

# Request for Proposal (RFP)

## for Supply, Installation and Commissioning of Outdoor 33KV RMU with Metering Panel

**RFP Enquiry No.OCAC-ESTT-TOWER-09/2023-23065**

### RFP Schedule

Sl. No.	Items	Date & Time
1	Availability of Bid Document in the website (www.ocac.in, www.odisha.gov.in)	18.10.2023
2	Last date for receiving pre-bid queries through e-mail: sailendra.sethi@odisha.gov.in	25.10.2023 at 3.00 PM
3	Pre Bid Conference	26.10.2023 at 4.00 PM
4	Issue of Corrigendum (if required)	27.10.2023 By 5 PM
5	Last date and time for Submission of Bid	06.11.2023 By 3.00 PM
6	Opening of Pre-Qualification & Technical Bids	06.11.2023 at 4.00 PM
7	Opening of Price Bids	To be Informed

The dates are subject to change according to the convenience and needs of the Purchaser.

**ODISHA COMPUTER APPLICATION CENTRE (OCAC)**

OCAC Building, Plot No. – N-1/7-D, Acharya Vihar Square, RRL PO, Bhubaneswar-13, Odisha

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## **I. DISCLAIMER:**

The information contained in this Request for Proposal (hereinafter referred to as "RFP") document provided to the Bidders, by the Odisha Computer Application Centre (OCAC) Odisha, or any of its employees, is provided to the Bidder(s) on the terms and conditions set out in this RFP document and all other terms and conditions subject to which such information is provided.

The purpose of this RFP document is to provide the Bidder(s) with information to assist in the formulation of Proposals. This RFP document does not aim to hold all the information each Bidder may require. This RFP document may not be appropriate for all persons, and it is not possible for the Odisha Computer Application Centre (OCAC) Odisha and its employees to consider the business/investment objectives, financial situation and particular needs of each Bidder who reads or uses this RFP document. Each Bidder should conduct its own investigations and analysis and should check the accuracy, reliability and completeness of the information in this RFP document and where necessary obtain independent advice from appropriate sources. Odisha Computer Application Centre (OCAC) Odisha and its employees make no representation or warranty and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of the RFP document. Client Department also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in the Bidding Documents.

Information provided in the RFP Document to the Bidder(s) is on a wide range of matters, some of which may depend upon interpretation of law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. OCAC/Client Department accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein.

The issue of this RFP Documents does not imply that the OCAC/Client Department is bound to select a Bidder or to appoint the Selected Bidder or Service Provider for the Project and the OCAC/Client Department reserves the right to reject all or any of the Bidders or Bids without assigning any reason whatsoever.

The Bidder shall bear all its costs associated with or relating to the preparation and submission of its Bid including but not limited to preparation, copying, postage, delivery fees, uploading, expenses associated with any demonstrations or presentations which may be required by OCAC/Client Department or any other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain with the Bidder and the OCAC/Client Department shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation or submission of the Bid, regardless of the conduct or outcome of the Selection process. OCAC may, in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this RFP document.

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**ODISHA COMPUTER APPLICATION CENTRE (OCAC)**

## **II. INSTRUCTION TO BIDDERS**

### **A. INVITATION FOR BIDS:**

Odisha Computer Application Centre (OCAC) invites bids from Electrical Equipment suppliers, Electrical Panel Builders, Electrical system integrators/Contractors for supply, Installation, testing and commissioning of 33KV outdoor RMU with Metering panel. The Agency shall be responsible for operations and maintenance support for 5 years from the date of FAT.

The Bid document has been published in the official website of OCAC ([www.ocac.in](http://www.ocac.in)), Bidders are requested to go through the Bid document carefully and participate in the bidding process with all necessary details as required.

This RFP is issued by OCAC, which is the sole point of contact during the selection process. The Nodal Officer responsible for the entire process is General Manager (Admin).

### **B. PREPARATION OF BIDS**

1. Bidder should take into account any corrigendum published on the tender document before submitting their bids.
2. Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid.
3. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document
4. Bidder to print all documents after filling up all relevant forms, get signed from Authorized signatory, stamp all pages and stack it sequentially as per the RFP.
5. The price bid has to be in a separate sealed envelope duly signed and stamped.
6. The technical bid and the price bid ( 2 separate envelope) may be submitted at OCAC within the date and time.
7. Bids submitted after the due data and time will not be accepted.



### C. FACT SHEET

This Fact Sheet comprising important factual data of the tender is for quick reference of the bidder.

Clause Reference	Topic
<b>The Proposal</b>	Odisha Computer Application Centre (OCAC) invites bids from Electrical Equipment suppliers, Electrical Panel Builders, Electrical system integrators/Contractors for supply, Installation, testing and commissioning of 33KV outdoor RMU with Metering Panel and associated works. The Agency shall be responsible for operations and maintenance support for 5 years from the date of FAT
<b>Method of Selection</b>	Least Cost Based Selection (LCS) i.e., L1 method shall be used to select the bidder. The bidder is required to submit the bids in Technical & Financial bid . Financial bid of those bidders who qualify in Technical Bid shall be opened.
<b>Non-refundable RFP Document Fee</b>	The RFP document can be downloaded from the website <a href="http://www.odisha.gov.in">www.odisha.gov.in</a> or <a href="http://www.ocac.in">www.ocac.in</a> or <a href="https://enivida.odisha.gov.in/">https://enivida.odisha.gov.in/</a> . The bidders are required to submit the RFP document fee of ₹11,200/-(inclusive of 12% GST) (Eleven Thousand Two Hundred Only) The RFP document fee can also be transfer online through NEFT only to Union Bank of India, Account Number 149311100000195, IFSC Code-UBIN0814938, Acharya Vihar Branch, Bhubaneswar. Account Name - Odisha Computer Application Centre. In case of NEFT online transfer of RFP Document fee, the firm must mention the Firm name, Amount Transfer with Transaction ID, Tender Enq. Number, GST No to the mail id mentioned in the RFP Schedule in the Pre-Bid Query.
<b>Earnest Money Deposit (EMD)</b>	Rs 1,00,000.00 ( Rupees one lac only) in form of Demand draft in favor of GM OCAC.
<b>Performance Bank Guarantee (PBG)</b>	Performance Bank Guarantee (PBG) @ 3% of the cost of the project from any Nationalized/Scheduled Commercial Bank in the prescribed format in favour of the Odisha Computer Application Centre shall be submitted by the successful bidder

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**ODISHA COMPUTER APPLICATION CENTRE (OCAC)**

Clause Reference	Topic
	within 30 days of issue of work order.
<b>Scope of Work</b>	Selected Bidder is expected to deliver the services mentioned in the scope of work as mentioned in this RFP.
<b>Language</b>	Bid must be prepared by the Bidder in English language only.
<b>Currency</b>	The bidder should quote in Indian Rupees only. The Total Price inclusive of GST will be considered for evaluation. So, the bidder must mention the base price and the GST component separately.
<b>Validity Period</b>	Proposals/bid must remain valid for a period of 180 days from the last date of bid submission.
<b>Bid to be submitted on or before last date of submission at:</b>	<p>The proposal must be submitted to:</p> <p>The General Manager (Admn.)</p> <p>Odisha Computer Application Centre (OCAC)</p> <p>OCAC Building, Plot No.-N-1/7-D, Acharya Vihar Square, RRL Post Office, Bhubaneswar-751013 (INDIA)</p> <p>Proposals must be submitted on or <b>before 06.11.2023 By 3.00 PM</b> through manual mode only.</p>

## D. PROPOSAL

Odisha Computer Application Centre (OCAC) invites bids from Electrical Equipment suppliers, Electrical Panel Builders, Electrical system integrators/Contractors for supply, Installation, testing and commissioning of 33KV outdoor RMU with Metering Panel. The Agency shall be responsible for operations and maintenance support for 5 years from the date of FAT as per the “Scope of Work” described in this RFP”.

## E. Scope of Work

The scope of work will be as follows but not limited to

1. Dismantling of the pole structure and offer a buy back for the items.
2. Creation of trench in HT area. Trench will be operable and size of 1mtr (w) x 1Mtr (D). Bidder to visit site and check the Trench distance.
3. Removal of HT cables from Pole structure to the HT panel.

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**ODISHA COMPUTER APPLICATION CENTRE (OCAC)**

4. Laying of HT cable from Mancheswar feeder 4 (Acharya vihar square) to the new proposed 33KV outdoor RMU with Metering Panel, partly buried in soil, partly through HDD while crossing the road and partly in existing trench.
5. The cables will be crossing the road through HDD (Horizontal directional drilling) for about 55 mtr.
6. SITC of isolator at the TPCODL feeder point.
7. Termination of existing HT cable and new HT cable at both RMU with Metering Panel
8. at input side.
9. Supply, unloading, Lifting, Shifting, installation, testing and commissioning of RMU with Metering Panel
10. Laying and termination of HT cable from HT panel to 4 nos of transformers.
11. Laying and installation of control cables
12. Creating foundation for RMU with Metering Panel.
13. Creation of earth pits and laying, installation and termination of earth strips as required.
14. Facilitating any statutory approvals required.

#### **F. Stepwise approach for the works.**

##### Step -1

Supply and laying of the HT cable from TPCODL feeder point to the HT yard.

Creation of foundation for RMU in HT yard. (Let's call this as RMU 2 and the existing RMU as RMU 1)

Creation of earth pit in HT yard

##### Step -2

Supply and installation of RMU-2 in the HT Yard over the foundation.

Supply and installation of Isolator at TPCODL feeding point.

Laying of HT cable from RMU 2 to the existing 2 nos. transformers.

##### Step - 3

Take shutdown on feeder 1 and remove the exiting cable from the transformers (currently connected to RMU-1)

Terminate the HT cable from the RMU-2 to the existing transformers.

Charge the feeder 2 and RMU and then the transformers.

##### Step-4

Dismantle the Pole structure in totality. Remove the cable from pole structure to RMU-1 and RMU-1 to existing transformers.

Creation of HT room ( not in the scope of bidder)

Creation of openable trench from RMU-2 to HT room and transformers ( bidder to submit layout and get this approved)

Step-5

Installation of HT panel in HT room ( not in the scope of bidder)

Termination of cable from Feeder -1 to RMU -1 and from RMU -1 to HT panel incomer -1

Laying of HT cable from HT panel to all the 4 transformers.

Step-6

On shutdown condition, remove cable from existing transformers and connect one of the cable from RMU-2 to the HT incomer -2. The second cable will not be used.

Step -7

Charge both the feeders, both RMUs , HT panel, and all 4 transformers ( combined scope with M/s Sify)

### **G. Right to Accept or Reject Any or All Proposal(s)**

OCAC reserves the right to accept or reject any proposal, and to annul the tendering process / Public procurement process and reject all proposals at any time prior to award of contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for such action.

OCAC reserves the right to award the contract to more than one bidder(s) for execution of the project in a time bound manner.

OCAC makes no commitment, express or implied, that this process will result in a business transaction with anyone.

The submission of RFP does not constitute an offer by OCAC. The bidder's participation in this process may result in selecting the bidder to engage in the execution of the contract.

## H. Cost of RFP Document and Earnest Money Deposit (EMD)

RFP Document shall be downloaded from the official site mentioned in the cover page. The bidders are required to submit the non-refundable RFP document Fee of ₹11,200/- (Rupees Eleven Thousand and Two Hundred Only Inclusive of 12% GST) through OCAC e-Tender Portal. **The RFP document fee can also be transfer online through NEFT only to Union Bank of India, Account Number 149311100000195, IFSC UBIN0814938, Acharya Vihar Branch, Bhubaneswar, Account Name Odisha Computer Application Centre.** In case of NEFT online transfer of RFP Document fee, the firm must mention the Firm name, Amount Transfer with Transaction ID, Tender Enquire Number, GST No to the mail id mentioned in the RFP Schedule.

In the Demand Draft i.e., Tender Document Fee, the bidder shall mention the Company Name & Tender Enquiry No, in the back side of the Demand Draft.

The bid / proposal submitted without RFP Document fee & BDF, mentioned above, will be summarily rejected.

**Note: - The bidders, who have submitted the EMD in previous tender, should not submit the same in the current tender. In case any previous bidder will not participate in the current tender, then the EMD will be returned to them after completion of bid process management of the current tender.**

## I. Performance bank Guarantee

An unconditional and irrevocable Bank Guarantee equivalent to 3% of the total cost of project (without GST) from any nationalized / scheduled commercial bank in the prescribed format as mentioned in this RFP in favor of the Odisha Computer Application Centre shall be submitted by the successful bidder within 15 days of issue of Purchase Order.

Failure of submission PBG within the specified time period may lead to cancel the Purchase Order. The Bank guarantee shall be valid till 3 years and 3 Months (39 Months) beyond completion of all installation of the necessary Hardware/components/Licenses at OCAC.

In the event of the bidder being unable to provide services and other terms and conditions of the PO/RFP for whatever reason, OCAC would evoke the PBG. OCAC shall notify the Bidder in writing of the exercise of its right to receive such compensation within **15 days**, indicating the contractual obligation(s) for which the Bidder is in default.

## J. Pre-Bid Queries

Bidders are requested to submit their queries by e-mail (One Mail-ID Per Bidder is allowed to submit the query only), to as per the format attached in **Annexure-G5**, in excel format on or before **25.11.2023 at 3.00 PM**. Failure to submit the queries in the asked format will result in rejection of queries. If the same bidder submits the query in multiple mail ids, then the bidder's query will be rejected.

