after 1st or 2nd warning to be decided by Project Manager depending on the severity)		Rs.10000/- and above
104.	Repeat Violation of same nature	5	5X Violation

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.

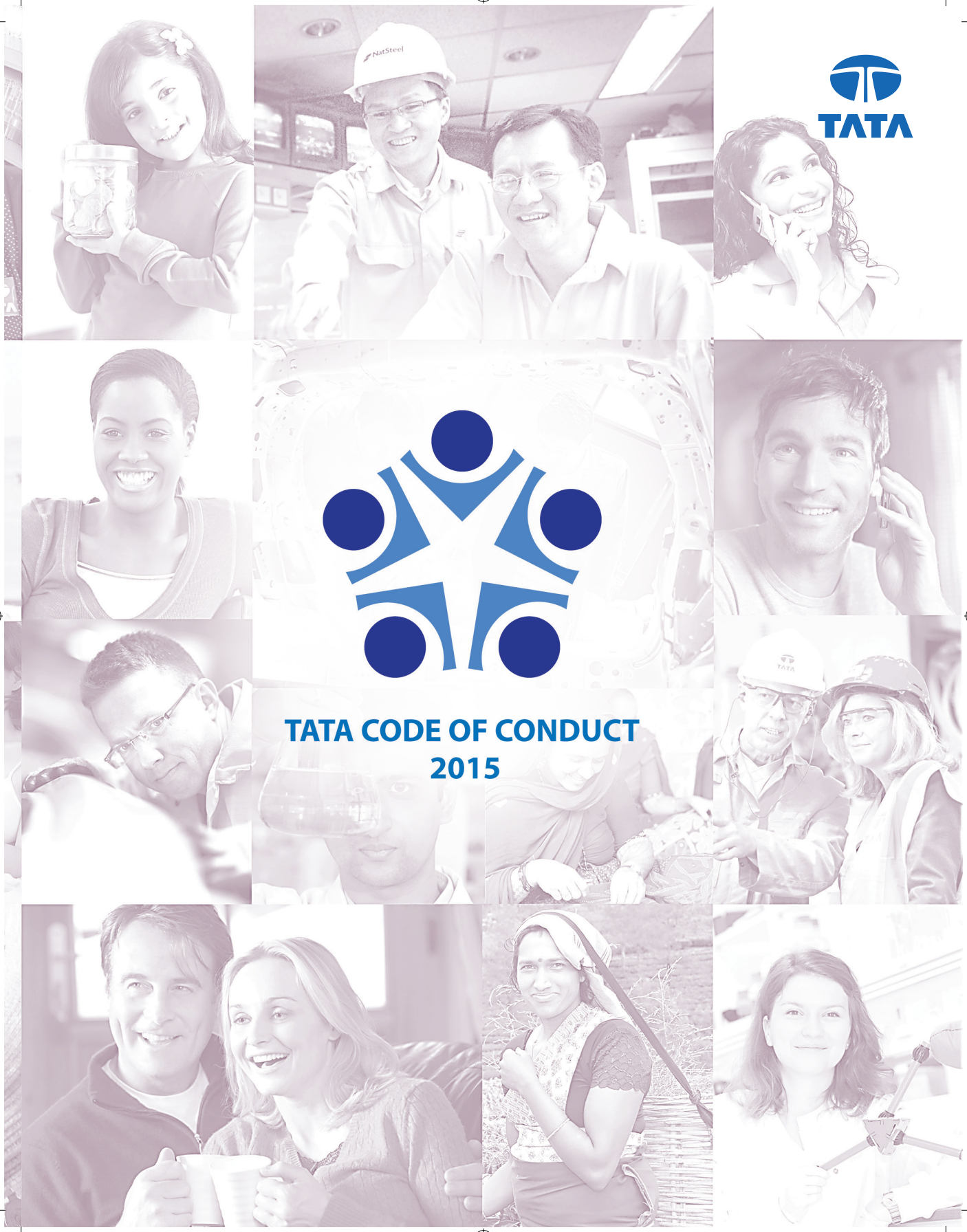
We shall actively communicate this policy to all stakeholders by suitable means and periodically review its relevance in continuously changing business environment.

(Praveer Sinha)
CEO & Managing Director

Date: 15th June, 2018

TATA POWER

Lighting up Lives!



TATA

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)

CONTENTS

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-authorised, non-discriminatory and non-discretionary vehicle outside India.

Government engagement

2. We engage with the government and regulators in a constructive manner in order to promote good governance. We conduct our interactions with them in a manner consistent with our Code.

3. We do not impede, obstruct or improperly influence the conclusions of, or affect the integrity or availability of data or documents for any government review or investigation.

