

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Northern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326****Open Tender Notification****For****One Year Rate Contract - Supply of ACDB & DCDB in TPCODL, TPNODL, TPSODL and TPWODL.****Tender Enquiry No.: TPCODL/CCG/25-26/1000003326,
Due Date for Bid Submission: 09/08/2025 [18:00 Hrs.]****Centralized Contracts Group
Tata Power Odisha DISCOMs
1st Floor, Anuj Building, Plot No. 29, Satya Nagar,
Bhubaneswar – 751007****TPCODL TPNODL TPSODL TPWODL
(TATA Power and Odisha Government Joint Venture)**

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326****Contents**

1.0	Event Information.....	5
1.1	Scope of work	5
1.2	Availability of Tender Documents.....	6
1.3	Calendar of Events.....	7
2.0	Pre- Qualification Criteria	7
3.0	Evaluation Criteria	8
3.1	Price Basis.....	9
4.0	Contact Information	9
5.0	Submission of Bid Documents.....	9
5.1	Bid Submission.....	9
5.1.1	First Part : EMD	10
5.1.2	Second Part : Techno-Commercial Bid	11
5.1.3	Third Part : Price Bid.....	12
5.2	Signing of Bid Documents	12
5.3	Mandatory documents required along with the Bid	12
5.4	Deviation from Tender	13
6.0	Bid Related Details.....	13
6.1	Bid Prices.....	13
6.2	Bid Currencies.....	13
6.3	Period of Validity of Bids	13
6.4	Alternative Bids.....	14
6.5	Modifications and Withdrawal of Bids	14
7.0	Bid Opening & Evaluation	14
7.1	Bid Confidentiality.....	14
7.2	Technical Bid Opening	14
7.2.1	Preliminary Examination of Bids/Responsiveness.....	14
7.2.2	Techno Commercial Clarifications	15

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326**

7.2.3	Right of Acceptance/Rejection	15
7.3	Price Bid Opening	15
8.0	Market Integrity	15
9.0	Supplier Confidentiality	16
10.0	Reverse Auctions	16
11.0	Award Decision	17
12.0	Order of Preference / Contradiction	17
13.0	Post Award Contract Administration	17
13.1	Special Conditions of Contract	17
13.2	Drawing Submission and Approval	18
13.3	Payment Terms	18
14.0	Climate Change	18
15.0	Ethics	19
16.0	Specification and standards	19
17.0	General Condition of Contract	19
18.0	Safety Policy and Safety Terms & Conditions	19
19.0	Tata Code of Conduct	19
20.0	Environment & Sustainability Policy	19
	ANNEXURE-I : Price Schedule	20
	ANNEXURE-II : Technical Specification	21
	ANNEXURE III : Schedule of Deviations	22
	ANNEXURE IV : Schedule of Commercial Specifications	23
	ANNEXURE V : Checklist of all the documents to be submitted with the Bid	24
	ANNEXURE VI : Acceptance form for Participation in Reverse Auction Event	25
	ANNEXURE VII : General Conditions of Contract	26
	ANNEXURE VIII : Safety Policy and Safety Terms & Conditions	26
	ANNEXURE IX : Tata Code of Conduct	26
	ANNEXURE X : Environment & Sustainability Policy	26

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Northern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP

NIT No.: TPCODL / CCG / 25-26 / 1000003326

ANNEXURE XI : Authorization Letter Format.....	27
ANNEXURE XII : Instructions to Bidder for participation in ARIBA System	28

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326****Centralized Contracts Group (CCG)**

The Centralized Contracts Group (CCG) is a shared service group of four Tata Power Odisha Distribution Companies (DISCOMs) - TPCODL, TPNODL, TPSODL & TPWODL. CCG is responsible for carrying out tendering activities to cater to the purchasing needs of all four DISCOMs.

1.0 Event Information

Bids are invited in Two Bid system from interested Bidders to establish a Rate Contract as below:

Tender Enquiry No.	Work Description	EMD (Rs.) *	Tender Fee inclusive of GST (Rs.) **	Last Date and Time for payment of Tender Fee
TPCODL / CCG / 25-26 / 1000003326	RC for Supply of ACDB & DCDB under TPCODL, TPNODL, TPSODL and TPWODL.	50,000	5,000	27/07/2025 18:00 Hrs

* EMD exempted for MSMEs registered in the State of Odisha.

** Tender fee – Rs. 1,000/- including GST. for MSMEs registered in the State of Odisha (Ref. Odisha MSME Preferential Norms^ for details on Odisha MSME support)

1.1 Scope of work

Bids are invited from interested Bidders to award Rate Contract (RC) for Procurement of ACDB & DCDB as mentioned below:

Sl No.	Description	UoM	TPNODL	TPWODL	TPSODL	TPCODL	Total Qty
1	Supply of 440 V ACDB	EA	10	15	8	10	43
2	Supply of 24 V DCDB	EA	-	15	-	5	20

Detailed scope as stipulated elsewhere in this tender document.

[^] Odisha MSME Preferential Norms

- **Tender Fees Relaxation:** To participate in the tender, MSMEs registered in the State of Odisha shall pay Rs. 1,000/- including GST towards cost of tender paper.
- **Earnest Money Deposit (EMD) Exemption:** EMD shall be exempted for MSME registered in the State of Odisha. However, Bidder shall be barred to participate in the tendering process for a period of 2 years in case it backs out post award of the contract.
- **Qualification Requirement Relaxation:** Qualification Requirement of Financial Turnover for MSME registered in the State of Odisha shall be reduced to 20% of the existing criteria.
- **Past Experience Relaxation:** instead of relying on the volumes / value of earlier Supplies / Projects, assessment of the Bidder shall be done on the basis of feedback from Customers. Past performance experience at Tata Power and its Group Companies shall supersede feedback from other Customers.
- **Reservation for MSME :** TP DISCOM shall procure at least 20% of the total volume of the procurement from MSME registered in the State of Odisha (however, it shall not apply where goods/services are not available with the MSME), subject to matching L1 discovered prices and meeting technical specifications including quality requirements.
- **Performance Bank Guarantee (PBG) Relaxation:** Performance Bank Guarantee for MSME registered in the State of Odisha shall be 25% of the value normally prescribed.

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Nothern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326****1.2 Availability of Tender Documents**

The bidder can get primary information about the tender from the Newspaper advertisement. Tender documents can be downloaded from TP Odisha DISCOMs' websites:-

www.tpcentralodisha.com, www.tpnodl.com, www.tpwesternodisha.com, www.tpsouthernodisha.com

Non-Refundable Tender Participation Fee, as indicated in tender document, to be submitted before last date of tender fee payment, in the form of direct deposit / NEFT / RTGS in the following bank account.

Account Name: TP Central Odisha Distribution Limited

Bank Name: State Bank of India,

IDCO Towers, Bhubaneswar

Bank Account No. : 10835304915

IFSC Code : SBIN0007891

To receive online bidding link, eligible and Interested bidder shall send an email to Package Owner (Ref. Clause 4.0 for details) attaching duly signed and stamped letter on Bidder's letterhead, with following details, expressing their intent to bid against above tender in following format:

Sr No	Description	Bidder's Response
i)	Tender Enquiry No.	
ii)	Description of materials / Works Tendered	
iii)	Name and address of the bidding company	
iv)	Name of the authorized contact person	
v)	Contact No. of authorized person	
vi)	E-mail Id to which online ARIBA link to be sent	
vii)	Tender Fee details (Amount / NEFT-RTGS UTR No / Date) (Ref sec 1.2)	
viii)	GST No. of bidder	
ix)	MSME Certificate (if applicable)	
x)	Postal address of bidder for return of EMD BG	

E-mail has to be sent to rajib.bhattacharya@tpwesternodisha.com with copy to vipin.chauhan@tpnodl.com before last date and time for payment of tender participation fee (Clause 1.3).

On receipt of the above letter, after due verification, ARIBA link for participation in the tender will be sent to bidder's e-mail address from ARIBA system. Bids shall be submitted only through online e-procurement platform, ARIBA. Any other form of bid submission shall not be accepted. **(Ref. Annexure XII for detailed instructions on bid submission in ARIBA)**

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326****1.3 Calendar of Events**

(a)	Date of sale/ availability of tender documents from Website	22.07.2025
(b)	Date by which Interested and Eligible Bidder to pay Tender Fee and confirm participation as mentioned in “Procedure to Participate in Tender”	27.07.2025, 17:00 Hours
(c)	Date & Time of Pre-Bid Meeting (If any)	To be notified if it is required.
(d)	Due Date of receipt of pre-bid queries by e-mail, if any	30.07.2025, 17:00 Hours
(e)	Due Date of Posting Consolidated replies to all the pre-bid queries as received	04.08.2025, 17:00 Hours
(f)	Due date and time of receipt of Bids	09.08.2025, 18:00 Hours
(g)	Date & Time of opening technical bids	11.08.2025, 18:00 Hours
(h)	Date & Time of opening of Price of qualified bids	To be notified to the successful bidders

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 TP Discom’s office, the last date of submission of bids and date of opening of bids will be the day following working day at appointed times.

2.0 Pre- Qualification Criteria

Sr No	Parameter	Owner Requirement	Documents to be submitted by Bidder
A	Technical Pre-Qualification Requirements		
1	Technical Experience / Performance	1) Bidder should have their own manufacturing facility and the In-house testing facilities for the acceptance test as per tender specifications. DISCOM reserves the right	1. Self-undertaking to be submitted in this regard.

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326**

		to inspect the said manufacturing facility as proof of compliance to this parameter.	Bidder should submit the undertaking in this regard. Supporting documents must be provided.
		2) Bidder should have adequate & experienced resources to ensure proper design, engineering, quality control and safety practices. Bidder should submit the undertaking in this regard.	
B	Financial Pre-Qualification Requirements		
1	Commercial Capability	1) The bidder should have an average annual turnover of a minimum of Rs. 5 crores for any three of the last three financial years. (FY 21-22, FY 22-23 & FY23-24) Copy of audited Balance Sheet and P&L Account to be submitted in this regard. (UDIN no is mandatory for balance sheet.)	Copy of audited P&L Account (with UDIN no.) to be submitted in this regard
		Qualification Requirement of Financial Turnover for MSME registered in the State of Odisha shall be reduced to 20% of the existing criteria.	
2	Experience	Bidder or OEM should have either executed 50% of total tender qty during last three financial years or single order of 25% of total tender qty during last three financial years or 2 orders of 15% each of total tender quantity for last 5 financial years. Copies of Purchase orders certifying the quantities has to be submitted along with the bid. Copy of work order / completion certificate to be submitted in this ragard. the work orders and completion certificates must be endorsed by Indian Company	Order copy to be provided; The performance certificate / PO details and contact details of the client need to be submitted
3	Statutory Compliances	The prospective Bidder(s) should be have following certificates- a. Valid GST Registration Certificate. b. Valid PAN No.	Certificate to be submitted

3.0 Evaluation Criteria

- The bids will be evaluated technically and on qualifying criteria of tender terms and conditions.
- The bids will be evaluated commercially on an individual item basis (all-inclusive lowest cost at item level) for the complete tender as calculated in Schedule of Items [Annexure I].

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326**

- Bidder has to mandatorily quote against each item of Schedule of Items [Annexure I]. Failing to do so, CCG may reject the bids.

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

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

3.1 Price Basis

-Price will be fixed and firm during the contractual period.

-Price variation clause shall be applicable as detailed elsewhere in this document

4.0 Contact Information

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

Communication Details:Package Owner:

Name: Rajib Bhattacharya
Contact No.: 9434210425
E-Mail ID: rajib.bhattacharya@tpwesternodisha.com

Escalation Level I:

Name: Sony Jha, HoD- CCG
E-Mail ID: sony.jha@tpcentralodisha.com

Escalation Level II:

Name: Mr. Vipin Chauhan, Head -CCG
E-Mail ID: Vipin.Chauhan@tpnodl.com

5.0 Submission of Bid Documents**5.1 Bid Submission**

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

All future correspondence regarding the tender, bid submission, bid submission date extension, Pre-bid query etc. shall be through TPCODL E-Tender system (Ariba).

Bids shall be submitted in 3 (Three) parts:

5.1.1 First Part : EMD

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Northern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326**

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 Bank Guarantee / Bank Draft / Bankers Pay Order (issued from a Scheduled Bank) online NEFT/ RTGS transfer 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 by CCG and the bid as submitted shall be liable for rejection. A separate **non-refundable tender fee** of stipulated amount also needs to be transferred **online through NEFT/ RTGS** in case the tender document is downloaded from our website.

