TP CENTRAL ODISHA DISTRIBUTION LIMITED
(A Tata Power & Odisha Govt. joint venture)
Procurement Department
2nd Floor, IDCO Tower, Janpath Bhubaneshwar, Odisha 751022
Tender No.: TPCODL/P&S/1000000103/2021-22

Open Tender Notification

for

Strengthening of LT & HT electrical infrastructure in elephant movement area in TPCODL

Tender Enquiry No.: TPCODL/P&S/1000000103/2021-22

Due Date for Bid Submission: 02.10.2021 [15:00 Hrs.]

TP Central Odisha Distribution Limited

(A Tata Power & Odisha Government joint venture)
Purchase department
2nd Floor, IDCO Towers, Janpath, Bhubaneswar-751022

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

Tender No.: TPCODL/P&S/1000000103/2021-22

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

-: Steps for E-tender submission:-

Tender Enquiry No	Work Description	Name of Package	EMD (Rs.)	Tender Participation Fee (Rs.)	Last Date and Time for payment of Tender Participation Fee
TPCODL/P&S/ 1000000103/ 2021-22	Strengthening of LT & HT electrical infrastructure in elephant movement area in TPCODL	Package- 4 / Dhenakanal Sub Division	**15 Lakhs**	5,000/-	20.09.2021, 15.00 Hrs
		Package- 5 / Hindol Road Sub Division			
		Package- 7 / Gondia Sub Division			
		Package- 12/ AED, Athagarh Division			
		Package- 14/ BCDD-II, Bhubaneswar Division			
		Package- 15/ KED, Khurdha Division			

Please note that corresponding details mentioned in this document will superseded any other details mentioned anywhere else in the Tender Document.

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.

Step 3:

After deposit of the tender fee, the bidder should furnish the following information through e-mail 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. 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

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.

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

CONTENTS OF THE ENQUIRY

1.0 Event Information

1.1 Scope of work

Open Tenders are invited through e-tender bidding process from interested Bidders for entering into a Contracts as defined below :

Tender Enquiry No	Work Description	Name of Package	EMD (Rs.)	Tender Participation Fee (Rs.)	Last Date and Time for payment of Tender Participation Fee
TPCODL/P&S/ 1000000103/ 2021-22	Strengthening of LT & HT electrical infrastructure in elephant movement area in TPCODL	Package- 4 / Dhenakanal Sub Division	**15 Lakhs**	5,000/-	20.09.2021, 15.00 Hrs
		Package- 5 / Hindol Road Sub Division			
		Package- 7 / Gondia Sub Division			
		Package- 12/ AED, Athagarh Division			
		Package- 14/ BCDD-II, Bhubaneswar Division			
		Package- 15/ KED, Khurdha Division			

Note:

- Tender fee is inclusive of GST
- The bidders shall offer for all packages.

1.2 Availability of Tender Documents

Please Refer "Procedure to participate in the e-Tender".

1.3 Calendar of Events

(a)	Date of availability of tender documents from TPCODL Website	From 10.09.2021 Onwards
(b)	Date by which Interested and Eligible Bidder to pay Tender Fee and confirm participation as mentioned in "Procedure to Participate in Tender"	20.09.2021, 15:00 Hrs
(c)	Last Date of receipt of pre-bid queries, if any	23.09.2021 up to 15:00 Hours
(d)	Last Date of Posting Consolidated replies to all the pre-bid queries as received	27.09.2021
(e)	Last date and time of receipt of Bids through AIBA E-Tender Portal	02.10.2021 up to 15:00 Hours

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 of requisite value
1.4.3 Price Bid as per the Price Schedule mentioned in Annexure-I (BOQ).
1.4.4 Necessary documents against compliance to Qualification Requirements mentioned at Clause 1.7 of this Tender Document.
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 Duly signed and stamped "Acceptance Form for participation in Reverse Auction" As per Annexure VI on bidder's letter head.
1.4.8 Proper authorization letter/ Power of Attorney to sign the tender on the behalf of bidder.

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 (BOQ).
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
1.6.6 Acceptance Form for participation in Reverse Auction" as per Annexure VI
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 average annual turnover of **Rs. 15 Crore** in last three years. Audited balance sheet, profit and loss account and auditors report from the statutory auditors of the company required.

2. Work Experience: Bidder should have work experience of **construction / augmentation of 33 kV / 11 kV/ LT overhead line on turnkey basis in any utility/companies with a cumulative length of minimum 50 km within last 5 years.**

Note- In case bidder has previous association with TPCODL for similar products and services, the performance feedback for that bidder by TPCODL's user group shall only be considered irrespective of performance certificate issued by any third party.

3. The bidder must have executed similar jobs for construction/ augmentation of 33kV/11kV/LT network in any utility/companies for **a total value of Rs. 5 Cr. of one single order or two orders of Rs. 3 Cr. each or three orders of Rs 2 Cr. each during last 5 financial years**.

4. Bidder must have all statutory compliance like valid PAN, ESI registration, EPF registration and GSTN registration.

5. Bidder should have a valid HT Electrical license issued by Govt. of Odisha for carrying out electrical works in Odisha Copy of license required. In case bidder is not having HT Electrical license issued by Govt. of Odisha bidder shall submit an undertaking that in case they are successful bidder, license shall be obtained before execution of contract. However, in such case, bidder should have HT Electrical license issued by Electrical licensing department other state government / Union territory.

6. Bidder should have a valid HT Electrical license issued by Govt. of Odisha for carrying out electrical works in Odisha Copy of license required. In case bidder is not having HT Electrical license issued by Govt. of Odisha should have HT Electrical license issued by Electrical licensing department other state government / Union territory. In such case, they shall submit an undertaking that, in case they are successful bidder, license shall be obtained before execution of contract. However, the bidder shall produce a copy of such application & receipt of Fees deposited for such license before the Competent Authority to TPCODL within 7 days of issue of PO in their favour. Such bidder shall ensure that such statutory License is obtained early for timely completion of the assigned contract without affecting the scheduled completion time.

TPCODL reserves the right to relax qualification criteria without assigning any reason thereof.

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

- The bids will be evaluated technically on the compliance to tender terms and conditions.
- The bids will be evaluated commercially on overall all-inclusive price of tender BOQ of each packages as calculated in Schedule of Items *[Annexure I]*. *However, maximum two no of packages shall be allotted to a single bidder in case a bidder become L1 for more than two packages. However, the TPCODL reserves the right to relax above clause for allotment of purchase order if the situations so warrants. Hence all bidders are advised to quote their most competitive rates. TPCODL reserves the right to split the order line item wise and / or quantity wise, among more than one Bidder.*
- 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, inspection of their any other site and evaluation shall be carried out to ascertain bidder's capability and quality procedures. However, TPCODL reserves the right to carry out site 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.

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

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

3.0 Submission of Bid Documents

3.1 Bid Submission

Bidders are requested to submit their offer in line with this Tender document through e-tendering process.

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

No e-mail or verbal correspondence will be responded. All communication will be done strictly with the bidder who have done the above step to participate in the Tender.

Bids shall be submitted in 3 (Three) parts:

FIRST PART: "EMD" as applicable shall be submitted. The EMD shall be valid for 210 days from the due date of bid submission in the form of NEFT/ RTGS / Bank Guarantee / Bank Draft / Bankers Pay Order (issued from a Scheduled Bank) in favoring 'TP Central Odisha Distribution Limited" payable at Bhubaneswar. The EMD (BG) has to be strictly in the format as mentioned in General Condition of Contract, failing which it shall not be accepted and the bid as submitted shall be liable for rejection. A separate non-refundable tender fee of stipulated amount also needs to be transferred online through 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

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

Chief (Procurement & Stores)
TP CENTRAL ODISHA DISTRIBUTION LIMITED
2ND FLOOR, IDCO TOWERS, JANAPATH, BHUBANESWAR- 751022

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

a) Documentary evidence in support of qualifying criteria mentioned as clause 1.7 of this tender documents
b) No Deviation Certificate as per the Annexure III – Schedule of Deviations
c) Acceptance to Commercial Terms and Conditions viz Delivery schedule/period, payment terms etc. as per the Annexure V – Schedule of Commercial Specifications.
d) Acceptance Form for participation in Reverse Auction as per the Annexure VII
e) Quality Assurance Plan *(where applicable)*

The technical bid shall be properly indexed and is to be submitted through TPCODL E-tender System (Ariba) only. Hard Copy of Technical Bids need not be submitted.

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

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

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

No e-mail or verbal correspondence will be responded. All communication will be done strictly with the bidder who have done the above step to participate in the Tender.

Communication Details:

Package Owner

Name: Mr. Arabinda Sahu, DM- Procurement

Contact No: 9438319343

E-Mail ID: arabinda.sahu@tpcentralodisha.com

Escalation Matrix

Name: Mr. Sudhakar Behera, GM-Procurement

Contact No: 9437282663

E-Mail ID: sudhakar.behera@tpcentralodisha.com

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

3.3 Bid Prices

Bidders need to quote for all packages as per the Price schedule attached in Annexure I. Also bidder need to quote for all the items mentioned in each Package with a break up of prices for supply and erection of

individual items and Taxes & duties as per the price schedule format. 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 as per the format (Annexure-A) provided in GCC valid for 210 days 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

The type tests report of the approved make 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

The bids shall be opened internally by TPCODL. Participating Bidders will get mail intimation from TPCODL E-Tender system (Ariba) when their Technical Bids are opened.

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.

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, price bids will be opened internally by TPCODL.

4.5 Price Bid Opening

Price Bid of only Technically qualified Bidders shall be considered and open internally by TPCODL. Bidders will get mail intimation from TPCODL E-Tender system (Ariba) when their Price Bids are opened.

The EMD of the bidder withdrawing or substantially altering his offer at any stage after the technical bid opening will be forfeited at the sole discretion of 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 (Annexure-VIII)
5. Technical specification (Annexure-II)
6. Acceptance form for participation in reverse auction (Annexure VII)
7. General Conditions of Contract (Annexure- IX)

7.0 Post Award Contract Administration

7.1.1 PRICE & TAXES

After finalization of tender, work order shall be issued on successful bidder. Prices shall remain firm till validity of contract. Within the validity of contract and as per requirement of material, release order shall be issued time to time.

Any change in statutory taxes, duties and levies during the contract period 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 BA, whereas any benefits arising owing to such statutory variation in taxes and duties shall be passed on TPCODL. Price shall remain firm and fixed and not subject to escalation till the execution of this contract, even if the completion/execution of the contract takes longer time than the specified period.

7.1.2 SCOPE OF WORK

The scope of work shall include providing engineering drawing, GTP, shop testing, joint field survey (with TPCODL and Forest department), loading, unloading, transportation, supply of all the materials & equipment and installation, erection, commissioning & dismantling (if any) to complete the works in all respect. The details scope of work is mentioned at schedule of items (Annexure-I) & Scope of Work (Annexure-VIII). The quantities mentioned in schedule of items may vary from either side. In case of any changes envisaged in scope of work, at any given point of time during the contract execution period, prior approval may be taken from the Engineer In Charge. Billing to done as per actual requirement.

7.1.3 COMPLETION PERIOD:

Time being the essence of the contract; the work shall be completed **within schedule completion as below** from the date of issue of work order including supply of all the materials, erection, testing, dismantling (if any), Electrical inspection (if any) & commissioning. The work shall be treated as complete item wise when one item shall be complete in all respects with all mountings, fixtures and standard accessories which are normally supplied even though not specifically detailed in the specification.

Sl no	Name of Package	Completion period
1	*Pkg-5 / Hindol Road Sub Division*	**8 Months**
2	*Pkg-12/ AED, Athagarh Division*	
3	Pkg-4/ Dhenakanal Sub Division	**5 Months**
4	Pkg-7/ Gondia Sub Division	
5	Pkg-14/ BCDD-II, Bhubaneswar Division	
6	Pkg-15/ KED, Khurdha Division	

7.1.4. ENGINEER IN CHARGE :-

Concerned Circle In-Charge or his authorized representative of TPCODL shall be the Engineer in charge for the Project. All supervision, erection, testing at site and commissioning of the project shall be carried out in coordination with the Engineer in Charge along with project department.

7.1.5. TERMS OF PAYMENT :-

A. 80% (Eighty percent) of contract price on pro-rata basis along with taxes and duties shall be paid progressively for each portion of proportionally completed items (Supply and erection at site only) of work as per the agreed Bill of Materials subject to certification by Purchaser's Engineer-in-charge.

B. Balance 20% (Twenty percent) payment of the actual executed WO shall be paid after completion of acceptance test and Taking Over of the complete systems specified in the enquiry, including clearance of Electrical Inspection (if any), compliance of final punch point and after reconciliation & adjustment of payments, if any, towards Quantities of materials issued from purchaser's stock and consumed by the contractor for expeditious completion of the job.

7.1.5.1 Pre-Requisites for Payment

- Associate should have completed execution of that part of contract, for which payment is sought, to the satisfaction of TPCODL's Engineer-in-Charge responsible for the contract and obtained certification for execution of the work.
- Associate has undertaken joint measurement of the work executed along with TPCODL's Engineer-in-charge.
- Associate's bills/invoices submitted in triplicate have been certified by Engineer-In-Charge on the basis of actual measurement of works.

7.1.5.2. Bills & Invoices

Associate shall raise not more than one invoice/contract per month for the services rendered in the prescribed Tax Format and the invoice shall be submitted within 15 days of the following month at Bill Inward Receipt Desk (Bird) located TPCODL, Idco Tower, Bhubaneswar

All Bills shall be supported by joint measurement of work done, quality test report, MDCC, Electrical inspection report (in case final bill) and a copy of wage sheet, if applicable (showing proof of having disbursed wages as per applicable law) and a copy of statement substantiating that statutory payments having been affected.

Bills/ invoices shall mention Associate's Sales, GST Number, PAN number as applicable.

Final bill submission after completion of project or execution of job must be within 30 days from the actual date of completion/execution of work awarded.

7.1.5.3 Payment & Statutory Deductions

Payment shall be released within **30 days** from the submission of the bills. The associate shall submit "No Demand Certificate" in the format as per Annexure-D of the tender specification at the time of receipt of full and final payment. TPCODL at their sole discretion may deposit the PF etc. with statutory authorities. TPCODL will deduct the amounts of TDS as per statutory requirement under the income tax act and the DVAT Act and certificates (wherever applicable) will be issued to associate accordingly.

7.1.5.3.1 Statutory Deductions

TPCODL will deduct the amounts of TDS, TCS as per statutory requirement under the income tax act, the Goods and Services tax act, BOCW Act, or any other applicable tax act and certificates (wherever applicable) will be issued to associate accordingly.

7.1.6. GUARANTEE:

The materials to be supplied by the contractor shall be guaranteed for satisfactory operation against defects in design and workmanship for a **period of 24 months** for the work from the date of handing over the completed installations.

7.1.7. RIGHT OF WAY :

Right of way issues, if any, arising during execution of the works shall have no liability of TPCODL. These issues shall be settled at the sole discretion of the Contractor with compensation (if any). TPCODL shall however extend all possible help to the Contractor including discussion with the local authorities for early resolution of these issues. The BA has to arrange all necessary ROW permission for execution of project. No extra charges will be paid by TPCODL for arranging any permission from Govt authorities or any other agency.

7.1.8. LIQUIDATED DAMAGES

Liquidated damages **@0.5%** of the total executed contract value per week or part thereof, for the period of delay in integrated completion, subject to maximum **5%** of the value of the contract shall become leviable without prejudice to other rights of the TPCODL. This amount shall be recoverable from any amount due or becoming due to the Business Associates under this or any other contract. 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.

7.1.8.1 LD Waiver Request

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

7.1.9. CONTRACT PERFORMANCE BANK GUARANTEE:-

Associates shall submit within 30 days from the effective date of issue of PO, Security cum Performance Guarantee (SPBG) in the format as per **Annexure B** of tender document from Nationalized / Scheduled Bank encashable with the Bhubaneswar branch of the issuing bank acceptable to TPCODL for **10% of the total PO value** remain valid till the end of the Guarantee Period of contract basing on the stipulated completion period in the PO, plus additional three months claim period. The B.G validity period shall be extended from time to time as may be required under the contract.

7.1.10. SAFETY PRECAUTIONS:-

All jobs are to be executed strictly in compliance to the Safety terms and Conditions of Tata Power. Please refer Safety terms and conditions for details. Violation of Safety norms will result in Penalty as mentioned in the

document. Any compensation due on account of any type of accident at site shall be to the contractor's account.

7.1.11. WORKMAN COMPENSATION:

The Contractor shall take out a comprehensive insurance policy under the Workman Compensation Act to cover such workers, who will be engaged to undertake the jobs covered under this Work Order and a copy of this insurance policy will be given to Engineer-in-charge solely for their information, reference and records and Official use. The Contractor shall ensure that such insurance policies are kept at all times valid.

7.1.12. SUBMITTALS REQUIRED AFTER AWARD OF CONTRACT :

The BA shall provide the following documents to the Project Department

Outline program of survey, production, inspection, testing, delivery, survey, erection, pre-commissioning and commissioning in chart form. Included in the program will be the detailed schedule of drawing to be submitted. Along with, the periodic progress report shall be submitted. The Drawings and Guaranteed Technical particulars (GTP), Type test report, QAP of all bought out material of approved make specified in the tender shall be submitted prior to inspection.

7.1.13. INSPECTION:

i) PRE DISPATCH INSPECTION – The BA shall give advance notice for testing of all bought out materials as per approved make. The required DI shall be issued after which the BA shall lift the materials. The total quantity of each bought out material shall be inspected and delivered within maximum two lot. The contractor shall ensure that all the inspected materials along with intact seal at site and the same will be again cross checked and certified in the presence of Engineer in charge.

ii) POST DELIVERY & WORK INSPECTION – The Engineer in charge will inspect all required materials delivered at work site and will inspect the execution of work from time to time up to final completion. The work shall be verified by the owner's representative and third party agencies empanneled by DMU Gridco. However, the quality of the materials will be inspected by the Electrical Inspector regularly prior to installation.

iii) INSPECTION OF COMPLETED WORK – The work after due completion under the supervision of "The Engineer in Charge shall be inspect with the competent authority of Electrical Inspectorate, Govt. of Odisha and third party agency engaged by DMU Gridco. All arrangement for this inspection shall be the responsibility of the BA. The statutory fees (if any) regarding Electrical Inspection for entire scope of work shall be deposited by BA.

However, such Inspection and Testing shall not relieve Contractor of his obligation to execute the contract by letter of spirit. Any defects pointed out by the Electrical Inspector (if any), shall be corrected or attended by the BA at his own cost.

- All other terms and conditions of TPCODL GCC shall be applicable.

7.6 Climate Change

Significant quantities of waste are generated during the execution of project and an integrated approach for effective handling, storage, transportation and disposal of the same shall be adopted. This would ensure the minimization of environmental and social impact in order to combat the climate change. Please refer attached Environment Policy and Sustainability Policy, Annexure-XII, of Tata Power for more details.

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 attached Tata Code of Conduct (TCOC), Annexure-XI, for more information.

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

8.0 Technical Specification and standards:

Attached in Annexure-II

9.0 General Condition of Contract

Any condition not mentioned above shall be applicable as per GCC. Attached along with this tender in Annexure VIII.

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

10.0 Safety

All jobs are this tender have to be executed strictly in compliance to the Safety terms and Conditions of Tata Power. Please refer attached Safety terms and conditions, Annexure-IX, for details. Violation of Safety norms will result in Penalty as mentioned in the above document. Safety Policy of Tata Power is also enclosed for reference.

ANNEXURE I

Schedule for Items (BOQ)

Rate to be quoted as per BOQ given below:

Package-4

Strengthening of HT & LT electrical infrastructure in elephant movement area in Dhenkanal Sub Division of DED, Dhenkanal

Scope of work :

(i) Erection of Interposing Pin point PSC pole (9mtr / 300Kg) for both Cabling & Stretch of 11KV line: **263 Nos**
(ii) Erection of Interposing Cut point PSC pole (9mtr / 300Kg) for both Cabling & Stretch of 11KV line: **95 Nos**
(iii) Conversion of bare conductor to 99 mm2, XLPE covered conductor in 11 KV overhead line : **5.04 Ckt Km**
(iv) Conversion of bare conductor to 70 mm2, XLPE covered conductor in 11 KV overhead line : **7.7 Ckt Km**
(v) Erection of Interposing PSC pole (9mtr / 300Kg) for Cabling of LT line : **240 Nos**
(vi) Erection of Interposing PSC pole (9mtr / 300Kg) for Stretch of LT line: **144 Nos**
(vii) Conversion of bare conductor to 3x50+1x35 mm2 AB cable in LT overhead line : **12.35 Km**

Sl. No.	Name of Materials	Unit	Quantity	Unit Rate (Excluding GST) (Rs./Unit)	Unit GST (Rs./Unit)	Unit Rate (Including GST) (Rs./ Unit)	Total Amount (Rs.)
a	b	c	d	e	f	g= e+f	h= dxg
	Supply						
1	Supply of 300 Kg 9mtr long PSC pole	No	742				
2	Supply of 11 KV V Cross Arm (GI) (using 75x40x5 mm Channel) (Min Wt: 10.2 Kg)	No	263				
3	Supply of Top Bracket (GI) (using 100x50x5 mm Channel)	No	263				
4	Supply of Back Clamp (GI) (using 50x8mm Flat) for V Cross Arm	No	263				
5	Supply of 11 KV GI Pin	No	1074				
6	Supply of 11 KV Porcelain Pin Insulator	No	1074				
7	Supply of Insulated Ties (Top) for 11 KV Porcelain Pin insulator	No	764				

8	Supply of 11KV, 90 KN, Polymer Tension insulator (B&S) with Clamp, Nut & Bolts	No	570				
9	Supply of 11 KV, 90 KN, 4 Bolted type Single Tension Hardware fittings (B&S) with Clamp, Nut & Bolts	Set	285				
10	Supply of Tension fittings for covered conductor	Set	285				
11	Supply of Insulating Piercing Connector (IPC)	No	38				
12	Supply of 100x50x6mm GI Channel	Kg	4894.4				
13	Supply of 11 KV Mid Span compression jointing kit for covered conductor	No	38				
14	Supply of GI Nut, Bolt & Washer of different sizes	Kg	1842				
15	Supply of Coil Earthing (GI) for HT pole	No	358				
16	Supply of 11 KV, 99 mm2, Single Core, AAAC overhead Covered Conductor	KM	15.12				
17	Supply of 11 KV, 70 mm2, Single Core, AAAC overhead Covered Conductor	KM	23.1				
18	Supply of HT Stay Set (Complete)	Set	190				
19	Supply of HT Stay insulator	No	190				
20	Supply of HT Stay clamp (1.95Kg/Pair)	Pair	190				
21	Supply of SWG GI stay wire (7/10)	Kg	1900				
22	Supply of 11 KV Pole Extension piece using 100x50x5 mm GI channel	No	263				
23	Supply of Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole)	Set	526				
24	Supply of 3X50+1X35 mm2 LT AB Cable (ISI mark)	KM	12.35				

25	Supply of Suspension Clamp with Aluminium alloy pole bracket, stainless steel straps and buckles	No	432				
26	Supply of Dead end Clamp, with Aluminium alloy pole bracket, stainless steel straps and buckles	No	124				
27	Supply of LT Stay Set (Complete)	Set	122				
28	Supply of LT Stay insulator	No	122				
29	Supply of LT Stay clamp (1.4Kg/Pair)	Pair	122				
30	Supply of SWG GI Stay wire (7/12)	Kg	1220				
31	Supply of 3Ph 4W LT Straight Cross Arm using 75x40x5 GI Channel (Min Wt: 7.88 Kg)	No	144				
32	Supply of Back Clamp (GI)for LT Cross Arm (Min Wt : 0.85 Kg)	No	144				
33	Supply of LT GI Pin	No	576				
34	Supply of LT Pin Insulator	No	576				
	Service / Erection						
1	Erection of 300 Kg 9mtr long PSC pole	No	742				
2	Erection of 11 KV V Cross Arm (GI) (using 75x40x5 mm Channel) (Min Wt: 10.2 Kg)	No	263				
3	Erection of Top Bracket (GI) (using 100x50x5 mm Channel)	No	263				
4	Erection of Back Clamp (GI) (using 50x8mm Flat) for V Cross Arm	No	263				
5	Erection of 11 KV GI Pin	No	1074				
6	Erection of 11 KV Porcelain Pin Insulator	No	1074				
7	Erection of Insulated Ties (Top) for 11 KV Porcelain Pin insulator	No	764				

8	Erection of 11KV, 90 KN, Polymer Tension insulator (B&S) with Clamp, Nut & Bolts	No	570				
9	Erection of 11 KV, 90 KN, 4 Bolted type Single Tension Hardware fittings (B&S) with Clamp, Nut & Bolts	Set	285				
10	Erection of Tension fittings for covered conductor	Set	285				
11	Erection of Insulating Piercing Connector (IPC)	No	38				
12	Erection of 100x50x6mm GI Channel	Kg	4894.4				
13	Erection of 11 KV Mid Span compression jointing kit for covered conductor	No	38				
14	Erection of GI Nut, Bolt & Washer of different sizes	Kg	1842				
15	Erection of Coil Earthing (GI) for HT pole	No	358				
16	Erection of 11 KV, 99 mm2, Single Core, AAAC overhead Covered Conductor	KM	15.12				
17	Erection of 11 KV, 70 mm2, Single Core, AAAC overhead Covered Conductor	KM	23.1				
18	Erection of HT Stay Set (Complete)	Set	190				
19	Erection of HT Stay insulator	No	190				
20	Erection of HT Stay clamp (1.95Kg/Pair)	Pair	190				
21	Erection of SWG GI stay wire (7/10)	Kg	1900				
22	Fixing of HT & LT Stay set with 0.5 cum Cement concrete foundation 1:3:6 size (900x600x900mm) using 40 mm BHG metal with all labour & material	No	312				
23	Concreting of PSC pole by cement concrete of CC 1:4:8 using 40 mm BHG metal (size: 5ftx2ftx2ft=20 Cft =0.570 Cum Padding of PSC pole with cement	No	742				

	concrete of M-15 grade (1:2:4) of size 2ft x 2ft x4inch with all labour & material						
24	Couping of existing joist Pole by cement concrete of CC 1:2:4 (size 1MtrX0.5MtrX0.5Mtr) with all labour & material	No	598				
25	Erection of 11 KV Pole Extension piece using 100x50x5 mm GI channel	No	263				
26	Erection of Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole) with welding of two halves	Set	526				
27	Erection of 3X50+1X35 mm2 LT AB Cable (ISI mark)	KM	12.35				
28	Erection of Suspension Clamp with Aluminium alloy pole bracket, stainless steel straps and buckles	No	432				
29	Erection of Dead end Clamp, with Aluminium alloy pole bracket, stainless steel straps and buckles	No	124				
30	Erection of LT Stay Set (Complete)	Set	122				
31	Erection of LT Stay insulator	No	122				
32	Erection of LT Stay clamp (1.4Kg/Pair)	Pair	122				
33	Erection of SWG GI Stay wire (7/12)	Kg	1220				
34	Erection of 3Ph 4W LT Straight Cross Arm using 75x40x5 GI Channel (Min Wt: 7.88 Kg)	No	144				
35	Erection of Back Clamp (GI)for LT Cross Arm (Min Wt : 0.85 Kg)	No	144				
36	Erection of LT GI Pin	No	576				
37	Erection of LT Pin Insulator	No	576				
38	Dismantling of existing 11 KV overhead bare conductor and transportation to	Ckt	12.74				

	TPCODL central store	Km					
39	Dismantling of existing LT overhead bare conductor and transportation to TPCODL central store	Ckt Km	12.35				
	Total						

Figures : Rupees ……Only

Signature & Seal of the Bidder

Package-5

Strengthening of HT & LT electrical infrastructure in elephant movement area in Hindol Road Sub Division of DED, Dhenkanal

Scope of work :

(i) Erection of Interposing Pin point PSC pole (9mtr / 300Kg) for both Cabling & Stretch of 11KV Line: **421 Nos**

(ii) Erection of Interposing Cut point PSC pole (9mtr / 300Kg) for both Cabling & Stretch of 11KV Line: **122 Nos**

(iii) Conversion of bare conductor to 99 mm2, XLPE covered conductor in 11 KV overhead line : **12.57 Ckt Km**

(iv) Conversion of bare conductor to 70 mm2, XLPE covered conductor in 11 KV overhead line : **25.60 Ckt Km**

(v) Erection of Interposing PSC pole (9mtr / 300Kg) for Cabling of LT Line : **656 Nos**

(vi) Erection of Interposing PSC pole (9mtr / 300Kg) for Stretch of LT Line: **71 Nos**

(vii) Conversion of bare conductor to 3x50+1x35 mm2 AB cable in LT overhead line : **33.79 Km**

Sl. No.	Name of Materials	Unit	Quantity	Unit Rate (Excluding GST) (Rs./Unit)	Unit GST (Rs./ Unit)	Unit Rate (Including GST) (Rs./ Unit)	Total Amount (Rs.)
a	b	c	d	e	f	g= e+f	h= dxg
	Supply						
1	Supply of 300 Kg 9mtr long PSC pole	No	1270				
2	Supply of 11 KV V Cross Arm (GI) (using 75x40x5 mm Channel) (Min Wt: 10.2 Kg)	No	421				
3	Supply of Top Bracket (GI) (using 100x50x5 mm Channel)	No	421				
4	Supply of Back Clamp (GI) (using 50x8mm Flat) for V Cross Arm	No	421				
5	Supply of 11 KV GI Pin	No	1629				
6	Supply of 11 KV Porcelain Pin Insulator	No	1629				
7	Supply of Insulated Ties (Top) for 11 KV Porcelain Pin insulator	No	2290				
8	Supply of 11KV, 90 KN, Polymer Tension	No	732				

	insulator (B&S) with Clamp, Nut & Bolts						
9	Supply of 11 KV, 90 KN, 4 Bolted type Single Tension Hardware fittings (B&S) with Clamp, Nut & Bolts	Set	366				
10	Supply of Tension fittings for covered conductor	Set	366				
11	Supply of Insulating Piercing Connector (IPC)	No	115				
12	Supply of 100x50x6mm GI Channel	Kg	6285.44				
13	Supply of 11 KV Mid Span compression jointing kit for covered conductor	No	115				
14	Supply of GI Nut, Bolt & Washer of different sizes	Kg	2566				
15	Supply of Coil Earthing (GI) for HT pole	No	543				
16	Supply of 11 KV, 99 mm2, Single Core, AAAC overhead Covered Conductor	KM	37.71				
17	Supply of 11 KV, 70 mm2, Single Core, AAAC overhead Covered Conductor	KM	76.8				
18	Supply of HT Stay Set (Complete)	Set	244				
19	Supply of HT Stay insulator	No	244				
20	Supply of HT Stay clamp (1.95Kg/Pair)	Pair	244				
21	Supply of SWG GI stay wire (7/10)	Kg	2440				
22	Supply of 11 KV Pole Extension piece using 100x50x5 mm GI channel	No	421				
23	Supply of Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole)	Set	842				
24	Supply of 3X50+1X35 mm2 LT AB Cable (ISI mark)	KM	33.79				
25	Supply of Suspension Clamp with	No	1183				

	Aluminium alloy pole bracket, stainless steel straps and buckles						
26	Supply of Dead end Clamp with Aluminium alloy pole bracket, stainless steel straps and buckles	No	338				
27	Supply of LT Stay Set (Complete)	Set	189				
28	Supply of LT Stay insulator	No	189				
29	Supply of LT Stay clamp (1.4Kg/Pair)	Pair	189				
30	Supply of SWG GI Stay wire (7/12)	Kg	1890				
31	Supply of 3Ph 4W LT Straight Cross Arm using 75x40x5 GI Channel (Min Wt: 7.88 Kg)	No	71				
32	Supply of Back Clamp (GI)for LT Cross Arm (Min Wt : 0.85 Kg)	No	71				
33	Supply of LT GI Pin	No	284				
34	Supply of LT Pin Insulator	No	284				
	Service / Erection						
1	Erection of 300 Kg 9mtr long PSC pole	No	1270				
2	Erection of 11 KV V Cross Arm (GI) (using 75x40x5 mm Channel) (Min Wt: 10.2 Kg)	No	421				
3	Erection of Top Bracket (GI) (using 100x50x5 mm Channel)	No	421				
4	Erection of Back Clamp (GI) (using 50x8mm Flat) for V Cross Arm	No	421				
5	Erection of 11 KV GI Pin	No	1629				
6	Erection of 11 KV Porcelain Pin Insulator	No	1629				
7	Erection of Insulated Ties (Top) for 11 KV Porcelain Pin insulator	No	2290				
8	Erection of 11KV, 90 KN, Polymer Tension	No	732				

	insulator (B&S) with Clamp, Nut & Bolts						
9	Erection of 11 KV, 90 KN, 4 Bolted type Single Tension Hardware fittings (B&S) with Clamp, Nut & Bolts	Set	366				
10	Erection of Tension fittings for covered conductor	Set	366				
11	Erection of Insulating Piercing Connector (IPC)	No	115				
12	Erection of 100x50x6mm GI Channel	Kg	6285.44				
13	Erection of 11 KV Mid Span compression jointing kit for covered conductor	No	115				
14	Erection of GI Nut, Bolt & Washer of different sizes	Kg	2566				
15	Erection of Coil Earthing (GI) for HT pole	No	543				
16	Erection of 11 KV, 99 mm2, Single Core, AAAC overhead Covered Conductor	KM	37.71				
17	Erection of 11 KV, 70 mm2, Single Core, AAAC overhead Covered Conductor	KM	76.8				
18	Erection of HT Stay Set (Complete)	Set	244				
19	Erection of HT Stay insulator	No	244				
20	Erection of HT Stay clamp (1.95Kg/Pair)	Pair	244				
21	Erection of SWG GI stay wire (7/10)	Kg	2440				
22	Fixing of HT & LT Stay set with 0.5 cum Cement concrete foundation 1:3:6 size (900x600x900mm) using 40 mm BHG metal with all labour & material	No	433				
23	Concreting of PSC pole by cement concrete of CC 1:4:8 using 40 mm BHG metal (size: 5ftx2ftx2ft=20 Cft =0.570 Cum Padding of PSC pole with cement concrete of M-15 grade (1:2:4) of size 2ft x 2ft x4inch with all labour & material	No	1270				

24	Couping of existing joist Pole by cement concrete of CC 1:2:4 (size 1MtrX0.5MtrX0.5Mtr) with all labour & material	No	927				
25	Erection of 11 KV Pole Extension piece using 100x50x5 mm GI channel	No	421				
26	Erection of Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole) with welding of two halves	Set	842				
27	Erection of 3X50+1X35 mm2 LT AB Cable (ISI mark)	KM	33.79				
28	Erection of Suspension Clamp with Aluminium alloy pole bracket, stainless steel straps and buckles	No	1183				
29	Erection of Dead end Clamp with Aluminium alloy pole bracket, stainless steel straps and buckles	No	338				
30	Erection of LT Stay Set (Complete)	Set	189				
31	Erection of LT Stay insulator	No	189				
32	Erection of LT Stay clamp (1.4Kg/Pair)	Pair	189				
33	Erection of SWG GI Stay wire (7/12)	Kg	1890				
34	Erection of 3Ph 4W LT Straight Cross Arm using 75x40x5 GI Channel (Min Wt: 7.88 Kg)	No	71				
35	Erection of Back Clamp (GI)for LT Cross Arm (Min Wt : 0.85 Kg)	No	71				
36	Erection of LT GI Pin	No	284				
37	Erection of LT Pin Insulator	No	284				
38	Dismantling of existing 11 KV overhead bare conductor and transportation to TPCODL central store	Ckt Km	38.17				

39	Dismantling of existing LT overhead bare conductor and transportation to TPCODL central store	Ckt Km	33.79				
	Total						

Figures : Rupees ……Only

Signature & Seal of the Bidder

Package-7

Strengthening of HT & LT electrical infrastructure in elephant movement area in Gondia Sub Division of DED, Dhenkanal

Scope of work :

(i) Erection of Interposing Pin point PSC pole (9mtr / 300Kg) for both Cabling & Stretch of 11KV line: ***126 Nos***
(ii) Erection of Interposing Cut point PSC pole (9mtr / 300Kg) for both Cabling & Stretch of 11KV line: ***44 Nos***
(iii) Conversion of bare conductor to 99 mm2, XLPE covered conductor in 11 KV overhead line : ***2.06 Ckt Km***
(iv) Conversion of bare conductor to 70 mm2, XLPE covered conductor in 11 KV overhead line : ***10.92 Ckt Km***
(v) Erection of Interposing PSC pole (9mtr / 300Kg) for Cabling of LT line : ***239 Nos***
(vi) Conversion of bare conductor to 3x50+1x35 mm2 AB cable in LT overhead line : ***12.27 Km***

Sl. No.	Name of Materials	Unit	Quantity	Unit Rate (Excluding GST) (Rs./Unit)	Unit GST (Rs./ Unit)	Unit Rate (Including GST) (Rs./ Unit)	Total Amount (Rs.)
a	b	c	d	e	f	g= e+f	h= dxg
	Supply						
1	Supply of 300 Kg 9mtr long PSC pole	No	409				
2	Supply of 11 KV V Cross Arm (GI) (using 75x40x5 mm Channel) (Min Wt: 10.2 Kg)	No	126				
3	Supply of Top Bracket (GI) (using 100x50x5 mm Channel)	No	126				
4	Supply of Back Clamp (GI) (using 50x8mm Flat) for V Cross Arm	No	126				
5	Supply of 11 KV GI Pin	No	510				
6	Supply of 11 KV Porcelain Pin Insulator	No	510				
7	Supply of Insulated Ties (Top) for 11 KV Porcelain Pin insulator	No	779				
8	Supply of 11KV, 90 KN, Polymer Tension insulator (B&S) with Clamp,	No	264				

	Nut & Bolts						
9	Supply of 11 KV, 90 KN, 4 Bolted type Single Tension Hardware fittings (B&S) with Clamp, Nut & Bolts	Set	132				
10	Supply of Tension fittings for covered conductor	Set	132				
11	Supply of Insulating Piercing Connector (IPC)	No	39				
12	Supply of 100x50x6mm GI Channel	Kg	2266.88				
13	Supply of 11 KV Mid Span compression jointing kit for covered conductor	No	39				
14	Supply of GI Nut, Bolt & Washer of different sizes	Kg	844				
15	Supply of Coil Earthing (GI) for HT pole	No	170				
16	Supply of 11 KV, 99 mm2, Single Core, AAAC overhead Covered Conductor	KM	6.18				
17	Supply of 11 KV, 70 mm2, Single Core, AAAC overhead Covered Conductor	KM	32.76				
18	Supply of HT Stay Set (Complete)	Set	88				
19	Supply of HT Stay insulator	No	88				
20	Supply of HT Stay clamp (1.95Kg/Pair)	Pair	88				
21	Supply of SWG GI stay wire (7/10)	Kg	880				
22	Supply of 11 KV Pole Extension piece using 100x50x5 mm GI channel	No	126				
23	Supply of Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole)	Set	252				
24	Supply of 3X50+1X35 mm2 LT AB Cable	KM	12.27				

	(ISI mark)						
25	Supply of Suspension Clamp with Aluminium alloy pole bracket, stainless steel straps and buckles	No	429				
26	Supply of Dead end Clamp with Aluminium alloy pole bracket, stainless steel straps and buckles	No	123				
27	Supply of LT Stay Set (Complete)	Set	79				
28	Supply of LT Stay insulator	No	79				
29	Supply of LT Stay clamp (1.4Kg/Pair)	Pair	79				
30	Supply of SWG GI Stay wire (7/12)	Kg	790				
	Service/ Erection						
1	Erection of 300 Kg 9mtr long PSC pole	No	409				
2	Erection of 11 KV V Cross Arm (GI) (using 75x40x5 mm Channel) (Min Wt: 10.2 Kg)	No	126				
3	Erection of Top Bracket (GI) (using 100x50x5 mm Channel)	No	126				
4	Erection of Back Clamp (GI) (using 50x8mm Flat) for V Cross Arm	No	126				
5	Erection of 11 KV GI Pin	No	510				
6	Erection of 11 KV Porcelain Pin Insulator	No	510				
7	Erection of Insulated Ties (Top) for 11 KV Porcelain Pin insulator	No	779				
8	Erection of 11KV, 90 KN, Polymer Tension insulator (B&S) with Clamp, Nut & Bolts	No	264				

9	Erection of 11 KV, 90 KN, 4 Bolted type Single Tension Hardware fittings (B&S) with Clamp, Nut & Bolts	Set	132				
10	Erection of Tension fittings for covered conductor	Set	132				
11	Erection of Insulating Piercing Connector (IPC)	No	39				
12	Erection of 100x50x6mm GI Channel	Kg	2266.88				
13	Erection of 11 KV Mid Span compression jointing kit for covered conductor	No	39				
14	Erection of GI Nut, Bolt & Washer of different sizes	Kg	844				
15	Erection of Coil Earthing (GI) for HT pole	No	170				
16	Erection of 11 KV, 99 mm2, Single Core, AAAC overhead Covered Conductor	KM	6.18				
17	Erection of 11 KV, 70 mm2, Single Core, AAAC overhead Covered Conductor	KM	32.76				
18	Erection of HT Stay Set (Complete)	Set	88				
19	Erection of HT Stay insulator	No	88				
20	Erection of HT Stay clamp (1.95Kg/Pair)	Pair	88				
21	Erection of SWG GI stay wire (7/10)	Kg	880				
22	Fixing of HT & LT Stay set with 0.5 cum Cement concrete foundation 1:3:6 size (900x600x900mm) using 40 mm BHG metal with all labour & material	No	167				
23	Concreting of PSC pole by cement concrete of CC 1:4:8 using 40 mm BHG metal (size: 5ftx2ftx2ft=20 Cft =0.570	No	409				

	Cum Padding of PSC pole with cement concrete of M-15 grade (1:2:4) of size 2ft x 2ft x4inch with all labour & material						
24	Couping of existing joist Pole & new joist pole by cement concrete of CC 1:2:4 (size 1MtrX0.5MtrX0.5Mtr) with all labour & material	No	299				
25	Erection of 11 KV Pole Extension piece using 100x50x5 mm GI channel	No	126				
26	Erection of Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole) with welding of two halves	Set	252				
27	Erection of 3X50+1X35 mm2 LT AB Cable (ISI mark)	KM	12.27				
28	Erection of Suspension Clamp with Aluminium alloy pole bracket, stainless steel straps and buckles	No	429				
29	Erection of Dead end Clamp with Aluminium alloy pole bracket, stainless steel straps and buckles	No	123				
30	Erection of LT Stay Set (Complete)	Set	79				
31	Erection of LT Stay insulator	No	79				
32	Erection of LT Stay clamp (1.4Kg/Pair)	Pair	79				
33	Erection of SWG GI Stay wire (7/12)	Kg	790				
34	Dismantling of existing 11 KV overhead bare conductor and transportation to TPCODL central store	Ckt Km	12.98				
35	Dismantling of existing LT overhead bare conductor and transportation to TPCODL central store	Ckt Km	12.27				

	Total					

Figures : Rupees ……Only

Signature & Seal of the Bidder

Package-12

Strengthening of HT & LT electrical infrastructure in elephant movement area in AED, Athagarh Division

Scope of work :

(i) Erection of Interposing Pin point PSC pole (9mtr / 300Kg) for both Cabling & Stretch of 11KV line: ***654 Nos***

(ii) Erection of Interposing Cut point PSC pole (9mtr / 300Kg) for both Cabling & Stretch of 11KV line: ***122 Nos***

(iii) Conversion of bare conductor to 70 mm2 covered conductor in 11 KV overhead line : ***45.8 Ckt Km***

(iv) Erection of Interposing PSC pole (9mtr / 300Kg) for Cabling of LT line : ***16 Nos***

(v) Conversion of bare conductor 3x50+1x35 mm2 AB cable in LT overhead line : ***1.85 Km***

Sl. No.	Name of Materials	Unit	Quantity	Unit Rate (Excluding GST) (Rs./Unit)	Unit GST (Rs./ Unit)	Unit Rate (Including GST) (Rs./ Unit)	Total Amount (Rs.)
a	b	c	d	e	f	g= e+f	h= dxg
	Supply						
1	Supply of 300 Kg 9mtr long PSC pole	No	792				
2	Supply of 11 KV V Cross Arm (GI) (using 75x40x5mm Channel) (Min Wt: 10.2 Kg)	No	654				
3	Supply of Top Bracket (GI) (using 100x50x5 mm Channel)	No	654				
4	Supply of Back Clamp (GI) (using 50x8mm Flat) for V Cross Arm	No	654				
5	Supply of 11 KV GI Pin	No	2328				
6	Supply of 11 KV Porcelain Pin Insulator	No	2328				
7	Supply of Insulated Ties (Top) for 11 KV Porcelain Pin insulator	No	2748				
8	Supply of 11KV, 90 KN, Polymer Tension insulator (B&S) with Clamp,	No	732				

	Nut & Bolts						
9	Supply of 11 KV, 90 KN, 4 Bolted type Single Tension Hardware fittings (B&S) with Clamp, Nut & Bolts	Set	366				
10	Supply of Tension fittings for covered conductor	Set	366				
11	Supply of Insulating Piercing Connector (IPC)	No	137				
12	Supply of 100x50x6mm GI Channel	Kg	6285.44				
13	Supply of 11 KV Mid Span compression jointing kit for covered conductor	No	137				
14	Supply of GI Nut, Bolt & Washer of different sizes	Kg	1586				
15	Supply of Coil Earthing (GI) for HT pole	No	776				
16	Supply of 11 KV, 70 mm2, Single Core, AAAC overhead Covered Conductor	KM	137.4				
17	Supply of HT Stay Set (Complete)	Set	250				
18	Supply of HT Stay insulator	No	250				
19	Supply of HT Stay clamp (1.95Kg/Pair)	Pair	250				
20	Supply of SWG GI stay wire (7/10)	Kg	2500				
21	Supply of 11 KV Pole Extension piece using 100x50x5 mm GI channel	No	30				
22	Supply of Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole)	Set	1552				
23	Supply of 3X50+1X35 mm2 LT AB Cable (ISI mark)	KM	1.85				
24	Supply of Suspension Clamp with Aluminium alloy pole bracket, stainless	No	65				

	steel straps and buckles						
25	Supply of Dead end Clamp with Aluminium alloy pole bracket, stainless steel straps and buckles	No	19				
26	Supply of LT Stay Set (Complete)	Set	3				
27	Supply of LT Stay insulator	No	3				
28	Supply of LT Stay clamp (1.4Kg/Pair)	Pair	3				
29	Supply of SWG GI Stay wire (7/12)	Kg	30				
	Service/ Erection						
1	Erection of 300 Kg 9mtr long PSC pole	No	792				
2	Erection of 11 KV V Cross Arm (GI) (using 75x40x5 mm Channel) (Min Wt: 10.2 Kg)	No	654				
3	Erection of Top Bracket (GI) (using 100x50x5 mm Channel)	No	654				
4	Erection of Back Clamp (GI) (using 50x8mm Flat) for V Cross Arm	No	654				
5	Erection of 11 KV GI Pin	No	2328				
6	Erection of 11 KV Porcelain Pin Insulator	No	2328				
7	Erection of Insulated Ties (Top) for 11 KV Porcelain Pin insulator	No	2748				
8	Erection of 11KV, 90 KN, Polymer Tension insulator (B&S) with Clamp, Nut & Bolts	No	732				
9	Erection of 11 KV, 90 KN, 4 Bolted type Single Tension Hardware fittings (B&S) with Clamp, Nut & Bolts	Set	366				

10	Erection of Tension fittings for covered conductor	Set	366				
11	Erection of Insulating Piercing Connector (IPC)	No	137				
12	Erection of 100x50x6mm GI Channel	Kg	6285.44				
13	Erection of 11 KV Mid Span compression jointing kit for covered conductor	No	137				
14	Erection of GI Nut, Bolt & Washer of different sizes	Kg	1586				
15	Erection of Coil Earthing (GI) for HT pole	No	776				
16	Erection of 11 KV, 70 mm2, Single Core, AAAC overhead Covered Conductor	KM	137.4				
17	Erection of HT Stay Set (Complete)	Set	250				
18	Erection of HT Stay insulator	No	250				
19	Erection of HT Stay clamp (1.95Kg/Pair)	Pair	250				
20	Erection of SWG GI stay wire (7/10)	Kg	2500				
21	Fixing of HT & LT Stay set with 0.5 cum Cement concrete foundation 1:3:6 size (900x600x900mm) using 40 mm BHG metal with all labour & material	No	253				
22	Concreting of PSC pole & Joist Pole by cement concrete of CC 1:4:8 using 40 mm BHG metal (size: 5ftx2ftx2ft=20 Cft =0.570 Cum Padding of PSC pole with cement concrete of M-15 grade (1:2:4) of size 2ft x 2ft x4inch with all labour & material	No	792				
23	Erection of 11 KV Pole Extension piece using 100x50x5 mm GI channel	No	30				