OUR GROUP COMPANIES

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

J.R.D. Tata
Chairman, Tata Sons (1938 – 1991)

J. OUR GROUP COMPANIES

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

Q&A

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

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

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

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

RAISING CONCERNS

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

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

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

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

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

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: _____

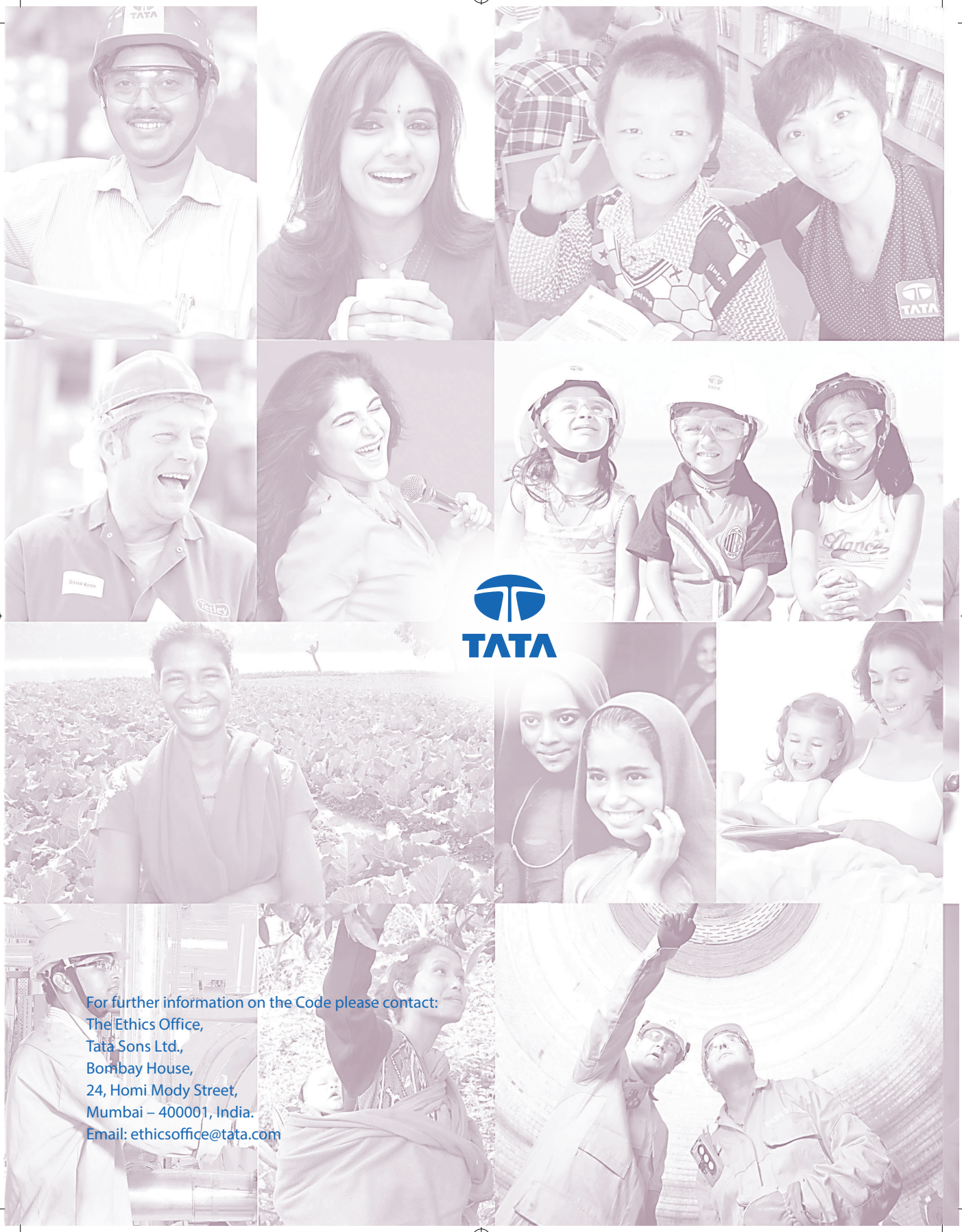
_____

_____

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

NOTES

NOTES



TATA

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

CORPORATE 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 POWER
Lighting up Lives!

Contractor's Safety Code of Conduct

Reason for Change	Prepared By	Checked By	Approved by
Revision to accommodate Existing changes in org structure and to simplify the procedure	Rajesh Sharma *(Head-Safety Generation)*	Suresh Khetwani *(Chief - Safety & Environment)* Monish Kumar *(Chief -Corporate Contract)*	V. V. Namjoshi (Chief Generations)

INDEX

1. Objective

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

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

To ensure reduction in reportable injuries and achieve goal of zero accidents, first edition of contractor safety code of conduct was launched successfully in the year 2014. Since last four years after the launch of CSCC, Tata Power could achieve the objective of reduction in reportable injuries and fatalities.

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

2. Scope:

This procedure applies to all operating and project sites of The Tata Power Company Ltd and Group companies including new businesses like EV charging, Home Automation etc.

