

**Tender Notification for**

**SURVEY, DESIGN, SUPPLY, INSTALLATION, TESTING,  
COMMISSIONING & INTEGRATION WITH SCADA OF  
FAULT PASSAGE INDICATORS AT SUBSTATIONS IN  
BRPL, NEW DELHI (INDIA)**

**NIT NO CMC/BR/21-22/RS/MS/928**

**Tender Date: 29.05.2021**

**Due Date for Submission: 21.06.2021, 1530 HRS**

**BSES RAJDHANI POWER LTD (BRPL)**

**Corporate Identification Number: U74899DL2001PLC111527**

**Telephone Number: +91 11 3009 9999**

**Fax Number: +91 11 2641 9833**

**Website: [www.bsesdelhi.com](http://www.bsesdelhi.com)**

## SECTION – I: REQUEST FOR QUOTATION

### 1.00 Event Information

BRPL invites sealed tenders in 2 envelopes for following scope of work

Sl. No.	Description	Estimated Cost (Rs.)	Qty.	Delivery & Installation at
1	SURVEY, DESIGN, SUPPLY, INSTALLATION, TESTING, COMMISSIONING & INTEGRATION WITH SCADA OF FAULT PASSAGE INDICATORS AT SUBSTATIONS IN BRPL, NEW DELHI (INDIA)	4.20 Crores	As per BOQ (Bidder is requested to verify the same before bidding by visiting the site )	Delhi Sites

The bidder must qualify the requirements as specified in clause 2.0 stated below.

All envelopes shall be duly super scribed survey, design, supply, installation, testing, commissioning & integration with scada of fault passage indicators modems at substations in brpl, new delhi (india), brpl at following sites conforming to Technical Specn. GN101-03-SP-165-00 BRPL- NIT NO CMC/BR/21-22/RS/MS/928 DUE ON 21.06.2021, 1530 HRS”

- 1.01 The schedule of specifications with detail terms & conditions can be obtained from address given below against submission of non-refundable demand draft of **Rs.1180/-** drawn in favour of BSES Rajdhani Power Ltd, payable at Delhi. The tender documents & detail terms and conditions can also be downloaded from the website “**www.bsesdelhi.com --> Tenders --> BSES Rajdhani Power Ltd --> Open Tenders**”. In case tender papers are downloaded from the above website, then the bidder has to enclose a demand draft covering the cost of bid documents.
- 1.02 Bids will be received upto 21-06-2021, 1530 HRS at the address given at 3.01 below. Part A of the Bid shall be opened on 21-06-2021, 1600 HRS. Part B of the Bid will be opened in case of Techno-Commercially qualified Bidders and the date of opening of same shall be intimated in due course. It is the sole responsibility of the bidder to ensure that the bid documents reach this office on or before the last date.
- 1.02.1 BSES Rajdhani Power Ltd reserves the right to accept/reject any or all Tenders without assigning any reason thereof in the event of following
- (i) **Earnest Money Deposit (EMD)** of value Rs 8,40,000/- is not deposited in shape of Demand Draft/Pay Order/Banker’s Cheque /Bank Guarantee drawn in favour of BSES Rajdhani Power Ltd, payable at Delhi.
  - (ii) The offer does not contain prices indicating break-up towards all taxes & duties in prescribed format
  - (iii) Complete Technical details are not enclosed.
  - (iv) Tender is received after due date and time.
  - (v) Technical offer contains any prices
  - (vi) Prices are **not FIRM** and subject to Price Variation

**2.0 QUALIFICATION CRITERIA:-**

The prospective bidder must qualify all of the following requirements to participate in the bidding process who meet following requirements will be considered as successful bidder and management has a right to disqualify those bidders who do not meet these requirements.

**Technical**

- The bidder should be Original Equipment Manufacturers (OEM)/ Authorized Dealer(AUD)/ Authorized Distributor of OEM / Solution provider to power utilities

Bidder quoting as authorized distributor/dealers of the manufacture will be considered provided :

- a. The bidder furnishes authorization from the manufactures of material/item.
  - b. The bidder as authorized agent, has supplied similar item in past in any other utility.
  - c. The bidder shall be authorized distributor/dealer since last 02 yr or more.
  - d. Bidder shall submit manufacturer's authorization letter on OEM letter head duly signed by authorized signatory.
- Bidder should have an legal entity as per Income Tax such as company registered under Companies Act,1956, Partnership firm, Pvt Ltd Company or the case may , bidder have to submit those documents.
  - 
  - The Bidder should be a Solution provider for utility field RMU status to the Utility SCADA control System. The list of such installations shall be furnished (List of Installations).
  - The Bidder should have successfully supplied, Installed and integrated field status to SCADA of 200 Nos. FPI Order in two reputed companies in last 5 (Five) Years. Bidder shall submit 2 Nos. (Two) Supply & Installation form 2 reputed companies as an supporting documents for minimum 200 nos. Installation.
  - The bidder shall perform POC of the proposed solution architecture before tender finalization to be technically qualified.
  - Bidder shall procure major equipments from the approved vendor list of BRPL who are meeting applicable qualification criteria for individual items. The vendor must be having valid type test reports carried out within five(5) years.
  - Bidder shall submit the performance certificates for 1 year satisfactory performance from 2 reputed companies for executed jobs in last 5 years.
  - The bidder should have technical & field services organization personnel at various stages of field erection & management services required for successful erection, testing & commissioning.
  - The bidder should have established field quality assurance system & safety organization designed to achieve high level of reliability at various stage of field services required for successful erection, testing, & commissioning.
  - The bidder should have qualified technical & dedicated QA personnel at various stages of manufacturing & testing.

BRPL reserve the right to waive minor deviation, if they do not materially affect the ability of bidder to perform the order. (Kindly Mention in Technical Bids)

### **Financial**

- a. Bidder must have average annual turnover of minimum Rs 1 crore in last two (2) Financial years .
- b. The bidder must have adequate financial stability and status to meet financial obligation pursuant to scope of work.
- c. The bidder shall submit a “NO LITIGATION” statement as per attached format.
- d. The bidder must possess valid latest ISO certification and valid BIS License or Equivalent International License.
- f. An undertaking (self-certificate) that the bidder has not been blacklisted/debarred by any central/state government institution including electricity boards.
- g. The bidder must have valid PAN No., GST registration in addition to other statutory compliances. The bidder must submit the copy of registrations and submit an undertaking that the bidder shall comply all the statutory compliances as per the applicable laws/rules etc. before the start of the work.

### **ALL OTHER TERMS AND CONDITIONS OF THE NIT , INCLUDING BALANCE QUALIFYING CONDITIONS , SHALL REMAIN THE SAME.**

Notwithstanding anything stated above, BRPL reserves the right to assess bidder's capability to perform the contract, assess the capability and installed capacity of the Bidder for carrying out the supplies, should the circumstances warrant such assessment in the overall interest of the purchaser. In this regard the decision of the purchaser is final.

### **3.00 BIDDING AND AWARD PROCESS**

Bidders are requested to submit their offer strictly in line with this tender document. **NO DEVIATION IS ACCEPTABLE.** BRPL shall response to the clarifications raised by various bidders and the will be distributed to all participating bidders through website.

#### **3.01 BID SUBMISSION**

The bidders are required to submit the bids in 2(two) parts to the following address

**Head of Department  
Contracts & Material Deptt.  
BSES Rajdhani Power Ltd  
1<sup>st</sup> Floor, C Block  
BSES Bhawan, Nehru Place  
New Delhi 110019**

PART A: TECHNICAL **BID** comprising of following (1 original + 1 copy)

- EMD in prescribed format
- Non-refundable demand draft for Rs 1180/- in case the forms are downloaded from website
- Documentary evidence in support of qualifying criteria
- Technical Details / Filled in GTP/Type test report etc
- Qualified Manpower available & Organization Chart
- Testing Facilities
- Copies of Orders, Execution /Performance Certificate & Other Documents to support the QC as per clause 2.0
- Original Tender documents duly stamped & signed on each page as token of acceptance
- Acceptance to Commercial Terms and Conditions viz Delivery schedule/period, Payment terms, PBG etc

PART B: FINANCIAL **BID** comprising of (1 original only)

- Price strictly in the Format enclosed indicating Break up of basic price, taxes & duties, transportation etc

### 3.02 TIME SCHEDULE

The bidders should complete the following within the dates specified as under:

S. No.	Steps	Date
1	Date of sale of bid documents	04-06-2021, 1500Hrs
2	Last date of Queries, if any	15-06-2021, 1500Hrs.
3	Last date of receipt of bid documents	21-06-2021, 1530Hrs
4	Date & time of opening of tender – Part A	21-06-2021, 1600Hrs

This is a two part bid process. Bidders are to submit the bids in 2(two) parts

Both these parts should be furnished in separate sealed covers super scribing NIT no. DUE DATE OF SUBMISSION, with particulars as **PART-A TECHNICAL BID & COMMERCIAL TERMS & CONDITIONS** and **Part-B FINANCIAL BID** and these sealed envelopes should again be placed in another sealed cover which shall be submitted before the due date & time specified.

**Part – A:** Technical Bid should not contain any cost information whatsoever and shall be submitted within the due date.

**PART B:** This envelope will be opened after techno-commercial evaluation and only of the qualified bidders.

**REVERSE AUCTION:** Purchaser reserves the right to use **REVERSE AUCTION** through SAP-SRM as an optional tool as an integral part of the entire tendering process. All techno-commercially qualified bidders shall participate in this event



BSES RAJDHANI POWER LIMITED

Notwithstanding anything stated above, the Purchaser reserves the right to assess bidder's capability to perform the contract, should the circumstances warrant such assessment in the overall interest of the purchaser. In this regard the decision of the purchaser is final.

**BIDS RECEIVED AFTER DUE DATE AND TIME MAY BE LIABLE TO REJECTION**

**4.00 AWARD DECISION**

4.01 Purchaser intends to award the business on a lowest bid basis, so suppliers are encouraged to submit the bid competitively. The decision to place purchase order/LOI solely depends on purchaser on the cost competitiveness across multiple lots, quality, delivery and bidder's capacity, in addition to other factors that Purchaser may deem relevant.

4.02 In the event of your bid being selected by purchaser (and / or its affiliates) and you subsequent DEFAULT on your bid; you will be required to pay purchaser (and / or its affiliates) an amount equal to the difference in your bid and the next lowest bid on the quantity declared in NIT/RFQ.

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

4.04 Qty Variation: The purchaser reserves the rights to vary the quantity by (+/-) 30% of the tender quantity.

**5.00 MARKET INTEGRITY**

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

- Failure to honor prices submitted to the marketplace.
- Breach of the terms of the published in Request for Quotation/NIT.

**6.00 SUPPLIER CONFIDENTIALITY**

All information contained in this RFQ is confidential and shall not be disclosed, published or advertised in any manner without written authorization from BRPL. This includes all bidding information submitted.

All RFQ documents remain the property of BRPL and all suppliers are required to return these documents to BRPL upon request.

Suppliers who do not honor these confidentiality provisions will be excluded from participating in future bidding events.

## 7.00 **CONTACT INFORMATION**

Technical clarification, if any, as regards this RFQ shall be sought in writing and sent by post/courier to following address. The same shall not be communicated through email/phone

	<b>Technical</b>	<b>Commercial</b>
<b>Contact Person</b>	Mr. Anil Bohara	Mr. Robin Sebastian
<b>Address</b>	BSES Rajdhani Power Ltd , 4 <sup>th</sup> Floor, Building no. 20, Nehru Place, New Delhi 110019	BSES Rajdhani Power Ltd , 1 <sup>st</sup> Floor, C Block, BSES Bhawan, Nehru Place, New Delhi 110019
<b>Email</b>	<a href="mailto:Anil.bohara@relianceada.com">Anil.bohara@relianceada.com</a>	<a href="mailto:robin.sebastian@relianceada.com">robin.sebastian@relianceada.com</a>

## 8.00 **BID FORM**

- 8.01 The Bidder shall submit one "Original" and one "Copy" of the Un-priced Bid Form, Price Schedules & Technical Data Sheets duly filled in as per attached specification/BOM etc enclosed.

## 9.0 **EMD**

The bidder shall furnish, as part of its bid, an EMD amounting Rs.8,40,000/- as specified in the RFQ. The EMD is required to protect the Purchaser against the risk of Bidder's conduct which would warrant forfeiture.

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

- Banker's Cheque / Demand Draft/Pay Order drawn in favour of BSES Rajdhani Power Ltd, payable at Delhi.
- Bank Guarantee valid for One hundred Twenty (120) days after due date of submission or amended due date of submission drawn in favour of BSES Rajdhani Power Ltd, BSES Bhawan, Nehru Place, New Delhi 110019

The EMD may be forfeited in case of:

- The Bidder withdraws its bid during the period of specified bid validity

OR

- The case of a successful Bidder, if the Bidder does not
  - Accept the Purchase Order, or
  - Furnish the required performance security BG.

## 10.0 **BID PRICES**

- 10.01 Bidders shall quote for the entire Scope of Supply/Work with a break-up of prices for individual items and Taxes & Duties. The total Bid Price shall also cover all the Supplier's obligations mentioned in or reasonably to be inferred from the Bidding Documents in



BSES RAJDHANI POWER LIMITED

respect of Design, Supply, Transportation to site, all in accordance with the requirement of Bidding Documents. The Bidder shall complete the appropriate Price Schedules included herein, stating the Unit Price for each item & total Price with taxes, duties & freight upto destination.

- 10.02 The prices offered shall be inclusive of all costs as well as Duties, Taxes and Levies paid or payable during execution of the supply work, breakup of price constituents, should be there.
- 10.03 Prices quoted by the Bidder shall be **“Firm”** and not subject to any price adjustment during the performance of the Contract. **A Bid submitted with an adjustable price/ Price Variation Clause will be treated as non -responsive and rejected.**
- 10.04 The qty break-up shown else-where in Price Schedule is tentative. The bidder shall ascertain himself regarding material required for completeness of the entire work. Any item not indicated but is required to complete the job, shall be deemed to be included in the prices quoted.

#### 11.0 **BID CURRENCIES**

Prices shall be quoted in Indian Rupees Only.

#### 12.0 **PERIOD OF VALIDITY OF BIDS**

- 12.01 Bids shall remain valid for 120 days from the due date of submission of the Bid & subsequent corrigendum/amendment/extension of due date of submission.
- 12.02 Notwithstanding Clause 12.01 above, the Purchaser may solicit the Bidder's consent to an extension of the Period of Bid Validity. The request and the responses thereto shall be made in writing and sent by post/courier.

#### 13.0 **ALTERNATIVE BIDS**

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

#### 14.0 **FORMAT AND SIGNING OF BID**

- 14.01 The original Bid Form and accompanying documents, clearly marked "Original Bid" and "copy" must be received by the Purchaser at the date, time and place specified pursuant to Clauses 15.0 and 16.0. In the event of any discrepancy between the original and the copy, the original shall govern.
- 14.02 The original and copies of the Bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to sign on behalf of the Bidder. **Such authorization shall be indicated by written Power-of-Authority accompanying the Bid.**





BSES RAJDHANI POWER LIMITED

- 14.03 The Bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the Bid.