TPCODL 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

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

-In such case, Tender Fee and EMD should be strictly 2 separate transactions else bids shall be rejected.

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

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

“EMD (Earnest Money Deposit)”

“RC for Supply of ACDB & DCDB in TPCODL, TPNODL, TPSODL and TPWODL”

Chief –Centralized Contracts Group

TP Central Odisha Distribution Limited

1st Floor, Anuj Building, Plot No. 29, Satya Nagar, Bhubaneswar- 751007

Kind Attn.: Rajib Bhattacharya, Mob No.: 9434210425

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

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

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

- Bank Guarantee in favor of TP Central Odisha Distribution Limited payable at Bhubaneswar.
- Online transfer of requisite amount through NEFT/ RTGS.
- Bank Guarantee valid for 210 days after due date of submission.

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326***Ref. GCC for Forma of Bank Guarantee****The EMD shall be forfeited in case:***

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

Or

b) The successful Bidder does not

a) accept the Purchase Order, or

b) furnish the required Performance Security Bank Guarantee

5.1.2 Second Part : Techno-Commercial Bid

Techno-Commercial bid shall contain the following documents. Absence of any of these may attract bid rejection:

1. Index Stating Document name & Page No./Document No. in bid. As illustrated below:

Sr No	Document	Page No/Document No
1	Type test Reports	3
2	Schedule of Deviations	8
3	...	...

2. Requisite Documents for compliance to Qualification Criteria mentioned in Clause 2.0 and clause no. 1.5.
3. Type Test Certificate* of same or higher rating.
4. Acceptance of Specification as per Annexure II.
5. Duly signed and stamped 'Schedule of Deviations' as per Annexure III on bidder's letter head.
6. Duly signed and stamped 'Schedule of Commercial Specifications' as per Annexure IV on bidder's letter head.
7. Duly filled in Annexure V and VI.
8. Proper authorization letter / Power of Attorney to sign the tender on the behalf of bidder.
9. Copy of PAN, GST registration (In case any of these documents is not available with the bidder, same to be explicitly mentioned in the 'Schedule of Deviations')

The type tests specified in technical specifications should have been carried out **within five years (unless otherwise explicitly stated) 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 DISCOM.*

The technical bid shall be submitted through CCG / TPCODL E-tender System (Ariba) only. Hard Copy of Technical Bids need not be submitted unless specifically asked for.

5.1.3 Third Part : Price Bid

Property of CCG – Not to be reproduced without prior written permission of CCG (TP Odisha DISCOMs)

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326**

Price Bid shall contain only the price details and strictly in format as mentioned in Annexure I along with explicit break up of basic prices and Taxes & duties 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. The price bids containing any deviations/conditions shall be liable to be rejected.

Price Bid is to be submitted in soft copy through CCG/TPCODL E-Tendering system (Ariba) only. Hard copy of Price Bid shall not be submitted.

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

5.2 Signing of Bid Documents

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

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

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

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

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

5.3 Mandatory documents required along with the Bid

- 1.4.1 EMD of requisite value and validity
- 1.4.2 Tender Fee.
- 1.4.3 Requisite Documents for compliance to Qualification Criteria mentioned in Clause 1.7.
- 1.4.4 Acceptance of Specification, drawing with filled in GTP as per Annexure II.
- 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.

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326**

1.4.7 Duly filled in Annexure V and VI.

1.4.8 Proper authorization letter/ Power of Attorney to sign the tender on the behalf of bidder.

1.4.9 Copy of PAN, GST registration (In case any of these documents is not available with the bidder, same to be explicitly mentioned in the 'Schedule of Deviations')

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

5.4 Deviation from Tender

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

6.0 Bid Related Details**6.1 Bid Prices**

Bidders need to quote for all items as per the Price schedule attached in Annexure I. 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 DISCOMs' sites. The all-inclusive prices offered shall be inclusive of all costs –Insurance, Transport, duties, taxes, levies paid or payable etc. during the execution of the supply work. Applicable GST to be specified clearly.

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

6.2 Bid Currencies

Prices shall be quoted in Indian Rupees Only unless otherwise stated explicitly.

6.3 Period of Validity of Bids

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

Notwithstanding clause above, CCG 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.

6.4 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.

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326****6.5 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.

7.0 Bid Opening & Evaluation**7.1 Bid Confidentiality**

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

7.2 Technical Bid Opening

Technical Bids shall be opened online as per schedule mentioned in section 1.3, in CCG Office (1st Floor Conference room, Plot -29, Anuj Building Satya Nagar, Bhubaneswar). Bidders having authorization letter (format Annexed- XI) for attending bid opening from competent authority of respective Organizations, who may choose to be present physically / online at the time of tender opening. If the office is closed on the specified date of opening of the bids, the opening shall be done on the next working day at the same time. Technical bid must not contain any cost information whatsoever, else bids shall be liable to be rejected.

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

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

7.2.1 Preliminary Examination of Bids/Responsiveness

CCG 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 in order & format as detailed elsewhere in this document. CCG 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, CCG 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. CCG reserves the right to reject non-responsive bids.

7.2.2 Techno Commercial Clarifications

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326**

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, CCG/Engineering may at its discretion, ask the Bidder for a clarification on its Bid for any deviations with respect to specifications and attempt will be made to bring all bids on a common footing. Any such clarification as sought shall have to be responded to bidder **within two working days**, post which the bids shall be liable to be rejected. 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.

7.2.3 Right of Acceptance/Rejection

Bids are liable for rejection in absence of following documents:

- i. EMD of requisite value and validity.
- ii. Tender fee of requisite value.
- iii. Price Bid as per the Price Schedule mentioned in Annexure I (BOQ)
- iv. Necessary documents against compliance to Qualification Requirements mentioned in Clause 2.0 of this Tender Document.
- v. Filled in Schedule of Deviations as per Annexure III.
- vi. Filled in Schedule of Commercial Specifications as per Annexure IV.
- vii. Signed and filled in Specification and GTP as per Annexure II.
- viii. Duly filled and signed Annexure V and VI.
- ix. Receipt of Bid within the due date and time.

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

7.3 Price Bid Opening

Price Bids will be opened online for all technically qualified bidders on the dates as shall be informed to qualified bidders in CCG Office (First Floor Conference room, Plot -29, Anuj Building Satya Nagar, and Bhubaneshwar). Bidders having authorization letter (format annexed) for attending bid opening from competent authority of respective Organizations shall be allowed to be present physically/online at the time of bid opening. If the office is closed on the specified date of opening of the bids, the opening shall be done on the next working day at the same time. 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 DISCOM without any further correspondence in this regard.

8.0 Market 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, CCG 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

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326**

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

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

10.0 Reverse Auctions

CCG reserves the right to conduct the reverse auction 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.

Bidders shall be allowed to participate in Reverse auction as per following criteria hence bidders are advised to quote their most competitive rates while submitting the bids to avoid disqualification from participation in Reverse Auction.

Reverse Auction shall be as per the below approach:

No of bidders allowed to participate in RA process shall be: Total No of bidders on whom tender would be split PLUS 2 more bidders

Illustrative example: Total no of qualified bidders is 10 & tender needs to split amongst 4 bidders.

PLUS 2 means (04 + 02 = 06) means lowest 6 bidders i.e., L1 to L6 bidders would be allowed in the RA process. Balance, H1 to H4 bidders would not be allowed in the RA process.

In case – Total no of qualified bidders is equal to or less than the **PLUS 2** number, all qualified bidders shall be allowed in the RA process.

Illustrative example: Total no of qualified bidders is 4 & tender needs to split amongst 2 bidders. PLUS 2 means (02 + 02 = 04), so all 4 qualified bidders would be allowed in the RA process

Illustrative example: Total no of qualified bidders is 3 & tender would be awarded to single party only. PLUS 2 means (01 + 02 = 03), so all 3 qualified bidders would be allowed in the RA process

11.0 Award Decision

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326**

DISCOM 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 3.0. 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 7.2.1. The decision to place purchase order/LOI solely depends on CCG on bidder qualification & cost competitiveness across multiple lots, quality, delivery and bidder's capacity, in addition to other factors that CCG may deem relevant.

CCG reserves the right to split the order quantity wise/Line item wise among **2 Nos Bidders**. All bidders are advised to quote their most competitive rates against each line item. However CCG reserves the right to adjust the splitting as per bidders' participation/qualification/any other unforeseen condition in tender.

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

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

12.0 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 – Price Bid (Annexure I)
2. Technical Specifications (Annexure II)
3. Special Conditions of Contract (Clause 13.1)
4. Submission of Bid Documents (Clause 5.0)
5. Acceptance Form for Participation in Reverse Auction (Annexure VI)
6. General Conditions of Contract (Annexure VII)

13.0 Post Award Contract Administration**13.1 Special Conditions of Contract**

1. Rate Contract shall be valid for a period of 12 months from the placement of the Contract. Release Order (RO) shall be placed as per the requirement of respective TP Odisha Discom. Rates shall remain firm throughout RC period.
2. Prices shall be inclusive of Transit Insurance/ Packing & Forwarding charges and shall be inclusive of unloading & stacking at Discom site / store locations.
3. Business Associate (BA) shall submit applicable Performance Bank Guarantee as per GCC within 21 days of issuance of order. Performance Bank Guarantee for MSME registered in the State of Odisha shall be 25% of the value normally prescribed.
4. Guarantee period shall be As per attached technical Spec . No separate extended warrantee shall be applicable for parts replaced within main equipment's guarantee period.
5. BA shall submit GTP/ Drawing within 07 days from issuance of rate contract. If drawing is not approved by competent authority due to document shortfall or any changes are suggested, vendor has to resubmit new drawing/GTP/documents within 03 days of such intimation. BA shall offer for prototype inspection within

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326**

15 days of issuance of approved Drawings/GTP (if applicable). In case BA does not get necessary approvals for issuance of manufacturing clearances /CAT-A within mentioned / mutually agreed timelines, then CCG/TP Odisha Discoms reserve the right to cancel issued rate contract / release order and also reserve the right to forfeit EMD/PBG.

6. **Delivery Period** shall be 75 Days from date of receipt of release order / CAT A Approval form TP Odisha Discom, whichever is later.
7. **Payment Terms:** 100% payment On delivery of the material in good condition and certification of acceptance by certified officials Associates shall submit the bills/Invoice in original in name of respective discoms. The Payment shall be released within 60 Days from the date of Submission of certified bills/invoices. For MSME- Vendors the Payment shall be released within 40 Days from the date of Submission of certified bills/invoices..
8. Pre-dispatch inspection, MDCC and LD shall be applicable as per GCC.
9. TP Odisha Discom reserves right to short close the issued Release Order / Rate contract, in case of any quality issues.
10. Any change in statutory taxes, duties and levies during the contract period shall be borne by respective TP Odisha Discom. However, in case of delay in supply owing to reasons not attributable to TP Odisha Discom, any increase in total liability shall be passed on the Bidder, whereas any benefits arising owing to such statutory variation in taxes and duties shall be passed on TP Odisha Discom.
11. All other terms of GCC – Supply shall be applicable.

13.2 Drawing Submission and Approval

As per SCC, Clause number 13.1

13.3 Payment Terms

As per SCC, Clause number 13.1

14.0 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–X).

15.0 Ethics

TP DISCOMs are ethical organizations bound by Tata Code of Conduct. As a policy we lay 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.

DISCOM 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.

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Northern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326**

- Our suppliers and service providers shall represent our company only with duly authorized written permission from our company. They are expected to abide by the Code in their interactions with, and on behalf of us, including respecting the confidentiality of information shared with them.
- We shall ensure that any gifts or hospitality received from, or given to, our suppliers or service providers comply with our company's gifts and hospitality policy.
- We respect our obligations on the use of third party intellectual property and data.

Bidder is advised to refer Tata Code of Conduct (TCOC) attached for more information. For details, refer link: <https://www.tata.com/about-us/tata-code-of-conduct>

Any ethical concerns with respect to this tender can be reported to the following:

Mr. Pourush Garg (Chief Central Contracts Group): pourush.garg@tpcentralodisha.com

16.0 Specification and standards

As per Annexure II

17.0 General Condition of Contract

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

18.0 Safety Policy and Safety Terms & Conditions

Annexure VIII attached along with this tender.

19.0 Tata Code of Conduct

Annexure IX attached along with this tender.

20.0 Environment & Sustainability Policy

Annexure X attached along with this tender.