24	Erection of Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole) with welding of two halves	Set	1552				
25	Erection of 3X50+1X35 mm2 LT AB Cable (ISI mark)	KM	1.85				
26	Erection of Suspension Clamp with Aluminium alloy pole bracket, stainless steel straps and buckles	No	65				
27	Erection of Dead end Clamp with Aluminium alloy pole bracket, stainless steel straps and buckles	No	19				
28	Erection of LT Stay Set (Complete)	Set	3				
29	Erection of LT Stay insulator	No	3				
30	Erection of LT Stay clamp (1.4Kg/Pair)	Pair	3				
31	Erection of SWG GI Stay wire (7/12)	Kg	30				
32	Dismantling of existing 11 KV overhead bare conductor and transportation to TPCODL central store	Ckt Km	45.8				
33	Dismantling of existing LT overhead bare conductor and transportation to TPCODL central store	Ckt Km	1.85				
	Total						

Figures : Rupees ……Only

Signature & Seal of the Bidder

Package-14
Strengthening of HT electrical infrastructure in elephant movement area in BCDD-II, Bhubaneswar Division

(i) Erection of Interposing Pin point PSC pole (9mtr / 300Kg) for both Cabling & Stretch of 11KV Line: ***673 Nos***
(ii) Erection of Interposing Cut point PSC pole (9mtr / 300Kg) for both Cabling & Stretch of 11KV Line: ***76 Nos***

Sl. No.	Name of Materials	Unit	Quantity	Unit Rate (Excluding GST) (Rs./Unit)	Unit GST (Rs./ Unit)	Unit Rate (Including GST) (Rs./ Unit)	Total Amount (Rs.)
a	b	c	d	e	f	g= e+f	h= dxg
	Supply						
1	Supply of 300 Kg 9mtr long PSC pole	No	749				
2	Supply of 11 KV V Cross Arm (GI) (using 75x40x5mm Channel) (Min Wt: 10.2 Kg)	No	673				
3	Supply of Top Bracket (GI) (using 100x50x5 mm Channel)	No	673				
4	Supply of Back Clamp (GI) (using 50x8mm Flat) for V Cross Arm	No	673				
5	Supply of 11 KV GI Pin	No	2247				
6	Supply of 11 KV Porcelain Pin Insulator	No	2247				
7	Supply of 11KV, 90 KN, Polymer Tension insulator (B&S) with Clamp, Nut & Bolts	No	456				
8	Supply of 11 KV, 90 KN, 4 Bolted type Single Tension Hardware fittings (B&S) with Clamp, Nut & Bolts	Set	456				
9	Supply of 100x50x6mm GI Channel	Kg	3915.52				
10	Supply of GI Nut, Bolt & Washer of different sizes	Kg	1205				

11	Supply of Coil Earthing (GI) for HT pole	No	749				
12	Supply of HT Stay Set (Complete)	Set	152				
13	Supply of HT Stay insulator	No	152				
14	Supply of HT Stay clamp (1.95Kg/Pair)	Pair	152				
15	Supply of SWG GI stay wire (7/10)	Kg	1520				
16	Supply of Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole)	Set	673				
	Service/ Erection						
1	Erection of 300 Kg 9mtr long PSC pole	No	749				
2	Erection of 11 KV V Cross Arm (GI) (using 75x40x5mmChannel) (Min Wt: 10.2 Kg)	No	673				
3	Erection of Top Bracket (GI) (using 100x50x5 mm Channel)	No	673				
4	Erection of Back Clamp (GI) (using 50x8mm Flat) for V Cross Arm	No	673				
5	Erection of 11 KV GI Pin	No	2247				
6	Erection of 11 KV Porcelain Pin Insulator	No	2247				
7	Erection of 11KV, 90 KN, Polymer Tension insulator (B&S) with Clamp, Nut & Bolts	No	456				
8	Erection of 11 KV, 90 KN, 4 Bolted type Single Tension Hardware fittings (B&S) with Clamp, Nut & Bolts	Set	456				
9	Erection of 100x50x6mm GI Channel	Kg	3915.52				
10	Erection of GI Nut, Bolt & Washer of different sizes	Kg	1205				
11	Erection of Coil Earthing (GI) for HT pole	No	749				
12	Erection of HT Stay Set (Complete)	Set	152				

13	Erection of HT Stay insulator	No	152				
14	Erection of HT Stay clamp (1.95Kg/Pair)	Pair	152				
15	Erection of SWG GI stay wire (7/10)	Kg	1520				
16	Fixing of HT Stay set with 0.5 cum Cement concrete foundation 1:3:6 size (900x600x900mm) using 40 mm BHG metal with all labour & material	No	152				
17	Concreting of PSC pole by cement concrete of CC 1:4:8 using 40 mm BHG metal (size: 5ftx2ftx2ft=20 Cft =0.570 Cum Padding of PSC pole with cement concrete of M-15 grade (1:2:4) of size 2ft x 2ft x4inch with all labour & material	No	749				
18	Couping of existing joist Pole by cement concrete of CC 1:2:4 (size 1MtrX0.5MtrX0.5Mtr) with all labour & material	No	673				
19	Erection of Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole) with welding of two halves	Set	673				
	Total						

Figures : Rupees ……Only

Signature & Seal of the Bidder

Package-15

Strengthening of HT & LT electrical infrastructure in elephant movement area in KED, Khurdha Division

(i) Erection of Interposing Pin point PSC pole (9mtr / 300Kg) for both Cabling & Stretch of 11KV Line: ***1053 Nos***
(ii) Erection of Interposing PSC pole (9mtr / 300Kg) for Cabling of LT Line : ***134 Nos***
(iii) Conversion of bare conductor to 3x50+1x35 mm2 AB cable in LT overhead line : ***6.01 Km***
(iv) Erection of Interposing 11 mtr long Joist pole for 33KV Line: ***8 Nos***

Sl. No.	Name of Materials	Unit	Quantity	Unit Rate (Excluding GST) (Rs./Unit)	Unit GST (Rs./ Unit)	Unit Rate (Including GST) (Rs./ Unit)	Total Amount (Rs.)
a	b	c	d	e	f	g= e+f	h= dxg
	Supply						
1	Supply of 300 Kg 9mtr long PSC pole	No	1187				
2	Supply of 11 KV V Cross Arm (GI) (using 75x40x5 mm Channel) (Min Wt: 10.2 Kg)	No	1053				
3	Supply of Top Bracket (GI) (using 100x50x5 mm Channel)	No	1061				
4	Supply of Back Clamp (GI) (using 50x8mm Flat) for V Cross Arm	No	1061				
5	Supply of 11 KV GI Pin	No	3159				
6	Supply of 11 KV Porcelain Pin Insulator	No	3159				
7	Supply of GI Nut, Bolt & Washer of different sizes	Kg	1753				
8	Supply of Coil Earthing (GI) for HT pole	No	1053				
9	Supply of HT Stay Set (Complete)	Set	297				
10	Supply of HT Stay insulator	No	297				

11	Supply of HT Stay clamp (1.95Kg/Pair)	Pair	297				
12	Supply of SWG GI stay wire (7/10)	Kg	2970				
13	Supply of Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole)	Set	4620				
14	Supply of 3X50+1X35 mm2 LT AB Cable (ISI mark)	KM	6.01				
15	Supply of Suspension Clamp with Aluminium alloy pole bracket, stainless steel straps and buckles	No	210				
16	Supply of Dead end Clamp, with Aluminium alloy pole bracket, stainless steel straps and buckles	No	60				
17	Supply of LT Stay Set (Complete)	Set	53				
18	Supply of LT Stay insulator	No	53				
19	Supply of LT Stay clamp (1.4Kg/Pair)	Pair	53				
20	Supply of SWG GI Stay wire (7/12)	Kg	530				
21	Supply of 11 Mtr long, 150x150 mm GI RS Joist (34.6 Kg/ Mtr)	No	8				
22	Supply of 33 KV V cross Arm (using 100x50x5 mm GI Channel) (Min Wt : 22 Kg)	No	8				
23	Supply of 33 KV GI Pin	No	24				
24	Supply of 33 KV Porcelain Pin Insulator	No	24				
	Service/ Erection						
1	Erection of 300 Kg 9mtr long PSC pole	No	1187				
2	Erection of 11 KV V Cross Arm (GI) (using 75x40x5 mm Channel) (Min Wt: 10.2 Kg)	No	1053				
3	Erection of Top Bracket (GI) (using	No	1061				

	100x50x5 mm Channel)						
4	Erection of Back Clamp (GI) (using 50x8mm Flat) for V Cross Arm	No	1061				
5	Erection of 11 KV GI Pin	No	3159				
6	Erection of 11 KV Porcelain Pin Insulator	No	3159				
7	Erection of GI Nut, Bolt & Washer of different sizes	Kg	1753				
8	Erection of Coil Earthing (GI) for HT pole	No	1053				
9	Erection of HT Stay Set (Complete)	Set	297				
10	Erection of HT Stay insulator	No	297				
11	Erection of HT Stay clamp (1.95Kg/Pair)	Pair	297				
12	Erection of SWG GI stay wire (7/10)	Kg	2970				
13	Fixing of HT & LT Stay set with 0.5 cum Cement concrete foundation 1:3:6 size (900x600x900mm) using 40 mm BHG metal with all labour & material	No	350				
14	Concreting of PSC pole & Joist Pole by cement concrete of CC 1:4:8 using 40 mm BHG metal (size: 5ftx2ftx2ft=20 Cft =0.570 Cum Padding of PSC pole & joist pole with cement concrete of M-15 grade (1:2:4) of size 2ft x 2ft x4inch	No	1195				
15	Couping of existing joist Pole & new joist pole by cement concrete of CC 1:2:4 (size 1MtrX0.5MtrX0.5Mtr)	No	1061				
16	Erection of Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole) with welding of two halves	Set	4620				
17	Erection of 3X50+1X35 mm2 LT AB Cable (ISI mark)	KM	6.01				
18	Erection of Suspension Clamp with	No	210				

	Aluminium alloy pole bracket, stainless steel straps and buckles						
19	Erection of Dead end Clamp, with Aluminium alloy pole bracket, stainless steel straps and buckles	No	60				
20	Erection of LT Stay Set (Complete)	Set	53				
21	Erection of LT Stay insulator	No	53				
22	Erection of LT Stay clamp (1.4Kg/Pair)	Pair	53				
23	Erection of SWG GI Stay wire (7/12)	Kg	530				
24	Erection of 11 Mtr long, 150x150 mm GI RS Joist (34.6 Kg/ Mtr)	No	8				
25	Erection of 33 KV V cross Arm (using 100x50x5 mm GI Channel) (Min Wt : 22 Kg)	No	8				
26	Erection of 33 KV GI Pin	No	24				
27	Erection of 33 KV Porcelain Pin Insulator	No	24				
28	Dismantling of existing LT overhead bare conductor and transportation to TPCODL central store	Ckt Km	6.01				
	Total						

Figures : Rupees ……Only

Signature & Seal of the Bidder

NOTE:

- Bidder should quote as per the "Item description" column.
- The bids will be evaluated commercially on the overall all-inclusive price of tender BOQ of each packages.
- All materials shall be supplied and erected by the BA.
- The unit price should be inclusive of freight, insurance, cess and other levies (if any) and exclusive of GST. GST to be mentioned separately. Total price shall be inclusive of all.
- The bidders are advised to quote prices strictly in the above format. Failing to do so, bids are liable for rejection.
- The bidder must fill each and every column of the above format. Mentioning “extra/inclusive” in any of the column may lead for rejection of the price bid.
- No cutting/ overwriting in the prices is permissible.
- The BA has to arrange all necessary ROW permission for execution of project. No extra charges will be paid by TPCODL for arranging any permission from Govt authorities or any other agency.
- Guarantee Period : 24 months from the date of handing over the completed installations.
- Completion Period : Eight Months for Pkg- 5 & 12 and Five Months for Pkg- 4, 7, 14 & 15.
- Price shall be quoted considering item description and technical specification.
- Other T&C as per tender documents.

ANNEXURE II

Technical Specification attached separately with the tender

ANNEXURE III

Schedule of Deviations

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

Unless specifically mentioned in this schedule, the tender shall be deemed to confirm the 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

SELF DECLARATION FORM

Sir,

I/We the undersigned do hereby declare that, I/We have never been blacklist and/or there were no debarring actions against us for any default in supply of material/ equipments or in the performance of the contract entrusted to us in any of the electricity utilities *of India.*

Seal of the Bidder:

Signature:

Name:

ANNEXURE V

Schedule of Commercial Specifications

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

S. No.	Particulars	Remarks
1.	Prices firm or subject to variation (If variable indicate the price variation clause with the ceiling if applicable)	Firm / Variable
1a.	If variable price variation on clause given	Yes / No
1b.	Ceiling	--------- %
1c.	Inclusive of GST	Yes / No (If Yes, indicate % rate)
1d.	Inclusive of transit insurance	Yes / No
2.	Delivery	Weeks / months
3.	Guarantee clause acceptable	Yes / No
4.	Terms of payment acceptable	Yes / No
5.	Performance Bank Guarantee acceptable	Yes / No
6.	Liquidated damages clause acceptable	Yes / No
7.	Validity (180 days) (From the date of opening of 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 Micro, Small & Medium Enterprises Act, 2020	Yes / No (If Yes, indicate, MSME Reg'n No.)

Seal of the Bidder:

Signature:

Name:

ANNEXURE VI

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 V)	
6	Sheet of commercial/ technical deviation if any (Annexure III)	
7	Balance sheet for the last completed three financial years; mandatorily enclosing Profit & loss account statement	
8	Acknowledgement for Testing facilities if available (duly mentioned on bidder letter head)	
9	List of Machine/ tools with updated calibration certificates if applicable	
10	Details of order copy (duly mentioned on bidder letter head)	
11	Order copies as a proof of quantity executed	
12	Details of Type Tests if applicable (duly mentioned on bidder letter head)	
13	All the relevant Type test certificates as per relevant IS/ IEC (CPRI/ ERDA/ other certified agency) if applicable	
14	Project/ Supply Completion certificates	
15	Performance certificates	
16	Client Testimonial/ Performance Certificates	
17	Credit rating/ Solvency certificate	
18	Undertaking regarding non blacklisting (On company letter head) (Annexure IV)	
19	List of trained/ Untrained Manpower	

Annexure VII

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 VIII

SCOPE OF WORK

The work Involves:

DFO	Name of Package	Electrical Section	Scope of work					
			Conversion of HT bare line to 11KV, 99 mm2 Covered Conductor (Ckt. Km)	Conversion of HT bare line to 11KV, 70 mm2 Covered Conductor (Ckt. Km)	HT 9Mtr long PSC interposing poles for Cabling & Stretch (No)	Cut point 9 Mtr. Long PSC Pole (No)	3x50+1x35 mm2 LT XLPE AB Cable (Km)	LT, 9Mtr long PSC interposing poles for Cabling & Stretch (No)
Dhenkanal & Cuttack	Pkg-4/ Dhenkanal Sub Division	DKL No-II	2.78	2.95	68	20	2.27	44
		DKL No-III	0	1.24	138	48	1.92	181
		Bhapur	2.27	3.52	57	27	8.15	159
		Total	**5.05**	**7.71**	**263**	**95**	**12.34**	**384**
	Pkg-5/ Hindol Road Sub Division	Hindol Road	2.78	3.55	112	32	4.94	167
		Khajuriakata	8.76	18.44	264	77	28.84	560
		Hindol	1.03	3.61	45	13	0	0
		Total	**12.57**	**25.6**	**421**	**122**	**33.78**	**727**
	Pkg-7/ Gondia Sub Division	Gondia	0	2.06	20	6	1.46	29
		Joronda	1.24	6.08	71	28	9.42	183
		Nihalprasad	0.82	2.78	35	10	1.39	27
		Total	**2.06**	**10.92**	**126**	**44**	**12.27**	**239**
Athagarh & Satakosia	Pkg-12 / AED, Athagarh Division	Athagarh-II	0	0	0	0	0.7	3
		Khuntuni	0	1	6	3	0.8	8
		Badamba	0	31	382	81	0	0
		Kanpur	0	2.5	17	7	0	0
		Narasinghpur	0	6.3	79	16	0.35	5
		Narasinghpur	0	5	170	15	0	0
		Total	**0**	**45.8**	**654**	**122**	**1.85**	**16**
Chandaka	Pkg-14 / BCDD-II, BBSR	Baranga / Bharatpur	0	0	673	76	0	0
		Total	**0**	**0**	**673**	**76**	**0**	**0**

DFO	Name of Package	Electrical Section	Scope of work					
			Conversion of HT bare line to 11KV, 99 mm2 Covered Conductor (Ckt. Km)	Conversion of HT bare line to 11KV, 70 mm2 Covered Conductor (Ckt. Km)	HT 9Mtr long PSC interposing poles for Cabling & Stretch (No)	Cut point 9 Mtr. Long PSC Pole (No)	3x50+1x35 mm2 LT XLPE AB Cable (Km)	LT, 9Mtr long PSC interposing poles for Cabling & Stretch (No)
Khordha, Chandaka & City Forest	Pkg- 15/ KED, Khordha Division	Jankia (33KV Line)	0	0	8 No. (150x150) mm RS Joist	0	0	0
		Jankia 11KV	0	0	73	0	0	0
		Khordha-II	0	0	52	0	0	0
		Khordha-II	0	0	4	0	0	0
		Banki-III	0	0	873	0	5.71	106
		Janla	0	0	40	0	0	24
		Janla	0	0	6	0	0	0
		Janla	0	0	3	0	0	0
		Khordha-III	0	0	2	0	0.3	4
		Total	**0**	**0**	**1061**	**0**	**6.01**	**134**

(i) Before start of work, a joint verification with Forest Officer and TPCODL shall be made for the execution of the work. The quality of the work shall be communicated during execution of work.

(ii) The detail route survey along with its scope in each location as specified including route map shall be done in close co-ordination with forest department.

(iii) Complete manufacture, including shops testing & supply of materials from the approved vendor (materials which are to be supplied by the bidder)

(iv) Providing Engineering drawings related to line, equipments data, operational manual, preparation of Cable Schedule (in shape of a booklet) etc for the Owner's approval.

(v) Packing and transportation from the manufacturer's works to the site.

(vi) Receipt, storage, preservation and conservation of equipment at the site.

(vii) Pre-assembly, if any, erection testing and commissioning of all the equipment;

(viii) Loading, unloading and transportation as required,

(ix) Erection of installations of specified voltages.

(x) Erection of interposing PSC pole (9mtr, 300 Kg) along cabling of bare line in 11 KV & LT Line with its accessories/ fitting maintaning adequate ground clearance.

(xi) Erection of interposing PSC pole (9mtr, 300 Kg) for stretching of 11 KV & LT Line with its accessories/ fitting maintaning adequate ground clearance.

(xii) The Span length of in LT line should not be more than 30 mtr and the span length in 11 KV line should not be more than 50 mtr.

(xiii) Use of pole extension where ever necessary depending upon site condition.

(xiv) Provision of concreting & padding in each new PSC pole and joist pole.

(xv) Fixing of Spike in each pole.

(xvi) Couping of existing joist pole.

(xvii) Provision of LT & HT Stay set.

(xviii) Conversion of bare conductor to 99 mm2/ 70 mm2 XLPE covered conductor in 11 KV line along with fixing of suitable hard ware fitting and other accessories.

(xix) Conversion of bare conductor to 3x50+1x35 mm2 XLPE AB Cable in LT line. along with fixing of suitable hard ware fitting and other accessories.

(xx) Dismantling of bare conductor and handed over to TPCODL central store (Bhubaneswar/ Choudwar) through Section Officer with transportation at contractor's own cost.

(xxi) Co-ordination with TPCODL and third party agencies empanelled by DMU Gridco for execution and verification of work.

(xxii) Co-ordination with Electrical inspector regularly for inspection of quality of materials prior to installation.

(xxiii) Testing, Commissioning of installations.

(xxiv) Electrical inspection by Electrical Inspection, GoO after completion of work. All statutory charges (if any) towards inspection shall be within the scope of the contractor.

(xxv) Clearance from Govt. authority like Forest department / Municipality/ NAC or any other department if any.

(xxvi) Provide other miscellaneous materials required as per site condition to execute the work in complete manner.

(xxvii) The BA has to follow the Contract safety management (CSM) as per GCC. The penalty will be imposed on the bidder for any safety violence as per CSM matrix.

(xxviii) Prior erecting any extra items for these scheme- rates should be approved from competent authority.

(xxix) The Bidder should have own Safety equipment like Neon Tester, Portable Earth, Earthing discharge rod etc. along with Calibration certificates of all equipment.

(xxx) BA has to ensure safety and Quality of job at site for whole duration and they have to submit the safety report and quality report to TPCODL if required.

(xxxi) Resolve of ROW issue (if any) by the BA. TPCODL extend support to BA in ROW arrangement.

(xxxii) Proving the steel barricading/ any other (as per site requirement) as per TPCODL specification will be in Bidder scope, TPCODL will not give any additional cost for this activity. This line item is not mentioned in Tender BOQ and no extra item will be paid to successful bidder in future for this activity.

(xxxiii) Crane/ New Generation Hydra shall be used for loading, unloading, handling & erection of equipments at site. Normal Hydra shall not be used at site. In case of site related issues where crane or New Gen Hydra cannot be used due to site constraint or other reasons, the Normal Hydra can be used only post receipt of permission from TPCODL E-I-C.

(xxxiv) Clearance of Site : The Contractor's shall from time to time during the progress of the Works clear away and remove all surplus materials and rubbish disposal in an approved manner. On completion of the work the Contractor shall remove all Contractors' equipment and leave the whole of the Site clean and in a workable condition, to the satisfaction of the TPCODL. The contractor should rectify any damage occur during execution like road, footpath restoration etc to its original position.

Location Details

DED, Dhenkanal

DFO: Dhenkanal

NAME OF ELECTRICAL SECTION : NO. - II, DHENKANAL

Sl No	Location /Village	Scope of HT Work			
		99mm2, 11 KV Covered conductor (Km)	70mm2, 11 KVCovered Conductor (Km)	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Dadhikhai	0.72		7	2
2	Shyamacharanpur to Hanuman Temple		0.06	1	2
3	Slerlmalia Farm house to Kendhupada		2.88	28	7
4	Chaulia High School to Apanga Cashow field	2.06		20	6
5	Kotapal malabandha Road			12	3
	Total	**2.78**	**2.95**	**68**	**20**

Sl No	Location /Village	Scope of LT Work	
		3x50 +1x35 mm2 LT XLPE AB Cable (Km)	LT Interposing Pole in cabling & stretch work (No)
1	Dadhikhai	0.21	4
2	Shyamacharanpur to Hanuman Temple	2.06	40
		2.27	**44**

NAME OF ELECTRICAL SECTION : NO. - III, DHENKANAL

Sl No	Location /Village	Scope of Work			
		99mm2, 11 KV Covered conductor (Km)	70mm2, 11 KVCovered Conductor (Km)	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Boulpur Vana sahi to Tentuliapada sub-station		1.24	12	3
2	Sankulei village near to Puruna Gaon			6	2
3	Sankulei village end to right side baoundary			7	2
4	Balabhadrapur inside the village			8	2
5	Haladibari to Gurujanga			8	2

6	Sadasivpur near UCO bank			5	2
7	Bhojadeipur village starting to near pond			2	2
8	Sadasivpur village Majhisahi			3	2
9	Baradaq Matru Bhawan to Barada village			2	2
10	Janhitaila village Road side				
11	Janhi Taila village inside			3	2
12	Sankarpratpur Sasan			6	2
13	Chainpur Nuasahi			1	2
14	Gadasila to Jhargadia			8	2
15	Sudhadihakateni Railway Gate to Baulapur Pump House			18	5
16	Baulapur Brahmanidevi Mandir back side to Sanbaulapur			15	4
17	Sanabaulapur vikllage			3	2
18	Baulapur pur harijan Sahi to Tentuliapada Mangala Mandir			9	2
19	Kasiadihi village Start to Lokanath Vidya Pitha			5	2
20	Kasiadihi Balipada to Mahidhar pur			8	2
21	Kasiadihi machine Sahi			3	2
22	Kasiadihi godi Sahi			6	2
	Total	**0**	**1.24**	**138**	**48**

Sl No	Location /Village	**Scope of LT Work**	
		3x50 +1x35 mm2 LT XLPE AB Cable (Km)	LT Interposing Pole in cabling & stretch work (No)
1	Khuntujhari to Panchayat Office	0.72	14
2	Ragadisahi	0.72	14
3	Khuntujhari to towards village	0.07	1
4	Baulapur Vana Sahi	0.41	8
5	Inside village Ranapasi left side road		8
6	Gurujanga village majhi sahi		6
7	Sankulei village near to Puruna Gaon		4
8	Sankulei village end to right side baoundary		4
9	Balabhadrapur inside the village		4
10	Balisinga village		10

11	Bhojadeipur village starting to near pond		4
12	Bhojadeipur village Siva Mandir		2
13	Sadasivpur talasahi Siva Mandir		6
14	Sadasivpur village Majhisahi		10
15	Baradaq Matru Bhawan to Barada village		10
16	Janhitaila village Road side		8
17	Janhi Taila village inside		4
18	Barada Upara Sahi		8
19	Chainpur Patana galisahi		6
20	Sankarpratpur Sasan		10
21	Sanabaulapur vikllage		6
22	Kasiadihi village Start to Lokanath Vidya Pitha		16
23	Kasiadihi Balipada to Mahidhar pur		6
24	Kasiadihi village Strat point to Siva Mandir		4
25	Kasiadihi machine Sahi		4
26	Kasiadihi godi Sahi		4
	Total	**1.92**	**181**

NAME OF ELECTRICAL SECTION : BHAPUR

Sl No	Location /Village	**Scope of HT Work**			
		99mm2, 11 KV Covered conductor (Km)	70mm2, 11 KVCovered Conductor (Km)	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Near Nitaigour Matha		0.52	5	2
2	Inside Kamaning village Paddy field		0.52	5	2
3	Dhirapatana Paddy field		0.10	1	2
4	Nllalgour Matha		0.43	4	2
5	Kamunig Tower		0.12	2	2
6	Sadeibereni	0.21		2	2
7	Near Mangalpur Petrol Pump		0.19	2	2
8	Sarion to Ragadisahi		0.10	1	2
9	Saradeipur to Bhaliabolakateni		0.52	5	2
10	Lambodarpur to Bhagirathipur	1.03		10	3
11	Fasigan to Purunakapisahi	1.03		10	3
12	Puruna Kapisahi Chhak		1.03	10	3
	Total	**2.27**	**3.52**	**57**	**27**

Sl No	Location /Village	Scope of LT Work	
		3x50 +1x35 mm2 LT XLPE AB Cable (Km)	LT Interposing Pole in cabling & stretch work (No)
1	Near Nitaigour Matha	0.31	6
2	Inside Kamaning village Paddy field	0.21	4
3	Inside Gajamara village (Right side)	0.36	7
4	Chasapada near Transformer	0.10	2
5	Dhirapatana Paddy field	0.10	2
6	From Nllaigour Matha to Pump	0.19	4
7	Sadeibereni	0.19	4
8	Balabhadrapur	0.21	4
9	Balabhadrapur to Sarion	0.21	4
10	Saradeipur to Bhaliabolakateni	0.52	10
11	Lambodarpur to Bhagirathipur	0.10	2
12	Lambodarpur UP School	1.55	30
13	Fasigan to Purunakapisahi	2.06	40
14	Puruna Kapisahi Chhak	2.06	40
	Total	**8.15**	**159**

NAME OF ELECTRICAL SECTION : HINDOL ROAD

Sl No	Location /Village	Scope of HT Work			
		Single Core, 99mm2, 11 KV Covered conductor (Km)	Single Core, 70mm2, 11 KV Covered Conductor (Km)	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Abaslka School near Gaila Chhak to Crosser line		0.31	4	2
2	Kaunriapal Railway underground cable DP to Kaunriapal Bandha Cut Point		0.36	4	2
3	Belpada Railway Cable to Bandha Cut point		0.62	6	2
4	Gailo Siva Mandir cut point to Kaunriapal Pal	1.24		12	3
5	Kauriapal village to Pasasingh Pala	1.55		15	3
6	Gunudei cut point to Mahadia LI cut point DP		1.24	12	3
7	Rasasing sub-station no boundary line		0.41	4	2
8	Mahadia village end point backside		0.62	6	2
9	Badalu to Narana crosser			3	2
10	Gunadei High School to Gunadei village			13	3
11	Gunadei harijan Sahi to Sugarcane field			7	2

12	Khaira sahi to Jibankhola Ashram			11	2
13	Podapada bus stand to canal site			11	2
14	Podapada Pump house to railway site			4	2
	Total	**2.78**	**3.55**	**112**	**32**

Sl No	Location /Village	**Scope of LT Work**	
		3x50 +1x35 mm2 LT XLPE AB Cable (Km)	LT Interposing Pole in cabling & stretch work (No)
1	Belpada village sub-station to Gailo Sivamandira Pond	0.31	6
2	Belpada village sub-station to Belapada village	0.62	12
3	Mahadia village starting to end point	1.85	36
4	Kaunriapal School to Sub-station	0.62	12
5	Kaunriapal DP to Talasahi	0.93	18
6	Rasasingh inside village	0.62	12
7	Badalu to Dolamandap		8
8	Gunadei UP. School to Guptupu Sahi		8
9	Gunadei harijan Sahi to Sugarcane field		10
10	Sabar Sahi to harijan Sahi		6
11	Gunadei to L.I point		8
12	Gunadei to Brahmani River Bank		3
13	Bania Bhuin to Brahmani River Bank		4
14	N.H-55 to Gunadei Bus stand		24
	Total	**4.94**	**167**

NAME OF ELECTRICAL SECTION : KHAJURIAKATA

Sl No	Location /Village	**Scope of HT Work**			
		99mm2, 11 KV Covered conductor (Km)	70mm2, 11 KVCovered Conductor (Km)	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Nua to Thokar	6.18		60	18
2	Madhapur Lanka Sahi-front		4.12	40	12
3	Mundiapasi village end		1.03	10	3

4	Bhagabanpur village near school	1.03		10	3	
5	Bhallagotha transformer to Bidyadharpur		4.12	40	12	
6	Bedapada Mandap sahi to Bedapada village		2.06	20	6	
7	Brahmapur near pond		1.03	10	3	
8	Khandatiri School	1.55		15	3	
9	Khandatiri School		0.00			
10	Giridharprasad to Panchayat Office		2.06	20	6	
11	Giridharprasad to Panchayat Office		0.00			
12	Giridharprasad to Panchayat Office		0.93	9	2	
13	Giridharprasad to Panchayat Office		1.03	10	3	
14	Bramhaniapal Nua Gram to Transformer		1.03	10	3	
15	Bramhaniapal Nua Gram to Transformer		1.03	10	3	
	Total	**8.76**	**18.44**	**264**	**77**	

Sl No	Location /Village	**Scope of LT Work**	
		3x50 +1x35 mm2 LT XLPE AB Cable (Km)	LT Interposing Pole in cabling & stretch work (No)
1	Nua to Thokar	2.06	40
2	Nukhapatana village middle	1.03	20
3	Nukhapatana village near transformer	1.03	20
4	Nuabag near transformer	1.03	20
5	Baghadharia village first	1.03	20
6	Kalanga village first	1.03	20
7	Bankitia village first	1.03	20
8	Buhalipal village in middle	1.55	30
9	Jarada village in Middle	2.06	40
10	Haripur transformer	1.03	20
11	Thenga Bus stand near transformer	1.03	20
12	Bedapada village to Transformer	1.55	30
13	Brahmpur Barasahi	1.03	20
14	Brahmpur Barasahi	0.31	6
15	Brahmpur Barasahi	0.21	4
16	Brahmpur Barasahi	1.03	20
17	Brahmpur Mathasahi	0.31	6
18	Brahmpur Mathasahi	0.21	4
19	Brahmapur near pond	1.55	30
20	Khandatiri School	1.55	30
21	Khandatiri School	1.55	30
22	Giridharprasad to Panchayat Office	2.06	40

23	Giridharprasad to Panchayat Office	1.55	30
24	Bramhaniapal Nua Gram to Transformer	1.03	20
25	Ganjara transformer to Jagannathpur	1.03	20
	Total	**28.84**	**560**

NAME OF ELECTRICAL SECTION : HINDOL

Sl No	Location /Village	Scope of HT Work			
		99mm2, 11 KV Covered conductor (Km)	70mm2, 11 KV Covered Conductor (Km)	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Sinkol village inside N.A.C electrification	1.03		10	2
2	Inside Rupali village		1.03	10	3
3	Before Jamusahi Transformer		0.21	2	2
4	Nuakote Harijan Sahi to Mundasahi		1.55	15	4
5	Karabira village to School		0.82	8	2
	Total	**1.03**	**3.61**	**45**	**13**

NAME OF ELECTRICAL SECTION : GONDIA

Sl No	Location /Village	Scope of HT Work			
		99mm2, 11 KV Covered conductor (Km)	70mm2, 11 KVCovered Conductor (Km)	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Nilakanthapur Harijan Sahi		1.03	10	3
2	Near House of Hruda Nanda Das Dollar		1.03	10	3
	Total		**2.06**	**20.00**	**6.00**

Sl No	Location /Village	Scope of LT Work	
		3x50 +1x35 mm2 LT XLPE AB Cable (Km)	LT Interposing Pole in cabling & stretch work (No)
1	Dallasinga Marthapur (Near U.P School)	0.10	2
2	Raitala nua Sahi Kalaka House	0.12	3
3	Raitala nua sahi Pani Tanki	0.37	7
4	Raitala nua sahi Sanalana Behera house to Pramod Nayak	0.19	4
5	Raitala S/S	0.11	2
6	Near House of Hruda Nanda Das Dollar	0.31	6
7	Road Bend Vill-Dollar	0.26	5
	Total	**1.46**	**29**

NAME OF ELECTRICAL SECTION : JORANDA

Sl No	Location /Village	Scope of HT Work			
		99mm2, 11 KV Covered conductor (Km)	70mm2, 11 KVCovered Conductor (Km)	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Gahamakhunti to Kundllalta	1.24		12	3
2	Krushnakumarpur (biradia banha to Sagar Malla Field)		0.52	5	2
3	Chhanabolua (Chhanabolua to Sai Public School)		0.52	5	2
4	Jankhira		1.24	12	3
5	Biradia (Bandha)		0.41	4	2
6	House of Mayadhar Tarai, Kathapal		0.31	3	2
7	Near Goradapal S/S		0.62	6	2
8	Madhapur near 11KV Crossing (Near Nistruta)		0.52	5	2
9	Near L.I Point of Nanda Kishore Bhanja, Kabera		0.31	3	2
10	Near House of Bhagyadhar Rout, Niladri Bihara		0.41	4	2
11	Near house of Dillip Ku. Das at Panda Tallla, Joranda		0.31	3	2
12	Madhu Nayak to Jagabandh House, Kabera		0.52	5	2
13	At Sugar cane field of Markar Sethy, Kabera		0.41	4	2
	Total	**1.24**	**6.08**	**71**	**28**

Sl No	Location /Village	Scope of LT Work	
		3x50 +1x35 mm2 LT XLPE AB Cable (Km)	LT Interposing Pole in cabling & stretch work (No)
1	Gahamakhunti to Kainsa	0.41	8
2	Krushnakumarpur (biradia banha to Sagar Malla Field)	3.09	60
3	Jankhira	0.31	6
4	Biradia (Bandha)	0.21	4
5	House of Mayadhar Tarai, Kathapal	0.41	8
6	Kathapal Village to Jagannath Mandir, Bainsia	0.21	4
7	Near Goradapal S/S	0.21	4
8	Near Radhadeipur Chhaka	0.31	6
9	Madhapur near 11KV Crossing (Near Nistruta)	0.41	8
10	Near L.I Point of Nanda Kishore Bhanja, Kabera	0.41	8
11	Near House of Duryodhana Sahoo, Vill-Chirulei	0.31	6

12	Near House of Bhagyadhar Rout, Niladri Bihara	0.26	5
13	Near house of Dillip Ku. Das at Panda Tallla, Joranda	0.31	6
14	From Iswariya Prajapita Ashram to house Biranchi Parida	0.31	6
15	Near Chabish Kuda S/S	0.21	4
16	Kabera Mangala Mandira to Bus Stop Kabera	0.31	6
17	Salyabadi Rout to Hari Rpul, Kabera	0.31	6
18	Madhu Nayak to Jagabandh House, Kabera	0.41	8
19	Dadhisinga Nayak House, Kabera	0.31	6
20	Near Kabera Masani (Samsana)	0.41	8
21	At Sugar cane field of Markar Sethy, Kabera	0.31	6
	Total	**9.42**	**183**

NAME OF ELECTRICAL SECTION : NIHALPRASAD

Sl No	Location /Village	**Scope of HT Work**			
		99mm2, 11 KV Covered conductor (Km)	70mm2, 11 KVCovered Conductor (Km)	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Nuagar Sabar Sahi		0.72	7	2
2	Near Bhaliapata Chhaka		0.72	7	2
3	Belamalia School S/S		0.52	5	2
4	Tolorpasi Chhak to Belamalia Road Side		0.82	8	2
5	Bega G.P Back Side	0.82		8.0	2.0
	Total	**0.82**	**2.78**	**35**	**10**

Sl No	Location /Village	**Scope of LT Work**	
		3x50 +1x35 mm2 LT XLPE AB Cable (Km)	LT Interposing Pole in cabling & stretch work (No)
1	Nuagar Sabar Sahi	0.21	4
2	Near Bhaliapata Chhaka	0.15	3
3	Belamalia School S/S	0.21	4
4	Tolorpasi Chhak to Belamalia Road Side	0.31	6
5	Bega G.P Back Side	0.52	10
	Total	**1.39**	**27**

AED, Athagarh

(DFO: Athagarh)

NAME OF ELECTRICAL SECTION : – ATHAGARH NO-II

Sl No	Location /Village	Scope of HT Work			
		99mm2, 11 KV Covered conductor (Km)	70mm2, 11 KVCovered Conductor (Km)	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
		Nil			

Sl No	Location /Village	Scope of LT Work	
		3x50 +1x35 mm2 LT XLPE AB Cable (Km)	LT Interposing Pole in cabling & stretch work (No)
1	Champapur Kanyaashram	0.2	2
2	Tailamala Village	0.5	1
	Total	**0.7**	**3**

NAME OF ELECTRICAL SECTION : – KHUNTUNI

Sl No	Location /Village	Scope of HT Work			
		99mm2, 11 KV Covered conductor (Km)	70mm2, 11 KVCovered Conductor (Km)	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Dhandisahi to Baunsatangar	0	0.5	3	1
2	Dalabhaga, Godisahi near Bricks Factory	0	0.3	1	1
3	Megha Daspur Right side Road	0	0.2	2	1
	Total	**0**	**1.0**	**6**	**3**

Sl No	Location /Village	Scope of LT Work	
		3x50 +1x35 mm2 LT XLPE AB Cable (Km)	LT Interposing Pole in cabling & stretch work (No)
1	Bali Bazar to Bali College	0.3	4
2	Gourangpur Chicken Firm	0.2	3
3	Jenapur Coltivation field	0.3	1
	Total	**0.8**	**8**

NAME OF ELECTRICAL SECTION : – BADAMBA

Sl No	Location /Village	Scope of HT Work			
		99mm2, 11 KV Covered conductor (Km)	70mm2, 11 KVCovered Conductor (Km)	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Banapur to Rampur	0	2.5	31	6
2	Jodamba to Aranda	0	5.5	70	12
3	Tangeiri Chhaka to Soruan	0	4	50	10
4	Galumada Chhaka to Khalimati	0	1.5	17	5
5	Tangeri Chhakat ato Oranda Kendudhipasahi	0	2	24	6
6	Chanchunia to Daleimaru	0	2	24	6
7	Kandhabadabhin to Barapali	0	2	24	6
8	Nareijani to Chhanchunia	0	4	50	10
9	Vanharpal	0	1.5	17	5
10	Guptamanika	0	6	75	15
	Total	**0**	**31.0**	**382**	**81**

NAME OF ELECTRICAL SECTION : – KANPUR

Sl No	Location /Village	Scope of HT Work			
		99mm2, 11 KV Covered conductor (Km)	70mm2, 11 KVCovered Conductor (Km)	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Panchagochhia	0	0.5	3	1
2	Panchagochhia	0	1	2	3
3	Olab	0	1	12	3
	Total	**0**	**2.5**	**17**	**7**

NAME OF ELECTRICAL SECTION : – NARSINGHPUR

Sl No	Location /Village	Scope of HT Work			
		99mm2, 11 KV Covered conductor (Km)	70mm2, 11 KVCovered Conductor (Km)	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Baghuapala road to Tuniamatha	0	0.2	5	0
2	Badabhuin Purunasahi to Nuasahi	0	0.5	9	1
3	Bhejiapada School to Karadapada	0	0.5	4	1
4	Bhejiapada Nuasahi to School	0	0.5	6	1
5	Ostapala	0	1	12	3
6	Salapasi	0	1.5	17	5
7	Nilakanthapur	0	0.5	6	1
8	Chatrapada	0	1.2	15	3
9	Kharuani	0	0.4	5	1
	Total	**0**	**6.3**	**79**	**16**

Sl No	Location /Village	Scope of LT Work	
		3x50 +1x35 mm2 LT XLPE AB Cable (Km)	LT Interposing Pole in cabling & stretch work (No)
1	Malaharsahi to Sisupathar	0.15	3
2	Uthanga Mahapur	0.2	2
	Total	**0.35**	**5**

(DFO: Satakosia W/L)

NAME OF ELECTRICAL SECTION : – NARSINGHPUR

Sl No	Location /Village	Scope of HT Work			
		99mm2, 11 KV Covered conductor (Km)	70mm2, 11 KVCovered Conductor (Km)	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Kamaladiha to Kaintara Nuagaon to Bankadhara	0	0	80	0
2	Sisupathar Malaharsahi to Dam Tala	0	0	20	0
3	Sisupathar Dam to inside Dam area	0	0	5	0
4	Sisupathar to Chhakamunda Subas Talia	0	0	30	0
5	Siaribhundi to Kuchilakhai Chhak	0	5	35	15
	TOTAL	**0**	**5.0**	**170**	**15**

BCDD-II, Bhubaneswar
(DFO:Chandaka wildlife)

NAME OF ELECTRICAL SECTION : – BARANGA / BHARATPUR

Sl No	Location /Village	Scope of HT Work			
		11 KV 99mm2 covered conductor	11 KV 70mm2 covered conductor	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Daspur			39	4
2	Daspur towards Andharua			76	12
3	Sunderpur Mundasahi towards Baramana, Ganeshvihar			81	9
4	Patharagadia			97	8
5	Alasei to Darutengha			93	8

6	Chandaka Darutenga road			80	6	
7	Malimuhana towards biotech park , Andharua			25	4	
8	Near Depanjali Apartment , Andharua			3	2	
9	Godibari Mundasahi to Kantabada			39	5	
10	Near Kurtika institute to Kantabada			11	2	
11	Nuagaon – Kanteni Road near RI training Institute			39	5	
12	RI training institute towards IIIT Square			39	5	
13	Krishnapuri Colony towards Malipada RI office			51	6	
Total				**673**	**76**	

KHED - KHORDHA

NAME OF ELECTRICAL SECTION : – JANKIA ,
NAME OF FOREST DIVISION:- KHORDHA

Sl No	Location /Village	Scope of 33KV Work			
		11 KV 99mm2 covered conductor	11 KV 70mm2 covered conductor	33 KV Interposing Joist Pole (150x150 mm)in cabling & stretch work (No)	33 KV Cut Point (No)
1	Malipada(Near Sarbana Hotel)			2	
2	Malipada (NH 16 to Bhagabati Temple)			6	
	Total			**8**	

Sl No	Location /Village	Scope of HT Work			
		11 KV 99mm2 covered conductor	11 KV 70mm2 covered conductor	11 KV Interposing Pole cabling & stretch work (No)	11 KV Cut Point (No)
1	Ogalpur			1	
2	Ratamati NH-16 site			7	
3	Gayabandha (Sarvana Hotel)			18	

4	Olasingh to Damanbhuin			11	
5	Olasingh College to Rambhabilli			12	
6	Sarapari near Malaguni Bridge			12	
7	Sarapari			12	
	Total			**73**	

NAME OF ELECTRICAL SECTION : – KHURDHA –II

NAME OF FOREST DIVISION:- CHANDAKA W/L DIVISION

Sl No	Location /Village	Scope of HT Work			
		11 KV 99mm2 covered conductor	11 KV 70mm2 covered conductor	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Nuapada			1	
2	Manapur			7	
3	Mangalpur			7	
4	Mahula			5	
5	Mahula Square			1	
6	Mahula School			7	
7	Karadapalli			4	
8	Karadapalli(infront of Hi tech nursery			4	
9	Karadapalli(infront of Hi tech nursery to Range office road			4	
10	Minchinpatana (Infront of church)			4	
11	Minchinpatana to Angarapada Paddy Field			5	
12	Bindiyagiri (Near Eastern Plantation)			1	
13	Bindiyagiri (Near Road side temple)			1	
14	Bindiyagiri (Village back side)			1	
	Total			**52**	

NAME OF FOREST DIVISION:- KHORDHA

Sl No	Location /Village	Scope of HT Work			
		11 KV 99mm2 covered conductor	11 KV 70mm2 covered conductor	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Madhupur (Inside Village)			1	
2	Mahula			3	
	Total			**4**	

NAME OF ELECTRICAL SECTION : – BANKI – III

NAME OF FOREST DIVISION:- CHANDAKA W/L DIVISION

Sl No	Location /Village	Scope of HT Work			
		11 KV 99mm2 covered conductor	11 KV 70mm2 covered conductor	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Dulanapur to Hamera			32	
2	Barabati			12	
3	Talabasta to TATA Mines			80	
4	Talabasta to Padanpur (Batabandha)			90	
5	Padanpur to Kochila patana			22	
6	Padanpur to Samantarapur			22	
7	Dampada to Pathapur			130	
8	Pathapur to Charigharia			80	
9	Pathapur to RWSS			12	
10	Upper Pathapur to Ashram School			15	
11	Talapathpur to Ghatakula			22	
12	Pathapur LI Substation			22	
13	Amerendrapur village Substation			12	
14	Pathapu- Ir LI Substation			22	
15	Charigiria to Bhagipur			130	
16	Bhagipur to Ramachandi			80	
17	Ramachandi to Gobindapur Chhaka			10	
18	Gayalabanka to Jaria			80	
	Total			**873**	

Sl No	Location /Village	Scope of LT Work	
		3x50 +1x35 mm2 LT	LT Interposing Pole in

		XLPE AB Cable (Km)	cabling & stretch work (No)
1	Dulanapur to Hamera	0	10
2	Gayalabanka to Mahantsahi	1.5	12
3	Gayalabanka to Mahanadi	2.3	24
4	Gayalabanka Bricks factory to Mahanadi	1.91	24
5	Bhagipur to Mahanadi	0	24
6	Nuasahi Village Substation	0	12
	Total	**5.71**	**106**

NAME OF ELECTRICAL SECTION : – JANLA
NAME OF FOREST DIVISION:- CHANDAKA W/L DIVISION

Sl No	Location /Village	Scope of HT Work			
		11 KV 99mm2 covered conductor	11 KV 70mm2 covered conductor	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Godibari munda sahi to Kantabada			3	
2	Near Krutika institute, Kantabada			7	
3	Guptapada Near OISF			1	
4	Guptapada Near Football Playground)			1	
5	Guptapada Near MI Dam)			1	
6	Jamujhari (Near Sani Temple			1	
7	Jamujhari (Play ground)			1	
8	Near Mendhasal beat towards Seafood Park)			7	
9	Giringaput village near Kargil farm			3	
10	Near Minja Shop of Barapita village			6	
11	Barapita school towards Barapita village			1	
12	Kalajhara Temple towards inside of village			3	
13	Haridamada Adivasi Sahi			1	
14	Haridamada Behera Sahi			3	
15	Haridamada Shiva Temple			1	
	Total			**40**	

Sl No	Location /Village	Scope of LT Work	
		3x50 +1x35 mm2 LT XLPE AB Cable (Km)	LT Interposing Pole in cabling & stretch work (No)
1	Mendhasal market to Kukuda mundi village	0	24
	Total		**24**

NAME OF FOREST DIVISION:- CITY FOREST DIVISION

Sl No	Location /Village	Scope of HT Work			
		11 KV 99mm2 covered conductor	11 KV 70mm2 covered conductor	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Deulipatana			3	
2	Mendhasala			3	
	Total			**6**	

NAME OF FOREST DIVISION:- KHORDHA DIVISION

Sl No	Location /Village	Scope of HT Work			
		11 KV 99mm2 covered conductor	11 KV 70mm2 covered conductor	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Paniora (Road)			1	
2	Paniora (Road)			2	
	Total			**3**	

NAME OF ELECTRICAL SECTION : – KHURDHA- III
NAME OF FOREST DIVISION:- KHORDHA DIVISION

Sl No	Location /Village	Scope of HT Work			
		11 KV 99mm2 covered conductor	11 KV 70mm2 covered conductor	11 KV Interposing Pole in cabling & stretch work (No)	11 KV Cut Point (No)
1	Dalak (near Dalak Ashram)			1	
2	Dalak Adivasi Sahi			1	
	Total			**2**	

Sl No	Location /Village	Scope of LT Work	
		3x50 +1x35 mm2 LT XLPE AB Cable (Km)	LT Interposing Pole in cabling & stretch work (No)
1	Dalak (Behera Sahi)	0.3	4
	Total	**0.3**	**4**

Annexure IX

General Conditions of Contract – Attached separately

Annexure X

Safety Policy and Safety terms and conditions (Attached separately)

Annexure-XI

Tata Code of Conduct

The Owner abides by the Tata Code of Conduct in all its dealing with stake holders and the same shall be binding on the Owner and the Contractor for dealings under this Order/ Contract. A copy of the Tata Code of Conduct is available a tour website:

https://www.tatapower.com/pdf/aboutus/Tata-Code-of-Conduct.pdf

The Contractor is requested to bring any concerns regarding this to the notice of our Chief Procurement & Stores mail ID: pkjain@tatapower.com.