**15.0 SEALING AND MARKING OF BIDS**

- 15.01 Bid submission: One original, Copy-1, (hard copies) of all the Bid Documents shall be sealed and submitted to the Purchaser before the closing time for submission of the bid.
- 15.02 The Technical Documents and the EMD shall be enclosed in a sealed envelope and the said envelope shall be super scribed with —“Technical & EMD“. The price bid shall be inside another sealed envelope with super scribed “Financial Bid “. Both these envelopes shall be sealed inside another big envelope. All the envelopes should bear the Name and Address of the Bidder and marking for the Original, Copy-1, and the envelopes should be super scribed with —“Tender Notice No. & Due date of opening“.
- 15.03 The Bidder has the option of sending the Bids in person. Bids submitted by Email/Telex/Telegram /Fax will be rejected. No request from any Bidder to the Purchaser to collect the proposals from Courier/Airlines/Cargo Agents etc shall be entertained by the Purchaser.

**16.0 DEADLINE FOR SUBMISSION OF BIDS**

- 16.01 The original Bid, together with the required copies, must be received by the Purchaser at the address specified earlier.
- 16.02 The Purchaser may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Documents, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will there after be subject to the deadline as extended.

**17.0 ONE BID PER BIDDER**

Each Bidder shall submit only one Bid by itself. **No Joint Venture is acceptable.** A Bidder who submits or participates in more than one Bid will cause all those Bids to be rejected.

**18.0 LATE BIDS**

Any Bid received by the Purchaser after the deadline for submission of Bids prescribed by the Purchaser, pursuant to Clause 16.0, will be declared "Late" and may be rejected and returned unopened to the Bidder.

**19.0 MODIFICATIONS AND WITHDRAWAL OF BIDS**

- 19.1 The Bidder is not allowed to modify or withdraw its Bid after the Bid's submission.

**20.0 THE PURCHASER 'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR A LL BIDS**

The Purchaser reserves the right to accept or reject any Bid and to annul the Bidding

process and reject all Bids at anytime 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 the Purchaser's action.

## **21.0 AWARD OF CONTRACT/ ORDERS**

21.01 The Purchaser will award the Contract to the successful Bidder whose Bid has been Determined to be the lowest-evaluated responsive Bid, provided further that the Bidder has been determined to be qualified to satisfactorily perform the Contract. Purchaser reserves the right to award order to other bidders in the tender, provided it is required for timely execution of project & provided he agrees to come to the lowest rate.

21.02 Though the contract is for Turnkey in nature, the Purchaser intends to issue 2 (two) separate Purchase/Work Orders viz  
a) Purchase Order for Supply Portion  
b) Work Order for Installation, Testing & Commissioning

Purchaser intends to award the business on a lowest bid basis, so suppliers are encouraged to submit the bid competitively. The decision to place purchase order/LOI solely depends on purchaser on the cost competitiveness across multiple lots, quality, delivery and bidder's capacity, in addition to other factors that Purchaser may deem relevant.

In the event of your bid being selected by purchaser (and / or its affiliates) and you subsequent DEFAULT on your bid; you will be required to pay purchaser (and / or its affiliates) an amount equal to the difference in your bid and the next lowest bid on the quantity declared in NIT/RFQ.

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

Qty Variation: The purchaser reserves the rights to vary the quantity by (+/-) 30% of the tender quantity.

The purchaser reserves the right to distribute the procurable quantity on one or more than one of the eligible tenders.

If the quantity is to be split, quantity distribution shall be in the manner detailed below:

- a) If the quantity is to be split among 2 bidders, it will be done in the ratio of **70:30** on L1 price.
- b) If the quantity is to be split among 3 bidders, it will be done in the ratio of **60:25:15** on L1 price.

Note: In case quantity needs to be distributed and order splitting is required, distribution of quantity shall be maximum among three (03) bidders.

## **22.0 LETTER OF INTENT/ NOTIFICATION OF AWARD**

The letter of intent/ Notification of Award shall be issued to the successful Bidder whose bids have been considered responsive, techno-commercially acceptable and evaluated to be the lowest (L1). The successful Bidder shall be required to furnish a letter of

acceptance within 7 days of issue of the letter of intent /Notification of Award by Purchaser. The date of LOI/LOA shall be treated as Start date of work.

**23.0 CONTRACT PERFORMANCE BANK GUARANTEE**

Within 15 days of the receipt of Notification of Award/ Letter of Intent/PO from the Purchaser, the successful Bidder shall furnish the Performance Bank Guarantee towards faithful performance of Contract for an amount of 10% (Ten percent) of the Contract Price. The Performance Bond shall be valid upto completion period/handling over, whichever is earlier plus 3 months claim period. Upon submission of the performance security, the EMD shall be released. 2 (two) nos. separate CPBG's shall be submitted against Supply, ETC.

**24 COMMISSIONING PERIOD**

Supply, erection, testing & commissioning of entire system within 270 days (9 months) from the date of LOI/PO. Successful bidder shall submit detailed project plan mentioning all project activities schedule to BRPL.

**Section II: SPECIAL TERMS AND CONDITIONS OF CONTRACT**

- 1.1. Bidders are requested to visit the site to understand the scope of work, site conditions and requirements prior to Bidding. Hence, no price/time escalation shall be admissible on these accounts.
- 1.2. The scope of this tender includes supply, survey, design, engineering, manufacturer, shop testing, inspection, packing, dispatch, loading, unloading and storage at site, storage and construction insurance, assembly, erection, structural, complete pre-commissioning checks, testing and commissioning at site, obtaining statutory clearance & certification from state electrical inspector and handing over to owner.
- 1.3. The scope includes supply of all barricading, free issued materials (including installation, transportation, loading & unloading), dewatering, watch and ward and transportation of scrap (generated at Site), balance free-issued material, dismantled material from site to site, site to BRPL store including loading & unloading and no additional charges shall be paid against these activities. Used barricading material will be taken back by bidder soon after job is handed over or as directed by BRPL E-I-C(Head –DMS ) or BRPL nominated representative. No additional cost for these items will be paid to the Bidder. Any leakage, pilferage and damage of the material shall be in vendor's scope.
- 1.4. Prices for all the activities shall be FIRM till the actual completion of the job. Statutory variation will be allowed for direct supplies only wherever breakup of Taxes & Duties are available in Price Bid. In case bidder has not submitted any price breakup, no variation on account of statutory variation shall be paid extra by BRPL.
- 1.5. There will be no price escalation given to bidder even if there is delayed the project due to ROW permission.

- 1.6. Permission from road owning agencies & statutory clearance for road cutting shall be taken by BRPL. However, full support shall be provided by bidder to achieve it.
- 1.7. Bidder has to submit the technical parameters with details of Spares for each rating with catalogue, reference codes etc.
- 1.8. Wherever BRPL specifications are not available relevant IS/IEC to be followed. All Drawings mentioned in the Tender Specification and other required for the completeness of the tender shall be submitted. Drawing submission process shall not be deemed complete if all the requirements are not complied during the submission of the same.
- 1.9. The bidder should have own testing equipment's/they have to provide like IR Tester, Hi Pot Test Kit and Earth Tester with Calibration Certificates for testing the cables.
- 1.10. The Bidder should have own Safety equipment like Neon Tester, Portable Earth, Earthing discharge rod etc. along with Calibration Certificates of all the equipment.
- 1.11. The Bidder should have all major tools and tackles for cable laying like Bench Machine, Rollers, Jack for lifting the Cable drum along with calibration certificates etc.
- 1.12. Bidder has to submit the item wise price bifurcation in bid. Unprice copy must be attached with the Part A. Reverse Auction will be carried out on Lump sum Basis/Total Landed Cost i.e. Supply + ETC
- 1.13. Any other material not specifically mentioned above but required for successful commissioning and operation is in the scope of bidder. Prior erecting any extra items for this scheme –rates should be approved from competent authority.
- 1.14. Successful bidder has to comply the statutory compliance.
- 1.15. Successful Bidder has to depute the safety officer and quality officer separately at site for whole duration and they have to submit the safety report and quality report to BRPL E-I-C on weekly basis.
- 1.16. Successful bidder has to send the weekly progress report to BRPL EIC.
- 1.17. In case of any major deviation, deletion or addition which bidder may feel is relevant to this project & for its safe operation and completion of works; Bidder may clearly highlight and communicate the same to the purchaser with his bid.
- 1.18. Necessary Statutory Clearances from CEI of Delhi & any other authority for energizing shall be in the scope of this tender. However, any statutory fees shall be borne by BRPL on production of documentary evidence.



BSES RAJDHANI POWER LIMITED

1.19. Taking over after commissioning of the complete system and final approval of Electrical Inspector & Compliance to punch points observed to the satisfaction of Projects as per statutory requirements, system shall be handed over to BRPL.

1.20. Problem Troubleshooting & Restoration In Warranty Period For A Particular Material/Equipment:

Service Engineer Availability to Attend, Identify & Restore Defects (Minor) Of materials/Equipment's under Guarantee Period within 48 Working Hours (Exclusion of Material Support Cases)

Spare Material Delivery for Restoration Of circuit (Major Defect) Under Guarantee Period within Two Weeks. Seller must keep Requisite Inventory of Critical Spares & Other Equipment's Covered in Guarantee Period to Restore Equipment within Two Weeks.

In Case Of Complete Replacement of material, complete material to Be Replaced within a Period of 4 Weeks.

#### **1.21. PROJECT INFORMATION & COMPLETION**

The contractor shall be fully responsible to complete the project in time. It is desired that the project should complete as per the schedule from the date of LOI or purchase order whichever is earlier. The detail completion schedule shall be prepared by vendor and shall be submitted at the time of detailed engineering for approval. Vendor has to submit the progress report fortnightly in the format attached with this tender/as asked by the Purchaser.

#### **1.22. PROJECT IMPLEMENTATION & EXECUTION CONTROL**

The bidders are requested to submit the following along with the bid, about the project implementation & execution methodology.

- a) Write up/overview of project Plan
- b) Implementation Methodology
- c) Project Organization Chart for Representatives, Project Office & site office teams along with the functions.
- d) Bar Chart & Network Diagram (with critical path) for various activities to achieve scheduled completion.

### **SECTION III: GENERAL TERMS AND CONDITIONS - SUPPLY**

**1.01** All the Bids shall be prepared and submitted in accordance with these instructions.

**1.02** Bidder shall bear all costs associated with the preparation and delivery of its Bid, and the Purchaser will in no case shall be responsible or liable for these costs.

**1.03** The Bid should be submitted by the Bidder in whose name the bid document has been issued and under no circumstances it shall be transferred /sold to the other party.

- 1.04** The Purchaser reserves the right to request for any additional information and also reserves the right to reject the proposal of any Bidder, if in the opinion of the Purchaser, the data in support of RFQ requirement is incomplete.
- 1.05** The Bidder is expected to examine all instructions, forms, terms & conditions and specifications in the Bid Documents. Failure to furnish all information required in the Bid Documents or submission of a Bid not substantially responsive to the Bid Documents in every respect may result in rejection of the Bid. However, the Purchaser's decision in regard to the responsiveness and rejection of bids shall be final and binding without any obligation, financial or otherwise, on the Purchaser.

**2.0 DEFINITION OF TERMS**

- 2.01** "Purchaser" shall mean BSES Rajdhani Power Limited, on whose behalf this bid enquiry is issued by its authorized representative / officers.
- 2.02** "Bidder" shall mean the firm who quotes against this bid enquiry issued by the Purchaser. "Supplier" or "Suppliers" shall mean the successful Bidder and/or Bidders whose bid has been accepted by the Purchaser and on whom the "Letter of Acceptance" is placed by the Purchaser and shall include his heirs, legal representatives, successors and permitted assigns wherever the context so admits.
- 2.03** "Supply" shall mean the Scope of Contract as described.
- 2.04** "Specification" shall mean collectively all the terms and stipulations contained in those portions of this bid document known as RFQ, Commercial Terms & Condition, Instructions to Bidders, Technical Specifications and the Amendments, Revisions, Deletions or Additions, as may be made by the Purchaser from time to time.
- 2.05** "Letter of Acceptance" shall mean the official notice issued by the Purchaser notifying the Supplier that his proposal has been accepted and it shall include amendments thereto, if any, issued by the Purchaser. The "Letter of Acceptance" issued by the Purchaser shall be binding on the "Supplier". The date of Letter of Acceptance shall be taken as the effective date of the commencement of contract.
- 2.06** "Month" shall mean the calendar month and "Day" shall mean the calendar day.
- 2.07** "Codes and Standards" shall mean all the applicable codes and standards as indicated in the Specification.
- 2.08** "Offer Sheet" shall mean Bidder's firm offer submitted to BRPL in accordance with the specification.
- 2.09** "Contract" shall mean the "Letter of Acceptance/Purchase Order" issued by the Purchaser.
- 2.10** "Contract Price" shall mean the price referred to in the "Letter of Acceptance/Purchase Order".



BSES RAJDHANI POWER LIMITED

- 2.11** “Contract Period” shall mean the period during which the “Contract” shall be executed as agreed between the Supplier and the Purchaser in the Contract inclusive of extended contract period for reason beyond the control of the Supplier and/or Purchaser due to force majeure.
- 2.12** “Acceptance” shall mean and deemed to include one or more of the following as will be stipulated in the specification:
- a) The written acceptance of material by the inspector at suppliers works to ship the materials.
  - b) Acceptance of material at Purchaser site stores after its receipt and due inspection/ testing and release of material acceptance voucher.
  - c) Where the scope of the contract includes supplying, acceptance shall mean issue of necessary equipment / material takeover receipt after installation & commissioning and final acceptance.

### **3.0 CONTRACT DOCUMENTS & PRIORITY**

- 3.01** Contract Documents: The terms and conditions of the contract shall consist solely of these RFQ conditions and the offer sheet.

### **4.0 SCOPE OF SUPPLY -GENERAL**

- 4.01** The “Scope of Supply” shall be on the basis of Bidder’s responsibility, completely covering the obligations, responsibility and supplies provided in this Bid enquiry whether implicit or explicit.
- 4.02** Bidder shall have to quote for the Bill of quantities as listed elsewhere.
- 4.03** All relevant drawings, data and instruction manuals.

### **5.0 QUALITY ASSURANCE AND INSPECTION**

- 5.01** Immediately on award of contract, the bidder shall prepare detailed quality assurance plan/test procedure identifying the various stages of manufacture, quality checks performed at each stage, raw material inspection and the Customer hold points. The document shall also furnish details of method of checking, inspection and acceptance standards / values and get the approval of Purchaser before proceeding with manufacturing. However, Purchaser shall have right to review the inspection reports, quality checks and results of suppliers in house inspection department which are not Customer hold points and the supplier shall comply with the remarks made by purchaser or his representative on such reviews with regards to further testing, rectification or rejection, etc. In case of standard items, BRPL shall forward the standard QAP which is to be followed by vendor during manufacturing.
- 5.02** Witness and Hold points are critical steps in manufacturing, inspection and testing where the supplier is obliged to notify the Purchaser in advance so that it may be witnessed by the Purchaser. Final inspection is a mandatory hold point. The supplier to proceed with the work past a hold point only after clearance by purchaser or a witness waiver letter from BRPL.
- 5.03** The performance of waiver of QA activity by Purchaser at any stage of manufacturing does not relieve the supplier of any obligation to perform in accordance with and meet all the requirements of the procurement documents and also all the codes & reference



documents mentioned in the procurement document nor shall it preclude subsequent rejection by the purchaser.