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Nothern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326****ANNEXURE-I : Price Schedule**

Sl No.	Description	Uo M	TPN ODL	TPW ODL	TPSO DL	TPC ODL	Total Qty	Unit Price	Unit Tax (18%)	All Inclusive Unit Price	Total all Inclusive Price
1	Supply of 440 V ACDB	EA	10	15	8	10	43				
2	Supply of 24 V DCDB	EA	-	15	-	5	20				

**Mandatory to quote in all line items (If Applicable)*

NOTE:

- Prices shall be firm till the validity of the contract (As applicable).
- The bids will be evaluated commercially on entire BOQ basis.
- The prices mentioned above shall be on FOR basis for all the TPNODL, TPCODL, TPSODL & TPWODL (As applicable) locations.
- Issuance of Release Orders (RO) shall be done by respective Discoms as per their requirement.
- The material shall be delivered as per the location captured in the release order.
- The bidders are advised to quote prices strictly in the above format. Failing to do so, bids are liable for rejection.
- The bidder must fill each column of the above format. ***Mentioning “extra/inclusive”/other conditions in any of the column may lead for rejection of the price bid.***
- No cutting/ overwriting in the prices is permissible.
- The quantity mentioned above are for evaluation purposes only and may vary as per actual site requirement.

TPCDL

TP Central Odisha Distribution Limited

TPNDL

TP Northern Odisha Distribution Limited

TPSDL

TP Southern Odisha Distribution Limited

TPWDL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP

NIT No.: TPCODL / CCG / 25-26 / 1000003326

ANNEXURE-II : Technical Specification

Attached separately with Tender

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Northern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326****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 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:

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Nothern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326****ANNEXURE IV : Schedule of Commercial Specifications**

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

S. No.	Particulars	Remarks
1.	Prices firm or subject to variation (If variable indicate the price variation clause with the ceiling if applicable)	Firm / Variable
a.	If variable price variation on clause given	Yes / No
b.	Ceiling	----- %
c.	Inclusive of GST	Yes / No (If Yes, indicate % rate)
d.	Inclusive of transit insurance	Yes / No
2.	Delivery Clause acceptable	Yes / No
3.	Guarantee clause acceptable	Yes / No
4.	Terms of payment acceptable	Yes / No
5.	Performance Bank Guarantee acceptable	Yes / No
6.	Liquidated damages clause acceptable	Yes / No
7.	Validity (180 days) (From the date of opening of bid)	Yes / No
8.	Inspection during stage of manufacture	Yes / No
9.	Covered under Small Scale and Ancillary Industrial Undertaking Act 1992	Yes / No (If Yes, indicate, SSI Reg'n No.)

Seal of the Bidder:***Signature:******Name:***

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Nothern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326****ANNEXURE V : Checklist of all the documents to be submitted with the Bid**

Bidder has to mandatorily fill in the checklist mentioned below:

S. No.	Documents attached	Yes / No / Not Applicable
1	EMD of required value	
2	Tender Fee as mentioned in this tender	
3	Signed copy of this tender as an unconditional acceptance	
5	Duly filled schedule of commercial specifications (Annexure IV)	
6	Sheet of commercial/technical deviation if any (Annexure III)	
7	Balance sheet for the last completed three financial years; mandatorily enclosing Profit & loss account statement	
8	Acknowledgement for Testing facilities if available (duly mentioned on bidder letter head)	
9	List of Machine/tools with updated calibration certificates if applicable	
10	Details of order copy (duly mentioned on bidder letter head)	
11	Order copies as a proof of quantity executed	
12	Details of Type Tests if applicable (duly mentioned on bidder letter head)	
13	All the relevant Type test certificates as per relevant IS/IEC (CPRI/ERDA/other certified agency) if applicable	
14	Project/supply Completion certificates	
15	Performance certificates	
16	Client Testimonial/Performance Certificates	
17	Credit rating/solvency certificate	
18	Undertaking regarding non blacklisting (On company letter head)	
19	List of trained/untrained Manpower & Organization Structure with a bifurcation detail for manpower details with experience for design, quality & Safety Dept.	
20	IMS documents (Quality & Environment)	
21	Corrective action & Preventive action (CAPA) report (if applicable)	
22	QAP Plan	
23	Record of any defect observed in manufacturing	
24	Record of safety issues & CAPA sheet	
25	Factory License	

Seal of the Bidder:***Signature:******Name:***

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326****ANNEXURE VI : Acceptance form for Participation in Reverse Auction Event***(To be signed and stamped by the bidder)*

In a bid to make our entire procurement process more fair and transparent, CCG 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. CCG 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. CCG will make every effort to make the bid process transparent. However, the award decision by CCG would be final and binding on the supplier.
3. The bidder agrees to non-disclosure of trade information regarding the purchase, identity of CCG, 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 CCG.
6. In case of intranet medium, CCG shall provide the infrastructure to bidders. Further, CCG 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.
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 Discom site / store.
10. The prices submitted by a bidder during the auction event shall be binding on the bidder.
11. No requests for event time extension of auction event shall be considered by CCG.
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 & Stamp of Bidder]

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Northern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326****ANNEXURE VII : General Conditions of Contract*****Attached Separately with Tender*****ANNEXURE VIII : Safety Policy and Safety Terms & Conditions*****Attached Separately with Tender*****ANNEXURE IX : Tata Code of Conduct*****Attached Separately with Tender******Also Refer: <https://www.tata.com/about-us/tata-code-of-conduct>*****ANNEXURE X : Environment & Sustainability Policy*****Attached Separately with Tender***

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Northern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326****ANNEXURE XI : Authorization Letter Format**

(To be presented by the authorized person at the time of opening of Bid on the letter head of Bidder and should be signed by an Authorized Signatory with Name and Seal of the Company)

Chief - Central Contracts Group

Tata Power Odisha DISCOMs

Plot-29 Anuj Building

Satya Nagar Bhubaneswar

SUB: Tender for**Ref: Tender No..... dated.**

Dear Sir,

This has reference to your above Tender. Mr. / Miss / Mrs. _____ is hereby authorized to attend the bid opening of the above Tender on _____ on behalf of our organization.

The specimen signature is attested below:

Specimen Signature of Representative

Signature of Authorizing Authority
Name & Designation of Authorizing Authority

NOTE: This Authorization letter is to be carried at the time of Bid Opening

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326****ANNEXURE XII : Instructions to Bidder for participation in ARIBA System**

Step 1: Eligible and Interested bidder shall send an email to Package Owner (Ref. Clause 4.0 for details) attaching duly signed and stamped letter on Bidder's letterhead, with following details, expressing their intent to bid against above tender:

Sr No	Description	Bidder's Response
i)	Tender Enquiry No.	
ii)	Description of materials / Works Tendered	
iii)	Name and address of the bidding company	
iv)	Name of the authorized contact person	
v)	Contact No. of authorized person	
vi)	E-mail Id to which online ARIBA link to be sent	
vii)	Tender Fee details (Amount / NEFT-RTGS UTR No / Date) (Ref sec 1.2)	
viii)	GST No. of bidder	
ix)	MSME Certificate (if applicable)	
x)	Postal address of bidder for return of EMD BG	

E-mail has to be sent to rajib.bhattacharya@tpwesternodisha.com with copy to vipin.chauhan@tpnodl.com before "Last date and time for payment of Tender Participation Fee".

Step 4: On receipt of the document as mentioned in Step 3 above and after due verification of the same, ARIBA link for participation in the tender will be sent to bidder's e-mail address from ARIBA system.

Step 5: In this e-mail online link as "**Click Here**" shall be there to access the event & participate in the tender.

Step 6: First time bidders need to **Sign Up** for accessing the event. Create User Name and password as mentioned in Sign Up page. A one-page registration screen will open for first time user. All * mark mandatory field to be filled in.

Those who are already having User Name and password for accessing events, may LOGIN using same User Name and password. (Bidder's user name and password for their other customer shall not be applicable for TPCODL / TPWODL / TPNODL / TPSODL)

Step 7: Post login, access the RFQ

Step 8: After review and downloading of all documents click on "**Review Pre-requisites**"

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Northern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 25-26 / 1000003326**

Step 9: Review and accept **“Bidder Agreement”**.

Step 10: Tender document (PDF) can be downloaded from relevant section in Ariba Portal

Step 11: Technical Bid Submission: Bidder has to attach pdf version of technical bid in section relevant to technical bid submission. Uploading any price related information in this section shall lead to bidder rejection.

Step 12: Price Bid Submission: Price schedule as attached in relevant section has to be downloaded. Price and tax details to be filled-in as per the format. PDF version of duly filled price bid to be uploaded in relevant section. Price bid to be mandatorily signature & sealed by authorized person on Company letter head. For Price Bid put all the unit price and taxes and duties in provided field. Put "NA" in not applicable field.

Step 13: After successfully uploading Techno commercial offer and price part, click - **“Submit Entire Response”**

STANDARD TECHNICAL SPECIFICATION COVER SHEET

Specification No. : ENG-LV-3021-R-02

Specification Name : SPECIFICATION FOR 415V ACDB

Revision	Prepared by	Reviewed by	Reviewed by	Reviewed by	Approved by	Released by
R-02	Yashobanta Rout				Niranjan Khuntia	Pourush Garg
	TPCODL				TPCODL	TPCODL
	05-07-2025					
R-01	Jyoti Ranjan Sahu	SATYA PRASAD NAYAK	JYOTIPRAKASH MOHANTY	SHANTAPRIYA JENA	Shailendra Kumar Jaiswal	SHIRISH SHARAD DIKAY
	TPSODL	TPCODL	TPWODL	TPNODL	TPSODL	TPSODL
	09-03-2023	09-03-2023	09-03-2023	13-03-2023	15-03-2023	24-03-2023
ENG-LV-3021	Jyoti Ranjan Sahu	SATYA PRASAD NAYAK	JYOTIPRAKASH MOHANTY	SHANTAPRIYA JENA	Shailendra Kumar Jaiswal	Shirish Sharad Dikay
	TPSODL	TPCODL	TPWODL	TPNODL	TPSODL	TPSODL
	04-02-2023	04-02-2023	04-02-2023	06-02-2023	06-02-2023	07-02-2023

Property of TATA POWER ODISHA DISCOMs – Not to be reproduced without permission of TPCODL/ TPNODL/ TPSODL/ TPWODL

CONTENTS

- 1.0 SCOPE**
- 2.0 APPLICABLE STANDARDS**
- 3.0 CLIMATIC CONDITIONS OF INSTALLATION**
- 4.0 GENERAL TECHNICAL REQUIREMENTS**
- 5.0 GENERAL CONSTRUCTIONS**
- 6.0 MARKING**
- 7.0 TESTS**
- 8.0 TYPE TEST CERTIFICATES**
- 9.0 PRE-DISPATCH INSPECTION**
- 10.0 INSPECTION AFTER RECEIPT AT STORES**
- 11.0 GUARANTEE**
- 12.0 PACKING**
- 13.0 TENDER SAMPLE**
- 14.0 QUALITY CONTROL**
- 15.0 TESTING FACILITIES**
- 16.0 MANUFACTURING FACILITIES**
- 17.0 SPARES, ACCESSORIES AND TOOLS**
- 18.0 DRAWINGS AND DOCUMENTS**
- 19.0 SCHEDULE “A” GUARANTEED TECHNICAL PARTICULARS**
- 20.0 SCHEDULE “B” DEVIATIONS**

1.0 SCOPE

This specification covers the technical requirements of design, manufacture, testing at manufacturer's works, packing, forwarding, supply and unloading at site/store and performance of 415Volts ACDB with all accessories and necessary training for trouble free & efficient performance. It is not the intent to specify completely herein all the details of tech design and construction of material. However, the material shall conform to practices consistent with sound environmental management and local statues. It is also expected that equipment shall comply in all respects to high standards of engineering, design and workmanship and shall be capable of performing in continuous commercial operation in manner acceptable to the TPCODL/TPNODL/TPSODL/TPWODL, who will interpret the meanings of drawings and specification and shall have the power to reject any work or material which, in his judgment is not in accordance therewith. The offered material shall be complete with all components necessary for their effective and trouble-free operation. Such components shall be deemed to be within the scope of Bidder's supply irrespective of whether those are specifically brought out in this specification and/or the commercial order or not.

2.0 APPLICABLE STANDARDS

The equipment covers by this specification shall unless otherwise stated, be designed, manufactured & tested in accordance with the latest edition of the following standards /IEC and shall conform to the regulation of local statutory authorities.