## K. Responses to Pre-Bid Queries and Issue of Corrigendum

The Nodal Officer mentioned in the RFP document will endeavor to provide timely response to all queries. However, OCAC makes no representation or warranty as to the completeness or accuracy of any response made in good faith, nor does OCAC undertake to answer all the queries that have been

posed by the applicants. The responses to the queries from all applicants will be published by OCAC through corrigendum.

At any time prior to the last date for receipt of RFP, OCAC may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective applicant, modify the RFP Document by a corrigendum.

The Corrigendum (if any) & clarifications to the queries from the prospective bidders will be published at OCAC and Odisha Govt. Website.

Any such corrigendum shall be deemed to be incorporated into this RFP.

In order to provide prospective applicants reasonable time for taking the corrigendum into account, OCAC may, at its discretion, extend the last date for the receipt of RFP.

The tendering authority reserves the right not to respond to any/all queries raised or clarifications sought if, in their opinion and at their sole discretion, they consider that it would be inappropriate to do so or do not find any merit in it.

## **L. Submission of Proposals**

- a. The bidders shall submit their RFP bid document as per the format given in this RFP document through on-line mode through <https://enivida.odisha.gov.in>, in the following manner:
  - i. Technical Proposal
  - ii. Commercial Proposal
- b. Please Note that Prices shall not be indicated in technical bid but shall only be indicated in the Price Bid.
- c. All the pages of the RFP bid must be sequentially numbered and must contain the list of contents with page numbers and Flag Marks. Any deficiency in the documentation may result in the rejection of the bid.
- d. The original bid shall be prepared in indelible ink. It shall contain no interlineations or overwriting, except as necessary to correct errors made by the bidder itself. Any such corrections must be initialed by the person (or persons) who sign(s) the tender paper.
- e. All pages of the bid shall be initialed and stamped by the Authorize Person who signs the bid.
- f. The bidder shall attach a content page to the bid document highlighting the page numbers/ Flag Marks where each document is available without which the bid will be rejected.

## **M. Authentication of Bids**

The RFP document shall be accompanied by an Authorization letter (**Annexure: G3**) / Power-of-Attorney in the name of the authorized signatory of the proposal.

## **N. Preparation and Submission of Bid**

### **Preparation Costs**

The bidder shall be responsible for all costs incurred in connection with participation in the bid process, including site visits but not limited to, costs incurred in conduct of informative and other diligence activities, participation in meetings/ discussions/ presentations, preparation of bid, in providing any additional information required by OCAC to facilitate the evaluation process, and in negotiating a definitive contract or all such activities related to the bid process. OCAC will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

### **Language**

The proposal shall be filled by the bidder in English language only. If any supporting documents submitted are in any language other than English, translation of the same in English language is to be duly attested by the bidders. For purposes of interpretation of the proposal, the English translation shall govern.

### **Venue & Deadline for Submission of Bid**

Proposals, in its complete form in all respects as specified in the RFP document, must be submitted on or before the last date and time of submission of bid as mentioned on the cover page of the RFP bid at the address specified below in person at OCAC. No other way of submission of bid including submission through courier shall not be considered.

The General Manager (Admn),

OCAC Building, Plot No.-N-1/7-D, Acharya Vihar Square,

RRL Post Office,

Bhubaneswar-751013 (INDIA)

## Late Bids

Bids received after the due date and the specified time (including the extended period if any) for any reason whatsoever, shall not be entertained and shall be returned unopened.

The bids submitted by telex/ telegram/ fax/ e-mail etc. shall not be considered. No correspondence will be entertained on this matter.

OCAC shall not be responsible for any postal delay or non-receipt / non-delivery of the documents. No further correspondence on the subject will be entertained.

## III. Delivery and Execution timelines

Sl.No	Tasks	Timeline
1	Supply and installation of RMU and Isolator	T0+30 days (T1)
2	Supply of cable	T0+30 days (T2)
3	Laying of cables	T1 + 15 days (T3)
4	Commissioning of all systems	T3+10 days



## IV. CRITERIA FOR EVALUATION

The selection process consists of below two phase's i.e.

- a) Technical Bid Evaluation
- b) Price Bid Evaluation

### A. Pre-Qualification

The bidder shall attach a content page to the bid document highlighting the page numbers/ Flag Marks in the first page of the Pre-Qualification Bid where each document is available without which the bid will be rejected.

Sl. No.	Basic Requirement	Specific Requirements	Documents Required
1.	General	The Bidder or its OEM incorporated in a country sharing a land boundary with India cannot participate in this bid.	– Declaration by the Bidder / OEM on their letter head in this regard should submit along with the Bid.
2.	Legal Entity	<p>The bidder must be a company registered in India under Indian Companies Act 1956 and 2013</p> <p>OR</p> <p>A Partnership firm registered under Indian Partnership Act, 1932,</p> <p>OR</p> <p>A Proprietorship Entity</p> <p>The bidder must be in operation since last 3 years as on 31<sup>st</sup> March 2023. The bidder must have GST registration &amp; up-to-date Income Tax Return, PAN Number as on 31<sup>st</sup> March 2022.</p>	<p>a. Valid copy of certificate of incorporation and registration certificates.</p> <p>b. Copy of GST registration.</p> <p>c. Copies of relevant Certificates of registration Income Tax / PAN Number from the respective Government Department.</p>

Sl. No.	Basic Requirement	Specific Requirements	Documents Required
3.	Turnover	The average annual turnover of the bidder during the last three financial year ending with 31 <sup>st</sup> March 2023 should not be less than ₹2.0 crore.	<ul style="list-style-type: none"> <li>- Audited Balance Sheets</li> <li>- Valid CA Certificate</li> </ul>
4.	Net Worth	The net worth of the bidder must be positive in last three financial years ending at 31st March 2023.	- Copies of relevant Certificates should be submitted (CA)
5.	Technical Capability	<p>Bidder must have successfully undertaken at least similar nature of work of value specified herein during the last Five Financial years i.e. 2018-19,2019-20,2020-21,2021-22and 2021-23</p> <ul style="list-style-type: none"> <li>- One similar nature not less than the Amount ₹40 Lacs.</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>- Two similar natures each of which not less than the amount ₹30 Lacs</li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>- Three similar natures each of which not less than the amount ₹20 Lacs</li> </ul> <p><b>'Similar Nature'</b> is defined as Supply, Installation, Commissioning or Maintenance VCB (HT) panels/RMU/LV Panels etc and associated works in last five previous years ending with 31<sup>st</sup> March 2022".</p>	<p>Satisfactory work Completion Certificates from the client + Copy of the Work Order/Purchase Order.</p> <p style="text-align: center;"><b>OR</b></p> <p>Copy of Work Order/Purchase Order + Self Certificate of satisfactory work Completion certificate from the respective Employer/Company.</p> <p style="text-align: center;"><b>OR</b></p> <p>Copy of Work Order/Purchase Order + Satisfactory Phase Completion Certificate from the Employer for ongoing projects.</p>

Sl. No.	Basic Requirement	Specific Requirements	Documents Required
6.	Local Service Centres	The OEM / Bidder or his Authorised Business Partner should have installations in Odisha with support Centre/Authorised service provider in the state. In case not, successful bidder must establish their support centre/Authorised partner with adequate manpower within 30 days.	– A Self Certified letter by an authorized signatory; OR – Undertaking for setting up Service Support Centres/Authorised service partner direct or through Channel Partner.
7.	Performance	The Bidder must not have any record of poor performance, abandoned work, having inordinately delayed completion and having faced Commercial failures etc. for any State Government or Government of India Organization / Department during last 5 years as on ' <u>31st March 2023</u> '.	A Self Certified letter
8.	License	Bidder or their authorised partner must Possess relevant licenses from Statutory Electricity authorities to work on HT line.	Copy of valid License.

**Note:** - Only bidders qualifying in Pre-Qualification criteria would be considered for Technical Bid evaluation.

## B. Technical Bid Evaluation Criteria

Technical Bids of the Bidders, who qualified in the Pre-Qualification Criteria, will be considered for further evaluation. The Technical evaluation committee will evaluate the technical response submitted by the Bidder. The Technical bid response includes the below details:-

The Technical Bid response will be initiated with the Technical Bid Cover letter in specified format as mentioned in **Annexure-5 (A)**.

Detailed Compliance Sheet of the Technical Specification dully signed in Company Letter Head /OEM's Letter Head.

Detailed Bill of material keeping in view the Requirement including all appliances, licenses, accessories and others proposed as per **Clause 8.1.1**.

In case of deviation while evaluating the Technical Bid response based upon the criteria, the bid will be subjected for rejection.

All supporting documents as mentioned in **Annexure-G13**.

### **C. Price Bid Evaluation**

Bidder's who qualify in the pre-qualification and technical bid evaluation would be shortlisted for Price Bid Evaluation. Bidder's, who do not qualify in the technical bid evaluation, will not be invited for opening of Price bids. OCAC will award the contract to the successful bidder whose bid has been determined to be substantially responsive and has been determined as the Lowest Price bid (L1).

### **D. Notification of Award**

OCAC will notify the successful bidder in writing or by fax or email, that its proposal has been accepted. In case the tendering process / public procurement process has not been completed within the stipulated period, OCAC may like to request the bidders to extend the validity period of the bid. In such case the extended period shall be accepted as mutually agreed upon.

*Note: - In any case, if the L1 bidder is unable to execute the project as per the terms and conditions of this tender, then the work will be given to the next competitive bidders, i.e. L2, with the L1 price.*

### **E. Issue of Purchase Order**

After Tender Process is over and subsequent approval of the competent authority, OCAC shall issue the purchase order or within such extended period, as may be specified by the Authorized Representative of OCAC, incorporating all clauses and the proposal of the bidder with the successful bidder.

### **F. Failure to Agree with the Terms and Conditions of the RFP**

Failure of the successful bidder to agree with the Terms, Conditions and PO and the RFP shall constitute sufficient grounds for the annulment of the award, in which event OCAC may award the contract to the next best value bidder or call for new proposals from the interested bidders. In such a case, the OCAC shall forfeit the EMD of the successful bidder.

### **Delivery and Installation Schedule**

Delivery and Installation : 3 weeks from the date of work order

Commissioning : 1 weeks from the date of installation

### **G. General Terms and Conditions of Contract**

#### **Purchaser**

Odisha Computer Application Centre, Plot No.-N-1/7-D, Nayapalli, Near Planetarium, Acharya Vihar square, Bhubaneswar-751013.

## **Cost of Proposal**

The bidder shall bear all the costs associated with the preparation and submission of its Proposal, including site visits, and the GoO/OCAC will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the proposal process.

## **Amendment of RFP Documents**

At any time prior to the deadline for submission of Proposal, OCAC reserves the right to modify and amend any of the stipulated condition/criterion in the RFP, depending upon project priorities *vis-à-vis* urgent commitments. Such amendments in shape of corrigendum/addendum shall be hosted in the websites where the original RFP was hosted. The bidder shall acknowledge the receipt of each corrigendum/addendum by submitting a signed copy of it along with Pre-Qualification Bid/Price Bid to the RFP issuing authority. Failure to acknowledge receipt of each corrigendum/addendum shall be interpreted as receipt of the corrigendum/addendum by the bidder and no claim will be entertained or accepted in this regard.

## **Arithmetic Errors Correction**

Bidders are advised to exercise greatest care in entering the pricing figures. No excuse that mistakes have been made or requests for prices to be corrected will be entertained after the quotations are opened. Arithmetic errors, if any, in the price break-up format will be rectified on the following basis: -

If there is discrepancy in the unit price and the total price, the unit price shall prevail for calculation of total price.

## **Prices**

- Prices quoted by the bidders should include, GST, back to back support with OEM during warranty for 3 Years, insurance costs, transportation costs etc.,
- Once a contract price is arrived, the same must remain firm and must not be subject to escalation during the performance of the contract due to fluctuation in foreign currency, change in the GST structure, changes in costs related to the materials and labour or other components or for any other reason.
- No other cost whatsoever will be paid by OCAC.
- Further, subsequent to the orders being placed, the Bidder shall pass on to OCAC all fiscal benefits arising out of reductions in Government Levies viz., GST, Otherwise rates are firm during the entire contract period.

## Payment Terms

The payment schedule is as follows: Each milestone payment will be made to the bidder against submission of Performance Bank Guarantee (PBG) which is THREE PERCENTAGE of the Purchase Order Value)

Sl. No.	Project Milestone	Payment (%)	Documents Required
1	Delivery of RMU, isolator panel and HT cables & verification as per delivery schedule	60% of the quoted value	1. Original Delivery Challan 2. Original Invoice (In triplicate)
	Laying of cable and termination	20% of the quoted value	Joint measurement sheet approved by OCAC
2	Installation, Configuration & Integration as per Installation schedule	20% of the quoted value	1. Installation Certificate 2. Warranty Certificate

## Technical Information

- The technical documentation involving detailed instruction for operation and user's manual etc. is to be delivered with the equipment supplied. The language of the documentation should be English.
- The system offered should not be End-of-Support declared by OEM for a minimum period of 7 Years.
- In addition to the above, if any additional / enhanced configuration is suggested in view of technological changes, it may be furnished as optional feature with / without cost duly explaining the additional utility of the offered model as well as commercial offer document. However, the basic quote should be confined only to the configuration / model offered for.

## Disqualification

The bid is liable to be disqualified if:-

- Bid not submitted in accordance with this RFP.
- During validity of the bid or its extended period, if any, the bidder increases his quoted prices without the consent of department to change the bid quote.
- The bidder puts his own conditions with the bid.