- 5.04** On completion of manufacturing the items can only be dispatched after receipt of dispatch instructions issued by the Purchaser.
- 5.05** All in-house testing and inspection shall be done with out any extra cost. The in-house inspection shall be carried out in presence of BSES/BSES authorized third party inspection agency. Cost of Futile/abortive visit(s) shall be debited from the invoices
- 5.06** Purchaser reserves the right to send any material being supplied to any recognized laboratory for testing, wherever necessary and the cost of testing shall be borne by the Bidder. In case the material is found not in order with the technical requirement / specification, the charges along with any other penalty which may be levied is to be borne by the bidder. To avoid any complaint the supplier is advised to send his representative to the stores to see that the material sent for testing is being sealed in the presence of bidder's representative.

## **6.0 PACKING, PACKING LIST & MARKING**

- 6.01 Packing:** Supplier shall pack or shall cause to be packed all Commodities in crates/boxes/drums/containers/cartons and otherwise in such a manner as shall be reasonably suitable for shipment by road or rail to BRPL, Delhi/New Delhi stores/site without undue risk of damage in transit.
- 6.02 Packing List:** The contents of each package shall be itemized on a detailed list showing the exact weight, extreme outside dimensions (length, width & weight) of each container/box/drum/carton, Item SAP Code, PO No & date. One copy of the packing list shall be enclosed in each package delivered.

## **7.01 PRICE BASIS FOR SUPPLY OF MATERIALS**

- a) Bidder to quote their prices on Landed Cost Basis and separate price for each item. FIRM prices for supply to BRPL Delhi/New Delhi stores inclusive of packing, forwarding, loading at manufacturer's premises, payment of GST.
- b) The above supply prices shall also include unloading at BRPL Delhi/New Delhi stores/site.
- c) Transit insurance will be arranged by Purchaser; however bidder to furnish required details in advance for arranging the same by Purchaser

## **8.0 TERMS OF PAYMENT AND BILLING – SUPPLY & INSTALLTION**

### **Supply Part**

- a) 10% advance against submission of BG of equivalent amount valid upto completion period/handing over , whichever is earlier plus 3 months claim period. In case of delay, the BG shall be extended suitably.
- b) 50% prorata of supply value shall be payable against R/A bills for supply of equipment and materials within 30 days against receipt of material at site and submission of following documents duly certified by BRPL Project-in-charge:





BSES RAJDHANI POWER LIMITED

- i. Consignee copy of LR
  - ii. Detailed invoice showing commodity description, qty, unit & total price,
  - iii. Original certificate issued by BRPL confirming receipt of material at site & acceptance
  - iv. Dispatch clearance & inspection report issued by the inspection authority
  - v. Packing List, Test Reports
  - vi. Guarantee Certificate.
- c) 40% prorata after Installation, testing, Commissioning & Integration with SCADA of equipment of installation duly certified by BRPL Project-in-charge and Handing Over of the entire Installation and submission of BG of 10% of contract value valid up to Defect Liability period plus 3 months towards Claim period.

#### **Erection, Testing, Installation and Commissioning:**

- a) 10% advance against submission of BG of equivalent amount valid upto completion period/handing over , whichever is earlier plus 3 months claim period. In case of delay, the BG shall be extended suitably.
- b) 90% after Installation, testing, Commissioning & Integration with SCADA of equipment of installation duly certified by BRPL Project-in-charge.

### **9.0 PRICE VALIDITY**

- 9.01** All bids submitted shall remain valid, firm and subject to unconditional acceptance by BRPL Delhi for 120 days from the due date of submission & subsequent corrigendum/amendment/extension of due date of submission. For awarded suppliers/contractors, the prices shall remain valid and firm till contract completion.

### **10.0 PERFORMANCE GUARANTEE**

- 10.01** Bank guarantee shall be drawn in favour of “BSES Rajdhani Power Ltd” as applicable. The performance Bank guarantee shall be in the format as specified by BRPL.
- 10.02** Contract performance bank guarantee of total 10% of the contract price shall be submitted within 15 days of award of contract with the validity till completion of the contract period.
- 10.03** Contractor shall submit the performance bank guarantee equivalent to the 10% of the contract value at the time of claiming the last payment as per clause no. 8.0 (Terms of payment and billing – SUPPLY), with the validity of the bank guarantee till Defect Liability Period plus 3 months.

### **11.0 FORFEITURE**

- 11.01** Each Performance Bond established under Clause 10.0 shall contain a statement that it shall be automatically and unconditionally forfeited without recourse and payable against



BSES RAJDHANI POWER LIMITED

the presentation by BRPL of this Performance Bond, to the relevant bank referred to above, together with a simple statement that supplier has failed to comply with any term or condition set forth in the Contract.

- 11.02** Each Performance BG established under will be automatically and unconditionally forfeited without recourse if BRPL in its sole discretion determines that supplier has failed to comply with any term or condition set forth in the contract.

**12.0 RELEASE**

All Performance Bonds will be released without interest within seven (7) days from the last date up to which the Performance Bond has to be kept valid (as defined in Clause 10.0) except for the case set forth in Clause 21.0.

**13.0 WARRANTY/DEFECTS LIABILITY PERIOD**

- 13.01** The bidder to guarantee the materials / items supplied against any defect of failure, which arise due to faulty materials, workmanship or design for the entire defects liability period. The Defect liability period shall be 60 months from the date of Handing over of entire Installation.

If during the defects liability period any materials / items are found to be defective, these shall be replaced or rectified by the bidder at his own cost within 30 days from the date of receipt of intimation.

The bidder shall be able to depute their service personnel within 48 hours in case of emergency and shall ensure the availability of manpower/spares for the same during warranty period.

**14.0 RETURN, REPLACEMENT OR SUBSTITUTION.**

BRPL shall give Supplier notice of any defective Commodity promptly after becoming aware thereof. BRPL may in its discretion elect to return defective Commodities to Supplier for replacement, free of charge to BRPL, or may reject such Commodities and purchase the same or similar Commodities from any third party. In the latter case BRPL shall furnish proof to Supplier of the cost of such substitute purchase. In either case, all costs of any replacement, substitution, shipping, labour and other related expenses incurred in connection with the return and replacement or for the substitute purchase of a Commodity hereunder should be for the account of Supplier. BRPL may set off such costs against any amounts payable by BRPL to Supplier. Supplier shall reimburse BRPL for the amount, if any, by which the price of a substitute Commodity exceeds the price for such Commodity as quoted in the Bid.

**15.0 EFFECTIVE DATE OF COMMENCEMENT OF CONTRACT:**

- 15.01** The date of the issuance of the Letter of Acceptance/Purchase Order shall be treated as the effective date of the commencement of Contract.



BSES RAJDHANI POWER LIMITED

## **16.0 TIME – THE ESSENCE OF CONTRACT**

- 16.01** The time and the date of completion of the “Supply” as stipulated in the Letter Of Acceptance / Purchase order issued to the Supplier shall be deemed to be the essence of the “Contract”. The Supply has to be completed not later than the aforesaid Schedule and date of completion of supply.

## **17.0 THE LAWS AND JURISDICTION OF CONTRACT:**

- 17.01** The laws applicable to this Contract shall be the Laws in force in India.
- 17.02** All disputes arising in connection with the present Contract shall be settled amicably by mutual consultation failing which shall be finally settled as per the rules of Arbitration and Conciliation Act, 1996 at the discretion of Purchaser. The venue of arbitration shall be at Mumbai in India

## **18.0 EVENTS OF DEFAULT**

- 18.01** Events of Default. Each of the following events or occurrences shall constitute an event of default ("Event of Default") under the Contract:

- (a) Supplier fails or refuses to pay any amounts due under the Contract;
- (b) Supplier fails or refuses to deliver Commodities conforming to this RFQ/ specifications, or fails to deliver Commodities within the period specified in P.O. or any extension thereof
- (c) Supplier becomes insolvent or unable to pay its debts when due, or commits any act of bankruptcy, such as filing any petition in any bankruptcy, winding-up or reorganization proceeding, or acknowledges in writing its insolvency or inability to pay its debts; or the Supplier's creditors file any petition relating to bankruptcy of Supplier;
- (d) Supplier otherwise fails or refuses to perform or observe any term or condition of the Contract and such failure is not remediable or, if remediable, continues for a period of 30 days after receipt by the Supplier of notice of such failure from BRPL.

## **19.0 CONSEQUENCES OF DEFAULT.**

- (a) If an Event of Default shall occur and be continuing, BRPL may forthwith terminate the Contract by written notice.
- (b) In the event of an Event of Default, BRPL may, without prejudice to any other right granted to it by law, or the Contract, take any or all of the following actions;
  - (i) present for ` to the relevant bank the Performance Bond;
  - (ii) Purchase the same or similar Commodities from any third party; and/or



BSES RAJDHANI POWER LIMITED

- (iii) Recover any losses and/or additional expenses BRPL may incur as a result of Supplier's default

## **20.0 LIQUIDATED DAMAGES**

- 20.01** If supply of items / equipment is delayed beyond the supply schedule as stipulated in LOI/PO, then the Supplier shall be liable to pay the Purchaser for delay a sum of 1 % (one percent) of the basic (ex-works) price for every week of delay or part thereof for individual mile stone deliveries.
- 20.02** The total amount for delay under the contract will be subject to a maximum of ten (10%) percent of the total contract value.
- 20.03** The Purchaser may, without prejudice to any method of recovery, deduct the amount for such damages from any amount due or which may become due to the Supplier or from the Performance Bond or file a claim against the supplier.

## **21.0 STATUTORY VARIATION IN TAXES AND DUTIES**

The total order value shall remain **FIRM** within stipulated delivery period and shall not be adjusted on account of any price increase/variations in commodities & raw materials. However Statutory Taxes, duties and Levies imposed by Competent Authorities by way of fresh notification(s) within the stipulated delivery period shall be borne by BRPL on submission of necessary documents claiming such variation. The variation will be applicable only on such value wherever price breakup of same is submitted by vendor/available in PO/WO

The company reserves the right to review/change the terms & conditions of the Purchase Order/Work Order prospectively w.e.f. the date of implementation of GST to give effect/take care the impact of GST, if required.

## **22.0 FORCE MAJEURE**

### **22.01 General**

An "Event of Force Majeure" shall mean any event or circumstance not within the reasonable control directly or indirectly, of the Party affected, but only if and to the extent that:

- (i) Such event or circumstance materially and adversely affects the ability of the affected Party to perform its obligations under this Contract, and the affected Party has taken all reasonable precautions, due care and reasonable alternative measures in order to prevent or avoid the effect of such event on the affected party's ability to perform its obligations under this Contract and to mitigate the consequences thereof.
- (ii) For the avoidance of doubt, if such event or circumstance would not have materially and adversely affected the performance of the affected party had such affected party followed good industry practice, such event or circumstance shall not constitute force majeure.
- (iii) Such event is not the direct or indirect result of the failure of such Party to perform any of its obligations under this Contract.
- (iv) Such Party has given the other Party prompt notice describing such events, the effect thereof and the actions being taken in order to comply with above clause.

- 22.02** Specific Events of Force Majeure subject to the provisions of above clause, Events of Force Majeure shall include only the following to the extent that they or their consequences satisfy the above requirements:
- (i) The following events and circumstances:
    - a) Effect of any natural element or other acts of God, including but not limited to storm, flood, earthquake, lightning, cyclone, landslides or other natural disasters.
    - b) Explosions or fires
  - (ii) War declared by the Government of India, provided that the ports at Mumbai are declared as a war zone.
  - (iii) Dangers of navigation, perils of the sea.
- 22.03** Notice of Events of Force Majeure If a force majeure event prevents a party from performing any obligations under the Contract in part or in full that party shall:
- i) Immediately notify the other party in writing of the force majeure events within 7(seven) working days of the occurrence of the force majeure event
  - ii) Be entitled to suspend performance of the obligation under the Contract which is affected by force majeure event for the duration of the force majeure event.
  - iii) Use all reasonable efforts to resume full performance of the obligation as soon as practicable
  - iv) Keep the other party informed of all such efforts to resume full performance of the obligation on a regular basis.
  - v) Provide prompt notice of the resumption of full performance or obligation to the other party.
- 22.04** Mitigation of Events of Force Majeure Each Party shall:
- (i) Make all reasonable efforts to prevent and reduce to a minimum and mitigate the effect of any delay occasioned by an Event of Force Majeure including recourse to alternate methods of satisfying its obligations under the Contract;
  - (ii) Use its best efforts to ensure resumption of normal performance after the termination of any Event of Force Majeure and shall perform its obligations to the maximum extent practicable as agreed between the Parties; and
  - (iii) Keep the other Party informed at regular intervals of the circumstances concerning the event of Force Majeure, with best estimates as to its likely continuation and what measures or contingency planning it is taking to mitigate and or terminate the Event of Force Majeure.
- 22.05** Burden of Proof In the event that the Parties are unable in good faith to agree that a Force Majeure event has occurred to an affected party, the parties shall resolve their dispute in accordance with the provisions of this Agreement. The burden of proof as to whether or not a force Majeure event has occurred shall be upon the party claiming that the force majeure event has occurred and that it is the affected party.
- 22.06** Termination for Certain Events of Force Majeure. If any obligation of any Party under the Contract is or is reasonably expected to be delayed or prevented by a Force Majeure event for a continuous period of more than 3 months, the Parties shall promptly discuss in good faith how to proceed with a view to reaching a solution on mutually agreed basis. If a solution on mutually agreed basis cannot be arrived at within a period of 30 days after the expiry of the period of three months, the Contract shall be terminated



BSES RAJDHANI POWER LIMITED

after the said period of 30 days and neither Party shall be liable to the other for any consequences arising on account of such termination.

**22.07** The Purchaser may terminate the contract after giving 7(seven) days notice if any of following occurs:

- a) Contractor fails to complete execution of works within the approved schedule of works, terms and conditions
- b) In case the contractor commits any Act of Insolvency, or adjudged insolvent
- c) Has abandoned the contract
- d) Has failed to commence work or has suspended the progress of works
- e) Has failed to proceed the works with due diligence and failed to make such due progress

**22.08** Limitation of Force Majeure event. The Supplier shall not be relieved of any obligation under the Contract solely because cost of performance is increased, whether as a consequence of adverse economic consequences or otherwise.

**22.09** Extension of Contract Period due to Force Majeure event The Contract period may be extended by mutual agreement of Parties by way of an adjustment on account of any period during which an obligation of either Party is suspended due to a Force Majeure event.

**22.10** Effect of Events of Force Majeure. Except as otherwise provided herein or may further be agreed between the Parties, either Party shall be excused from performance and neither Party shall be construed to be in default in respect of any obligations hereunder, for so long as failure to perform such obligations shall be due to and event of Force Majeure."

### **23.0 TRANSFER AND SUB-LETTING**

**23.01** The Supplier shall not sublet, transfer, assign or otherwise part with the Contract or any part thereof, either directly or indirectly, without prior written permission of the Purchaser.

### **24.0 RECOVERIES**

**24.01** When ever under this contract any money is recoverable from and payable by the bidder, the purchaser shall be entitled to recover such sum by appropriating in part or in whole by detecting any sum due to which any time thereafter may become due from the supplier in this or any other contract. Should the sum be not sufficient to cover the full amount recoverable the bidder shall pay to the purchaser on demand the remaining balance.

### **25.0 WAIVER**

**25.01** Failure to enforce any condition herein contained shall not operate as a waiver of the condition itself or any subsequent breach thereof.