IEC 60947/ IEC 61439	Specification for Low voltage Switchgear and Control gear
IS 2705/ IS 16227	Current transformer/ Instrument Transformers
IS 694	PVC insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 1100 V.
IS 2629	Recommended practice for Hot Dip Galvanizing of Iron & Steel
IS 2633	Tests for uniformity of zinc coating
IS 5578	Guide for marking of insulated conductors
IEC 60060	High-voltage test techniques
IEC 61010-1	Safety requirement for electrical equipment for measurement, control and laboratory use
IS 11353	Guide for uniform system of marking and identification of conductors and apparatus terminals
IEC 62052-11	Electricity metering equipment (a.c.) - General requirements, tests and test conditions
IEC 62053-22	Static meters for AC active energy (Classes 0.1 S, 0.2 S and 0.5 S)
IS 14697	AC Static Transformer Operated Watthour Meters (Class 0.2 S and 0.5 S) and Var-Hour Meters (Class 0.2 S, 0.5 S and 1 S)-Specification
IS/IEC 60529	Classification of degrees of protection provided by enclosures of electrical equipment/ Degrees of protection provided by enclosures (IP code)
IS 8623-2	Low-voltage Switchgear and Controlgear Assemblies - Part 2: Particular Requirements for Busbar Trunking Systems (Busway)
IEC 60664	Insulation co-ordination for equipment within low voltage systems including clearances & creepage distances for equipment
IS 14772	General requirements for enclosures for accessories for household and similar fixed electrical installation

3.0 CLIMATIC CONDITIONS OF THE INSTALLATION:

The material shall be suitable for following climatic conditions.

1	Maximum ambient temperature	50 deg C
2	Max. Daily average ambient temp	35 deg C
3	Min Ambient Temperature	0 deg C
4	Maximum Humidity	95%
5	Average Annual Rainfall	150cm
6	Average No. of rainy days per annum	120
7	Altitude above MSL not exceeding	1000m
8	Wind Pressure	300 Km/hr
9	Earthquakes of an intensity in horizontal Direction	Equivalent to seismic acceleration of 0.3g
10	Earthquakes of an intensity in Vertical Direction	Equivalent to seismic acceleration of 0.15g (g being acceleration due to gravity)

TPCODL/TPNODL/TPSODL/TPWODL service area has heavy saline conditions along the coast and High cyclonic intensity winds with speed up to 300 Kmph. The atmosphere is generally laden with mild acid and dust in suspension during the dry months and is subjected to fog in cold months.

4.0 GENERAL TECHNICAL REQUIREMENTS

Sl no	Description	Requirement
4.1	Switchgear Panel	
4.1.1	Architecture	Metal-clad air insulated
4.1.2	Normal Service condition	Indoor
4.1.3	No of phases	Three
4.1.4	Rated Voltage	415
4.1.5	Rated Frequency	50 Hz
4.1.6	Rated Impulse withstand Voltage	8 kVP
4.1.7	Rated insulation voltage	690 V
4.1.8	Main Bus Bar Continuous rated current	250A
4.1.9	Busbar Material & Current Density	Aluminium with Grade E-91E with heat shrinkable PVC sleeves with Red, Yellow, Blue Colour for respective phases & Black colour for neutral suitable for 1.1kV, maximum 1.0A/ sq.mm. Bus bar size of phase & neutral shall be same.
4.1.10	Cross section area of bus bar (phase & neutral)	300 sqmm Al
4.1.11	Bus Bar Short circuit withstand current	25kA/1sec
4.1.12	Cross section area of earth bus bar	50x6mm GI

4.1.13	Degree of protection for enclosure for meters	IP 54
4.1.14	Temperature Rise	Shall be as per IEC/IS 61439
4.1.15	Insulation Resistance	>50 M ohms
4.1.16	Max. operating height from ground Level	1800mm
4.1.17	Min. operating height from ground Level	300mm
4.1.18	Cable Entry & Exit	From Bottom
4.1.19	System earthing	50x6mm Al. Earthbus shall be provided throughout the length of the panel. 2 nos. Earthing stud to be provided at the bottom of the panel All hinged door shall be earthed through 2.5 sqmm tinned braided copper wire Earth connection also to be provided in each compartment
4.1.20	Paint	Shade – RAL 7032 Minimum 80 micron
4.1.21	Material of Sheet Thickness of Enclosure Sheet/Frame Thickness of Doors/Covers Sheet Thickness of Gland Plate Base Frame	CRCA Sheet 2 mm 2 mm 3 mm ISMC 75
4.1.22	Type of Gasket	Polyurethane
4.1.23	Feeder Description Name plate	To be provided by the Bidder for each feeder (Feeder details to be provided during drawing approval)
4.1.24	Type of Wire Control Circuit Voltage Circuit CT Circuit Earthing	PVC Insulated 1.1kV grade FRLSH type 2.5 sqmm – Gray, Black 2.5 sqmm – Gray 2.5 sqmm – R, Y, B 2.5 sqmm – Green
4.1.25	Size of enclosure	- Max. 500mm (Width) of I/C - Max. 300 mm (Width) of Cable Alley - Max. 400 mm (Depth) - Max. 2200 (Height) including Base Frame
4.1.26	Indication Lights	- For Incomers – ON, OFF & Trip - For Incomers – Phase indication (R, Y & B) - For Outgoing MCCB - ON

SI no	Description	Requirement				
4.2	Item/ Panel Reference	Incomer	Outgoing			
4.2.1	Circuit Breaker Type/ Rating (A)	MCCB 250A with spreaders with FRP separators	TPN MCCB		TPN MCB	SPN MCB
			100A	63A	32A	16A
4.2.2	Quantity (Nos.)	2	1	2	5	16
4.2.3	Nos of Poles	3	3	3	3	2
	Neutral Link	2 (1 no. for each)	1 no. for each		Not Required	
4.2.4	Type of release	Microprocessor based with integrated short circuit, overload and earth fault protection	Thermal Magnetic Release (TMD) based O/L, S/C protection		Magnetic with O/L, S/C	
4.2.5	O/L Releases Setting	80%-100%				-
4.2.6	Rated Voltage	415V ± 10%				230V
4.2.7	Rated Ultimate Short circuit breaking Capacity (Icu)	35 KA	35KA		10KA	
4.2.8	Rated Service short circuit breaking capacity (Ics)	100% of Icu	50% of Icu			
4.2.9	Utilization Category	B				
4.2.10	Rated Insulation Voltage	690V				500V
4.2.11	Rated Impulse withstand voltage	8kVp				6kVP
4.2.12	1.1KV Al, XLPE cables (sqmm)	4CX300/150 -	4CX50	4CX25	4CX25	2CX10
4.2.13	Cast Resin type CT (3 Nos/ Incomer) -ratio, Burden	250/5A 15VA, CI-0.5S	-	-	-	-
4.2.14	For anti-condensation heaters	230V AC				
4.2.15	Metering	Multi- function meter for A, V, kW, kWh	Not required			
4.2.16	Panel illumination and space heating	Space Heater – min. 60 W Thermostat – 300C to 1100C LED Lamp with holder – 5 W Door Limit Switch – 6A 3Pin Switch & Socket – 15 A Control Fuse with Base – 6A DP AC MCB – 6A, 10kA				
4.2.17	Make	MCCB- Siemens, L&T, ABB, C&S, Schneider, Havells MCB- Siemens, ABB, Legrand, Schneider, Havells				

5.0 GENERAL CONSTRUCTION

5.1 SWITCHGEAR

- The switchgear panel shall be of sheet steel construction and shall be dust and vermin proof and shall be suitable for indoor installation. The panels shall be of Metal Clad compartmentalized, free standing, continuous from rear, modular type. The switchgear panels shall be rigid without using any external bracing. The switchboard panels should comply with relevant IS/IEC and revision thereof and shall be designed for easy operation maintenance and further extension. Bus bar, metering, circuit breaker

chamber, cables and cable box chamber should have proper access for maintenance, proper interlocks should be provided. Metal enclosed switchgear shall be so designed that normal service, inspection and maintenance operations including visual checking of phase sequence, earthing of connected cables, locating of cable faults, voltage tests on connected cables can be carried out safely.

- b) Panels shall have structural steel frame-work enclosed on all sides by CRCA sheet steel of minimum thickness as specified below:
Frame: 2 mm
Doors & Covers: 2 mm
Removable gland plate: 3 mm
- c) Panels shall consist of a front portion with equipment mounted on it and wiring access from rear. All doors, cut- outs and removable covers shall be gasketed all round by polyurethane gaskets. Panel space heater with thermostat, LED lamp with double door switch and 3pin socket & ON/OFF switch and double pole MCB with control fuses for each circuit shall be provided in each cable alley for each vertical panel.
- d) Panels shall be mounted and bolted to a common base channel of height 75mm. The channel in turn shall be fixed to the foundation bolts at site. All foundation equipment, anchor bolts etc. including the supporting channel shall be furnished by successful bidder in advance for completion of Civil Works prior to dispatch of panels. The bottom plates of the panels shall be fitted with removable gland plates for fixing the cable glands.
- e) Height of the panel should be limited to 2200mm. Each Indicating instruments and meters shall be at a suitable height so that the lettering on the dials can be easily read. Control switches/push buttons shall be conveniently located for ease of operation. The centre lines of the switches, push buttons and indicating lamps shall not be at a height more than 1800mm also shall not be less than 300mm that of the lowest unit. MCB with neutral link shall be provided at the panel for incoming AC supplies. All other insulators shall also be made of non-hygroscopic material.
- f) All components of the same rating and construction which may be needed to be replaced shall be interchangeable. If there are removable parts with different ratings and if parts are interchangeable within the assembly of metal enclosed switchgear and control gear, any possible combination of removable and fixed parts shall withstand the rated insulation level specified for fixed parts concerned. While making the general arrangement, consideration will be given to the place of sectionalizing to select the location where the minimum electrical connections are transferred from one section to other section.
- g) All the components of a module will be mounted on a component plate using machine screws and taped holes (except the components mounted on the door) to ensure vibration free operation. Circuit breakers shall be mounted such that they are accessible from the front of the panel. These components plates should be fixed with bolts for easy replacements. Standardization will be adopted while making these plates so that the component plates of the same size modules. can be changed from one module to other.
- h) Interlocks between different components shall be provided for safety and ease of operation. All instruments shall be non-draw-out type and safeguard in every respect from damages. The operation of a MCCB shall be impossible when it is in closed position. It shall be impossible to close the incoming MCCB in service position unless it is connected to auxiliary circuit.
- i) The rear of the ACDB shall have bolted covers in sections except cable chamber. Single line diagram for power distribution and wiring diagram for power and control shall be provided inside the panel. All retaining catches, screws and bolts for doors and covers shall be hot dip galvanized screws and bolts shall be captive. All hardware for the complete equipment including foundation bolts, lifting lugs & cable termination lugs etc. shall be supplied along with the panels.
- j) Auxiliary and control equipment installed on the panel shall be suitably protected against disruptive

discharge from main circuit. Bus bars shall be insulated with 1.1kV insulating sleeves.

- k) Degree of Protection for the enclosure shall be IP54 and that of partitions shall be IP4X. Compartment shall have its own front located, outward opening lockable hinged door with concealed hinges and bolted back cover. The door shall have interlocking facility with the MCCB or its handle such that the door can be opened only if the MCCB is in 'OFF' position. De- interlocking arrangement shall also be provided. Partitions of metal-clad switchgear and control gear shall be metallic and earthed.

- l) Control supply in individual bay shall to be distributed through MCB of suitable rating for individual control function like:

Trip Circuit & Close Circuit (Only for Incomer)

Heating and Lighting Circuit for Cable Alley

MCB shall be rated for 10kA short circuit rating. It shall be quick make, quick break, and independent manual type with trip free feature. MCB shall have the following:

- Over current protection
- Short Circuit Protection

- m) Wherever CB contacts are to be multiplied, latch type relay shall be used for contact multiplication. Auxiliary contact multiplier relays shall be reputed make and selected on the basis of continuous current carrying capacity and rated voltage. The fluctuation in voltage level shall be accounted for (+/-) 10% continuously.
- n) Each switchgear panel shall have 20% spare terminals. All equipment mounted on front side of panel. shall have Individual nameplates with equipment designation engraved. The termination links for cables shall be segregated in vertical plane. The bidder shall deliver to site completely assembled, wired, tested panels and only the interconnecting cables shall be connected at site.
- o) Cable entry arrangement shall be from bottom and suitable for 1.1KV XLPE armored external cables of sizes as mentioned in the specification. Removable CRCA gland plate of 3mm with cable holes to suit the cable sizes and with 2mm polyurethane type gasket of non-inflammable and insulating vermin proof material shall be provided. A minimum distance of 250mm will be provided between the gland plate and the nearest terminal for proper dressing and termination of the cable.
- p) Separate compartment is required for Incomer & Outgoings MCCBs. Outgoing MCBs shall have also separate compartments from MCCBs. MCCB & MCB compartment shall be separate. Multiple MCB shall be mounted in one compartment. MCCB & MCB shall not be door mounted.
- q) Both Incomer-1 & 2 are connected to common bus bar
- r) Common Busbar shall be for both incomer with interlocking arrangements. Electrical Interlock to be provided between both incomer-1 & 2.