- Bid received after due date and time.
- Bid not accompanied by all requisite documents.
- Bidder fails to enter into a contract within 30 working days of the date of notice of the award of tender or within such extended period, as may be specified by an authorized representative.

## **Performance Bank Guarantee**

The successful bidder shall furnish an unconditional and irrevocable Performance Bank Guarantee (PBG) for 3% (three percent) of the total price without GST within 15 days of issue of Purchase Order. The PBG must be from any nationalized / scheduled commercial bank in India. The PBG shall be valid for a period of 39 MONTHS (3 Years and 3 Months) from the date of successful installation at OCAC. The bidder should calculate the delivery period and installation period from the date of issue of PO and accordingly submit the PBG at OCAC. The performance Bank Guarantee should be as per the format given in **Annexure-G11**. All charges whatsoever such as premium; commission etc. with respect to the Performance Bank Guarantee shall be borne by the bidder. The Performance Bank Guarantee may be discharged / returned by OCAC upon being satisfied that there has been due performance of the obligations of the Bidder. However, no interest shall be payable on the Performance Bank Guarantee. In the event of the bidder being unable to accept the PO and non-performance during Warranty period of the service or whatever reason, OCAC would evoke the PBG. OCAC shall notify the Bidder in writing of the exercise of its right to receive such compensation within 14 days, indicating the contractual obligation(s) for which the Bidder is in default.

## **Liquidated Damages**

- a) OCAC will consider the inability of the Bidder to deliver or install the equipment within the specified time limit, as a breach of contract and would entail the payment of Liquidation Damages on the part of the Bidder.
- b) The liquidation damages represent an estimate of the loss or damage that OCAC may have suffered due to delay in performance of the obligations (relating to delivery, up-gradation, integration, training, etc., of the deliverables) by the Bidder. Penalty will be charged @ 0.5% of the total value without GST per week subject to maximum of 5% of total order value, in case of delay in delivery, installation & integration beyond delivery & installation schedule mentioned in Purchase Order/RFP.
- c) OCAC shall without prejudice to its other remedies under the terms and condition of PO/RFP, deduct the Price, as liquidated damages from the Performance Bank Guarantee given by the Bidder.

## Termination of Purchase Order

Prior to the delivery of the system, OCAC may at any time terminate the Purchase order by giving written notice to the Bidder if the Bidder becomes bankrupt or otherwise insolvent. In this event, termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to OCAC. OCAC reserves the right to cancel the Purchase order in the event of happening one or more of the following Conditions: -

- Failure of the successful bidder to accept the Purchase order
- Delay in delivery beyond the specified period.
- Delay in up-gradation / integration and acceptance tests beyond the specified periods.
- In addition to the cancellation of purchase contract, OCAC reserves the right to appropriate the damages through encashment of Bid Security / Performance Guarantee given by the Bidder.
- OCAC would not be liable to pay any damages to the selected Bidder in cases comprising termination for default.

## Force Majeure Condition

- a) If the performance as specified in this order is prevented, restricted, delayed or interfered by reason of Fire, explosion, cyclone, floods, War, revolution, acts of public enemies, blockage or embargo, Any law, order, proclamation, ordinance, demand or requirements of any Government or authority or representative of any such Government including restrict trade practices or regulations, Strikes, shutdowns or labor disputes which are not instigated for the purpose of avoiding obligations herein, or Any other circumstances beyond the control of the party affected, then notwithstanding anything here before contained, the party affected shall be excused from its performance to the extent such performance relates to prevention, restriction, delay or interference and provided the party so affected uses its best efforts to remove such cause of non-performance and when removed the party shall continue performance with utmost dispatch.
- b) If a Force Majeure situation arises, the Bidder shall promptly notify the authorized representative of OCAC in writing of such condition and the cause thereof. Unless otherwise directed by the authorized representative of OCAC in writing, the Bidder shall continue to perform its obligations under the terms and conditions of PO as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.



## Resolution of Disputes

- a) It will be OCAC's endeavor to resolve amicably any disputes or differences that may arise between OCAC and the Bidder from misconstruing the meaning and operation of the Tender and the breach that may result.
- b) In case of Dispute or difference arising between OCAC and a Supplier relating to any matter arising out of or connected with this Purchase Order, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The Arbitrators shall be chosen by mutual discussion between OCAC and the Supplier OR in case of disagreement each party may appoint an arbitrator and such arbitrators may appoint an Umpire before entering on the reference. The decision of the Umpire shall be final.
- c) The Bidder shall continue work under the Contract during the arbitration proceedings unless otherwise directed in writing by OCAC or unless the matter is such that the work cannot possibly be continued until the decision of the Arbitrator or the umpire, as the case may be, is obtained.
- d) Arbitration proceedings shall be held at Bhubaneswar, India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English Notwithstanding anything contained above, in case of dispute, claim & legal action arising out of the contract, the parties shall be subject to the jurisdiction of courts at Bhubaneswar, India only.
- e) Any notice given by one party to the other pursuant to this Contract shall be sent to the other party in writing or by fax and confirmed in writing to the other party's specified address. The same has to be acknowledged by the receiver in writing. A notice shall be effective when delivered or on the notice's effective date, whichever is later.

## V. TECHNICAL SPECIFICATIONS FOR RMU WITH METERING PANEL

### A. 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 33 KV motorized Ring Main Units with Metering panel & all other accessories for trouble free & efficient performance .

### B. STANDARDS :

The equipment covered by this specification shall unless otherwise stated, be designed, manufactured. and tested in accordance with latest editions of the following IEC/IS Standards and shall conform to the regulations of local statutory authorities.

IEC 62271-200	HV switchgear and control gear-AC Metal Enclosed switchgear and control gear for voltages above 1 kV and
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	upto and including 52kV .
IEC 62271-1	Common specifications for high voltage switchgear and control gear standards
IEC 62271-102	HV switchgear and control gear-Alternating current disconnectors and earthing switches
IEC 62271-103	High voltage switches — Part 1: Switches for rated voltages above 1 kV and less than 52 kV
IEC 60529.	Degrees of protection provided by enclosures (IP Code)
IEC 62262	Degrees of protection provided by enclosures for electrical equipment against mechanical impacts (IK Code)
IEC 60060	High-voltage test techniques
IEC 60947 /IS 13947	Low voltage switchgear and control gear
IEC 60439-1	Low-voltage switchgear and control gear assemblies- Type tested and partially type tested assemblies
IEC 60255-151	Electrical relays - Part 3: Single input energizing quantity measuring relays with dependent or independent time.
IEC 60044-1 / IS 2705	Current Transformers
IEC 60044-2 / IS 3156	Voltage Transformers
IEC 60376	Specification of technical grade sulfur hexafluoride (SF6) for use in electrical equipment
IEC 61958	High-voltage prefabricated switchgear and control gear assemblies - Voltage presence indicating system

### C. CLIMATIC CONDITIONS OF THE INSTALLATION:

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	100%
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)

OCAC service area has heavy saline conditions along the coast and High cyclonic Intensity winds with speed upto 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.

### GENERAL TECHNICAL REQUIREMENTS

Sr.No	Descriptions	As Specified By OCAC
1	RMU Category-Motorised with Inbuilt Battery charger & Battery	Way Motorised (1 CB + 2 LBS)
2	RMU Application	Outdoor
3	Dielectric Medium	SF6
4	Interrupting Medium	SF6 / Vacuum
5	System Frequency	50 Hz
6	Rated voltage	36Kv

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#### ODISHA COMPUTER APPLICATION CENTRE (OCAC)

7	Service Voltage	33Kv
8	Rated Current-LineSwitches	630A
9	Rated Current –CB	630A
10	Rated Short time Current Withstand	25KA for 1 Sec / 20KA for 3 Sec
11	Internal ARC (1 Sec)	25KA
12	Rated Short time Making Capacity	50kA
13	Rated Cable charging Interrupting current incomer load break switch	25A
14	Rated Load InterruptingLine Current	630A
15	Rated Magnetizing Interrupting Current of Line switch.	10A
16	No. Of Operations at rated Short Circuit Current on line Switches Earthing Switches and CB	5 close
17	i. Mechanical endurance for Isolator & earth switch	Min 1000 Operations
	ii. Mechanical endurance for circuit breaker	Min 2000 Operation
	CTs for Protection:	To be Finalised during Detailed Engineering if applicable
	Material : Epoxy resin cast/	
	Burden : 2.5VA	
	Ratio : 100-50/1 A	
	Accuracy Class : 5P20	
18	Electrical Operations of Isolator & E/Switch at rated current	To be Provided By Bidder

19	Temp Rise	Maximum permissible temperature for bus bar shall not be 105 deg C an ambient temperature not exceeding 50 deg C, as per IEC 60694 And IEC 62271. However, the temperature rise for accessible enclosures and covers shall not exceed 30K and in case, they are not required to be touched during normal operation, the limit shall be raised by 10K
20	Min Gas Pressure	0.05 Bar G
21	SF6 Gas Pressure Indicator	To be Provided by Bidder
22	SF6 Gas leakage Detector	1 per 20 RMUs Subject to Minimum One Number
23	Guaranteed SF6 Leakage per Annum	Less than 0.1%
24	Degree Of Protection	IP 67 for the tank and IP2X for the front cover/mimic board and IP55 for Outdoor RMUs .The RMU metal parts shall be 2.0 mm thickness high tensile steel which must be shot blasted, spray galvanised with minimum thickness of 30 micron and subsequently powder coated. The overall Paint thickness shall be 125 microns (No negative tolerance is allowed)
25	Internal arc test	25kA 1 Sec
26	Lightning Impulse withstand Phase to Earth	170kVp
27	Power frequency withstand for 1Minutes	70kVrms
28	SF6 tank design	Hermetically sealed unpainted stainless steel enclosure with SF6 Gas. Sealed pressure system by Laser welding so that no refilling of gas is required for 30 years. No gas work to prevent access to live parts. No gasket shall be used, No bolts Shall be provided
29	Earth Bus Bar Material & Size	To be provided by Bidder
30	Earthing of main CCT cables shall be earthed with earth switch with S/C making capacity as per IEC  129. closing shall be possible only when Isolator is open.	To be provided by Bidder

31	Incomer load break switch shall be SF6 type with least maintenance and shall have at least 3 positions, Open, Close & earth with Natural interlocks. Fitting of motor at site shall be possible & shall have mechanical interlock.	To be provided by Bidder
32	<p>Circuit Breakers:</p> <p>With VCB interrupter and SF6 insulated bus with minimum maintenance and shall have at least 2 positions I.e. Open &amp; Close, Manual operation &amp; fitting of motor at site shall be possible if required.</p> <p>In view of safety each VCB shall be assisted with feeder side disconnector having 3 positions, open disconnected, closed, and earth (having fault making capacity) and shall be constructed in such a way that natural interlocking prevents unauthorized operations.</p>	To be provided by bidder
33	<p>Protection Relay –Without Auxiliary Power &amp; shall include 3 toroid transformer in trans. Tee-off bushing, electronics relay, low energy release &amp; fast on</p> <p>test receptacle for protection testing.</p>	Self powered O/C+E/F IDMT characteristics with 0.05 Sec TMS.
34	Make of Relay	–ABB, Ashida, Schneider, Siemens
35	Flag indication for CB Trip on fault in relay mechanical or Electrical	To be Provided By bidder
	Testing of cable-without opening the doors.If doors are opened then earth switch shall	

36	be in closed position and cable test rod fixing provision in bolt head which can be fixed on terminations through boot cap/opening for testing purpose AND if doors are opened it shall not be possible to operate, Isolator, E/switch or CB through interlocks	To be confirmed. If separate test bushing are provided, it Shall be covered with suitable antitheft covers with anti vandal screws.
37	Protection against Theft	Design Of RMU shall be tamper & arc proof. And vandal Screws shall be provided. Cable covers shall be pad lockable. All live parts / test Bushing etc. Shall be covered with antitheft covers.
38	Doors	Outer enclosure should be hinged main door with padlock provision. Cable chamber door should not be hinged type. It should be arc proof with bolted arrangement.  Note: RMU shall be inside the enclosure.
39	Voltage indicator box shall be fixed type- This device shall be in compliance with IEC 61958 standard.	Capacitive dividers type which will supply low voltage to power the lamps and 3 inlets can be used to check phase sequence.
40	Phase comparator	1 per RMU
41	Cable Clamps	HDPE
41.1	Cable Termination	
41.2	Type	Heat/Cold shrinkable (Raychem/3M Make only)
41.3	Size (To be finalized in detailed Engineering Stage)	1CX400Sqmm
42	Height	Minimum 900mm above GL
43	Earth fault passageindicator	One Per RMU with as a part of RMU
44	Operating handle	To be provided by bidder as part of RMU
45	MIMIC Diagram in Front of panel	To be provided by bidder
45.1	Bus bar	
45.2	Material	Copper
46	Cross Section	To be specified by bidder
47	Opening & Closing times (Max)	Opening Time: 2.5 Cycle Closing Time: 3 Cycles

47.1	Current Transformer	Shall be epoxy resin and are mounted around the cable outside SF6 gas compartment. The CTs around the cables shall be supported on the sheetsteel bracket base sized for CTs .CTs shall not bekept hanging or put on base frame directly
48	CT Dimension	1CX400Sqmm
49	SCADA Compatibility-Remote operation of RMU shall be possible by using motors fitted to operating mechanism of isolators & CB etc.	As per specification
50	Harting Plug arrangement for individual isolator as wellas breaker motor connections, which will be fitted on RMU body itself	As per specification
51	Guarantee- From date of taking over by TPL	48 Months from the date of commissioning or 60 months from the date of supplies made under the contract whichever is later
52	Dimension (LxWxH)(mm x mm x mm)	To be provided by bidder
53	Total weight	To be provided by bidder
54	Paint	As per OEM Standard
55	Power Supply	24VDC for Control Circuit from Battery & Battery Charger. Input Supply to Battery Charger : 220VAC
		Aux PT $3300/\sqrt{3}$ / 220 VAC, 500VA (Optional and to be quoted Separately)
		Coupled type DC operated motors shall be suitable for the installation on the indoor type RMU's on the isolator function and to be flitted in/from the LV compartment side. There shall be provision to fit the motor on Circuit



56	Motor	breaker also Motor Voltage: 24 VDC Operating Time:4-8 Sec Rating: To be submitted by Bidder
57	Auxiliary contacts (spare numbers to be provided )	LBS (4NO+4NC) Earth Switch (2NO+2NC) CB (4NO+4NC) CB Disconnecter (2NO+2NC) CB earth switch (2NO+2NC)
58	Metering Unit	Metering Unit Shall be Standalone Type & attached with RMU. It shall have Dedicated CT and PT for metering only and sealed metering compartment.  Metering Compartment should not have CT & PT wiring only. CTR: 100/5, Acc. Cl: 0.2S, Burden 15VA PT: 33000/rt3:110/rt3, Acc. Cl:0.2 ,30VA Metering Panel shall be Type tested as per Tender Spec.  Panel should have Sealing Facility as a part of Metering Requirement.  (CT ratio to be decided during detailed engineering after taking consent from metering Dept.)