### **26.0 INDEMNIFICATION**

Notwithstanding contrary to anything contained in this RFQ, Supplier shall at his costs and risks make good any loss or damage to the property of the Purchaser and/or the other



BSES RAJDHANI POWER LIMITED

Supplier engaged by the Purchaser and/or the employees of the Purchaser and/or employees of the other Supplier engaged by the Purchaser whatsoever arising out of the negligence of the Supplier while performing the obligations under this contract.

**27.0 DOCUMENTATION:**

The Bidder's shall procure all equipment from BRPL approved sources as per attached specifications. The Bidder's shall submit 5 copies of Material/Type Test Certificates, O&M Manuals, and Approved & As-built drawings. The Bidder's shall ensure for the strict compliance to the specifications and Field Quality Procedures issued by BRPL Engineer in-charge.

**28.0 COMMISSIONING SPARES**

28.01 Commissioning Spares shall be deemed to be included in the quoted

## SECTION IV PRICE FORMAT – SUPPLY & INSTALLATION

Package	Sr. No	Item Description	UOM	Qty	Basic Rate w/o tax	CGST	SGST	IGST	Unit rate with GST	Amount = Unit rate with GST and Qty
A	<b>Supply</b>									
	1	Supply of SSIM along with Modem, RTU/FRTU, battery, charger, accessories confirming to BRPL specification <b>for DWARKA Division</b> including - Mandatory spares as indicated in technical specification								
	a	Type – 1 (16DI / 4DO)	NO	599						
	b	Type – 2 (32DI / 16DO / 8AI)	NO	13						
	c	Type – 3 (48DI / 16DO / 8AI)	NO	11						
	2	Supply of Fault passage indicator along with CBCT <b>for DWARKA division</b> as per BRPL Technical specification	NO	180						
	<b>Erection, testing, Installation, Integration and Commissioning</b>									
	1	ETC of SSIM along with Modem, RTU/FRTU, battery, charger, accessories confirming to BRPL specification <b>for DWARKA Division</b> including - Survey of the BRPL location list - Installation of SSIM at sites along with interconnection control and aux power wiring - Testing and integration of the SSIM with the BRPL SCADA for all the sites.								
	a	Type – 1 (16DI / 4DO)	NO	599						
	b	Type – 2 (32DI / 16DO / 8AI)	NO	13						
	c	Type – 3 (48DI / 16DO / 8AI)	NO	11						
	2	ETC of Fault passage indicator along with CBCT <b>for DWARKA division</b> including - Dismantling of existing FPI and deposit in BRPL Store - Installation of FPI on the existing RMU along with Phase CTs and CBCT	NO	180						



Supply									
B	1	Supply of SSIM along with Modem, RTU/FRTU, battery, charger, accessories confirming to BRPL specification <b>for SARITA VIHAR Division</b> including - Mandatory spares as indicated in technical specification							
	a	Type – 1 (16DI / 4DO)	NO	252					
	b	Type – 2 (32DI / 16DO / 8AI)	NO	16					
	c	Type – 3 (48DI / 16DO / 8AI)	NO	7					
	2	Supply of Fault passage indicator along with CBCT <b>for SARITA VIHAR division</b> as per BRPL Technical specification	NO	76					
Erection, testing, Installation, Integration and Commissioning									
B	1	ETC of SSIM along with Modem, RTU/FRTU, battery, charger, accessories confirming to BRPL specification <b>for SARITA VIHAR Division</b> including - Survey of the BRPL location list - Installation of SSIM at sites along with interconnection control and aux power wiring - Testing and integration of the SSIM with the BRPL SCADA for all the sites.							
	a	Type – 1 (16DI / 4DO)	NO	252					
	b	Type – 2 (32DI / 16DO / 8AI)	NO	16					
	c	Type – 3 (48DI / 16DO / 8AI)	NO	7					
	2	ETC of Fault passage indicator along with CBCT <b>for SARITA VIHAR division</b> including - Dismantling of existing FPI and deposit in BRPL Store - Installation of FPI on the existing RMU along with Phase CTs and CBCT	NO	76					

**NOTE:**

- 1) The prices quoted are inclusive of training of BRPL officials (as per spec)
- 2) The bidder shall, at its own, handle all imported equipment's and handle all formalities for custom clearances, port charges, etc. if any.



BSES RAJDHANI POWER LIMITED

- 3) All Tools & Tackles, Consumables and Commissioning Spares required to complete the work shall be included in the quoted rates
- 4) Any other item not mentioned above but are required for successful completion of the works shall be deemed to be included in the above quoted rate
- 5) Reverse auction shall be conduct on package wise (each)

## **SECTION V**

### **GENERAL TERMS & CONDITIONS - ERECTION, TESTING & COMMISSIONING**

#### **1. DEFINITIONS and INTERPRETATION**

The following terms shall have the following meanings:

1.1 “Company”: means BSES Rajdhani Power Ltd, a company incorporated under the Companies Act 1956 and having its office at BSES Bhawan, Nehru Place, New Delhi 110 019, which expression shall include its authorized representatives, agents, successors and assigns.

1.2 “Contractor”: shall mean the successful Tenderer / vendor to whom the contract has been awarded

1.3 “Rate”: The unit rates for the work to be carried out at site shall be as per finalized unit rates through tender. The finalized rates shall be firm for the entire duration of work to be carried out by the Contractor under the work order and are not subject to escalation for any reason whatsoever.

1.4. CONTRACT SPECIFICATION: The terms "CONTRACT Specification" shall mean the Technical specification of the work as agreed by you and description of work as detailed in

Annexure-I enclosed herewith and all such particulars mentioned directly/referred to or implied as such in the contract.

1.5 SITE: The terms "Site" shall mean the working location in BRPL area. Under this tender, working location shall be as mentioned elsewhere.

1.6 ENGINEER IN CHARGE: "Engineer In-charge" means the Company's authorized representative for the purpose of carrying out the work.

## **2. EXAMINATION OF SITE AND LOCAL CONDITIONS:**

The contractor is deemed to have visited the site of the work and ascertained therefore all site conditions and information pertaining to his work. The company shall not accept any claim whatsoever arising out of the difficult site/terrain/local conditions, if any.

## **3. LANGUAGE AND MEASUREMENT:**

The CONTRACT issued to the contractor by the company and all correspondence and documents relating to the CONTRACT placed on the Contractor shall be written in English language.

Metric System shall be followed for all dimension, units etc.

## **5. RATES:**

The rates finalized for this order shall be firm for the entire duration of work carried out by the Contractor under the order and are not subject to any variation and escalation for any reason whatsoever.

The cost of insurance during loading/unloading of materials/ equipments during its storage and handling/erection at site for installation is included in the contractor's scope and value is included in the unit rates finalized.

The unit rates finalized are also inclusive of barricading and watch & ward during execution and no separate charges shall be paid for the same.

The cost of training of BRPL Official shall be included in the prices quoted by vendor.

## **6. TAXES AND DUTIES:**

Prices are inclusive of all taxes and duties and GST. However, IT as per applicable rate will be deducted from your bills as Tax Deduction at Source (TDS). The order involves only services and labour hence WCT/VAT not applicable to the order.

The total order value shall remain **FIRM** within stipulated delivery period and shall not be adjusted on account of any price increase/variations in labour. However Statutory Taxes, duties and Levies imposed by Competent Authorities by way of fresh notification(s) within the stipulated delivery period shall be borne by BRPL on submission of necessary documents claiming such variation. The variation will be applicable only on such value wherever price breakup of same is submitted by vendor/available in PO/WO.



BSES RAJDHANI POWER LIMITED

## **8. DEFECT LIABILITY PERIOD:**

Work executed shall be guaranteed against any defect or failure which may arise due to faulty materials, design or workmanship for a period of 60 months from the date of commissioning or handing over of entire installation whichever is earlier.

If during the Defect Liability Period any materials/ items are found to be defective, these shall be replaced or rectified by the bidder at his own cost within 30 days from the date of receipt of intimation.

## **9. PERFORMANCE GUARANTEE**

**9.01** Bank guarantee shall be drawn in favour of “BSES Rajdhani Power Ltd” as applicable. The Performance Bank guarantee shall be in the format as specified by BRPL.

**9.02** Contract performance bank guarantee of total 10% of the contract price shall be submitted within 15 days of award of contract with the validity till completion of the contract period.

**9.03** Contractor shall submit the performance bank guarantee equivalent to the 10% of the contract value at the time of claiming the last payment as per clause no. of **TERMS OF PAYMENT (Erection, Testing & Commissioning)**, with the validity of the bank guarantee till Defect Liability Period plus 3 months.

## **10. COMPLETION PERIOD**

You are required to mobilize your manpower and Tools & Tackles and furnish a list of equipments to be used for erection and commence the execution activity as per instructions of Engineer In-charge. The entire erection work should be completed within 9 months from the date of issue of LOI. The detailed schedule and milestone completion dates would be as per the contract schedules given from time to time by Engineer In-charge at site. You shall submit a weekly progress report to Engineer In charge.

## **11. CLEANLINESS**

All debris shall be removed and disposed of at assigned areas on daily basis. Surplus excavated earth shall be disposed of in an approved manner. In short, you shall be fully responsible for keeping the work site clean at all times. In case of non- compliance, company shall get the same done at Contractor's risk and costs.

## **12. COMMISSIONING & ACCEPTANCE TEST:**

After completion of the work, the Contractor shall conduct trial run/ operation in the presence of Engineer In charge. During such trial run the system shall be operated under the supervision of the Contractor. If any rectification/modification required during this period the Contractor shall do all necessary measures.

On satisfactory completion of above, the system shall be deemed to have energized and placed in commercial operation. The Engineer In Charge will issue an acceptance certificate.

### **13. WORK COMPLETION CERTIFICATION, HANDING OVER.**

The work carried out by the Contractor under this order has to be certified by Engineer In-charge for satisfactory completion of work allotted to the contractor with respect to specifications / Field Quality Procedures as per applicable standards. In case of modification/correction to be carried out, contractor shall carry out the said modifications/correction without additional cost. The Contractor shall remain in close contact with Engineer In-Charge at site to report the general findings of the fieldwork during the initial as well as later stage of the work at site.

The contractor shall be solely responsible for any shortage or damage of materials issued to them handling of and / or in storage and erection at site and cost of the same will be recovered from the contractor as certified by Engineer In-Charge. Contractor must submit a periodical material reconciliation statement in the approval format with every Running Bill raise by him or end of every month whichever is earlier. The contractor shall maintain an accurate and exhaustive record detailing out the list of all items received by him for the purpose of erection and keep such record open for the inspection of the company.

### **14. PENALTY AND LIQUIDATED DAMAGES**

14.1 Penalty: A penalty of 10% of bill amount shall be levied in each case of non-compliance of safety practices and site cleanliness.

14.2 Liquidated Damages: In the event of any delay in completion of the work beyond the stipulated time given by in order due to reasons solely attributable to the Contractor, the Contractor shall pay to the Company liquidated damages.

If the Contractor failed perform the services within the time period specified in the order, the Company shall, without prejudice to its other remedies under the contract, deduct liquidated damages a sum equivalent to 1 % of the order value for each week or part there of delay until the actual date of completion up to a maximum deduction of 10% of total order value or remaining value. Once the maximum is reached to Company may consider termination of contract without any liabilities to Company.

Engineer In charge should specifically mention the amount of LD levied on the bill of contractor.

### **15. SAFETY CODE:**

The Contractor shall ensure adequate safety precautions at site as required under the law of the land and shall be entirely responsible for the complete safety of their workman as well as other workers at site and premises. The contractor shall not deploy any worker below the age of 18 years.

The contractor shall observe the safety requirements as laid down in the contract and in case of sub-contract (only after written approval of company); it shall be the responsibility of main contractor that all safety requirements are followed by the employees and staff of the sub-contractor.

The contractor employing two hundred employees or more, including contract workers, shall have a safety coordinator in order to ensure the implementation of safety requirements of the contract and a contractor with lesser number of employees, including contract workers, shall nominate one of his employees to act as safety coordinator who shall liaise with the safety officer on matters relating to safety and his name shall be displayed on the notice board at a prominent place at the work site.

The contractor shall be responsible for non-compliance of the safety measures, implications, injuries, fatalities and compensation arising out of such situations or incidents.

In case of any accident, the contractor shall immediately submit a statement of the same to the owner and the safety officer, containing the details of the accident, any injury or casualties, extent of properly damage and remedial action taken to prevent recurrence and in addition, the contractor shall submit a monthly statement of the accidents to the owner at the end of each month.

#### **16. STATUTORY OBLIGATIONS:**

The Contractor shall take all steps as may be necessary to comply with the various applicable laws/rules including the provisions of contract labour (Regulation & Abolition Act) 1970 as amended, minimum wages Act, 1984, Workman Compensation Act, ESI Act, PF Act, Bonus Act and all other applicable laws and rules framed there under including any statutory approval required from the Central/State Govt. Ministry of Labour. Broadly, the compliance shall be as detailed below, but not limited to:

- a) An Electrical license issued by Govt. of Delhi.
- b) PF Code No. and all employees to have PF A/c No. under PF every Act, 1952.
- c) All employees to have a temporary or permanent ESI Card as per ESI Act.
- d) ESI Registration No.
- e) GST registration number, if applicable.
- f) PAN No.
- g) Work Contract Tax Registration Number/ VAT Registration.
- h) Labour License under Contract Labour Act (R & A) Act 1970
- i) Electrical License

(Engineer-in-charge responsible for execution of the job should obtain a copy of Labour License before start of the work by the contractor.)

The Contractor must follow:

- a) Third party Insurance Policy before start of work.
- b) To follow Minimum Wages Act prevailing in the state.
- c) Salary / Wages to be distributed in presence of representative of Company's representative not later than 7th of each month.
- d) To maintain Wage- cum - Attendance Register.
- e) To maintain First Aid Box at Site.
- f) Latest P.F. and E.S.I. challans pertaining to the period in which work was undertaken along with a certificate mentioning that P.F. and E.S.I. applicable to all the employees has been deducted and deposited with the Authorities within the time limits specified under the respective Acts.



BSES RAJDHANI POWER LIMITED

- g) Workman Compensation Policy. {If applicable}
- h) Labour license before start of work. {If applicable}

#### **17. WORKMAN COMPENSATION:**

The Contactor shall take insurance policy under the Workman Compensation Act to cover such workers who are not covered under ESI and PF by the Contractor however engaged to undertake the jobs covered under this order and a copy of this insurance policy will be given to Company for reference and records. This insurance policy shall be kept valid at all times. In case there are no worker involve other than those who are covered under ESI and PF by the Contractor, the Contractor shall certify for the same,

The contractor shall keep the company indemnified at all times, against all claims of compensation under the provision of Workmen Compensation Act 1923 and as amended from time to time or any compensation payable under any other law for the time being workman engaged by the contractor/sub-contractor/sub-agent in carrying out the job involved under this work order and against costs and expenses, if any, incurred by the company in connection therewith and without prejudice to make any recovery.

The company shall be entitled to deduct from any money due to or to become due to the Contractor, moneys paid or payable by way of compensation as aforesaid or cost or expenses in connection with any claims thereto and the Contractor shall abide by the decision of the Company as to the sum payable by the Contractor under the provisions of this clause.