5.2 Circuit Breaker

- a) The MCCB shall be fixed type. Comprehensive interlocking system to prevent any dangerous or inadvertent operation shall be provided. The contacts & spare contact of MCCB to be wired up to the terminals.
- b) The MCCB shall be manually operated with three pole simultaneous operations. The indicating device shall show the OPEN, CLOSE and TRIP position of MCCB visible from front of the cubicle.

5.3 BUSBAR

- a) Bus bars and all other electrical connections between various components shall be made of Aluminium of rectangular cross-section with current density of maximum 1 A/mm², shall be suitable for 3 phase, 4 wire, 400 volts 50 Hz AC supply and have a fault withstanding capacity of 25 KA for 1 second. The bus

bars shall be insulated with heat shrinkable and colour coded insulating sleeves, except at the points of connections. The phase bus bar shall be of ample capacity to carry the rated current of 250A continuously without excessive heating and for adequately meeting the thermal and dynamic stresses in the case of short circuit in the system. Neutral Bus bar shall have same rating of phase bus bars. All bus bars shall be rigidly and firmly mounted and shall be capable of withstanding short circuit stresses and vibrations. The bus bars shall be extensible on both sides depending upon layout.

- b) Minimum electrical clearances shall be maintained between phases, neutral and body as per relevant IS however the minimum clearance between phase to phase and phase to ground shall be 25.4mm & 19.4mm respectively.
- c) The Bus bars shall run in a separate bus bar chamber using suitable Bus bar support of non-hygroscopic, non-combustible, material such as DMC/ SMC at sufficiently close intervals to prevent bus bar sag. All bus bar joints shall be provided with high tensile steel bolts (electro plated with suitable metal such as Nickel Cadmium), spring washer and nuts so as to ensure good contact. Alternatively, electroplated/ tinned brass bolts shall be used. The joints shall be formed with fish-plates on either side of bus bar to provide adequate contact area. Bus supports shall be provided on either side of joints. Max. Unsupported distance from the joints and between two supports shall not exceed 450mm.
- d) All accessible bus bar joints shall be provided with removable FRP shrouds min 3mm.

5.4 CURRENT TRANSFORMER

- a) The Current transformer shall be Epoxy Cast resin type and rated for 25KA (1 Sec) with details as given in GTP. The CT control wiring shall be of 4 mm² multi stranded copper wire with 1.1KV insulation grade. All CTS shall be designed to carry continuously a current of 120% of the rated current.
- b) CTs shall be put outgoing side of incoming MCCB.

5.5 METERING, INSTRUMENTATION AND CONTROL DEVICES

5.5.1 MEASURING INSTRUMENTS

3-phase, 4-wire LT CT operated static multifunction meter with associated CT's (250/5 A, Class 0.5S, 15 VA) shall be provided for only incomers to record Current reading (Range 0-400A), voltage reading (Range 0-500V) and power & energy consumption. The multifunction meter shall necessarily have RS 485 Modbus serial port for communication with SCADA. All meters shall be of flush mounting type with 96x96 sq. mm. The meter shall be enclosed in a dust tight housing providing IP5X or an equivalent provision to completely protect it against dust ingress, and shall protect in a way that performance doesn't get effected due to small dust also. The design and manufacture of the meters shall ensure the preventing of fogging of instrument glass. Instrument meters shall be sealed in such a way that access to the measuring element and to the accessories within the case shall not be possible. Inbuilt selector switches shall be provided to be used on three phase supply.

5.5.2 INDICATING LAMPS

The indicating lamps used in the panel will be pleasant looking, LED type indicating lamps in round shape and suitable for continuous operation at 85% to 110% of their rated voltage. They shall be provided with suitable series resistor and the bulb shall be replaceable from the front of the panel.

The selection of the colors of the indicating lamps will be as follows:

Red - MCCB ON

Green MCCB OFF

Amber MCCB TRIP

Red, Yellow and Blue for incoming 3-ph supply indication.

The various feeders shall be assigned the indicating lamps as mentioned:

Incomer 1 & 2 – ON ,OFF,TRIP and 3-ph supply indications

MCCB Outgoing - ON indication only

All color caps shall be similar and interchangeable and all LEDs shall be of same type and ratings. The LED lamps shall be furnished 20% in excess of actual numbers required and color caps shall be furnished 10% in excess of actual numbers used for each.

5.6 PANEL WIRING

- a) Panels shall be supplied completely wired internally to equipment and terminal blocks and ready for the TPCODL/TPNODL/TPWODL/TPSODL external cable connections at the terminal blocks. The control wiring will be done with PVC single core flexible copper wires and properly dressing all the wires either in a PVC duct of liberal size or bunched together by PVC strapping taps and thereafter fastened to steel members of the panel. When panels are arranged to be mounted adjacent to each other all inter-panel wiring and connections between panels shall be provided by the Bidder.
- b) All wiring shall be carried out with 1100 V grade, single core stranded copper conductor wires with PVC insulation. Extra flexible wires shall be used for wiring of devices mounted on moving parts such as swinging panels and doors.

The minimum size of the stranded copper conductor used for panel wiring shall be as follows:

CT circuits: 4mm² per lead

All circuits except CT circuits: 2.5mm² per lead

- c) Interconnections to adjacent panels shall be brought out to a separate set of terminal blocks located near the slots or holes meant for taking the interconnecting wires. Arrangements shall permit easy interconnections to adjacent panels at site and wires for this purpose shall be provided by the bidder looped and bunched properly inside the panels. The unused instrument space on the front or rear of the panels shall be kept clear of wiring, to facilitate addition of devices without rewiring associated portion of the panels.
- d) Wire terminations shall be made with solder less crimping type of (ring type lugs for all CT and pin type lugs for other circuits) tinned copper lugs which firmly grip the conductor and insulation. Insulated sleeves shall be provided at all the wire terminations. Printed type PVC ferrules marked to correspond with panel wiring diagram shall be fitted at both ends of all the control, instrumentation, and protection wiring. Ferrules shall fit tightly on the wires and shall not fall off when the wire is disconnected.
- e) Internal wiring to be connected to external equipment shall terminate on terminal blocks. The terminal blocks for CTS shall be provided with test links and isolating facilities. The CT terminal blocks shall be provided with short circuiting and earthing facilities Switchgear shall have 20% terminals as spare terminals in each panel & should be uniformly distributed in all the blocks.
- f) The Power interconnections shall be carried out by means of bolted connections with washers. The wiring shall be terminated by using crimping sockets. Under no circumstances the wiring should be under any kind of stress for which sufficient length of control wiring should be provided.

5.7 TERMINAL BLOCKS

- a) The terminal blocks shall be 1100 V grade, 10 Amps rated, one piece, moulded, complete with insulated barriers, stud type terminals, washers, nuts and lock nuts and identification strips. Markings on the terminal strips shall correspond to wire numbers on the wiring diagrams. The terminal blocks shall be fully enclosed with easily removable covers and made of moulded non-inflammable plastic material.
- b) All spare contacts of the panel mounted equipment and devices shall be wired up to terminal blocks. All the TB's shall be of single Decker type. Bidder shall be provided with potential free contacts for Mains ON, I/C ON, I/C OFF for SCADA. Supplier will provide wiring of these contacts up to terminal block in ACDB panel.

5.8 Space Heaters

- a) Strip type space heaters of adequate capacity shall be provided inside each panel to prevent moisture condensation on the wiring and panel mounted equipment. Space heaters shall be rated for 240V, 1Phase 50hz supply. Heaters inside the panels shall not be mounted close to the wiring or any panel mounted equipment. Heaters shall be complete with miniature circuit breaker on the phase and link on the neutral of the heater supply.
- b) An adjustable type thermostat shall be provided in the heater control circuit with temperature range of 30-110 deg C.

5.9 Interior Lighting

Each Panel shall be provided with a 5W, 230, 1ph, 50Hz LED for the illumination of the panel during maintenance. The fitting shall be complete with switch-fuse unit and the switching of the fitting shall be controlled by the respective panel door switch.

5.10 Power & Control Supplies

The ACDB panel shall be provided with necessary arrangement for receiving, distributing, isolating and fusing of AC supply for various control, Signaling, lighting and space heater circuits.

5.11 CABLE TERMINATION ACCESSORIES

The TPCODL/TPNODL/TPSODL/TPWODL's external cable connections will be terminated on the terminal blocks provided in the control panel. All necessary cable terminating accessories such as gland plates, cable glands, crimp type tinned copper lugs, supporting clamps and brackets, wiring troughs and gutters etc for cables shall be included in the bidder's scope of supply.

5.12 Labels

- a) All equipment mounted on the front and rear side as well as equipment mounted inside the panels shall be provided with individual labels equipment designation. Also on the top of each bay on front as well as rear side , large and bold nameplates shall be provided for bay designation.
- b) All front mounted equipment feeders shall be provided, at the rear also with individual labels engraved with tag numbers corresponding to the ones shown in the panel internal wiring to facilitate easy tracing of the wiring.
- c) Labels both external & internal shall be made on non-rusting metal preferably Aluminium anodized one. Labels shall have white letters on black background. The lettering size shall be 6 mm for panel designation shall be subject to the purchaser's approval.
- d) Each switch shall bear clear inscription identifying it's function e.g. 'BREAKER' 52A' etc. Similar inscription shall be also be provided on each device whose function is not otherwise defined. If any switch device doesn't bear this inscription, separate name plate giving its function shall be provided for it. Switch shall also have clear inscription for each position indication e.g. 'Local-Remote-OFF', 'ON-OFF', 'R-Y-B-OFF' etc. Each IED and meter shall be prominently marked.
- e) Description of the feeder name plates shall be as follows:
 - 16A DP: for Lighting & 1-Ph supply loads.
 - 32A TP: for battery charger, Sump Pump, Station lightings, C & R panels etc.
 - 63A TP: for transformer cooler supply, Yard lighting etc.
 - 100A TP: for Oil filter machine etc.

5.13 EARTHING

- a) All panels shall be equipped with a separate earth bus securely fixed along with the inside base of panels. When several panels are mounted adjoining each other, the earthy bus shall be made continuous. Provision shall be made on the earth bus bars of the end panels for connecting the same to the earthing grid.
- b) An earthing conductor of 50X6 mm² Al. (minimum) shall be provide extending the whole length of switchgear and control gear to sustain the rated short time withstand current. Every equipment mounted in the panel shall be directly earthed to this earth bus by distinct connections.

- c) The earth bus shall be located at sufficient height from the gland plate and shall not be removable from the outside of cubicle. Door earthing shall also be provided with bolted lugs. The earth bus shall be identified by means of the sign I marked on the outer surface of ASB in a legible and indelible manner on the both side.

5.14 GALVANIZING

- a) All galvanizing shall be carried out by the hot dip process, in accordance with latest amended IS. The zinc coating shall be smooth, continuous and uniform. It shall be free from acid spots 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.
- b) After galvanizing no drilling or welding shall be performed on the galvanized parts of the equipment except that nuts may be threaded after galvanizing.
- c) All hardware and nut bolts shall be of GI with minimum 80 micron thickness

5.15 REMOTE MOITORING AND CONTROL PHILOSOPHY

- a) The multi-function meter shall necessarily have RS485, MODBUS protocol for communication with SCADA such that remote monitoring of its parameter is possible.
- b) Contacts of O/G breaker for ON indication status shall be wired up to the terminals.