Type of Ring Main Units shall be as under:

3 Way/4 Way Non Extensible Type (For Outdoor application):

3 Way Motorized (1 CB + 2 LBS) with Self powered O/C & E/F

#### **D. GENERAL CONSTRUCTION FOR RMU**

The switchgear and bus bar shall be contained in a stainless steel tank filled with SF6 gas and the outer body shall be made of minimum CRCA of 2mm or GI high tensile steel 2mm thick with thick gland plates of 3mm. The sheet steel shall have surface treatment of 7 tank process With powder coating of minimum 70 microns. The tank shall have SS sheet of 1 minimum 2mm thickness with internal Arc Type tested and meet the "sealed pressure system" criteria in accordance with the IEC 62271-200. This is a system for which no handling / refilling of gas shall be required throughout the expected operating life, i.e. 30 years. Sealed pressure systems are completely assembled, filled and tested in the factory.

The maximum leakage rate of SF6 gas shall be lower than 0.1 % of the total initial mass of SF6 gas per annum. The filling pressure for the switchgear shall be just above the atmospheric pressure so as to reduce the tendency to leak. SF6 gas used for the filling of the RMU shall be in accordance with .IEC 376. It is preferable to fit an absorption material in the tank to absorb the moisture from the SF6 gas and to regenerate the SF6 gas following arc interruption. The degree of protection for RMU tank

(Indoor/Outdoor) shall be IP 67. The mimic board shall be provided with IP2X /IP3X degree of protection for Indoor RMUs and protection for Outdoor RMUs shall be minimum IP 54

The RMU shall be suitable for mounting on plinth with provision for cabling through gland plate in the base and trench below, The RMU shall be designed so that the position of the different devices is visible to the operator on the front and operations are also visible. The RMU shall be identified by an appropriately sized label which clearly indicates the functional units and their electrical characteristics.

The RMU shall be designed to be tamper proof so as to prevent access to all live parts during operation without the use of tools.

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

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

Any accidental over pressure inside the sealed chamber shall be limited by the opening of a pressure limiting device provided in the rear part of the tank. Gas shall be released to the rear of the RMU away from the operator. Bidder shall provide type test report to prove compliance to the 'Internal fault IAC AFLR as per IEC 62271-200. An anti-reflex mechanism on the operating lever shall prevent any attempts to reopen immediately after closing of the switch-or earth switch. All manual operations shall be carried out on the front of the RMU. The instrument transformers (CT/PT) shall be required and to be incorporated in the drawing for discussion at the final stage.

## **Circuit Breaker for Transformer Local Feeder Control**

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

An operating mechanism can be used to manually close the circuit breaker and charge the mechanism in a single movement. It shall be fitted with a local system for manual tripping by, an integrated push button. There will be no automatic re-closing. The operating mechanism shall be compatible for remote/SCADA operation. The circuit breaker shall be associated with an integrated protection unit that will operate without any auxiliary power supply

and shall include three toroid transformers incorporated in the transformer tee-off bushings, an electronic self powered relay, a low energy release, and a "fast-on" test receptacle for protection testing (with or without CB tripping).

The protection system shall ensure circuit breaker tripping as of a minimum operating current which is the rated current of the underground network to be protected. The CT settings shall be adjustable and CT ratio to be decided during detailed engineering as per site requirement. Protection core CT complete details should be furnished (Burden, class, ALF).

The circuit breaker shall be provided with Phase protection of Definite time/ IDMT element for overcurrent and earth fault with minimum PSM-0.05, Tsm-0.01 having standard characteristics of Standard Inverse, Very inverse, Extremely Inverse as per IEC 60255-3 standard. The Earth Fault Protection shall be provided of.

Definite time/ IDMT element having standard characteristics of Standard Inverse, Very inverse, Extremely Inverse as per IEC 60255-3 standard. The "Time Multiplier" with minimum set point of 0.05 TMS shall be available. The breaker shall have the provision of flag Relay for indication of Trip on Fault. High set (DT) for overcurrent and earth fault-min current setting-0.5 In, minimum Time Delay-20 millisecond. The relays shall be suitable numerical relay with necessary elements or any other relay as per the Purchaser's approval.

There shall be provision for testing of cable without opening the front door by suitable arrangements. In case cables are to be tested with front door open, doors shall have interlocks such that doors can be opened only with earth switch in closed position. Termination boots as approved by the Purchaser's should have a proper opening to facilitate the testing. The opening shall be covered by means of removable protection cap

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

The circuit breaker shall be compatible for remote operation and can close (ON) and open (OFF) by remote operation.

### **E. Incomer Load Break Switches :**

The Load break switches shall have positions, open-disconnected closed, and earthed, and will be constructed in such a way that natural interlocking prevents unauthorized operations

The position indicator shall provide positive contact indication in accordance with IEC 265-1 standard. In addition, manufacturer shall prove reliability of indication in accordance with IEC 129. The switches shall be fully mounted and inspected in the factory. Manual opening and closing will be driven by a fast-acting mechanism, independent of operator action.

Mechanical Interlock should be provided for Earth switch, If cable is back charged Earth switch should not be closed.

Each switch can be fitted with an electrical operating mechanism in a specially reserved location, without any modification of the operating mechanism and without de-energizing the RMU.

Load break Switch should be operated manually & motorized.

#### **F. Bushings and Cable terminations:**

Each cable compartment shall be provided with three bushings of adequate sizes to terminate the incoming and outgoing cables along with a terminal block (TB) located at convenient accessible location so as to wire all inputs & outputs (IOs) up to the terminal block (TB). The bushings shall be conveniently located for proper bend so as to allow easy working and termination of cables. The cable termination shall be done with Heat shrinkable /Push ON termination method so that adequate clearances are maintained between phases & cable shall be held by HDPE (fire retardant) cleat. 2 runs, of 3CX400 Sq mm, OR 1R of 3 NO. 1CX630 Sq mm shall be used for cable termination. (It shall be finalized during detailed engineering) All the cable secondary Wiring should be rooted through marshaling box separately for relay, CT etc. BA should provide bimetallic washer for tightening of cable.

#### **G. Earthing:**

The RMU outdoor metal clad, switchgear, Distribution Transformer, R.S. Joists, M.S Channels/M.S. angles etc, shall be equipped with an earth bus securely fixed along the base of the RMU. The size of earth busbar of GI Strip (75X12 mm) shall be as per IEC/IS. Provision shall be made on end of RMU for connecting the earth bus to the earth grid by erecting suitable 2 earth pipes of 50mm dia. M.S. rod of 3 meter in Pits. Both the earth pipes are also to be connected in a grid formation. Necessary terminal clamps and connectors shall be included in the scope of supply.

#### **H. Voltage indicator lamps and phase comparators:**

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

#### **I. Front Cover**

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

## J. Fault Passage Indicators

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

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

FPI should be communicable type with remote resettable functionality.

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

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

## **K. Remote Control of the RMU:**

Remote operation of the RMU line switches shall be possible using pre-fitted motors to the operating mechanism for both line switch and circuit-breaker functions. All the necessary accessories shall be supplied separately, to stores.

Auxiliary contacts for remote indication of switch status are also required.

The fitting of the motors to the mechanism must not in any way impede or interfere with the manual operation of the switches. An auxiliary contact to prevent motorized operation of the mechanism while the operating handle is inserted into the operating point shall also be provided.

Preferred Communication protocol for FRTU shall IEC-60870-5-104

## **L. Paint**

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

## **M. MARKING**

All the components and operating devices of the RMU shall be provided with durable and legible nameplates containing all technical parameters. Name plates shall be suitably embossed with "PONO with date", "PROPERTY OF TPCODL/TPNODL/TPSODL/TPWODL & PO Number along with the following information. A Danger plate of appropriate size shall also be provided on the enclosure.

- 1) Manufacturer's Name
- 2) Month and year of supply
- 3) PO Number
- 4) Rated Voltage
- 5) System Frequency
- 6) Rated Short time withstand current for 'I' sec
- 7) Rated Impulse withstand Voltage
- 8) Degree of Protection
- 9) Type Designation or Serial no.
- 10) Year of manufacture
- 11) Applicable Rated values
- 12) Mass of unit
- 13) SF6 gas filling pressure

## **N. TESTS**

### **O. TESTS FOR RMU**

All the Routine and acceptance tests shall be carried out in accordance with the relevant IS/IEC standards. All routine/acceptance tests shall be witnessed by the purchaser/his authorized representative. All the

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

### **P. Type Test**

Power Frequency test

Mechanical operation test and checking of interlocks

Dielectric test on main and control circuits.

Temperature Rise test.

Internal Arc withstand test,

Degree of Protection test.

Test to check the capability of main and earthing circuits subjected to rated peak and shorttime withstand current.

Test to check the total time taken to clear the faults (relay pick up + Trip coil pick up + breaker trip) for instantaneous & time delay modes under various settings of relay and trip coil through secondary current injection.

### **Q. Salt Spray Test**

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

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

### **R. Routine test:**

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

- 1) Dimensional & Visual Checks
- 2) Operational & Interlock Tests of breaker & isolator switches
- 3) Measurement of Circuit Resistance
- 4) Sf-6 chamber pressure withstand/leakage test.
- 5) HV withstand test across isolator distance.
- 6) HV withstand test of control and auxiliary circuits.

- 7) Voltage Indication Tests.
- 8) Breaker Contact Resistance Test
- 9) Total Trip Time Check Test through Current Injection in primary.
- 10) IR Value.

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

- 1) Visual inspection of the final finished product.
- 2) Intactness with Bushing.
- 3) Insulation Test.
- 4) AC HV test.

### **S. Acceptance test:**

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

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

Facility for primary current injection up to 1000amp.

Facility to check total trip timing of breaker along with breaker main contacts through primary current injection

### **T. TYPE TEST CERTIFICATE**

The Bidder shall furnish the type test certificates of the 33 KV RMU for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at CPRI or any other International Laboratory as per the relevant standards. Type tests shall have been conducted in CPRI/ERDA or any other International Laboratory during the period not exceeding time span as per CEA guidelines. In the event of any discrepancy in the test reports, i.e. any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be carried out without any cost implication to TPCODL/TPNODL/TPSODL/TPWODL.

### **U. INSPECTION AFTER RECEIPT AT STORE**

The material received at 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 Project Engineering department.

### **V. 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 48 months from the date of commissioning or 60 months from the date of last supplies made under the contract whichever is later, Bidder shall be liable to undertake to replace/rectify such defects at its own costs, within mutually agreed time frame, and to the entire satisfaction of the Purchaser, failing which the Purchaser will be at liberty to get it replaced/rectified at Bidder's risks and costs and recover all such expenses plus the Purchaser's own charges (@ 20% of expenses incurred), from the Bidder or from the " Security cum Performance Deposit" as the case may be.

Bidder shall further be responsible for 'free replacement for another period of **THREE** years from the end of the guarantee period for any 'Latent Defects' if noticed and reported by the Purchaser.

## **W. PACKING**

Bidder shall ensure that all equipment 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

## **X. QUALITY CONTROL**

The bidder shall submit with the offer, assurance plan indicating the various stages of inspection, the tests and checks which will be carried out on the material of construction, components during manufacture and after finishing, bought out items and fully assembled component and equipment including drives. 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 or its nominated representative engineer shall have free access to the manufacturer/sub-supplier's works to carry out inspections.

## **Y. TESTING FACILITIES**

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

## **Z. MANUFACTURING ACTIVITIES**

The successful bidder will have to submit the bar chart for various manufacturing activities clearly elaborating each stage with quantity. This bar chart shall be in line with the Quality Assurance Plan, submitted with the offer. This bar chart will have to be submitted within 15 days from the release of the order.

## **AA. SPARES, ACCESSORIES & SPECIAL TOOLS/GAUGES**

Bidder shall provide a list of recommended spares with quantity and unit prices for 5 years of operation after commissioning. The Purchaser may order all or any of the spare parts listed at the time of contract award and the spare parts so ordered shall be supplied as part of the definite works. The Purchaser may order additional spares at any time during the contract period at the rates stated in the Contract Document. Bidder shall give an assurance that spare parts and consumable items will continue to be available through the life of the equipment which shall be 25 years minimum. However, the Purchaser shall give a minimum of 12 months notice in the event that the Bidder or any sub-vendor plans to discontinue manufacture of any component used in this equipment.