#### **ACCIDENTAL INSURANCE POLICY FOR LIFE COVER:**

Before commencing the execution of the work the CONTRACTOR shall take Accidental insurance policy for the staff engaged by him for this work to insure against any loss of life which may occur during the contract for the work of the COMPANY. The policy shall have coverage of Rs. 10 Lacs (Table C- Death + Permanent Total Disability + Partial permanent Disability due to external accidents). The Contractor shall be responsible for on the spot same day claim settlement with the victim's legal heirs without waiting for settlement by insurance claim without any liability on BRPL. The premium amount for such life cover policy shall be borne by the contractor. The contractor shall furnish copy of policy when demanded by BRPL.

#### **18. STAFF AND WORKMAN**

It shall be responsibility of contractor

(a) To obtain Contract Labour License from the concerned authorities and maintain proper liaison with them. Necessary Forms for obtaining Labour License would be issued by the company. However you will bear all expenses for obtaining Labour license and registration in PF Department for your scope of work. You will deposit PF of your staff/laborer each month and all related documents should be furnished to us.

b) To obtain workman insurance cover against deployment of workers etc.

(II) To maintain, proper records relating to workmen employed, in the form of various Registers, namely,

- a) Register of workmen.
- b) Register of muster roll.
- c) Register of overtime.
- d) Register of wages.
- e) Any other register as per latest amendment Labour Act.

The records shall be in the prescribed formats only.

(III) To disburse monthly wages to your workers/ supervisors in time and in the presence of Company representatives or as directed by the Labour authorities.

(IV) To maintain proper liaison with the Project authorities, local police and all other government and local bodies.

(V) To pay your workmen at least not less than the minimum prescribed wages as per state/Central Labour laws as may be, applicable. The contractor shall, be responsible for compliance of all the provisions of minimum Wages Act, PF, ESIC Act workmen Compensation Act and Contract Labour Regulation & Abolition Act the rules made there under. In case of non-compliance of the statutory requirements. The company would take necessary action at the risk and cost of the Contractor.

(VI) To employ required number of skilled/semi-skilled and unskilled workmen as per site requirement to complete the entire project as per schedule. To provide safety shoes, safety helmets, safety belts, gloves etc. to your worker/staff as per requirement during erection work.

(VII) To employ necessary engineering and supervisory staff for completion of the Project in time. While day-to-day management of the site and supervision of the works shall be the responsibility of your Engineer - In charge, he will report to the Engineer in charge to assist him to discharge the overall responsibility of the execution of the project.

## **19. THIRD PARTY INSURANCE**

Before commencing the execution of the work the contractor shall take third party insurance policy to insure against any damage or loss or injury which may occur to any property / public property or to any person or any employee or representative of any outside Agency/ the company engaged or not engaged for the work of the company, by or arising out of the execution of the work or temporary work or in carrying out of this Agreement. For third party insurance policies, the contractor shall be responsible for settlement of claims with the underwriters without any liability on the purchaser / owner and will arrange replacements / rectification expeditiously without a waiting settlement by insurance claim at contractors own cost.

## **20. SECURITY**

Adequate number of trained Security Guards shall be deployed both at the storage yard and stores as well as places of work to prevent theft and pilferage of material and accessories and various other materials. All security rules and safety rules enforced at site by company shall be strictly observed.

## **21. ENVIRONMENTAL, HEALTH & SAFETY PLAN:**



Contractor will make ensure that the Environment, Health & Safety (EHS) requirements are clearly understood and faithfully implemented at all levels at site as per instruction of Company. Contractors must comply with these requirements:

- a) Comply with all of the elements of the EHS Plan and any regulations applicable to the work
- b) Comply with the procedures provided in the interests of Environment, Health and Safety
- c) Ensure that all of their employees designated to work are properly trained and competent
- d) Ensure that all plant and equipment they bring on to site has been inspected and serviced in accordance with legal requirement and manufacturer's or suppliers' instructions
- e) Make arrangements to ensure that all employees designated to work on or visit the site present themselves for site induction prior to commencement of work
- f) Provide details of any hazardous substances to be brought onsite
- g) Ensure that a responsible person accompanies any of their visitors to site

All contractors staff is accountable for the following:

1. Use the correct tools and equipment for the job and use safety equipment and protective clothing supplied, e.g. helmets, goggles, ear protection, etc. as instructed
2. Keep tools in good condition
3. Report to the Supervisor any unsafe or unhealthy condition or any defects in plant or equipment
4. Develop a concern for safety for themselves and for others
5. Prohibit horseplay
6. Not to operate any item of plant unless they have been specifically trained and are authorized to do so.

## **22. TEST CERTIFICATE & QUALITY ASSURANCE:**

The Contractor shall procure all equipment from genuine sources as approved by the Company and as per Company specifications. The Contractor shall submit all the test certificates and joint inspection reports related to major equipment wherever applicable. The contractor shall ensure for the strict compliance to the specifications and Field Quality Procedures issued by company / Engineer in-charge.

## **23. SUB-CONTRACTING / SUBLETTING:**

CONTRACTOR shall not assign or transfer the whole or any part of this Work Order or any other benefits accruing there from nor shall it subcontract / sublet the whole or any part of the Works without the prior written consent of COMPANY.

In the event the contractor assigns this work order, contractor's assignees shall be bound by the terms and conditions of this work order and shall, if deemed necessary by COMPANY at the time of such assignment, undertake in writing to be so bound by this Work Order.

Notwithstanding the subletting / subcontracting of any portion of the works, contractor shall remain wholly responsible for the carrying out, completion and satisfactory execution of Works in all respects in accordance with this Work Order, specification, approved drawings and data sheets.

#### **24. INDEMNITY:**

Contractor shall indemnify and save harmless COMPANY against and from any and all liabilities, claims, damages, losses or expenses arising due to or resulting from:

- a) any breach non-observance or non-performance by contractor or its employees or agents of any of the provisions of this Work Order.
- b) any act or omission of contractor or its employees or agents.
- c) any negligence or breach of duty on the part of contractor, its employees or agents including any wrongful use by it or them of any property or goods belonging to or by COMPANY.

Contractor shall at all times indemnify COMPANY against all liabilities to other persons, including the employees or agents of COMPANY or contractor for bodily injury, damage to property or other loss which may arise out of or in consequence of the execution or completion of Works and against all costs charges and expenses that may be occasioned to COMPANY by the claims of such person.

#### **25. EVENTS OF DEFAULTS:**

COMPANY may, without prejudice to any of its other rights or remedies under the Work Order or in law, terminate the whole or any part of this Work Order by giving written notice to the Contractor, if in the opinion of COMPANY, contractor has neglected to proceed with the works with due diligence or commits a breach of any of the provisions of this work order including but not limited to any of the following cases:

- a) Failing to complete execution of work within the terms specified in this work order.
- b) Failing to complete works in accordance with the approved schedule of works.
- c) Failing to meet requirements of specifications, drawings, and designs as approved by COMPANY.
- d) Failing to comply with any reasonable instructions or orders issued by COMPANY in connection with the works.
- e) Failing to comply with any of the terms or conditions of this work order.

In the event COMPANY terminates this work order, in whole or in part, on the occurrence of any event of default, COMPANY reserves the right to engage any other subcontractor or agency to

complete the work or any part thereof, and in addition to any other right COMPANY may have under this work order or in law including without limitation the right to penalize for delay under



BSES RAJDHANI POWER LIMITED

clause 15.0 of this work order, the contractor shall be liable to COMPANY for any additional costs that may be incurred by COMPANY for the execution of the Work.

## **26 RISK & COST:**

If the Contractor fails to execute the work as per specification / as per the direction of Engineer's In-charge within the scheduled period and even after the extended period, the contract shall get cancelled and company reserves the right to get the work executed from any other source at the Risk & Cost of the Contractor. The Extra Expenditure so incurred shall be debited to the Contractor.

## **27. ARBITRATION:**

To the best of their ability, the parties hereto shall endeavor to resolve amicably between themselves all disputes arising in connection with this LOA. If the same remain unresolved within thirty (30) days of the matter being raised by either party, either party may refer the dispute for settlement by arbitration. The arbitration to be undertaken by two arbitrators, one each to be appointed by either party. The arbitrators appointed by both the parties shall mutually nominate a person to act as presiding arbitrator before entering upon the reference in the event of a difference between the two arbitrators and the award of the said presiding arbitrator in such a contingency shall be conducted in accordance with the provisions of the Indian Arbitration & Conciliation Act, 1996 and the venue of such arbitration shall be in the city of New Delhi only.

## **28. FORCE MAJEURE:**

### **28.1 General:**

An "Event of Force Majeure" shall mean any event or circumstance not within the reasonable control, of the Party affected, but only if and to the extent that:

(i) Such event or circumstance, despite the exercise of reasonable diligence, could not have been prevented, avoided or reasonably foreseen by such Party;

(ii) Such event or circumstance materially and adversely affects the ability of the affected Party to perform its obligations under this Contract, and the affected Party has taken all reasonable precautions, due care and reasonable alternative measures in order to prevent or avoid the effect of such event on the affected parties ability to perform its obligations under this Contract and to mitigate the consequences thereof. For the avoidance of doubt, if such event or circumstance would not have materially and adversely affected the performance of the affected party had such affected party followed good industry practice, such event or circumstance shall not constitute force majeure.

(iii) Such event is not the direct or indirect result of the failure of such Party to perform any of its obligations under this Contract; and



BSES RAJDHANI POWER LIMITED

(iv) Such Party has given the other Party prompt notice describing such events, the effect thereof and the actions being taken in order to comply with above clause

### **28.2 Specific Events of Force Majeure:**

Subject to the provisions of above clause, Events of Force Majeure shall include only the following to the extent that they or their consequences satisfy the above requirements:  
The following events and circumstances:

(i) Effect of any natural element or other acts of God, including but not limited to storm, flood, earthquake, lightning, cyclone, landslides or other natural disasters, and

(ii) Explosions or fires

(iii) Declaration of the Site as war zone.

Any order, regulation, directive, requirement from any Governmental, legislative, executive or judicial authority.

### **28.3 Notice of Events of Force Majeure**

If a force majeure event prevents a party from performing any obligations under the Contract in part or in full, that party shall :

(i) Immediately notify the other party in writing of the force majeure events within 2 working days of the occurrence of the force majeure event

(ii) Be entitled to suspend performance of the obligation under the Contract which is affected by force majeure event for the duration of the force majeure event

(iii) Use all reasonable efforts to resume full performance of the obligation as soon as practicable

(iv) Keep the other party informed of all such efforts to resume full performance of the obligation on a regular basis

(v) Provide prompt notice of the resumption of full performance or obligation to the other party.

### **28.4 Mitigation of events of force majeure:**

The Contractor shall:

(i) Make all reasonable efforts to prevent and reduce to a minimum and mitigate the effect of any delay occasioned by an Event of Force Majeure, including applying other ways in which to perform the Contract;

(ii) Use its best efforts to ensure resumption of normal performance after the termination of any Event of Force Majeure and shall perform its obligations to the maximum extent practicable as agreed between the Parties; and Keep the Company informed at regular intervals of the circumstances concerning the event of Force Majeure, with best estimates as to its likely

continuation and what measures or contingency planning it is taking to mitigate and or terminate the Event of Force Majeure.

#### **28.5 Burden of proof:**

In the event that the Parties are unable in good faith to agree that a Force Majeure event has occurred to an affected party, the parties shall resolve their dispute in accordance with the provisions of this Contract. The burden of proof as to whether or not a force majeure event has occurred shall be upon the party claiming that the force majeure event has occurred and that it is the affected party.

#### **28.6 Terminations for certain events of force majeure:**

If any obligation of any Party under the Contract is or is reasonably expected to be delayed or prevented by a Force Majeure event for a continuous period of more than 1 (one) month during the Term of the Contract the Contract shall be terminated at the discretion of the Company and neither Party shall be liable to the other for any consequences arising on account of such termination.

#### **29. SECRECY CLAUSE:**

The technical information, drawing and other related documents forming part of work order and the information obtained during the course of investigation under this work order shall be the Company's executive property and shall not be used for any other purpose except for the execution of the work order. The technical information drawing, records and other document shall not be copied, transferred, or divulged and/ or disclosed to third party in full/part, not misused in any form whatsoever except to the extent for the execution of this work order.

These technical information, drawing and other related documents shall be returned to the Company with all approved copies and duplicates including drawing/plans as are prepared by the Contractor during the executions of this work order, if any, immediately after they have been used for agreed purpose.

In the event of any breach of this provision, the contractor shall indemnify the Company against any loss, cost or damage or claim by any party in respect of such breach.

#### **30. TERMINATION:**

"During the course of the execution, if at any time BSES observe and form an opinion that the work under the order is not being performed in accordance with the terms of this Agreement, BSES reserves its right to cancel this Agreement giving 15 days notice mentioning the reason for the termination of the agreement and BSES will recover all damages including losses occurred due to loss of time from Contractor.

#### **31. QUALITY:**

Contractor shall ensure that strict quality is maintained and execution of works under this Work Order and Works are executed in conformity with the Specification.



BSES RAJDHANI POWER LIMITED

All tools, tackles, instruments and other equipments used in the execution of the Works shall be duly calibrated as required and Contractor shall maintain proper records of such tools, tackles, instruments and / or equipment.

### **32. ACCEPTANCE**

Acceptance of this work order implies and includes acceptance of all terms and conditions enumerated in this work order in the technical specification and drawings made available to you consisting of general conditions, detailed scope of work, detailed technical specification & detailed equipment, drawing. Complete scope of work and the Contractor's and Company's contractual obligation are strictly limited to the terms set out in the work order. No amendments to the concluded work order shall be binding unless agreed to in writing for such amendment by both the parties.

However, during the course of the execution of the work order, if at any time the Company's representative observe and form an opinion that the work under the work order is not being performed in accordance with the terms of this work order, the company reserves its right to cancel this work order forthwith without assigning any reason and the Company will recover all damages including losses occurred due to loss of time from the Contractor.

We request you to please sign the duplicate copy of this work order as a token of your acceptance and return to us.

## **SECTION VIII VENDOR CODE OF CONDUCT**

Purchaser is committed to conducting its business in an ethical, legal and socially responsible manner. To encourage compliance with all legal requirements and ethical business practices, Purchaser has established this Vendor Code of Conduct (the "Code") for Purchaser's Vendors. For the purposes of this document, "Vendor" means any company, corporation or other entity that sells, or seeks to sell goods or services, to Purchaser, including the Vendor's employees, agents and other representatives. Fundamental to adopting the Code is the understanding that a business, in all of its activities, must operate in full compliance with the laws, rules and regulations of the countries in which it operates. This Code encourages Vendors to go beyond legal compliance, drawing upon internationally recognized standards, in order to advance social and environmental responsibility.

I. Labour and Human Rights

Vendors must uphold the human rights of workers, and treat them with dignity and respect as understood by the international community.