Annexure XII

CORPORATE ENVIRONMENT POLICY

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

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

(Praveer Sinha)
CEO & Managing Director

Date: 15th June, 2018

TATA POWER
Lighting up Lives!

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.)

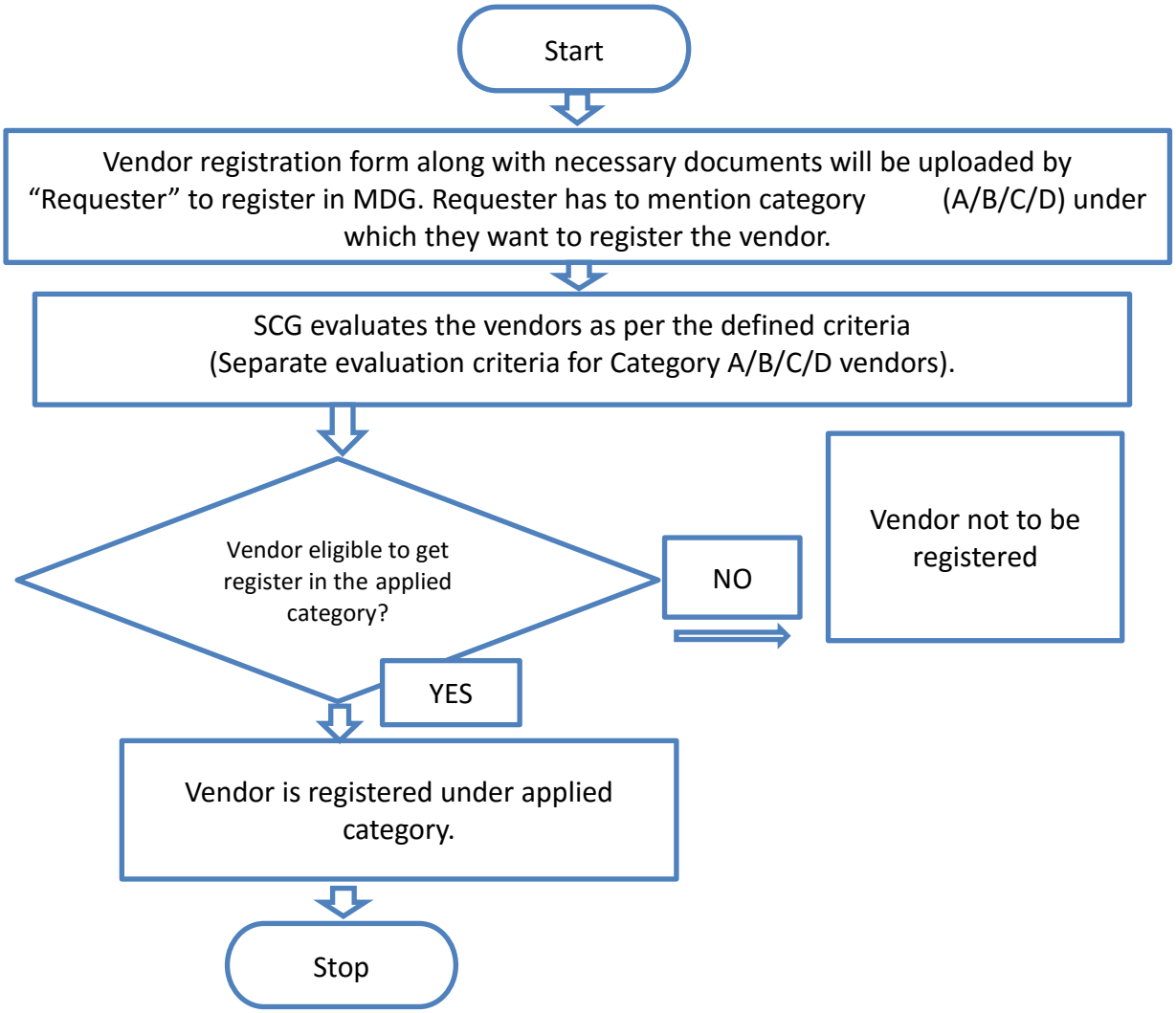
Otherwise the RFQ will be attached only with Safety Terms and Conditions. Long term and low value jobs (see definition) are exempted from the CSCC process.

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:

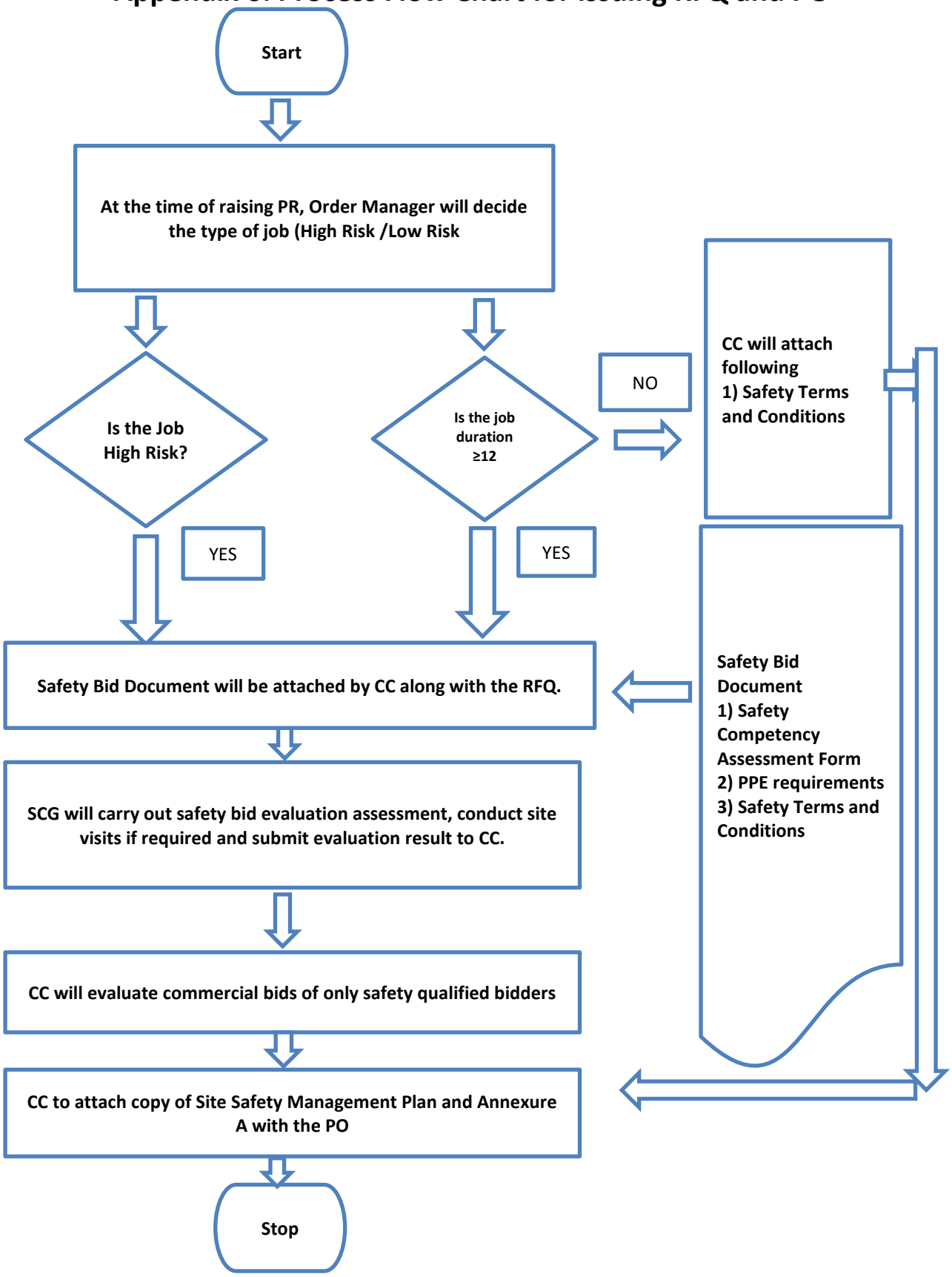
Sr No	Description of violation	Severity	Penalty
1.	Working without Permit	5	5000/-
2.	Untrained (TPSDI) worker on high-risk jobs.	5	5000/-
3.	Unhygienic/Bad condition of PPE	2	250/-
4.	Not following Tata Power Procedure & Standard	4	2000/-
5.	Unsafe Act/Condition of Severity 4	4	2000/-
6.	Unsafe Act/Condition 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.

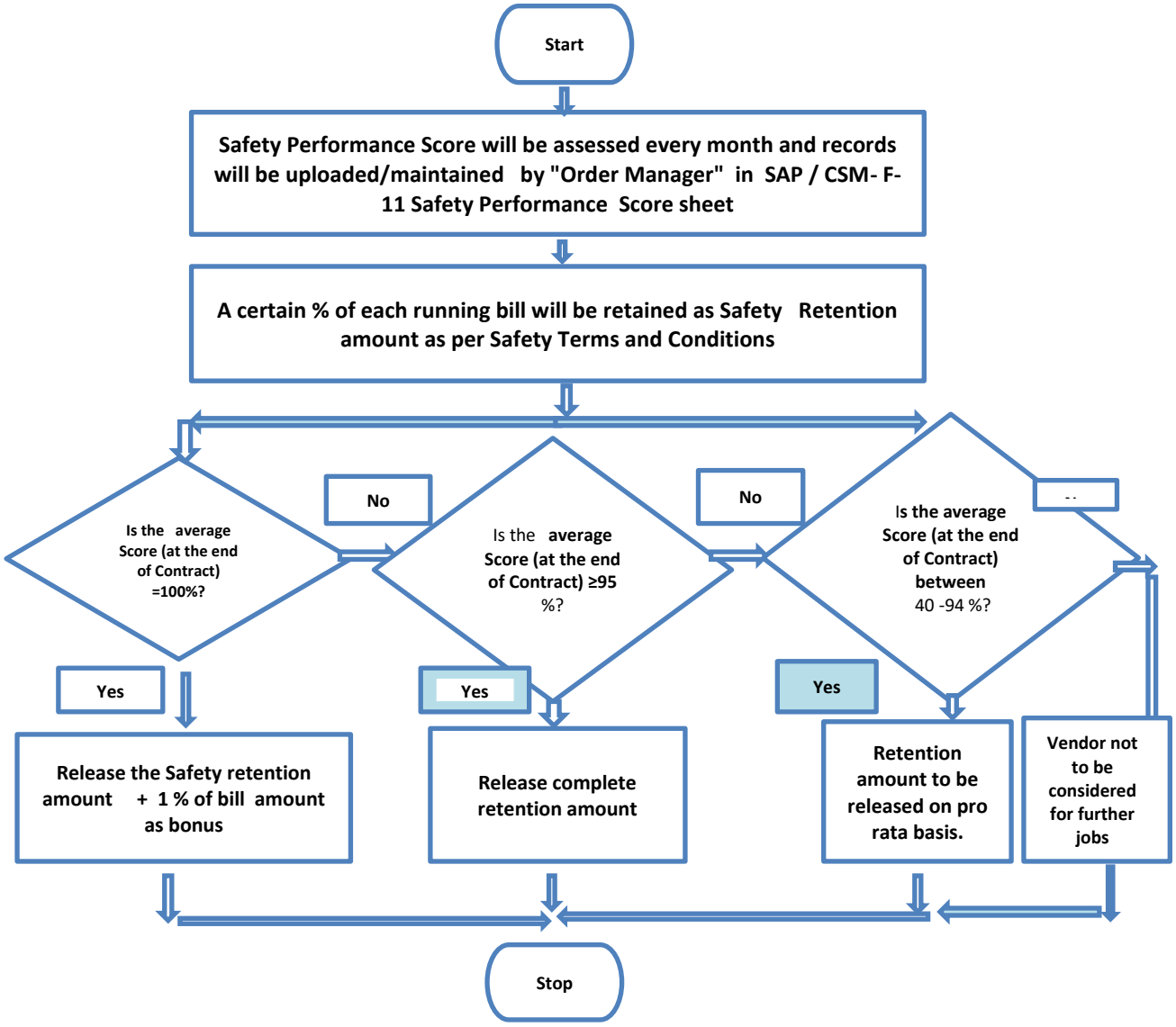
10.0 First Aid facilities and Nearby Hospitals Details

	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.				

1. TECHNICAL SPECIFICATION FOR CONSTRUCTION OF 11KV & LT LINES

1.0 NATURE OF WORK

The work covered by this Specification is for strengthening of electrical infrastructure 11 KV HT and LT distribution lines by replacing the bare conductor covered conductor and LT AB cable respectively along with placing interposing pole in elephant movement area as specified herein and in the attached Schedules.

The work is to be executed in forest areas/ village area, hence adequate safety measures to be taken while erection in close co-ordination with the local forest authorities.

1.1 GENERAL PARTICULARS OF THE SYSTEM

The following are the general particulars governing the design and working of the complete system of which the Works will form a part -

The system will be in continuous operation during the varying atmospheric and climatic conditions occurring at all seasons.

1.2 SCOPE-

(A) Construction of 33 KV & 11 KV Lines & AB Cabling works.

Strengthening of 33 KV & 11 KV lines under various packages which include replacement of bare conductor by insulated cable as specidied in the price schedule, erection of iteposing pole with its accessories, fitting spike, pole extension (if required) etc. All items required for construction above work in complete shape shall be supplied by the contractor.

2.0 SURVEY (detail & check, estimating of quantities & spotting of Poles)

Walk over survey shall have to be carried out to establish the Route alignment by the contractor for 11 KV, LT lines. If the line is passing in any Municipal/ NAC/Forest areas permission from local bodies has to be obtained prior to execution of work. Suitable distance from the side of the road has to be made towards placement of line poles.

2.0.2 GENERAL: Preliminary route alignment in respect of the proposed 33KV &11KV, LT lines has been fixed by the employer subject to alteration of places due to way leave or other unavoidable constraints. The Right of way shall be solved by the contractor and all expenses there of shall be borne by him. However, TPCODL shall render all helps in co-ordination with law and order department for solving the same. Involvement of Forest land should be restricted as far as possible.

2.0.3 Provisional quantities/numbers of different types of tower structures/Joist poles/PSC poles have been estimated and indicated in the BOQ Schedule given. However final quantities for work shall be as determined by the successful bidder, on completion of the detail survey, preparation of route profile drawing and designing of the different types of tower structures/Joist poles/PSC poles as elaborated in the specification and scope of work.

2.0.4 The contractor shall undertake detailed survey on the basis of the tentative alignment fixed by the employer. The said preliminary alignment may, however, change in the interest of economy to avoid forest and hazards in work. While surveying the alternative route the following points shall be taken care by the contractor.

(a) The line is as near as possible to the available roads in the area.

(b) The route is straight and short as far as possible.

(c) Good farming areas, religious places, forest, civil and defense installations, aerodromes, public and private premises, ponds, tanks, lakes, gardens, and plantations are avoided as far as practicable.

(d) The line should be far away from telecommunication lines as reasonably possible. Parallelism with these lines shall be avoided as far as practicable.

(e) Crossing with permanent objects are minimum but where unavoidable preferably at right angles.

(f) Difficult and unsafe approaches are avoided.

(g) The survey shall be conducted along the approved alignment only.

(h) For river crossing/ Crossing of Nallas : Taking levels at 25 meter interval on bank of river and at 50 meter interval at bed of river so far as to show the true profile of the ground and river bed railway/road bridge, road The levels shall be taken at least 100 m. on either side of the crossing alignment. Both longitudinal and cross sectional shall be drawn preferably to a scale of 1:2000 at horizontal and 1:200 vertical.

After completing the detailed survey, the contractor shall submit the final pole schedule (with no. of stay or struct) for final approval of the employer. To facilitate checking of the alignment, suitable reference marks shall be provided. For this purpose, concrete pillars of suitable sizes shall be planted at all angle locations and suitable wooden/iron pegs shall be driven firmly at the intermediate points. The contractor shall quote his rate covering these involved jobs.

2.0.5 (a) Optimization of Pole Location

I. Pole Spotting

To optimize the line length, the contractor shall spot the poles in such a way so that the line is as close as possible to the straight line drawn between the start & end point of the line.

II. Crossings

Road Crossings:- At all road crossings, the double tension HW fittings should be used. There should absolutely no joints in the conductors in all road, power line and all other major crossing. The ground clearance from the road surfaces under maximum sag condition shall be not less than 8.5mtr over roads. In National High way the minimum height of guarding at the maximum sagging point should be less than 8.5 mts.

Railway Crossings- The railway crossing overhead or underground shall be carried out in the manner as approved & prescribed by the railway authorities from time to time.

The crossing shall normally be at right angle to the railway track. In case crossing is required to be done through underground cable, cost of the cable including laying and other accessories shall be in the scope of the contractor. During detailed engineering, the contractor shall submit his proposed arrangement for each railway crossing to the owner. The approval for crossing railway track shall be obtained by the owner from the Railway Authority.

Power Line Crossings--

Where the line is to cross over another line of the same voltage or lower voltage, provisions to prevent the possibility of their coming into contact with each shall be made in accordance with the Indian Electricity Rules.

III. Details En-route

After survey and finalization of route, the contractor shall submit detailed route map for each line. This would be including following details:

All poles on both sides of all the crossings shall be tension poles i.e. disc type insulators shall be used on these poles. At all the crossing described above the contractor shall use protective guarding as per REC Construction Standard A-1 to fulfill statutory requirements for 11 kV & 33 KV trunks & main spur line. 11kV & 33 KV branch spur line, being in the village, protective guarding shall be used wherever it will be required.

Clearance from Ground, Building, Trees etc. – Clearance from ground, buildings, trees and telephone lines shall be provided in conformity with the Indian Electricity Rules, 1956 as amended up to date. The vendor shall select the height of the poles in order to achieve the prescribed electrical clearances.

VII. Fittings Common to all Line

Pin Insulator Binding: The contractor shall use AL. Binding wire for binding shall be as per REC Construction Standards No. C-5 or better thereof.

Guy/Stay wire Clamp: The contractor shall supply & install Guy/Stay wire Clamp as per REC Construction Standard G-1 or better here of as specified..

VIII. Stay/Guy Sets

a) The Stay/Guys shall be used at the following pole locations;

At all the tapping points & dead end poles

Both side poles at all the crossing for road, nalla, railway crossings etc.

b) The arrangement and number of stay sets to be installed on different pole structures shall be as per REC Construction Standards no. A-23 to A-27, G-5 & G-8. However, this shall be decided finally during erection, as per the advice of Engineer.

c) The stay set to be installed complete in all respect and would broadly consist of following items:

7/10 SWG G.I. Stay wire for 11 kV lines and 7/12 SWG for LT line as per REC Specification No.46/1986Stay Insulator type A for LT line and type C for 11 kV line as per REC Specification No. 21/1981, Turn Buckle. Anchor rod and plate (Hot Dipped galvanized). Thimbles and Guy Grip Complete stay set shall be as per REC Construction Standards no. G-1. The stay clamp is envisaged as GS structure along with other clamps brackets etc.

IX. Erection of stay sets

The contractor shall install the stay set complete in all respect. This includes excavation of pit in all kinds of soil with PCC in the ratio 1:3:6 of size 900x600x900 mm as specified which shall be placed in the bottom of the pit.

The rest (upper half) of the pit shall be filled with excavated soil duly compacted layer by layer. An angle between 30 to 45 degrees shall be maintained between stay wire and the pole. The stay wire shall be used with a stay insulator at a height of 5 mts. above ground level with F.I. turn buckle.

X. Stringing and Installation of Line with insulated Conductors/ AB cable.

General

The scope of erection work shall include the cost of all labour, tools and plants such as tension stringing equipment and all other incidental expenses in connection with erection and stringing work. The Bidders shall indicate in the offer the sets of stringing equipment he would deploy exclusively for work under each package.

The stringing equipments shall be of sufficient capacity to string AAA conductor or ACSR insulated conductor.

The Contractor shall be responsible for transportation to site of all the materials to be provided by the Contractor as well as proper storage, insurance etc. at his own cost, till such time the erected line is taken over by the owner.

Contractor shall set up required number of stores along the line and the exact location of such stores shall be discussed and agreed upon with the owner.

Insulator Fixing

Pin insulators shall be used on all poles while strain insulators shall be used on all angle & dead end poles. Damaged insulators and fittings, if any, shall not be used. Prior to fixing, all insulators shall be cleaned in a manner that shall not spoil, injure or scratch the surface of the insulator, but in no case shall any oil be used for this purpose. Torque wrench shall be used for fixing various line materials and components, such as suspension clamp for conductor, whenever recommended by the manufacturer of the same.

Running Out of the insulated Conductors/ AB cable

The contractor shall be entirely responsible for any damage to the pole or conductors during stringing. The conductors shall be run out of the drums from the top in order to avoid damage to conductor

A suitable braking device shall be provided to avoid damaging, loose running out and kinking of the conductors. Care shall be taken to ensure that the conductor does not touch and rub against the ground or objects, which could scratch or damage the strands.

The sequence of running out shall be from the top to down i.e. the top conductor shall be run out first, followed in succession by the side conductors. Unbalanced loads on poles shall be avoided as far as possible.

Wherever applicable, inner phase off-line conductors shall be strung before the stringing of the outer phases is taken up.

When lines being erected run parallel to existing energized power lines, the Contractor shall take adequate safety precautions to protect personnel from the potentially dangerous voltage build up due to electromagnetic and electrostatic coupling in the pulling wire, conductors and earth wire during stringing operations.

The Contractor shall also take adequate safety precautions to protect personnel from potentially dangerous voltage build up due to distant electrical storms or any other reason.

The Contractor shall be entirely responsible for any damage to the poles, insulators etc during stringing.

Stringing of insulated Conductor/ AB cable

The stringing of the insulated conductor/ AB cable shall be done by the standard stringing method.

Conductors shall not be allowed to hang in the stringing blocks for more than 96 hours before being pulled to the specified sag.

Derricks/ scaffoldings or other equivalent methods shall be used to ensure that normal services are not interrupted and any property is not damaged during stringing operations for roads, telecommunication lines, power lines and railway lines. However, shut-down shall be obtained when working at crossings of overhead power lines. The contractor shall make specific request for the same to the owner.

Jointing

When approaching the end of a drum length at least three coils shall be left in place when the stringing operations are stopped. These coils are to be removed carefully, and if another length is required to be run out, a joint shall be made as per the recommendations of the accessories manufacturer.

Conductor splices shall not crack or otherwise be susceptible to damage during stringing operation. The Contractor shall use only such equipment/methods during conductor stringing which ensures complete compliance in this regard.

All the joints of on the HT insulated conductor shall be made through cut point pole in accordance with the recommendations of the manufacturer. Each part of the joint shall be cleaned by wire brush till it is free of rust or dirt, etc. This shall be properly greased with anti-corrosive compound if recommended by the manufacturer, before the final compression is carried out with the compressors.

All the joints or splices shall be made at least 30 meters away from the pole. No joints or splices shall be made in spans crossing over main roads, railway line and Small River spans. Not more than one joint per conductor per span shall be allowed. The compression type fittings shall be of the self centering type or care shall be taken to mark the conductors to indicate when the fitting is centered properly.

In case of ACSR conductors the filler compound should be used during compression. In case AAAC is used each press should over lap 25% of the previous press.

Tensioning and Sagging Operations:

The tensioning and sagging shall be done in accordance with the approved stringing charts or sag tables.

The sag shall be checked in the first and the last section span for sections up to eight spans and in one additional intermediate span for sections with more than eight spans Tensioning and sagging operations shall be carried out in calm weather when rapid changes in temperature are not likely to occur.

Clipping In

Clipping of the conductors into position shall be done in accordance with the manufacturer's recommendations.

Jumpers at section and angle towers shall be formed to parabolic shape to ensure maximum clearance requirements. Pilot pin insulator shall be used, if found necessary, to restrict jumper swing & to ensure proper clearance to design values.

Fasteners in all fittings and accessories shall be secured in position. The security clip shall be properly opened and sprung into position.

Fixing of Conductors and Earth wire Accessories

Conductor and earth wire accessories supplied by the Contractor shall be installed by the Contractor as per the design requirements and manufacturer's instructions. While installing the conductor and earth wire accessories, proper care shall be taken to ensure that the surfaces are clean and smooth and that no damage occurs to any part of the accessories or of the conductors.

Replacement:

If any replacements are to be effected after stringing and tensioning or during maintenance e.g. replacement of cross arms, the conductor shall be suitably tied to the pole at tension points or transferred to suitable roller pulleys at suspension points.

XI. Stringing of Aerial Bunched Cable (ABC)

Fixing of Suspension & Tension/ Dead end fittings to the Poles.

The suspension clamp is to be hung on eye hook/ suspension hook, which is fixed to the pole at a minimum distance of 0.15 mt. from top end of the pole. The messenger wire of bunched cable resting on a pulley is separated from the cable by separating wedges and inserted in the conductor groove of the suspension clamp.

The bolt is tightened to a torque of 20 N after which the pulley and wedges are to be removed. The cable is tied to the messenger wire with nylon tie on both sides of clamps. Pole clamps 50 x 8 mm flat shall be used. Eye hook of 20mm dia MS rod to be used as per the drawing. The pole clamp shall be made to suite the pole width. This shall be installed as per Fig. No. 2 (a) of REC Construction Standard. All ferrous items shall be hot dip galvanized with zinc coating of 610gms / m^2.

Fittings & Accessories

The following hardware fittings and accessories shall be used to install, erect & join the aerial bunched cable.

a) Suspension Clamp with Eye-Hook – The Contractor shall install the suspension clamp with eye hook. This hook shall be used to attach the AB cable on the pole by means of a dead end clamp in terminal poles and for attaching a suspension clamp suitable for holding AB cables of size 35mm^2 to 95mm^2 in straight lines and angle up to 90 Deg.-

b) Suspension fittings & the corresponding eye hook shall be as per REC Construction Standard No. e – 34. The eye hooks shall be made from minimum 20mm dia MS rods with eye on one end and the other end being suitably flattened with two holes for M16 bolt & nut to fix with the back clamps made from minimum 50x8mm flats as per drawing. The eye hook, back clamp and bolts & nuts are to be hot dip galvanized.

c) Dead End fittings shall be bolted type as per REC Construction Standard No. E-35 & the corresponding eye hook shall be as specified above. The dead clamps are to be anchored with the pole with similar arrangement of eye hook & back clamp. In this case, the back

clamp shall have two nos. of holes on both sides for M16 bolts. One side of the clamp shall be used for holding the eye hook with dead end clamp and the other side shall be used for anchoring the Stay.

d) Nylon Tie- The contractor shall supply nylon ties. These ties shall be used for tying the conductors with the messenger wire to prevent the phase conductors from chatting against suspension clamp. The nylon tie is made of weather resistant black nylon.

e) Connectors- The contractor shall supply connector. These shall be used as non-tension aluminum to aluminum connections for conductor joints.

f) Plastic Covers for Connectors- The contractor shall install Plastic Covers for Connectors. These covers shall be used with aluminum/aluminum connectors to protect connectors against corrosion caused by climatic conditions.

Installation of Cable

The contractor shall be fully responsible for all activities related to installation of AB cable. His responsibilities consists of handling, pulling, stringing & jointing of the cable and effecting service connection to consumers as per direction of the Engineer-in-charge. The total no. of consumers per KM in urban area and rural area is approximately 200 & 50 nos. respectively. But payment shall be made as per actual use of piercing connectors to effect service connection to the consumers.

Handling of AB Cable

The contractor shall observe following precautions while handling the AB Cable:

The cable drums must be stored and transported in an upright position.

While loading/unloading, the drums shall not be thrown from transport vehicles.

Cable contact with sharp articles shall be avoided.

In order to prevent damage to the insulation, the cable shall not be dragged on the ground. Pulleys shall be used for this purpose.

In order to prevent strands from spreading, always cut the cable with a cutter.

Use nylon ties or electrical tape to prevent the cable from spreading away from messenger wire after the cutting. Staple the end of the cable on to the drum in order to prevent loosening.

Do not remove the protective boards from the cable drum before the cable is pulled off the drum.

While moving the drum by rolling it on ground, always roll the drum in the direction indicated by the arrow on the flange. When pulling the cable, the spinning direction must be opposite.

Do not store the drums on wet soil, sandy or humid places.

Store the accessories in good order for quick easy and correct handling.

Pulling the Cable

The principle is to pull the cable under mechanical tension so that contact with the ground or any other obstacles is avoided. The cable drum should be perfectly in alignment with line to be strung and fixed about 15-20 mts.

From the holding the first pulley. Open the cover of the drum to check and ensure that the insulation is not damaged.

The pulling which is sent up upto the cable drum is about 15-20 mts from the pole holding to the last pulley. The pulleys are directly hung to such hook on the poles. The pulley tandem is to be used on angle poles if the line is deviating more than 60º Pull the guiding rope through all the pulleys.

Normal care shall be taken to assume a smooth passage of whole cable through the pulleys, especially in the first pole and on angle poles. One worker should act s brakeman at the cable drum so that the cable is not loosened during the pulling. One worker should follow the cable going through the pulleys and stop the pulling if anything goes wrong.

Stringing Operations.

The contractor shall follow one of the following methods for stringing.

1. Sag Method

Fix a dead end clamp on the neutral messenger wire at the pole. The messenger shall be bent behind the clamp to ensure sufficient friction between the messenger and the clamp in the initial stays during stringing.

Bind the conductor together beside the dead end clamp using a nylon tie.

Hand the clamp on the hook at the end pole Rewind simultaneously the slack cable length on the cable drum.

Attach the ‘come along’ on the neutral messenger wire at the first pole of the line.

Tighten the cable by the shackle or the winch when required sag is obtained.

Hand the dead end clamp on the hook and install it on the neutral messenger.

Remove the come along

Bind the conductors together on the messenger wire using a nylon tie

Check the length of the cable needed and cut it at an appropriate point.

2. Dynamometer Methods

Start the operation as above up to the stage.

Install the dynamo meter on the come-along

Tighten the cable at the required value by reading the Dynamo meter

Finish the stringing as in the sag method operation.

Jointing of Cables

Jointing of cable shall be in accordance with clause 12.3.3 of IS 1255:1993 and manufacturers special instructions given hereunder. This joining is to be done by skilled personnel.

Cable Damage and Repairs: If the cable is damaged for whatever reasons, it shall be brought to the notice of the engineer and shall not be used without his approval.

No joint or splice shall be made in spans crossings over main roads, small rivers or in tension spans.

Not more than on joint in the cable shall be allowed in one span.

The stringing rate include rates for paving, stringing, clamping, jointing, tensioning and fitting of all necessary accessories.

Insulated piercing connectors suitable for AB cable size from 16mm^2 to 95mm^2 and service connection cable of size 2.5mm^2 to 35mm^2 shall be used for effecting service connections to the consumers.

Final Checking, Testing and Commissioning

After stringing have been done as approved by the engineer, to ensure that everything is complete in all respects, the works shall be thoroughly inspected keeping in view the following main points.

All the bolts and nuts should be of hot dip galvanized materials as per relevant IS.

The stringing of the cable has been done as per the approved sag and desired clearances are achieved.

No damage, minor or major to the cable, messenger wire and accessories

The contractor shall submit a report to the above effect to the Engineer in Charge, who shall inspect and verify the correctness of the report. In case it is noticed that some or any of the above is not fulfilled, the engineer shall get such items rectified by the contractor no extra cost to the purchaser.

After final checking, the line shall be tested for insulation resistance in accordance with IS 1255:1983.

All arrangements for such testing or any other test desired by the Engineer-in-charge shall be done by the contractor and necessary labour, transport and equipment shall be provided by him. Any defect found out as a result of such tests shall be rectified by the contractor, forthwith at no extra cost to the purchaser.

In addition to the above, the contractor shall be responsible for testing and ensuring that the total and relative sags of the cable as within the specified tolerance. Such tests shall be carried out at selected points along the route as required by the Engineer-in-charge and the contractor shall provide all necessary equipment and labour to enable the tests to be carried out. After satisfactory test on the line and approval by the Engineer in Charge, the line shall

be energized at full operating voltage before handling over. The cable shall be megger tested before and after jointing. The AB cable shall be tested for.

i) Continuity of messenger wire and conductors

ii) Absence of cross phasing

iii) Insulation resistance to earth

iv) Insulation resistance between conductors

v) DC Resistance

vi) Capacitance

As per IS 1255:1983 of the latest issue and as per manufacturers instructions.

Sufficient backfilled earth covers each foundation pit and is adequately compacted.

All poles are used strictly according to final approved drawing and are free of any defect or damage whatsoever.

The stringing of the conductors and earth wire has been done as per the approved sag and tension charts and desired clearances as clearly available.

All conductor and messenger wire accessories are properly installed.

All other requirements for completion of works such as fixing of danger plate and anti-climbing device have been fulfilled.

The insulation of the line as a whole is tested by the Contractor through provision of his own equipment, labour etc., to the satisfaction of the owner. Proper earthing of the poles.

HT/LT/Road Crossing Guarding

The contractor shall provide & install protective guarding as per REC construction standard for both 33 and 11 kV line, The guarding shall be provided at all the crossing i.e. road, telecommunication & power lines, railway line, nallaha etc.

The contractor is required to follow local statutory regulations stipulated in Electricity (Supply) Act 1948, Indian Electricity Rules 1956 as amended and other local rules and regulations referred in these specifications.

Reference Standards

The codes and/or standards referred to in the specifications shall govern, in all cases wherever such references are made. In case of a conflict between such codes and/or standards and the specifications, latter shall govern. Such codes and/or standards, referred to shall mean the latest revisions, amendments/changes adopted and published by the relevant agencies unless otherwise indicated. Other internationally accepted standards which ensure equal or better performance than those specified shall also be accepted, subject to prior approval by the owner. In case no reference is given for any item in these specifications, latest REC specification & Construction Standards shall be referred to.

2.0.7 WAY-LEAVE AND TREE CUTTING

Way-leave permission which may be required by the contractor shall be arranged at his cost. While submitting final-survey report for approval, proposals for way-leave right of way shall be submitted by the contractor. Employer may extend help to get the permission within a reasonable time as mutually agreed upon for which due notice shall be given by the contractor in such a way so that obtaining permission from appropriate authority do not hinder the continued and smooth progress of the work.

The employer shall not be held responsible for any claim on account of damage done by the contractor or his personnel to trees, crops and other properties.

The contractor shall take necessary precaution to avoid damage to any ripe and partially grown crops and in the case of unavoidable damage, the employer shall be informed and necessary compensation shall be paid by the contractor.

All the documents required for application to the statutory authorities must be prepared by the contractor & submitted to the employer for submission of the application towards approval of Railway Crossing etc. However, the responsibilities lie with the contractor to get the clearance.

Trimming of tree branches or cutting of a few trees en-route during survey is within the scope of survey to be done by the contractor. Contractor shall arrange for necessary way-leave and compensation in this regard. During erection of the line, compensation for tree cutting, damage caused to crops, actual cutting and falling of the trees including way-leave permission for such route clearance shall be arranged by the contractor at his cost. The contractor will identify the number of trees and detail of obstructions to be removed for erection of the line and intimate the employer well in advance in case of any help. Other related works like construction of temporary approach roads, etc. as required, shall be done by the contractor and the same will lie within the scope of contractor's work and such cost shall be considered to be included in the rates quoted by him.

5.0 CONSTRUCTION OF FOUNDATION FOR JOIST POLES AND PSC POLES

5.0.1 ERECTION OF POLE, CONCRETING OF POLES AND COMPACTION OF SOIL

Drawing for the excavation of pits, Foundation of both wet and Black cotton soil is enclosed which are to be adopted. If better design with less volume approved or tested by any other distribution agencies will also be acceptable.

5.0.2 Following arrangement shall be adopted for proper erection of poles wherever necessary and properly compacting of the soil around the base / foot of the poles, under this package.

(a) Excavation has to done as per the drawing to the required depth and size. After final excavation the pit should be dressed properly so that uneven portion and loose soil should be removed before concreting (**M-7.5**) **of size 5ftx2ftx2ft** . The base footing of the pole concreting (**M-15) of 4inch x2ft x2ft** has to be done by proper alignment and verticality.

(b) The verticality and leveling of pole/structure should be done by the help of plumbob or with theodolite and leveling instrument.

5.0.3 CEMENT CONCRETE (PLAIN OR REINFORCED), STUB SETTING GROUNDING AND BACK FILLING etc.

A) Materials

All materials whether to be consumed in the work or used temporarily shall conform to relevant IS specification, unless stated otherwise, and shall be of the best approved quality.

B) Cement

Cement to be used in the work under the contract shall generally conform to IS:269/455-1989. Cement bags shall be stored by the contractor in a water tight well ventilated store sheds on raised wooden platform (raised at least 150 mm above ground level) in such a manner as to prevent deterioration due to moisture or intrusion of foreign matter. Cements to be used within three months from the date of manufacture. Sub-standard or partly set cement shall not be used and shall be removed from the site by the contractor at his cost .

C) Coarse Aggregates i.e Stone chips or stone ballast. For M15 concrete (mix 1:2:4) the aggregate will be in the ranges from 12mm to 20mm.size and for M7.5 concrete (mix 1:4:8) these will be from 25mm to 40mm size.

D) **Pole erection**

1. **After proper alignment**, checking of verticality and leveling, the pole or structure should be properly tied before placing of base concrete of required height. Again the verticality and leveling should be checked.
2. **The RCC pedestal concrete** (M-15) is to be done by providing good quality of shutters, so that there will no leakage of cement slurry during concreting. The cooping height should be **450** mm/750 mm above the existing ground level in urban area and in cultivated lands respectively. The top portion of the cooping should be made tapered.
3. **Above** the cooping 450 mm of pole or structure should be painted with double layer of Black Bituminus paints.
4. **All the bolted joints** should be tightened properly by providing suitable size GI Bolt Nuts and Spring washers. After completion of erection works all the bolts should be spot welded in order to avoid theft of members.
5. **The back filling** of locations should be done by using the excavated soil only in layers (each layer should not be more than 500 mm) by putting water and ramming by using wooden

rammers. In no case stone of size more than 75mm used for back filling. Back-filling has to be done 75mm above ground level or as specified

6. **Curing of concrete** should be done for 28 day continuously. Curing should not be done within 24 Hours of concreting.

7. **All the excess** excavated materials and other unused materials from the concreting site should be disposed of to a suitable site by the contractor.

a) Mixer (Running time-2 min.)

b) **In case of** hand mixing, 10% extra cement has to be provided. Hand mixing should be done on GI sheet platform only.

c) **Poking rod** may be used for compacting in locations at PSC poles only

d) **Use of vibrator** for compacting is mandatory.

e) **Clean water** (free from saline and alkaline) should be used for concreting.

f) **Aggregates** (both coarse and fine) used should be free from foreign materials.

g) **Shutters** used should not be removed before 24hrs. of casting.

h) **In case of** black cotton soil borrowed earth (morum soil mixed with sand is preferable) may be used for back filling.

i) **Sufficient qty. of water** should be sprinkled over backfilled earth and chimney kept wet by using wet gunny bags.

5.0.4 **All the persons** working on tower shall wear safety helmet, safety belt and safety shoes, Similarly all the persons working on ground shall wear safety helmet and safety shoes.

5.0.4.1. If there is any LT/HT power line near the vicinity of tower erection, necessary shutdown of the power line shall be obtained in writing from the concerned Agency in order to avoid electrical hazards caused by accidental touching of stay/Guy ropes with power line.

5.0.4.2 Safety precaution Safety shall be given utmost importance during stringing. The following need to be ensured.

5.0.4.3 Safe working conditions shall be provided at the stringing site.

5.0.4.4 Full proof communication through walky- talkie / mobile phones shall be used in order to avoid any damage to workmen or public on ground.

2. TECHNICAL SPECIFICATIONS FOR SINGLE CORE 11 KV XLPE COVERED AAAC CONDUCTORS

1. SCOPE:

This specification covers details of All Aluminium Alloy Stranded Covered Conductors for use on 11kV (MVCC) distribution system. The conductor covered insulation shall mark EN50397-1:2006 by embossing/ printing on it at every meter through out the length. Covered conductor means a longitudinally water blocked conductor (Al Alloy) with triple extruded covering (1st semi conducting layer, 2nd

XLPE insulation layer and final XLPE Outer layer with UV and Tracking resistance properties. The standard EN-50397-2/ relevant IS/ relevant IEC/ other (if any) are applicable for accessories required for erection of covered conductor and EN-50397-3 is applicable for erection of covered conductors.

2. SERVICE CONDITIONS:

The conductor to be supplied against this specifications shall be suitable for satisfactory continuous operation under the following tropical conditions.

a) Maximum ambient temperature (DegreeC)------ 50
b) Minimumtemperatureofairinshade(DegreeC ------ 3.5
c) Relative Humidity(%)------ 10 to 100
d) Maximum Annual Rainfall(mm) ------ 1450
e) Maximum Wind Pressure(kg/sq.m.) ------ 150
f) Maximum altitude above mean sea level(meter) ------ 1000
g) Isoceraunic level (days/year) ------ 50
h) Seismic level (Horizontalacceleration) ------ 0.3g

3. CONDUCTOR SIZES:

a) 7/ 3.57 mm (70 sq.mm)
b) 7/4.25mm (99sq.mm)

4. APPLICABLE STANDARDS:

Unless otherwise stipulated in this specification , the conductor shall conform to the following Indian/International Standards (amended upto date)

SR. NO.	INDIAN/INTERNATIONAL STANDARDS	TITLE
1	IS : 398 (Part IV) / 1994	Specification for aluminium conductors for overhead transmission purpose
2	EN 50397-1:2006	Covered Conductor Specification for voltage 1KV to 33KV.
3	EN 50397-2:2006	Accessories for covered conductors -Tests and acceptance criteria
4	EN 50397-3:2006	Covered conductors for overhead lines and the related accessories for rated voltages above 1 kV a.c. and not exceeding 36 kV a.c.
5	IS : 10418	Reels and drums for bare conductors.

4. PROPERTIES OF CONDUCTOR:

The properties of stranded all aluminium alloy conductors of various sizes shall be as in Table -I.

TABLE-I ALUMINIUM ALLOY STRANDEDCONDUCTOR

Actua l Area	Stranding & wire dia.	Approx. overall dia.	Approx. mass	Calculated resistance at 20 d.c. (max.)	Approx. calculated Breaking Load	Short Circuit for 1 sec	Min. Current Rating
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
mm.sq.	**mm**	**mm**	**Kg/km**	**Ohm/km**	**kN**	**KA**	**Amps**
70	7/3.57	10.71	288	0.468	18.6	7.1	207
99	7/4.25	12.75	386	0.331	25.3	10.0	258

6 (a)PROPERTIES OF WIRES:

The properties of aluminium alloy wires to be used in the construction of the Stranded conductors shall be as per IS 398 part-IV.

6(b) TOLERANCE ON NOMINAL SIZES:

No negative tolerance shall be permitted on the nominal diameter aluminium wire used in the manufacture of AAAC COVERED COVERED. However, positive tolerance in this respect shall be as provided in IS: 398 (Part IV)/1994 (amended upto date).

7. FREEDOM FROM DEFECTS:

The wire shall be smooth and free from all imperfections such as spills, splits, slag inclusion, dia. marks scratches, fittings, blow holes, projections, looseness, overlapping of strands, chipping of aluminium layers etc. and all such other defects which may hamper the mechanical and electrical properties of the conductor. Special care should be taken to keep away dirt, grit etc. during stranding.

8. JOINTS. IN WIRES:
Conductors containing seven wires:-

There shall be no joint in any wire of a stranded conductor containing seven wires , except those made in the base rod or wire before final drawing.

9. STRANDING:-
The wires used in the construction of a stranded conductor shall, before stranding satisfy all the relevant requirements of this standard.

The lay ratio of the different layers shall be within the limits given in he Table-III.

TABLE - III : LAY RATIOS FOR ALUMINIUM ALLOY STRANDED CONDUCTORS

No. of wires in Conductors	6 - wire layer	
	Min.	Max.
7	10	14

- In all constructions, the successive layers shall have opposite directions of lay, the outer most layer being right handed. The wires in each layer shall be evenly and closely stranded.In aluminium alloy stranded conductors having multiple layers of wires, the lay ratio of any layer shall not be greater than the lay ratio of the layer immediately beneath it.

10 FILLING (WATERBLOCKING):

The Stranded Conductor shall be longitudinally water tight by means of a water blocking material incorporated during the extrusion process. The use of grease/water swellable tape / water swellable powder etc is not permitted. The water blocking material shall be stable at maximum operating conductor temperature of 90 Deg. Cent.

The water blocking compound shall be compatible with the conductor material as well as the semi conducting polymer screen layer above it and not adversely affect its electrical or mechanical properties.

11 INSULATION:

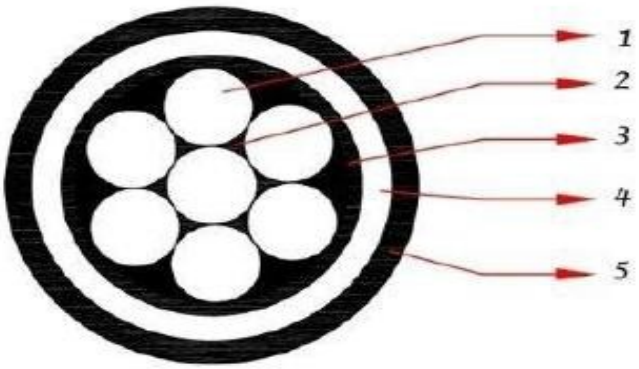
The Insulation should be dual layered with the Inner Layer being XLPE with a nominal thickness of 1.2 mm for Voltages up to 11 KV , and the Outer Layer being a suitable XLPE which is UV Resistant, Non Tracking and Erosion Resistant with a nominal wall thickness of 1.1 mm. The minimum combined Insulation Thickness of both Layers should be 2.3 mm minimum.

The conductor manufacturing and stranding process shall incorporate the Longitudinal water blocking also.

The Semi conducting compound screen, Inner insulation and outer insulation should be extruded in one step i.e. triple extrusion to ensure a good, permanent bond beween the three layers and also with the conductors.

It shall be possible to remove the Semi conducting compound screen, inner & outer insulation layers without damage to the conductor.

Following figure shows the Cross Section of a AAAC COVERED Conductor.



Nos.	Description	Unit	Nominal Thickness		
			11 KV	22 KV	33 KV
1	Aluminium Alloy Wire	Sq.mm	AS PER REQUIREMENT		
2	Extruded Longitudinal Water Blocking Layer	mm	AS REQUIRED TO MAKE WATER BLOCKED ARRANGEMENT		
3	Extruded Semi conductive layer	mm	0.3	0.3	0.4
4	Inner Insulation of XLPE, without carbon black	mm	1.2	1.32	2.43
5	Outer Insulation with UV & Track Resistant XLPE	mm	1.1	1.1	1.2

12.TYPE TEST:

All the following type tests in accordance with EN 50397-1 : 2006 shall be performed on MVCC samples drawn bypurchaser.