Any spare apparatus, parts or tools shall be subject to the same specification, tests and conditions as similar material supplied under the Contract. They shall be strictly interchangeable and suitable for use in place of the corresponding parts supplied with the plant and must be suitably marked and numbered for identification.

## BB. DRAWINGS & DOCUMENTS

Following drawings and documents shall be prepared based on TPCODL/TPNODL/TPSODL/TPWODL specifications and statutory requirements and shall be submitted with the bid:

- a) Completely filled in Technical Particulars
- b) General description of the equipment and all components including brochures.
- c) General arrangement for RMU
- d) Power flow diagram
- e) Foundation plan
- f) Bill of material
- g) Experience List
- h) Type test certificates

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

SI. No.	Description	For Approval	For Review/Information	Final Submission
1	General Technical Particulars	✓		✓
2	General Arrangement drawings	✓		✓
3	Schematic Diagram	✓		✓
4	Bill of materials	✓	✓	✓
5	Foundation Plan & loading details		✓	✓
6	Installation Instructions		✓	✓
7	Instruction for Use		✓	✓
8	Transport/ Shipping dimension drawing	✓	✓	✓
9	QA & QC Plan	✓	✓	✓
10	Test Certificates			

All the documents & drawings shall be in English language.

After the receipt of the order, the successful bidder will be required to furnish five copies of all relevant drawings for approval.

Instruction Manuals: Bidder shall furnish two softcopies (CD) and four (4) hard copies of nicely bound manuals (In English language) covering erection and 'maintenance instructions and all relevant information and drawings pertaining to the main equipment as well as auxiliary devices.

## VI. TECHNICAL SPECIFICATION FOR 33 KV ISOLATORS

### SPECIFICATION NO. APDCL/PP&D/T&C/STS/HT Isolator/2020/1

#### A. SCOPE

This specification provides for design, manufacture, testing at manufactures works, inspection, packing and delivery of outdoor station type 12kV and 36kV (Local) manual operating mechanism air break disconnects (Isolators) with/without earthing blades and complete in all respect with bi-metallic connectors and other accessories and auxiliary equipment for installations in various substations in Assam. Operating mechanism, fixing details etc. shall be as described herein.

#### B. SERVICE CONDITIONS

The Isolators to be supplied against this Specification shall be suitable for satisfactory continuous operation under the following climatic conditions.

1	Location	At various locations within the state of Assam
2	Maximum ambient air temperature (°C)	45
3	Minimum ambient air temperature (°C)	2
4	Maximum average daily ambient air temperature (°C)	35
5	Maximum yearly weighted average ambient temperature(°C)	32
6	Maximum altitude above mean sea level (Metres)	1000
7	Maximum Humidity	93%
8	Average number of thunderstorm days	45->50
9	Average numbers of dust storms per annum	10
10	Maximum rainfall/annum	3500 mm
11	Average rainfall	2280 mm
12	Wind Pressure	97.8 Kg/Sq.mm
13	Altitude above MSL	100 m to 1000 m
14	Seismic Level	0.24g to 0.48g

### **C. Note:**

The equipment shall generally be for use in moderately hot and humid tropical climate, conducive to rust and fungus growth unless otherwise specified.

### **D. SYSTEM CONDITIONS**

The isolators shall be suitable for outdoor installation with 3-phase 50 Hz, 11 kV/33kV systems and they should be designed suitable for service under fluctuations in supply voltage up to

±12%. Permissible under Indian Electricity Supply Act and rules made there under.

### **E. STANDARDS**

The isolators and isolator-cum-earthling switches shall comply with the requirements of IS 9921 (as amended up to date) and the latest edition of IEC 62271-102 (IEC 60129). The Insulators shall comply with the requirement of latest edition of IS 2544/1973 and IEC 60168/1988 (as amended up to date)

Sr.No.	Standard No.	Title
	IS 9921 (Part 1 to 4)	Alternating Current Disconnectors (Isolators) and Earthing Switches for Voltages Above 1 000 V - Part I
	IEC 62271-102 (IEC/60129)	Alternating current disconnectors and earthing switches
	IEC 62271-1 (IEC 60694)	High-voltage switchgear and controlgear - Part 1: Common specifications
	IS 2544/ IEC 60168	Porcelain post insulators for systems with nominal voltage greater than 1000 V olts
	IS 5350	Dimensions of Indoor and Outdoor Porcelain Post Insulators and Post Insulator Units for Systems with Nominal Voltages Greater than 1000 V
	IS 2629	Recommended Practice for Hot-Dip Galvanizing of Iron and Steel
	IS 4736	Hot-dip Zinc Coatings on Mild Steel Tubes
	IS 4759	Hot-dip zinc coatings on structural steel and other allied products
	IS 6745	Method for determination of mass of zinc coating on zinc coated iron and steel articles
	IS 2633	Methods for testing uniformity of coating of zinc coated articles
	IS 9530/1980	Recommended practice for silver plating
	IS 5925/1970	Recommended practice for silver plating for general engineering purposes
	BS 2816/1964	Testing of silver plating thickness
	IS 6735/1994	Spring lock washers
	IS 2016	Plain washers
	IS 1161	Steel tubes for structural purposes
	IS 1239	GI pipe('B' class or Medium class)
	IS 2147	Degree of protection provided for enclosures for low voltage control gear

	IS:4691	Degree of protection provided by enclosures for rotating electrical machinery
	IS: 5561	Electrical Power Connectors

## F. KEY TECHNICAL PARAMETERS

The equipment covered in this specification shall meet the technical requirements listed below. The Isolator must be Double Break, center pole rotating type

Sl. No.	Parameter	Unit	Requirements for (33kV)
1	Rated Freq.	Hz.	50
2	System Neutral Earthing		Solidly earthed
3	No. of phase(poles)	No.	3
4	Temp. rise	Deg. C	As per standards IS/IEC
5	Safe duration of overload	Minutes	
	a) 150 % of rated current		5
	b) 120 % of rated current		30
6	Rated voltage	KV rms	36
7	Type of isolator (AB)		DBCR
8	Rated normal current	Amps.	800 / 1250
9	Rated short time withstand current for 3 second	KA rms	25
10	Rated peak current	KA peak	63
11	Rated short circuit make current	KA peak	63
12	Derating factor		unity
13	Basic Insulation Level		
	1) Lightning Impulse withstand voltage		
	a) Pole to earth & between poles	KV peak	170
	b) Across isolating distance	KV peak	195

	2) Rated power freq. withstand voltage		
	a) Pole to earth & between poles	KV rms	70
	b) Across isolating distance	KV rms	80
14	Min. creepage distance (The protected creepage distance shall not be less than 50% of total)	mm	900
15	Phase to phase spacing for installation	mm	1500
16	<b>Min. clearances</b>	mm	
	a) Phase to earth		430
	b) Between rotating post and fixed post on		485

Sl. No.	Parameter	Unit	Requirements for (33kV)
	one phase		
17	Height of centre line of terminal pad aboveground level	mm	3700
18	Special Requirements:  Isolator main switch (MS) shall be required to make or break the line charging current when no significant change in voltage occurs across the isolating distance on account of make or break.  The isolator required is not with "Turn and twist mechanism". It must be rotating type.		

## G. GENERAL TECHNICAL REQUIREMENTS

### 1.1. TYPE & RATING

Isolators shall have three posts per phase, triple pole single throw, gang operated out-door type silver plated contacts with horizontal operating blade and isolators posts arranged vertically. The isolators will be double break type. Rotating blade feature with pressure relieving contacts is necessary i.e. the isolator shall be described in detail along- with the offer. All isolators shall operate through 90 degree from their fully closed position to fully open position, so that the break is distinct and clearly visible from the ground level.

The equipment offered by the tenderer shall be designed for a normal current rating of 800 A, 1250 A for 33 KV suitable for continuous service at the system voltage specified herein. The isolators are not required to operate under load but they must be called upon to handle magnetization currents of the power transformers and capacitive currents of bushings, bus-bars connections, very short lengths of cables and current of voltage transformers.

The rated insulation strength of the equipment shall not be lower than the levels specified in IS 9921 IEC publication No. IEC 62271-102 (IEC 60129), which are reproduced below:

Standard declared voltage kv/rms	Rated voltage of the Isolator	Standard withstand positive kV (peak)	Impulse Voltage polarity	One minute power frequency withstand voltage KV (RMS)	
				Across the isolating distance	To earth and between poles
		Across the isolating distance	To earth and between poles	Across the isolating distance	To earth and between poles



33 KV	36	195	170	80	70
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The 33 KV isolators are required with post insulators but with mounting structures. The isolators should be suitable for mounting on the Boards standard structures. The isolators shall be supplied with base channels along with fixing nuts, bolts and washers for mounting on the structured.

#### H. TEMPRATURE RISE

The maximum temperature attained by any part of the equipment when in service at site under continues full load conditions and exposed to the direct rays of Sun shall not exceed 45 degree centigrade above ambient temperature.

#### I. ISOLATOR INSULATION

Isolation to ground, insulation between open contacts and the insulation between phases of the completely assembled isolating switches shall be capable of withstanding the dielectric test voltage specified above.

#### J. MAIN CONTACTS

All isolators shall have heavy duty self-aligning and high pressure line type fixed contacts of modern design and made of hard drawn electrolytic copper. The fixed contact should be of reverse loop type. The various parts shall be accordingly finished to ensure inter- changeability of similar components.

The fingers of fixed contacts shall be preferably in two pieces and each shall form the reverse loops to hold fixed contacts. The fixed contacts would be placed in 'c' clamp. The thickness of 'C' clamp shall be adequate. This channel shall be placed on a channel of adequate thickness. This channel shall be welded on an insulator mounting plate of 8mm thickness. The spring of fixed contact shall have housing to hold in place. This spring shall be made of stainless steel with adequate thickness. The pad for connection of terminal connector shall be of Aluminium with thickness not less than 12 mm.

The switch blades forming the moving contacts shall be made from tubular section of hard drawn electrolytic copper having outer diameter not less than 38 mm and thickness 3 mm. These contacts shall be liberally dimensioned so as to withstand safely the highest short circuit and over voltage that may be encountered during service. The surfaces of the contacts shall be rendered smooth and silver plated. The thickness of silver plating shall not be less than 15 microns for 11 KV and 25 microns for 33 KV. In nut shell, the male and female contact assemblies shall be of robust construction and design of these assemblies shall ensure the same.

- a) Electro-dynamic withstands ability during short circuit without any risk of repulsion of contacts.
- b) The current density in the copper parts shall not be less than 2 Amp/sq.mm and aluminium parts shall be less than 1 Amp / sq.mm.
- c) Thermal withstand ability during short circuit.

- d) Constant contact pressure even when the live parts of the insulator stacks are subjected to tensile stresses due to linear expansion of connected bus bar of flexible conductors either because of temperature variation or strong winds.
- e) Wiping action during closing and opening.
- f) Self-alignment assuring closing of the switch without minute adjustment.

The earthing switch should be provided with three sets of suitable type of fixed contacts below the fixed contacts assemblies of the main switch on the incoming supply side and the sets of moving contacts having ganged operation. These contacts shall be fabricated out of electrolytic copper for 33 KV isolators with earth switch and designed to withstand

current on the line.

Arcing contacts/Horn: Arcing contacts are not required. Auxiliary switches : Auxiliary switches are not required

### **κ. CONNECTORS**

The connectors for 11KV isolator shall be made of Aluminium alloy LM-9 or LM-25 and shall be suitable for Raccoon/Dog ACSR Conductors for 11KV and Wolf conductors for 33 KV with horizontal and vertical takeoff arrangement. The details in regard to dimensions, the number of bolts to be provided, material and manufacture shall be furnished by the bidder for owner approval before manufacturing. The groove provided in the connection should be able to accommodate conductor size mentioned above smoothly.

The clamps to be offered should be manufactured by gravity die-casting method only and not by sand casting process. It is necessary that suitable clamps are offered along with the isolator and also it is obligatory to give complete technical particular of clamps along with the drawing, as per details given above and also as per following detail:

- a) The terminal connector shall be manufactured and tested as per IS: 5561.
- b) All castings shall be free from blow holes, surface blisters, cracks and cavities.
- c) All the sharp edges shall be blurred and rounded off.
- d) No part of the clamp shall be less than 12 mm thick.
- e) All current carrying parts shall be designed and manufactured to have minimum contact resistance.
- f) Connectors shall be designed to be corona free in accordance with the requirement of IS: 5561.
- g) All nuts and bolts shall be made of stainless steel only. Bimetallic sleeve/liner shall be 2 mm thick
- h) Wherever necessary, bi-metallic strip of standard quality and adequate dimension shall be used.

### **λ. POST INSULATOR**

33KV insulators shall be of reputed make subject to owner approval. The post insulators for the above for 33 KV isolators, two numbers 33 KV insulators per stack and 9 stacks shall be supplied with each isolator. The insulator stack shall conform to the latest applicable Indian or IEC standard and in particulars to the IS; 2544 specification for porcelain post insulators. The porcelain used for manufactures of insulators shall be homogeneous, free from flaws or imperfections that might affect the mechanical or dielectric quality, and they shall be thoroughly vitrified, tough and impervious to moisture. The glazing of the porcelain shall be uniform brown colour, free from glisters, burns and other similar defects. Insulators of the same rating and type shall be interchangeable.