- Fair Treatment - Vendors must be committed to a workplace free of harassment. Vendors shall not threaten workers with or subject them to harsh or inhumane treatment, including sexual harassment, sexual abuse, corporal punishment, mental coercion, physical coercion, verbal abuse or unreasonable restrictions on entering or exiting company provided facilities.
- Antidiscrimination - Vendors shall not discriminate against any worker based on race, colour, age, gender, sexual orientation, ethnicity, disability, religion, political affiliation, union membership, national origin, or marital status in hiring and employment practices such as applications for employment, promotions, rewards, access to training, job assignments, wages, benefits, discipline, and termination. Vendors shall not require a pregnancy test or discriminate against pregnant workers except where required by applicable laws or regulations or prudent for workplace safety. In addition, Vendors shall not require workers or potential workers to undergo medical tests that could be used in a discriminatory way except where required by applicable law or regulation or prudent for workplace safety.
- Freely Chosen Employment - Forced, bonded or indentured labour or involuntary prison labour is not to be used. All work will be voluntary, and workers should be free to leave upon reasonable notice. Workers shall not be required to hand over government-issued identification, passports or work permits as a condition of employment.
- Prevention of Under Age Labour - Child labour is strictly prohibited. Vendors shall not employ children. The minimum age for employment or work shall be 15 years of age, the minimum age for employment in that country, or the age for completing compulsory education in that country, whichever is higher. This Code does not prohibit participation in legitimate workplace apprenticeship programs that are consistent with Article 6 of ILO Minimum Age Convention No. 138 or light work consistent with Article 7 of ILO Minimum Age Convention No. 138.
- Juvenile Labour - Vendors may employ juveniles who are older than the applicable legal minimum age for employment but are younger than 18 years

of age, provided they do not perform work likely to jeopardize their health, safety, or morals, consistent with ILO Minimum Age Convention No. 138.

- Minimum Wages - Compensation paid to workers shall comply with all applicable wage laws, including those relating to minimum wages, overtime hours and legally mandated benefits. Any disciplinary wage deductions are to conform to local law. The basis on which workers are being paid is to be clearly conveyed to them in a timely manner.
- Working Hours - Studies of good manufacturing practices clearly link worker strain to reduced productivity, increased turnover and increased injury and illness. Work weeks are not to exceed the maximum set by local law. Further, a work week should not be more than 60 hours per week, including overtime, except in emergency or unusual situations. Workers should be allowed at least one day off per seven-day week.
- Freedom of Association - Open communication and direct engagement between workers and management are the most effective ways to resolve workplace and compensation issues. Vendors are to respect the rights of workers to associate freely and to communicate openly with management regarding working conditions without fear of reprisal, intimidation or harassment. Workers' rights to join labour unions, seek representation and or join worker's councils in accordance with local laws should be acknowledged.

II. Health and Safety Vendors must recognize that in addition to minimizing the incidence of work-related injury and illness, a safe and healthy work environment enhances the quality of products and services, consistency of production and worker retention and morale. Vendors must also recognize that ongoing worker input and education is essential to identifying and solving health and safety issues in the workplace.

The health and safety standards are:

- Occupational Injury and Illness - Procedures and systems are to be in place to prevent, manage, track and report occupational injury and illness, including provisions to: a) encourage worker reporting; b) classify and record injury and illness cases; c) provide necessary medical treatment; d) investigate cases and implement corrective actions to eliminate their causes; and e) facilitate return of workers to work.



- Emergency Preparedness - Emergency situations and events are to be identified and assessed, and their impact minimized by implementing emergency plans and response procedures, including: emergency reporting, employee notification and evacuation procedures, worker training and drills, appropriate fire detection and suppression equipment, adequate exit facilities and recovery plans.
- Occupational Safety - Worker exposure to potential safety hazards (e.g., electrical and other energy sources, fire, vehicles, and fall hazards) are to be controlled through proper design, engineering and administrative controls, preventative maintenance and safe work procedures (including lockout/tagout), and ongoing safety training. Where hazards cannot be adequately controlled by these means, workers are to be provided with appropriate, well-maintained, personal protective equipment. Workers shall not be disciplined for raising safety concerns.
- Machine Safeguarding - Production and other machinery is to be evaluated for safety hazards. Physical guards, interlocks and barriers are to be provided and properly maintained where machinery presents an injury hazard to workers.
- Industrial Hygiene - Worker exposure to chemical, biological and physical agents is to be identified, evaluated, and controlled. Engineering or administrative controls must be used to control overexposures. When hazards cannot be adequately controlled by such means, worker health is to be protected by appropriate personal protective equipment programs.
- Sanitation, Food, and Housing - Workers are to be provided with ready access to clean toilet facilities, potable water and sanitary food preparation, storage, and eating facilities. Worker dormitories provided by the Participant or a labour agent are to be maintained clean and safe, and provided with appropriate emergency egress, hot water for bathing and showering, and adequate heat and ventilation and reasonable personal space along with reasonable entry and exit privileges.
- Physically Demanding Work - Worker exposure to the hazards of physically demanding tasks, including manual material handling and heavy or repetitive lifting, prolonged standing and highly repetitive or forceful assembly tasks is to be identified, evaluated and controlled.

### III. Environmental

Vendors should recognize that environmental responsibility is integral to producing world class products. In manufacturing operations, adverse effects on the environment and natural resources are to be minimized while safeguarding the health and safety of the public.

The environmental standards are:

- **Product Content Restrictions** - Vendors are to adhere to applicable laws and regulations regarding prohibition or restriction of specific substances including labeling laws and regulations for recycling and disposal. In addition, Vendors are to adhere to all environmental requirements specified by Purchaser.
- **Chemical and Hazardous Materials** -Chemical and other materials posing a hazard if released to the environment are to be identified and managed to ensure their safe handling, movement, storage, recycling or reuse and disposal.
- **Air Emissions** - Air emissions of volatile organic chemicals, aerosols, corrosives, particulates, ozone depleting chemicals and combustion by-products generated from operations are to be characterized, monitored, controlled and treated as required prior to discharge.
- **Pollution Prevention and Resource Reduction** -Waste of all types, including water and energy, are to be reduced or eliminated at the source or by practices such as modifying production, maintenance and facility processes, materials substitution, conservation, recycling and re-using materials.
- **Wastewater and Solid Waste** - Wastewater and solid waste generated from operations, industrial processes and sanitation facilities are to be monitored, controlled and treated as required prior to discharge or disposal.
- **Environmental Permits and Reporting** - All required environmental permits (e.g. discharge• monitoring) and registrations are to be obtained, maintained and kept current and their operational and reporting requirements are to be followed.

### IV. Ethics

Vendors must be committed to the highest standards of ethical conduct when dealing with workers, Vendors, and customers.

- Corruption, Extortion, or Embezzlement - Corruption, extortion, and embezzlement, in any form, are strictly prohibited. Vendors shall not engage in corruption, extortion or embezzlement in any form and violations of this prohibition may result in immediate termination as an Vendor and in legal action.
- Disclosure of Information - Vendors must disclose information regarding its business activities, structure, financial situation, and performance in accordance with applicable laws and regulations and prevailing industry practices.
- No Improper Advantage - Vendors shall not offer or accept bribes or other means of obtaining undue or improper advantage.
- Fair Business, Advertising, and Competition - Vendors must uphold fair business standards in advertising, sales, and competition.
- Business Integrity - The highest standards of integrity are to be expected in all business interactions. Participants shall prohibit any and all forms of corruption, extortion and embezzlement. Monitoring and enforcement procedures shall be implemented to ensure conformance.
- Community Engagement - Vendors are encouraged to engage the community to help foster social and economic development and to contribute to the sustainability of the communities in which they operate.
- Protection of Intellectual Property - Vendors must respect intellectual property rights; safeguard customer information; and transfer of technology and know-how must be done in a manner that protects intellectual property rights.

#### V. Management System

Vendors shall adopt or establish a management system whose scope is related to the content of this Code. The management system shall be designed to ensure (a) compliance with applicable laws, regulations and customer requirements related to the Vendors' operations and products; (b) conformance with this Code; and (c) identification and mitigation of operational risks related to this Code. It should also facilitate continual improvement.

The management system should contain the following elements:

- Company Commitment - Corporate social and environmental responsibility statements affirming Vendor's commitment to compliance and continual improvement.

- Management Accountability and Responsibility - Clearly identified company representative[s] responsible for ensuring implementation and periodic review of the status of the management systems.
- Legal and Customer Requirements - Identification, monitoring and understanding of applicable laws, regulations and customer requirements.
- Risk Assessment and Risk Management - Process to identify the environmental, health and safety and labour practice risks associated with Vendor's operations. Determination of the relative significance for each risk and implementation of appropriate procedural and physical controls to ensure regulatory compliance to control the identified risks.
- Performance Objectives with Implementation Plan and Measures - Areas to be included in a risk assessment for health and safety are warehouse and storage facilities, plant/facilities support equipment, laboratories and test areas, sanitation facilities (bathrooms), kitchen/cafeteria and worker housing /dormitories. Written standards, performance objectives, targets and implementation plans including a periodic assessment of Vendor's performance against those objectives.
- Training - Programs for training managers and workers to implement Vendor's policies, procedures and improvement objectives.
- Communication - Process for communicating clear and accurate information about Vendor's performance, practices and expectations to workers, Vendors and customers.
- Worker Feedback and Participation - Ongoing processes to assess employees' understanding of and obtain feedback on practices and conditions covered by this Code and to foster continuous improvement.
- Audits and Assessments - Periodic self-evaluations to ensure conformity to legal and regulatory requirements, the content of the Code and customer contractual requirements related to social and environmental responsibility.
- Corrective Action Process - Process for timely correction of deficiencies identified by internal or external assessments, inspections, investigations and reviews.
- Documentation and Records - Creation of documents and records to ensure regulatory compliance and conformity to company requirements along with appropriate confidentiality to protect privacy.

The Code is modelled on and contains language from the Recognized standards such as International Labour Organization Standards (ILO), Universal Declaration of Human Rights (UDHR), United Nations Convention against Corruption, and the Ethical Trading Initiative (ETI) were used as references in preparing this Code and may be useful sources of additional information.

### **Annexure - I**

The Contractor must submit the following to Engineer-In-Charge before commencement of work:

- a) An Electrical license.
- b) PF Code No. and all employees to have PF A/c No. under PF every Act, 1952.
- c) All employees to have a temporary or permanent ESI Card as per ESI Act.
- d) ESI Registration No.
- e) PAN No.
- f) Work Contract Tax/VAT Registration Number.
- g) Labor License under Contract Labor Act (R & A) Act 1970(All Engineer-in-charge responsible for execution of the job should obtain a copy of Labor License as per guidelines of HR department before start of the work by the contractor.)
- h) GST No.

The Contractor must follow:

- a) Third party Insurance Policy before start of work.

- b) To follow Minimum Wages Act prevailing in the state.
- c) Salary/ Wages to be distributed in presence of Company's representative not later than 7th of each month.
- d) To maintain Wage- cum - Attendance Register.
- e) To maintain First Aid Box at Site.
- f) Latest P.F. and E.S.I. challans pertaining to the period in which work was undertaken along with a certificate mentioning that P.F. and E.S.I. applicable to all the employees has been deducted and deposited with the Authorities within the time limits specified under the respective Acts.
- g) Workman Compensation Policy. (If applicable)
- h) Labor license before start of work. (If applicable)

**Appendix- I**  
**COMMERCIAL TERMS AND CONDITIONS – SUPPLY**

Sl No	Item Description	AS PER BRPL	BIDDER'S CONFIRMATION
1	Validity	120 days from the due date of submission or amended due date of submission	
2	Price basis	a) <b>Firm</b> , FOR Delhi store basis. Prices shall be inclusive of GST, freight up to Delhi stores. b) Unloading at stores - in vendor's scope c) Transit insurance in BRPL scope	
3	Payment terms	<b><u>Supply Part</u></b> a) 10% advance against submission of BG of equivalent amount valid upto completion period/handing over , whichever is earlier plus 3 months claim period. In case of delay, the BG shall be extended suitably. b) 50% prorata of supply value shall be payable against	

		<p>R/A bills for supply of equipment and materials within 30 days against receipt of material at site and submission of following documents duly certified by BRPL Project-in-charge:</p> <ul style="list-style-type: none"> <li>i. Consignee copy of LR</li> <li>ii. Detailed invoice showing commodity description, qty, unit &amp; total price,</li> <li>iii. Original certificate issued by BRPL confirming receipt of material at site &amp; acceptance.</li> <li>iv. Dispatch clearance &amp; inspection report issued by the inspection authority.</li> <li>v. Packing List, Test Reports</li> <li>vi. Guarantee Certificate.</li> </ul> <p>c) 40% prorata after Installtion, testing, Commissioning &amp; Integration with SCADA of equipment of installation duly certified by BRPL Project-in-charge and Handing Over of the entire Installation and submission of BG of 10% of contract value valid up to Defect Liability period plus 3 months towards Claim period.</p> <p><b><u>Erection, Testing, Installation and Commisioning:</u></b></p> <p>a) 10% advance against submission of BG of equivalent amount valid upto completion period/handing over , whichever is earlier plus 3 months claim period. In case of delay, the BG shall be extended suitably.</p> <p>b) 90% after Installation, testing, Commissioning &amp; Integration with SCADA of equipment of installation duly certified by BRPL Project-in-charge.</p>	
4	Completion time	Commissioning of Testing & Commissioning of materials: 270 days from date of LOI/ PO	
5	Defect Liability period	60 months from the date of handing over of entire Installation.	
6	Liquidated damages	1% of basic price for every week delay subject to maximum of 10% of total PO/WO value of undelivered units/ remaining work.	
7	Performance Bank Guarantee	Contractor shall submit the performance bank guarantee equivalent to the 10% of the contract value at the time of claiming the last payment, with the validity of the bank guarantee till Defect Liability Period plus 3 months.	

**APPENDIX II**

**BID FORM**

To

Head of Department  
Contracts & Material Deptt.  
BSES Rajdhani Power Ltd  
New Delhi 110019

Sir,

1 We understand that BRPL is desirous of execution of  
.....(Name of work)

2 Having examined the Bidding Documents for the above named works, we the

NIT: CMC/BR/21-22/RS/MS/928

Page 48 of 57

Bidders seal & signature





BSES RAJDHANI POWER LIMITED

undersigned, offer to deliver the goods in full conformity with the Terms and Conditions and technical specifications for the sum indicated in Price Bid or such other sums as may be determined in accordance with the terms and conditions of the contract .The above amounts are in accordance with the Price Schedules attached herewith and are made part of this bid.

3 If our Bid is accepted, we under take to deliver the entire goods as) as per delivery schedule mentioned in Section IV from the date of award of purchase order/letter of intent.

4 If our Bid is accepted, we will furnish a performance bank guarantee for an amount of 10% (Ten)percent of the total contract value for due performance of the Contract in accordance with the Terms and Conditions.

5 We agree to abide by this Bid for a period of 120 days from the due date of bid submission & subsequent corrigendum/amendment/extension of due date of submission. It shall remain binding upon us and may be accepted at any time before the expiration of that period.

6 We declare that we have studied the provision of Indian Laws for supply of equipments/materials and the prices have been quoted accordingly.

7 Unless and until Letter of Intent is issued, this Bid, together with your written acceptance there of, shall constitute a binding contract between us.

8 We understand that you are not bound to accept the lowest, or any bid you may receive.

9 There is provision for Resolution of Disputes under this Contract, in accordance with the Laws and Jurisdiction of Contract.

Dated this..... day of..... 20.....

Signature..... In the capacity of

.....duly authorized to sign for

and on behalf of

(IN BLOCK CAPITALS).....