3. Definitions

3.1. **Order Manager:** Order Manager is the Tata Power representative, who has the ownership of the given job.

3.2. **Site Safety Management Plan**: It is the safety plan agreed between Contractor and Tata Power. It will contain the entire job specific safety requirement and will be signed by the contractor.

3.3. **Contractor**: An individual or a company that provides services to Tata Power under a signed contract.

3.4. **Emergency:** a serious, unexpected or dangerous situation requiring immediate action, which may result in loss of revenue/property, business discontinuity. In case of Emergency*, services may be procured by selecting the qualified vendor based on the vendor category without the safety bid evaluation. It must be approved by MB level and above.

3.5. **Expert Service jobs:** Jobs which needs expert services of contractor which does not involve direct exposure to the potential risk or work which involves only

supervisory work such as expert for turbine overhaul, expert for boiler overhaul, expert for pump and motor, expert for compressor overhaul.

3.6. **Head of the Division:** Business in charge of the division who is overall custodian of the generating station or transmission division or distribution division.

3.7. **Category A Vendor:** Vendor eligible to carry out Very High & High risk (as per Tata Power Hazard Identification and Risk Analysis Procedure) and /or Long-Term Contract related to operation and maintenance (O&M) of plant. Vendors must fulfil the requirement specified for Category A in Appendix 12-CSMF-5 of this document.

3.8. **Category B Vendor:** Vendors eligible to carry out technical jobs, that are classified under Medium /low risk. Vendors must fulfil the requirement specified for Category B in Appendix 12-CSMF-5 of this document.

3.9. **Category C Vendor:** Vendors eligible for to carry out low or very low risk administrative and office jobs. For this he must fulfil the requirement specified for Category C in Appendix 12-CSMF-5 of this document.

3.10. **Category D Vendor:** All Consultants, Medical Practitioners or vendors taking job from Tata Power and working from their own premises (e.g. motor rewinding at vendor's shop floor, equipment sent for repair to vendor's works etc.) are classified as Category D Vendor

3.11. **High Risk Jobs:** A Job or its activities are considered as Very High or High Risk when Order manager apply the "Tata Power Hazard Identification and Risk Analysis" procedure and found safety risk associated with are under Very High or High category. Indicative lists of jobs are given in appendix 15 of this document**.**

3.12. **Medium Risk Jobs:** Jobs or its activities are considered as medium risk when Order manager apply "Tata Power Hazard Identification and Risk Analysis" procedure and found the same as Medium Risk.

3.13. **Low Risk Jobs:** Any job or its activities are considered as Low or Very low risk while Order manager, calculate it by applying "Tata Power Hazard Identification and Risk Analysis" procedure and found it under Low or Very Low category.

3.14. **Long Duration Jobs:** When the duration of job is 12 months or more, it is considered as Long duration job

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

4. Responsibilities

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

4.1.1 Finalizing the Site Safety Management Plan along with Contractor, Safety Concurrences Group, Divisional Safety Head and Expert (External or Internal) if required.

4.1.2 Supervise and ensure work is carried out as per the Site Safety Management Plan including agreed Risk Assessment (HIRA/JSA) and Method Statement.

4.1.3 Conduct audit and evaluate Safety Performance of contractor.

4.1.4 Ensure contractors adhere to all statutory provisions.

4.1.5 In case any deviation is needed in agreed safety management plan or in CSCC process for execution of job, Management of Change procedure will be applicable, and approval may be obtained from divisional head /Cluster head.

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

4.2.1 To follow all Tata Power Critical Safety Procedure, Rules and guidelines given in Safety Terms and Conditions

4.2.2 Undertake job as per Site Safety Management Plan CSM-F10 and method statements agreed with Tata Power.

4.2.3 Raise any concerns with regard to their work and its safety with the Tata Power Order Manager.

4.2.4 Report all injuries, near misses, unsafe acts/conditions, and occurrences to the Tata Power Order Manager immediately.

4.2.5 Ensure that all sub-contractors follow the Tata Power Safety Procedure and agreed Site Safety Management Plan CSM-F10.

4.2.6 To follow all statutory requirements as per the laws of the land.

4.2.7 All vendors applying for A category jobs or submitting quote for high risk jobs shall obtain certificates of ISO 9001, ISO14001 and ISO45001 before submitting quote for high risk Jobs.