The porcelain and metal parts should be assembled in such a manner that any thermal expansion differential between the metal and the porcelain parts throughout the range of temperature variation shall not loosen the parts or create undue internal stresses which may affect the electrical or mechanical strength and rigidity. Each cap and base

shall be of high-grade cast steel or malleable steel casting and they shall be machine faced and smoothly galvanized. The cap and base of the insulators shall be interchangeable with each other.

The tenders shall in variably enclose with the offer, the type test certificate and other relevant technical guaranteed particulars of insulators offered by them. Please note that isolators without type test certificates will not be accepted.

Each 11KV / 33KV Post Insulators used in the isolators should have technical particulars as detailed below:

Sl.No.	Particulars	11KV	33KV
1	Nominal system voltage KV (rms)	11	33
2	Highest system voltage KV (rms)	12	36
3	Dry P.F. One minute with stand KV (rms)	35	75
4	Wet PF one minute withstand KV (rms)	35	75
5	P.F. Puncture withstand test voltage KV	1.3 times the actual dry flash over voltage of the unit	
6	Impulse voltage withstand test KV (peak)	75	170
7	Visible discharge test KV voltage	9	27
8	Creepage distance mm (min)	300	900
9	Tensile strength in KN	10	16
10	Short time current rating for 3 Secs KA	25	25

For 33 KV Isolators: In place of 33 KV Post Insulator the composition of 2 units of 22KV Post Insulators per stack complying with the following parameters are acceptable:

a	Nominal system voltage	33 KV
b	Highest system voltage	36 KV
c	Impulse voltage withstand	170 KV
d	Power frequency wet withstand voltage	75 KV
e	Height of stack	500 mm
f	Creepage distance (Minimum)	900 mm
g	Tensile Strength	30KN
h	Bending strength	4.5KN

### **M. OPERATING MECHANISM FOR 11KV / 33KV ISOLATORS:**

All Isolators and earthing switches shall have separate dependent manual operation. The Isolator should be provided with padlocking arrangements for locking in both end position to avoid unintentional operation. For this purpose Godrej make 5 lever brass padlocks having high neck with three keys shall be provided. The isolating distances should be visible for isolators.

The Isolators and Isolators with earth switch inclusive of their operating mechanism should be such that they cannot come out of their open or close position by gravity wind pressure, vibrations reasonable shocks or accidental touching of connecting rods of the operating mechanism. Isolators should be capable of resisting in closed position, the dynamic and thermal effects of maximum possible short circuit current at the installation point. They shall be so constructed that they do not open under the influence of the short circuit current. The operating mechanism should be of robust construction and easy to operate by a single person and conveniently located for local operation in the switchyard. Provision for earthing of operating handle by means of 8 SWG GS wire must be made.

### **N. PIPES**

Tandem pipes operating handle shall be class BIS marked type having atleast 24mm internal diameter for 33KV isolator. The operating pipe shall also be class B ISI marked with internal diameter of atleast 38 mm for 33KV isolators.

The pipe shall be terminated in to suitable universal type joints between the insulator bottom bearing and operating mechanism.

### **o. BASE CHANNEL**

The Isolator shall be mounted on base fabricated from steel channel section of adequate size not less than 75x40x6 mm for 11KV and 100x50x6 mm for 33KV.

To withstand total weight of isolator and insulator and also all the forces that may encounter by the isolator during services, suitable holes shall be provided on this base channel to facilitate it's mounting on our standard structures. The steel channel in each phase shall be mounted in vertical position and over it two mounting plates atleast 8mm thick with suitable nuts and bolts shall be provided for minor adjustment at site.

## P. CLEARANCES

We have adopted the following minimum clearance for isolators in our system .The bidder should therefore keep the same in view while submitting their offers:

<b>Description</b>	<b>Center distance between Poles (Center to Center)  i.e. Phase to Phase clearance</b>	<b>Distance between center lines of  outer posts on same pole</b>
33 KV Isolator	12 cm	96 cm

## Q. TYPE TESTS

The equipment offered, shall be fully type tested as per the relevant standards. The tenderer shall furnish one set of the type test reports along with the offer. The purchaser reserves the right to demand repetition of some or all the type tests in the presence of purchaser's representative. For this purpose the tenderer may quote unit rates for carrying out each type test.

If type tests are carried out beyond 5 years, then the offer may be considered for placement of order however, successful bidders have to carry out the said type tests before commencement of the supply at their own expense.

During the type test the isolator shall be mounted on its own support structure or equivalent support structure and installed with its own operating mechanism to make the type tests representative. Drawing of equivalent support structure if any and mounting arrangements made for type tests shall be furnished for purchaser's approval before conducting the type tests.

The type tests shall be conducted on the isolator along with approved insulators and terminal connectors.

Mechanical endurance test shall be conducted on the main switch as well as earth switch on one disconnect of each type.

The isolators shall be subjected to the following type test in accordance to with IS: 9920. Dielectric test (impulse and one minute) power frequency withstands voltage.

- a) Temperature rise test
- b) Rated off load breaking current capacity
- c) Rated active load breaking capacity
- d) Rated line charging breaking capacity
- e) Rated short time current
- f) Rated peak withstand current
- g) Mechanical and Electrical Endurance

The equipment shall be subjected to the following routine test.

- a) Power frequency voltage dry test.
- b) Measurement of resistance of the main circuit
- c) Operating test.

The porcelain will have pull out test for embedded component and beam strength of porcelain base.

## **R. PRE-COMMISSIONING TESTS**

Contractor shall carry out following tests as pre-commissioning tests. Contractor shall also perform any additional test based on specialties of the items as per the field instructions of the equipment Supplier or Employer without any extra cost to the Employer. The Contractor shall arrange all instruments required for conducting these tests along with calibration certificates and shall furnish the list of instruments to the Employer for approval.

- (a) Insulation resistance of each pole.
- (b) Manual operation and interlocks.
- (c) Insulation resistance of control circuits and motors.

- (d) Ground connections.
- (e) Contact resistance.
- (f) Proper alignment so as to minimize the vibration during operation to the extreme possible.
- (g) Measurement of operating Torque for isolator and Earth switch.
- (h) Resistance of operating and interlocks coils.
- (i) Functional check of the control schematic and electrical & mechanical interlocks.
- (j) 50 operations test on isolator and earth switch.



**s. PERFORMANCE GUARANTEE:**

The equipment shall be guaranteed for satisfactory performance for a period of 66 months from the date of receipt at site in good condition or 60 months from the date of commissioning, whichever is earlier. In case of failure within this period the supplier will make good the faulty equipment at no extra cost to the purchaser.

**t. DOCUMENTATION:**

- a) All drawings shall conform to international standards. All drawings shall be "A3" size only. All dimensions and data shall be in System International units.
- b) List of drawings and documents:
- c) The tenderer shall furnish four sets of following drawings alongwith his offer:
- d) General outline and assembly drawings of the isolator, operating mechanism, structure, insulator and terminal connector.
- e) Sectional views and descriptive details of items such as moving blades, contacts, arms, contact, pressure, contact support, bearing, housing of bearings, bushes, balancing of heights, phase coupling pipes, base plate, operating shaft, guides, swivel joint operating mechanism and its components, etc.
- f) Drawings with structure for the purpose of type tests.
- g) Name plate.
- h) Schematic drawing
- i) Type test reports in case the equipment has already been type tested.
- j) Test reports, literature, pamphlets of the bought out items, and raw material.
- k) The successful tenderer shall, within 10 days from date of LOA get approval of above said drawings from office of CE (Stores), MSEDCL, Mumbai.
- l) Six sets of the type test reports, duly approved by the purchaser, shall be submitted by the supplier for distribution, before commencement of supply. Adequate copies of acceptance and routine test certificates, duly approved by the purchaser, shall accompany the dispatched consignment.
- m) The manufacturing of the equipments shall be strictly in accordance with the approved drawings and no deviation shall be permitted without the written approval of the purchaser. All manufacturing and fabrication work in connection with the equipment prior to the approval of the drawing shall be at the supplier's risk.
- n) Approval of drawings/work by purchaser shall not relieve the supplier of his responsibility and liability for ensuring correctness and correct interpretation of the latest revision of applicable standards, rules and codes of practices.

**u. INSTRUCTION MANUALS:**

Twenty five copies of the erection, operation and maintenance manuals in English shall be supplied for each type of the disconnect one month prior to dispatch of the equipment. The manual shall be bound volume and shall contain all drawings and information required for

erection, operation and maintenance of the isolator including but not limited to the following particulars:

Marked erection prints identifying the component parts of the disconnect as shipped with assembly drawings.

Detailed dimensions and description of all auxiliaries.

Detailed views of the insulator stacks, metallics, operating mechanism, structure, interlocks, spare parts etc.

**v. SPARES**

The tenderer shall furnish in his offer, a list of spares with unit rates for disconnect that may be necessary for maintenance of the isolator for a period of five years. The purchaser reserves the right for selection of items and quantities of these spares to be ordered.

The cost of following spares shall be quoted separately.

- a) Insulators
- b) Contacts
- c) Moving blades
- d) Springs
- e) Bearings
- f) In addition list of optional spares may be enclosed.

**W. PACKING AND FORWARDING**

The equipment shall be packed in crates suitable for vertical/horizontal transport, as the case may be, and suitable to withstand handling during transport and outdoor storage during transit. The supplier shall be responsible for any damage to the equipment during transit, due to improper and inadequate packing. The easily damageable material shall be carefully packed and marked with the appropriate caution symbols. Wherever necessary, proper arrangement for lifting, such as lifting hooks etc. shall be provided, Any material found short inside the packing cases shall be supplied by supplier without any extra cost.

Each consignment shall be accompanied by a detailed packing list containing the following information.

- a) Name of the consignee
- b) Details of consignment
- c) Destination
- d) Total weight of consignment
- e) Sign showing upper/lower side of the crate.
- f) Handling and unpacking instructions
- g) Bill of material indicating contains of each package.

The supplier shall ensure that the packing list and bill of material are approved by the purchaser before dispatch.

## X. GUARANTEED TECHNICAL PARTICULARS OF 33KV ISOLATORS

S. No.	Particulars	33KV ISOLATORS
1	Manufacturer's Type/Designation/Installation	
2	Manufacturer's Name and works address of Manufacture	
3	Standard(s) according to which the isolators are manufactured	
4	Type of Disconnecter	
5	Maximum design voltage at which the isolator can operate (kV)	
6	Rated Frequency (Hz)	
7	Rated Voltage (KV)	
8	Max. current that can be safely interrupted by the isolator	
	i) Inductive (A & % PF)	
	ii) Capacitive (A & % PF)	
9	Continuous current rating	
	i) Nominal (Amps)	
	ii) Under site conditions (Amps)	
10	Rated short time withstand current	
	i) For 3 seconds (KA rms)	
	ii) For 1 second (KA rms)	
	iii) Rated peak withstand current (kAp)	
10	Milli Volt drop test voltage between :	
11	i) Contacts	
	ii) Terminals of each phase	
12	Current density at the minimum cross- section of:	
	a) Moving blade (Amps/Sq.mm.)	
	b) Terminal pad ( Amps/sq.mm.)	
	c) Male Contacts (Amps/sq.mm.)	
	d) Female Contacts (Amps/sq.mm.)	
	e) Terminal Connector (Amp/sq.mm)	
13	Max. temp. rise of following current carrying parts when carrying rated current continuously (deg.C) over an ambient of 50 deg.C instead of 40 deg.C mentioned in relevant IS.	
	i) Moving blades	
	ii) Contacts with silver plating	
	iii) Terminal pad.	
	iv) Bi-metallic terminal connector	

	v) Springs	
14	Class (outdoor or indoor)	
15	Derating factor for specified site conditions	
16	No. of operations the isolator can make without deterioration of contacts.	
17	15) Insulation levels	
	i) Lightning Impulse withstand voltage (kV peak)	
	a) Phases to Earth	
	b) Isolating Distance	
	ii) Power frequency withstand voltage (kVrms)	
	a) Phases to Earth	
	b) Isolating Distance	
18	Minimum clearance in air (mm):	
	i) When switch is closed:	
	a) Between adjacent poles of different phases (centre to centre)	
	b) Between live parts and earth	
	ii) When switch is open:	
	a) Between poles of same phase (centre to centre)	
	b) Between adjacent poles of different phases (centre to centre)	
19	Design and Construction	
	i) No. of insulators per pole	
	ii) No. of breaks per pole	
	iii) Type of closing/opening mechanism (Horizontal/Vertical break straight etc.) should be GANG operated thorough hand	
	iv) Contacts (Male):	
	a) Material and grade	
	b) Dimensions & Cross-sectional area in sq.mm.	
	v) Contacts(Female):	
	a) Material and grade	
	b) Dimensions & Cross-sectional area in sq.mm.	
	vi) Moving Blades:	
	a) Material and grade	
	b) Dimensions & Cross-sectional area in sq.mm.	
	vii) Terminal pad:	
	a) Material and grade	
	b) Dimensions & Cross-sectional area in sq.mm.	
	viii) Arching horns :	
	a) Material and grade	
	b) Dimensions & Cross-sectional area in sq.mm.	