### Appendix III

#### ACCEPTANCE FORM FOR PARTICIPATION IN REVERSE AUCTION EVENT

(To be signed & stamped by the bidder along-with bid)

BSES Rajdhani Power Ltd (BRPL) intends to use reverse auction through SAP-SRM tool as an integral part of entire tendering process. All techno-commercially qualified bidders shall participate in the reverse auction.

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

1. In case of bidding through Internet medium, bidders are advised to ensure availability of all associated infrastructure as required to participate in the reverse auction event. Inability to bid due to telephone glitch, internet response issues, software & hardware hangs/failures, power failures or any other reason shall not be the responsibility of BRPL.



BSES RAJDHANI POWER LIMITED

2. In case bidder fails to participate in the reverse auction event due to any reason whatsoever, it shall be presumed that the bidder has no further discounts to offer and the initial bid submitted by them as a part of tender shall be considered as bidder's Final No Regret offer. Any off-line price bids received from a bidder in lieu of non-participation in the reverse auction event shall be rejected by BRPL.
3. The bidder is advised to understand the auto bid process t safeguard themselves against any possibility of non-participation in the reverse auction event.
4. The bidder shall be prepared with competitive price quotes during the day of reverse auction event.
5. The prices quoted by bidder in reverse auction event shall be on FOR Landed cost BRPL Store/site basis inclusive of all relevant taxes, duties, levies, transportation charges etc.
6. The prices submitted by the bidder during reverse auction event shall be binding on the Bidder.
7. The bidder agrees to non-disclosure of trade information regarding bid details e.g. purchase, Identity, bid process/technology, bid documentation etc.
8. BRPL will make every effort to make the bid process transparent. However award decision of BRPL will be final and binding on the bidder.
9. The prices submitted during reverse auction event shall be binding on the bidder.
10. No request for Time extension of the reverse auction event shall be considered by BRPL.
11. BRPL shall provide the user id and password to the authorized representative of the bidder. Authorization letter in lieu of the same shall be submitted along with the signed and stamped acceptance form.
12. The original price bids of the bidders shall be reduced on pro-rata basis against each line item based on the final all inclusive prices offered during conclusion of the reverse auction event for arriving at contract amount

#### APPENDIX IV

##### FORMAT FOR EMD BANK GUARANTEE

*(To be issued in a Non Judicial Stamp Paper of Rs.50/-purchased in the name of the bank)*

Whereas [*name of the Bidder*] (herein after called the "Bidder") has submitted its bid dated [*date of submission of bid*] for the supply of [*name and/or description of the goods*] (here after called the "Bid").

KNOW ALL PEOPLE by these presents that WE [name of bank] at [*Branch Name and address*],having our registered office at[*address of the registered office of the bank*](herein after called the "Bank"),are bound unto BSES Rajdhani Power Ltd., with it's Corporate Office at BSES Bhawan Nehru Place, New Delhi -110019 ,(herein after called —the "Purchaser")in the sum of Rs. ....-/- (Rupees ..... only) for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors, and assigns by these presents.

Sealed with the Common Seal of the said Bank this \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_.

THE CONDITIONS of this obligation are:

- 1 If the Bidder withdraws its Bid during the period of bid validity specified by the Bidder on the Bid Form ; or
2. If the Bidder, having been notified of the acceptance of its Bid by the Purchaser during the period of bid validity:

- (a) Fails or refuses to execute the Contract Form, if required; or
- (b) Fails or refuses to furnish the performance security, In accordance with the Instructions to Bidders/ Terms and Conditions;

We undertake to pay to the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that is its demand the purchaser will note that amount claimed by it is due to it, owing to the occurrence of one or both of the two condition(s), specifying the occurred condition or condition(s).

This guarantee will remain in force up to and including One Hundred Twenty(120) days after the due date of submission bid, and any demand in respect thereof should reach the Bank not later than the above date.

(Stamp & signature of the bank)

Signature of the witness

## APPENDIX - V

### LITIGATION HISTORY

Year	Name of client	Details of contract & date	Cause of Litigation/ arbitration and dispute	Disputed amount

## APPENDIX - VI

### CURRENT CONTRACT COMMITMENTS/ WORK IN PROGRESS



BSES RAJDHANI POWER LIMITED

Year	Name of client	Details of contract & date	Value of outstanding work	Estimated completion date

## APPENDIX - VII

### FINANCIAL DATA

(Duly Certified by Chartered Accountant)

	Actual in previous 5 financial years				
	FY 20-21	FY 19-20	FY 18-19	FY 17-18	FY 16-17
Total assets					
Current assets					
Total Liability					
Current Liability					
Profit before taxes					
Profit after taxes					
Sales Turnover					

## APPENDIX VIII

### CHECK LIST

Sl No	Description	Compliance
1	INDEX	YES/NO
2	COVERING LETTER	YES/NO
3	BID FORM (UNPRICED) DULY SIGNED	YES/NO
4	BILL OF MATERIAL (UNPRICED)	YES/NO
5	DOCUMENTS IN SUPPORT OF QUALIFICATION CRITERIA	YES/NO



BSES RAJDHANI POWER LIMITED

6	TECHNICAL BID	YES/NO
7	ACCEPTANCE TO COMMERCIAL TERMS AND CONDITIONS	YES/NO
8	FINANCIAL BID (IN SEALED ENVELOPE)	YES/NO
9	EMD IN PRESCRIBED FORMAT	YES/NO
10	DEMAND DRAFT OF RS 1000/- DRAWN IN FAVOUR OF BSES RAJDHANI POWER LTD	YES/NO
11	POWER OF ATTORNEY/AUTHORISATION LETTER FOR SIGNING THE BID	YES/NO
12	FINANCIAL DATA IN TABULAR FORMAT	YES/NO
13	LIST OF CURRENT COMMITMENTS/ WORK IN PROGRESS	YES/NO
14	BANK SOLVENCY CERTIFICATE	YES/NO
15	NO LITIGATION CERTIFICATE	YES/NO

**APPENDIX-I**  
**FORMAT FOR PERFORMANCE BANK GUARANTEE-ETC**

(TO BE ISSUED ON RS 100/- STAMP PAPER)

Bank Guarantee No.

Place:

Date:

To  
BSES Rajdhani Power Limited



BSES RAJDHANI POWER LIMITED

Whereas BSES RAJDHANI POWER LTD (hereinafter referred to as the "Purchaser", which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) has awarded to M/s.. with its Registered/ Head Office at

(hereinafter referred to as the "Supplier" which expression shall unless repugnant to the context or meaning thereof, include its successors administrators, executors and assigns), a contract no. dated (the Contract);

And whereas the value of the Contract is Rs. (The Contract Value).

And whereas it is a condition of the Contract that the Supplier shall provide a Performance Bank Guarantee for the due and faithful performance of the entire Contract for a sum equivalent to - % of the Contract Value to the Purchaser on or before

And whereas the Bank under instructions from the Supplier has agreed to guarantee the due performance of the Contract.

Now it is agreed as follows:

1. we (Name of the Bank) having its Head Office at (hereinafter referred to as the Bank, which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) shall indemnify and keep indemnified the Purchaser for, and guarantee and undertake to pay to the Purchaser immediately on written demand, a sum equivalent to % of the Contract Value as aforesaid at any time upto (day/month/year) without any demur, reservation, contest, recourse or protest and/or without any reference to the Supplier, against all losses, damages, costs and expenses that may be caused to or suffered by the Purchaser by reason of any default on the part of the Supplier in performing and observing any and all the terms and conditions of the Contract or breach on the part of the Supplier of terms or conditions of the Contract.

2. The demand shall consist only of an original letter issued by Purchaser stating that the Supplier has failed to fulfill its obligations under the Contract. Such demand made by the Purchaser on the Bank shall be conclusive and binding notwithstanding any difference or dispute between the Purchaser and the Supplier or any difference or dispute pending before any Court, Tribunal, Arbitrator or any other authority.

3. The Bank undertakes not to revoke this guarantee during its currency without previous written consent of the Purchaser and further agrees that the guarantee herein contained shall continue to be enforceable during the period that would be taken for satisfactory performance and fulfillment in all respects of the Contract or in the event of any dispute between the Purchaser and Supplier until the dispute is settled (provided that the claim/ demand under this guarantee is lodged /referred during the currency of this guarantee) or till the Purchaser discharges this guarantee whichever is earlier.

4. The Purchaser shall have the fullest liberty without affecting in any way the liability of the Bank under this guarantee from time to time to extend the time for performance of the Contract by the Supplier. The Purchaser shall have the fullest liberty, without affecting the liability of the Bank under this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Supplier, and to exercise



BSES RAJDHANI POWER LIMITED

the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract. or any other course or remedy or security available to the Purchaser. The Bank shall not be released of its obligations under these presents by any exercise by the Purchaser of its liberty with reference: to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Purchaser or any other indulgence shown by the Purchaser of by any other matter or thing whatsoever which under law would, but for this provision, have the effect of relieving the Bank.

5. The Bank agrees that the Purchaser and its option shall be entitled to enforce this guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Supplier and notwithstanding any security or other guarantee that the Purchaser may have in relation to the Supplier's liabilities.

6. Notwithstanding anything contained hereinabove the liability of the Bank under this guarantee is restricted to a sum equivalent to % of the Contract Value ie. Rs.(Rupees) and it shall remain in force upto and including . Unless a demand to enforce a claim under this guarantee is made against the Bank within 3 months from the the above date of expiry i.e. up to all the rights of the Purchaser under the said guarantee shall be forfeited and the Bank shall be released and discharged from all liabilities thereafter.

7. This Performance Bank Guarantee shall be governed by the laws of India.

Dated this Witness

day of 20..... at

1. For Bank

2. Signature  
Name Power of Attorney No:

Banker's Seal

## ANNEXURE –I-ETC

The Contractor must submit the following to Engineer-In-Charge before commencement of work:

- An Electrical license. (If applicable)
- PF Code No. and all employees to have PF A/c No. under PF every Act, 1952.
- All employees to have a temporary or permanent ESI Card as per ESI Act.
- ESI Registration No.
- PAN No.
- Work Contract Tax/VAT Registration Number.
- Labor License under Contract Labor Act (R & A) Act 1970(All Engineer-in-charge responsible for execution of the job should obtain a copy of Labor License as per guidelines of HR department before start of the work by the contractor.)

The Contractor must follow:



BSES RAJDHANI POWER LIMITED

- a) Third party Insurance Policy before start of work.
- b) To follow Minimum Wages Act prevailing in the state.
- c) Salary/ Wages to be distributed in presence of Company's representative not later than 7th of each month.
- d) To maintain Wage- cum - Attendance Register.
- e) To maintain First Aid Box at Site.
- f) Latest P.F. and E.S.I. challans pertaining to the period in which work was undertaken along with a certificate mentioning that P.F. and E.S.I. applicable to all the employees has been deducted and deposited with the Authorities within the time limits specified under the respective Acts.
- g) Workman Compensation Policy. (If applicable)
- h) Labor license before start of work. (If applicable)

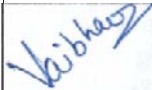




# **TECHNICAL SPECIFICATION**

## **(Page 1- 50 as below)**

# **Technical Specification For Integration of Substation and FPI status with SCADA in BRPL**

Specification no – GN101-03-SP-165-00

Prepared by		Reviewed by		Approved by		Rev	Date
Name	Sign	Name	Sign	Name	Sign		
Vaibhav Vaish		Anil Bohara		Gopal Nariya		R1	17-05-2021

## Contents

1.0	Scope of work.....	4
2.0	Codes & standards .....	4
3.0	Electrical Distribution System Data.....	5
4.0	11kv RMU details .....	6
5.0	Sub-Station Integration Module (SSIM) .....	6
6.0	Fault Passage Indicator (FPI).....	8
7.0	Indication & signals (for SCADA).....	9
8.0	Labels & finish .....	10
9.0	Quality assurance.....	10
10.0	Inspection & testing .....	11
12.0	Deviations.....	12
13.0	Drawings Submission .....	12
Annexure A Scope of supply.....		14
Annexure B Technical particulars (Data by purchaser).....		16
Annexure C Guaranteed Technical Particulars (Data by Supplier) .....		17
Annexure D Mandatory spares- .....		20
Annexure E Specification for Modem .....		21
Annexure F 23		
SERVICING AND WARRANTY REQUIREMENT- EQUIPMENT SUPPLY .....		23
Annexure G Specification for FRTU .....		30
Index	31	
Record of Revision.....		33
1.0.0	Feeder Remote Terminal Units.....	34
1.1.0	FRTU Architecture .....	34
1.1.1	Central Processing Module .....	34
1.1.2	I/O Module .....	34
1.1.3	FRTU Time and Date Facility .....	35
1.2.0	Functional Requirements.....	35
1.2.1	Input / Output Point Types .....	35
1.2.2	Status Inputs.....	35

1.2.3	Control Outputs .....	36
1.2.4	Input / Output Point Counts .....	37
1.2.5	Analog Inputs.....	37
1.2.6	Programmable Logic Control (PLC).....	37
1.2.7	FRTU Data Communications.....	38
1.2.8	Wifi Connectivity for local access .....	38
1.2.9	Cyber Security .....	39
1.3	FRTU Enclosures .....	39
1.4	FRTU Power Supply.....	39
1.5	FRTU Test Systems .....	40
1.6	Software / Firmware .....	40
1.6.1	General.....	41
1.6.2	Diagnostic Software.....	41
1.7	FRTU Testing .....	42
1.8	FRTU Spares:.....	43
1.9	FRTU Types: .....	43
1.10	High Gain Antenna .....	43
1.11	Accessories .....	43
	Annexure – 1: Guaranteed Technical Particulars.....	44
	Annexure – 2: IO List .....	45
	Annexure - H: Make List .....	48
	Annexure - I: Deviation Sheet Format.....	49
	Special Conditions: .....	50

## 1.0 Scope of work

The Scope of work is as below:-

- Site Survey – Carry out site survey of Sub-stations as per list and 11kV feeder SLD provided by BRPL. Purpose of the survey is to verify the field data - type of RMU at site, FPI working status, availability of auxiliary supply source etc. The Quantity as indicated in the BOQ is tentative only. Quantity shall be finalized based on the site survey report.
- Design, manufacture, testing and supply of **Sub-Station Integration Module (SSIM)** as per the BRPL Requirement including FRTU, Modem, Battery, Battery Charger as per specification.
- Installation, testing, commissioning and SCADA Integration with BRPL SCADA for the SSIM at various BRPL Locations including interpanel wiring (between RMU/DT/ACB & SSIM), wiring from Auxiliary power source, mounting for Indoor and outdoor locations etc.
- Identification of faulty FPIs in the existing RMUs during site survey and replacement of the same with new FPI including CBCT, Phase fault detection CTs installation and connection to FPI as per the technical specification.
- Supply of mandatory spares as per specification.

The SSIM shall perform data acquisition & data processing as desired for the application. It shall acquire status data from potential free contacts available in Sub-Station equipments like RMU/DT/ACB etc.

The SSIM shall include all hardware, software, and firmware necessary to meet the data acquisition requirements. All software required to maintain, configure and troubleshoot the offered equipment and/or solution, shall be supplied with its lifetime license (if applicable) validity without any additional cost.

Make of all accessories shall be as per Annexure - H. Mandatory Spares also to be supplied by bidder as per the list mentioned in Annexure - D.