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

4.3.1 Assessment of Safety Potential of new vendor before registration as per CSM-F1-Safety Category Qualification Form.

4.3.2 Safety Evaluation of the bids as per evaluation format CSM-F-9 Safety Bid Evaluation Criteria

4.3.3 Finalization of the Site Safety Management Plan CSM-F-10 submitted by the contractor.

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

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

4.3.4.2 Capex jobs of High-Risk Category

5.1 Vendor Registration

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

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

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

5.2 Bid evaluation

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

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

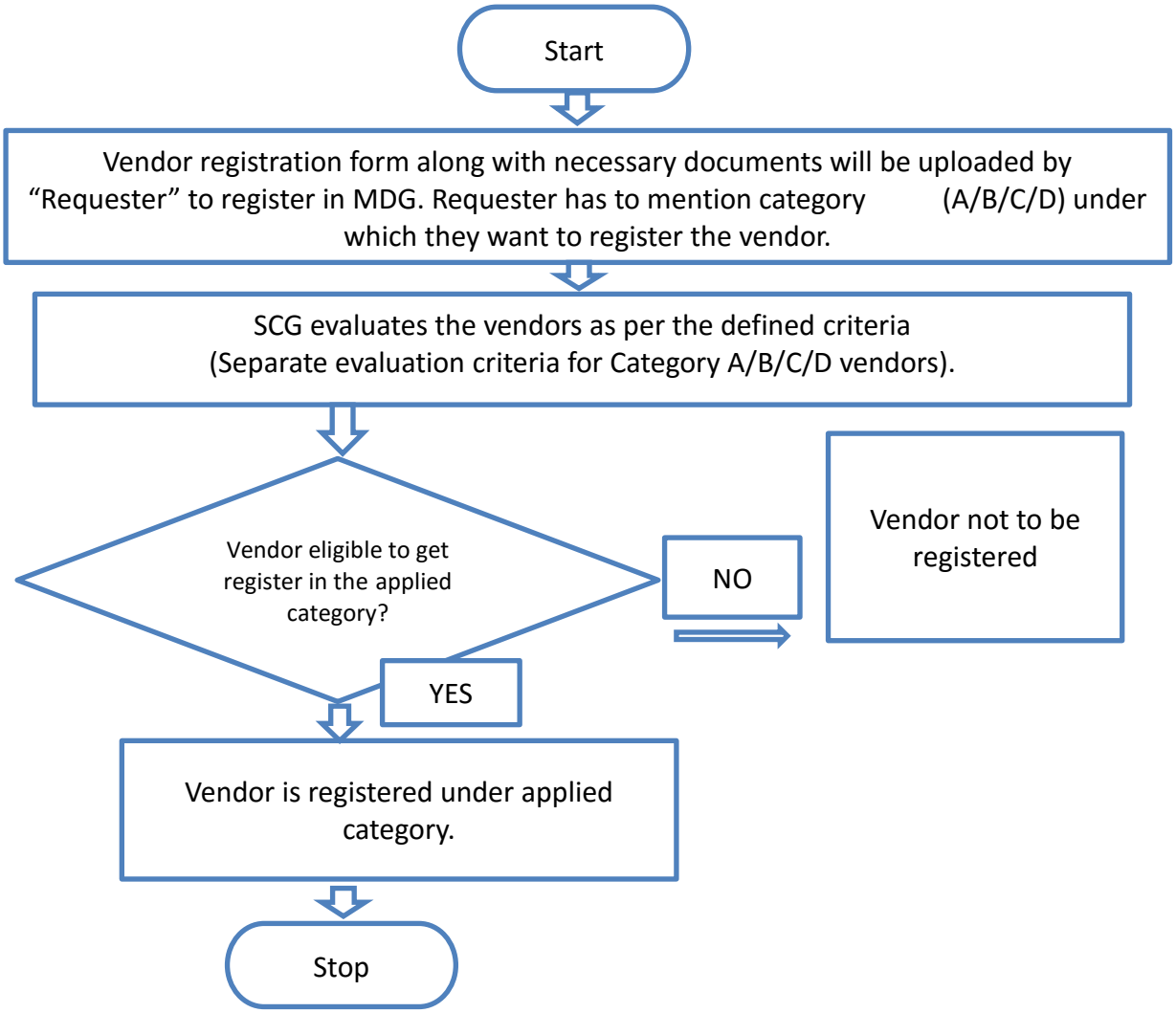
Otherwise the RFQ will be attached only with Safety Terms and Conditions. Long term and low value jobs (see definition) are exempted from the CSCC process.

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

5.3 Safety Performance Evaluation

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

Appendix 1: Process Flow Chart for Vendor Registration


Start
Vendor registration form along with necessary documents will be uploaded by "Requester" to register in MDG. Requester has to mention category (A/B/C/D) under which they want to register the vendor.
SCG evaluates the vendors as per the defined criteria (Separate evaluation criteria for Category A/B/C/D vendors).
Vendor eligible to get register in the applied category?
NO
Vendor not to be registered
YES
Vendor is registered under applied category.
Stop

Appendix 2: CSM-F-1 Safety Category Qualification form

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

Safety Category Qualification Form

Please Consider my application for

Category A Vendor: Vendor eligible to carry out Very High- and High-risk O&M jobs
Category B Vendor: Vendors eligible to carry out technical jobs, classified as Medium / low risk
Category C Vendor: Vendors eligible for to carry out low or very low risk administrative and office jobs
Category D vendor: All Consultants, Medical Practitioners or vendors taking job from Tata Power and working from their own premises.