ix) Springs	
a) Material and grade	
b) Dimensions & Cross-sectional area in sq.mm.	
x) Contact Support:	
a) Material, size and length of plate	
b) Material and size of plate	
xi) Rain hood - Material grade and size	
xii) Nuts and Bolts	
a) Size, material and grade in live parts	
b) Size, material and grade in other parts	
xiii) Insulator base plate	
Material and size & min. thickness of plate below insulators.	
xiv) Bearings:	
a) Make, Type and No. of bearings for:	
i) Rotating insulator base assembly	
ii) Operating mechanism	
iii) Whether lubricating nipple is provided	
b) Make, and size of bearing housing	
xv) Size of GI pipes ( medium class) used for :	
a) Down operating pipe (mm)	
b) Connecting pipe for same phase (mm)	
c) Connecting Pipe for adjacent poles(mm)	
xvii) Tandem pipe	
a) Size class and No. of pipes	
b) Size of shackle, screw	
c) No. of bearings/bush and its material and size.	
xvii) Type of interlock	
xviii) Type of universal/swived joint	
a) Between bearing and down pipe	
b) Between down pipe and operating mechanism	
xix) Insulators	
a) Type.	
b) No. of units per insulator	
c) Rating of insulators(KV)	
d) Height of each insulator stack (mm)	
e) Bolt circle diameter(mm)	
f) Tensile strength (kg).	
g) Compressive strength(Kg.)	
h) Torsional strength (kg.m.)	
i) Cantilever strength upright	

	j) Power frequency dry flash- over voltage (KV) rms.	
	k) Power frequency wet flash-over voltage(KV) rms.	
	l) Impulse flash-over voltage(positive wave) (KV) peak.	
	m) Impulse withstand voltage (kv) peak	
	n) Power frequency puncture voltage (KV) rms.	
	o) Visual discharge voltage level (KV) rms.	
	p) Creepage distance : Total(mm)	
	q) Dry arcing distance (mm)	
	xx) Base:	
	a) Size ,Nos. & length of steel sections used	
	b) Overall size(mm)	
	c) Total weight (Kgs)	
	xxi) Terminal Connectors:	
	a) Clamp Body:	
	i) Alloy Composition	
	ii) Plating if any	
	iii) Dimension	
	b) Bolts and nuts size	
	i) Alloy composition	
	ii) Tensile strength	
	a) Type of washers used	
	b) Materials of braids	
	c) Temperature rise when carrying rated current at 50 deg.C ambient (deg.C)	
	d) Weight of each type of clamp (Kg.)	
20	Mass of isolator hardware in Kg.	
	A) Without earth blade	
21	Type of contacts	
22	Nuts & Bolts	
	a) Size, material & grade in live parts	
	b) Terminal connectors.	
	c) Other parts.	
23	Locking arrangement of Isolators and earth switch operating mechanism	
24	Whether isolator hardware is complete with all accessories	
25	Details of type test reports furnished:	
	Item IS:Type test Testing	
	Report No. authority & date	

	i) Isolator	
	ii) Terminal connector	
	iii) Degree of protection	
26	List of brought out items	
27	List of drawing furnished	
28	Marking	

Seal and Signature of the bidder

## Y. GUARANTEED TECHNICAL PARTICULARS

Sr. No	Descriptions	As Specified By OCAC	Bidders Response
1	RMU Category-Motorised with Inbuilt Battery charger & Battery	3 Way Motorised (1 CB + 2 LBS/ 2CB +1LBS)	
2	RMU Application	Outdoor	
3	Dielectric Medium	SF6	
4	Interrupting Medium	SF6 / Vacuum	
5	System Frequency	50 Hz	
6	Rated voltage	36Kv	
7	Service Voltage	33Kv	
8	Rated Current-Line Switches	630A	
9	Rated Current –CB	630A	
10	Rated Short time Current Withstand	25KA for 1 Sec / 20KA for 3 Sec	
11	Internal ARC (1 Sec)	25KA	
12	Rated Short time Making Capacity	50kA	
13	Rated Cable charging Interrupting current incomer load break switch	25A	

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**ODISHA COMPUTER APPLICATION CENTRE (OCAC)**



14	Rated Load Interrupting Line Current	630A	
15	Rated Magnetizing Interrupting Current of Line switch.	10A	
16	No. Of Operations at rated Short Circuit Current on line Switches Earthing Switches and CB	5 close	
17	i. Mechanical endurance for Isolator & earth switch	Min 1000 Operations	
	ii. Mechanical endurance for circuit breaker	Min 2000 Operation	
	CTs for Protection:	To be Finalised during Detailed Engineering	
	Material : Epoxy resin cast/		
	Burden : 2.5VA		
	Ratio : 100-50/1 A		
	Accuracy Class : 5P10		
18	Electrical Operations of Isolator & E/Switch at rated current	To be Provided By Bidder	
19	Temp Rise	Maximum permissible temperature for bus bar shall not be 105 deg C an ambient temperature not exceeding 50 deg C, as per IEC 60694 And IEC 62271. However, the temperature rise for accessible enclosures and covers shall not exceed 30K and in case, they are not required to be touched during normal operation, the limit shall be	

		raised by 10K	
20	Min Gas Pressure	0.05 Bar G	
21	SF6 Gas Pressure Indicator	To be Provided by Bidder	
22	SF6 Gas leakage Detector	1 per 20 RMUs Subject to Minimum One Number	
23	Guaranteed SF6 Leakage per Annum	Less than 0.1%	
24	Degree Of Protection	IP 67 for the tank and IP2X for the front cover/mimic board and IP55 for Outdoor RMUs .The RMU metal parts shall be greater than 2.0 mm thickness high tensile steel which must be shot blasted, spray galvanised with minimum thickness of 30 micron and subsequently powder coated. The overall Paint thickness shall be not less than 70 microns.	
25	Internal arc test	25kA 1 Sec	
26	Lightning Impulse withstand Phase to Earth	170kVp	
27	Power frequency withstand for 1Minutes	70kVrms	
28	SF6 tank design	Hermetically sealed unpainted stainless steel enclosure with SF6 Gas. Sealed pressure system by Laser welding/TIG & MIG welding so that no refilling of gas is required for 30 years. No gas work to prevent access to live parts. No gasket shall be used, No bolts Shall be provided	
29	Earth Bus Bar Material & Size	To be provided by Bidder	
	Earthing of main CCT cables shall be earthed with earth switch with S/C making capacity as per IEC 129.		

30	<p>closing shall be possible only when Isolator is open.</p>	To be provided by Bidder	
31	<p>Incomer load break switch shall be SF6 type with least maintenance and shall have at least 3 positions, Open, Close &amp; earth with Natural interlocks. Fitting of motor at site shall be possible &amp; shall have mechanical interlock.</p> <p>The electrical interlock for preventing manual closing of earth switch under cable charged condition to be provided.</p>	To be provided by Bidder	
32	<p>Circuit Breaker Preferably SF6 type with minimum maintenance and shall have at least 2 positions i.e. open &amp; close, manual operation &amp; fitting of motor at site shall be possible if required.</p>	To be provided by bidder	
33	<p>Protection Relay – Without Auxiliary Power &amp; shall include 3 toroid transformer in trans. Tee-off bushing, electronics relay, low energy release &amp; fast on</p>	Self powered O/C+E/F IDMT characteristics with 0.05 Sec TMS.	

	test receptacle for protection testing.		
34	Make of Relay	SEG-WIP1 or Schneider-VIP 300 or REJ 603 or any other as per OCAC approval.	
35	Flag indication on CB for trip on fault	To be Provided By bidder	
36	Testing of cable- without opening the doors.If doors are opened then earth switch shall be in closed position and cable test rod shall be provided which can be fixed on terminations for testing purpose AND if doors are opened it shall not be possible to operate ,Isolator, E/switch or CB	To be confirmed. If separate test bushing are provided, it Shall be covered with suitable antitheft covers with anti vandal screws.	
37	Protection against Theft	Design Of RMU shall be tamper & arc proof. And vandal Screws shall be provided. Cable covers shall be pad lockable. All live parts / test Bushing etc. Shall be covered with antitheft covers.	
38	Doors	Hinged doors shall be provided. the hinges for the doors need to be riveted and shall not have any access from outside. Bolted hinges shall not be acceptable.	
39	Voltage indicator box shall be fixed type- This device shall be in compliance with IEC 61958 standard.	Capacitive dividers type which will supply low voltage to power the lamps and 3 inlets can be used to check phase sequence.	
40	Phase comparator	1 per RMU	

41	Cable Clamps	HDPE	
41.1	Cable Termination		
41.2	Type	Heat/Cold shrinkable	
41.3	Size (To be finalized in detailed Engineering Stage)	Suitable for 3C x 400 Sqmm / 1CX400Sqmm / 1CX630Sqmm	
42	Height	Minimum 900 mm above GL	
43	Earth fault passage indicator	One Per RMU with as a part of RMU	
44	Operating handle	To be provided by bidder as part of RMU	
45	MIMIC Diagram in Front of panel	To be provided by bidder	
45.1	Bus bar		
45.2	Material	Copper	
46	Cross Section	To be specified by bidder	
47	Opening & Closing times (Max)	Opening Time: 2.5 Cycle Closing Time: 3 Cycles	
47.1	Current Transformer	Shall be epoxy resin and are mounted around the cable outside SF6 gas compartment. The CTs around the cables shall be supported on the sheet steel bracket base sized for CTs .CTs shall not be kept hanging or put on base frame directly	
48	CT Dimension	Suitable for 3C x 400 Sqmm / 1CX400Sqmm / 1CX630 Sqmm	
49	SCADA  Compatibility- Remote operation of RMU shall be possible by using motors fitted to operating mechanism of isolators & CB etc.	As per specification	

50	Harting Plug arrangement for individual isolator as well as breaker motor connections, which will be fitted on RMU body itself	As per specification	
51	Guarantee- From date of taking over by OCAC	48 Months from the date of commissioning or 60 months from the date of supplies made under the contract whichever is later	
52	Dimension (LxWxH) (mm x mm x mm)	To be provided by bidder	
53	Total weight	To be provided by bidder	
54	Paint	As per OEM standard	
55	Power Supply	24VDC for Control Circuit from Battery & Battery Charger 15AH Input Supply to Battery Charger :220VAC +Aux PT	
56	Motor	Coupled type DC operated motors shall be suitable for the installation on the indoor type RMU's on the isolator function and to be flitted in/from the LV compartment side. There shall be provision to fit the motor on Circuit breaker also Motor Voltage: 24 VDC Operating Time:4-8 Sec Rating: To be submitted by Bidder	

## VII. 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

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**ODISHA COMPUTER APPLICATION CENTRE (OCAC)**

OCAC Building, Plot No. – N-1/7-D, Acharya Vihar Square, RRL PO, Bhubaneswar-13, Odisha

## VIII. Annexure: G-1

(To be in company letter head)

### Particulars of the Bidders

Sl. No.	Information Sought	Details to be Furnished
1	Name of the bidding Company	
2	Address of the Company	
3	Incorporation status of the firm (Public limited / Private limited, etc.)	
4	Year of Establishment	
5	Date of registration	
6	RoC Reference No.	
7	Details of company registration	
8	Details of registration with appropriate authorities for GST	
9	Name, Address, e-mail ID, Phone nos. and Mobile Number of Contact Person	
10	Roles & Responsibilities	

Name of the Bidder: .....

Authorized Signatory: .....

Signature:

Seal:

Date:

Place:



## IX. Annexure: G-2

(To be in company letter head)

### Self declaration of not been declared blacklisted

RFP Enquiry No: OCAC-23065, Date: 29.08.2023

To

The General Manager (Admn.)  
Odisha Computer Application Centre,  
OCAC Building, Plot No. N-1/7-D  
Acharya Vihar Square, RRL Post Office  
Bhubaneswar – 751013

Sir/Madam,

In response to the RFP Enquiry No. - RFP Enquiry No: OCAC-2306 Date: 29.08.2023, Ms. /Mr. \_\_\_\_\_, as a \_\_\_\_\_, I / We hereby declare that our firm/organization/company \_\_\_\_\_ is having unblemished past record and have not been declared blacklisted by any Central/State Government/PSU institution and there has been no pending litigation with any government department on account of similar services. I/We further declare that our company has not defaulted in executing any Government order in the past.

Signature of witness

Date:

Place:

Signature of the Bidder

Date:

Place:

**X. Annexure: G-3**

**(To be in company letter head)**

**Authorization Letter**

RFP Enquiry No: OCAC-23065, Date: 29.08.2023

To

The General Manager, (Admn.)  
Odisha Computer Application Centre,  
OCAC Building, Plot No. N-1/7-D  
Acharya Vihar Square, RRL Post Office  
Bhubaneswar – 751013

Sir/Madam,

Ms. /Mr. \_\_\_\_\_ is hereby authorized to sign relevant documents on behalf of the firm/organization/company in dealing with the RFP Enquiry No: OCAC-23065, Date: 29.08.2023, She/he is also authorized to attend meetings & submit the commercial information as may be required by you in the course of processing above said application.

Thanking you,

Authorized Signatory

## **XI. Annexure: G-4**

**(To be in company letter head)**

Acceptance of Terms & Conditions Contained In the RFP Document

RFP Enquiry No: **OCAC-23065, Date: 29.08.2023**

To

The General Manager (Admn)  
Odisha Computer Application Centre,  
OCAC Building, Plot No. N-1/7-D  
Acharya Vihar Square, RRL Post Office  
Bhubaneswar – 751013

Sir/Madam,

I have carefully gone through the Terms & Conditions contained in the RFP Enquiry No: **OCAC-23065, Date: 29.08.2023**, for Selection of Agency for Outdoor 33KV RMU with Metering Panel

.I declare that all the provisions of this RFP document are acceptable to my company. I further certify that I am an authorized signatory of my company and am, therefore, competent to make this declaration.