6.0 NAME PLATE AND MARKING

Name plates shall be suitably embossed with PO no. with date, "PROPERTY OF TPCODL/TPNODL/TPSODL/TPWODL" along with following information:

- a) Reference Standard
- b) Manufacturer name/ Trade mark, Country of manufacture
- c) PROPERTY OF TPCODL/TPNODL/TPSODL/TPWODL
- d) Rated voltage, Rated frequency
- e) Rated Normal Current
- f) Guarantee (Months)
- g) Manufacturing month & year
- h) Serial number
- i) PO number & Date

7.0 TESTS

All routine, acceptance & type tests shall be carried out in accordance with the relevant IS/IEC. All routine/acceptance tests shall be witnessed by TPSODL/TPCODL/TPNODL/TPWODL authorized representative. All the components shall also be type tested as per the relevant standards.

7.1 TYPE TESTS

Test to prove the capability of the main & earthing circuits to be subjected to be the rated peak and the rated short-time withstand currents.

- a) Dielectric tests
- b) Temperature rise test
- c) Degree of protection test
- d) Short circuit making & breaking capacities
- e) Tests to prove the capability of the main and earthing circuits to be subjected to the rated peak and the rated short-time withstand currents.

7.2 ROUTINE TESTS

- a) Dimensional and visual check for damages.
- b) All main/auxiliary bus bars joints, wire terminations, nuts & bolts shall be checked and tightened
- c) Operational tests
- d) Test of auxiliary electrical devices
- e) Dielectric tests
- f) Measurement of resistance of main circuit
- g) Verification of clearance & creepage distances

- h) Verification of correct wiring continuity of protective circuit
- i) Suitable injection tests for all measuring instruments to establish accuracy of calibration.
- j) Tests after erection on site.

8.0 TYPE TEST CERTIFICATE

The Bidder shall furnish the type test certificates for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at CPRI / ERDA/Govt. Owned Lab as per relevant IS. Type tests should have been conducted in certified Test laboratories during the period not exceeding CEA latest guidelines from the date of opening the bid. In the event of any discrepancy in the test reports, i.e. any test report not acceptable, same shall be carried out without any cost implication to TPSODL/TPCODL/TPNODL/TPWODL

9.0 PRE-DISPATCH INSPECTION

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

Following documents shall be sent along with material:

- a) Test reports
- b) PO copy
- c) MDCC issued by TPCODL/TPNODL /TPSODL/TPWODL
- d) TPCODL/TPNODL /TPSODL/TPWODL Invoice in duplicate
- e) Packing list
- f) Inspection report
- g) Delivery Challan
- h) Other Documents (as applicable).

10.0 INSPECTION AFTER RECEIPT AT STORES

The material received at TPCODL/TPNODL /TPSODL/TPWODL store will be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection and one copy of the report shall be sent to Engineering and Contracts department.

11.0 GUARANTEE

Bidder shall stand guarantee towards design, materials, workmanship & quality of process/ manufacturing of items under this contract for due and intended performance of the same, as an integrated product delivered under this contract. In the event any defect is found by the Purchaser up to a period of at least 36 months from the date of commissioning or 48 months from the date of last supplies made under the contract whichever is earlier. Bidder shall be liable to undertake to replace/rectify such defects at its own costs, within mutually agreed time frame, and to the entire satisfaction of the TPCODL/TPNODL/TPSODL/TPWODL, failing which the Purchaser will be at liberty to get it replaced/rectified at Bidder's risks and costs and recover all such expenses plus the Purchaser's own charges (@ 20% of expenses incurred), from the Bidder or from the "Security cum Performance Deposit" as the case may be.

In case of Guarantee Period failure, Bidder shall report at site within 72 hours from intimation and arrange for rectification of fault within a mutually agreed time. In case rectification at site is not possible then alternative arrangement (replacement) to be made by Bidder within 15 days of intimation of failure.

12.0 PACKING

Supplier shall ensure that all material covered by this specification shall be prepared for rail/road transport (local equipment) and be packed in such a manner as to protect it from damage in transit. The bidder shall provide instructions regarding handling and storage precautions to be taken at site.

Note: Single use plastic not to be used for packing of the material.

13.0 TENDER SAMPLE

Not Applicable

14.0 TRAINING

Not Applicable

15.0 QUALITY CONTROL

The bidder shall submit 'Quality Assurance Plan' followed in respect of bought out Items manufactured by him

- a) Raw materials in process
- b) Final inspection
- c) Packaging
- d) Marking.

As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. TPCODL/TPNODL /TPSODL/TPWODL reserves the sole rights for the type test of random sample from the lot and in case of any discrepancy or deviation from the Type test certificates submitted along with the bid, the complete Lot shall be rejected. TPCODL/TPNODL /TPSODL/TPWODL's nominated representative shall have free access to the bidder's works to carry out inspections.

The bidder shall submit with the offer Quality assurance plan indicating the various stages of inspection, tests and checks which will be carried out on the material of construction, components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. The Purchaser's engineer or its nominated representative shall have free access to the manufacturer's/sub-supplier's works to carry out inspections. The bidder shall ensure that the material supplied is as per the Guaranteed Technical Particulars as specified in the specifications.

16.0 MINIMUM TESTING FACILITIES

Bidder shall have adequate in-house testing facilities for carrying out all routine tests & acceptance tests as per relevant Indian standards. In case of supply by the channel partner, the manufacturer shall have the in-house testing facilities to carry out the routine and acceptance tests.

17.0 MANUFACTURING ACTIVITIES

CAT-B/CAT-A approval is mandatory to start manufacturing works.

18.0 SPARES, ACCESSORIES AND TOOLS

Not applicable

19.0 DRAWINGS AND DOCUMENTS

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

- a) Completely filled—in clause wise compliance of this specification.
- b) Signed and stamped copy of General Arrangement Drawing
- c) Complete type test reports
- d) Completely filled signed and stamped copy of technical specification
- e) Any other technical document if required

Following documents shall be submitted after award of RC/PO, before manufacturing:

- a) Completely filled GTP of the specification.
- b) Signed and stamped copy of General Arrangement Drawing
- c) Compliance of all undertaking submitted during technical evaluation

All the Documents and Drawings shall be in English Language.

20.0 GUARANTEED TECHNICAL PARTICULARS

Bidder to submit clause wise compliance of the Technical Specification.

21. SCHEDULE OF DEVIATIONS

(TO BE ENCLOSED WITH TECHNICAL BID)

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

S. No	Clause No.	Details of deviation with justifications

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

Seal of the Company:

Signature

Designation

STANDARD TECHNICAL SPECIFICATION COVER SHEET

Specification No.:

Specification Name: SPECIFICATION FOR DCDB

Revision	Prepared by	Reviewed by	Reviewed by	Reviewed by	Approved by	Released by
-	Yashobanta Rout				Niranjan Khuntia	Pourush Garg
	TPCODL				TPCODL	TPCODL
	09-07-2025					

Property of TATA POWER ODISHA DISCOMs – Not to be reproduced without permission of TPCODL/ TPNODL/ TPSODL/ TPWODL

CONTENTS

- 1.0 SCOPE**
- 2.0 APPLICABLE STANDARDS**
- 3.0 CLIMATIC CONDITIONS OF INSTALLATION**
- 4.0 GENERAL TECHNICAL REQUIREMENTS**
- 5.0 GENERAL CONSTRUCTIONS**
- 6.0 MARKING**
- 7.0 TESTS**
- 8.0 TYPE TEST CERTIFICATES**
- 9.0 PRE-DISPATCH INSPECTION**
- 10.0 INSPECTION AFTER RECEIPT AT STORES**
- 11.0 GUARANTEE**
- 12.0 PACKING**
- 13.0 TENDER SAMPLE**
- 14.0 QUALITY CONTROL**
- 15.0 TESTING FACILITIES**
- 16.0 MANUFACTURING FACILITIES**
- 17.0 SPARES, ACCESSORIES AND TOOLS**
- 18.0 DRAWINGS AND DOCUMENTS**
- 19.0 SCHEDULE “A” GUARANTEED TECHNICAL PARTICULARS**
- 20.0 SCHEDULE “B” DEVIATIONS**

1.0 SCOPE

This specification covers the technical requirements of design, manufacture, testing at manufacturer's works, packing, forwarding, supply and unloading at site/store and performance of 48V/24V DCDB with all accessories and necessary training for trouble free & efficient performance. It is not the intent to specify completely herein all the details of tech design and construction of material. However, the material shall conform to practices consistent with sound environmental management and local statutes. It is also expected that equipment shall comply in all respects to high standards of engineering, design and workmanship and shall be capable of performing in continuous commercial operation in manner acceptable to the TPCODL/TPNODL/TPSODL/TPWODL, who will interpret the meanings of drawings and specification and shall have the power to reject any work or material which, in his judgment is not in accordance therewith. The offered material shall be complete with all components necessary for their effective and trouble-free operation. Such components shall be deemed to be within the scope of Bidder's supply irrespective of whether those are specifically brought out in this specification and/or the commercial order or not.

2.0 APPLICABLE STANDARDS

The equipment covers by this specification shall unless otherwise stated, be designed, manufactured & tested in accordance with the latest edition of the following standards /IEC and shall conform to the regulation of local statutory authorities.

SL. NO.	IEC/IS	Description
1.	IS: 1248	Specification for Indicating instrument.
2.	IS:375 /1963	Specification for wiring
3.	IS:13947/ 1993	Specification for Air Brake Switch/Contactor
4.	IS: 8828/1993	Specification for Miniature circuit breaker
5.	IS:6619	Safety code for semiconductor rectifier Equipment
6.	IS:2147	Degree of protection for cubicle
7.	IS 6619: 1972	Safety Code for Semi-conductor Rectifier Equipment
8.	UL 1564	UL Standard for Safety Industrial Battery Chargers
9.	IEC 61000-4-17	Electromagnetic compatibility (EMC) – Part 4-17: Testing and measurement techniques – Ripple on DC input power port immunity test
10.	IEC 60947/ IEC 61439	Specification for Low voltage Switchgear and Control gear
11.	IS 694	PVC insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 1100 V.
12.	IS 2629	Recommended practice for Hot Dip Galvanizing of Iron & Steel
13.	IS 2633	Tests for uniformity of zinc coating
14.	IS/IEC 60529	Classification of degrees of protection provided by enclosures of electrical equipment/ Degrees of protection provided by enclosures (IP code)
15.	IEC 60664	Insulation co-ordination for equipment within low voltage systems including clearances & creepage distances for equipment

3.0 CLIMATIC CONDITIONS OF THE INSTALLATION:

The material shall be suitable for following climatic conditions.

1	Maximum ambient temperature	50 deg C
2	Max. Daily average ambient temp	35 deg C

3	Min Ambient Temperature	0 deg C
4	Maximum Humidity	95%
5	Average Annual Rainfall	150cm
6	Average No. of rainy days per annum	120
7	Altitude above MSL not exceeding	1000m
8	Wind Pressure	300 Km/hr
9	Earthquakes of an intensity in horizontal Direction	Equivalent to seismic acceleration of 0.3g
10	Earthquakes of an intensity in Vertical Direction	Equivalent to seismic acceleration of 0.15g (g being acceleration due to gravity)

TPCODL/TPNODL/TPSODL/TPWODL service area has heavy saline conditions along the coast and High cyclonic intensity winds with speed up to 300 Kmph. The atmosphere is generally laden with mild acid and dust in suspension during the dry months and is subjected to fog in cold months.