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

Signature :
Name and Designation :
Stamp of Organization :

Appendix 3: Safety Terms and Conditions

Please refer the attached document Safety Terms and Conditions.

Appendix 4: CSM- F-3- Safety Performance Evaluation Criteria

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

Contract Value	Retention Amount (%)
Up to 10 Lakhs	2.5
10 – 50 lakhs	2
0.5 to 10 Cr	1.5
>10 Cr	1

2. The evaluation criteria include Lead Indicators such as CFSA (Contractor Field safety Audit) score, percentage of workers trained in TPSDI, inspection of critical equipment. Lag indicators such as Fatalities, LWDC and man days lost.
3. The retention amount saved will go to a separate Safety Improvement Fund.
4. For the contract value of more than Rs 1 Cr or contract duration more than 12 months, the retention amount shall be released half yearly based on safety performance. For all remaining contracts, the retention amount will be released with the final bill.
5. Long term jobs with low value (Less than Rs. 1 Cr.) are exempted from the safety retention. Invoice of these type of jobs can be cleared without safety retention.
6. In case of job stoppage due to safety violations / unsafe observations at the site, no time extension shall be given to the contractor, if such delays are attributable to contractor.
7. In case of fatality, limb loss or loss of property, vendor must pay for liability, legal, statutory and additional mutually agreed settlement charges imposed by the appointed committee. This charge is over and above the retention amount.
8. The committee will finalize an amount between 5 -50 lakhs based on factors such as advise by statutory authorities, contract value and impact of accident etc.
9. Safety performance bonus 1% (limiting to 50 lakhs) of the invoice value will be considered at the end of the job if the contractual safety performance score 100%.
10. During the progress of the work, concerned Supervisor/Engineer will visit and inspect the work site regularly and evaluate the safety performance of the contractor based on matrix attached herewith and apply the Consequence management policy as applicable.
11. Order Manager, divisional chief and SBU head have the authority to terminate the contract in case of three consecutive serious violations.

Safety Performance Evaluation report- CSM-F-3

	Lead Indicators	**Unit Of measurement**	**Target**	**weight age**
1	% of Employee certified in TPSDI/Authorized agency	%	50%	10
2	CFSA score (Annexure 6.1)	Average Severity of Violations	1.49	20
3	Monthly inspection completed by contractor for Critical Equipment, lifting Tools & Tackles and hand tools used at site as per Tata Power Checklist	%	80	5
4	Revalidation of Condition of tools, tackles and equipment by Order Manger.	%	100	15
	Lag Indicators			
1	Number of Fatalities	No.	0	30
2	Number of Lost workday case (LWDC)	No.	0	10
3	Man-days Lost	No.	0	10