Signature of witness

Date:

Place:

Signature of the Bidder

Date:

Place:

## XII. Annexure: G-5

(To be in company letter head)

Pre-Bid Queries Format

RFP Enquiry No: OCAC-23065, Date: 29.08.2023

Name of the Bidder/Company:

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Name of Person(s) Representing the Bidder/Company:

Name of Person	Designation	Email-ID(s)	Tel. Nos. & Fax Nos.

Company/Firm Contacts:

Contact Person(s)	Address for Correspondence	Email-ID(s)	Tel. Nos. & Fax Nos.

Query / Clarification Sought:

Sl.No.	RFP Page No.	RFP Clause No.	Clause Details	Query / Suggestion / Clarification

*Note: - Queries must be strictly submitted only in the prescribed format (.XLS/ .XLSX). Queries not submitted in the prescribed format will not be considered/ responded at all by the tendering authority.*

### **XIII. Annexure: G-5 (A)**

#### **Covering Letter - Technical Bid**

*(To be filled by the bidder and signed in Company Letter Head)*

To  
The General Manager (Admin)  
Odisha Computer Application Centre  
(Technical Directorate of I.T. Dep't, Govt. of Odisha)  
N-1/7-D, Acharya Vihar P.O. - RRL,  
Bhubaneswar - 751013

**Subject:** Technical Proposal for supply, Installation, testing and commissioning of Outdoor 33KV RMU with Metering Panel

. The Agency shall be responsible for operations and maintenance support for 5 years from the date of FAT.

Sir/Madam,

We, the undersigned, offer to provide our services against your RFP enquiry no. *<Insert RFP no>* dated *<insert date>*. We are hereby submitting our Proposal, which includes this Technical Bid sealed in the envelope.

We hereby declare that all the information and statements made in this Technical bid are true and accept that any misinterpretation contained in it may lead to our disqualification.

We agree to abide by all the terms and conditions of the tender document. We would hold the terms of our bid valid for 180 days as stipulated in the RFP document.

We agree that you are not bound to accept the lowest or any bid response you may receive. We also agree that you reserve the right in absolute sense to reject all or any of the products / services specified in the bid response without assigning any reason whatsoever.

Odisha Computer Application Centre (OCAC)

It is hereby confirmed that I/We are entitled to act on behalf of our corporation/company /firm/organization and empowered to sign this document as well as such other documents which may be required in this connection.

Yours sincerely,

Authorized Signature [*In full and initials*]: \_\_\_\_\_

Name and Title of Signatory: \_\_\_\_\_

Name of Firm: \_\_\_\_\_

Address: \_\_\_\_\_

#### **XIV. Annexure: G-6**

**(To be in company letter head)**

#### **Format for List of Previous Work Orders Executed**

RFP Enquiry No: OCAC-23065, Date: 29.08.2023

<b>SL. No</b>	<b>Name of Client</b>	<b>Name of the Project</b>	<b>Project Brief</b>	<b>Project Cost</b>	<b>Status (Complete/ In Progress/ Delay)</b>
1					
2					
3					
.					
.					

Note: The information provided in the above table must supported by copies of relevant work order and completion certificate.

Signature of witness

Signature of the Bidder

Date:

Date:

Place:

Place:

## **XV. Annexure: G-7**

**(To be in company letter head)**

### **Price Bid Letter**

RFP Enquiry No: **OCAC-23065, Date: 29.08.2023**

To

The General Manager (Admn),  
Odisha Computer Application Centre,  
OCAC Building, Plot No. N-1/7-D  
Acharya Vihar Square, RRL Post Office  
Bhubaneswar – 751 013

**Subject:** Submission of the Bid or Selection of Agency for SITC of Outdoor 33KV RMU with Metering Panel

Sir/Madam,

We, the undersigned, offer to provide our services or Selection of Agency SITC of Outdoor 33KV RMU with Metering Panel

In accordance with your RFP Enquiry **OCAC-23065, Date: 29.08.2023** and our bid document with Price Bid is attached in **Annexure: G-8.**

#### **1. Price and Validity**

All the prices mentioned in our RFP are in accordance with the terms as specified in the RFP documents. We declare that our Bid Price is for the entire scope of the work as specified in the appropriate section in the RFP. All the prices and other terms and conditions of this Bid are valid minimum for a period 180 days from the date of opening of the Bid. Subject to further extended period as mutually agreed upon. We understand that the actual payment would be made as per the



existing tax rates during the time of payment.

## **2. Unit Rates**

We have indicated in the relevant forms enclosed, the unit rates for the purpose of on account of payment as well as for price adjustment in case of any increase to / decrease from the scope of work under the contract.

## **3. Qualifying Data**

We confirm having submitted the information as required by you in your Instruction to Bidders. In case you require any other further information/documentary proof in this regard before evaluation of our bid, we agree to furnish the same in time to your satisfaction.

## **4. Bid Price**

We declare that our Bid Price is for the entire scope of the work as specified in the RFP. These prices are indicated at Price Bid attached with our bid as part of the Bid.

We understand you are not bound to accept any tender you receive.

We hereby declare that our bid is made in good faith, without collusion or fraud and the information contained in the bid is true and correct to the best of our knowledge and belief.

We understand that our bid is binding on us and that you are not bound to accept a bid you receive.

Thanking you,

We remain,

Yours sincerely,

Authorized Signature:

Name and Title of Signatory:

Name of Firm and Address

**XVI. Annexure: G-8****(To be in company letter head)****A. Price Bid Format**

<b>S/L No.</b>	<b>Equipment Details</b>	<b>Qty</b>	<b>UoM</b>	<b>Unit Rate In INR</b>	<b>GST in INR</b>	<b>Total Amount In INR</b>
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G = CX(E+F)</b>
1	Supply of Ring Main Unit (RMU) with Metering cubicle – all outdoor type, as per the specification.	1	No			
2	Lifting, shifting, Installation, testing and commissioning of RMU.	1	Lot			
3	Supply of Outdoor HT isolator structure at supplier feeding point.	1	Nos			
4	Lifting , shifting, Installation, testing and commissioning of Outdoor HT isolator	1	Lot			
5	Creation of RMU foundation	1	Nos			
6	Supply of 33KV HT grade cable 1C 400 sq mm as per IS 7098 Part 2/1985 from supplier point till RMU Panel ( to be paid on actual. Bidder to survey the site for actual measurement). The cable will be laid partly direct under the ground, partly on existing trench and partly on new trench.	1600	Mtr			
7	Laying of 33KV HT grade 4 runs 1C 400 Sq.mm cable directly under the ground of depth more than 1050mm and filling with sand and earth.	125	Mtr			
8	Laying of 33KV HT grade	180	Mtr			

Odisha Computer Application Centre (OCAC)

	4 runs 1C 400 Sq.mm cable in existing trench.					
	Laying of 33KV HT grade 4 runs 1C 400 Sq.mm cable under the road through Horizontal direction drill (HDD). Bidder to do proper scanning of the exiting services under the ground.	55	Mtr			
9	Dismantling of 4-pole structure and buying back.	1	Nos			
10	Creation of GI earth Pit as per IS 3043 along with all accessories	4	Nos			
11	Supply, laying and termination of 75x12 GI strip	50	Mtr			
12	Creation of openable trench in HT yard. Depth of the trench to be min 1050 mm and width to be 1000 mm. Trench wall and bed to be made of brick wall with plaster. Thickness of the wall to be min 115 mm. Trench cover to be with RCC slab of 75mm thick x 1000mm length x 450mm width with lifting handle.	20	Mtr			
13	Termination of cable at all termination points	42	point			
14	Supply of 33KV HT grade cable 3C 185 sq mm as per IS 7098 Part 2/1985	Rate only	Mtr			
15	Laying of 33KV HT grade 3C 185 Sq.mm cable in exiting trench	Rate only	Mtr			
<b>GRAND TOTAL PRICE</b>						
<b>Amount in words:</b>						

*Note:*

*1. The bidder as applicable will install all above-mentioned components. Bidder are requested to visit the site before they propose their solution and estimate the amount of work as per site conditions.*

*2. Payment will be done as per actual measurement. For cables, it will be measured between point of termination between both sides. A 2% wastage will be allowed on cable measurement only.*

## **XVII. Annexure: G-9**

**(To be submitted in OEM's letter head)**

### **Manufacturer Authorization Format**

RFP Enquiry No: OCAC-23065, Date: 29.08.2023

To

The General Manager (Admn),

Odisha Computer Application Centre,

OCAC Building, Plot No. N-1/7-D

Acharya Vihar Square, RRL Post Office

Bhubaneswar – 751 013

**Subject:** -Submission of Manufacturer Authorization Letter.

We <OEM Name> having our registered office at <OEM Address> are an established and reputed manufacturer of <hardware details> do hereby authorize M/s \_\_\_\_\_ (**Name and address of the Partner**) to offer their quotation, negotiate and conclude the contract with you against the above invitation for tender offer.

Odisha Computer Application Centre (OCAC)

We hereby extend our full guarantee and warranty as per terms and conditions of the tender and the contract for the solution, products/equipment and services offered against this invitation for tender offer by the above firm and will extend technical support and updates / upgrades if contracted by the bidder.

We also confirm that we will ensure all product upgrades ( including management software upgrades and new product feature releases ) are provided by **M/s .....**for all the products quoted for and supplied to the OCAC during the three year product warranty period. Further we confirmed that the Equipment being quoted for the Tender in the bid should not be declared as End of Sale / End of Support on the date of submission of the bid. Service / Support including spares, patches etc. for the quoted products shall be available for the complete duration of the project or 5 years whichever is higher from the date submission of bid.”

<OEM Name>

<Authorised Signatory>

Name:

Designation:

**Note:** This letter of authority should be on the letterhead of the OEM and should be signed by a person competent and having the power of attorney to bind the manufacturer. It should be included by the bidder in its Pre-qualification bid.

**XVIII. Annexure: G-10**

**Installation-cum-Acceptance Certificate**

Bidder Name	
RFP Enquire No.	
Purchase Order No and Date	
Description of equipment	
Date of delivery of equipment	
Installation Date	
Serial No's of equipment Installed	
Acceptance of equipment	Equipment has been delivered and successfully installed & configured and commissioned as per our RFP requirements and all the systems are working satisfactorily. Accordingly the Equipment may be accepted.

Name of OCAC official: \_\_\_\_\_

Designation: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Seal:

## **XIX. Annexure: G-11**

### **Performance Bank Guarantee**

To

The General Manager (Admin)  
Odisha Computer Application Centre  
Plot No. - N-1/7-D, Acharya Vihar  
P.O.-RRL, Bhubaneswar - 751013  
EPBX: 0674-2567280/2567064/2567295  
Fax: +91-0674-2567842

Whereas, << name of the agency and address >> (hereinafter called “the Bidder”) has undertaken, in pursuance of Order no. << insert contract no. >> dated. <<Insert date >> to provide Implementation services for << name of the assignment >> to OCAC (hereinafter called “the beneficiary”)

And whereas it has been stipulated by in the said contract that the Bidder shall furnish you with a bank guarantee by a recognized bank for the sum specified therein as security for compliance with its obligations in accordance with the contract;

And whereas we, << name of the bank >> a banking company incorporated and having its head /registered office at << address of the registered office >> and having one of its office at << address of the local office >> have agreed to give the supplier such a bank guarantee.

Now, therefore, we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total of Rs.<< insert value >> (Rupees << insert value in words >> only) and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of Rs.<< insert value >> (Rupees << insert value in words >> only) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Bidder before presenting us with the demand.

Odisha Computer Application Centre (OCAC)

We further agree that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made between you and the Bidder shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

This Guarantee shall be valid until << *Insert Date* >>)

Notwithstanding anything contained herein:

- I. Our liability under this bank guarantee shall not exceed Rs<< insert value >> (rupees << insert value in words >> only).
- II. This bank guarantee shall be valid up to << insert expiry date >>)
- III. It is condition of our liability for payment of the guaranteed amount or any part thereof arising under this bank guarantee that we receive a valid written claim or demand for payment under this bank guarantee on or before << insert expiry date >>) failing which our liability under the guarantee will automatically cease.

**(Authorized Signatory of the Bank)**

**Seal**



**XX. Annexure: G-13****List of Enclosures**

RFP Enquiry No: OCAC-23065, Date: 29.08.2023

Please check whether following have been enclosed.

<b>Sl. No.</b>	<b>Enclosure description</b>	<b>Enclosed (Yes / No)</b>	<b>Annexure / Attachment / Page No. / Envelop No. of the Enclosure</b>
1	Annexure-G1 Particulars of the Bidder		
2	Copy of Registration Certificate of the firm		
3	Organization Profile		
4	Self Declaration that the bidder hasn't been black listed by any Govt./PSU (Annexure-G2)		
5	Up-to-date Copy of GST Return of previous 3 Years		
6	Copy of GST Registration No & PAN No with Date		
7	Copy of the IT Return up to previous 3 Years		
8	Audited Balance Sheet and Profit & Loss Account statement for previous three years.		
9	Authorization Letter (Annexure-G3)		
10	Acceptance of terms and condition (Annexure-G4)		
11	List of previous work orders executed (Annexure-G6)		
13	Tender document fee in a sealed envelope (Super scribe tender document fee on the top of the sealed envelope) with pre-qualification bid.	DD No : Amount : Bank:	
14	Bid Security Declaration Form as per Annexure-12 in a sealed envelope (Super scribe EMD on the top of the sealed envelope) with pre-qualification bid.	:	
15	Price Bid Letter & Price Bid duly signed with sealed envelope. (Annexure-G7 & G8)		
16	Manufacturer Authorization Format (Annexure-G9) with pre-qualification bid.		
17	Performance Bank Guarantee (Annexure-G11)		