Electrical tests

- Conductor resistance
- High voltage test

For CC without conductor screen:

Test voltage (a.c.)	1U
Number of specimen	1
Length of specimen (minimum)	5m
Duration of immersion in water (minimum)	1h
Temperature of water	(20 ± 5) deg C
Test duration	15 min (S) 1 h (T)

For CC with conductor screen or upon agreement between customer and producer:

Test voltage (a.c.)	1U
Number of specimen	1
Length of specimen (minimum)	5m
Duration of immersion in water (minimum)	1h
Temperature of water	(20 ± 5) deg C
Test duration	4 h (S) 48 h (T)

- Spark test on the covering test voltage: ac 0.7U to dc 1 U

Leakage current test voltage : ac 0.7 U

Tracking resistance

Construction and dimensions compliance with the designs requirements

Thickness of the covering

Construction and mechanical properties of the conductor rated tensile strength

Construction and dimension

12.4 Non-electrical tests on the covering

12.4.1 Mechanical Properties

a) before ageing of sample

b) after ageing of sample

12.4.2 Carbon black content

12.3.2 Resistance to UV rays

12.5 Teast of compatibility Ageing of complete product sample

12.6 Thermal properties of the covering

12.6.1 Shrinkage testDistance L between marks (200±5) mm

12.6.2 Hot-set test

12.6.3 Pressure test at high temperature (for PE cable)

12.7 Further tests on the covering

12.7.1 Water absorption

12.7.2 Shore D hardness

12.8 Test of the longitudinal water tightness

12.8.1 With heat cycle

Number of specimen	1
Length of specimen	3m
Test duration	24 h
Bending radius	20 D

12.8.2 Without heat cycle

Number of specimen	1
Length of specimen	1m
Test duration	1h

12.9 Marking

12.9.1 Content, legibility

12.9.2 Durability

12.10 Slipage test

The details of facility available in the manufacturer's works in this connection should be given in the bid.

14 ACCEPTANCE TESTS:

All Acceptance tests as per EN 50397-1 : 2006 as amended upto date including the optional And should offered Anti tracking testing on selective samples in manufacturer's work during acceptance test.

15 TESTING FACILITIES AND DETAILS OF EQUIPMENTS :

The supplier / tenderer shall clearly state as to what testing facilities are available in the works of manufacturer and whether the facilities are adequate to carry out type, routine and acceptance tests And Anti Tracking as mentioned in EN 50397-1 :

2006 on the MVCC. The facilities shall be provided by the bidder to purchaser's representative for witnessing the tests in the manufacturer's works. If any test cannot be carried out at manufacturer's works reason should be clearly stated in the tender.

13 END SEALING :-

Heat Shrinkable end caps with sealant shall be used for effectively sealing the end terminals of the covered conductor. The inner diameter range of cap shall be such that it shall tightly fit to the covered conductors to prevent moisture ingress.

13 PACKING AND MARKING :

The conductors shall be wound in reels or drums conforming to the latest versions of IS : 10418 (amended upto date), ' Specification for Drums for cables .

14. PACKING :

The normal length of various conductors shall be as given in the following table:

Conductor Size in sq.mm.	Normal Length in km
70 (7/ 3.57 mm)	1.5
99 (7/ 4.25 mm)	1.0

14.1.2.1 LENGTHS AND VARIATION IN LENGTHS :

The standard length of AAAC COVERED Covered shall be as per mentioned in clause. No 14.1.2 Tolerance of +/- 5%(plus or minus five percent)shall be permitted in this standard length. All the lengths outside these limits of tolerances shall be treated as random length.

Random length shall not be less than 80%(eighty percent) of the standard length specified as above and the total acceptable quantity of such random lengths shall be within 7%(seven percent) quantity of the allotted quantity to each consignee of the respective size of the conductor.

14.1.2.1 IDENTIFICATION MARKS ON COVERED CONDUCTOR:

The following particulars shall be properly legibleembossed/Printingon the coveredconductorattheintervalsofnotexceedingonemeterthroughoutthe

length of thecable. The covered conductor with poor andillegible embossing/ Printing shall be liable for rejection.

a) Manufactures name and/or Tradename.
b) Voltagegrade.
c) Year ofmanufacture.
d) TPCODL.
e) SuccessiveLength.
f) Size ofcable
g) EN 50397-1 :2006

Also The following information be marked on each package :

Manufacturer'sname

a) Trade mark ,ifany
b) Drum or identificationnumber
c) Size of conductor Number and lengths ofconductors
d) Gross mass of thepackage
g) Net mass ofconductor
h) EN 50397-1 :2006.

15. INSPECTION :

All tests and inspection shall be made at the place of manufacturer unless otherwise especially agreed upon by the manufacturer and purchaser at the time of purchase. The manufacturer shall afford the inspector representing the purchaser all reasonable facilities without charges, to satisfy him that the material is being furnished in accordance with this specification.

16. VERIFICATION OF LENGTH OF CONDUCTOR :

i) The Company shall ascertain the length of AAAC COVERED Conductor at supplier's works and at the receiving store centers by measuring the actual length by length measuring machine used for the purpose. The supplier should ensure that length measuring machine is available for measurement of the length by our inspecting officer.

ii) Both ends of the AAAC COVERED Conductor will be sealed by the supplier and seals will be contained in the drum and not exposed out of drum.

iii) The declared length will be measured between manufacturer's seals at both ends of AAAC COVEREDConductor.

iv) The weight of AAAC COVERED Conductor will also be checked for ensuring correctlay and length of the AAAC COVERED Conductor.

v) For the verification of the length of the conductor, 10 %of total lot (in Drums) should be selected at the works. The physical verification of the length of the conductor should be carried out for maximum up to 5 (five) drums. If there are anymore drums left for verification, then weight of each verified drum shouldbecarriedoutandaverageweightmaybecalculated.

Then the weight of each of all the remaining selected drums may be taken and if these weights are matching with the average weight, then that particular lot may be accepted otherwise rejected.

vi) Verification of length of conductor will also be carried out at each stores center for two drums out of each lot. If the average length is found correct or more, the lot will be accepted. If the average length is found to be less than the declared, the percentage of such short length will be applied for reduction for the entire quantitysuppliedinthelotatrespectivestoresforacceptance

vii) In case of dispute, joint inspection alongwith the representative of the supplier shall be carried out after giving 10 (ten) days notice to the supplier to remain present at stores center for the purpose. If the representative fails to attend on stipulated date for joint inspection, the decision of the consignee shall be final andbinding.

17. REJECTION :

i) While measuring the length , the sample piece from each length shall be taken for carrying out the test as per IS: 398 (Part IV) / 1994 (amended upto date) & EN 50397-1 : 2006 . All the values of each sample should not exceed the value as per the relevant specification. In case of deviation , whole lot will be rejected atworks.

ii) Specific resistivity of Aluminium Alloy wire used should not exceed 0.0328 ohm sq.mm./m at 20 degree centigrade as prescribed in IS: 398 (Part IV)/1994 (amended upto date). If the results are at variance , whole lot shall be rejected.

18. EN CERTIFICATION MARK:

The AAAC COVERED Conductor with EN 50397-1 marking only is required by the TPCODL against this tender specification and as such , only those tenderer who

Make covered conductor as per EN 50397-1 for AAAC COVERED Conductor need quote against this invitation of tender.

19. SCHEDULES :

The tenderer shall fill in the following schedules which form part of the tender specification and offer.

6)GTP

Bidder shall confirm by signing with stamp on the GTP

Sl.N	Parameters	Unit	Specified Values for covered Conductor	Offered Values for

o				**covered Conductor**
1	Name of the manufacture			
2	Applicable Standard		EN 50397-1:2006, IS 398-IV/1994	
3	Type of cable		AAAC Covered Conductor	
4	Voltage Grade	KV	11	
5	Nominal Cross-sectional area of conductor	mm2	70 & 99	
6	Conductor			
a	Material		AAAC	
b	Shape		Stranded Circular and Watertight	
c	No / diameter of wire (before stranding)	No/mm	7x3.57 (For 70mm2) 7x4.25 (For 99mm2)	
d	Approx. conductor diameter	mm	10.71 (For 70mm2) 12.75 (For 99mm2)	
e	Max. D.C. Resistance at 20ºC	Ω/Km	0.468 (For 70mm2) 0.331 (For 99mm2)	
f	Restiance Temperature co-efficient	/ ºC	0.004	
g	Minimum Tensile strength of conductor	KN	18.6 (For 70mm2) 25.3 (For 99mm2)	
h	Aluminium Alloy		Al7/ ALMgSi	
7.0	Thickness and dimensions			
7.1	Conductor Screen			
a	Material		Extruded Semi-Conducting Compund	
b	Nominal Thickness	mm	0.3	
7.2	Insulation inner layer			
a	Material		XLPE	
b	Nominal thickness	mm	1.2	
7.3	Insulation outer layer			
a	Material		Track Resistant, UV Resistant and Erosion Resistance	
b	Nominal thickness		1.1	

7.4	Approx. Overal Diameter	mm		
8	Lightening impulse withstand strength of XLPE	KV	100	
9	Maximum continuous operating temperature	ºC	90	
10	Max Load (IEC 287), cond. Temp 80 ºC, air temp. 50 ºC, wind speed 0.5m/s solar radiation 1200W/m2	A	…… (For 70mm2) ……. (For 99mm2)	
11	Max short circuit current, 1 sec	KA	7.1 (For 70mm2) 10 (For 99mm2)	
12	Approx. Weight	Kg/ Km	……. (70mm2) …….. (99 mm2)	
13	Standard Packing length	Km	……. (70mm2) …….. (99 mm2)	
14	Method of water tightness arrangement		Extruted, Longitudinal water blocking layer	
15	Maximum leakage current on surface of the covered conductor	mA	1.0	
16	Type of Curing		Dry Cured	
17	Embossing on Covered conductor		Voltage Grade, Year of manufacture, Name manufacture, Size of cable, TPCODL, Standard EN 50397-1:2006, IS 398-IV/1994	

The cable manufacturer should have **Type Test Certificate of** 11 KV, 99 mm2 & 70 mm2, Single Core, AAAC overhead XLPE Covered Conductor **from CPRI / ERDA only** conducted during **last 5 years**.

3. TECHNICAL SPECIFICATIONS FOR LT AB CABLE

GUARANTEED TECHNICAL PARTICULARS

Sl No.	Description	3X95 + 1X70+1X16mm2	3x50+1x35+ 1x16	3x50+1x35 & 1X50 + 1X35	3x35+1x25 & 1X35 + 1X25
1	Reference ISS / IEC Code followed	IS14255/95, IS 398 Part-IV	IS14255/95, IS 398 Part-IV	IS14255/95, IS 398 Part-IV	IS14255/95, IS 398 Part-IV

2	Embossing on the insulation at one meter interval	As per clause 12.0, Section-III (Technical Specification)			
3	Embossing on each Cable Drum.	As per IS 14255-1995	As per IS 14255-1995	As per IS 14255-1995	As per IS 14255-1995
4	Phase Conductor Material / Insulation type	H2/H4 grade aluminum as per IS 8130/84 / XLPE (Black) as per IS 14255/95	H2/H4 grade aluminum as per IS 8130/84 / XLPE (Black) as per IS 14255/95	H2/H4 grade aluminum as per IS 8130/84 / XLPE (Black) as per IS 14255/95	H2/H4 grade aluminum as per IS 8130/84 / XLPE (Black) as per IS 14255/95
5	Material of Neutral Messanger Conductor.	Aluminum Alloy as per IS 398 Part-IV	Aluminum Alloy as per IS 398 Part-IV	Aluminum Alloy as per IS 398 Part-IV	Aluminum Alloy as per IS 398 Part-IV
6	No. Of Strands / Minimum Average Strand Dia.in mm. (measured after opening the strans of Finished Phase conductor.)	19/2.54	7/3.05	7/3.05	7/2.55
7	Minimum Over all Diameter of Phase conductor in compacted condition. in mm	12.7	9.15	9.15	7.65
8	No. Of Strands / Minimum Average Strand Dia. In mm. (Neutral Catenary.)	7/3.6	7 / 2.54	7/2.54	7/2.14
9	Minimum Over all Diameter of Neutral Catenary in compacted condition. in mm	10.8	7.6	7.6	6.4
10	No. Of Strands / Nominal cross sectional area In No	7/1.75/16mm2	7 / 16	N.A	N.A

	/ mm2. (St. Light Conductor)				
11	Minimum average thickness of insulation of phase Cond. (mm)	1.5	1.5	1.5	1.2
12	Minimum thickness of insulation of Phase Cond. (mm)	1.25	1.25	1.25	0.98
13	Minimum thickness of insulation at any point in street light conductor (mm)	0.98	0.98	0.98	0.98
14	Maximum DC resistance of Phase conductor at 20 ° C ohmn/ KM	0.32	0.641	0.641	0.868
15	Maximum DC resistance of street light conductor Ω / Km	1.91	1.91	N.A	N.A
16	Maximum DC resistance of neutral cond. Ω / Km	0.492	0.986	0.986	1.38
17	Minimum Breaking Load for messanger Conductor	19.7	9.8	9.8	7
18	Volume Resistivity of insulation at 27 deg C.	$1X10^{13}$Ω - cm min.	$1X10^{13}$Ω - cm min.	$1X10^{13}$Ω - cm min.	$1X10^{13}$Ω - cm min.
19	Volume Resistivity of insulation at 70 deg C.	$1X10^{11}$Ω - cm min.	$1X10^{11}$Ω - cm min.	$1X10^{11}$Ω - cm min.	$1X10^{11}$Ω - cm min.
20	Cable drum length	250 / 500 /1000m	250 / 500 /1000m	250 / 500 /1000m	250 / 500 /1000m

N.B :

1) For values not available in relevant ISS, values indicated in our GTP / Tender Specification shall be valid.
2) In case of discrepancies between values of ISS & GTP, better will revail.

3) Average diameters of strands of each cable shall be ascertained by physical measurement after opening the strands of each phase of a finished AB Cable offered for inspection.

8. PROCEDURE TO BE ADOPTED DURING PRE-DESPATCH INSPECTION :

All the materials shall be inspected & tested by our authorized inspectors at your factory premises before dispatch of materials. The Pre-despatch inspection shall be carried out in two stages as detailed below.

a) **Stage –I Inspection:**

Initially packing list of materials offered for inspection, Raw materials invoices for materials used to manufacture offered AB Cables, Test Reports of such Raw Materials, up-to date calibration certificate of measuring instruments to be used for testing of offered materials & B.I.S Licence to use ISI marks for the offered product for inspection shall be verified by the inspecting officer, before proceeding for inspection.

After verification of above documents, each drum carrying AB Cables, presented for inspection should be physically verified to comply with the provisions of tender/ appoved GTP.

After being satisfied on verification of above documents & physical verification of drums, random samples from each size of cables shall be collected for testing as per ISS, in presence of your representative and our authorized inspectors for testing. The samples shall be first physically verified for dimensional and embossing requirements mentioned at sl. 5,6,7,8,9,10,11,12 & 18 of the Guaranteed Technical Particulars (GTP). Specific weight in Kg / Km of the offered cable shall be ascertained by physical measurement of weight of the sample, after the sample passes above physical & dimensional requirements.

Further rewinding tests shall be conducted on other sample drums to verify the gross weight of the drum, total length of the cable in side the drum as declared in the packing slip, embossing details through out the length of the cable, net weight of the cable in side the drum, specific weight of the offered cable in Kg / Km. etc. The specific weight of the cable thus ascertained during re-winding test shall not be less than the specific weight ascertained earlier during physical verification of samples as above.

The materials found unsuitable during this stage-I inspection shall be rejected and the lot shall not be considered for further testing in Stage-II .

b) **Stage-II Inspection :**

Only after the samples pass the stage-I inspection indicated above, the offered lot shall only be tested for Acceptance Tests. Such Acceptance Tests shall be carried out as per IS 14255-1995.

After the samples pass both stage-I & stage-II Inspections, the inspection report of the authorized inspector enclosing documents such as (1)copies of verified documents such as raw-material invoices, (2) raw material test reports, (3)valid B.I.S License for the product offered for inspection, (4)calibration report of the measuring instruments used during testing etc., (5) the physical verification reports & (6) rewinding statements for re-winding tests conducted during stage –I inspection, (7) the test results for acceptance tests conducted

during stage-II inspection (8) results of the routine tests conducted by the manufacturer for the offered lot etc. & any other report felt necessary by the authorized inspectors for acceptance of the lot of material offered for inspection, shall be submitted to the undersigned.

After receipt of successful inspection reports as above, the dispatch instruction shall be issued by the undersigned.

The materials shall be dispatched by the supplier to the consignee indicated in the dispatch instruction. The consignment of the dispatched materials shall be accepted at the designated TPCODL Stores after due physical verification observing departmental formalities.

However in case of any future discrepancy regarding the quality of materials delivered during guarantee period, the owner reserves the right to test the samples of the cables supplied, at CPRI or any Govt. testing Laboratory. In such case the results of the testing laboratory shall be binding to both the parties. The charges of testing at Govt. testing laboratory shall be borne by manufacture/ contractor.

9. **(A) INSULATION EMBOSSING:** Each individual conductor comprising a bundle shall have the range of non-erasable distinct embossing listed below legibly printed on the insulation surface at one meter intervals. The embossing should be very clear & easily visible to naked eye.

- ISI Mark, IS 14255-95, Manufacturer's B.I.S Licence No. legibly embossed on the insulation.
- Name of the Purchaser.
- W.O No. & Date.
- Manufacturer's trademark identification.
- Year of manufacture: last two digits are sufficient:
- Designation of conductor type
- Size: for example "3x50"
- Shape of conductor.
- Rated voltage class : 0.65/1.1KV .
- Back up conductor identification: conductors with one, two and three projections shall be marked R, Y and B respectively. The conductor with no projection shall be marked N and
- The height of the printed lettering shall be not less than 20% of the overall diameter of the conductor

(B) PACKING AND SHIPPING:

The cable shall be wound on strong drums or reels capable of withstanding all normal transportation and handing.

Each length of cable shall be durably sealed before shipment to prevent ingress of moisture. The drums reels or coils shall be lagged or covered with suitable material to provide physical protection for the cable during transit or during storage and handling operations.

In the case of steel drums adequate precautions shall be taken to prevent damage being caused by direct contact between the cable sheath and the steel. These precautions hall be subject to the approval of the Purchaser.

If wooden drums are used then the wood shall be treated to prevent deterioration from attack by termites and fungi.

Each drum or reel shall carry or be marked with following information:

- Individual serial name
- Standard ISI AMrks, 14255-95, Manufacturer's BIS License No.
- Name of the Purchaser : TPCODL / Elephant Work
- Employer's name
- Destination
- Work Order No. & Date
- Manufacturer's name
- Year of manufacture
- Cable size and type
- Length of conductor (meters)
- Net and Gross mass of conductor (Kg)
- All necessary slinging and stacking instructions
- Destination
- Contractor's name
- Name and address of contractor's agent in Orissa
- Country of origin

The direction of rolling as indicated by an arrow shall be marked on a flange.

10. DOCUMENTS TO BE FURNISHED BY THE AUTHORISED INSPECTING OFFICER / ELECTRICAL INSPECTOR/ THIRD PART AGENCY AFTER SUCCESSFUL INSPECTION :

Following documents are to be submitted by the Authorised Inspecting Officer (s) / Third Party Agency engaged by the Purchaser for inspection of Materials, to the undersigned for approval / acceptance.

i) Verified copies of Packng slips of the drums of AB Cables offered for inspection.

ii) Physical Verification reports for Cable Drums as per clause 9(B) above.

iii) Verified copy of the valid B.I.S license for the offered AB Cables.

iv) Verified copies Raw materials invoices , for the raw materials used for production of offered AB Cable.

v) Duly signed Physical Verification Reports (For Sample Drums) for measured dimensions as specified at sl. 5,6,7,8,9,10, 11, 12 of the GTP of this specification, along with measured specific weight of offered LT XLPE AB Cable in Kg / Kms. & embossing details observed on the insulation of verified samples.

vi) Rewinding Reports (For Sample Drums) indicating , (a) measured length of the AB Cable contained in the drum, (b) measured Gross weight, (c)) Net weight of AB Cable contained inside the drum, (d) ascertained specific weight of the AB Cable, (e) Embossing Details on the insulations (As per Clause-9A above.), etc.

vii) Duly signed copies of the Test Reports for Acceptance Tests conducted at stage –II of Pre-Despatch inspection, for randomly selected Drums as per relevant ISS after the lot passes the stage-I inspection as provided under clause 8 (a) above.

viii) Verified Copies of routine Type Test Report conducted by the manufacturer for the lot of AB Cable offered for inspection.

ix) Verified copies of the valid calibration certificates of the instruments used, for measurement & testing of above materials.

x) Any other document, felt necessary by the owner or it's Authorised Inspecting Officer / Electrical Inspector/ Third Party Agency engaged by the Purchaser for above Pre-desptch inspection.

4. TECHNICAL SPECIFICATIONS PSC Pole (9 Mtr x 300 Kg)

I. Applicable Standard :

The Poles shall comply with latest standards as under:

REC Specification No. 15/1979, REC Specification No. 24/1983, IS 1678, IS 2905, IS 7321.

II. Materials

Cement

Cement to be used in the manufacture of pre-stressed concrete poles shall be ordinary for rapid hardening Portland cement confirming to IS: 269-1976 (Specification for ordinary and low heat Portland cement) or IS: 8041 E-1978 (Specification for rapid hardening Portland cement).

Aggregates

Aggregates to be used for the manufacture of pre-stressed concrete poles shall confirm to IS: 383 (Specification for coarse and fine aggregates from natural sources for concrete) .The nominal maximum sizes of aggregates shall in no case exceed 12 mm.

Water

Water should be free from chlorides, sulphates, other salts and organic matter. Potable water will be generally suitable.

Admixture

Admixture should not contain Calcium Chloride or other chlorides and salts which are likely to promote corrosion of pre-stressing steel. The admixture shall conform to IS: 9103.

Pres-Stressing Steel

Pre-stressing steel wires including those used as un tensioned wires should conform to IS:1785 (Part-I) (Specification for plain hard-drawn steel wire for pre-stressed concrete, Part-I cold drawn stress relieved wire).IS:1785 (Part-II)(Specification for plain hard-drawn steel wire) or IS:6003 (Specification for indented wire for pre-stressed concrete).The type design given in the annexure are for plain wires of 4 mm diameter with a guaranteed ultimate strength of 160 kg/mm². All pre-stressing steel shall be free from splits, harmful scratches, surface flaw, rough, aged and imperfect edges and other defects likely to impair its use in pre-stressed concrete.

Concrete Mix

Concrete mix shall be designed to the requirements laid down for controlled concrete (also called design mix concrete) in IS: 1343-1980 (Code of practice for pre-stressed concrete) and IS: 456 – 1978 (Code of practice for plain and reinforced concrete) subject to the following special conditions:

Minimum works cube strength at 28 days should be at least 420 Kg/cm².

The concrete strength at transfer should be at least 210 Kg/cm².

The mix should contain at least 380 Kg of cement per cubic meter of concrete.

The mix should contain as low water content as is consistent with adequate workability. It becomes necessary to add water to increase the workability the cement content also should be raised in such a way that the original value of water cement ratio is maintained.

III. Design Requirements

The poles shall be designed for the following requirements:

The poles shall be planted directly in the ground with a planting depth as per IS: 1678. Wherever, planting depth is required to be increased beyond the specified limits or alternative arrangements are required to be made on account of ground conditions e.g. water logging etc., the same shall be in the scope of the bidder at no extra cost to owner. The bidder shall furnish necessary design calculations/details of alternative arrangements in this regard.

The working load on the poles should correspond to those that are likely to come on the pole during their service life.

The factor of safety for all poles 9.0Mts. Shall not be less than 2.0 and for 8.0 M poles, the factor of safety shall not be less than 2.5.

The average permanent load shall be 40% of the working load.

The F.O.S. against first load shall be 1.0.

At average permanent load, permissible tensile stress in concrete shall be 30 kg/cm².

At the design value of first crack load, the modulus of rupture shall not exceed 53.0kg/cm² for M-40.

The ultimate moment capacity in the longitudinal direction should be at least one fourth of that in the transverse direction.

The maximum compressive stress in concrete at the time of transfer of pre-stress should not exceed 0.8 times the cube strength.

The concrete strength at transfer shall not be less than half, the 28 days strength ensured in the design, i.e. 420x0.5=210kg/cm². For model check calculations on the design of poles, referred to in the annexure, a reference may be made to the REC "Manual on Manufacturing of solid PCC poles, Part-I-Design Aspects".

IV. Dimensions and Reinforcements

The cross-sectional dimensions and the details of pre-stressing wires should conform to the particulars given in the enclosed drawing. The provisions of holes for fixing cross-arms and other fixtures should conform to the REC specification No.15/1979.

All pre-stressing wires and reinforcements shall be accurately fixed as shown in drawings and maintained in position during manufacture. The un-tensioned reinforcement as indicated in the drawings should be held in position by the use of stirrups which should go round all the wires.

All wires shall be accurately stretched with uniform pre-stressed in each wire. Each wire or group of wires shall be anchored positively during casing. Care should be taken to see that the anchorages do not yield before the concrete attains the necessary strength.

V. Cover

The cover of concrete measured from the outside of pre-stressing tendon shall be normally 20 mm.

VI. Welding and Lapping of Steel

The high tensile steel wire shall be continuous over the entire length of the tendon. Welding shall not be allowed in any case. However, joining or coupling may be permitted provided the strength of the joint or coupling is not less than the strength of each individual wire.

VII. Compacting

Concrete shall be compacted by spinning, vibrating, shocking or other suitable mechanical means. Hand compacting shall not be permitted.

VIII. Curing

The concrete shall be covered with a layer of sacking, canvass, Hessian or similar absorbent material and kept constantly wet up to the time when the strength of concrete is at least equal to the minimum strength of concrete at transfer of pre-stress. Thereafter, the pole may be removed from the mould and watered at intervals to prevent surface cracking of the unit the interval should depend on the atmospheric humidity and temperature. The pre-stressing wires shall be de-tensioned only after the concrete has attained the specified strength at

transfer (i.e. 200 or 210 kg/cm² as applicable).The cubes cast for the purpose of determining the strength at transfer should be coursed, a sear as possible, under condition similar to those under which the poles are cured. The transfer stage shall be determined based on the daily tests carried out on concrete cubes till the specified strength indicated above is reached. Thereafter the test on concrete shall be carried out as detailed in IS: 1343(code of practice for pre-stressed concrete). The manufacture shall supply, when required by the

owner or his representative, result of compressive test conducted in accordance with IS: 456 (Code of practice for plain and reinforced concrete) on concrete cubes made from the concrete used for the poles. If the manufacture so desired, the manufacture shall supply cubes for test purpose and such cubes shall be tested in accordance with IS: 456 (Code of practice for plain and reinforced concrete).

IX. Lifting Eye-Hooks or Holes

Separate eye-hooks or hoes shall be provided for handling the transport, one each at a distance of 0.15 times the overall length, from either end of the pole. Eye-hooks, if provided, should be properly anchored and should be on the face that has the shorter dimension of the cross-section. Holes, if provided for lifting purpose, should be perpendicular to the broad face of the pole.

X. Holes for Cross Arms etc

Sufficient number of holes shall be provided in the poles for attachment of cross arms and other equipments.

XI. Stacking & Transportation

Stacking should be done in such a manner that the broad side of the pole is vertical. Each tier in the stack should be supported on timber sleeper located as 0.15 times the overall

length, measured from the end. The timber supported in the stack should be aligned in vertical line.

XII. Earthing

(a) Earthing shall be provided by having length of 6 SWG GI wire embedded in Concrete during manufacture and the ends of the wires left projecting from the pole to a length of 100mm at 250 mm from top and 1000 mm below ground level.

(b) Earth wire shall not be allowed to come in contract with the pre-stressing wires.

B. PSC Pole (9 Mtr x 300 Kg)

GUARANTEED TECHNICAL PARTICULARS

Sl No.	Description	Unit	9 Mtr X 300 Kg
1	Type of pole		**PSC**
2	Factor of Safety		**2.5**
3	Overall Length of Pole Meters	meters	**9**
4	Working Load Kg	Kg	**300**
5	**Overall Dimensions**		

A	Bottom Depth	mm	
B	Top Depth		
C	Breadth		
6	Reinforcement Detail:		
7	Diameter of prestressing wire	mm	**4**
8	No. of Tensioned wires		**20**
9	No. of Untensioned wire		**0**
10	Length of each untensioned wire		
11	**Concrete Detail**		
A	Cement Type		**OPC**
B	Grade		**43**
C	Type		**M-420**
D	Quantity	Cubic meter/pole	
E	Standard confirming to:		
12	**Steel Quality**	Kg/Pole	
A	Ultimate Tensile Strength (UTS)	Kg/Cm^2	**17500**
B	Weight		
13	**IS:**		
A	Pole		**IS 1678/2000**
B	Cement		**IS 8041**
C	Aggreagates		**IS 383 /1970**
D	Pre-Strassing Steel		**IS 6003/1983**
E	Concrete Mix		**IS 456/2000**

5. 150MM x150MM GI RS JOIST POLE

1. **Standards** :

   The GI RS JOISTS shall comply with the requirements of latest issue of IS – 2062 2006 , Grade – A , IS : 808 / 1989 / 2001 , IS : 1608 / 1995 & IS : 12777 / 1989 & their latest amendments if any.

2. **Clamatic Conditions** :

   The climatic conditions at site under which the store shall operate satisfactory, are as follows

   Maximum temperature of air in shade 45 c

   Maximum temperature of air in shade 0 c

   Maximum temperature of air in shade 50 c

Maximum rain fall per annum	2000mm
Maximum temperature of air in shade	45 c
Maximum ambient temperature	45 c
Maximum humidity	100%
Av. No. of thunder storm days per annum	70%
Av. No. of dust storm per annum	20
Av. Rain fall per annum	150mm

3. Rolled Steel Joists

a. The Rolled Steel joist (RSJ) support structures shall be fabricated from mild steel, grade A and in lengths dictated by design parameters . The joists, may include, but shall not be limited to the following sizes :

4. Dimensions and Properties

Sl No.	**RSJ DESIGNATION**	**150 x 150 mm ISHB**
1	Length of Joist in Mtr with +100mm/- 0% Tolerance	12 mtr & 13mtr
2	Weight in kg/m with ±2.5% Tolerance	34.6 Kg./ Mtr.
3	Sectional Area (cm2)	44
4	Depth(D) of Section (mm) with +3.0mm/ -2.0mm Tolerance as per IS 1852-1985	150
5	Width(B) of Flange(mm) ±4.0mm Tolerance for 150 x 150 mm ISHB IS 1852-1985	150
6	Thickness of Flange (Tf) (mm) with ±1.5 mm Tolerance	9
7	Thickness of Web(Tw) (mm) with ±1.0 mm Tolerance	11.8
8	Corner Radius of fillet or root (R1) (mm)	8
9	Corner Radius of Toe (R2) (mm)	4
10	Moment of Inertia	
	Ixx (cm4)	1635.6
	Iyy (cm4)	494.9
11	Radius of Gyration (cm)	
	Rxx	6.09
	Ryy	3.35
12	Modulus of Section Zxx(cm3)	
	Zyy(cm3)	218
	Zxx(cm3)	63.2
13	Flange Slope( ) in Degree	94
14	Tolerance in Dimension	As per IS:1852

5. MECHANICAL PROPERTIES:

Tensile Test :	Requirement as per IS:2062/ 1999 Grade-A
Yeild Stress(MPa)	Min 250
Tensile Strength(MPa)	Min 410
Lo=(5.65 So)Elongation%	Min 23
Bend Test	Shall not Crack

6. CHEMICAL PROPERTIES:

Chemical Composition	Requirement as IS:2062/ per 1999 Grade-A	Permissible variation over Specified
Grade	A	-

Chemical Name	Fe-410W A	-
Carbon(%Max.)	0.23	0.02
Manganese(%Max.)	1.5	0.05
Sulphur(%Max.)	0.050	0.005
Phosphorous(%Max.)	0.050	0.005
Silicon(%Max.)	0.40	0.03
Carbon Equivalent(%Max.)	0.42	-
Deoxidation Mode	Semi-killed or killed	-
Supply condition	As rolled	-

7. However, In case of any discrepancy between the above data & the relevant ISS, the values indicated in the IS shall prevail.

8. The Acceptance Tests shall be Carried out as per Relevant ISS.

9. 150x150mm GI RS Joists:

RS Joists of Specific Weight 34.6kg/mtr with length of each type of pole being 11mtr & 13 mtrs long and each pole weighing 380.6 & 449.8 Kg respectively for specified number of poles with specified weight in MT as given in the NIT table given above shall have to be supplied as per IS:2062;2006 Grade"A", IS:808;1989/2001, IS1608:1995 & IS:12779-1989 and their latest amendment if any complying the required Dimension, Weight, Chemical & Mechanical properties confirming to the relevant IS, as per the Tolerrance given Below.

10. APPLICABLE TOLLERANCES :

Length of each pole = + 100mm / - 0 % As per relevant IS: 12779-1989

(with proportionate change in no of Poles)

Specific Weight of RS Joists = ±2.5% As per relevant IS: 1852/1985

Weight for whole lot of supply for all categories = ±3.0% As per relevant IS: 12779-1989 for both type of RS Joists.

GALVANISING

Joist pole shall be hot dip galvanized, are as following:
All galvanizing shall be carried out by the hot dip process, in accordance with Specification IS 2629. However, high tensile steel nuts, bolts and spring washer shall be electro galvanized to Service Condition 4. The zinc coating (610 gms per sq.mt) shall be smooth, continuous and uniform. It shall be free from acid spot and shall not scale, blister or be removable by handling or packing.

There shall be no impurities in the zinc or additives to the galvanic bath which could have a detrimental effect on the durability of the zinc coating.

Before picking, all welding, drilling, cutting, grinding and other finishing operations must be completed and all grease, paints, varnish, oil, welding slag and other foreign matter completely removed.
All protuberances which would affect the life of galvanizing shall also be removed.

The weight of zinc deposited shall be in accordance with that stated in Standard IS 2629

and shall not less than 0.61kg/mtr² with a minimum thickness of 86 microns.

Parts shall not be galvanized if their shapes are such that the pickling solutions cannot be removed with certainty or if galvanizing would be unsatisfactory or if their mechanical strength would be reduced. Surfaces in contact with oil shall not be galvanized unless they are subsequently coated with an oil resistant varnish or paint.

In the event of damage to the galvanizing the method used for repair shall be subject to the approval of the Engineer in Charge or that of his representative.

In no case the repair of galvanisation on site will be permitted.

The threads of all galvanized bolts and screwed rods shall be cleared of spelter by spinning or brushing. A die shall not be used for cleaning the threads unless specifically approved by the Engineer in Charge. All nuts shall be galvanized. The threads of nuts shall be cleaned with a tap and the threads oiled.

Partial immersion of the work shall not be permitted and the galvanizing tank must therefore be sufficiently large to permit galvanizing to be carried out by one immersion.

After galvanizing no drilling or welding shall be performed on the galvanized parts of the equipment excepting that nuts may be threaded after galvanizing. To avoid the formation of white rust galvanized materials shall be stacked during transport and stored in such a manner as to permit adequate ventilation. Sodium dichromate treatment shall be provided to avoid formation of white rust after hot dip galvanization.

The galvanized steel shall be subjected to test as per IS-2633.

EMBOSSING ON EACH GI R.S JOIST :

Following distinct non-erasable embossing is to be made on each R.S Joists to be supplied to TPCODL under this Tender.

Name of the Owner - TPCODL
B.I.S Logo (ISI Mark).
Size of the R.S Joist :
Name of manufacture:
WO No & Dt.

6. TECHNICAL SPECIFICATION OF EARHTING COIL

I. SCOPE

The specification covers design, manufacture, testing for use in earthing of the HT & LT poles. Each ht pole shall be earthed with coil type earthing as per REC Construction Standard J-1.

II. GENERAL REQUIREMENTS

Earthing coils shall be fabricated from soft GI Wire Hot Dip Galvanized. The Hot Dip galvanized wire shall have clean surface and shall be free from paint enamel or any other poor conducting material. The coil shall be made as per REC constructions standard.

The Hot Dip galvanizing shall conform to IS: 2629/1966, 2633/1972 and 4826/1969

with latest amendments.

III. TESTS

Galvanizing Tests

Minimum Mass of Zinc

On GI Wire used 280 cm/m²

After Coiling-266 gm/m².The certificate from recognized laboratory shall be submitted towards mas of zinc.

Dip Test

Dip test shall stand 3 dips of 1 minute and one dip of ½ minute before coiling and 4 dips of 1 minute after coiling as per IS: 4826/1979

Adhesion Test

As per ISS 4826 – 1979.

IV. DIMENSIONAL REQUIREMENT

Nominal dia of GI Wire -4 mm (Tolerance±2.5%)

Minimum no. of turns – 115 Nos.

External dia of Coil (Min) – 50 mm

Length of Coil (Min) – 460 mm

Free length of GI Wire at one end coil (Min.) – 2500 mm

Minimum length of wire to be grounded during installation -1000 mm.

The turns should be closely bound. Weight of one finished Earthing Coils (min.) – 1.850 Kg.

EARHTING COIL

GUARANTEED TECHNICAL PARTICULARS

Sl. No.	GENERAL TECHNICAL PARTICULARS	Bidder's Offer
1	Nominal diameter of wire	
2	No. of turns	
3	External dia of Coil	
4	Length of Coil	
5	Mass of Zinc	
6	Total weight of Coil	

7	Whether drawing enclosed (yes)	

6.0.4 EXTENSION POLE

Pole with pole extension arrangement up to two **to three** meters (**in case** of 33 KV new **Mini base** GI tower structure) shall be used at low ground level locations for maintaining ground clearance and for road crossings for HT Lines.

7.0 PROVISION OF GUYS/STRUT POLES TO SUPPORTS

7.0.1 The arrangement for guys shall be made wherever necessary**.** Strut poles/flying guys wherever required shall be installed on various pole locations as per REC construction standards. In order to avoid guys/ Strut self supported GI poles/ structures may be used.

7.0.2 In this work anchor type guy sets are to be used. These guys shall be provided at following locations where guys are damaged or not provided.

(i) Angle locations

(ii) Dead end locations

(iii) T-off points

(iv) Steep gradient locations.

(v) Double Pole, & four pole

The stay rod should be placed in a position so that the angle of rod with the vertical face of the pit is 30^0 to 45^0 as the case may be maximum movement for tightening or loosening.

7.0.3 If the guy wire proves to be hazardous, it should be protected with suitable asbestos pipe filled with concrete of about 2 m length above the ground level, painted with white and black strips so that, it may be visible at night.

7.0.4 The guy insulator should have a minimum vertical clearance of 3.5 mtr from the ground.

7.TECHNICAL SPECIFICATION OF HT & LT STAY SETS

II. SCOPE

This specification covers design, manufacture, testing and dispatch of LT Stay Sets of 16 mm and HT stay sets 20 mm dia**.**

III. GENERAL REQUIREMENTS

16 MM Dia Stay sets (Galvanized) – LT Stay Set

This stay sets (Line Guy set) will consist of the following components:-

Anchor Rod with one washer and Nut

Overall length of rod should be 1800 mm to be made out of 16 mm dia GI Rod, one end threaded up to 40 mm length with a pitch of 5 threads per cm and provided with one square GI washer of size 40X40x1.6mm and one GI hexagonal nut conforming to IS:1367:1967 & IS:1363:1967. Both washer and nut to suit threaded rod of 16 mm dia. The other end of the rod to be made into a round eye having an inner dia of 40mm with

best quality welding.

Anchor Plate Size 200 x 200 x6 mm

To be made out of GI plate of 6 mm thickness. The anchor plate should have at its centre 18 mm dia hole.

Turn Buckle & Eye Bolt with 2 Nuts

To be made of 16 mm dia GI Rod having an overall length of 450mm, one end of the rod to be threaded up to 300 mm length with a pitch of 5 threads per cm and provided with two GI Hexagonal nuts of suitable size conforming toIS:1363:1967 & IS:1367:1967. The other end of rod shall be rounded into a circular eye of 40mm inner dia with proper and good quality welding.

Bow with Welded Angle

To be made out of 16mm dia GI rod. The finished bow shall have an over all length of 995 mm and eight of 450 mm, the apex or top of the bow shall be bent at an angle of 10 R. The other end shall be welded with proper and good quality welding to a GI angle 180 mm long having a dimension of 50x50x6mm. The angle shall have 3 holes of 18 mm dia each.

Thimble

To be made on 1.5 mm thick GI sheet into a size of 75x22x40mm and shape as per standard shall be supplied.

Average Weight of Finished 16mm Stay Sets shall be at least 7.702 KG (Minimum)

(Excluding Nuts Thimbles and Washer) 8.445 Kg. (Maximum)

20 mm Dia Stays Sets for 33 Kv,11 KV Lines (Galvanized) HT Stay Set

The Stay Set (Line Guy Set) will consist of the following components:

Anchor Rod with one Washer and Nut

Overall length of Rod should be 1800mm to be made out of 20 mm dia GI rod oneend threaded up to 40 mm length with a pitch of threads per cm. And provided with one square G.I Washer of Size 50x50x1.6mm and one GIHexagonal nut conforming to IS: 1363:1967 & IS:1367:1967. Both washer and nut to suit the threaded rod of 20mm. The other end of the rod to be made into a round eye having an inner dia of 40mm with best quality of welding. Dimensional and other details are indicated and submitted by bidders for owner's approval before start of manufacturing.

Anchor Plate Size 300 x 300 x 8 mm

To be made out of G.S. Plate of 8 mm thickness. The anchor plate to have at its centre 22mm dia hole.

Turn Buckle, Eye Bolt with 2 Nuts.

To be made of 20 mm dia G.I Rod having an overall length of 450 mm. One end of the rod to be threaded up to 300 mm length with a pitch of 4 threads per cm. The 20 mm dia bolt so made shall be provided with two G.I Hexagonal nuts of suitable size conforming to IS: 1363:1967 & IS: 1367:1967.The other end of the rod shall be rounded into a circular eye of 40mm inner dia with proper and good quality of welding. Welding details are to be indicated by the bidder separately for approval.

Bow with Welded Channel:

To be made out of 16mm dia G.I Rod. The finished bow shall have and overall length of 995 mm ad height of 450 mm. The apex or top of the bow shall be bent at an angle of 10R. he other end shall be welded with proper and good quality welding to a G.I Channel 200 mm long having a dimension of 100x50x4.7 mm. The Channel shall have 2 holes of 18 mm dia and 22 dia hole at its centre as per drawing No.3 enclosed herewith.

Thimble 2 Nos.

To be made of 1.5 mm thick G.Isheet into a size of 75x22x40mm and shape as per standard.

Galvanizing

The complete assembly shall be hot dip galvanized.

Welding

The minimum strength of welding provided on various components of 16mm and 20 mm dia stay sets shall be 3100 kg & 4900 kg respectively. Minimum 6mm filet weld or its equivalent weld area should be deposited in all positions of the job i.e. at any point of the weld length. The welding shall be conforming to relevant IS:823/1964 or its latest amendment.

Threading

The threads on the Anchor Rods, Eye Bolts and Nuts shall be as per specification IS; 4218:1967 (ISO Metric Screw Threads). The Nuts shall be conforming to the requirements of IS: 1367:1967 and have dimension as per IS 1363:1967. The mechanical property requirement of fasteners shall confirm to the properly clause 4.6 each for anchor rods and Eye bolt and property clause 4 for nuts as per IS: 1367:1967.

Average weight of finished 20 mm Stays Set: 14.523 Kg.(Min) (Excluding Nuts Thimble & Washer) :15.569 Kg.(Max.)

IV. TESTS

The contractor shall be required to conduct testing of materials at Govt./Recognized testing laboratory during pre-dispatch inspection for Tensile Load of 3100 Kg/4900Kg. applied for

one minute on the welding and maintained for one minute for 16 mm and 20mm dia stay sets respectively.

V. IDENTIFICATION MARK

All stay sets should carry the identification mark of the Purchaser (TPCODL)applicable.

This should be engraved on the body of stay rods to ensure proper identification of the materials. The nuts should be of a size compatible with threaded portion of rods and there should be not play or slippage of nuts.

Welding wherever required should be perfect and should not give way after erection.

VI. TOLERANCES

The tolerances for various components of the stay sets are indicated below subject to the condition that the average weight of finished stay sets of 16mm dia excluding nuts, thimbles and washers shall not be less than the weight specified above:-

B) HT /LT STAY SET

GURANTEED TECHNICAL PARTICULARS

Sl No.	**Item Description**	**Specified Parameters**			
		Section Tolerances	**Fabrication Tolerances**	**Material**	
1	Anchor Plate	6mm thick +2.5%-5%	200x200mm+1%	GI Plate 6 mm Thick	**LT Stay Set**
		8mm thick +2.5%-5%	300x300mm+1%	GI Plate 8 mm thick	**HT Stay Set**
2	Anchor Rod	16mmdia +5%-3%	Length 1800mm+0.5% Rounded Eye 40 mm inside dia + 3% Threading 40mm +11%-5%	GI Round 16mm dia	**LT Stay Set**

		20mm dia +3%-2%	Length 1800mm +0.5% Round Eye 40mm inside dia + 3%. Threading 40mm +11%-5%	GI Round 20mm dai	**HT Stay Set**
3	Turn Buckle Bow	16mm dia +5%-3%	Length 995mm +1% 16mm dia Length180mm +1% 50x50x5mm Channel length	GI Round 16mm dia. G I Channel 50x50x5mm	**LT Stay Set**
		20mm dia +5%-3%	Length 995mm +1% 20mm dia Length200mm +1% 100x50x5mm Channel length	GI Round 20mm dia. G I Channel 100x50x5mm	**HT Stay Set**
4	Eye Bolt Rod	16mm dia +5%-3%	Length 450mm + 1% Threading 300mm+1% Round Eye 40mm inside dia +3%	GI Round 16 mm dia	**LT Stay Set**
		20mm dia + 5%-3%	Length450mm +1% Threading 300mm+1% Round Eye 40mm inside dia +3%	GI Round 20mm dia.	**HT Stay Set**
5	Galvanisation thickness				**LT Stay Set** **HT Stay Set**
A	Anchor Plate				**LT Stay Set** **HT Stay Set**
B	Anchor Rod				**LT Stay Set** **HT Stay Set**
C	Turn Buckle				**LT Stay Set** **HT Stay Set**
D	Eye Bolt Rod				**LT Stay Set** **HT Stay Set**
6	Weight of complete set				**LT Stay Set** **HT Stay Set**
7	Whether drawing				

	submitted				

8. TECHNICAL SPECIFICATIONS OF STAY WIRE (7/8SWG) / (7/10 SWG) & (7/12 SWG)

I. Application Standards

Except when they conflict with the specific requirements of this specification, the G.I Stay Stranded Wires shall comply with the specific requirements of IS: 2141-1979. IS: 4826-1979 & IS: 6594-1974 or the latest versions thereof.

II. Application and Sizes

The G.I. stranded wires covered in this Specification are intended for use on the overhead power line poles, distribution transformer structures etc.

The G.I stranded wires shall be of 7/8SWG7/4 mm for 33 kv lines, 7/10SWG (7/3.15 mm for 11KV lines and 7/12 SWG 7/2.5 mm for LT lines standard sizes.

III. Materials

The wires shall be drawn from steel made by the open hearth basic oxygen or electric furnace process and of such quality that when drawn to the size of wire specified and coated with zinc, the finished strand and the individual wires shall be of uniform quality and have the properties and characteristics as specified in this specification. The wires shall not contain sulphur and phosphorus exceeding 0.060% each.

Tensile Grade

The wires shall be of tensile grade 4, having minimum tensile strength of 700 N/mm² conforming to 1S:2141.

General Requirements

The outer wire of strands shall have a right-hand lay.

The lay length of wire strands shall be 12 to 18 times the strand diameter.

Minimum Breaking Load

The minimum breaking load of the wires before and after stranding shall be as follows:

No. of Wires & Const.	Wire Dia (mm)	Min. breaking load of the Single wire before stranding (KN)	Min. breaking load of the standard wire (KN)
7 (6/1)	2.5	3.44	21.40
7 (6/1)	3.15	5.46	34.00
7 (6/1)	4.0	8.80	54.9

V. Construction

The galvanized stay wire shall be of 7-wire construction. The wires shall be so stranded together that when an evenly distributed pull is applied at the ends of completed strand, each wire shall take an equal share of the pull. Joints are permitted in the individual wires during stranding but such joints shall not be less than 15 metres apart in the finished strands.

The wire shall be circular and free from scale, irregularities, imperfection, flaws, splits and other defects.

VI. Tolerances

A tolerance of (+) 2.5% on the diameter of wires before stranding shall be permitted.

VII. Sampling Criteria

The sampling criteria shall be in accordance with IS :2141.

VIII. Tests on Wires before Manufacture

The wires shall be subjected to the following tests in accordance with IS :2141.

Ductility Test Tolerance on Wire Diameter

Tests on Completed Strand

The completed strand shall be tested for the following tests in accordance with IS:2141. Tensile and Elongation Test: The percentage elongation of the stranded wire shall not be less than 6%.

Chemical analysis Galvanizing Test

The Zinc Coating shall conform to "Heavy Coating" as laid down in 1S:4826

IX. Marking

Each coil shall carry a metallic tag, securely attached to the inner part of the coil bearing the following information:

a) Manufacturers name or trade mark

b) Lot number and coil number

c) Size

d) Construction

e) Tensile Designation

f) Lay

g) Coating

h) Length

i) Mass

j) ISI certification mark, if any

X. Packing

The wires shall be supplied in 75-100 Kg. coils. The packing should be done in accordance with the provisions of IS:6594

XI. Other Items:

For remaining items of stay sets mentioned in the enclosed drawing, relevant applicable Indian standards shall be applicable.