Appendix 5: CSM- F-4 Safety Violation Penalty Criteria

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

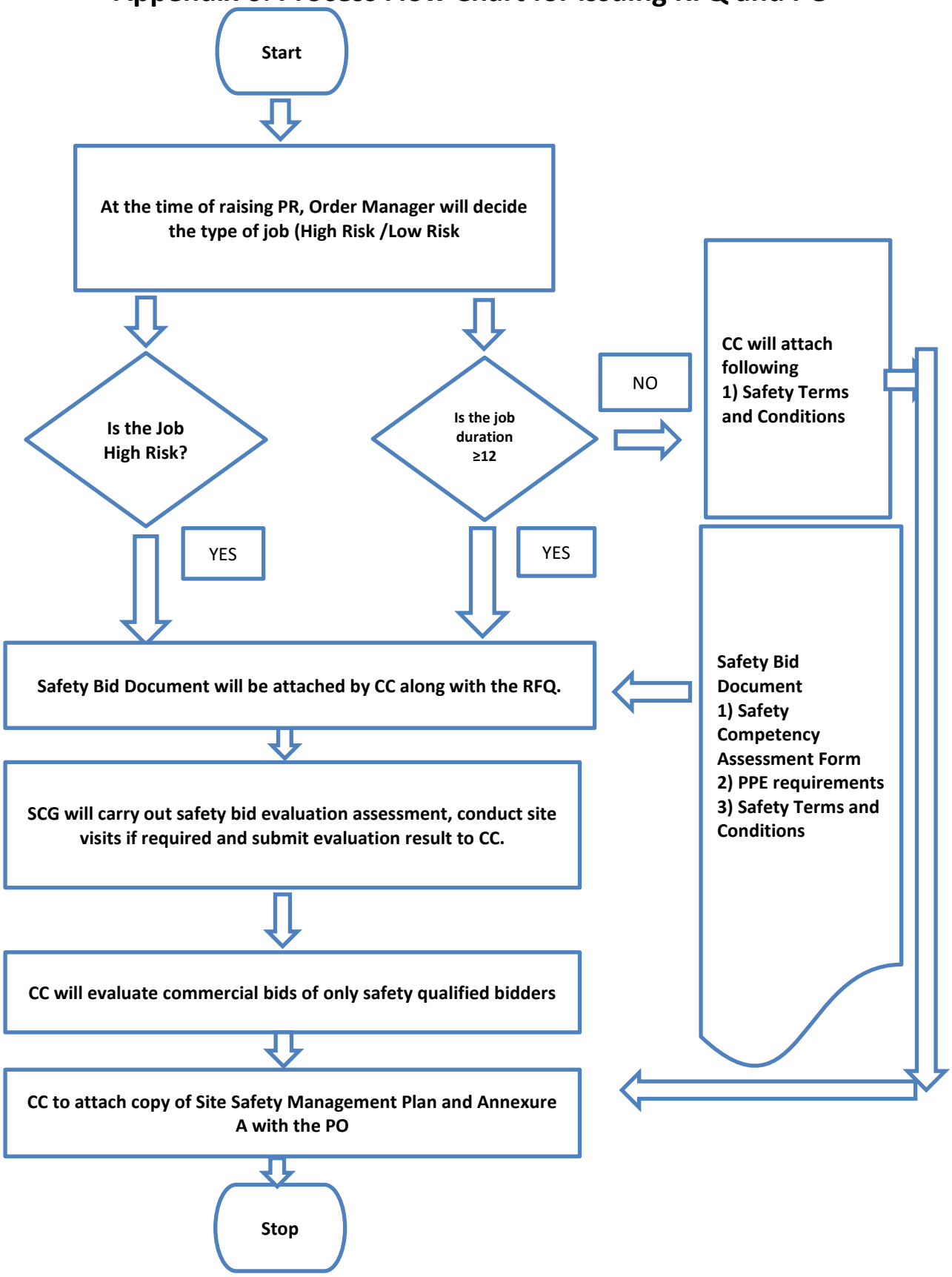
Sr No	Description of violation	Severity	Penalty
1.	Working without Permit	5	5000/-
2.	Untrained (TPSDI) worker on high-risk jobs.	5	5000/-
3.	Unhygienic/Bad condition of PPE	2	250/-
4.	Not following Tata Power Procedure & Standard	4	2000/-
5.	Unsafe Act/Condition of Severity 4	4	2000/-
6.	Unsafe Act/Condition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

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

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

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

Appendix 6: Process Flow Chart for issuing RFQ and PO



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:

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

Direct bidder employee
Partly Direct / Partly sub-contracted
Sub-Contracted

3. Against each of the category, bidder to indicate the minimum qualification and experience of the proposed manpower.
4. Rows can be added to also identify other specialised manpower e.g. specific details to be included for high risk activities operators
5. Columns can be extended to the actual duration of Site activities.
6. 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.**

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)		Signature	Date

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

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

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

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

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

6.1 Pre-Working Checks

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

Tools required for work:

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

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

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

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

7.0 Task Specific Hazards: - *Refer to Task Specific Risk Assessment and attach in appendix*
Attachment: - Specific Risk Assessment
In addition, please provide below control measures in risk assessment *(as applicable).*

Fall Protection Measures: (Where Work at height cannot be avoided)							
Control Measures for Electrical Hazards							
Others Hazard if any (please provide details)							
Hazardous Substances to be used in job : (Attach MSDS if required)							
	Yes /No	Yes /No	Yes /No	Yes /No	Yes /No	Yes /No	Yes /No

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

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

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

Required Personnel Protective Equipment:	 Safety Boots	 Hard Hats	 Safety Gloves	 Hearing Protection	 Eye Protection	 Respiratory Protection	Other: 1. Hi-Viz 2. Coveralls 3.