4.0 GENERAL TECHNICAL REQUIREMENTS

SI no	Description	Requirement
1.	Switchgear Panel	
2.	Architecture	Metal-clad air insulated
3.	Normal Service condition	Indoor
4.	Rated Voltage	24/48V DC
5.	Main Bus Bar Continuous rated current	100 A
6.	Busbar Material & Current Density	Aluminum with Grade E-91E with heat shrinkable PVC sleeves, maximum current density 1.0A/ sq.mm
7.	Cross section area of bus bar (phase & neutral)	125 sqmm Al
8.	Degree of protection for enclosure for meters	IP 54
9.	Temperature Rise	Shall be as per IEC/IS 61439
10.	Insulation Resistance	>50 M ohms
11.	Max. operating height from ground Level	1800mm
12.	Min. operating height from ground Level	300mm
13.	Cable Entry & Exit	From Bottom
14.	System earthing	50x6mm GI. Earthbus shall be provided throughout the length of the panel. 2 nos. Earthing stud to be provided at the bottom of the panel All hinged door shall be earthed through 2.5 sqmm tinned braided copper wire Earth connection also to be provided in each compartment
15.	Paint	Shade – RAL 7032 Minimum 80 micron

16.	Material of Sheet Thickness of Enclosure Sheet/Frame Thickness of Doors/Covers Sheet Thickness of Gland Plate Base Frame	CRCA Sheet 2 mm 2 mm 3 mm ISMC 75
17.	Type of Gasket	Polyurethane
18.	Feeder Description Name plate	To be provided by the Bidder for each feeder (Feeder details to be provided during drawing approval)
19.	Type of Wire Control Circuit Voltage Circuit CT Circuit Earthing	PVC Insulated 1.1kV grade FRLSH type 2.5 sqmm – Gray, Black 2.5 sqmm – Gray 2.5 sqmm – R, Y, B 2.5 sqmm – Green
20.	Size of enclosure	- Max. 500mm (Width) of I/C - Max. 300 mm (Width) of Cable Alley - Max. 400 mm (Depth) - Max. 2200 (Height) including Base Frame
21.	Indication Lights	- MCCB (Incomer) – ON, OFF & Trip - DC ON Indication for Incomer
22.	Incoming: MCCB incomer with spreader link Qty. – 1 no.	100A, DP, 25kA, Microprocessor based with integrated Overload, Short Circuit protection; Suitable for 24/48V DC
23.	Outgoing:	
24.	MCB (1 No)	32A DC DP, 10kA; Suitable for 24/48V DC
25.	MCB (6 No)	25A DC DP, 10kA; Suitable for 24/48V DC
26.	MCB (6 No)	16A DC DP, 10kA; Suitable for 24/48V DC
27.	DC Ammeter (1 No) – Communicable Type	0-100A Range
28.	DC Voltmeter (1No) - Communicable Type	0-60V DC
29.	Panel illumination and space heating	- Space Heater – min. 60 W - Thermostat – 30°C to 110°C - LED Lamp with holder – 5 W - Door Limit Switch – 6A 3Pin Switch & Socket – 15 A - Control Fuse with Base – 6A - DP AC MCB – 6A, 10kA
30.	Make	- MCCB- Siemens, L&T, ABB, C&S, Schneider, Havells - MCB- Siemens, ABB, Legrand, Schneider, Havells - Terminal Block - PHOENIX/ELEMAX/CONNECTWEL/ WAGO
31.	Protection Required with display	- Under Voltage - Over Voltage - DC Earth Leakage

5.0 GENERAL CONSTRUCTION

5.1 SWITCHGEAR

- a) The switchgear panel shall be of sheet steel construction and shall be dust and vermin proof and shall be suitable for indoor installation. The panels shall be of Metal Clad compartmentalized, free standing,

continuous from rear, modular type. The switchgear panels shall be rigid without using any external bracing. The switchboard panels should comply with relevant IS/IEC and revision thereof and shall be designed for easy operation maintenance and further extension. Bus bar, metering, circuit breaker chamber, cables and cable box chamber should have proper access for maintenance, proper interlocks should be provided. Metal enclosed switchgear shall be so designed that normal service, inspection and maintenance operations including visual checking of phase sequence, earthing of connected cables, locating of cable faults, voltage tests on connected cables can be carried out safely.

- b) Panels shall have structural steel frame-work enclosed on all sides by CRCA sheet steel of minimum thickness as specified below:
Frame: 2 mm
Doors & Covers: 2 mm
Removable gland plate: 3 mm
- c) Panels shall consist of a front portion with equipment mounted on it and wiring access from rear. All doors, cut- outs and removable covers shall be gasketed all round by polyurethane gaskets. Panel space heater with thermostat, LED lamp with double door switch and 3pin socket & ON/OFF switch and double pole MCB with control fuses for each circuit shall be provided in each cable alley for each vertical panel.
- d) Panels shall be mounted and bolted to a common base channel of height 75mm. The channel in turn shall be fixed to the foundation bolts at site. All foundation equipment, anchor bolts etc. including the supporting channel shall be furnished by successful bidder in advance for completion of Civil Works prior to dispatch of panels. The bottom plates of the panels shall be fitted with removable gland plates for fixing the cable glands.
- e) Height of the panel should be limited to 2200mm. Each Indicating instruments and meters shall be at a suitable height so that the lettering on the dials can be easily read. Control switches/push buttons shall be conveniently located for ease of operation. The centre lines of the switches, push buttons and indicating lamps shall not be at a height more than 1800mm also shall not be less than 300mm that of the lowest unit. MCB with neutral link shall be provided at the panel for incoming AC supplies. All other insulators shall also be made of non-hygroscopic material.
- f) All components of the same rating and construction which may be needed to be replaced shall be interchangeable. If there are removable parts with different ratings and if parts are interchangeable within the assembly of metal enclosed switchgear and control gear, any possible combination of removable and fixed parts shall withstand the rated insulation level specified for fixed parts concerned. While making the general arrangement, consideration will be given to the place of sectionalizing to select the location where the minimum electrical connections are transferred from one section to other section.
- g) All the components of a module will be mounted on a component plate using machine screws and taped holes (except the components mounted on the door) to ensure vibration free operation. Circuit breakers shall be mounted such that they are accessible from the front of the panel. These components plates should be fixed with bolts for easy replacements. Standardization will be adopted while making these plates so that the component plates of the same size modules. can be changed from one module to other.
- h) Interlocks between different components shall be provided for safety and ease of operation. All instruments shall be non-draw-out type and safeguard in every respect from damages. The operation of a MCCB shall be impossible when it is in closed position. It shall be impossible to close the incoming MCCB in service position unless it is connected to auxiliary circuit.
- i) The rear of the DCDB shall have bolted covers in sections except cable chamber. Single line diagram for power distribution and wiring diagram for power and control shall be provided inside the panel. All retaining catches, screws and bolts for doors and covers shall be hot dip galvanized screws and bolts shall be captive. All hardware for the complete equipment including foundation bolts, lifting lugs & cable

termination lugs etc. shall be supplied along with the panels.

- j) Auxiliary and control equipment installed on the panel shall be suitably protected against disruptive discharge from main circuit. Bus bars shall be insulated with 1.1kV insulating sleeves.
- k) Degree of Protection for the enclosure shall be IP54 and that of partitions shall be IP4X. Compartment shall have its own front located, outward opening lockable hinged door with concealed hinges and bolted back cover. The door shall have interlocking facility with the MCCB or its handle such that the door can be opened only if the MCCB is in 'OFF' position. De- interlocking arrangement shall also be provided. Partitions of metal-clad switchgear and control gear shall be metallic and earthed.
- l) Control supply in individual bay shall to be distributed through MCB of suitable rating for individual control function like:

Trip Circuit & Close Circuit (Only for Incomer)
Heating and Lighting Circuit for Cable Alley

MCB shall be rated for 10kA short circuit rating. It shall be quick make, quick break, and independent manual type with trip free feature. MCB shall have the following:

- Over current protection
- Short Circuit Protection

- m) Wherever CB contacts are to be multiplied, latch type relay shall be used for contact multiplication. Auxiliary contact multiplier relays shall be reputed make and selected on the basis of continuous current carrying capacity and rated voltage. The fluctuation in voltage level shall be accounted for (+/-) 10% continuously.
- n) Each switchgear panel shall have 20% spare terminals. All equipment mounted on front side of panel. shall have Individual nameplates with equipment designation engraved. The termination links for cables shall be segregated in vertical plane. The bidder shall deliver to site completely assembled, wired, tested panels and only the interconnecting cables shall be connected at site.
- o) Cable entry arrangement shall be from bottom and suitable for 1.1KV XLPE armored external cables of sizes as mentioned in the specification. Removable CRCA gland plate of 3mm with cable holes to suit the cable sizes and with 2mm polyurethane type gasket of non-flammable and insulating vermin proof material shall be provided. A minimum distance of 250mm will be provided between the gland plate and the nearest terminal for proper dressing and termination of the cable.
- p) Separate compartment is required for Incomer & Outgoings. Multiple MCB shall be mounted in one compartment. MCCB & MCB shall not be door mounted.

5.2 Circuit Breaker

- a) The MCCB shall be fixed type. Comprehensive interlocking system to prevent any dangerous or inadvertent operation shall be provided. The contacts & spare contact of MCCB to be wired up to the terminals.
- b) The MCCB shall be manually operated with two pole simultaneous operations. The indicating device shall show the OPEN, CLOSE and TRIP position of MCCB visible from front of the cubicle.

5.3 BUSBAR

- a) Bus bars and all other electrical connections between various components shall be made of Aluminium of rectangular cross-section with current density of maximum 1 A/mm², shall be suitable for 48/24V DC supply. The bus bars shall be insulated with heat shrinkable and colour coded insulating sleeves, except at the points of connections. The phase bus bar shall be of ample capacity to carry the rated current of 100A continuously without excessive heating and for adequately meeting the thermal and dynamic

stresses in the case of short circuit in the system. All bus bars shall be rigidly and firmly mounted and shall be capable of withstanding short circuit stresses and vibrations. The bus bars shall be extensible on both sides depending upon layout.

- b) Minimum electrical clearances shall be maintained between phases, neutral and body as per relevant IS however the minimum clearance between bus bar to bus bar & bus bar to enclosure shall be 40mm.
- c) The Bus bars shall run in a separate bus bar chamber using suitable Bus bar support of non-hygroscopic, non-combustible, material such as DMC/ SMC at sufficiently close intervals to prevent bus bar sag. All bus bar joints. shall be provided with high tensile steel bolts (electro plated with suitable metal such as Nickel Cadmium), spring washer and nuts so as to ensure good contact. Alternatively, electroplated/ tinned brass bolts shall be used. The joints shall be formed with fish-plates on either side of bus bar to provide adequate contact area. Bus supports shall be provided on either side of joints. Max. Unsupported distance from the joints and between two supports shall not exceed 450mm.
- d) All accessible bus bar joints shall be provided with removable FRP shrouds min 3mm.

5.4 METERING. INSTRUMENTATION AND CONTROL DEVICES

5.4.1 MEASURING INSTRUMENTS

The Ammeter & Voltmeter meter shall necessarily have RS 485 Modbus serial port for communication with SCADA. All meters shall be of flush mounting type with 96x96 sq. mm. The meter shall be enclosed in a dust tight housing providing IP5X or an equivalent provision to completely protect it against dust ingress, and shall protect in a way that performance doesn't get effected due to small dust also. The design and manufacture of the meters shall ensure the preventing of fogging of instrument glass. Instrument meters shall be sealed in such a way that access to the measuring element and to the accessories within the case shall not be possible. Inbuilt selector switches shall be provided to be used on three phase supply.

5.4.2 INDICATING LAMPS

The indicating lamps used in the panel will be pleasant looking, LED type indicating lamps in round shape and suitable for continuous operation at 85% to 110% of their rated voltage. They shall be provided with suitable series resistor and the bulb shall be replaceable from the front of the panel.

The selection of the colors of the indicating lamps will be as follows:

Red - MCCB ON

Green MCCB OFF

Amber MCCB TRIP

Red for incoming DC supply indication.

The various feeders shall be assigned the indicating lamps as mentioned:

Incomer – ON ,OFF,TRIP and 3-ph supply indications

DC ON Indication for Incomer

All color caps shall be similar and interchangeable and all LEDs shall be of same type and ratings. The LED lamps shall be furnished 20% in excess of actual numbers required and color caps shall be furnished 10% in excess of actual numbers used for each.

5.5 PANEL WIRING

- a) Panels shall be supplied completely wired internally to equipment and terminal blocks and ready for the TPCODL/TPNODL/TPWODL/TPSODL external cable connections at the terminal blocks. The control wiring will be done with PVC single core flexible copper wires and properly dressing all the wires either in a PVC duct of liberal size or bunched together by PVC strapping taps and thereafter fastened to steel members of the panel. When panels are arranged to be mounted adjacent to each other all inter-panel wiring and connections between panels shall be provided by the Bidder.

- b) All wiring shall be carried out with 1100 V grade, single core stranded copper conductor wires with PVC insulation. Extra flexible wires shall be used for wiring of devices mounted on moving parts such as swinging panels and doors.