(D) STAY WIRE (7/10 SWG) (7/10 SWG) & (7/12 SWG)

GURANTEED TECHNICAL PARTICULARS

Sl. No.	GENERAL TECHNICAL PARTICULARS	7/08 SWG	7/10 SWG	7/12 SWG

1	Nominal diameter of wire			
2	Tolerance in diameter			
3	Sectional Area (In Sq. mm.)			
4	Tensile strength			
A	Min. N/mm²			
B	Max. N/mm²			
5	Minimum breaking load (KN)			
6	Type of coating Heavy/Medium/Light			
7	Variety Hard/Soft			
8	Weight of Zinc coating (Gms/Sq. Mtr.) Min.			
9	No. of dips the coating is able to withstand as 18 ± 20ºC			
10	Adhesion Test (Wrap Test at 1 turn per second coiling while stress not exceeding % nominal tensile strength)			
A	Min. complete turn of wrap			
B	Dia of mandrel on which wrapped			
11	Bend Test			
A	Angle			
B	Dia round a format to be bent			
12	Freedom from defect			
13	Chemical composition the MS Wire used shall not exceed			
A	Sulphur 0.060%			
B	Phosphorous 0.065%			

9. TECHNICAL SPECIFICATION PIN INSULATORS, DISC INSULATORS & STAY INSULATOR (Porcelain)

4.1 11Kv Pin Insulators :- IS-731/77 (Procelin Insulator for O/H power lines with nominal voltage greater than 1000 volts.

33 Kv Pin Insulators.:-IS-731/77

11Kv GI Pin:- Confirming to IS-2486 Part-I/1971.
33 Kv GI Pin:- Confirming to IS-2486 Part-I/1971.

4.2 DISC –INSULATORS:

4.2.1 Insulator Strings

Sl.	Particulars	Single	Double	Single	Double

No.		Suspension string	suspension string	Tension string	Tension string
1.	No. of standard Discs (nos) 1. 33 KV 2. 11 kV	1X3 1X2	2X3 2X2	1X4 1X3	2X4 2X3
2.	Size of Disc (33 Kv/11 Kv)	255X145	255X145	280x170	280x170

All the above materials must conform to the schedules at C2 andC3

4.2.2 PORCELAIN GLAZE:

Surfaces to come in contact with cement shall be made rough by stand glazing. All other exposed surfaces shall be glazed with ceramic materials having the same temperature coefficient of expansion as that of the insulator shell. The thickness of the glaze shall be uniform throughout and the colour of the glaze shall be brown. The glaze shall have a visible luster and smooth on surface and be capable of satisfactory performance under extreme tropical climatic weather conditions and prevent ageing of the porcelain. The glaze shall remain under compression on the porcelain body throughout the working temperature range.

4.2.3 METAL PARTS:

Cap and Ball pins:

Twin Ball pins shall be made with drop forged steel and caps with malleable cast iron. They shall be in one single piece and duly hot dip g galvanized. They shall not contain parts or pieces joined together, welded, shrink fitted or by any other process from more than one piece of material. The pins shall be of high tensile steel, drop forged and heat malleable cast iron and annealed. Galvanizing shall be by the hot dip process with a heavy coating of zinc of very high purity with minimum of 6 dips. The bidder shall specify the grade, composition and mechanical properties of steel used for caps and pins.

4.2.4 SECURITY CLIPS:

The security clips shall be made of phosphor bronze or of stainless steel.

4.2.5 FILLER MATERIAL:

Cement to be used as a filler material shall be quick setting, for curing Portland cement. It shall not cause fracture by expansion or loosening by contraction. Cement shall not react chemically with metal parts in contract with it and its thickness shall be as small and as uniform as possible.

4.2.6 MATERIAL DESIGN AND WORKMANSHIP:

i) All raw materials to be used in the manufacture of these insulators shall be subject to strict raw materials quality control and to stage testing quality control during manufacturing stage to ensure the quality of the final end product. Manufacturing shall conform to the best engineering practices adopted in the field of extra high voltage transmission. Bidders shall therefore offer insulators as are guaranteed by them for satisfactory performance on Transmission lines.

ii) The design, manufacturing process and material control at various stages be such as to give maximum working load, highest mobility, best resistance to corrosion good finish, elimination of sharp edges and corners to limit corona and radio interference voltage

4.2.7 INSULATOR SHELL:

The design of the insulator shell shall be such that stresses due to expansion and contraction in any part of the insulator shall not lead to deterioration. Shells with cracks shall be eliminated by temperature cycle test followed by temperature cycle test followed by mallet test. Shells shall be dried under controlled conditions of humidity and temperature.

4.2.8 METAL PARTS:

The twin ball pin and cap shall be designed to transmit the mechanical stresses to the shell by compression and develop uniform mechanical strength in the insulator. The cap shall be circular with the inner and outer surfaces concentric and of such design that it will not yield or distort under loaded conditions. The head portion of the insulator or is under tension the stresses are uniformly distributed over the pinhole portion of the shell. The pinball shall move freely in the cap socket either during assembly of a string or during erection of a string or when a string is placed in position.

Metal caps shall be free from cracks, seams, shrinks, air holes, blowholes and rough edges. All metal surfaces shall be perfectly smooth with no projecting parts or irregularities which may cause corona. All load bearing surfaces shall be smooth and uniform so as to distribute the loading stresses uniformly. Pins shall not show any macroscopically visible cracks, insulations and voids.

4.2.9 GALVANIZING:

All ferrous parts shall be hot dip galvanized six times in accordance with IS: 2629. The zinc to be used for galvanizing shall conform to grade Zn 99.5 as per IS: 209. The zinc coating shall be uniform, smoothly adherent, reasonably light, continuous and free from impurities such as flux ash, rust stains, bulky white deposits and blisters. Before ball fittings are galvanized, all die flashing on the shank and on the bearing surface of the ball shall be carefully removed without reducing the designed dimensional requirements.

4.2.10 CEMENTING:

The insulator design shall be such that the insulating medium shall not directly engage with hard metal. The surfaces of porcelain and coated with resilient paint to offset the effect of difference in thermal expansions of these materials.

4.2.11 (a) Specific Requirement for Insulators

The insulators shall confirm in the following specific conditions of respective IS given in the table below

Insulator		Designation	Minimum mechanical failing load	Minimum Creepage distance
11 KV	Pin	Type-B of IS731	10 KN	320 mm
33 KV	Pin	Type-B of IS731	10 KN	580 mm
33KV/11KV	Stay	Type-C of IS 1445	88 KN	57 mm
LT	Stay	Type-C of IS 1445	44 KN	41 mm

4.2.12 SECURITY CLIPS (LOCKING DEVICES)

The security clips to be used as locking device for ball and socket coupling shall be 'R' shaped hump type to provide for positive locking of the coupling as per IS: 2486 (Part-IV). The legs of the security clips shall allow for sore adding after installation to prevent complete withdrawal from the socket. The locking device shall be resilient corrosion

resistant and of sufficient mechanical strength. There shall be no possibility of the locking device to be displaced or be capable of rotation when placed in position and under no circumstances shall it allow separation of insulator units and fitting 'W' type security clips are also acceptable. The hole for the security clip shall be countersunk and the clip shall be of such design that the eye of the clip may be engaged by a hot line clip puller to provide for disengagement under energized conditions. The force required for pulling the clip into its unlocked position shall not be less than 50 N (5 Kgs.) or more than 500N (50 Kgs.)

DISC INSULATORS (B & S Type)
GURANTEED TECHNICAL PARTICULARS

Sl. No.	Description	Bidder's Offer
1	Manufacturer's name	
2	Address of manufacturer	
3	Location of type testing	
4	Applicable standard	
5	Type of insulator (Porcelain)	
6	Dry impulse withstand voltage	
7	Wet power frequency, 1 minute, withstand voltage	
8	Dry, Critical Impulse Flashover Voltage	
9	Dry, power frequency, Critical Flashover Voltage	
10	Wet, power frequency, Critical Flashover Voltage	
11	Power frequency Puncture Voltage	
12	Mechanical Routine Test Load	
13	Mechanical Impact Strength	
14	Shattered Strength (Glass)	
15	Electromechanical Failing Load	
16	Safe Working Load	
17	Minimum Failing Load	
18	Creepage Distance	
19	Protected Creepage Distance	
20	Type and Grade of Materials : Insulator	
21	Type and Grade of Materials : Cap	
22	Type and Grade of Materials : Pin	
23	Type and Grade of Materials : Locking Pin	
24	Type and Grade of Materials : Cement	
25	Type of semi conducting Glaze	
26	Colour of Insulator	
27	Weight of Insulator	
28	Number of Insulators per Crate	
29	Gross Weight of Loaded Crate	
30	Whether drawing showing dimensional details have been furnished along with Bid	

11 KV PIN INSULATORS
GURANTEED TECHNICAL PARTICULARS

Sl. No.	Description	Bidder's Offer
1	Manufacturer's name	
2	Address of manufacturer	
3	Location of type testing	

4	Applicable standard	
5	Type of insulator (Porcelain)	
6	Dry impulse withstand voltage	
7	Wet power frequency, 1 minute, withstand voltage	
8	Dry, Critical Impulse Flashover Voltage	
9	Dry, power frequency, Critical Flashover Voltage	
10	Wet, power frequency, Critical Flashover Voltage	
11	Power frequency Puncture Voltage	
12	Safe Working Load	
13	Minimum Failing Load	
14	Creepage Distance	
15	Protected Creepage Distance	
16	Type and Grade of Materials : Insulator	
17	Type and Grade of Materials : Thimble	
18	Type and Grade of Materials : Cement	
19	Type of semi conducting Glaze	
20	Radius of conductor Groove	
21	Colour of Insulator	
22	Weight of Insulator	
23	Number of Insulators per Crate	
24	Gross Weight of Loaded Crate	
25	Whether drawing showing dimensional details have been furnished along with Bid	
26	Whether Type Test Certificate have been furnished	
27	Other particulars (if any)	

HT STAY INSULATOR
GURANTEED TECHNICAL PARTICULARS

Sl. No.	Description	Bidder's Offer
1	Manufacturer's name	
2	Address of manufacturer	
3	Location of type testing	
4	Applicable standard & Type	
5	Type of insulator (Porcelain)	
6	Dry impulse withstand voltage	
7	Wet power frequency, 1 minute, withstand voltage	
8	Dry, Critical Impulse Flashover Voltage	
9	Dry, power frequency, Critical Flashover Voltage	
10	Wet, power frequency, Critical Flashover Voltage	
11	Power frequency Puncture Voltage	
12	Safe Working Load	
13	Minimum Failing Load	
14	Creepage Distance	
15	Protected Creepage Distance	
16	Type and Grade of Materials : Insulator	
17	Colour of Insulator	
18	Weight of Insulator	
19	Number of Insulators per Crate	
20	Type of semi conducting Glaze	
21	Minimum dia of Stay wire hole	
22	Whether drawing showing dimensional details have	

	been furnished along with Bid	
23	Whether Type Test Certificate have been furnished	
24	Other particulars (if any)	

GURANTEED TECHNICAL PARTICULARS

Sl. No.	Description	11 KV GI PIN
1	Manufacturer's name Manufacturer's name & Address	
2	Standard applicable specification	
3	Minimum failing load	
4	Dimensions (mm)	
A	Total length	
B	Shank length	
C	Stalk length	
5	Type of threads	
6	Threads per Inch	
7	Type of galvanization of pin & nuts	
8	Mass of zinc (minimum)	
9	Applicable specification	
10	No. of Nuts with each pin & its size	
11	No. of spring washer with each pin & its size	
12	Packing details	
A	Type of packing	
B	Weight of each pin approx, (with nut & washers)	
C	No. of Pins in each packing (Kg)	
13	Tolerance in weight / dimensions, if any	
14	I.S.I. Certificate License number	
15	Any other relevant information the bidder would like to indicate	
16	Manufacturer's Trade mark with each GS Pins	
17	Whether drawing has been submitted by the bidder	

10.TECHNICAL SPECIFICATION OF V CROSS ARM, BACK CLAMP FOR "V" CROSS ARM & POLE TOP BRACKET

5.0.1 Qualification Criteria of Manufacturer:-

The prospective bidder may source the above items from manufacturers who must qualify the following requirements:

The bidder should enclose Performance Certificates from the above users issued in the name of the manufacturer as proof of successful operation in field.

a) Hot Dip Galvanised Cross arms and Pole Top Brackets for 11kV construction at intermediate and light angle pole shall be fabricated from grade 43A mild steel of channel

section and for heavy angle poles, end poles and section poles fabricated from grade 43A mild steel of angle section. The grades of structural steel shall conform to IS – 226: 1975.

b) The 11 KV ‘ V ’ Cross arm shall be made out of 75x40x5 mm GI Channel of (9.56 kg/mtr weight) suitable for PSC Pole 9 Mtr x 300 Kg . The 33 KV ‘ V ’ Cross arm shall be made out of 100x50x5 mm GI Channel of (9.56 kg/mtr weight) suitable for 150X150 joist Pole. **The weight of 11 KV V Cross should be minimum 10.2 Kg. The weight of 33 KV V Cross should be minimum 22 Kg.**

The Back Clamp for both 11 KV Cross arm shall be made out of 50x8 GI Flat and shall be suitably designed to fit PSC Pole 9 Mtr x 300 Kg and 11 KV V Cross Arm.

c)The Pole Top Bracket shall be made out of 100x50x5 mm GI Channel suitably designed to fit PSC Pole / joist pole and V Cross Arm.

Except where otherwise indicated all dimensions are subject to the following tolerances: dimensions up to and including 50mm:+1mm: and dimensions greater than 50mm: +2%

All steel members and other parts of fabricated material as delivered shall be free of warps, local deformation, unauthorized splices, or unauthorized bends. Bending of flat strap shall be carried out cold. Straightening shall be carried out by pressure and not by hammering.

Straightness is of particular importance if the alignment of bolt holes along a member is referred to its edges.

Holes and other provisions for field assembly shall be properly marked and cross referenced. Where required, either by notations on the drawing or by the necessity of proper identification and fittings for field assembly, the connection shall be match marked. A tolerance of not more than 1mm shall be permitted in the distance between the center lines of bolt holes.

The holes may be either drilled or punched and, unless otherwise stated, shall be not more than 2mm greater in diameter than the bolts. When assembling the components force may be used to bring the bolt holes together (provided neither members nor holes are thereby distorted) but all force must be removed before the bolt is inserted. Otherwise strain shall be deemed to be present and the structure may be rejected even though it may be, in all other respects, in conformity with the specification.

The back of the inner angle irons of lap joints shall be chamfered and the ends of the members cut where necessary and such other measures taken as will ensure that all members can be bolted together without strain or distortion. In particular, steps shall be taken to relieve stress in cold worked steel so as to prevent the onset of embitterment during galvanizing.
Similar parts shall be interchangeable.

Shapes and plates shall be fabricated and assembled in the shop to the greatest extent practicable. Shearing flame cutting and chipping shall be done carefully, neatly and accurately. Holes shall be cut, drilled or punched at right angles to the surface and shall not be made or enlarged by burning. Holes shall be clean-cut without torn or ragged edges, and burrs resulting from drilling or reaming operations shall be removed with the proper tool.

Shapes and plates shall be fabricated to the tolerance that will permit field erection within tolerance, except as otherwise specified. All fabrication shall be carried out in a neat and

workmanlike manner so as to facilitate cleaning, painting, galvanizing and inspection and to avoid areas in which water and other matter can lodge.

Contact surfaces at all connections shall be free of loose scale, dirt, burrs, oil and other foreign materials that might prevent solid seating of the parts.

GALVANISING

All type of cross arms back clamps, F clamps & stay clamps shall be hot dip galvanized, are as following:

All galvanizing shall be carried out by the hot dip process, in accordance with Specification IS 2629. However, high tensile steel nuts, bolts and spring washer shall be electro galvanized to Service Condition 4. The zinc coating (610 gms per sq.mt) shall be smooth, continuous and uniform. It shall be free from acid spot and shall not scale, blister or be removable by handling or packing.

There shall be no impurities in the zinc or additives to the galvanic bath which could have a detrimental effect on the durability of the zinc coating.

Before picking, all welding, drilling, cutting, grinding and other finishing operations must be completed and all grease, paints, varnish, oil, welding slag and other foreign matter completely removed.
All protuberances which would affect the life of galvanizing shall also be removed.

The weight of zinc deposited shall be in accordance with that stated in Standard IS 2629 and shall not less than 0.61kg/m² with a minimum thickness of 86 microns for items of thickness more than 5mm, 0.46kg/m² (64 microns) for items of thickness between 2mm and 5mm and 0.33kg/m² (47 microns) for items less than 2mm thick.

Parts shall not be galvanized if their shapes are such that the pickling solutions cannot be removed with certainty or if galvanizing would be unsatisfactory or if their mechanical strength would be reduced. Surfaces in contact with oil shall not be galvanized unless they are subsequently coated with an oil resistant varnish or paint.

In the event of damage to the galvanizing the method used for repair shall be subject to the approval of the Engineer in Charge or that of his representative.

In no case the repair of galvanisation on site will be permitted.

The threads of all galvanized bolts and screwed rods shall be cleared of spelter by spinning or brushing. A die shall not be used for cleaning the threads unless specifically approved by the Engineer in Charge. All nuts shall be galvanized. The threads of nuts shall be cleaned with a tap and the threads oiled.

Partial immersion of the work shall not be permitted and the galvanizing tank must therefore be sufficiently large to permit galvanizing to be carried out by one immersion.

After galvanizing no drilling or welding shall be performed on the galvanized parts of the equipment excepting that nuts may be threaded after galvanizing. To avoid the formation of white rust galvanized materials shall be stacked during transport and stored in such a manner as to permit adequate ventilation. Sodium dichromate treatment shall be provided to avoid formation of white rust after hot dip galvanization.

The galvanized steel shall be subjected to test as per IS-2633.

5.0.3 11 KV V CROSS ARM

GURANTEED TECHNICAL PARTICULARS

Sl. No.	Description Unit		11 Kv	33 Kv
1	Type of crossarm			
2	Grade of steel			
3	Steel standard			
4	Fabrication Standard			
5	Dimensions	Mm		
6	Steel section utilized			
7	Steel tensile strength	N/cm²		
8	Working load	Kg		
9	Details of galvanizing method utilized and standard/specification conforming to?			
10	Minimum Weight of cross arm	kg	14 Kg	22 Kg
11	Whether drawing has been submitted with the bid			

5.0.4 POLE TOP BRACKETS

GURANTEED TECHNICAL PARTICULARS

Sl. No.	Description Unit		11 Kv
1	Type of crossarm		
2	Grade of steel		
3	Steel standard		
4	Fabrication Standard		
5	Dimensions	Mm	
6	Steel section utilized		
7	Steel tensile strength	N/cm²	
8	Working load	Kg	
9	Details of galvanizing method utilized and standard/specification conforming to?		
10	Minimum Weight of top bracket	kg	
11	Whether drawing has been submitted with the bid		

5.0.5 BACK CLAMP FOR “V” CROSS ARM

GURANTEED TECHNICAL PARTICULARS

Sl. No.	Description Unit		11 Kv
1	Type of Clamp		
2	Grade of steel		
3	Steel standard		
4	Fabrication Standard		
5	Dimensions	Mm	
6	Steel section utilized		
7	Steel tensile strength	N/cm^2	
8	Working load	Kg	
9	Details of galvanizing method utilized and standard/specification conforming to?		
10	Minimum Weight of back clamp	kg	
11	Whether drawing has been submitted with the bid		

5.0.6 Fixing of Cross Arms

After the erection of supports and providing guys, the cross-arms are to be mounted on the support with necessary clamps, bolts and nuts. The practice of fixing the cross arms before the pole erection should be followed.

11. TECHNICAL SPECIFICATIONS OF G.I. CHANNEL & ANGLE

SCOPE

This specification covers design, manufacture, testing and dispatch to owner's stores of GI Channel & Angle for use in structures in distribution system.

APPLICABLE STANDARD

Materials shall conform to the latest applicable Indian standards. In case bidders offer steel section and supports conforming to any other international specifications which shall be equivalent or better than IS, the same is also acceptable.

Sl.No.	Standard No.	Title
1	IS: 2062 Grade 'A'	Quality Specification for M.S. Angles, M.S. Channel
2	IS: 2062	Chemical and Physical composition of material
3	IS: 1852	Rolling and Cutting Tolerances for Hot Rolled Steel products
4	IS:2629	The Weight of Zinc Deposited shall be not less than 0.61Kg/mtr.^{2}

GENERAL REQUIREMENTS

Raw material

The Steel Sections shall be re-rolled from the BILLETS/INGOTS of tested quality as per latest version of IS:2830 or to any equivalent International Standard and shall be arranged by the bidder from their own sources.

The Chemical composition and Physical properties of the finished material shall be as per the equivalent standards.

Chemical Composition and Physical Properties of M.S. Angles, M.S. Channels, and M.S. Flat conforming to IS: Conforming to IS:2062/84

Chemical Composition

Chemical composition For Fe 410 WA Grade

1 C – 0.23% MAX

2 Mn – 1.5% MAX

3 S – 0.050% MAX

4 P – 0.050% MAX

5 SI – 0.40% MAX6 CE

(Carbon Equivalent)- 0.42% MAX

c. Mechanical Properties

1. Tensile strength Kgf/mm²⁻	- 410
2. Yield stress Min. for thickness/diameter	
< 20 mm	- 26 Kgf/mm² OR 250 N/ mm²
20-40 mm	- 24 Kgf/mm² OR 240 N/ mm²
> 40 mm	- 23 Kgf/mm² OR 230 N/ mm²
3. Elongation %	- 23%
4. Bend Test (Internal Dia)	- Min-3t
	(t–is the thickness of the material).

d.Tolerance

Variation in ordered quantity for any destination and overall ordered quantity be only to the extent of ±2%. Rolling and weight tolerances shall be as per version of IS: 1852 or to any equivalent International Standard.

TEST

Steel Section shall be tested in IS approved Laboratory or Standard Laboratory the Bidder country

having all facilities available for conducting all the test prescribed in relevant IS or IEC or to any equivalent International

Standard or any recognized and reputable International Laboratory or Institutions. The bidders are required to specifically indicate that;

They hold valid IS (or equivalent IEC) License.

Steel Section offered are bearing requisite IS certification or equivalent marks.

The bidders are required to submit a copy of the valid IS (or equivalent IEC) License clearly indicating size and range of product against respective ISS or any equivalent International Standards along with their offer.

MARKING

It is desirable that the bidder should put his identification marks on the finished material. The mark shall be in "legible English letter" given with marking dies of minimum 18 mm size.

INSPECTION AND TEST CERTIFICATES

The material to be supplied will be subject to inspection and approval by the purchaser's representative before dispatch and/or on arrival at the destination. Inspection before dispatch shall not however, relieve the bidder

of his responsibility to supply the Steel Sections strictly in accordance with the specification.

The purchaser's representative shall be entitled at all reasonable time during manufacture to inspect, examine and test at the bidder's premises the materials and workmanship of the steel section to be supplied.

As soon as the steel Section are ready for testing, the bidder shall intimate the purchaser well in advance , so that action may be taken for getting the material inspected. The material shall not be dispatched unless waiver of inspection is obtained or inspected by the purchaser's authorized representative.

Test certificates shall be in accordance with latest version of the relevant Indian Standards or any equivalent International Standard.

The acceptance of any batch/lot shall in no way relieve the bidder of any of his responsibilities for meeting all the requirements of the specification and shall not prevent subsequent rejection of any item if the same is later found defective.

DESIGNATION	Weight kg/m
100 x 50 x 5 mm MS Channel	**9.56**
75 x 40 x 5 mm MS Channel	**7.14**
65 x 65 x 6 mm MS Angle	**5.8**
50 x 50 x 6 mm MS Angle	**4.5**

GALVANISING

All type of Channel, Angle, Flats shall be hot dip galvanized, are as following:

All galvanizing shall be carried out by the hot dip process, in accordance with Specification IS 2629. However, high tensile steel nuts, bolts and spring washer shall be electro galvanized to Service Condition 4. The zinc coating (610 gms per sq.mt) shall be smooth, continuous and uniform. It shall be free from acid spot and shall not scale, blister or be removable by handling or packing.

There shall be no impurities in the zinc or additives to the galvanic bath which could have a detrimental effect on the durability of the zinc coating.

Before picking, all welding, drilling, cutting, grinding and other finishing operations must be completed and all grease, paints, varnish, oil, welding slag and other foreign matter completely removed.

All protuberances which would affect the life of galvanizing shall also be removed.

The weight of zinc deposited shall be in accordance with that stated in Standard IS 2629 and shall not less than 0.61kg/m² with a minimum thickness of 86 microns.

Parts shall not be galvanized if their shapes are such that the pickling solutions cannot be removed with certainty or if galvanizing would be unsatisfactory or if their mechanical strength would be reduced. Surfaces in contact with oil shall not be galvanized unless they are subsequently coated with an oil resistant varnish or paint.

In the event of damage to the galvanizing the method used for repair shall be subject to the approval of the Engineer in Charge or that of his representative.

In no case the repair of galvanization on site will be permitted.

The threads of all galvanized bolts and screwed rods shall be cleared of spelter by spinning or brushing. A die shall not be used for cleaning the threads unless specifically approved by the Engineer in Charge. All nuts shall be galvanized. The threads of nuts shall be cleaned with a tap and the threads oiled.

Partial immersion of the work shall not be permitted and the galvanizing tank must therefore be sufficiently large to permit galvanizing to be carried out by one immersion.

After galvanizing no drilling or welding shall be performed on the galvanized parts of the equipment excepting that nuts may be threaded after galvanizing. To avoid the formation of white rust galvanized materials shall be stacked during transport and stored in such a manner as to permit adequate ventilation. Sodium dichromate treatment shall be provided to avoid formation of white rust after hot dip galvanization.

The galvanized steel shall be subjected to test as per IS-2633.

12. TECHNICAL SPECIFICATION FOR HARDWARE FITTINGS

1 SCOPE

This Specification covers design manufacture, testing at manufacturer's Works, supply and delivery of power cable accessories, insulator and hardware fittings for string insulators suitable for use in 11 KV Over-head transmission XLPE covered conductor of 70 mm2 and 99 mm2 of TPCODL. The hard wares to be supplied shall be as per approved drawings of TPCODL. The firm shall submit his drawings for approval of TPCODL and only after which the manufacturing shall be started.

The materials/equipment offered, shall be complete with all components, which are necessary or usual for the efficient performance and satisfactory maintenance. Such part shall be deemed to be within the scope of contract.

2 STANDARDS

The materials covered under this Specification shall comply with the requirement of the latest version of the following standards as amended upto date, except where specified otherwise.

1	IS:2486	Part-II & III Insulator fitting for overhead power lines with nominal voltage greater than 1,000 volts.
2	IS:2121	Part I & II Conductor & earth wire accessories for overhead power lines
3	IS:9708	Stock Bridge Vibration Dampers on overhead power lines.
4	IS:2633	Method of testing of uniformity of coating on zinc coated articles
5	IS:209	Specification for Zinc.

6	BS:916	Specification for Hexagonal bolts and nuts.

3 . MATERIALS AND DESIGN

Aluminium and aluminium alloys, malleable iron and forget steel, having required mechanical strength, corrosion resistance and mach inability depending on the types of application for which accessories / fittings are needed, shall be employed.

In manufacturer of the accessories / fittings, the composition of the aluminium alloys used shall be made available to Employer if required for verification.

The materials offered shall be of first class quality, workmanship, well finished and approved design. All castings shall be free from blow-holes, flaws, cracks of other defects and shall be smooth, close grained and true forms and dimensions. All machined surfaces should be free, smooth and well finished.

Metal fittings of specified material for conductor and earth wire accessories and string insulator fittings are required to have excellent mechanical properties such as strength, toughness and high resistance against corrosion. All current carrying parts shall be so designed and manufactured that contact resistance is reduced to the minimum.

All bolts, nuts, bolt-heads shall be the white worth's standard thread. Bolt heads and nuts shall be hexagonal. Nuts shall be locked in an approved manner. The treads in nuts and tapped holes shall be cut after galvanizing an shall be well fabricated and greased. All other treads shall be cut before galvanizing. The bolt treads shall be undercut to take care of increase in diameter due to galvanizing. All nuts shall be made of materials to Clause 4.8 of IS:1367 (latest edition) with regard to its mechanical properties.

The general design conductor and earth wire accessories and insulator fittings shall be such as to ensure uniformity, high strength, free from corona formation and high resistance against corrosion even in case of high level of atmosphere pollution.

All hooks, eyes, pins, bolts, suspension clamps and other fittings for attaching to the tower or to the line conductor or to the earth wire shall be so designed that the effects of vibration, both on the conductor and the fittings itself, are minimized.

Special attention must be given to ensure smooth finished surface throughout. Adequate bearing area between fittings shall be provided and point or line contacts shall be avoided.

All accessories and hard wares shall be free from cracks, shrinks, slender air holes, burrs or rough edges.

The design of the accessories and hard wares shall be such as to avoid local corona formation or discharge likely to cause interference to tele-transmission signals of any kind.

4 GALVANISING :

All ferrous parts of conductor and ground wire accessories and insulator hard wares shall be galvanized in accordance with IS:2629-Recommended Practice for hot dip galvanizing of iron and steel or any other equivalent authoritive standards. The weight of zinc coating shall be determined as per method stipulated in IS:2633 for testing weights, thickness and uniformity of coating of hot dip galvanized articles or as per any other equivalent authoritative standards. The zinc used or galvanization shall conform to grade zn 98 of IS:209. The galvanized parts shall withstand four (4) dips of 1 minute each time while testing uniformity of zinc coating as per IS:2633.

Spring washers shall be electro galvanized.

5 INSULATOR HARDWARES

The insulator disc hardwares and string assemblies to be offered by the tenderer shall be suitable to meet the requirement given in the specific technical particulars as detailed hereinafter. Hardwares for suspension and tension insulator shall be suitable for insulator with normal pin shank diameter of 20 mm. in case of tension string unit and 16mm. for suspension string unit.

Each insulator string shall generally include the following hardware components.

	Single suspension set :		**Double suspension set :**
a	Ball Hook	a	Ball Hook
b	Tower side arcing horn	b	Socket Clevis with R-Type security clip – 03 nos.
c	Socket eye with R-Type security clip	c	Yoke plate – 02 Nos.
d	Line side arcing horn	d	Tower side arcing horn – 02 nos.
e	Suspension clamps	e	Ball clevis – 02 nos.
		f	Line side arcing horn – 02 Nos
		g	Clevis eye
		h	Suspension Clamp
	Single Tension Set :		**Double Tension Set :**
a	Anchor shackle	a	Anchor shackle
b	Ball eye.	b	Chain Link
c	Tower side arcing horn	c	Yoke plate – 02 Nos
d	Socket Clevis with R-Type security clip	d	Tower side arcing horn – 02 nos.
e	Line side arcing horn	e	Ball clevis – 02 nos.

6 TESTS, TEST CERTIFICATE AND PERFORMANCE REPORTS

The fittings and accessories for the power conductor, insulator and hardwares shall be tested in accordance with IS:2121, IS:2486, BS:916 for hexagonal bolts and nuts or any other authoritative equivalent standards. Six sets of type and routine test certificates and performance reports are to be submitted by the bidder.

The Employer however, reserves the right to get all the tests performed in accordance with the relevant I.S. Specification as Acceptance Test in presence of Employer-s representatives.

The tenderer shall clearly state the testing facilities available in the laboratory at his Works and his ability to carry out the tests in accordance with this Specification. All the specified tests shall be carried out without any extra cost.

Acceptance Test for power conductor accessories.

a. Visual examination
b. Dimensional verification
c. Failing load test
d. Slip strength test (for clamps)
e. Electrical resistance test

f. Fatigue test (for vibration dampers)
g. Mass pull off test (for vibration dampers)
h. Galvanizing test.

7 ACCEPTANCE TEST FOR HARDWARES

a) Dimensional verification.
5.10 Ultimate tensile test.
5.11 Slip strength test.
5.12 Electrical resistance test.
5.13 Heating cycle test
5.14 Breaking strength of full string assembly.
5.15 Galvanizing test.

8 BONDING PIECES :

a) Material	**Flexible copper bond (37/7/0.417 mm. tinned copper flexible stranded cable).**
b) Length	**Not less than 750 mm.**
c) Bolt size	**16mm x 40 mm.**
d) Copper area.	**34 sq.mm.**
e) Thickness of long	**6 mm.**
f) Material for connecting socket	**Tinned Brass**

9 FASTENERS: Bolts, Nuts & Washers

All bolts and nuts shall conform to IS-6639 – 1972. All bolts and nuts shall be galvanized. All bolts and nuts shall have hexagonal heads, the heads being truly concentric, and square with the shank, which must be perfectly straight.

Bolts upto M16 and having length upto ten times the diameter of the bolt should be manufactured by cold forging and thread rolling process to obtain good and reliable mechanical properties and effective dimensional control. The shear strength of bolt for 5.6 grade should be 310 Mpa minimum as per IS-12427. Bolts should be provided with washer face in accordance with IS-1363 Part-I to ensure proper bearing.

Fully threaded bolts shall not be used. The length of the bolt shall be such that the threaded portion shall not extend into the place of contact of the component parts.

All bolts shall be threaded to take the full depth of the nuts and threaded enough to permit the firm gripping of the component parts but not further. It shall be ensured

that the threaded portion of the bolt protrudes not less than 3 mm and not more than 8 mm when fully tightened. All nuts shall fit and be tight to the point where shank of the bolt connects to the head.

- Flat washers and spring washers shall be provided wherever necessary and shall be of positive lock type. Spring washers shall be electro-galvanized. The thickness of washers shall conform to IS-2016-1967.

- The bidder shall furnish bolt schedules giving thickness of components connected, the nut and the washer and the length of shank and the threaded portion of the bolts and size of holes and any other special details of this nature.
- To obviate bending stress in bolt, it shall not connect aggregate thickness more than three time its diameter.
- Bolts at the joints shall be so staggered that nuts may be tightened with spanners without fouling.
- Fasteners of grade higher than 8.8 are not to be used and minimum grade for bolts shall be 5.6.

10 GENERAL:

- All ferrous parts including fasteners shall be hot dip galvanized, after all machining has been completed. Nuts may however be tapped (threaded) after galvanizing and the threads oiled. Spring washers shall be electro-galvanized. The bolt threads shall be undercut to take care of the increase in diameter due to galvanizing. Galvanizing shall be done in accordance with IS-2629-1985 and shall satisfy the tests mentioned in IS: 2633-1986. Fasteners shall withstand four dips while spring washers shall withstand three dips of one-minute duration in the standard Preece test. Other galvanized materials shall be guaranteed to withstand at least six successive dips each lasting one minute under the Standard Preece test for galvanizing.

- The zinc coating shall be perfectly adherent of uniform thickness, smooth, reasonably bright, continuous and free from imperfections such as flux, ash, rust stains, bulky white deposits and blisters. The zinc used for galvanizing shall be of grade Zn 99.95 as per IS 209-1979.
- Pin balls shall be checked with the applicable “G” gauges in at least two directions, one of which shall be across the line of die flashing and the other 90 deg. to this line. ‘NO GO’ gauges shall not pass in any direction.
- Socket ends, before galvanizing shall be of uniform contour. The bearing surface of socket ends shall be uniform about the entire circumference without depressions or high spots. The internal contours of socket ends shall be concentric with the axis of the fittings as per IS 2486/IEC-120. The axis of the bearing surfaces of socket ends shall be coaxial with the axis of the fittings. There shall be no noticeable tilting of the bearing surfaces with the axis of the fittings.

- All current carrying parts shall be so designed and manufactured that contact resistance is reduced to minimum.
- Welding of aluminum shall be by inert gas shielded tungsten are or inert gas, shielded metal arc process. Welds shall be clean, sound, smooth, and uniform without overlaps, properly fused and completely sealed. There shall be no cracks, voids incomplete penetration, incomplete fusion, under-cutting or inclusions Porosity shall be minimized so that mechanical properties of the aluminum alloys are not affected. All welds shall be properly finished as per good engineering practices.

10.1 Electrical Design:

The normal duty and heavy duty suspension, light duty, normal duty and heavy duty tension insulator sets shall all comply with the technical requirements and satisfy the test requirements

10.2 Mechanical design:

The mechanical strength of the insulators and corresponding insulator fittings must match .The design shall be such that stresses due to expansion and contraction in any part of the insulator shall not lead to the development of defects.

Insulating material shall not engage directly with hard metal. All fixing materials shall be of approved quality, shall be applied in an approved manner and shall not enter into chemical action with the metal parts or cause fracture by expansion in service. Where cement is used as a fixing medium, cement thickness shall be as small and even as possible and proper care shall be taken to correctly centre and locate the individual parts during cementing.

Technical Specification for Design, Supply and Testing of Hard ware fittings.

11 Type tests:

The following type tests shall be conducted on hardware fittings.

A. On suspension hardware fittings only.

Magnetic power loss test.
Clamp slip strength Vs torque
Mechanical strength test.
On one test on elastomer.

B. On Tension hard ware fittings only.

(i)	Electrical resistance test for Dead end assembly	IS 2486 (Part-I) 1971
(ii)	Heating cycle test for dead end assembly.	-do-
(iii)	Slip strength test for dead end assembly.	IS 2486 (Part-I)
(iv)	Mechanical strength test.	

C. On both suspension and tension hardware fittings.

(i) Visual examination : IS-2486 (Part-I) 1971
(ii) Verification of dimension : -Do-
(iii) Galvanizing / electroplating test. : -Do-
(iv) Mechanical strength test of each component :
(including corona control ring/grading ring and arcing horn)
(v) Mechanical strength test of welded joint. :
(vi) Mechanical strength test for corona control ring/ grading ring and arcing horn. : BS-3288 (Part-I)
(vii) Test on locking device for ball and socket coupling. : IEC – 372/1984
(viii) Chemical analysis, hardness tests, grain size, :
(inclusion rating and magnetic particle inspection for forging/casting.)

D. On suspension hardware fittings only.

1 Clamp slip strength ver as torque test for suspension clamp.
2 Shore hardness test of elastomer cushion for AG suspension clamp.
3 Bend test for armour rod set. : IS-2121 (Part-I)
4 Resilience test for armour rod set. : -do-
5 Conductivity test for armour rod set. : -do-

All the acceptance tests stated at clause shall also be carried out on composite insulator unit, except the eccentricity test at clause. In addition to these, all the acceptance tests indicated in IEC 1109 shall also be carried out without any extra cost to the employer.

E. For hardware fittings.

(a) Visual examination. : IS-2121 (Part-I)

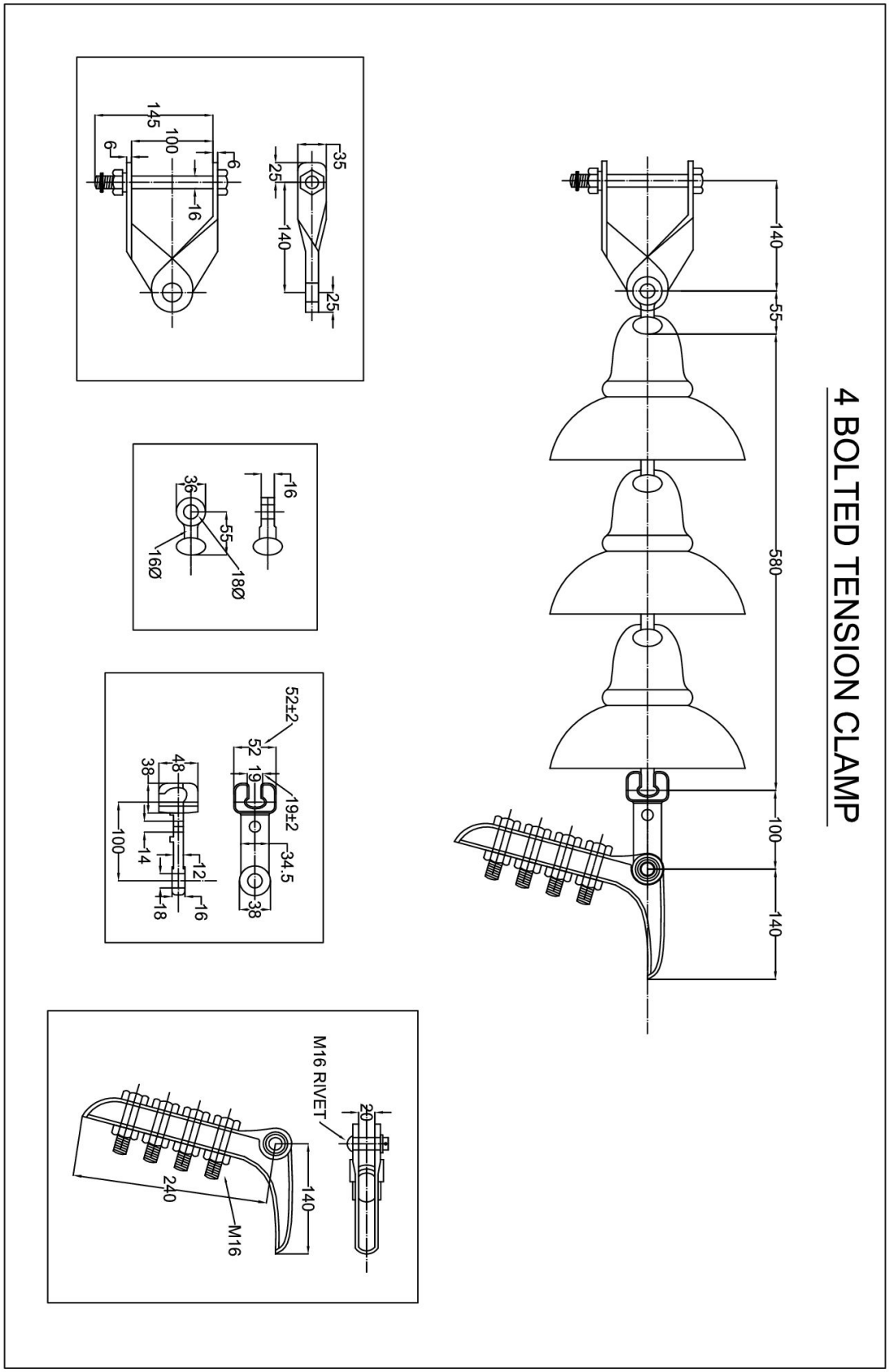
(i) Proof & test.

F. Tests on conductor accessories.

G. Type tests.

H. Mid span compression joint for conductor and earth wire.

(b) Chemical analysis of materials. :
(c) Electrical resistance tests. : IS-2121 (Part-II) 1981 clause 6.5 & 6.6
(d) Heating cycle test. : -do-
(e) Slip strength test. : -do-


4 BOLTED TENSION CLAMP
140
55
580
100
140
145
100
6
6
16
35
25
140
25
16
36
55
16Ø
18Ø
52±2
52
19
19±2
34.5
38
48
38
100
14
12
16
18
M16 RIVET
20
140
240
M16

13.TECHNICAL SPECIFICATION OF AB CABLE ACESSORIES

1.0 Scope

This specification covers the design, manufacture, assembly, testing and supply of Insulation Piercing Connectors (IPC), Suspension Clamp, Dead end Clamp, Eye hook, and Neutral connector for making connections to Aerial Bunched Cables rated 1100 volts and insulated with cross-linked polyethylene.

2.0 Standard

The design, performance and test requirements shall confirm to this specification and the following standards. However in case of any conflict, the requirements of this specification shall prevail.

1. NFC 33-040 Suspension Equipments
2. NFC 33-041 Anchoring Devices
3. NFC 33-020 Insulation Piercing Connectors.
4. NFC 33-003 Corrosion Resistance
5. NFC 20-540 Climatic Ageing
6. IS 14255 LV Aerial Bunched Cables
7. IS 8130: Conductors for Insulated cables
8. IS 7098 Part 1: XLPE Insulated Cables for working voltages upto 3.3 KV
9. IS 398 Part IV : aluminium alloy conductors
10. ASTM A 480 : Stainless Steel

The devices shall also be compatible with the cables of sizes & dimensions as defined in the cable Specifications for the cables with which they are intended to be used.

3.0 Cable Data

The standard sizes and characteristics of the phase conductors wires shall be as specified in IS: 14255-1995 and REC Specification 32/1984 of following sizes

a) 3x50 (Insulated Phase)+1x35(Bare Messenger) sq.mm

ANCHOR (DEAD END) & SUSPENSION CLAMPS

5.0 Scope

This specification covers the design, manufacture, assembly, testing and supply of Accessories for anchoring & suspending Aerial Bunched Cables rated 1100 volts and insulated with cross-linked polyethylene and aluminum alloy bare messenger.

	Description	Application
a)	Dead end Clamp, with Aluminium alloy pole bracket, stainless steel straps and buckles as per NFC 33-041	For fitting onto a pole for anchoring the end of a length of ABC, or for a major change in direction.
b)	Suspension Clamp, with Aluminium alloy pole bracket, stainless steel straps and buckles as per NFC 33-040	For supporting a length of ABC at an intermediate pole in a length, with small angle of deviation.

5.1 Cable Data

The standard sizes and characteristics of the phase and street lighting conductors, messenger wires shall be as specified in REC specification 32/1984 or IS: 14255-1995. The strength of the messenger shall be not less than the Value shown in Table 1.

Table-1

Conductor Size *(mm²).*	**Messenger Rating (as per IS 14255)**
35	9.8 KN
70	17.5 KN

5.2) ANCHORING CLAMP FOR NEUTRAL MESSENGER (Inulated or bare)

Anchoring assemblies are used to firmly attach the messenger of ABC to a concrete or steel pole and transmit the mechanical tension.

- at the end of a run
- at a major change in direction of over 30 degrees.

The clamp should consists of an Aluminium alloy corrosion resistant casted body or climatically resistant polymer material, flexible rope sling (“bail”) of stainless steel and self adjusting plastic wedges which shall anchor/hold the neutral messenger. The following key criterion to be followed for the design of the same

a) There shall be no loosable part in the process of clamping arrangement
b) Locking mechanism should be wedge type self locking. Wedges are to be made of high strength, climatic resistance Engineering Plastic with glass fibre.

5.2.1 Anchoring Assembly

Each Anchoring Assembly shall include.

- One number pole bracket.
- One number wedge type tension clamp as described above

Anchoring assemblies shall be supplied in sets to ensure compatibility of the materials against corrosion or wear of moving parts.

5.2.2 Pole Bracket for Anchoring Assembly

The pole bracket shall be made out of a single piece of Aluminium alloy suitable for attachment to a pole by two stainless Steel straps of length 0.75 meter and width 20mm ±0.2 x 0.7mm ±0.05 and buckle as described later in this specification. (or M16 Hot dip galvanized steel bolts also can be used)

The pole bracket should be designed with a closed hook; to ensure that Flexible rope (Bail) cannot slip out at any angle. The inner side of the bracket should be min 100 mm from the surface of the pole.

The pole bracket should be tested for the loads not less than slip strength of Clamp with the load applied at an angle of 45° from the normal to the surface of mounting of the bracket :-

Messenger Conductor Size Range (mm²)	**Min Breaking Load (KN)**
25 - 70	15.0

5.3 Flexible Rope (Bail) of Anchor Assembly

1. The Anchoring assembly shall be supplied with a stainless steel flexible Rope to connect the Tension Clamp to the Pole Bracket.
2. The flexible Rope forming part of clamp should be of length to maintain at least 150mm distance between bracket and body of clamp and shall have sufficient mechanical strength to withstand the mechanical test for the complete assembly tests in this specification, as per Table above.
3. The rope should have sufficient flexibility to ease the torsional movement of the ABC System.
4. The Rope should be pre-fitted with compression type end fittings which needs to be removable and re-fittable at one side of the clamp and locked at the other end of the anchoring clamp.
5. A wear resistant moveable saddle should be un-loosably fitted on the Rope to prevent abrasion at the point of fitting into the tension bracket. Saddle to be made of plastic for insulation.
6. Rope should have sufficient mechanical strength to withstand the mechanical test for the complete assembly tests in this specification.

5.4 Wedge Type Tension Clamp for Anchoring Assembly

1. Wedge type clamps shall be used for clamping the messenger without damaging the insulation in case of insulated messenger or strands in the cable of bare messenger.
2. The clamp shall be capable of clamping an uncut messenger so that it can continue without break to the connecting point or next span.

3. The clamp shall be of aluminium or polymeric body with fully insulating type of mechanical and weather resisting thermoplastic wedges for both bare & insulated messenger.
4. No bolts or loose parts are allowed as part of the Clamping system.
5. No tools shall be needed for fitting the messenger into the clamp.