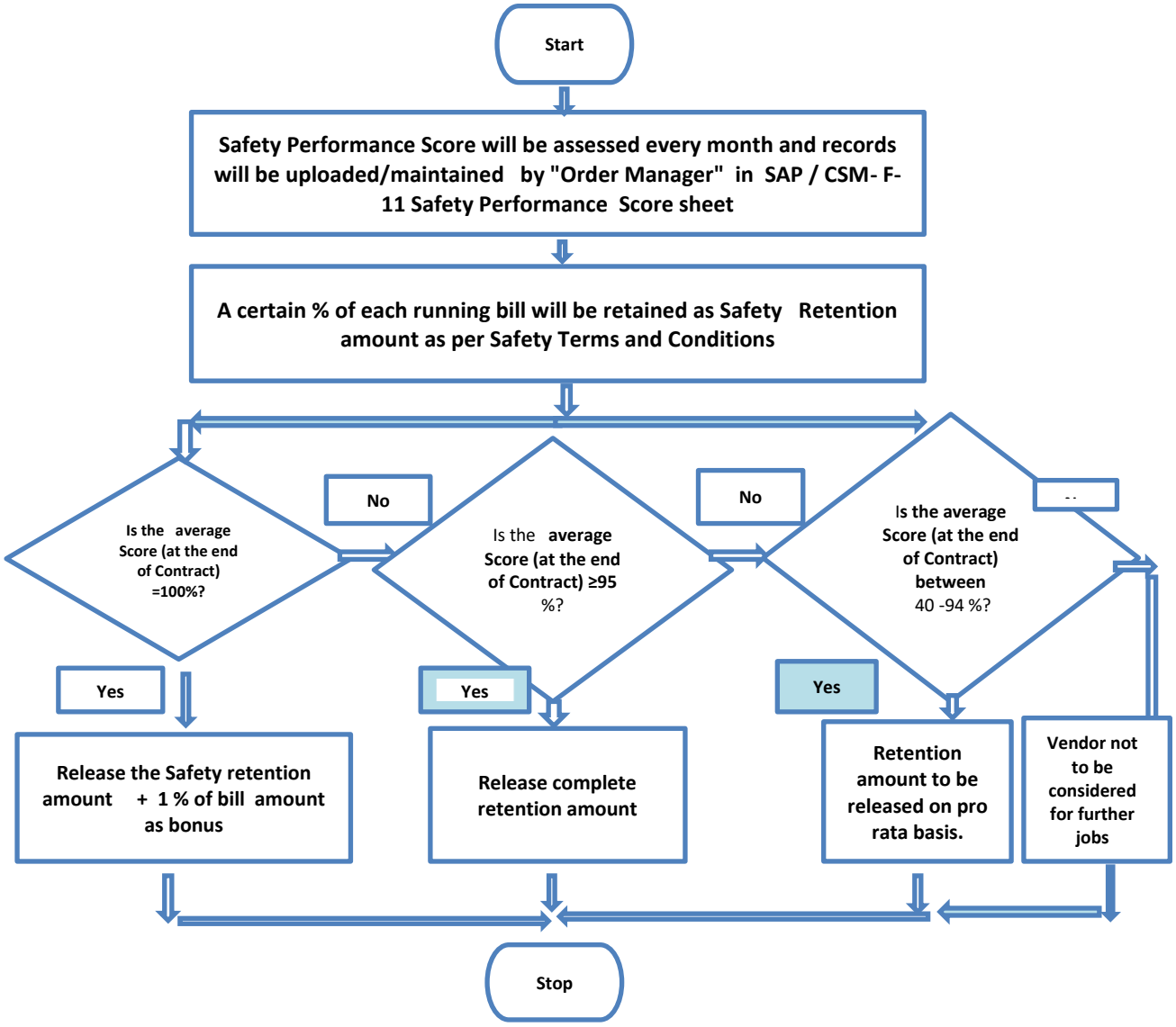
10.0 First Aid facilities and Nearby Hospitals Details

	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.

Appendix 10: Process Flow Chart for Safety Performance Evaluation



Appendix 11: CSM- F-11 Safety Performance Score

Sr. No	Parameter	Unit of Measurement	Target	Weightage	Actual Performance	Actual Score
Lead Indicator						
1	% of Employee certified in TPSDI/Authorized agency	Number	50%	10		
2	CFSA score (Annexure 6.1)	Average Severity of Violations	1.49	20		
3	Monthly inspection completed for Critical Equipment, lifting Tools & Tackles and hand tools used at site	Number	80%	10		
4	Condition of critical tools, tackles and equipment	Number	100%	10		
Lag Indicator						
1	Number of Fatalities	No	0	30		
2	Number of Lost workday case (LWDC) (reportable)	No	0	10		
3	Man-days Lost	Man-days	0	10		
					Final Score	
					Invoice Value	
					Amount to be released	

Safety Performance Evaluation Criteria

Lead Indicators

	Target			
% of Employee certified in TPSDI/Authorized agency	50%	100%	Less than 100%	
Score		10	5	
	Target			
CFSA score	<=1.49	1.5 to 2.5	2.51 to 3.5	>=3.51
Score	20	15	10	0
	Target			
Monthly inspection completed for Critical Equipment, lifting Tools & Tackles and hand tools used at site	>=80%	79 to 50%	<50%	
Score	10	7	0	
	Target			
Condition of critical tools, tackles and equipment	100%	<100%		
Score	10	0		

Lag Indicators

Number of Fatalities	0	>0	
Score	30	0	
Number of LWDC (reportable)	0	>0	
Score	10	0	
Number of man days lost	0	1 to 5	>5
Score	10	5	0

Appendix 12: CSM-F-5 Safety Potential Evaluation Criteria for Vendor Registration