The minimum size of the stranded copper conductor used for panel wiring shall be as follows:

CT circuits: 4mm² per lead

All circuits except CT circuits: 2.5mm² per lead

- c) Interconnections to adjacent panels shall be brought out to a separate set of terminal blocks located near the slots or holes meant for taking the interconnecting wires. Arrangements shall permit easy interconnections to adjacent panels at site and wires for this purpose shall be provided by the bidder looped and bunched properly inside the panels. The unused instrument space on the front or rear of the panels shall be kept clear of wiring, to facilitate addition of devices without rewiring associated portion of the panels.
- d) Wire terminations shall be made with solder less crimping type of (ring type lugs for all CT and pin type lugs for other circuits) tinned copper lugs which firmly grip the conductor and insulation. Insulated sleeves shall be provided at all the wire terminations. Printed type PVC ferrules marked to correspond with panel wiring diagram shall be fitted at both ends of all the control, instrumentation, and protection wiring. Ferrules shall fit tightly on the wires and shall not fall off when the wire is disconnected.
- e) Internal wiring to be connected to external equipment shall terminate on terminal blocks. The terminal blocks for CTS shall be provided with test links and isolating facilities. The CT terminal blocks shall be provided with short circuiting and earthing facilities Switchgear shall have 20% terminals as spare terminals in each panel & should be uniformly distributed in all the blocks.
- f) The Power interconnections shall be carried out by means of bolted connections with washers. The wiring shall be terminated by using crimping sockets. Under no circumstances the wiring should be under any kind of stress for which sufficient length of control wiring should be provided.

5.6 TERMINAL BLOCKS

- a) The terminal blocks shall be 1100 V grade, 10 Amps rated, one piece, moulded, complete with insulated barriers, stud type terminals, washers, nuts and lock nuts and identification strips. Markings on the terminal strips shall correspond to wire numbers on the wiring diagrams. The terminal blocks shall be fully enclosed with easily removable covers and made of moulded non-inflammable plastic material.
- b) All spare contacts of the panel mounted equipment and devices shall be wired up to terminal blocks. All the TB's shall be of single Decker type. Bidder shall be provided with potential free contacts for Mains ON, I/C ON, I/C OFF for SCADA. Supplier will provide wiring of these contacts up to terminal block in DCDB panel.

5.7 Space Heaters

- a) Strip type space heaters of adequate capacity shall be provided inside each panel to prevent moisture condensation on the wiring and panel mounted equipment. Space heaters shall be rated for 240V, 1Phase 50hz supply. Heaters inside the panels shall not be mounted close to the wiring or any panel mounted equipment. Heaters shall be complete with miniature circuit breaker on the phase and link on the neutral of the heater supply.
- b) An adjustable type thermostat shall be provided in the heater control circuit with temperature range of 30-110 deg C.

5.8 Interior Lighting

Each Panel shall be provided with a 5W, 230, 1ph, 50Hz LED for the illumination of the panel during maintenance. The fitting shall be complete with switch-fuse unit and the switching of the fitting shall be controlled by the respective panel door switch.

5.9 Power & Control Supplies

The DCDB panel shall be provided with necessary arrangement for receiving, distributing, isolating and fusing of DC supply for various control, Signaling, lighting and space heater circuits.

5.10 CABLE TERMINATION ACCESSORIES

The TPCODL/TPNODL/TPSODL/TPWODL's external cable connections will be terminated on the terminal blocks provided in the control panel. All necessary cable terminating accessories such as gland plates, cable glands, crimp type tinned copper lugs, supporting clamps and brackets, wiring troughs and gutters etc for cables shall be included in the bidder's scope of supply.

5.11 Labels

- a) All equipment mounted on the front and rear side as well as equipment mounted inside the panels shall be provided with individual labels equipment designation. Also on the top of each bay on front as well as rear side, large and bold nameplates shall be provided for bay designation.
- b) All front mounted equipment feeders shall be provided, at the rear also with individual labels engraved with tag numbers corresponding to the ones shown in the panel internal wiring to facilitate easy tracing of the wiring.
- c) Labels both external & internal shall be made on non-rusting metal preferably Aluminium anodized one. Labels shall have white letters on black background. The lettering size shall be 6 mm for panel designation shall be subject to the purchaser's approval.
- d) Each switch shall bear clear inscription identifying its function e.g. 'BREAKER' 52A' etc. Similar inscription shall be also be provided on each device whose function is not otherwise defined. If any switch device doesn't bear this inscription, separate name plate giving its function shall be provided for it. Switch shall also have clear inscription for each position indication e.g. 'Local-Remote-OFF', 'ON-OFF', 'R-Y-B-OFF' etc. Each IED and meter shall be prominently marked.
- e) Description of the feeder name plates shall be provided during drawing approval.

5.12 EARTHING

- a) All panels shall be equipped with a separate earth bus securely fixed along with the inside base of panels. When several panels are mounted adjoining each other, the earthy bus shall be made continuous. Provision shall be made on the earth bus bars of the end panels for connecting the same to the earthing grid.
- b) An earthing conductor of 50X6 mm² GI (minimum) shall be provide extending the whole length of switchgear and control gear to sustain the rated short time withstand current. Every equipment mounted in the panel shall be directly earthed to this earth bus by distinct connections.
- c) The earth bus shall be located at sufficient height from the gland plate and shall not be removable from the outside of cubicle. Door earthing shall also be provided with bolted lugs. The earth bus shall be identified by means of the sign I marked on the outer surface of panel in a legible and indelible manner on the both side.

5.13 GALVANIZING

- a) All galvanizing shall be carried out by the hot dip process, in accordance with latest amended IS. The zinc coating shall be smooth, continuous and uniform. It shall be free from acid spots 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.
- b) After galvanizing no drilling or welding shall be performed on the galvanized parts of the equipment except that nuts may be threaded after galvanizing.
- c) All hardware and nut bolts shall be of GI with minimum 80 micron thickness

5.14 REMOTE MONITORING AND CONTROL PHILOSOPHY

- a) The indicating meters shall necessarily have RS485, MODBUS protocol for communication with SCADA such that remote monitoring of its parameter is possible.

b) Contacts of MCB for ON indication status shall be wired up to the terminals.

5.15 Radio Interference:

- a) The equipment shall be efficiently screened against interference to radio and also other communication equipment, which may be installed in the same building. All sources of noise shall be filtered, if necessary, with suppressors generally in accordant with relevant standards.

Following are the minimum mandatory signal requirement for DCDB signals for ADMS (SCADA):

Measurement signals:

1. DC load voltage
2. Load current

Alarm signals:

1. DC earth Leakage
2. UV Alarm
3. OV Alarm
4. DC fail

DCDB shall be integrated with TPCODL/TPNODL/TPSODL/TPWODL SCADA over Modbus-RTU protocol. It shall be noted that voltage exact value to be mapped in SCADA.

6.0 NAME PLATE AND MARKING

Name plates shall be suitably embossed with PO no. with date, "PROPERTY OF TPCODL/TPNODL/TPSODL/TPWODL" along with following information:

- a) Reference Standard
- b) Manufacturer name/ Trade mark, Country of manufacture
- c) PROPERTY OF TPCODL/TPNODL/TPSODL/TPWODL
- d) Rated voltage, Rated frequency
- e) Rated Normal Current & Voltage
- f) Guarantee (Months)
- g) Manufacturing month & year
- h) Serial number
- i) PO number & Date

7.0 TESTS

All routine, acceptance & type tests shall be carried out in accordance with the relevant IS/IEC. All routine/acceptance tests shall be witnessed by TPSODL/TPCODL/TPNODL/TPWODL authorized representative. All the components shall also be type tested as per the relevant standards.

7.1 TYPE TESTS

Test to prove the capability of the main & earthing circuits to be subjected to be the rated peak and the rated short-time withstand currents.

- i. Voltage regulation test
- ii. Temperature Rise Test
- iii. Degree of Protection Test
- iv. HV Test
- v. Insulation Resistance
- vi. Test for Protection Device

7.2 ROUTINE TESTS

- a) Dimensional and visual check for damages.

- b) All main/auxiliary bus bars joints, wire terminations, nuts & bolts shall be checked and tightened
- c) Operational tests
- d) Test of auxiliary electrical devices
- e) Dielectric tests
- f) Measurement of resistance of main circuit
- g) Verification of clearance
- h) Verification of correct wiring continuity of protective circuit
- i) Suitable injection tests for all measuring instruments to establish accuracy of calibration.

8.0 TYPE TEST CERTIFICATE

The Bidder shall furnish the type test certificates for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at CPRI / ERDA/Govt. Owned Lab as per relevant IS. Type tests should have been conducted in certified Test laboratories during the period not exceeding CEA latest guidelines from the date of opening the bid. In the event of any discrepancy in the test reports, i.e. any test report not acceptable, same shall be carried out without any cost implication to TPSODL/TPCODL/TPNODL/TPWODL

9.0 PRE-DISPATCH INSPECTION

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

Following documents shall be sent along with material:

- a) Test reports
- b) PO copy
- c) MDCC issued by TPCODL/TPNODL /TPSODL/TPWODL
- d) TPCODL/TPNODL /TPSODL/TPWODL Invoice in duplicate
- e) Packing list
- f) Inspection report
- g) Delivery Challan
- h) Other Documents (as applicable).

10.0 INSPECTION AFTER RECEIPT AT STORES

The material received at TPCODL/TPNODL /TPSODL/TPWODL store will be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection and one copy of the report shall be sent to Engineering and Contracts department.

11.0 GUARANTEE

Bidder shall stand guarantee towards design, materials, workmanship & quality of process/ manufacturing of items under this contract for due and intended performance of the same, as an integrated product delivered under this contract. In the event any defect is found by the Purchaser up to a period of at least 36 months from the date of commissioning or 48 months from the date of last supplies made under the contract whichever is earlier. Bidder shall be liable to undertake to replace/rectify such defects at its own costs, within mutually agreed time frame, and to the entire satisfaction of the TPCODL/TPNODL/TPSODL/TPWODL, failing which the Purchaser will be at liberty to get it replaced/rectified at Bidder's risks and costs and recover all such expenses plus the Purchaser's own charges (@ 20% of expenses incurred), from the Bidder or from the "Security cum Performance Deposit" as the case may be.

In case of Guarantee Period failure, Bidder shall report at site within 72 hours from intimation and arrange for rectification of fault within a mutually agreed time. In case rectification at site is not possible then alternative arrangement (replacement) to be made by Bidder within 15 days of intimation of failure.

12.0 PACKING

Supplier shall ensure that all material covered by this specification shall be prepared for rail/road transport (local equipment) and be packed in such a manner as to protect it from damage in transit. The bidder shall provide instructions regarding handling and storage precautions to be taken at site.

Note: Single use plastic not to be used for packing of the material.

13.0 TENDER SAMPLE

Not Applicable

14.0 TRAINING

Not Applicable

15.0 QUALITY CONTROL

The bidder shall submit 'Quality Assurance Plan' followed in respect of bought out Items manufactured by him

- a) Raw materials in process
- b) Final inspection
- c) Packaging
- d) Marking.

As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. TPCODL/TPNODL /TPSODL/TPWODL reserves the sole rights for the type test of random sample from the lot and in case of any discrepancy or deviation from the Type test certificates submitted along with the bid, the complete Lot shall be rejected. TPCODL/TPNODL /TPSODL/TPWODL's nominated representative shall have free access to the bidder's works to carry out inspections.

The bidder shall submit with the offer Quality assurance plan indicating the various stages of inspection, tests and checks which will be carried out on the material of construction, components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. The Purchaser's engineer or its nominated representative shall have free access to the manufacturer's/sub-supplier's works to carry out inspections. The bidder shall ensure that the material supplied is as per the Guaranteed Technical Particulars as specified in the specifications.

16.0 MINIMUM TESTING FACILITIES

Bidder shall have adequate in-house testing facilities for carrying out all routine tests & acceptance tests as per relevant Indian standards. In case of supply by the channel partner, the manufacturer shall have the in-house testing facilities to carry out the routine and acceptance tests.

17.0 MANUFACTURING ACTIVITIES

CAT-B/CAT-A approval is mandatory to start manufacturing works.

18.0 SPARES, ACCESSORIES AND TOOLS

Not applicable

19.0 DRAWINGS AND DOCUMENTS

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

- a) Completely filled-in clause wise compliance of this specification.
- b) Signed and stamped copy of General Arrangement Drawing

- c) Complete type test reports
- d) Completely filled signed and stamped copy of technical specification
- e) Any other technical document if required

Following documents shall be submitted after award of RC/PO, before manufacturing:

- a) Completely filled GTP of the specification.
- b) Signed and stamped copy of General Arrangement Drawing
- c) Compliance of all undertaking submitted during technical evaluation

All the Documents and Drawings shall be in English Language.

20.0 GUARANTEED TECHNICAL PARTICULARS

Bidder to submit clause wise compliance of the Technical Specification.

21. SCHEDULE OF DEVIATIONS

(TO BE ENCLOSED WITH TECHNICAL BID)

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

S. No	Clause No.	Details of deviation with justifications

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

Seal of the Company:

Signature

Designation