6. The clamp shall be self tightening and capable of holding without slippage the load specified **as below**:

Messenger Conductor Size Range (mm^2)		**Min Breaking Load**
Section Area (mm^2)	**Dia (mm)**	**(KN)**
25 - 50	6 – 11	10.0
70 - 95	10 – 14	15.0

5.5) TESTING REQUIREMENTS OF ANCHORING ASSEMBLY (For insulated or bare messenger)

The following tests are intended to establish design characteristics as per NFC 33-041

Sl No.	**Test**	**Type Test**	**Acceptance Test**	**Routine Test**
1	Visual		X	X
2	Dimensional		X	X
3	Mechanical & Slip strength	X	X	X
4	Mechanical strength of Bracket & SS Strap with Buckle	X	X	X
5	Voltage	X	X	
6	Corrosion	X		
7	Climatic	X		

5.5.1 Visual

Design Aspects of the Anchoring Clamps needs to be visually verified as per the descriptions of this specification and criteria defined by the manufacturer in the quality plan and as accepted by customer. Following Mandatory marking should be available.

The marking allowing the identification of the samples shall be legible when examined with normal or corrected vision, without magnification.

A) Manufacturer`s name or logo or trade name

B) Month and year of manufacturing

C) Product Reference

5.5.2 Mechanical & Voltage Test

A) Mechanical Strength Test

No continuous slippage of slippage of neutral messenger nor clamp break down should occur before the value specified in Table-5

B) Voltage Test

Clamp subjected to a voltage test of 6KV between the conductive parts / fixation and a metallic rod of equivalent dia. of allowed range of cable.

No break down or flashover shall occur (tripping of voltage generator)

5.6) SUSPENSION ASSEMBLY (For insulated or bare messenger)

Suspension Assembly is used for supporting an ABC by installation on the messenger at an intermediate point of support such as a pole. It can accommodate small angles of deviation upto 30 deg.

The clamp should be designed to hang LT–AB cable with bare or insulated neutral messengers. The neutral messengers should be fixed by an adjustable grip device. A movable link should allow longitudinal and transversal movement of the clamp body.

- There should be no loosable part in the process of clamping arrangement.
- The clamp and the link should be made of Polymer to provide an additional Insulation between the cable and the pole to eliminate need for earthing.
- The clamps and movable links should be made of weather and UV resistant polymer.
- Clamps should be fixed to the pole by aluminium bracket. Bracket should be made of corrosion resistant aluminium alloy and suitable for fixing to pole by means of two S S Strap of 20mm ±0.2 x 0.7mm ±0.05 mm and SS Buckles. (Or M16 +hot dip galvanized steel bolts also cane be used)

Each Suspension Assembly shall consist of:

- One number Suspension Bracket.
- One number moveable (articulated) connecting link.
- One number Suspension Clamp.

Suspension Assemblies shall be supplied in sets to ensure compatibility of the materials against corrosion or wear of rotating/moving parts.

5.7 Suspension Clamp of Suspension Assembly

- Suspension Clamps are used for locking the messenger of the ABC Bundle without damaging the insulation if any or allowing the messenger to become dismounted from the fitting.
- The suspension clamp shall be made fully of insulating type of mechanically strong and weather resistant plastic.
- The suspension clamp shall be suitable for a minimum messenger wire size range of 50 to 95sq mm shall be capable of holding the neutral messenger up to the vertical load value mentioned in table 10 below
- Suspension Clamps for bare messengers shall be different from and easily distinguishable from those for insulated messengers
- Bolts and hand tools shall not be required for fixing and locking the messenger in the clamp.
- There should be no loosable parts in the Suspension clamp
- The suspension clamp shall be unloosably fitted to the suspension assembly.

Messenger Conductor Size Range (mm^2)		**Min Breaking Load (KN)**
Section Area (mm^2)	**Dia (mm)**	
25 - 70	6 - 14	12.0

5.8 Movable (articulated) link of Suspension assembly

Movable links are used between the suspension bracket and the suspension clamp to allow a degree of movement and flexibility between the two.

- Movable links should be made fully of insulating type of mechanically strong and weather resistant plastic.
- The movable link shall be unloosably fitted to the suspension assembly.

5.9 Suspension Bracket of Suspension assembly

The Suspension Bracket shall be made from single piece aluminium alloy suitable for attachment to a pole by

Two stainless steel straps of length 0.75 meter and width 20mm ±0.2 x 0.7mm ±0.05 mm and SS buckles

The Suspension Bracket shall be provided with an upper bulge to prevent the clamp from turning over on the Bracket for more than 45° from the horizontal or to within less than 60 mm from the pole.

The Suspension Bracket should be so designed to ensure that the Movable link cannot slip out of it.

5.10 TESTING REQUIREMENTS OF SUSPENSION ASSEMBLY

The following tests are intended to establish design characteristics as per NFC 33 -040

Sl No.	**Test**	**Type Test**	**Acceptance**	**Routine Test**

			Test	
1	Visual		X	X
2	Dimensional		X	X
3	Mechanical	X	X	X
4	Slip strength	X	X	
5	Voltage	X	X	
6	Corrosion	X		
7	Climatic	X		

5.10.1) Visual

Design Aspects of the Suspension assembly needs to be visually verified as per the descriptions of this specification and criteria defined by the manufacturer in the quality plan and as accepted by customer. Following Mandatory marking should be available.

A) Manufacturer`s name or logo or trade name

B) Month and year of manufacturing

C) Product Reference

5.10.2 Mechanical & Voltage Tests

A) Mechanical Strength Test

No continuous slippage of slippage of neutral messenger nor clamp break down should occur before the value specified in Table-5

B) Longitudinal Slip Test

There should not be any slip of more than 3 mm in the messenger below 300 N

C) Voltage Test

Clamp subjected to a voltage test of 6KV between the conductive parts / fixation and a copper foil which is covered over the maxi allowable cable placed inside the groove of the clamp.

No break down or flashover shall occur (tripping of voltage generator)

5.11) stainless steel strap and buckles

The stainless steel strap shall consist of

a) Stainless steel strap of size 20mm ±0.2 x 0.7mm ±0.05 mm and shall have tensile strength of 7.5KN min., elongation 30% Min, finish 2B, and the stainless steel material shall be of high mechanical strength, corrosion and wear resistant as per ASTM SS 202.

b) Tensile strength of strap is to be min 7.5KN to be tested on a loop with buckle. Number of loops for mounting the bracket on pole to be allocated as per load requirement for dead-end and suspension clamp specified in this specification.
c) Min two loops of 0.75 meter each with one buckle to be considered for attaching the brackets to the poles. For dead-end or suspension pole bracket a total of 1.5 meter of SS Strap and two buckle are required.
d) The SS Strap should be engraved with the name of the Manufacturer, month and year of manufacturing and length at a distance of approx. 250 mm.
e) The S S buckle to suit above strap shall be used to tension & fix it. It should have a slot width of not less than 20.5 mm x 1.5 mm
f) The Buckle should be made from ASTM SS 304 of thickness not less than 1.2 mm.
g) S S Strap should be supplied in 50 meter roll in plastic dispenser.
h) Buckles should be supplied in plastic bags containing 100 pcs per bag.

5.12 TEST REQUIREMENTS FOR STAINLESS STEEL STRAP AND BUCKLES

Type tests on SS Straps and Buckles shall consist of Cheical Analysis Test Report of Composition. In addition the SS Strap should have been type tested for Tensile Strength and Ultimate Elongation.

Sl No.	Test	Type Test	Acceptance Test	Routine Test
1	Visual		X	X
2	Dimensional		X	X
3	Tensile	X	X	X
4	Chemical and Mechanical Prpoerties	X		

5.12.1 Visual

Design Aspects of the Stainless Steel straps needs to be visually verified as per the descriptions of this specification and criteria defined by the manufacturer in the quality plan and as accepted by customer. Following Mandatory marking should be available.

A) Manufacturer`s name or logo or tradename

B) Month and year of manufacturing

C) Product Reference

5.12.2 Mechanical

A) Mechanical Strength Test
One loop of SS strap with a length of 0.75 meter and straped with a buckle should withstand a min load of 7.5 kN.

5.13 Type Test

For all accessories, the Qualification Test Report should be from CPRI, ERDA or International Laboratory Accreditation Corporation, Mutual Recognitions Arrangement (ILAC,MRA) signatory Laboratory like COFRAC.

6.0 NEUTRAL CONNECTOR

a) Neutral connector shall be one bolt type made of Extruded Aluminium Alloy conforming to IS:617-75 or better and shall be suitable for 6 to 70 sq. mm. bare messenger wires on both main and tap.

b) The bolt & washers shall be made of 8.8 grade conforming to IS:1367 and hot dip galvanized as per IS 2629.

c) The neutral connector is to be fitted with shear off nut to avoid any sort of connection issues.

d) Bolts to be permanently fixed to the aluminium body for facilitating an easy installation.

7.0 qualification test reports

For all accessories, the Qualification Test Report should be from CPRI, ERDA or International Laboratory Accreditation Corporation, Mutual Recognitions Arrangement (ILAC,MRA) signatory Laboratory like COFRAC.

8.0 QULIFICATION CRITEREA FOR MANUFACTURER

The manufacturer is to be approved as vendor for supply of these items, with relevant suppy record.

9.0 GUARANTEED TECHNICAL PARTICULARS :

The full guaranteed technical particulars as specified shall be guaranteed and shall be given in the proforma(s) given as **Annexure-I**

10.0 TYPICAL GENERAL DIAGROM OF INSTALLATION

The full guaranteed technical particulars as specified shall be guaranteed and shall be given in the proforma(s) given as **Annexure-I**I.

11.0 Example of GA Drawing :

An example GA drawing to be submitted shall be in line given in **Annexure-I**II

11.0 Sampling plan for acceptance tests

Sampling Plan for acceptance tests on all type of connectors mentioned are as per ISO 2859-1

11.1 For Visual and Dimensional

Sampling Level: General Inspection Level 1

AQL: 4% Rejection in sample size acceptable

SL NO	LOT SIZE	SAMPLE SIZE
1	**51 to 90**	**5**
2	**91 to 150**	**8**
3	**151 to 280**	**13**
4	**281 to 500**	**20**
5	**501 to 1200**	**32**
6	**1201 to 3200**	**50**
7	**3201 to 10000**	**80**
8	**10001 to 35000**	**125**
9	**35001 to 150000**	**200**
10	**150001 to 500000**	**315**
11	**500001& above**	**500**

11.2 For Mechanical and Voltage Tests

Sampling Level: Special Inspection Level S-2

AQL: 0.1% Rejection in sample size acceptable

SL NO	LOT SIZE	SAMPLE SIZE
1	51 to 90	3
2	91 to 150	3
3	151 to 280	5
4	281 to 500	5
5	501 to 1200	5
6	1201 to 3200	8
7	3201 to 10000	8
8	10001 and above	13

ANNEXURE-I

GuarantEed technical particular format

1. GTP for Dead-End / Anchoring Assembly (Dead-End Clamp with Bracket)

Dead-End Clamp		
Sl No	**Particulars**	
1	Type of Clamp	Dead end clamp with bracket
2	Name & Address of the Manufacturer	
3	Standard	NFC 33 041
4	Product Reference and Range of messenger size	Range to in line with this specification
5	Type of design	Wedge Type
6	Installation mode (with / without disassembly)	Without Disassembly
7	Any bolts or nut used in the design?	No
7	Type & grade Metallic / Nonmetallic Material	
8	Marking	
9	Dimensions (mm)	
10	Weight (Kg)	
11	Minimum Breaking Load (KN) (Acceptance test)	For messenger range of 25-50 = 10 KN For messenger range of 70-95 = 15 KN
12	Di-Electric test (Min 6 KV AC for 1 minute) (Acceptance test)	
Bracket		
13	Is the Material of bracket is die casted and	Yes

	heat treated aluminium alloy (Yes / No)	
14	Dimensions (mm)	As per approved Drawing
15	Weight (Kg)	
16	Minimum Breaking Load (KN) (Acceptance test)	For messenger range of 25-70 = 15 KN

2. GTP for Suspension Assembly (Suspension Clamp with Bracket)

S. No	Particulars	
1	Type of Clamp	Suspension Clamp with bracket
2	Name of the Manufacturer	
3	Address of the Manufacturer	
4	Standard	
5	Type Reference and Range of messenger size	
6	Installation mode (with / without disassembly)	
7	Is bracket & movable link included	
8	Type & grade Suspension Clamp	
9	Is the Material of bracket is die casted, heat treated aluminium alloy (Yes / No)	Yes
10	Marking	
11	Min Breaking Load (KN) (Acceptance test)	For messenger range of 25-70 = 12 KN
12	Di-Electric test (Min 6 KV AC for 1 minute) (Acceptance test)	

3. GTP for SS Strap

Sl. No.	Parameters	Value
1	Material composition	ASTM / AISI SS 202
2	Tensile strength per loop fitted with one number buckle	Min 7.5 KN

3	Width of Strap	20mm ±0.2
4	Thickness of Strap	0.7mm ±0.05
5	Marking on the strap for manufacturing date, name of manufacturer and length of 250mm (yes/No)	Yes
6	Supplied in a plastic dispensable casing for 50 mteres (Yes/No)	Yes

4. GTP for SS Buckle

Sl. No.	Parameters	Value
1	Material composition	ASTM / AISI SS 304
2	Weight of the material	
	Tensile strength (Buckle assembled with one loop of SS Strap	Min 7.5 KN
4	Supplied as a box of 100 nos each	Yes

5. INSULATION PIERCING CONNECTOR FOR NETWORING/BRANCHING & STREET LIGHTING

Sl No	Particulars	
1	Name of the Manufacturer	
2	Is manufacturer of accessories an ISO 9001- 2000 company. a) Copy of certificates enclosed? b) Are GA drawings enclosed ?	
3	Applicable standard	NFC 33 020
4	Type of connection required	Insulation Piercing
6	Is any metallic part carrying potential in operation exposed during installation	NO
7	Are end caps of branch cable a) Slide on type	

	(b) Rigid	
8	Are torque limiting shear heads provided to tightening bolts	YES
9	Range of cable sizes accommodated for Main & Branch	
10	Minimum & Maximum torque defined (Nm)	
11	Torque for establishing connection between main and branch (Nm)	
13	Max. Tensile load for no breakdown of Main conductor (for each cross section)	
14	Type of material for contact teeh or blade	
15	Cross section area and % equivalence to max branching cable size declared.	
16	Voltage withstand under water immersion (Min. 6 KV AC for 1 minute)	

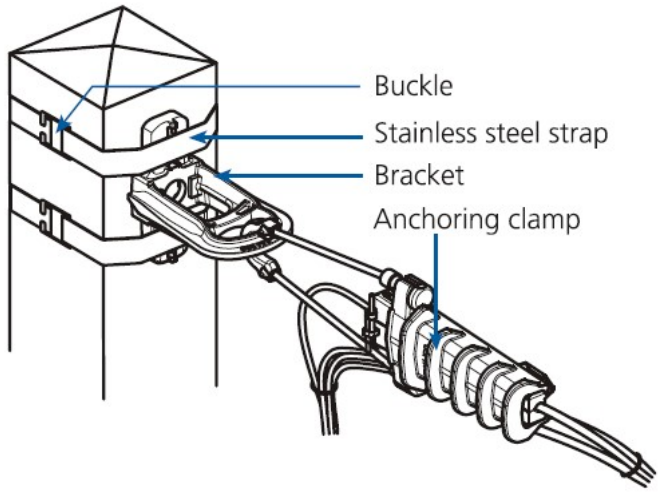
Note: Particulars mentioned in the format are mandatory and requested to be confirmed by the manufacturer

6. EARTHING CONNECTOR (CLAMP FOR NEUTRAL CONNECTION)

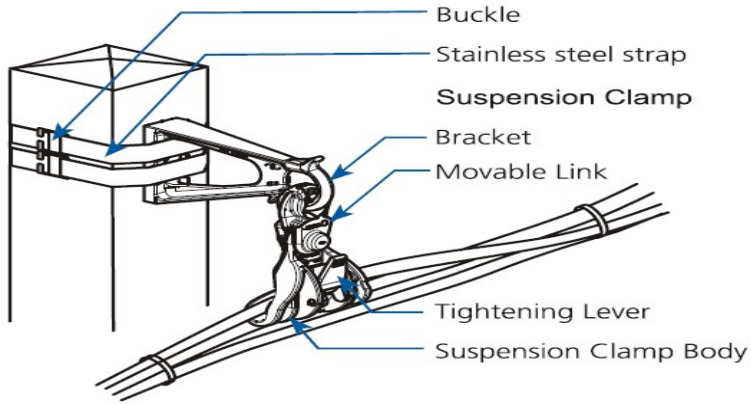
Sl.No	PARTICULARS	To be specified
1	Name & Address of the Manufacturer	
2	Are GA drawings enclosed	
3	Are experience certificate enclosed?	
4	Materials	
5	Conductor range (mm^2)	
6	a) Length, width & thickness of complete connector b) No. of bolts along with nuts and washer	
7	Particulars of Galvanisation	

ANNEXURE II :- TYPICAL GENERAL ARRANGEMENT DIAGRAM AND DRAWINGS

1. Dead End (Anchor) Clamp for insulated or bare messenger, with Pole Bracket and SS Strap

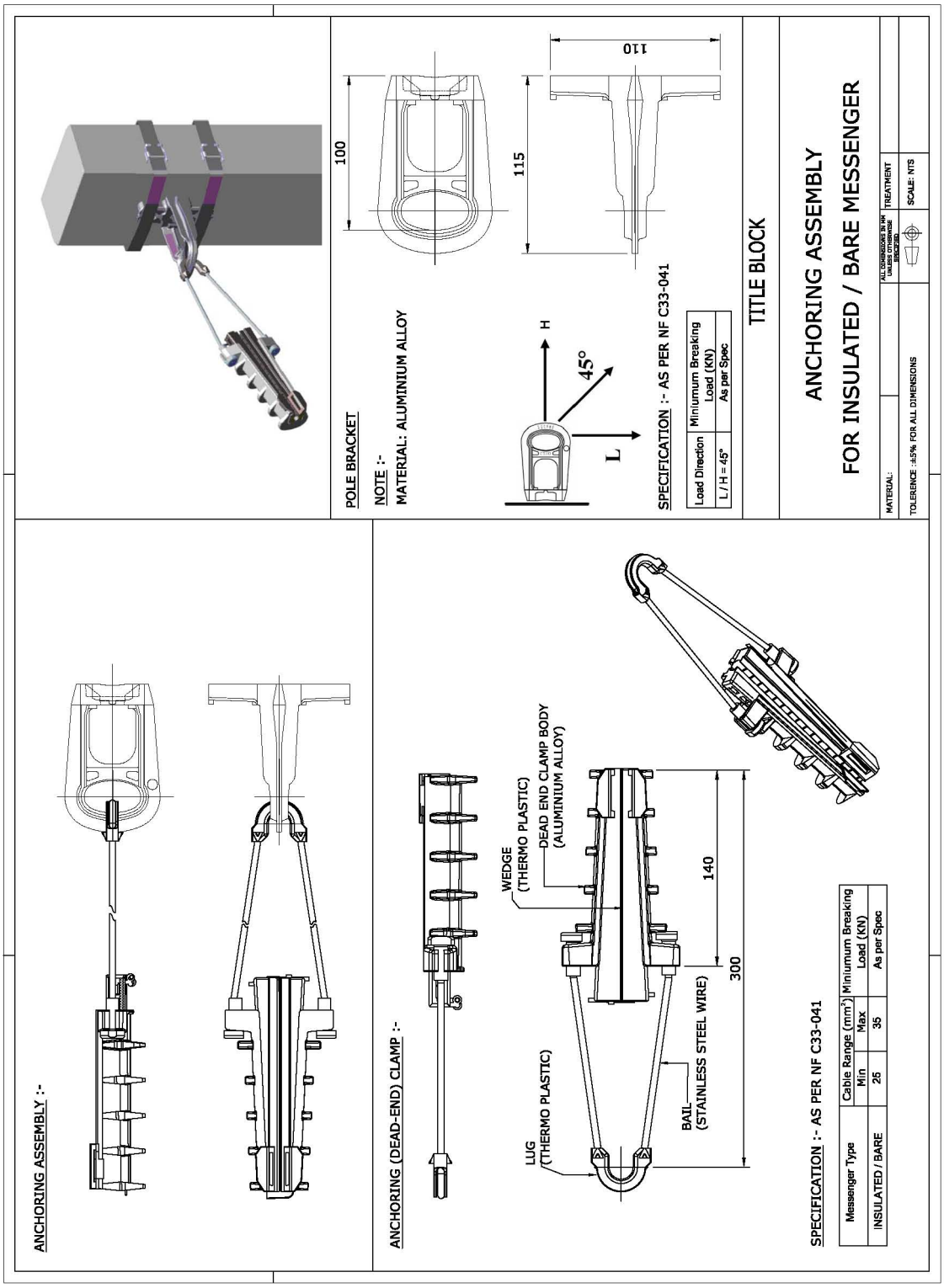


2. Suspension Clamp for insulated or bare , with Pole Bracket and SS Strap



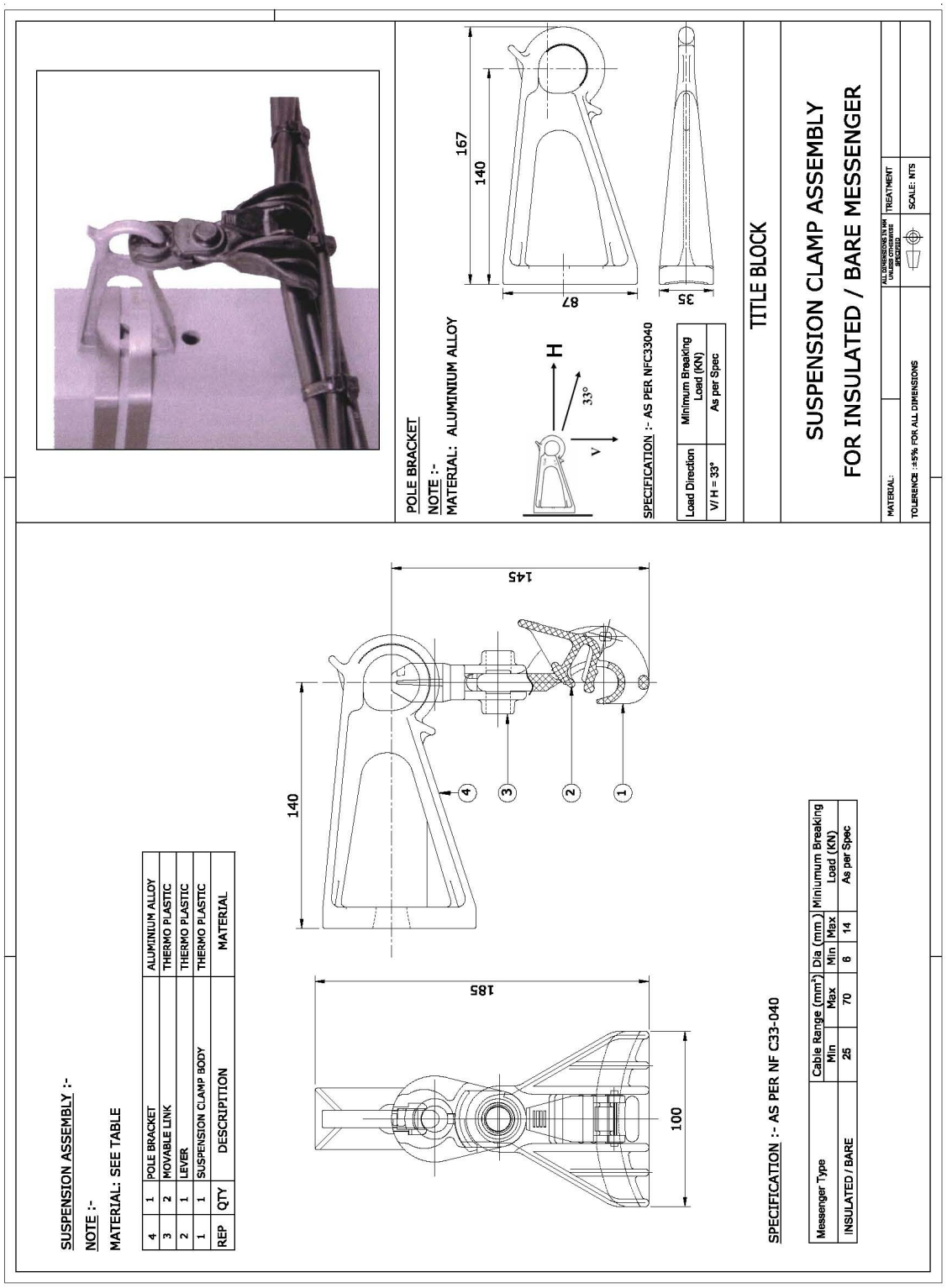
ANNEXURE-III - TYPICAL DRAWINGS

1 Typical Drawing of Dead-End (Anchoring

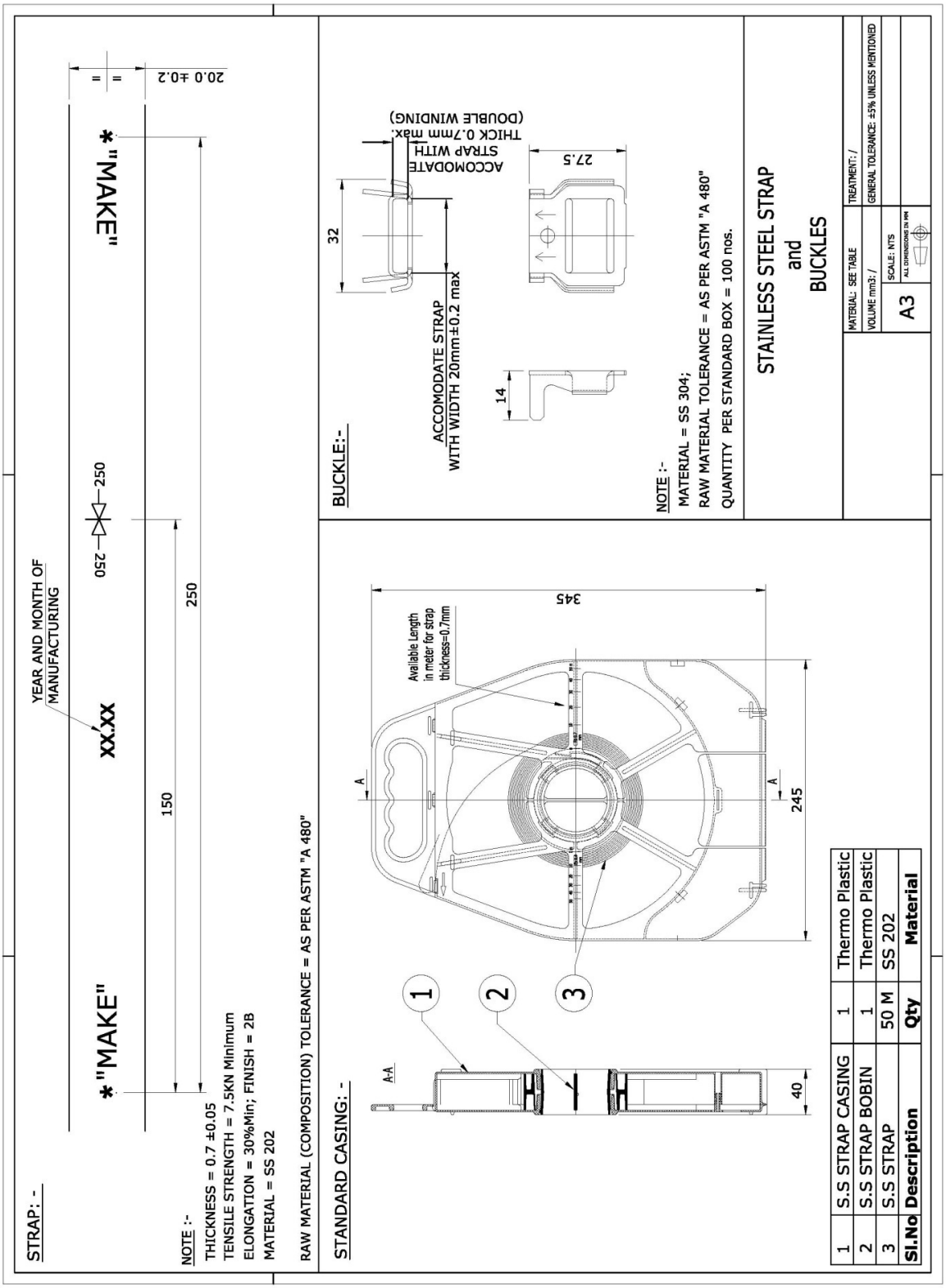


Assembly)

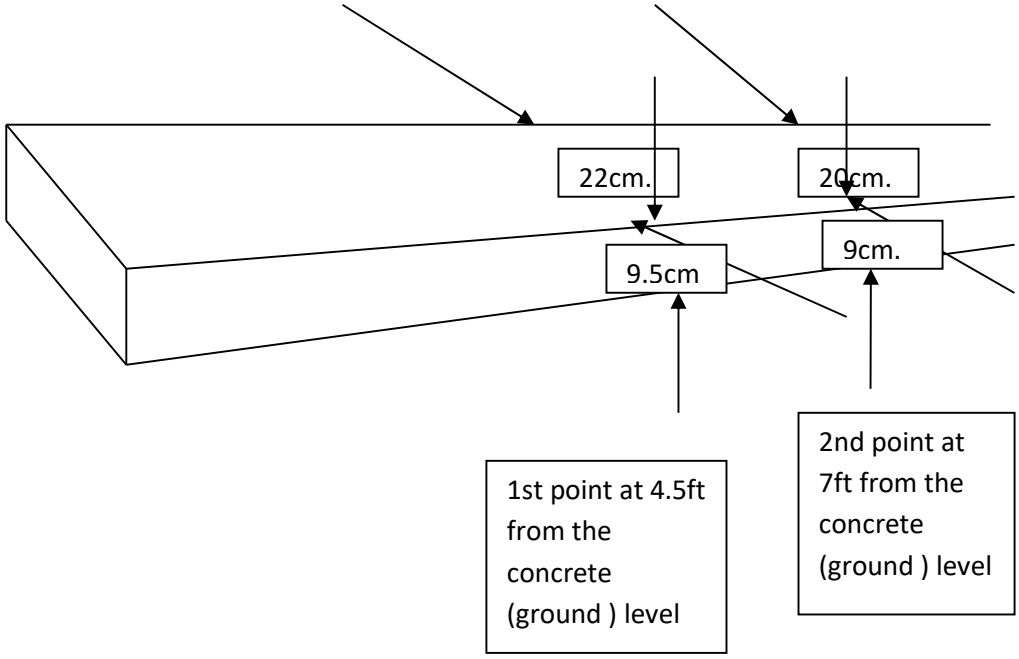
2 Typical Drawing of Dead-End (Suspension Assembly)

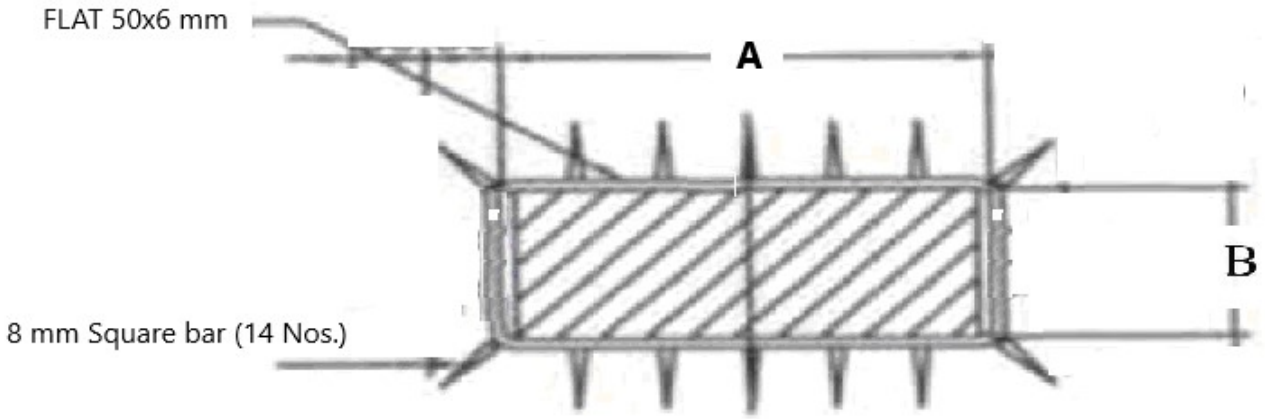


3 **Typical Drawing of Stainless Steel Strap & Buckle**



14. TECHNICAL SPECIFICATION SPIKE





Spike Clamp

Spike Clamp	A (in mm)	B (in mm)	Type of pole
1st point at 4.5 ft from the concrete (ground) level	310	90	PSC Pole
2nd point at 7ft from the concrete (ground) level	280	90	

N.B. : 1. Spike should be made up of 8 mm square bar (solid type) of 8'' long. To avoid theft, the two halfs should be welded completely.

2. This is to be inserted from the top of the PSC pole before fixing of the cross Arm.

3. All Spike should be hot dip galvanized. The weight of zinc deposited shall be in accordance with that stated in Standard IS 2629 and shall not less than 0.61kg/m² with a minimum thickness of 86 microns for items of thickness more than 5mm,

15. Guaranteed Technical Particulars for Insulating Piercing Connector

Sl No	Desrciption	Specified Value
1	Name of the Manufacture	
2	Applied Standard	NFC 33 020-1998
3	Range of Cable Size : Main & Tap	Main : 50- 120 Sqmm Branch : 35 – 95 Sqmm
4	Materials Composition	a) Body : Nylon b) Contact Plates : Tinned Copper c) Bolt- Steel d) Seals & end cap – Elastomer
5	Is any metallic part carrying potential in operation exposed during installation	No
6	Are end caps on branch cable	
	a) Slide on type	Yes
	b) Rigid	No
7	Are torque limiting shear heads provided tightening bolts	Yes
8	Marking	Make Main Range Tap Range
9	Rated current (Amp)	600
10	Voltage withstand under water immersion	15 KV for 1 Min
11	Rated Tightening torque in Nm	19 to 25 Nm

16. Guaranteed Technical Particulars for 11KV 90 KN Polymer Insulator (B&S type) suitable for XLPE 11 KV over head covered conductor of 70 mm2 and 99 mm2

Technical Specification of Dead End / Anchoring

1.1 APPLICATION OF TENSION CLAMP FOR MEDIUM VOLTAGE COVERED CONDUCTOR:

Sr.No	Description	Application
1	Tension Assembly (TA)	For fitting onto a pole for tensioning at the beginning or end of a length of MVCC, or for anchoring while a major change in direction. The Tension assembly consists of one wedge type Tension / anchoring clamp and one Tracking protection IPC.

- Anchoring assemblies are used to firmly hold the MVCC to a concrete or steel pole and transmit the mechanical tension at the end of a run at a major change in direction of over 20 degrees.
- The clamp should consist of an Aluminum alloy corrosion resistant casted body, Rigid sling ("bail") of Galvanised steel with Tracking IPC and self-adjusting fully insulating type of mechanical and weather resisting thermoplastic wedges which shall anchor/hold the cable.
- No tools shall be needed for fitting the MVCC into the clamp.

4.1.1 Design & Construction of Tension Clamp

A. Tension / Anchoring Clamp:

The following key criterion to be followed for the design of the same.

- There shall be no losable part (except Tracking IPC and bail) in the process of clamping arrangement.
- Locking mechanism should be wedge type self-locking. Wedges are to be made of high strength, climatic resistance Engineering Plastic with glass fibre.
- The fittings shall be able to withstand the specific minimum failure load (SMFL) and shall not damage the covering of cable. SMFL is the minimum failure load for clamp specified by the purchaser or declared by the supplier at which mechanical

failure will not take place.

B. Rigid Sling (Bail) of Anchor Assembly

- The Anchoring assembly shall be supplied with a Galvanized steel rod to connect the Tension Clamp to the Insulator clamp on the pole.
- The Rigid Bail forming part of clamp should have sufficient distance between bracket and body of clamp and shall have sufficient mechanical strength to withstand the mechanical test for the complete assembly tests in this specification.
- Flexible bail is not acceptable due to the reason to withstand the load.
- Rigid Bail should be fitted with provision to remove from the clamp to have easy installation.

C. Anti Tracking IPC

The Anchoring Clamp shall have an IPC to avoid tracking phenomenon by maintaining the metallic clamp as well as the cable passing through it at equipotential

Testing Requirements for an Anchoring Assembly.

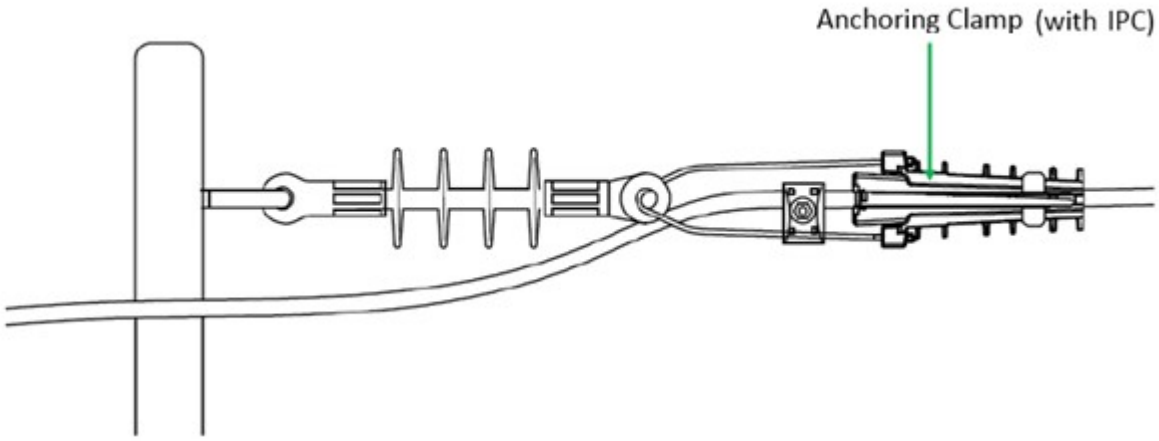
Type tests as per EN 50397-2 shall be conducted from NABL accredited independent Lab of India/the International Laboratory Accreditation corporation, Mutual Recognitions Arrangement (ILAC, MRA) signatory Laboratory like COFRAC.

The following tests are intended to establish design characteristics as per EN 50397 – 2.

S. No.	Test	Type Test	Acceptance Test	Routine Test
1.	Visual examination	√	√	√
2.	Dimension verification	√	√	√
3 3.1 3.2 3.3	Mechanical tests Tensile test at ambient temperature Tensile test at low temperature Tensile test at high temperature	 √ √ √	√	
4 4.1	Environmental tests Corrosion test	 √		

4.2	Climate ageing test	√ √		
5.	Check for permanent marking	√	√	

1. Tension Assembly (TA) with Anchoring clamp and one Tracking protection IPC



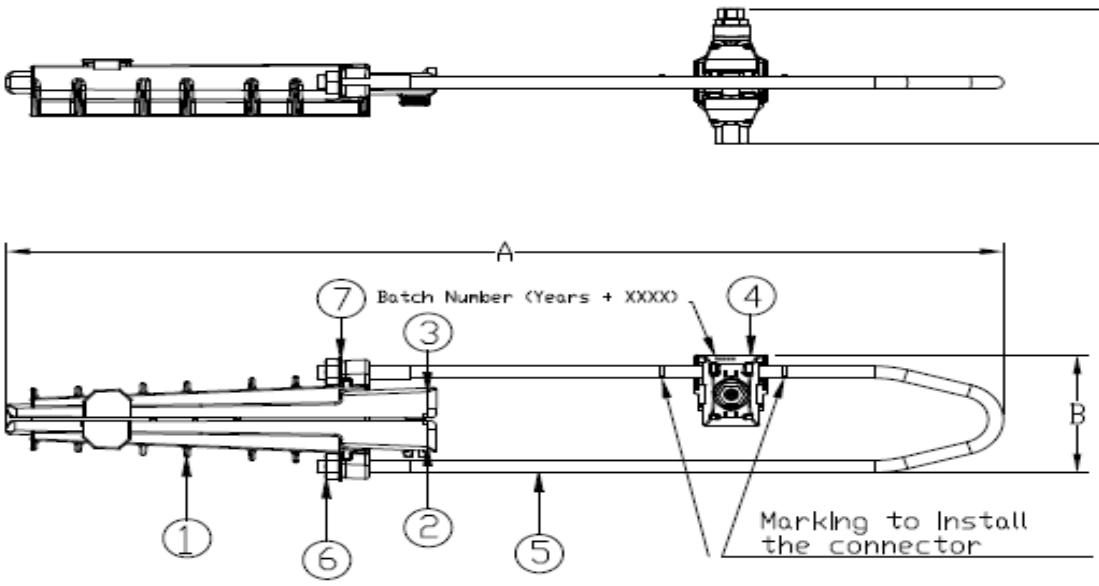
General GTP for Anchoring / Tension / Dead End Clamp

1. GTP for Dead-End / Anchoring Assembly (Dead-End Clamp with Bracket)

Sl. No.	Description	Requirement	Bidder Offer
1	Name of the Supplier		
2	Type of Design		
3	Weight		
4	Cable Range	Range in line with this specification	
5	Material		
6	Ultimate Tensile Strength	80% MBL of conductor	
7	Cable Installation (With/Without disassembly)	Ready- to-use (Without disassembling)	
8	Marking		
9	Dimensions		
10	Applicable Standard	EN 50397-2	

TYPICAL DRAWINGS

1. Tension Assembly (TA) with Anchoring clamp and one Tracking protection IPC



PART	QTY	DESCRIPTION	MATERIAL
7	2	WASHER	GALVANIZED STEEL
6	2	LOCK NUT	GALVANIZED STEEL
5	1	SS ROD	GALVANIZED STEEL
4	1	TRACKING IPC	–
3	1	LEFT WEDGES	HEAT AND UV RESISTANT THERMOPLASTIC
2	1	RIGHT WEDGES	HEAT AND UV RESISTANT THERMOPLASTIC
1	1	BODY	ALUMINIUM ALLOY

NOTE:
STANDARD: EN 50397-2
CABLE RANGE : SUITABLE COVERED CONDUCTOR
MARKING :PRODUCT REFERENCE,
MANUFACTURER LOGO,
BATCH CODE, MANUFACTURING PERIOD
General Tolerance : ±5%

NAME OF THE CUSTOMER :
A/T . NO :
QUANTITY :
DETAILS OF COVERED CONDUCTOR ACCESSORIES :

NAME OF THE MANUFACTURE & SYMBOL

CONTENTS	
CLAUSE NO.	**DESCRIPTION**
1.0	**ORGANIZATIONAL VALUES**
2.0	**ETHICS**
3.0	**CONTRACT PARAMETERS**
3.1	Issue/ Award of Contract
3.2	Contract Commencement Date
3.3	Contract Completion Date
3.4	Contract Period/Time
3.5	Contract Execution Completion Date
3.6	Contract Execution Period/Time
3.7	Contract Price /Value
3.8	Contract Document
3.9	Contract Language
3.10	Reverse Auction
4.0	**SCOPE OF WORK**
4.1	Technical Evaluation
4.2	Indemnity
4.3	Display of notice boards at work site
4.4	Disposal of waste at site
4.5	Deployment of workforce
4.6	Damage of Properties
4.7	Issuance of material
4.8	Company's right to use works
4.9	Rights of TPCODL to vary the scope work
5.0	**PRICES/RATES/TAXES**
5.1	For Supply part of Contract
5.2	For Service part of Contract
5.3	Changes in statutory Tax Structure

CONTENTS	
CLAUSE NO.	**DESCRIPTION**

CONTENTS	
CLAUSE NO.	**DESCRIPTION**

CONTENTS	
CLAUSE NO.	**DESCRIPTION**

1.0 ORGANIZATIONAL VALUES

The TPCODL has always been a value driven organization. These values continue to direct the growth and businesses.

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 members of Team TPCODL, Associates and Stakeholders are requested to register any grievance on ethics violation on Central Control Telephone No. 011-66404040.

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 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 (detailed in section 12 of this document) 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 execution of all items in the schedule of quantities (Supply, Service and or both as applicable) shall be deemed as the Contract Execution Completion Date.

3.6 Contract Execution Period/Time

The Period from Contract Commencement Date to Contract Execution Completion Date shall be the Contract Execution Period/Time. Timely Completion of Works/Timely Delivery of Materials is the essence of the contract. The period from effective date of contract to the date stipulated for completion of delivery of all items/completion of all the works/services, as per schedule of quantities of the contract is defined as contract execution completion time. The Delivery of Materials /The Completion of Works, as applicable, should be achieved in all respects as per schedules of quantities and all the terms and conditions of the contract, in the contract execution time.

Any revision/amendment in the originally stipulated contract execution time has to be approved by authorized representative of TPCODL.

3.7 Contract Price /Value

The total all inclusive price/value mentioned in the LOI/PO/RC of the contract document 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/actual measurement of work done and accepted and certified by the authorized representative of the company unless otherwise specified in schedule of quantities or in contract documents.

3.8 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.

- Letter of Intent (LOI/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)

3.9 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.

3.10 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 J. 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, licence 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.

4.1 Technical Evaluation

TPCODL reserves the right to assign scores to different parameters including but not limited to the following while evaluating the bids. TPCODL reserves the right to change the parameters and score without prior information to the associates:

S. No.	Evaluation Parameter	Max. Score
A	**Bidders already Registered with TPCODL**	**100**
A.1.	**Quality of the Products & Services** a. <u>For Supply Part:</u> No Material Rejections in last 2 years Deduction of 3 marks for each PO/ RO (for same product category) with major rejections in last 2 years. (Major rejection shall be considered when material is taken back by the vendor for rectification and the quantity of rejected material is more than 10%). b. <u>For Service Part:</u> No violation of statutory compliances in last 1 year. Deduction of 2 marks for each instance of violation in last 1 year. c. <u>Safety</u> Deduction of 2 marks for each instance of safety violation in last 1 year. Deduction of 4 marks for each reported Non-Fatal Accident in last 1 year. In case of any reported fatal accident: *ZERO MARKS*	12 12 16
A.2.	**Timely Execution of Contracts** Total Achieved Score = {30 – 3 x (Avg. %age LD deductions in last 2 years)}	30
A.3.	**Legal Issues with TPCODL** Zero instances of Arbitration procedures / Court Cases / PBG forfeitures in last 2 years: 30 marks else 'Zero' marks	30
B	**Bidders new to TPCODL**	**100**
B.1.	**Visits** <u>For Supply Part</u>: Factory Visit and Evaluation. <u>For Service Part:</u> Client Site Visit where the bidder is providing similar services. The visits as above shall be arranged by the bidder. However all costs towards conveyance, lodging, boarding etc. shall be borne by ODL. The score assigned by TPCODL based on the above visits shall be final and binding on the bidder. **<u>Safety:</u>**	30 20

S. No.	Evaluation Parameter	Max. Score
	Score achieved against the BA safety Management System questionnaire.	
B.2.	**Client Referrals** At least 3 nos. Customer References for similar products/ services in last 3 years. All customer references shall be either of the following: ▪ Govt. Organizations/ PSUs/ Power Distribution Utilities. ▪ Private Organizations with an annual turnover of >= 500 cr. PO copies or Completion Certificates are admissible. Each reference: 10 marks	30
B.3.	**Blacklisting Information** Not blacklisted by any reputed organization / utility in last 2 years: 20 marks else 'Zero' marks.	20

- Bidder shall be considered as technically qualified if they are able to achieve a technical score of >70 marks on the above parameters. 'A' or 'B'.
- The bidder must have the PF and ESI registration. In case it is not there (provided the bidder is not exempted from the PF and ESI), bidder shall not be evaluated on the above parameters and will be considered as disqualified.

4.2 Indemnity

Associates shall undertake to fully indemnify TPCODL (also referred to as the Company in the GCC) against all kinds of liabilities or damages, of whatsoever nature, including compensation arising from any accident to the person or property of those in Associate's employment or to any other person or properties including those of TPCODL, arising due to reasons attributable to any, act, omission or negligence of the Associate the Associates, for the entire period of contract including period of guarantee.

Within 7 days of award of work, the Associates shall submit Indemnity Bond in the format as per Annexure-E to Order Issuing Authority.

Contract having value more than Rs 2 Cr per Annum, Associates shall submit Indemnity Bond on Rs 100/- Non Judicial Stamp Paper in the format as per Annexure- E to Order Issuing Authority.

4.3 Display of Notice Boards at Work Sites

The Associate shall put up display notice board at each project site where the works are in progress indicating the information given below:

- Name of the Project.
- Estimated Cost of Project.
- Date of Commencement.
- Expected date of completion.
- Name of Associate and his telephone number.
- Name of Engineer-in-Charge and his telephone number.

4.4 Disposal of Waste at Site

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.

The associates shall follow the below criteria for disposal of waste at site during the execution of project.