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

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

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

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

Evaluation Criteria for Category B

Sr. No	Description	Weightage (%)	Actual Score	Remarks
1	Does the contractor have a valid ISO 9001 certification?	30		
2	During site visit check for safety adequacy at site	30		Annexure -12.1
3	Check the Safety statistics of Contractor	10		Annexure -12.2

4	Check the Safety orientation & training process of Contractor	15		Annexure -12.3
5	Check the organizational structure for safety professionals & engineers / supervisors.	10		Annexure -12.4
6	Certified/skilled workers as a percentage of overall workforce	5		
	Total	100		

Evaluation Criteria for Category C

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

Annexure 12.1: Evaluation Criteria for Category D:

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

Annexure 12.2

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

Annexure 12.3

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

Annexure 12.4

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

Appendix 13: CSM-F-9 Safety Bid Evaluation Criteria.

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

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

		Minimum Requirement	**Weightage (%)**	**Score Obtained**
Manpower	**Safety Officer (1 per 500 workers)**	**Qualification-** Officer shall possess Advance Diploma In Industrial Safety by state technical board. **Experience**- Minimum 1-year experience in relevant field as mentioned in the job in PR.	5	
	Safety Supervisor (1 per work site up to max. 50 workers)	**Qualification-** Supervisor shall possess ITI/ Diploma in relevant field. **Experience**- Minimum 2-year experience in relevant field as mentioned in the job in PR. **Training** – Trained and certified by TPSDI or equivalent institute in relevant safety procedures. **Note:** On request of the contractor/Users -TPDSI should vet & certify the skilled & experienced	5	

		Technician if Technical Qualification is not adequate.		
	Technician (Skilled workers as electrician, rigger, fitter, welder, cable jointer, line men etc)	**Experience**- Minimum 2 year experience in relevant field as mentioned in the job in PR. **Training** – Trained and certified by TPSDI or equivalent institute in relevant safety procedures.	5	
Tools & Tackles	Equipment / Machines/ Tools & Tackles(lifting and shifting tools)	The list of Equipment /Machines / Tools and tackles to be used for job to be submitted by the contractor. Evaluation of the list will be carried out based on 1) Suitability as per the relevant job 2) Make and age of the tools from authorized agencies defined by the user. 3) Certification by the competent authority of respective state.	30	
Safety Records	Safety Records	Safety Records for last 3 years (as per vendor or as per our knowledge) – Recommendation?	15	
Safety Plan	HIRA/Contract Job Safety Plan	Adequacy of HIRA and Job Safety Plan with respect to relevant job. More weight age will be given to vendor for using mechanized work and advanced tools and equipment	20	
Accredited Bodies certificate	ISO-9001	ISO-9001	2	
	ISO-14001	ISO-14001	3	
	OHSAS 18001 ISO 45000	OHSAS 18001/ISO 45000	15	
		Total Score		

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

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

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

Annexure -13.1:

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

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

Appendix 14: CSM-F-11.1 CFSA Format

CONTRACTOR FIELD SAFETY AUDIT

Project Name :

Date:

Description of Severity rating:		**Audit Team:**	
	1 = Untidy area, minor issues, sets poor example		
	2 = Restricted access, unacceptable trash, disorderly		
	3 = Rule or procedure violation, potential injury		
	4 = Unsafe condition, serious injury potential		
	5 = Immediate serious injury potential, stop activity immediately and correct	**Audit Time:**	10:00hrs -11:30 hrs
		Weather:	cloudy

	Description	**Responsible**		**Number Personnel Observed**		**Violations**			**Remarks**	Leading Indicators			
		Engineer	**Contractors**	**Good Citizens**	**Violators**	**Number of Violations**	**Severity**	**Violations x Severity**		4 & 5	PPE	Unsafe Act	Unsafe Condition
Area													
1													
	Sub Totals			**0**	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**
	% of Observed People Working Safely												
	Number of Violations												
	Average Severity of Violations												
	Number of Severity 4 & 5 Violations												
	% of 4 & 5 Violations												
	Approximate Number of Workers Observed												
	Number of People on Site												
	% of Workers Observed												

Appendix 15: Indicative List of High-Risk Jobs

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

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

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

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

Indicative List of High-Risk Jobs - Renewable Cluster					
Sl. No.	**Jobs**				
1	Working on Electrical Panels				
2	Hi Potting of Equipment				
3	Battery commissioning and maintenance				
4	Working on the nasal of Wind Turbine				
5	Working on live electrical switchyard, material Handling and Equipment installation				
6	Roof Top Solar Panels Installation and maintenance				
7	Working in live Electrical Switchyard, Material Handling, equipment installation				
8	All maintenance activities that requires climbing on Towers /Structures / Transformer/ GODs				
9	Loading and Unloading of Solar Panels on trucks				
10	Structural Repair /Dismantling work at height.				