- Associate shall ensure that the detailed project plan include the waste management, segregation of all designated waste material (Recyclable/ Non-Recyclable), collecting, storing, disposing and transferring the same to pre-arranged facility/destination in timely and safe manner as per environmental legislations during the execution of project. The project plan shall also include the innovative construction practice to eliminate or minimize waste, protect surface/ground water, control dust and other emissions to air and control noise during the execution of project. The copy of same shall be given to EIC before the commencement of project.
- The purchase policy of BA shall encourage the procurement of material with recycled and minimum packaging of goods during delivery. Associate shall provide the appropriate means for site to site transportation of materials to avoid damage and litter generation.
- Associate shall educate and inform to its project team about the requirement and responsibilities for waste minimization and disposal in general and provide training of practices that support this. Waste management should be treated like a safety program.
- In the event that area of contaminated or biological hazard is identified, Associate shall ensure that plant, equipment, personnel and any activity associated with the work is carried out in consultation with EIC of TPCODL.
- Associate shall ensure that the residents living near the site are kept informed about proposed working schedule and shall informed timings and duration of any abnormal noise full activity that is likely to happen.
- Associate shall ensure the regular maintenance and monitoring of vehicles and equipment for efficient fuel use so that emissions and noise are within acceptable limits to avoid air pollution.

4.5 Deployment of Work Force

Associate shall deploy adequate labour, as considered necessary by TPCODL for execution of the contract including Sundays and Holidays whenever required to do so with no extra cost to TPCODL. However, prior permission shall be taken from the site Engineer to carry out the work beyond normal working hours or on Sundays and Holidays. Female employees shall not be deployed beyond normal working hours/days and no child labour shall ever be deployed. Associate shall depute full time qualified and experienced engineers to supervise the work at site. All such staff shall be maintained from commencement to completion of all works to the entire satisfaction of the Engineer-in-Charge. Associate's employees deployed for the works under this contract will not be considered in Company's employment at any time. Associate shall continue to be responsible for all such employees, their safety, all types of statutory compliances related thereto and in any other manner whatsoever. The company will stand indemnified by the Associate in respect of all the above. At the same time Company upon noticing any breach or default on any statutory compliances, may at their sole discretion, decide to act in a manner as deemed fit at the risks and costs of the Associate.

TPCODL shall have the right to instruct the Associate to change the Sub- Associates or skilled /unskilled workers in case the conduct, the workmanship or speed of the work is not satisfactory.

Associates shall submit duly signed undertaking regarding engagement of competent staff / employee commensurate to the nature of job to Engineer–in–charge in the format attached as Annexure – H.

4.6 Damages to Properties

The Associates shall take necessary steps to ensure that the equipment and installations of the Company, Third parties, including other utility services like water supply pipelines; open drains telephone cables etc. are not damaged during execution of the works. The Associates shall be responsible for all such damages and shall have to repair/ replace and/or compensate for the entire claims in respect of such damages at its own cost.

4.7 Issuance of Material

The material issued to the Associate shall be in the custody of the Associates who shall be fully responsible for the same. After completion of the works, the Associates will reconcile the material. Any cost of material which is short or damaged/lost will be deducted from Associate bill/ deposits.

4.8 Company's Right To Use Works

If Taking Over Certificate is delayed for any reason, for which TPCODL's decision shall be final and binding upon the Associate, the Company shall be entitled to use the works or portion thereof without affecting Associate's responsibility and liability to complete the balance works as per company's directives from time to time, though Associate shall be afforded reasonable opportunity by the company to enable Associates to complete all balance works required for issuance of 'Taking Over Certificate' by the company.

4.9 Rights of TPCODL to vary the scope work

TPCODL shall 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 communicating the intent to do so in writing to the Associate. On receipt of such communication the Associate shall, within the time frame specified in the contract shall provide TPCODL with a reasonably detailed estimate of the cost of the change in scope outlined in the TPCODL communication. The change in the Contract price and time shall be revised 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 in the scope of work till such time revision of Contract price and time schedule are approved and communicated to the associate by TPCODL.

Any change in the Scope of Work and/or Terms & Conditions of the order shall be intimated by TPCODL through an amendment to the contract. The amendment shall be treated valid only if signed by the authorized signatory of the original contract.

5.0 PRICES/ RATES/ TAXES

5.1 For Supply part of Contract

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.

5.2 For Service part of Contract

The Prices and Rates are inclusive of cost of materials supplied as per contract terms and for which MDCC is issued by TPCODL and to the extent required for completion of works, cost of service executed as per schedule of quantities, cost of testing as per contract terms, cost of documentations including all relevant test certificates and other supportive documents to be furnished as per contract terms. The rates shall remain firm till actual completion of contract.

The Prices/Rates are inclusive of all taxes, levies, cesses 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 shall remain unchanged irrespective of TPCODL making changes in quantum in all or any of the schedules of items of contract.

5.3 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

A. 5% of the Release Order/ Purchase Order price shall be paid as initial interest free advance on fulfillment of the following by the Associate:

   a) Acceptance of PO/ LOI.
   b) Submission of advance payment BG of 15% of the Release Order/ Purchase Order price which shall remain valid till the advance is fully adjusted.

c) Submission of Contract Performance Bank Guarantee of 5/10% of the RC/ PO price valid till 30 days after taking over of the works.

B. 10% of the Release Order/ Purchase Order price shall be paid as interest free advance against approval of drawings under Category-1 of major drawings, Quality Plans, Pert Chart, Field Quality Plan, posting of Project Manager and commencement of the first mile stone of the work mutually agreed including C-3 Form, and submission of a true copy of 'Erection All Risk Insurance Policy' taken for the awarded jobs. The drawing list shall be mutually agreed at the time of award of work.

C. 50% on account payment of the total of item wise cost of material Release Order/ Purchase Order shall be paid against receipt of material at site in good condition and certification by TPCODL along with bills complete in all respects viz. MDCCs etc.

D. 20% on account payment of the actual executed value shall be paid against mechanical completion of erection on prorate basis against monthly bills and 70% on account of the actual executed value shall be paid against the service line item including composite line item. In case this milestone is not completed beyond 120 days for reasons attributable to TPCODL, the payment corresponding to supply part shall be released subject to submission of BG of equivalent amount by the BA valid for a period of further 12 months. If required, it shall be extended by the BA on request of TPCODL.

E. 15% payment of the actual executed Release Order/ Purchase Order shall be paid after completion of acceptance test and Taking Over of the complete systems specified in the enquiry, including clearance of Electrical Inspection, compliance of final punch point and after reconciliation & adjustment of payments, if any, towards Quantities of materials issued from purchaser's stock and consumed by the contractor for expeditious completion of the job. In case this milestone is not completed beyond 120 days beyond schedule for reasons attributable to TPCODL, the payment corresponding to supply part shall be released subject to submission of BG of equivalent amount by the BA valid for a period of further 12 months. If required, it shall be extended by the BA on request of TPCODL.

The Contractor shall submit all Operation & Maintenance manuals and "As Built Drawings" etc. and shall also submit Equipment Warranty Bank Guarantee (EWBG) equivalent to 5/10% of actual executed contract price before the release of this last payment and return of CPBG. The validity of EWBG shall be for a period of 15 months from the date of taking over of the works or specified guarantee period in drawing/tender/technical specification documents etc. whichever is later. The associate shall also submit 'No Demand Certificate' at the time of receipt of full and final payment.

6.1 Pre-Requisites for Payment

- Associate should have completed execution of that part of contract, for which payment is sought, to the satisfaction of TPCODL's Engineer-in-Charge responsible for the contract and obtained certification for execution of the work.
- Associate has undertaken joint measurement of the work executed along with TPCODL's Engineer-in-charge

- Associate's bills/invoices submitted have been certified by Engineer-In-Charge.

6.2 Bills & Invoices

Unless specified otherwise in the special conditions of contract, Associate shall raise not more than one invoice/contract per month for the services rendered in the prescribed Tax Format and the invoice shall be submitted within 15 days of the following month at Bill Inward Receipt Desk (BIRD) located at Civil Lines III Office, TPCODL**.**

All Bills shall be supported by joint measurement of work done, quality test report and a copy of wage sheet, if applicable (showing proof of having disbursed wages as per applicable law) and a copy of statement substantiating that statutory payments having been affected.

Bills/ invoices shall mention Associate's 'Sales, Service, WCT Tax Registration Number, PAN number as applicable.

Final bill submission after completion of project or execution of job must be within 30 days from the actual date of completion/execution of work awarded.

6.3 Payment & Statutory Deductions

Payment shall be released within 30 days from the submission of the bills. The associate shall submit "No Demand Certificate" in the format as per Annexure-D at the time of receipt of full and final payment. In case any non-compliance to contract conditions comes to TPCODL's notice, TPCODL will be entitled to deduct 30% of estimated wages plus 20% of wages as TPCODL's overheads. Associates would be obliged to provide the copy of monthly wage sheet in any case, failing which no payment shall be made. TPCODL at their sole discretion may deposit the PF etc. with statutory authorities. TPCODL will deduct the amounts of TDS as per statutory requirement under the income tax act and the DVAT Act and certificates (wherever applicable) will be issued to associate accordingly.

In case of non-submission of PAN No TDS @ 20% shall be deducted from all payable amounts for which no TDS certificate shall be issued. TDS once deducted as above shall not be revised in any condition.

6.3.1 Statutory Deductions

TPCODL will deduct the amounts of TDS, TCS as per statutory requirement under the income tax act, the Goods and Services tax act, BOCW Act, or any other applicable tax act and certificates (wherever applicable) will be issued to associate accordingly. For consumption of TPCODL's Water and Electricity by Associate for execution of Contract, Associate shall pay 0.5% & 1.0% respectively of contract value and it shall be deducted from the running bills. The Engineer-in-Charge as stated in the Order shall be responsible for certification of the work executed and the bills. Bills (including original) shall be submitted in triplicate at Bill Inward Receipt Desk (BIRD) located at Civil lines-III, Near Vidhan Sabha, TPCODL.

6.4 Guidelines for Raising Running/Final Bills

Contract Value Up to 5 Lakhs	One Final Bill
Contract Value More than 5 lakhs	Monthly Running Bill & One Final Bill

All Bills shall be processed only when all bank Guarantees are in place and before payments of Final Bill Associate have to furnish NDC.

6.5 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.

6.6 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-D.

7.0 MODE OF PAYMENT

Payment shall be made through RTGS mode for which Business Associated shall submit the details of Bank Account and other details as per annexure K. 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.

The quantities of items indicated are estimated and preliminary. However, payments shall be made on the basis of actual quantity of work carried out and measured jointly by the Company and the Associate. Associates shall be responsible to organize joint measurements of works with TPCODL Engineer-in-Charge before raising any bill of work done. In the event Associate fails to do so, TPCODL at their sole discretion, may take measurements of work done and proceed as deemed fit and in such an event Associate's right to lodge any subsequent claim shall stand forfeited.

8.0 SECURITY CUM PERFORMANCE DEPOSIT

Associates shall submit within 15 days from the effective date of issue of PO/RC, Security cum Performance 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 one month.

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

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

validity of original SPBG only till the requisite period, i.e. Guarantee Period plus one month.

9.0 STATUTORY COMPLIANCE

9.1 Compliance to Various Acts

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

9.2 SA 8000

Further being TPCODL is SA 8000 complied and expects its Associates to follow guidelines of SA8000: 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	25% relaxation in PBG for order value above 50 lacs else 50% relaxation	All limited and Open tenders
4	Turnover	25% relaxation in company turnover under qualifying requirement criteria	All Open Tenders

****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 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).

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

9.4 Compliance to Labour Laws

Bidder needs to ensure compliance to applicable labour laws including timely disbursement of wages. In case wages are not disbursed as per the stipulated timelines, then TPCODL shall pay the wages to BA employees on behalf of BA. Apart from deducting the amount of wages paid, TPCODL shall deduct an additional service charge equivalent to 25% of the wages paid from the payment due to BA.

9.5 Compliance to Construction and Demolition Waste Management Rules & Environment (Protection) Amendment Rules

BA is liable to follow the Construction and Demolition Waste Management Rules- 2016, Environment (Protection) Amendment Rules- 2018 and Guidelines on dust mitigation measures in handling construction material and C&D wastes issued by CPCB.

Following are some main points of above Rules/Guidelines for Construction work, cable laying jobs etc.

1. Barricading to be provided at site to cover complete area.
2. Construction material and waste should be inside the closed area made by using barricading.
3. Water sprinkling/fine spray from nozzles to be done to suppress the dust.
4. The board of Dust mitigation measures shall be displayed at site for public viewing with required details.
5. Loose sand or soil and construction material that causes dust shall be covered.
6. Transport material that are easily wind borne need to be covered by a sheet made of either jute, tarpaulin, plastic or any other effective material.
7. All areas for storing C&D waste/construction material to be demarcated and preferably barricaded particularly those materials that have potential to be dust borne.
8. Grinding and cutting of building materials in open area shall be prohibited.
9. Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.
10. No uncovered vehicles carrying construction material and waste shall be permitted.
11. Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures to be notified at the site.

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 SAFETY

All Associates shall strictly abide by the guidelines provided in TPCODL's Contractor Safety Management System (CSMS) as applicable at all stages during the contract period. Associate shall execute the contracts ensuring the following in and as order of priority:

- Safety of Human Beings.
- Safety of equipment/Assets.
- Timely Completion of Contract.

Safety related requirements as mentioned in our Contractor Safety Management System is attached as annexure L and is an integral part of this GCC.

12.0 INSPECTION/PARTICIPATION

12.1 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 within maximum of two weeks of 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.

12.2 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.

12.3 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.

12.4 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.

12.5 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.

13.0 MDCC & DELIVERY OF MATERIALS

13.1 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 utilised 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 sub-contractors:

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.

13.2 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.

13.3 Consignee

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

13.4 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

13.5 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.

14.0 GUARANTEE

14.1 Guarantee of Performance

Associates shall stand guarantee that the equipment and material supplied/service or work rendered 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.

14.2 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 15 Months from the Date of Commissioning or 24 months from the date of delivery of final lot of supplies made, whichever is earlier.

14.3 Failure in Guarantee Period (GP)

If the equipment and material supplied/service or work rendered 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/service or work rendered under the contract 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/service or work 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.

14.4 Cost of repairs on failure in GP

The cost of repairs/rectification /replacement, apart from the actual cost of repairs/rectification/replacement is also inclusive of all associate costs of required transportation, site inspection /mobilization/dismantling and re-installation costs as applicable, to be borne by the 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.

14.5 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.

14.6 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.

14.7 Support beyond the Guarantee Period

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

15.0 LIQUIDATED DAMAGES

Liquidated damages @1% of the total executed contract value per week or part thereof, for the period of delay in integrated completion, subject to maximum 10% of the value of the contract shall become leviable without prejudice to other rights of the TPCODL. This amount shall be recoverable from any amount due or becoming due to the Business Associates under this or any other contract. In specific cases, TPCODL reserves the right to apply LD only on the unexecuted portion of the supply and works for standalone use, provided full quantity is executed within a maximum 30% additional time. 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.

15.1 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.

15.2 Material Recovery

In case of any recoveries for materials or services (for material free issued by TPCODL and not reconciled by BA or for services claimed and paid in excess at the time of running bills), the total cost which shall be recovered from the BA, shall be the gross amount of material or services (i.e. including taxes) plus applicable taxes as prevailing at the time of such recoveries.

16.0 ASSIGNMENT OR SUBCONTRACTING

Associates shall not assign/subcontract/outsource the schedule of activities of contract TPCODL enters with the associate, in part or full, without TPCODL's prior written approval.

However outsourcing of materials/equipment/services by Associate to make the integrated product for which TPCODL's has placed the contract with the associate from suppliers, makes and agencies which have been mutually agreed upon during contract pre-award stage is permitted subject to following conditions.

In such cases where outsourcing is done by the Associate

- Shall ensure that outsourced suppliers comply with the technical and financial qualification requirements specified by TPCODL in the contract document
- Shall furnish all particulars about the proposed outsourcing agencies and the details of the goods/services/work outsourced to the Associate while seeking approval of TPCODL for inclusion for outsourcing. The Associate shall give approval or shall refuse approval in writing within thirty (30) days of receipt of such request. However the Associate shall not be entitled for any additional contract execution time whatsoever in lieu of the process for approval for outsourcing agencies, and shall be held responsible for any delay in the project execution time.
- Shall remain jointly and severally liable for any action, deficiency, and/or negligence on the part of his outsourcing agencies. The approval extended by the Associate to outsourcing agencies recommended by the Associate shall not discharge the later from his Contract obligations.

Shall submit to the Associate unpriced copies of purchase orders with technical specifications included in the orders, placed on outsourcing agencies as soon as the respective orders have been placed by the Associate.

17.0 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.

18.0 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.

18.1 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.

18.2 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.

18.3 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.

18.4 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.

18.5 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.

19.0 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.

20.0 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.

21.0 LIABILITY & LIMITATIONS

21.1 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.***

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.

21.2 Limitation of Liability

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

22.0 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.

23.0 SUSPENSION Of CONTRACT

23.1 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,

23.2 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 27 for breach/default of contract conditions.

23.3 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 24.3) 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.

24 TERMINATION OF CONTRACTS

24.1 Termination for Default/Breach of Contract

The contract / PO 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 24 (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 24 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:

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

ii) 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.

iii) 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.

iv) 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.

v) 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.

24.2 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. This convenience will be available to associate only after one year from the contract effective date. For this purpose, associate will provide a notice period of 90 days to TPCODL, Associate will have to pay TPCODL a 'termination convenience fee' equivalent to 5% of unexecuted contract value.

24.3 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.

25.0 DISPUTE RESOLUTION & ARBITRATION

In case of any dispute or difference the parties shall endeavor to resolve the same through conciliatory and amicable measures within 15 Days failing which the matter may be referred by either party for resolution by the sole arbitrator to be appointed mutually by both the parties. The arbitral proceedings shall be conducted in accordance with Arbitration and Conciliation Act 1996 and the place of arbitration shall be 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.

25.1 Governing law 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.

26.0 ATTRIBUTES OF GCC

26.1 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.

26.2 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.

26.3 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.

27.0 INSURANCE

The Associate shall arrange accident insurance policy for his foreign experts/specialists/personnel deputed to Site and Associate's/his sub-Associates' manufacturing works as well as for his Indian engineers and supervisory staff. The Associate shall also take out for his Indian workmen, where applicable, a separate policy as required under Workmen's Compensation Act.

Associates shall be responsible to suitably insure their entire work-force (to the extent of at least meeting requirements under Workmen Compensation Act) Tools, Plant, Third party liability at the project site, All Risk comprehensive insurance for the entire works (insurance for free issue items will be in TPCODL scope) for total contract (PO/RO) value or any other such risks during execution of works, till the works are handed over to the company, in consultation with TPCODL and shall submit copies of such insurances to the Engineer-in-Charge for review / acceptance before commencing the work. Engineer-in-charge must ensure compliance to insurance requirement by Associate before commencement of works. TPCODL shall stand fully indemnified in this respect.

28.0 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.

29.0 TRANSFER OF TITLES

The title of ownership and property to all equipment, installations, erections, constructions materials, drawings & documents shall pass to the TPCODL after Commissioning and complete handing over-taking over.

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.

The Associate shall take all corrective measures arising out of discrepancies, errors and omissions in drawings and other information within the time schedule and without extra cost to the TPCODL.

The Associate shall also be responsible for any delay and/or extra cost if any, in carrying out engineering, and site works by other agencies arising out of discrepancies, errors and omissions stated in as well as of any late revision/s of drawings and information submitted by the Associate.

30.0 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 according to the guidelines mentioned below:

31.0 CONTACT POINTS

In case Business Associate needs information with respect to payments or has any grievances, same may be sent to the following mail ids:

- For all queries during the processing of invoice: purchase@cescorissa.com
- For all queries after the invoice is paid: purchase@cescorissa.com
- For any other grievance/ issues with respect to contract issued to Business Associate, please get in touch with BA Grievance Cell: purchase@cescorissa.com

32.0 LIST OF ANNEXURES

S. No.	Subject	Annexure
1.	Performa for Bid Security Bank Guarantee	A
2.	Performa for Advance Payment Bank Guarantee	B
3.	Performa for Performance Bank Guarantee (CP cum EP)	C
4.	Performa for No Demand Certificate by Associate	D
5.	Performa for Indemnification on Statutory Compliance	E
6.	Performa For Application For Issuance of Consolidated TDS Certificate	F
7.	HR Service Level Agreement	G
8.	Under taking for competence of workmen	H
9.	Business Associate Feedback Form	I
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ANNEXURE-A

PROFORMA FOR BID SECURITY BANK GUARANTEE

TP Central Odisha Distribution Ltd,

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 The TP 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 the ……. Bank or our local Branch at Bhubaneswar ……..(detail address & code No…….. of local branch to be specified) 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 ADVANCE PAYMENT BANK GUARANTEE

(On Rs.100/- Stamp Paper)

Note:

(a) Format shall be followed in toto

(b) Claim period of six months must be kept up

(c) The guarantee to be accompanied by the covering letter from the bank confirming the signature to the guarantee

---

TP Central Odisha Distribution Ltd

Bhubaneswar

Advance Payment B.G.No……

Contract No……dated……

1. You have entered into a Contract No_____ with M/s._____ (hereinafter referred to as "the Vendor") for the supply and delivery of _____

   (hereinafter referred to as" the said Equipment") for the price and on the terms and conditions contained in the said contract.

2. In accordance with the terms of the said contract, you have agreed to make an advance payment of Rs._____ (Rupees_____ only) being _____% (_____percent) of the total value of the contract on "the Vendor" furnishing you with an irrevocable, unconditional and acceptable bank guarantee to be valid till the date of receipt of "the said equipment" covered by your above mentioned contract. For this purpose you have agreed to accept our 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 months 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)**

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 month 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 _____ 200_____

Witness

Bank's rubber stamp

1. _____ Banks full address

Designation of Signatory

2. _____ Bank official number

ANNEXURE- C

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

---

TP Central Odisha Distribution Ltd

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 _____ 200__

Witness

Bank's rubber stamp

1. _____ Banks full address

Designation of Signatory

2. _____ Bank official number

ANNEXURE-D

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.

Dated **Signature**

Place **Name**

Designation

(Company Seal)

ANNEXURE – E

PROFORMA FOR "INDEMNIFICATION ON STATUTORY COMPLIANCES"

(To be submitted by the successful Bidder within seven days of award of work)

(Certificate No. CCP/001)

Name of the Project

Letter of Award / Contract No.

Dated

Name of the Associate

Scheme No. / Job No.

By this confirmation we, _____ (Associate) are formally bound to M/s. TPCODL towards any sum which may be imposed, levied or hereinafter recovered by the Provident Fund Organization under the provisions of the Employees of the Provident Fund and Miscellaneous Provisions Act 1952 in respect of employees employed by us.

We well and truly bind ourselves and our heirs executors administrators and representatives jointly severely and respectively for the above payment only to be paid to M/s. TPCODL.

AND WHEREAS we, _____ (Associate) is making compliance of the Employees Provident Fund and Miscellaneous Provisions Act 1952, have entered into the above written bond for the indemnity to M/s. TPCODL against all losses from the acts or default of the said Associate in respect of compliance of the Provident Fund Act.

Similarly we hereby confirm that we have complied with all statutory and local laws and nothing is outstanding with regard to Local Sales Tax, Labour Laws, Local Municipal dues, Electricity dues etc. We have entered into the above written bond for the indemnity to M/s. TPCODL against all losses from the acts or default of the said Associate in respect of compliance of the Local Sales Tax Laws, Local Laws, Labour Laws, Local Municipal Dues, Electricity dues etc.

NOW THE CONDITION, of the above written bond is as such that if the Associate during the period of this contract commits any default or fails to make payment of Contributions in respect of his employees to the Employees Provident Fund Organization, he shall indemnify the Principal Employer M/s. TPCODL from all and every loss and damage caused to them from any act, omissions or negligence of the said Associate in respect of compliances under the Employees Provident Fund and Miscellaneous Provisions Act, 1952.

IN WITNESS to the above written bond we have here to set our hands, with our free consent.

Dated **Signature**

Place **Name**

Designation (Company Seal)

ANNEXURE-F

PROFORMA FOR APPLICATION FOR ISSUANCE OF CONSOLIDATED TDS CERTIFICATE

To be printed on the letterhead

To,

The TP Central Odisha Distribution Ltd

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 - G

SERVICE LEVEL AGREEMENT

(To be adhered to by Business Associates (BAs) in TPCODL on Human Resource Issues)

1.0 The following shall be adhered to by the Business Associates during his / its association with TPCODL:

Shall Abide by TPCODL Core Values:

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

b) Understanding – We must be caring, show respect, compassion and humanity to our colleagues and customers and always work for the benefit of the communities we serve.

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

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

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

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

2.0 The Business Associate / his manager / supervisor who is responsible for managing the project site / performance contract etc. in TPCODL would also ensure adherence of these values by his employees / persons deployed by him in connection with his works undertaken in TPCODL.

3.0 TPCODL is a signatory to the United Nation Global Compact as an integral part of its Governance principles / business. The Business Associates are required to:

a) Support and respect the protection of human rights and make sure that they are not complicit in human right abuses.

b) Respect freedom of association and effective recognition of the right to collective bargaining.

c) Not to resort to any form of forced and compulsory labour.

d) Shall ensure abolition of child labour in his area of work.

e) There is no discrimination in respect of employment and occupation in respect of his employees.

f) Support precautionary approach to environmental challenges.

g) Promote greater environmental responsibility by himself and his employees in his areas of work.

h) Deploy and defuse environmental friendly technologies while carrying out the works.

i) Work against corruptions in all its form including extortion and bribery by himself and his employees.

4.0 The Business Associates are required to adhere to all applicable Labour Laws with special reference to the following:

a) No person below the age of 18 years and no child labour will be engaged directly or indirectly for executing the work connected with the business of TPCODL.

b) Minimum wages along with other statutory dues like PF, ESI, etc. as applicable to the workers shall be made within the prescribed period of 7th / 10th day of the following month.

c) Deduction / deposit / record keeping and all other requirements under Employees PF Act 1952, Employees State Insurance Act 1948 and other applicable acts (if any) shall be adhered to.

d) Only statutorily authorized deductions (if any) shall be made in accordance with the relevant statutes.

e) All the provisions of Contract Labour (R&A) Act 1970 shall be complied with in respect of the workers engaged for TPCODL work. The work will be commenced only after completing necessary formalities for obtaining Labour License (if applicable).

f) Necessary registers / records, filing of returns etc. shall be maintained for verification by Statutory / TPCODL authorities.

g) Payment of wages shall be made only in presence of and with certification of authorized representative of TPCODL or shall be made in the form of cheque / bank transfer to the employee.

h) During the period of contract, the Business Associate will arrange for deployment of his supervisor / manager for total supervision and control of the work and their manpower. All the activities related to their manpower e.g. attendance, leave, wage disbursement etc. will be done under the supervision & control of Business Associates, While adhering to the prescribed standard / norms of production / productivity & quality. During execution of the work, Business Associate shall engage only such qualified / skilled manpower as may be envisaged / required for ensuring level of production / service into the contract / work order.

i) Clearances as follows shall be obtained from IR & Welfare Group:

   i. Clearance for commencement (before start of the work).
   ii. No Objection Certificate (after completion / before final settlement).
   iii. Copies of PF / ESI Challans shall be deposited with IR & Welfare Group every month

j) The Business Associate shall indemnify TPCODL from any liabilities under applicable Labour Statutes.

k) The Business Associate shall ensure safety and health of his employees and shall also maintain hygienic working environment / condition in his area of work.

l) The Business Associate and his employee shall abide by Laws of Land and shall not violate any applicable provisions.

m) The Business Associate appreciates with and acquiesces to the right of TPCODL as principal employer to fulfil any of his legal obligations, if he fails to do so under applicable labour laws and deduct the same from his running bills / final payments / enchasing security deposit / Bank Guarantee as the case may be. If there is any further shortfall TPCODL has the right to recover the same from the Business Associate.

n) The Business Associate ensures that person employed by him adhere to the moral and legal conduct and shall not violate any standard conduct envisaged in the premise of

TPCODL by all such as, Transparency, Safety, Discipline, Integrity etc. The Business Associate or his employees should refrain from corrupt practices, giving or taking bribe in connection with any TPCODL business.

5.0 The '<u>Statutory Compliance Enforcement System</u>' in TPCODL is detailed below for adherence by all concerned. Corporate IR & Welfare Group will be the process owner for implementation of the system with the help of concerned Engineer I/c or Officer I/c.

a) Statutory Compliance being a professed value in TPCODL Code of Conduct, the concerned Engineer / Officer in charges are requested to adhere to the provisions and advise respective Business Associates in their domain to comply in letter and spirit.

b) Immediately after issuance of letter of intent, the authorized representative of the Business Associate will report to Corporate IR & Welfare group for completion of statutory requirements.

c) Normally, the work will be started only after 'Clearance for Commencement of Work (CCW) is issued by IR & W group to the Business associate. However in exceptional exigencies in engineer I/c / Officer I/c may direct the Business Associate to start the work and inform IR & W group about the same. Statutory requirements in this case may be completed parallely.

d) First monthly bill will be released only after producing CCW to the finance department. Similarly closure of work and final settlement will be affected after issuance of no objection certificate from IR & W group.

6.0 <u>Requirements for 'Clearance for Commencement of Work' (CCW):</u>

a) Submission of filled up Form 'A' for database (Annexure-1).
b) Copy of PF Code allocation letter.
c) Copy of ESI Code allocation letter.
d) Submission of duly filled up Form IV CL(R&A) act (In case more than or equals to 20 workers during the period of contract).
e) Submission of duly filled up Form VI A (Notice of Commencement).
f) Copy of insurance cover note under WC Act 1923 (if applicable).
g) Copy of Contract Agreement.
h) Copy of indemnity bond (if applicable).
i) Affidavit with regard to payment of wages through cheque / bank transfer only.

7.0 <u>Requirements during execution of work:</u>

a) Copy of receipt of application for license / license (if applicable).
b) Copy of PF Challan (latest by 26th day of every Month).
c) Copy of ESI Challan (latest by 26th day of every Month).
d) Copy of Wage disbursement sheet / Bank statement.
e) Filing / Maintenance of all statutory registers / reports / returns for inspection by Statutory/ TPCODL authorities.
f) Certification of wage disbursement by authorized representative of TPCODL.
g) Copy of 'Labour Welfare Fund' deposit certificate / Challan.
h) Insuring safe working practices at the work place.

8.0 <u>Requirements for 'No Objection Certificate' (NOC) for closure of work:</u>

a) Submission of duly filled up Form VI A (Notice of Completion).

b) Copy of Half yearly / Annual return for ESI / PF / CL(R&A).

c) Consolidated copy of wage sheet of last month indicating full & final settlement of all dues like retrenchment benefit, bonus, leave encashment etc. Copy of individual declaration by employees in Form X regarding termination of employment.

d) Confirmation certificate regarding filling up of form for transfer / withdrawal of PF by the concerned workers.

In case any of the above are deviated / not complied with the Letter of Award/Order shall be liable to be withdrawn / cancelled.

Enclosure:

1) Form A
2) Form X
3) Form XI
4) Form VI A
5) Form XXIV

FORM (A)

[To be submitted by the Business Associate to the Principal Employer within a week from LoA issuance]

A. Details of the Agency

1. Name of Agency :
2. Nature of work :
3. Local Address with Ph.No. :

   (With Father's name) :
4. Permanent Address (Full) :
5. PF code no. & Place :
6. ESI Code no. & Place :
7. Name and address of :

   Sub-contractor (if any)

B. Details of Work

8. Name of work (as specified in LOI/LOA) :
9. LOI/LOA Nos. & Dates :
10. Period of contract (Specify Dates) :

    [Including Extension period, if any] :
11. Work Area [Department / Location] :
12. Name / Cell no. of Officer I/c :
13. Maximum No. of workers and staff to be engaged on any day during the year.
    - Supervisory Staff :
    - Workers :
14. Do you have any other contract in TPCODL : Yes/No

    If yes, furnish details:

15. Details of Workmen's compensation Policy, if applicable

Name of Insurance Company ……... ……Policy No …… Number of persons covered …… Period of coverage: From …….. To ……..

If no, I hereby undertake the liability arising out of Workmen's Compensation Act and Rules made there under.

C. Details of workers to be engaged

No. of Workers

S. No.	Unskilled*	Semi-skilled*	Skilled*	Clerical / Supervisory

*** Number to be indicated**

I/We shall fulfill all obligations arising from and under all relevant law in force from time to time. I/We undertake to keep the TPCODL indemnified against any loss or liability arising out of failure of my / our abiding the relevant laws.

The name of my / our representatives is …… to enter the TPCODL Premises on my behalf.

Date:

(Signature of the Business Associate

or his Authorized Representative)

This Business Associate is / will be engaged in TPCODL.

(Signature and seal of

Officer I/c of the Work)

Form X

Undertaking

I _____ hereby undertake that all the dues in respect of my employment with M/s _____ for the period of _____ to _____have been settled and final payments including retrenchment benefit have been made to me in full.

( )

_____

Date:

Form XI

Undertaking

With reference to the contract job awarded by TP Central Odisha Distribution Ltd to M/s_____ vide work order No._____ dated_____

I _____on behalf of

M/s _____hereby undertake:

1. that the dues in respect of the workmen/ employee(s) engaged by us for the said contract, payable as per the provisions of relevant statute pertaining to
   i. wages/ salary
   ii. PF & ESI, Bhubaneswar Labour Fund
   iii. All other statutory obligation

   has been paid /settled in full and no amount/ compliance is due/ pending.

2. That in case any dispute / claim is raised by the concerned workers i.r.o. any dues / payments, M/s _____ will settle the same on it's own and such liability will be borne by M/s _____

3. That M/s _____ hereby indemnify M/s TPCODL from any future liability i.r.o. any statutory obligation in respect of said contract.

Date:

_____

( )

Authorized Signatory

For M/s _____

FORM- VI A

Notice for Commencement /Completion of contract work

I/We, Sh. / M/s _____ (Name and Address of the Contractor) hereby intimate that the contract work _____ (name of work) in establishment of the _____ (name and address of the Principal Employer) for which License No._____dated_____has been issued to me/us by the Licensing Officer _____(name of the Headquarters), has been commenced / completed with effect from _____date / on date.

Signature of Contractor

With Office Seal

The Inspector

_____

_____

FORM XXIV

[See Rule 82(1)]

Return to be sent by the Contractor to the licensing Officer (in duplicate)

Half -Yearly Ending_____

1. Name and address of the Contractor
2. Name and address of the Establishment
3. Name and address of the Principal Employer
4. Duration of Contract: From _____to _____
5. No. of days during the half year on which
   (a) the establishment of the principal employer had worked
   (b) the contractor's establishment had worked
6. Maximum No. of contract labour employed on any day during the half –year:

Men	Women	Children	Total

7. (i) Daily hours of work and spread over
   (ii) (a) whether weekly holiday observed and on what day
   (b) if so, whether it was paid for
   (iii) No. of man – hours of overtime worked
8. No. of man days worked by

Men	Women	Children	Total

9. Amount of wages paid

Men	Women	Children	Total

10. Amount of deductions from wages, if any

Men	Women	Children	Total

Whether the following have been provided –

(i) Canteen : _____

(ii) Rest rooms : _____

(iii) Drinking water : _____

(iv) Crèches : _____

(v) First Aid : _____

Signature of contractor

Place _____

Date _____

ANNEXURE – H

UNDERTAKING FOR COMPETENCE OF WORKMEN

Name of Associate :

Tender No. :

Item :

With reference to the tender mentioned above, I/We _____, hereby undertake that the workmen/ employee(s) engaged by M/s _____ for the job against said tender shall be competent in all respect, commensurate to the nature of job.

Date:

_____

( )

Authorized Signatory

For M/s

Seal

ANNEXURE-I

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 / NCR ☐ 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						

S. No.	Parameters	1 Do Not Agree	2 Slightly in Agreement	3 In Fair Agreement	4 Mostly in Agreement	5 Fully Agree	Remarks/ Suggestion
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						
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

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

SN	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.

SNo	Parameters	Certainly NO	Probably NO	Probably YES	Certainly 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 have observed / experienced elsewhere in Indian/ International organization.

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-J

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 outrightly 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-K

To,

DGM (Finance)

The TP Central Odisha Distribution Ltd

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 _____

(Authorized 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 authorized 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-L

CONTRACTOR SAFETY MANAGEMENT SYSTEM

1. OBJECTIVE

The objective of the Contractor Safety Management System is to lay down clear guidelines for all Business Associates (including their associates, staff and agents) which would facilitate them to observe all statutory rules and regulations, comply with applicable standards of Central Electricity Authority (Measures relating to safety and electric supply) Regulations, 2010 & (safety requirements for construction, operation and maintenance of electrical plants and electric lines) Regulations,2011, TPCODL Safety Manual and Guidelines and thus, ensure creation of safe working environment for all stakeholders of our network.

2. SCOPE

All contracts (minor and major) will be subject to the provisions of this document.

Minor Contracts: Contracts which satisfy all the criteria listed under the head "Minor Contracts".

Major Contracts: Contracts which satisfy any two or more criteria listed under the head "Major Contracts"

Criteria	Minor Contracts	Major Contracts
Value of Contract	< Rs. 1500000/- (less than Rs. Fifteen Lac)	>= Rs. 1500000/- (Equal or more than Rs. Fifteen Lac)
Period	Period less than 1 year	Any period
Working on energized electrical equipment	No	Yes
Working on height (above 1.8 Mtrs from ground)	No	Yes
Work involving construction activity	No	Yes
Working with hazardous goods or chemicals	No	Yes
Work involving danger to general public	No	Yes

Note: *Exceptions for major and minor contract are – in house software development, supply of material or equipment but no direct or indirect installation of the same material, administration contracts (courier, water supply, printing, security, transport, etc.), minor civil work like plastering at ground level or flooring, etc. The facility management (housekeeping) contract will always be treated as a minor contract.*

3. INFORMATION REQUIRED AT TIME OF VENDOR REGISTRATION OR BEFORE COMMENCEMENT OF CONTRACT

3.1 Business Associate is required to fill the Safety Management System Questionnaire as per *annexure 1* and submit along with the vendor registration process / bid / tender document. The filled questionnaire will be scrutinized by Engineer In-charge / indenting group and recommend suitability of the BA with respect to safety requirements. The fulfilment of statutory requirements for vendor registration pertaining to labour laws etc. shall be done by BA Cell on being referred to it.

3.2 Business Associate is required to take suitable risk control measures mentioned against the identified Hazards and Risk document provided for all contracts as per *annexure 2*. The primary objective of this is to evaluate the understanding of the BA towards risk mitigation and employment of safe work procedures. BA is required to conduct the Hazard identification and Risk Assessment study as per the procedure and deploy more or other measures if deemed necessary.

3.3 Business Associate shall comply with **Statutory Requirements related to Safety and Occupational Health** and submit the "Safety Undertaking" as per *annexure 4*.

4. GENERAL SAFETY CONDITIONS REQUIRED TO BE FULFILLED BY BUSINESS ASSOCIATES

The requirements of the contractor safety management system applicable to the minor or major contracts related to various groups are as following –

4.1 Maintenance of Distribution Network – *Annexure 3.1*
4.2 Distribution Projects – *Annexure 3.2*
4.3 EHV Projects – *Annexure 3.3*
4.4 Maintenance of Sub transmission network – *Annexure 3.4*
4.5 Civil / Generation Projects – *Annexure 3.5*
4.6 Meter Management Group (MMG), Revenue Recovery Group (RRG), Energy Auditing Group, AMI, MRG, etc. – *Annex3.6*
4.7 Maintenance and Operation of Street Light. **–** *Annexure 3.7*

1. *Please note that hydra cranes used by any dept should be ACE Model No. FX 150 ACE SX 150, Escorts Model No. TRX 1550 or contemporary. Use of old generation hydra cranes like ACE 14XW or ACE 12 XW, etc are prohibited.*

(*Details as per Annexure attached)*

Note: *For minor contracts, the BA shall assign the duties of Safety Representative to the Work Supervisor. Work Supervisor will deliver all duties and responsibilities of Safety Supervisor as detailed in this document.*

The Business Associate (BA) having major contract will appointing Safety supervisor, engineer / manager for the TPCODL work. The BA shall make all necessary arrangements for getting their workforce safety trained and competency checked from the DOSEC of TPCODL before deployment in the field. BA Cell shall recommend the suitability after competency checked by Engineer In-charge and SHE&DM group (or his representative) of TPCODL. After getting the clearance from DOSEC, BA cell and receiving temporary I-card issued by TPCODL, Business Associate shall commence the working.

Safety Representative of Business Associates will formally become the nodal point for safety concerns for TPCODL. ***BA shall not frequently transfer or terminate the services of any of the safety representatives appointed for TPCODL work site. BA needs to ensure***

that Safety representative is available at all points of time; failing which the work being carried out in the interim (period when Safety representative is not available) shall be treated as working under improper supervision and due penal provisions shall be initiated against the BA. BA will be required to provide all applicable infrastructure and power to ensure smooth working of the safety representative to maintain a sound safety management system. **In all contracts safety representative will not be assigned any other activity at site apart from the works related to safety management. The duties are detailed in clause 5.5 of this document.** TPCODL will be auditing the facilities provided to the BA`s safety team time to time.

The Safety Representative of the BA shall be required to meet and follow the instructions of the Engineer In-charge and SHE&DM Group of TPCODL. He shall be responsible for providing the MIS and/or any other relevant information, as and when desired, within the stipulated time frame as per the requirements of TPCODL. Any non-conformance to safety will lead to the negative marking or issue of safety violation challan/ tokens which shall affect the monthly evaluation and performance of BA.

All contracts where BA has to depute vehicle for their staff and equipment to move from one location to other, the BA shall ensure that vehicle complies all required statutory clearances and requirement as per The Motor Vehicle Act, 1988 as well as TPCODL Road Safety Policy and are in good & safe state of working.

5. QUALIFICATION AND EXPERIENCE OF THE SAFETY AND SITE PERSONNEL

Qualification and experience required for the safety and site personnel are as following:

5.1 Safety Supervisor: It is mandatory that educational qualification of safety supervisor be ITI (of relevant trade) / Diploma (Any branch of engineering) and he has a working experience on electrical system / relevant field of work at least 5 yrs for ITI and 3 years for Diploma holder. Having formal experience of the safety systems will be an added advantage

5.2 Safety Engineer: It is mandatory that educational qualification of safety engineer be at least Diploma (relevant branch) and he has working experience on electrical system of at least 3 yrs. Having the formal experience of the safety systems will be an added advantage.

5.3 Safety Manager: The educational qualification of safety manager should be graduate engineer with working experience on electrical system / network of at least 3 yrs. OR Diploma in Industrial Safety with working experience of 05 years including at least 02 years on electrical network.

However, clause 5.1, 5.2 and 5.3 are not applicable for minor contracts. In such cases, BA shall assign the duties of Safety Representative to the Work Supervisor. Work Supervisor will deliver required duties of Safety Representative (as per clause 5.5) in addition to other duties without diluting the importance of safety.

5.4 Site Skilled Personnel: For all responsibility related to site activities and operations, the BA shall employ only qualified and skilled persons and shall comply the provisions of section 19 & 29 of Central Electricity Authority (Measures relating to safety and electric supply) Regulations, 2010. Persons holding valid approvals only by any Government approved agency or a competency assessment panel or a team set up by TPCODL

shall be allowed to perform the High Risk / High Hazard activities (refer page 1). The skill / qualification required for the electrician and electrical supervisor are given in *annexure 5*. The contracts related to maintenance of Distribution Network, Distribution Projects, EHV Projects, maintenance of Sub-Transmission Network, MMG & EAG, maintenance and operation of street lights, shall preferably have at least 20 per cent of ITI qualified electricians in the first year of the contract. This figure shall preferably be incremented by 15 per cent every subsequent year.

Note: For the competency assessment may please refer the work instructions. An employee shall have to necessarily undergo the competency assessment check once in every eighteen months.

5.5 **Requirements from the Safety Representative(s) of the Business Associate:**

5.5.1 Safety training of 2 hrs/employee/month and one day of safety induction training to all new employees joining the BA will be conducted by the BA as per Safety training modules of TPCODL.

5.5.2 Safety Talk / tool box talk before start of shift to BA employees.

5.5.3 Ensuring the availability & proper usage of the standard safety equipment (PPE)

5.5.4 Periodic inspection of PPE to ensure their serviceability and maintaining the 10% buffer stock of standard PPEs.

5.5.5 Ensuring the adherence to standard operating procedures of TPCODL as mentioned in TPCODL Safety standard and O & M and concerned function's manual.

5.5.6 Safety inspections / audits as per the process of TPCODL

5.5.7 Working in close coordination SHE&DM Group of TPCODL.

5.5.8 Reporting of unsafe acts, unsafe conditions, near miss, incident or accident to Engineer In-Charge and SHE&DM Group of TPCODL immediately after its occurrence.

5.5.9 Regular HIRA at site and comply the control measures as stated in the detailed HIRA as per the *annexure* 2. Also deployment of JSA based checklist shall be ensured.

5.5.10 Ensuring compliance with safety and other laws as may be applicable and providing for safety assurance.

5.6 **Training and Syllabus:** The BA shall not deploy any person at work place / site or send newly recruited personnel directly to DOSEC for competency assessment without Safety Induction Training.

5.6.1 All new BA employees have to necessarily undergo one and half days Safety training and Competency assessment at training centre of BA cell. This training will be conducted once in a week. After the completion of Safety training & Competency assessment I-card will be issued to all competent BA employees

5.6.2 BA is expected to initially train and judge the capability of the workman at his own end before further recommending the workmen for Competency assessment. If any BA workman sent for competency assessment. In case any BA workman fails in the Competency test at DOSEC, it will be deemed that BA has not imparted sufficient training at his end and actual cost of training ₹ 7500/ BA employee/ failed attempt will be recovered.

5.6.3 The workers who have imparted Safety Training and issued I-Cards of TPCODL, are not deployed at TPCODL worksites/ voluntarily left the job by workers/ used somewhere else other than TPCODL by the BA, in that case Management reserves the rights to intervene and recover the actual cost of training i.e. ₹ 7500/BA employee. (*Exempted for attrition rate of BA workers less than or equal to 10% of total workforce deployed at TPCODL)*

5.7 It is desired that Safety representative of the BA to impart the general safety training to each employee of duration 2 hrs per month. The training will be organized at BA level and the record to be sent to engineer in-charge and SHE&DM group of TPCODL every month. Please refer schedule and syllabus in *annexure 6*.

List of Personal Protective Equipment (PPE) and Maintenance schedule: BA shall commence the project or any work only when the required PPE are made available to the team of employees involved in the work. Each PPE of BA shall be checked / inspected by the safety representative / supervisor at zone before the work start or as prescribed in the list. Safety representative shall regularly check the healthiness of each PPE allocated to lineman. Suitable record shall be maintained at zone. Defective PPE shall be immediately replaced or within 24 hours by the BA. In no case linemen or any other official of BA may be allowed to work with defective PPE. It is preferred that BA ensures minimum stock of each PPE at zone for immediate replacement with defective one. The PPE shall be IS / BS / CE marked and exactly as per the standard or specification mentioned in the *annexure 7*. Working without PPE / non-standard PPE shall be treated as safety violation and penalty as stated in section 6.0 of this document. If TPCODL finds that BA has not provided the adequate / appropriate PPE to their staff, TPCODL reserves the rights to stop the work and call the BA to provide appropriate PPEs at the risk. If the BA fails to provide the required PPEs at the risk then the same shall be provided by TPCODL at the actual cost of the PPE. The amount shall be charged to BA and same shall be first recovered from the current bill of BA or any future payment to be made to BA. In the event of any balance amount still left for recovery, the same shall be adjusted against retention amount or by invoking bank guarantee submitted by BA.

5.8 Safety Audit / Inspection & HIRA: The BA shall get the required safety inspection / audit conducted by his technical team comprising of safety representative as per the *annexure 8*. The safety representative will be required to conduct the HIRA (Hazard Identification and Risk Assessment) *as per annexure 2* of the process and work undertaken at least two times in a year or every time if a new process / activity / machine is introduced or whenever an accident take place. The risk identified to be addressed suitably with –

- Engineering Control
- Management Control, and
- Personal Protective Equipment.

The safety representative of BA shall inform and educate for the identified risk and hazard control methods to employees, supervisor and engineer as well as the engineer in-charge and SHE&DM group of TPCODL.

5.9 Safety Performance and Safety MIS: The BA shall maintain good practice of safety all through the contract duration. Safety shall always be of paramount importance during the contract period. Safety performance will be monitored on yearly basis throughout the period and no relaxation will be given for bad performance. BA with good track record and excellent performance will be rewarded suitably as per clause 6.0 of this document. The BA has to provide monthly “Performance Report – Safety” to engineer in-charge and SHE&DM group TPCODL this shall be part of monthly bill along with training details. Performa of the report is enclosed as *annexure 9*.

5.10 Pre – Employment Medical Check-up and Fitness of employees engaged for the critical works: The BA shall submit the health fitness certificate for all those workers involved in climbing the pole or working at height for following diseases:

5.10.2 Epilepsy
5.10.3 Colour blindness
5.10.4 Deafness
5.10.5 Vertigo & height phobia

Every year BA will give an undertaking stating that all the employees are fit to work and have not developed aforesaid diseases. The Record of such medical check-ups shall be submitted to BA Cell before issue of temporary identity card. The records shall be maintained at BA Cell. All such medical check-ups shall be repeated once in a year for all workers involved in climbing the pole or working on electrical network.

6. REWARD AND PUNITIVE MEASURES

6.1 To support the enforcement of good SHE & DM practices by the Business Associate and to eliminate repeated or continuing safety violations, use of appropriate reward and punitive measures shall be made. Each unsafe act or violation of the safety guidelines as described in the Safety Manual of the TPCODL will be audit criteria of this system. Broadly the measures identified are following:

6.1.1 Working without PPE/ Safety Gadgets
6.1.2 Working without proper tools and tackles, barricading, Poor condition of Crane / Hydra / Vehicle, using without certification / Licence, Incompetent driver/ Helper
6.1.3 Working without creation of effective safety zone
6.1.4 Improper Supervision at worksite, Lineman/ Supervisor working without competency
6.1.5 Working without adherence to PTW process or authorization/ not adherence to SOPs / W.I. of TPCODL.
6.1.6 Improper Working at height equal to or above 1.8 mtrs without taking proper fall protection measures/ Poor condition of Ladder

6.2 Measures of Reward and Punitive Measures

The Engineer In-Charge, NSO, SC, ASOs, CSI / SIs and SHE &DM group will conduct the surprise audits of the work / project and if any non-conformance is found the same will be booked and entered in the format “Safety Violation Record” *annexure 10*. The flow of the information is given below:

Safety Violation Escalation & Monitoring process	
Action	**Responsibility**
Safety Violation form has been filled and counter foil sent to SHE&DM team for information. The main form is to be given to BA supervisor / Engineer in-charge. *(Automatically generated if Site audit done through Mobile App.)*	Engineer In-charge/ NSO / SC / SHE&DM Group /CSI/ ASO/ Any authorised TPCODL official.
↓	
Entry of the violation in the master record and sending the information to concerned Manager, HoG, HoD, Head and Chief (O &S). *(Automatically generated if Site audit done through Mobile App.)*.	SHE&DM Group
↓	
Forwarding the information Centralized Account Payable	Engineer In-charge

(CAPS) for amount deduction from the current bill of the BA, *if any.*	
↓	
HoG (Safety – II) & HoG (Safety & Quality – Commercial) and CAPS to generate the MIS of the violations and the amount deducted.	SHE&DM Group
↓	
The pool of the amount generated after the deduction to be utilized in safety welfare of BA employees.	SHE&DM Group with approval of CFO/Chief (O & S) /CEO&MD

The safety violations have been rated from 1 to 5 (figure 6.3) as per the gravity of the violation. If the same violation is repeated it may escalate into a higher penalty. If a particular Business Associate employee violates safety norms three times, he shall not be allowed to work in TPCODL for a period of one year from the date of the 3rd violation.

6.3 Safety Violation Escalation Matrix

6.3.1

Consequence of Safety Violation Observed (Not related to Incident/ Accident)		Violation				
S.No.	Safety Violation	1st	2nd	3rd	4th	Subsequent Violations
1	Working without PPE (Helmet/Gloves/Safety Harness/ Safety Shoes etc.)	A	B	C	D	Will attract the same penality as applicable in the 4th violation.
2	Improper Working at Height	A	B	C	D	
3	Working without proper tools and tackles	A	B	C	D	
4	Poor condition of Crane/Hydra/ Vehicle/Incompetent driver/ Helper	A	B	C	D	
5	Violation of SOP/ WI	B	C	D	E	
6	Working without adherence to PTW process or authorization/ Safety Zone	C	D	E		

Legend	Action to be taken	Responsibility	Penality Amount (in Rs.)	
A	Warning letter	Engineer Incharge	Nil	The number of violations are to be calculated cumulatively over the contract period and not on monthly basis.
B	Levy of Penalty	Engineer Incharge	2,000	
C	Memo to BA & Levy of Penalty	Head of Group	4,000	
D	Memo to BA & Levy of Penalty	Head of Department	10,000	
E	Memo to BA, Levy of Penalty and termination of Contract	Head of Department	1,00,000	

Figure 6.3 (1a)-Penality Matrix for Safety violation (Applicable for Minor Contracts)

Consequence of Safety Violation Observed (Not related to Incident/ Accident)		Violation				
S.No.	Safety Violation	1st	2nd	3rd	4th	Subsequent Violations
1	Working without PPE (Helmet/Gloves/Safety Harness/ Safety Shoes etc.)	B	C	D	D	Will attract the same penality as applicable in the 4th violation.
2	Improper Working at Height	B	C	D	D	
3	Working without proper tools and tackles	A	B	C	D	
4	Poor condition of Crane/Hydra/ Vehicle/Incompetent driver/ Helper	B	C	D	E	
5	Violation of SOP/ WI	C	D	E		
6	Working without adherence to PTW process or authorization/ Safety Zone	C	D	E		

Legend	Action to be taken	Responsibility	Penality Amount (in Rs.)	
A	Levy of Penalty	Engineer Incharge	5,000	The number of violations are to be calculated cumulatively over the contract period and not on monthly basis.
B	Memo to BA & Levy of Penalty	Engineer Incharge	10,000	
C	Memo to BA & Levy of Penalty	Head of Group	25,000	
D	Memo to BA & Levy of Penalty	Head of Department	50,000	
E	Memo to BA, Levy of Penalty and termination of Contract	Head of Department	1,00,000	

Figure 6.3 (1b)-Penality Matrix for Safety violation (Applicable for Major Contracts)

Once the BA reaches the “BLACK” (color – “5”) category, i.e. highest level of safety violation, “Termination” notice to BA will be issued from the office of the Head of Department (equivalent to Addl GM/ GM/ Sr. GM level) and further, *if required,* continuation / extension of contract will only be initiated by Functional Head of the department (equivalent to Sr. GM / VP level) and approved by CEO & MD. Till the extension, the contract will remain suspended.

TPCODL encourages the reportage of the safety violation during the contract work by BA. Any TPCODL employee can register a safety violation against the BA in the “Safety Violation Form” *annexure 10*. Initially the observer has to fill the form and handover the counterfoil (lower portion) of the document to the supervisor of the BA, inform the site engineer of TPCODL and send the top portion of the Safety Violation Form to SHE&DM group for the further necessary action against the BA. ***The cumulative nos. of Safety Violations pertaining to any particular BA shall be calculated on yearly basis.***

Safety violations resulting in incident / accident will be treated as per gravity of the injury / fatality and its impact as well as type i.e. minor or Major. Consequences of incident / accident are shown in the matrix (figure 6.3(2) for major and 6.3(3) for minor) below. In case of any accident, findings and recommendations of Accident Enquiry Committee will be final and binding and will supersede the arbitration clause of GCC.

Consequence Of an Incident / Accident (In case of MAJOR contract)		Incident / Accident				Action Required
Sl. No	Type of the injury	1st	2nd	3rd	4th	
1	Slight injury (First Aid Case)	F (Strengthening of process through continuous improvement in the work procedure)				Take risk reduction measures
2	Minor injury (No or Hospitalization less then 48 Hrs)	F	G	G	H	
3	Major injury (Bone injury or burn or Hospitalization more then 48 Hrs)	G	G	H	I	
4	Single fatality	J	K			Intolerable
5	Multiple fatalities (Two or more fatalities during one event)	K				

Legend	Action to be taken	Responsibility	Penalty (in Rs.)	
F	Memo to BA and levy of penalty	Engineer Incharge	5,000/-	The number of violations are to be calculated cumulatively over the contract period and not on monthly basis.
G	Memo to BA and levy of penalty	Head of Group	20,000/-	
H	Memo to BA and levy of penalty	Head of Group	50,000/-	
I	Memo to BA and levy of penalty	Head of Department	2,00,000/-	
J	Memo to BA and levy of penalty	Head of Department	5,00,000/-.	
K	Memo to BA, levy of penalty, termination of contract and black listing of BA	Functional Head	10,00,000/-	

Figure 6.3 (2) - Penalty Matrix for Incident / Accident in Major Contracts

(For example: In major contracts, if there is first incidence of major injury say bone injury (Cat. 3) where worker was hospitalized for more than 48 hrs then a penalty of amount Rs.20000/- will be deducted from the current bill produced for the payment. This penalty will be similar for first two incidents. However, it will increment to next higher category i.e. Rs. 50,000/- on subsequent incidents as per the above matrix)

Consequence Of an Incident / Accident (In case of MINOR contract)		Incident / Accident				Action Required
Sl. No	Type of the injury	1st	2nd	3rd	4th	
1	Slight injury (First Aid Case)	L (Strengthening of process through continuous improvement in the work procedure)				Take risk reduction measures
2	Minor injury (No or Hospitalization less then 48 Hrs)	L	M	M	N	
3	Major injury (Bone injury or burn or Hospitalization more then 48 Hrs)	M	M	N	O	
4	Single fatality	P	Q			Intolerable
5	Multiple fatalities (Two or more fatalities during one event)	Q				

Legend	Action to be taken	Responsibility	Penalty (in Rs.)	
L	Memo to BA and levy of penalty	Engineer Incharge	5,000/-	The number of violations are to be calculated cumulatively over the contract period and not on monthly basis.
M	Memo to BA and levy of penalty	Engineer Incharge	10,000/-	
N	Memo to BA and levy of penalty	Head of Group	25,000/-	
O	Memo to BA and levy of penalty	Head of Department	1,00,000/-	
P	Memo to BA and levy of penalty	Head of Department	3,00,000/-.	
Q	Memo to BA, levy of penalty, termination of contract and black listing of the BA	Functional Head	5,00,000/-	

Figure 6.3 (3) - Penalty Matrix for Incident / Accident in Minor Contracts

(For example: In minor contracts, if a worker meets with a non-fatal accident say bone injury (Cat. 3) where he was hospitalized for more than 48 hrs then a penalty of amount Rs. 10,000/-, will be charged from the current bill produced for the payment. This penalty will be similar for first two

incidents. However, it will increment to next higher category i.e. Rs. 25,000/- on subsequent incidents as per the above matrix.)

In case of single or multiple fatalities described under legends J&K of 6.3(2) and P&Q of 6.3(3), the concerned BA may be debarred from extension of contract or participate in new contract. In such event the approval of Chief (O & S) will be necessary for extension or award of new contract to concerned BA.

6.3.2 COMPENSATION FOR BA PERSONNEL

In the event of any untoward incident/ accident, the Business Associate shall ensure prompt medical assistance such as treatment, sickness benefit, etc. is provided to the victim(s) as per the Employees' Compensation Act, 1923 or Employees' State Insurance Act, 1948, as applicable. Also, the BA will be required to take adequate measures for compensating the victim(s) or his/her/their kin as follows:

I. <u>For Death or Permanent / Total Disablement</u>

The BA shall take an insurance coverage of at least Rs. 10 lakhs for each engaged employee, to cover any incidence of Death or Permanent / Total Disablement (Permanent/Total Disability shall be considered as defined under Employees' Compensation Act, 1923). In the event of any such unfortunate incident, the BA would ensure that adequate compensation is paid immediately to the family of the victim(s) from his own resources. This compensation shall be covered under the insurance policy subscribed by the BA mentioned earlier and the arrangement should be such that it would get reimbursed to the BA by the insurance agency subsequently.

II. <u>For Permanent Partial Disablement and Temporary Total Disablement</u>

The compensation in this case will be as per provisions of the Employees' Compensation Act, 1923 or Employees' State Insurance Act, 1948, as applicable.

Accordingly, the BA shall obtain a suitable Insurance Policy on award of Contract and submit documentary evidence of the policy to the BA Cell before commencement of work. The BA shall ensure that the Insurance policy is active at all times and all employees are covered in all respects till the conclusion of contract period or till working with TPCODL. The BA shall submit a copy of the policy after periodic renewals to the BA Cell.

However, on occurrence of such unfortunate incident, if it is found that the victim(s) is/are not covered under any insurance policy, the BA shall be liable to pay the entire sum of Rs. 10 lakhs from his own resources.

Further, in case of an accident resulting in Death or Permanent / Total Disablement while on duty, the appointed BA Nodal Officer will ensure that the BA complies with all statutory provisions and benefits i.e. PF, Compensation, Gratuity etc., and that all these are made available to the employees' nominee(s) as per the stipulated timelines.

6.3.3 TPCODL rewards the BA with good track record of safety management. It is proposed that BA complying with Contractors Safety Management, Safety Manual and Safety process

will be rewarded suitably as per the procedure, rule and regulations of the TPCODL. In any case major accident is reported during an assessment period BA will not be eligible for this reward scheme. Assessment of contracts will be once in year. Generally the assessment cycle is calendar year and guidelines will be declared time to time.

Abbreviations Used in the Document

TPCODL	TP Central Odisha Distribution Ltd
BA	Business Associate
HIRA	Hazard Identification & Risk Assessment
JSA	Job Safety Analysis
EHV	Extra High Voltage
SHE&DM	Safety, Occupation Health, Environment & Disaster Management
MMG	Meter Management Group
EAG	Energy Audit Group
PPE	Personal Protective Equipment
SOP	Standard Operating Procedures
CSI/SI	Circle Safety In-charge / Safety In-charge
ASO	Area Safety Officer
NSO	Nodal Safety Officer
SC	Safety Coordinator
HoG / HoD	Head of Group / Head of Department
AGM / GM / VP	Assistant General Manager / General Manager / Vice President
CFO / Chief (O & S)/ CEO & MD	Chief Finance Officer / Chief (Operating & Safety) / Chief Executive Officer & Managing Director
COS	Corporate Operation Services
CAP	Centralized Account Payable System
PTW	Permit To Work
GCC	General Conditions of Contract.

- END -

Annexure 1 (Refer Para 3.1)

Business Associate Safety Management System Questionnaire

	Certification			
	The information provided in this questionnaire is a summary of the company's occupational health and safety management system.			
	Company Name:			
Turnover and experience:			Name of top officer:	
Date:			Position	
	Contract Details			
Contract Name			Contract Number:	

Business Associates Safety Management System Questionnaire	Marks	Yes	No	Score achieved
Safety Policy and Management				
- **Is there a written company Safety policy?** - If yes provide a copy of the policy, if No please refer Note 1.	1			
- **Does the company have an Safety Management system** - If yes provide details, if No please refer Note 1.	1			
- **Is there a company Safety Management System manual or plan?** - If yes provide a copy of the content page(s), if No please refer Note 1.	2			
- **Are Safety and occupational health responsibilities clearly identified for all levels of Management and staff?** - If yes provide details, if No please refer Note 1.	2			
Safe Work Practices and Procedures				
- **Has the company prepared safe operating procedures or specific safety instructions relevant to its operations and relevant work as per contract?** - If yes provide a summary listing of procedures or instructions, if No please refer Note 2.	1			

Certification				
- Comments				
- **Is there a register of injury or accident?** - If yes provide a copy (format)	1			
- **Is there a documented incident or accident investigation procedure?** - If yes provide a copy of a standard incident report form, if No please refer Note 2. - Comments	1			
Safety Training				
- **Describe how occupational health and safety training is conducted in your company** If No please refer Note 1.	2			
- **Is a record maintained of all training and induction programs undertaken for employees in your company?** - If yes provide examples of safety training records, if No please refer Note 2.	1			
- **Are regular safety inspections / audits are undertaken at worksites?** -If yes provide details (formats), if No please refer Note 3.	1			
- **Is there a procedure by which employees can report hazards at workplaces?** - If yes provide details if No please refer Note 1.	1			
Safety Monitoring				
- **Is there an officer / supervisor responsible for monitoring workplace / worksite safety?**	1			

Certification				
- If yes provide details				
Safety Performance Monitoring				
- **Are employees regularly provided with information on company health and safety performance?** - If yes provide details	1			
- **Has the company ever been convicted of an occupational health and safety offence?** - If yes provide details	NO Marks *(Negative mark ONE for each case)*			
- Has there been any major accident of employee at TPCODL site in past	NO Marks *(Negative mark ONE for each case*			
- Has there been any fatal accident of employee at TPCODL site in past. - (Note: Bid evaluation committee has to take cognizance of the incident and shall evaluate the bid only after formal approval of competent authority i.e. CTO. - In case of yes please refer Note 4.	NO Mark (Negative mark FIVE for each case)			
Minimum of 75% marks is required for qualification.		Total Marks achieved		
Company Reference				
1. Name of company *2. Name of company*				

Note

1: If company does not have formal procedure on Safety Management System than vendor may submit proposed Safety road map along with safety action plan and brief safety policy on his letter head signed by head of the organization.

2: The vendor may submit the same in the Safety Action Plan.

3: The vendor may utilize the same format of TPCODL or on request SHE&DM group will assist the vendor in developing the audit system. For other points also vendor may take the assistance of SHE&DM group for development of Safety management system.

4: The vendor may submit the Safety Improvement Plan and Safety Action Plan for his employees based on following points.

i. *Action plan for enhancing safety awareness*
ii. *Action plan for safety training of employee*
iii. *Action plan for increasing safety audit in field*
iv. *Action plan for provision and utilization of safety PPE.*
v. *Action plan for fatality reduction.*
vi. *Action plan for enhanced supervision at site*
vii. *Action plan for making employee more responsible and accountable for safety.*
viii. *Action plan for availability and utilization of all required tool and equipment.*
ix. *Safety Improvement done in last two years, specially highlighting those which have been taken after the fatal accident along with results.*
x. *Safety initiatives planed or started recently.*
xi. *Any other point.*

Based on above points and documentary evidences vendor will be required to submit a detailed report in support of his bid. The bid evaluation committee and competent authority will scrutinize the facts and the evidence submitted. If found satisfactory competent authority i.e. CTO may accord his approval for bid opening otherwise his tender shall be disqualified.

Annexure 2 (Refer Para 3.2 and 5.8)

Risk Assessment Form

Business Associate:
Scope of the work:
BA's Representative:
Telephone:
Signature: Date:

Specific Task/Activity	Potential Hazards/Consequences	Class of Risk	Control Measures
Working at Height	Fall from height	2	1. Mandatory usage of JSA checklist prior to start of work 2. Use appropriate ladder 3. Use full body safety harness having double lanyard. 4. Use Electrical Safety Shoes if working on electrical network otherwise use safety shoes. 5. Use Safety helmet. 6. Use PPE as per the annexure 7 of this CSM document 7. Refer Work instruction related to Working at Height for other details 8. Use of metal scaffold to be ensured in height work (cup lock type) 9. Deploy competent workforce who are medically fit

Specific Task/Activity	Potential Hazards/Consequences	Class of Risk	Control Measures
Working on electrical equipment / network	Electric flash / electrocution	3	1. Mandatory usage of JSA checklist prior to start of work 2. Use Electrical Safety Shoes while working on electrical network. 3. Use Electrical Safety gloves of appropriate voltage rating. 4. Use face shield / visor attached with helmet. 5. Use Safety helmet. 6. Use PPE as per the annexure 7 of this CSM document 7. Mandatory usage of Insulated tools & tackles on electrical system 8. Mandatory compliance for Lock Out & Tag out system. Refer Work instruction related to Working on electrical equipment / network for other details
Excavation / Civil work	Collapse of soil, Fall in excavated pit leading to Injury	2	1. Use safety shoes. 2. Use Safety helmet. 3. Use PPE as per the annexure 7 of this CSM document 4. Hard Barricading of the worksite. 5. Refer Work instruction related to excavation / civil work for other details
Material lifting & Mechanical Erection work	Fall of material/object, Topple of crane,	2	1. Mandatory compliance of crane checklist 2. Visual condition check of lifting tools and tackles such as wire rope sling,belt sling, chain, pulley block, D-shackles, etc. shall be ensured. 3. The operator's physical fitness and alertness should be judged by sup. / EIC. 4. Use PPE as per the annexure 7 of this CSM document 5. Refer Work instruction related to Material lifting & Mechanical Erection work
Road Safety	Road Accidents	3	1. Mandatory compliance of TPCODL Road Safety policy W07(COR-P-12)

Specific Task/Activity	Potential Hazards/Consequences	Class of Risk	Control Measures
Note: This information for the general indication purpose. The detailed risk assessment shall be conducted before start of the work by the authorized representative of the BA. The report of same shall be submitted to engineer in-charge along with annexure 4 of the CSM document.			

Guidelines for filling the Risk Assessment Form

- *Specific Task/Activity* - The documentation of each major task associated with the contract.
- *Potential Hazards* - The identification of hazards associated with each activity or task to be carried out.
- *Class of Risk* - Each hazard should be evaluated as a level of risk, described as Risk Class 1, 2 or 3 defined above.
- *Control Measure* - The identification and documentation of actions required to eliminate or reduce the hazards that could lead to accident or injury.

Hazard / Risks shall be classified according to the following schedule:

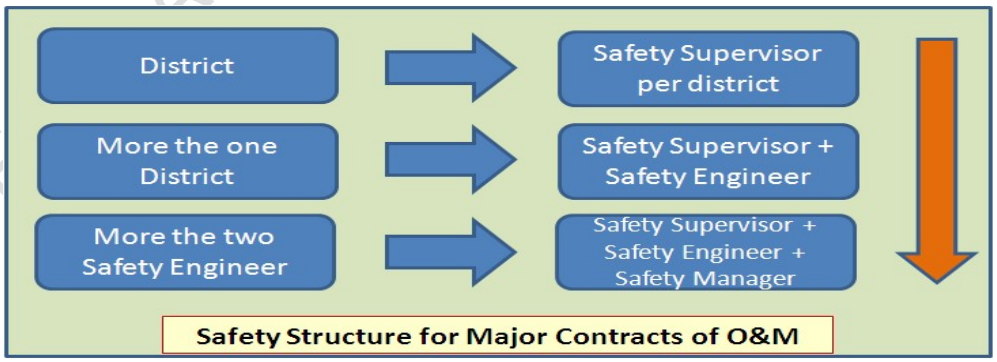
- Class 1: Potential to cause injury treatable with first aid
- Class 2: Potential to cause death or permanent injury
- Class 3: Potential to cause more than one or more lost time injuries.

Annexure 3.1 *(Refer Para 4.0)*

General Safety Conditions for the Maintenance of Distribution Network Contracts:

A BA awarded a contract (O&M) work of maintenance of distribution network will be required to fulfil the following conditions:

- BA shall provide Safety Policy and safety objectives of their company.
- BA shall comply with all statutory requirements like: applicable acts, regulations, codes of practice, OHSAS Standards, etc.
- BA shall provide the filled safety management questionnaire as per Annexure 1
- BA shall conduct a job risk assessment and provide information as per Annexure 2
- BA shall abide by Safety manuals, guidelines of TPCODL.
- BA shall provide its organisation structure & responsibilities in terms of Safety Management to TPCODL.
- BA shall document the work practices and procedures in terms of Safety Management.
- BA shall ensure safety training and induction program for the employees
- BA shall conduct safety audits & inspections as per TPCODL procedures provided by SHE&DM group.
- BA shall provide and ensure the proper usage of the safety equipment (PPE) as per the TPCODL approved list in *annexure 7.*
- BA shall ensure periodic inspection of PPE to ensure its serviceability as per the specification given by TPCODL.
- BA shall ensure the adherence to standard operating procedures or guidelines laid down by TPCODL.
- BA shall ensure reporting of any unsafe act, unsafe conditions, near miss, incident or accident to engineer in-charge and SHE&DM team of TPCODL.
- BA shall provide safety performance and Safety MIS (*annexure 9)* to engineer in-charge and SHE&DM group periodically. Based on any non-confirmation to the safety procedures and guidelines, BA is liable to be negatively marked for his performance and suitable penalty will be imposed.
- BA shall ensure to depute a Safety Supervisor for managing a complete safety management system in a district. In case the BA has been awarded work in more than one district, then the following safety structure will be adopted.

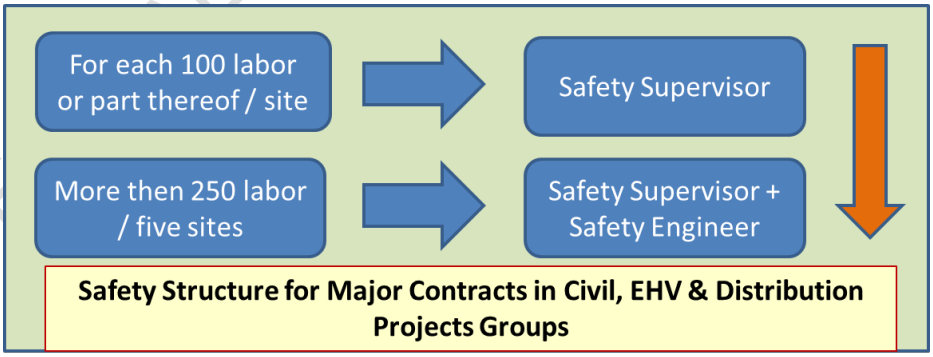


Annexure 3.2 ***(Refer Para 4.0)***

General Safety Conditions for the Distribution Projects Major Contracts:

A BA awarded a major contract work of TS&P in area of a circle will be required to fulfil the following conditions:

- BA shall provide Safety Policy and safety objectives of their company.
- BA shall comply with all statutory requirements like: applicable acts, regulations, codes of practice, OHSAS Standards, etc.
- BA shall provide the filled safety management questionnaire as per Annexure 1.
- BA shall conduct a job risk assessment and provide information as per Annexure 2
- BA shall abide by Safety manuals, guidelines of TPCODL.
- BA shall provide its organisation structure & responsibilities in terms of Safety Management to TPCODL.
- BA shall document the work practices and procedures in terms of Safety Management.
- BA shall ensure safety training and induction program for the employees
- BA shall conduct safety audits & inspections as per TPCODL procedures provided by SHE&DM group.
- BA shall provide and ensure the proper usage of the safety equipment (PPE) as per the TPCODL approved list in annexure 7.
- BA shall ensure periodic inspection of PPE to ensure its serviceability as per the specification given by TPCODL.
- BA shall ensure the adherence to standard operating procedures or guidelines laid down by TPCODL.
- BA shall ensure reporting of any unsafe act, unsafe conditions, near miss, incident or accident to engineer in-charge and SHE&DM team of TPCODL.
- BA shall provide safety performance and Safety MIS (*annexure 9)* to engineer in-charge and SHE&DM group periodically. Based on any non-confirmation to the safety procedures and guidelines, BA is liable to be negatively marked for his performance and suitable penalty will be imposed.
- BA shall ensure to depute a Safety Supervisor for managing a complete safety management system in the area. In case the BA has been awarded work in more than one circle, then the following safety structure will be adopted.



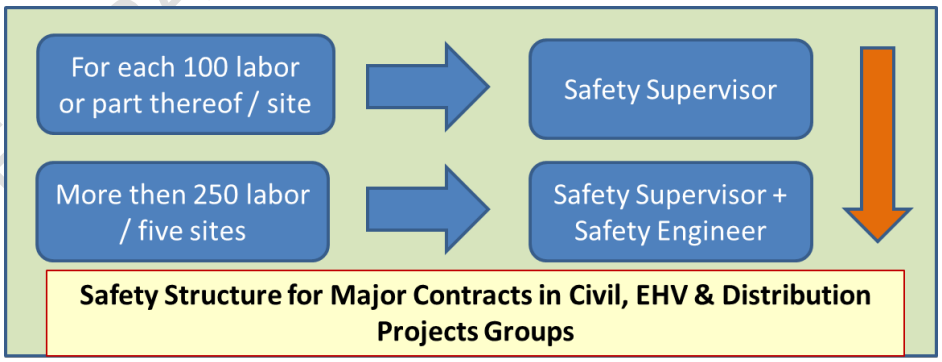
Safety Structure for Major Contracts in Civil, EHV & Distribution Projects Groups

Annexure 3.3 ***(Refer Para 4.0)***

General Safety Conditions for the major EHV Projects Contracts:

A BA awarded a major contract work of EHV projects will be required to fulfil the following conditions:

- BA shall provide Safety Policy and safety objectives of their company.
- BA shall comply with all statutory requirements like: applicable acts, regulations, codes of practice, OHSAS Standards, etc.
- BA shall provide the filled safety management questionnaire as per Annexure 1
- BA shall conduct a job risk assessment and provide information as per Annexure 2
- BA shall abide by Safety manuals, guidelines of TPCODL.
- BA shall provide its organisation structure & responsibilities in terms of Safety Management to TPCODL.
- BA shall document the work practices and procedures in terms of Safety Management.
- BA shall ensure safety training and induction program for the employees
- BA shall conduct safety audits & inspections as per TPCODL procedures provided by SHE&DM group.
- BA shall provide and ensure the proper usage of the safety equipment (PPE) as per the TPCODL approved list in annexure 7.
- BA shall ensure periodic inspection of PPE to ensure its serviceability as per the specification given by TPCODL.
- BA shall ensure the adherence to standard operating procedures or guidelines laid down by TPCODL.
- BA shall ensure reporting of any unsafe act, unsafe conditions, near miss, incident or accident to engineer in-charge and SHE&DM team of TPCODL.
- BA shall provide safety performance and Safety MIS (*annexure 9)* to engineer in-charge and SHE&DM group periodically. Based on any non-confirmation to the safety procedures and guidelines, BA is liable to be negatively marked for his performance and suitable penalty will be imposed.
- BA shall ensure to depute a Safety Supervisor for managing a complete safety management system in the area. In case the BA has been awarded work in more than one circle, then the following safety structure will be adopted.
- BA shall refer Construction Safety Manual in TPCODL Safety Manual for details.



Annexure 3.4 ***(Refer Para 4.0)***

General Safety Conditions for the Maintenance of Sub – Transmission Network Contracts:

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

- BA shall provide Safety Policy and safety objectives of their company.
- BA shall comply with all statutory requirements like: applicable acts, regulations, codes of practice, OHSAS Standards, etc.
- BA shall provide the filled safety management questionnaire as per Annexure 1
- BA shall conduct a job risk assessment and provide information as per Annexure 2
- BA shall abide by Safety manuals, guidelines of TPCODL.
- BA shall provide its organisation structure & responsibilities in terms of Safety Management to TPCODL.
- BA shall document the work practices and procedures in terms of Safety Management.
- BA shall ensure safety training and induction program for the employees
- BA shall conduct safety audits & inspections as per TPCODL procedures provided by SHE&DM group.
- BA shall provide and ensure the proper usage of the safety equipment (PPE) as per the TPCODL approved list in annexure 7.
- BA shall ensure periodic inspection of PPE to ensure its serviceability as per the specification given by TPCODL.
- BA shall ensure the adherence to standard operating procedures or guidelines laid down by TPCODL.
- BA shall ensure reporting of any unsafe act, unsafe conditions, near miss, incident or accident to engineer in-charge and SHE&DM team of TPCODL.
- BA shall provide safety performance and Safety MIS (*annexure 9)* to engineer in-charge and SHE&DM group periodically. Based on any non-confirmation to the safety procedures and guidelines, BA is liable to be negatively marked for his performance and suitable penalty will be imposed.
- BA shall ensure to depute a Safety Coordinator for managing a complete safety management system in the area. In case the BA has been awarded work in more than one area power system, then the following safety structure will be adopted.

Annexure 3.5 ***(Refer Para 4.0)***

General Safety Conditions for the major contract work in Civil / Generation Projects:

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

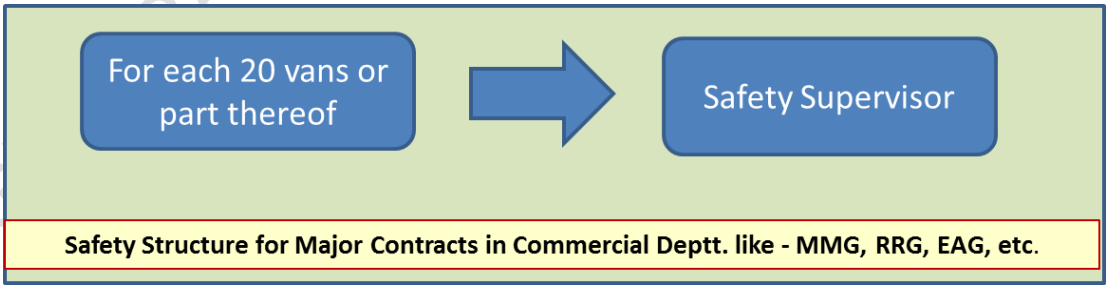
- BA shall provide Safety Policy and safety objectives of their company.
- BA shall comply with all statutory requirements like: applicable acts, regulations, codes of practice, OHSAS Standards, etc.
- BA shall provide the filled safety management questionnaire as per Annexure 1
- BA shall conduct a job risk assessment and provide information as per Annexure 2
- BA shall abide by Safety manuals, guidelines of TPCODL.
- BA shall provide its organisation structure & responsibilities in terms of Safety Management to TPCODL.
- BA shall document the work practices and procedures in terms of Safety Management.
- BA shall ensure safety training and induction program for the employees
- BA shall conduct safety audits & inspections as per TPCODL procedures provided by SHE&DM group.
- BA shall provide and ensure the proper usage of the safety equipment (PPE) as per the TPCODL approved list in annexure 7.
- BA shall ensure periodic inspection of PPE to ensure its serviceability as per the specification given by TPCODL.
- BA shall ensure the adherence to standard operating procedures or guidelines laid down by TPCODL.
- BA shall ensure reporting of any unsafe act, unsafe conditions, near miss, incident or accident to engineer in-charge and SHE&DM team of TPCODL.
- BA shall provide safety performance and Safety MIS (*annexure 9)* to engineer in-charge and SHE&DM group periodically. Based on any non-confirmation to the safety procedures and guidelines, BA is liable to be negatively marked for his performance and suitable penalty will be imposed.
- BA shall ensure to depute a Safety Supervisor (for workforce upto 100 at site) / a safety engineer (for workforce upto 250 at site) / safety manager (for more than two safety engineers) for managing a complete safety management system at the project site. In case the BA has been awarded more than one major contracts, then the following safety structure will be adopted.
- BA shall refer Construction Safety Manual in TPCODL Safety Manual for details.

Annexure 3.6 ***(Refer Para 4.0)***

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

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

- BA shall provide Safety Policy and safety objectives of their company.
- BA shall comply with all statutory requirements like: applicable acts, regulations, codes of practice, OHSAS Standards, etc.
- BA shall provide the filled safety management questionnaire as per Annexure 1
- BA shall conduct a job risk assessment and provide information as per Annexure 2
- BA shall abide by Safety manuals, guidelines of TPCODL.
- BA shall provide its organisation structure & responsibilities in terms of Safety Management to TPCODL.
- BA shall document the work practices and procedures in terms of Safety Management.
- BA shall ensure safety training and induction program for the employees
- BA shall conduct safety audits & inspections as per TPCODL procedures provided by SHE&DM group.
- BA shall provide and ensure the proper usage of the safety equipment (PPE) as per the TPCODL approved list in annexure 7.
- BA shall ensure periodic inspection of PPE to ensure its serviceability as per the specification given by TPCODL.
- BA shall ensure the adherence to standard operating procedures or guidelines laid down by TPCODL.
- BA shall ensure reporting of any unsafe act, unsafe conditions, near miss, incident or accident to engineer in-charge and SHE&DM team of TPCODL.
- BA shall provide safety performance and Safety MIS (*annexure 9)* to engineer in-charge and SHE&DM group periodically. Based on any non-confirmation to the safety procedures and guidelines, BA is liable to be negatively marked for his performance and suitable penalty will be imposed.
- BA shall ensure to depute a Safety Supervisor for managing a complete safety management system for the work as per the following safety structure.
- The BA for the RRG work shall depute one Safety supervisor.



Annexure 3.7 ***(Refer Para 4.0)***

General Safety Conditions for the major contract work in O&M of street light group:

A BA awarded a major contract work in operation and maintenance of street light group will be required to fulfil the following safety conditions:

- BA shall provide Safety Policy and safety objectives of their company.
- BA shall comply with all statutory requirements like: applicable acts, regulations, codes of practice, OHSAS Standards, etc.
- BA shall provide the filled safety management questionnaire as per Annexure 1
- BA shall conduct a job risk assessment and provide information as per Annexure 2
- BA shall abide by Safety manuals, guidelines of TPCODL.
- BA shall provide its organisation structure & responsibilities in terms of Safety Management to TPCODL.
- BA shall document the work practices and procedures in terms of Safety Management.
- BA shall ensure safety training and induction program for the employees
- BA shall conduct safety audits & inspections as per TPCODL procedures provided by SHE&DM group.
- BA shall provide and ensure the proper usage of the safety equipment PPE as per the TPCODL approved list in annexure 7.
- BA shall ensure periodic inspection of PPE to ensure its serviceability as per the specification given by TPCODL.
- BA shall ensure the adherence to standard operating procedures or guidelines laid down by TPCODL.
- BA shall ensure reporting of any unsafe act, unsafe conditions, near miss, incident or accident to engineer in-charge and SHE&DM team of TPCODL.
- BA shall provide safety performance and Safety MIS (*annexure 9)* to engineer in-charge and SHE&DM group periodically. Based on any non-confirmation to the safety procedures and guidelines, BA is liable to be negatively marked for his performance and suitable penalty will be imposed.
- Each BA shall ensure to depute a Safety Supervisor for managing a complete safety management system for the work awarded as per the below structure.

Annexure 4 *(Refer Para 3.3)*

Safety Undertaking by way of Affidavit

I_____ s/o_____R/o_____ (AUTHORIZED REPRESENTATIVE/PARTNER/DIRECTOR/PROPRIETOR) of M/S _____(name of company/firm)__ having its office at (Complete address of Company), authorized vide power of attorney dated ------/Board resolution dated----/letter of authority dated----, hereinafter referred to as **Contractor [or Business Associate (BA)]** which expression shall, unless it be repugnant to or inconsistent with the meaning or context thereof, be deemed to include its heirs, executors, administrators, and assigns do hereby affirm and undertake as under :

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

7. That the Contractor shall immediately replace supervisor in case it is found to be not up to the level of skill and experience required as in skill and experience required in *annexure 5* of this document, but any such replacement shall be only with the prior concurrence of TPCODL .
8. That the Contractor and its subcontractors shall abide by all the safety guidelines as per Safety Manual, Contract Safety Management and other guidelines issued from time to time by TPCODL during the contract period.
9. That in case the Contractor and/or any of its Subcontractor fail to ensure the compliance as required in terms of this undertaking the Contractor shall keep and hold TPCODL / its directors / officers / employees indemnified against any / all losses / damage / expense / liability / fines / compensation / claims / action / prosecutions or the like which might be suffered by TPCODL or to which TPCODL might get exposed to as a result of any breach /wilful negligence /deliberate default on the part of the Contractor /Subcontractor in complying with the same. Contractor shall also furnish any press release, clarification etc. if sought by TPCODL for any near miss or safety violations, accidents, which are attributable to fault of Contractor.

DEPONENT

VERIFICATION

Verified at Bhubaneswar on this _Day of _____20__ that the contents of the above affidavit are true and correct and nothing material has been concealed therefrom

DEPONENT

Annexure 5 *(Refer Para 5.4)*

SKILL / QUALIFICATION REQUIRED FOR ELECTRICIAN AND ELECTRICAL SUPERVISOR

Skill / Qualifications Required for Electrician *(Certificate of Competency Class-II)*:

1. Formal education in ITI – Wireman/ Electrician trade.

   OR

2. Working experience of minimum three years of practical wiring.

   OR

3. Have completed three years apprenticeship course through Apprenticeship Advisor, Govt. of NCT of Delhi / other state Govt. in the trade of Lineman / Wireman / Electrician.
4. A candidate must have attained the age of Eighteen years.

Skill / Qualifications Required for Electrical Supervisor (*Certificate of Competency Class-I)*:

1. Have at least five years' experience of practical wiring after passing the certificate of competency class-II i.e. electrician.

   OR

2. Recognized Degree or Diploma or equivalent qualification in Electrical Engineering from any Technical institute / College or University recognized by the Board.

   AND

   Must have completed the training/job in rectifying the common defects in electrical line and power installation for a period of one and three years after passing Degree or Diploma respectively

   OR

3. Possessing the valid certificate of certificate of competency class – 1 (Electrical Supervisor)

Annexure 6 (*Refer Para 5.6)*

Training Module for BAs Worker & Supervisor

Training for BA Supervisor **Duration – 02 Hrs / Month**

Methodology: **Lecture and Practical Demonstration of Safety Zone Creation**

Session: 1

Topic: **Electrical Safety Aspects**

Sub Topics:

1. Learning specifics of HT & LT Network of zone
2. Major type of HT / LT / service lines / street light maintenance works
3. Understanding the need of Safety
4. Understanding the safe process of maintenance :
    - Planning of the maintenance job
    - Availability of men, material & machine, PPEs, Safety gear and approved PTW
    - Briefing of the job by the supervisor of the TPCODL
    - Identification of Risks associated with the maintenance work and planning for controlling measures by TPCODL supervisor
    - Creation of safety zone by TPCODL supervisor and satisfying that the network is dead – Use of Neon Tester, Shorting Chain and Safety Tagging
    - Start of the work – Right person for the right job
    - Alert supervision
    - Completion of the job – Check points
    - Energization of network
    - Actions to be taken in case of some accident

Session: 2

Topic: **Use of Electrical Testing Equipment**

Methodology: **Lecture and Practical Demonstration**

Sub Topics:

1. Meggar, Hi Pot, Clamp On Meter, Neon Tester, Discharge Rod, Line tester etc.

Session: 3

Topic: **Awareness of Electrical Safety Aspects**

A. Understanding the need of this Training and Safety
B. Learning specifics of HT & LT Network
C. Major type of work to be carried out in zones
D. Switching Operations (Do's & Don'ts) including Street Light Switching
E. Working on Height *(practical demo also)*
F. Understanding the Safe Process of Maintenance / Working:
    - Planning of the job
    - Availability of men, material & machine, PPEs, Safety gear and approved PTW
    - Briefing of the job by the supervisor
    - Permit to Work
    - Safety Tagging and Lock Out Tag out

- Identification of Risks associated with the work to be carried out and planning for controlling measures by proper supervision
- Concept of "***Safety Zone***"
- Identification and use of Neon Tester, Shorting Chain, Clamp On Meter, Hi Pot, Meggar etc.
- Completion of the job – Check points
- Accident Theory & Incident Reporting
- Actions to be taken in case of some accident

Session: 4

Topic: Identification, Demonstration and Usages of Tools, PPEs and other Safety Gears and demonstration of working on HT pole

Session: 5

Topic: Practical demonstration of Safety Zone creation

FREQUENCY

Regular Safety Training Program

- It will be conducted for all field & supervisor staff of BA in such a manner that all BA Personnel attend at least two hours safety training during every month.

One Day Induction Safety Training Programs:

- This training will be for the new BA's personnel, who have been cleared by the Cross Functional Panel to undergo Safety training and who are likely to be deployed at various work sites of TPCODL by the BA, as a part of AMC / Work Contract.

Duration / Periodicity:

- Duration and periodicity has been defined above. However, this is subject to change at the discretion of TPCODL.

Annexure 7 *(Refer Para 5.7)*

LIST OF PERSONAL PROTECTIVE EQUIPMENT AND TESTING FREQUENCY

Sl. No.	Name of PPE	IS / EN Standard	Testing Frequency	Remarks	Ref Brand & Model
01	Leather Safety Shoes (Color – Black) with PU toe cap.	IS:15298 (Part-2)	Monthly and visual check every day for any crack or damage in the leather or sole.		BATA (Model No.- Endura L/C) Liberty (Model No. – 7198-01 HT Barton Black – Warrior)
02	HDPE Safety helmet with chin strap and ratchet type for adjustment.	IS:2925-1984	Monthly and visual check every day for any crack in shell.		Karam (PN Safetech) Joseph Leslie Accent Industries Honeywell
03	Full body harness (Safety belt)	EN 361	Monthly and visual check every day of the bends and the harness.		Karam (PN Safetech) Joseph Leslie Accent Industries
04	Electrical Safety Gloves	EN: 60903 CE marked	Weekly and visual check for any crack and blow test before every work.	Manufactured not beyond 12 months.	Make Sparian / Sumitech / CATU supplied with inner cotton glove with over glove of split leather.
05	Full face visor with safety helmet	EN: 166 CE marked (Visor)	Monthly and visual check every day for any crack in shell.	Clear acrylic visor attached with safety helmet.	Karam (PN Safetech) Joseph Leslie Accent Industries Honeywell
06	Fire Proof jacket for chest protection		Monthly and visual check every day.		
07	Safety Chain for shorting cum earthing.	As per TPCODL standard	Weekly and visual check before every work.	Made of brass, Total length – 5.5 meters and made of 12 SWG.	

Note:

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

Pictures of PPE for reference purpose.

Sl. No.	Name of PPE	IS / EN Standard	Picture
01	Leather Safety Shoes (Color – Black) with PU toe cap.	IS:15298(Part-2) and with test report of electrical resistance.	
02	HDPE Safety helmet with chin strap and ratchet type for adjustment.	IS:2925-1984	
03	Full body harness (Safety belt) The straps at shoulder and thigh shall have full pad for comfort. The back shall be so designed that harness straps do not tangle with each other.	EN 361:2002 EN 358 : 2000 IS: 3521:1991/2002	

04	Electrical Safety Gloves – Composite type Soft electrical gloves as per size of individual.	EN: 60903 CE marked	
05	Full face visor with safety helmet	EN: 166 CE marked (Visor)	
06	Fire Proof jacket for chest protection		
07	Safety Chain for shorting cum earthing.	As per TPCODL standard	  
08	Reflective jacket to each workmen	As per TPCODL standard	

Note : Picture shown are for indicative purpose only. Actual product may differ.

Annexure 8 *(Refer Para 5.8)* LIST OF AUDITS TO BE CONDUCTED

Audits	Responsibility	Freq.	Ref. Doc.
Permit to Work & Field Audit	BA Safety Representative	Weekly	F04 (COR P - 12)
Tool Bag & PPE's Audit		Weekly	F06 (COR P - 12)
First Aid Box Maintenance Record		Fortnightly	F08 (COR P - 12)
Fire Extinguisher Record ***(Applicable for the BA involved in major construction works and have storage of flammable material at worksite)***		Monthly	F09 (COR P - 12)
Safety Talk Register		Weekly	F18 (COR P - 12)
Site Safety Audit		Daily	F29A (COR P - 12)

Note:

1. *(BA Safety Representative has to use the formats as per Safety process COR – P – 12 of TPCODL)*

Annexure 9 (*Refer Para 5.9)*

PERFORMANCE REPORT – SAFETY

FOR THE MONTH OF……

Name of BA : ……

Name of the Project and Purchase order No: ……

Date of commencement of work: ……

Man Hour Worked in this month (No. of employees X 8 Hrs + Overtime): ……

Cumulative Man Hour worked: ……

Total Number of Minor Injury (this month): …… Minor Injury (Total)……

Major Injury (this month): …….. Major Injury (Total): ……

Detail of the Incident / Sub Standard Acts and Condition

Activity	This Month	Cumulative (Total)	Day Lost (this month)	Days Lost (Cumulative)
No. of the Incident				
No. of lost time injuries				
No. of dangerous occurrences				
No. of near miss reported				
Substandard Act/Conditions observed			Attach details of observation of this month	
Safety Violation Notice received (from TPCODL) (both in numbers and in Rs.)	No.	No.	No. of violation letter received and compliance report for the TPCODL.	
	Rs.	Rs.		

Note: Cumulative means total from date of commencement of work according to the contract.

Detail of the Accident / Near Miss Incidents:

Date and Time	Type of the incident	Name of Employee	Brief Description	Corrective and Preventive actions recommended

Details of the Safety Violations:

Date and Location	Brief Description	Name of employee involved	Action Taken

Detail of the Safety Talk / Tool Box Talk / Safety Training

Date and Location	Topic (s)	Total Number of employees (Worker / Supervisor)	Number of participants (Worker / Supervisor)

Detail of the Safety Meeting

Date and Location	Number of participants	Topics discussed	Major Observations / Innovation

Detail of the Safety Inspection /Audit: (as per TPCODL site audit checklist F29A(COR-P-12)

Date	Area / Location	Major Observations	Recommendations	Action Taken

Any other Safety, Occupational Health, Environment & Disaster Management Promotional Activity (During this month):

Date	Location	Activity	Level of Participation	Number of participation

Signature of the BA Safety Representative Signature of ZM / HoG

Name, E. No. and Date Name, E. No. Date.

Note: The original form to be deposited with Engineer in-charge and a copy to SHE&DM group on or before 5th of every month along with bill. List of training of the current month and status of PPE to be also mentioned individual wise.

BA may include additional lines if required. The TPCODL may revise the format as and when deemed required.

ANNEXURE-M

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 (PROPRIETORY) Partnership, Pvt. Ltd., Public Ltd. etc.	:
	1.3	YEAR OF ESTABLISHMENT	:
	1.4	LOCATION OF OFFICE POSTAL ADRESS 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 DRAUGHTSMEN	:
	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 / COLLABORA-TOR'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	:
		UTILISED	:
		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 RECOGNISED 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 ORANISATIONAL 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. GST Registration No	

*** 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-N

MANUFACTURER AUTHORIZATION FORM

(To be submitted on OEM's Letter Head)

Date: …….

Tender Enquiry No.: ……..

To,

Head (Contracts & Stores)

The TP Central Odisha Distribution 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