## 2.0 Codes & standards

Materials, equipment and methods used in the manufacture of switchboards shall conform to the latest edition of following –

S No.	Title
Indian Electricity Rules	With latest amendments
Indian electricity act	IE act 2003

IS 3427	A.C. Metal Enclosed Switchgear and Control gear for Rated Voltages Above 1 kV
IS 9920 part 1,3 & 4	High voltage switches above rated voltage 1kV
IS 13118	General requirements of circuit breakers above rated voltage 1kV
IS 3231	Electric Relays for Power System Protection
IEC 60059	Preferred current ratings of high voltage switchgear
IEC 60298	AC metal enclosed switchgear
IEC 60529	Classification of degrees of protection provided by enclosures
IEC 60255	Electrical relays
IEC 62271	HV Switchgear and Control gear
IEC 62271 - 103	HV Switchgear and Control gear - Switches for rated voltages above 1 kV up to and including 52 kV
IEC 62271 – 1	HV Switchgear and Control gear – Common Specifications
IEC 62271 – 201	HV Switchgear and Control gear - AC insulation-enclosed switchgear and control gear for rated voltages above 1 kV and up to and including 52 kV
IEC 60044	Instrument Transformers – Current Transformers
IEC 62271 – 102	HV Switchgear and Control gear – Alternating Current Disconnectors and Earthing Switches

Note:

In the event of direct conflict between various order documents, the precedence of authority of documents shall be as follows -

- i. Guaranteed Technical Particulars (GTP)
- ii. Technical Specification including applicable codes & standards
- iii. Approved Vendor Drawings
- iv. Deviation sheet

### 3.0 Electrical Distribution System Data

3.1	HT Supply	3 phase AC, 3 wire
3.1.1	Voltage	11000 volt $\pm 10\%$
3.1.2	Frequency	50 Hz $\pm 5\%$
3.1.3	System neutral	Earthed at upstream 11kV source
3.2	LT Supply	3 phase AC, 4 wire
3.2.1	Voltage	433 Volt $\pm 10\%$
3.2.2	Frequency	50 Hz $\pm 5\%$
3.2.3	System Neutral	Solidly grounded

## 4.0 11kv RMU details

4.1	RMU Configuration	3 Way (2 LBS + 1 CB) (Both Indoor and Outdoor) 4 Way (2 LBS + 2 CB) (Both Indoor and Outdoor ) (Both Manual and Motorized RMUs)
4.2	Load break switch, Circuit breaker & earth switch in RMU panel	Non-draw out type, fixed position
4.3	Panel type	Metal enclosed, framed, Compartmentalized panel construction
4.4	Service Location	Indoor, non air conditioned environment / Outdoor with continuous ambient temperature of 50 deg C and suitable for external climatic condition Resistant to water ultraviolet radiation (Canopy for outdoor application)
4.5	Marshalling terminal blocks	1 Sq mm, Nylon 66 material, Disconnecting type terminal blocks provided.

## 5.0 Sub-Station Integration Module (SSIM)

5.1	Scope of work	Initial survey for the area to be carried out by the vendor in order to finalise the locations and type of SSIM as listed in specification
5.2	Type of SSIM	3 type of SSIMs to be provided with following DI/DO requirements
5.2.1	Type - 1	16DI / 4DO (Along with Serial port for taking Relay signals to SCADA on MODBUS protocol) for 11kv Manual RMUs
5.2.2	Type – 2	32DI / 16DO / 8 AI (Along with Serial port for taking Relay signals to SCADA on MODBUS protocol) for 11kv 3 Way Motorized RMUs
5.2.3	Type – 3	48DI / 16DO / 8 AI (Along with Serial port for taking Relay signals to SCADA on MODBUS protocol) for 11kv 4 Way Motorized RMUs
5.3	Enclosure	CRCA enclosure with 2.5 mm thickness. Suitable for IP54 for Outdoor Installation
5.4	Mounting arrangement	
5.4.1	For indoor locations	Suitable arrangement for mounting SSIM on the wall to be provided
5.4.2	For Outdoor locations	SSIM panel Box to be mounted on suitable 4 legged MS angle pedestal properly grouted in ground. Minimum height of bottom of the mounted SSIM panel Box shall be 1 meter above ground level  The pedestal shall be appropriately painted with red oxide paint and two coats of black paint in order to avoid rusting.

5.5	Components of the SSIM	The following components to be provided in the SSIM
5.5.1	Battery	To be provided in only Type-1 SSIM 24V DC Li-Ion battery to be provided with minimum 2 Hours battery backup
5.5.2	Battery Charger	To be provided in only Type-1 SSIM 1 No. Battery Charger (with input AC MCB and Output DC MCB) to be provided. 24V DC Output to be provided. Battery Charger should be able to full charge the Battery in maximum 2 hours. Auto-changeover from AC supply to battery in case AC fail to be provided, Voltage Regulation - $\pm 1V$ Input Overvoltage, Output Overvoltage, Output overload, Over temperature, Battery Low, Battery reverse and Input Voltage transient protection to be provided
5.5.3	FRTU	To be provided as per technical specification in Annexure – G. FRTU to be provided as per DI/DO requirement indicated in Clause 5.2
5.5.4	Modem	Single SIM Modem to be provided as per specification
5.5.5	Auxiliary relays for DO Cards	To be provided for type – 1,2 and 3 as per the DO requirement
5.6	Wiring	
5.6.1	Control Wiring from RMU Terminal Block to SSIM	Multi strand/multi core flexible color coded PVC insulated Cu wire 1 sq mm (SCADA) with ferrules at both ends to be provided. Wiring to be provided in Conduit (flexible metal conduit) between RMU and SSIM. Max length between RMU and SSIM – 10 meters
5.6.2	Aux Power cable Wiring to SSIM	PVC Insulated 2C x 2.5 Sqmm. Cu Armored Cable from BRPL Aux Supply Source Max length between Aux Supply and SSIM – 10 meters Bottom Cable entry to be provided in the SSIM.
5.7	Cable Entry	Removable type gland plates shall be provided at bottom of enclosure with 4-5 nos. of knock out holes suitable for 3/4" gland for control cable entry. Provision of entry shall be kept for extending modem antenna outside the enclosure. Double Compression type glands to be provided in order to ensure no opening is available after cable termination is done.



5.8	Ventilation	Appropriate ventilation shall be provided in order to ensure no heating takes place in the SSIM. Louvers with dust filters can be provided in order to ensure proper heat dissipation from SSIM without hampering IP protection class
5.9	Door locking	Proper locking arrangement to be provided on the SSIM for equipment safety. 2 Nos keys shall be provided with every SSIM.
5.10	Gasket	Neoprene Rubber Gasket to be provided ensuring IP class protection
5.11	Hardware (Nuts, Bolts etc.)	Stainless Steel
5.12	Earthing	Studs on both sides with holes for M10 Bolt.  8SWG GI wire to be used for connection of SSIM earthing to owners earthing
5.13	Equipment ID	Equipment ID shall be painted on any appropriate face of SSIM at a clearly readable height from the base level. Front recommended type face for the signage is True type or Post script  Font Size: All painting should be in UPPERCASE.  Total No's of Character: 18 <ul style="list-style-type: none"> <li>• Height of Font: 50 mm</li> <li>• Height of Base: 100 mm</li> <li>• Spacing between alphabets: : 3 mm</li> <li>• Paint: Base coat – Dense Yellow. Letters – Black Quick Drying paint 2 coats.</li> </ul> Equipment ID shall be separately provided by BRPL on the basis of Manufacturer Serial No.  Equipment ID printing shall complete at factory by seller on each and every SSIM before dispatch.

## 6.0 Fault Passage Indicator (FPI)

6.1	Scope of work	Initial Survey for the FPI shall be carried out by the vendor. All the FPIs which have been identified as defective shall be replaced with FPI as per the specification below.
6.1	Fault passage indicator (FPI) (Earth fault and over current protection type)	Digital type and shall operate as the current exceeds the set value. Flash indication for identifying faults with red LED with one flash for every one sec. Test & reset button 1 NO + 1 NC potential free contact for remote indication FPI power supply unit shall use lithium battery with minimum life of 1000 blinking hours , so that FPI shall continue to function even after main feeder has tripped.

6.1.1	Earth Fault and over current Indicator	CBCT – Split open type suitable for mounting without disconnection of cable for EF. Phase sensor – 3 Nos. for short ckt. purpose with mounting arrangement
6.1.2	Connection of CT sensors with FPI	Cable connection of FPI with CBCT/phase CTs shall be of pre moulded type on the CBCT side. Cable shall be 2.5 sq.mm cu cable
6.1.3	Data by Purchaser	
6.1.3.1	System Fault Level	2kA – 8.75kA
6.1.3.2	Type of Grounding	Solidly Grounded
6.1.3.3	Fault clearing time	100ms
6.1.3.4	Cable Type	PILC / XLPE , 150 sq.mm to 400 sq.mm
<b>6.2</b>	<b>Earth Fault Indicator</b>	
6.2.1	Sensing Current	50 to 400A
6.2.2	Sensing Time	30 to 100 ms in steps of 10ms.
6.2.3	Reset Time	0.5 -1-2-3-4 hr
6.2.4	Resetting Facility	a) Self reset after reset time b) Self reset after restoration of voltage c) Manual d) Remote resetting
6.2.5	Contact Rating	1A at 230 V
6.2.6	Degree of Protection	IP 54
6.2.7	Mounting Arrangement	Surface or Flush Mounting
6.2.8	Ambient Temperature	-20 to 55 Deg C
<b>6.3</b>	<b>Short Ckt indicator</b>	
6.3.1	Sensing Current	200 to 1200 A
6.3.2	Sensing Time	30 to 100 ms in steps of 10 ms
6.3.3	Reset time	0.5-1-2-3-4 hr

## 7.0 Indication & signals (for SCADA)

7.1	Status signals to SCADA-Available on marshalling terminal block	2 NO + 2 NC
7.1.1	LBS close / open	potential free contacts
7.1.2	LBS & CB Earth Switch close /open	potential free contacts
7.1.3	CB close / open	potential free contacts
7.1.4	Protection Relay Operated	potential free contacts
7.1.5	FPI operated	potential free contacts
7.1.6	SF6 gas pressure low	potential free contacts

7.2	Commands from SCADA- to be wired to marshalling terminal block	FPI Reset
7.3	RS 485 MODBUS output of Protection relay	Provided, to be taken to SCADA
7.4	Additional Signal to SCADA	
7.4.1	Battery Charger Fail/AC Fail	Required
7.4.2	Battery Low	Required

## 8.0 Labels & finish

8.1	Name plate on panel front	Fixing by rivet only
8.1.1	Material	Anodized aluminum 16SWG / SS
8.1.2	Background	SATIN SILVER
8.1.3	Letters, diagram & border	Black
8.1.4	Process	Etching
8.1.5	Name plate details	Month & year of manufacture, equipment type, input & output rating, purchaser name & order number, guarantee period, IP Class, Manufacturer Serial no
8.2	Labels	Anodized aluminum with white character on black background The label shall be riveted and not pasted on the panel compartment door. Preferable the labels shall be engraved on the plate.
8.3	Danger plate on front	Anodized aluminum 16 SWG with white letters on red background
8.4	Painting surface preparation	Chemical 10 tank process
8.5	Painting external finish	Powder coated epoxy polyester base grade A, shade -RAL 7032, uniform thickness 60 micron minimum
8.6	Painting internal finish	Powder coated epoxy polyester base grade A, shade -white, uniform thickness 60 micron minimum

## 9.0 Quality assurance

9.1	Vendor quality plan	To be submitted for purchaser approval
9.2	Inspection points in quality plan	To be mutually identified & agreed
9.3	Quality – Process Audits	BSES shall carryout vendor process audits.

9.4	Field quality plan	Bidder to submit field quality plan along with the bid
9.5	Spare part list	Bidder to submit detailed spare part list along with the bid
9.6	Maintenance manual	Bidder to submit maintenance manual along with the bid
9.7	Approved sub vendor /make List	Please refer Annexure-H. Any deviation from make without written approval of BRPL shall not be accepted at any stage of contract.

## 10.0 Inspection & testing

10.1	Type test	1. Bidder to submit following test report for DC charger. <u>a) temperature rise test</u> <u>b) voltage regulation test</u>  2. <u>IP Test report</u>
10.2	Routine test	As per relevant Indian standard
10.3	Acceptance test	To be performed in presence of purchaser at manufacturer works 1. Physical inspection & BOM, wiring check 2. GA Check as per approved drawing 3. Battery/Battery Charger test (if any) 4. Integration of the SSIM with BRPL SCADA. Checking of Remote status updation and remote operation

## 11.0 Shipping, Handling and Site support

11.1	Packing Protection	Against corrosion, dampness, heavy rains, breakage and vibration
11.2	Packing for accessories and spares	Robust wooden non-returnable packing case with all the above protection & identification Label
11.3	Packing Identification Label (Anodized Aluminum Plate)	On each packing case, following details are required: i. Individual serial number ii. Purchaser's name iii. PO number (along with SAP item code, if any) & date iv. Equipment Tag no. (if any) v. Destination vi. Manufacturer / Supplier's name vii. Address of Manufacturer / Supplier / it's agent viii. Country of origin ix. Month & year of Manufacturing x. Case measurements xi. Gross and net weights in kilograms

		xii. All necessary slinging and stacking instructions
11.4	Shipping	The seller shall be responsible for all transit damage.
11.5	Handling and Storage	<ol style="list-style-type: none"> <li>1. Manufacturer instruction shall be followed.</li> <li>2. Detail handling &amp; storage instruction sheet / manual to be furnished before commencement of supply.</li> </ol>

## 12.0 Deviations

12.1	<p>a) Deviations from this specification shall be listed separately by bidder clause wise (as mentioned in Annexure-I) along with optional offer and has to submit the list along with bid./quotation. BSES will review the deviations and if BSES is agreed with the deviation, seller has to take written confirmation from BSES on deviation during tender evaluation.</p> <p>b) In the absence of any separate list of deviations from the bidder with bid as well as written confirmation from BSES on deviations, it will be assumed by the Buyer that the Seller complies with the Specification fully.</p> <p>c) Any deviations mentioned in any other submitted bid documents (i.e.in filled GTP, Catalog, BSES old approval, buyer's/seller's standards etc) by seller without separate deviation sheets will not consider as a deviation from this tech spec at any stage of contract.</p>
------	---

## 13.0 Drawings Submission

13.1	To be submitted along with bid	The seller has to submit following:
13.1.1	GA / cross sectional drawing of product showing all the views / sections	
13.1.2	Detailed reference list of customers using the offered product during the last 5 years with similar design and rating	
13.1.3	Completely filled GTP	
13.1.4	Manufacturer's quality assurance plan and certification for quality standards	
13.1.5	Type test reports for the type, size & rating of product / equipment offered	
13.1.6	Complete product catalogue and Manual.	
13.2	Recommended spare parts and consumable items for five years of operation and spare parts catalogue with price list in order to adhere to guarantee clauses	
13.3	All documents as per clause 9 of this specification	
13.4	After award of contract, Seller has to submit following drawings for buyer's Approval (A) / Reference (R)	
13.4.1	Program for production and testing (A)	
13.4.2	Guaranteed Technical Particulars (A)	
13.4.3	GA drawing along with civil foundation details if any	
13.4.4	Schematic and wiring drawings for all components	
13.4.5	Terminal arrangement & cable box details including gland plate arrangement etc	
13.4.6	Bill of material	
13.4.7	Transport / Shipping dimensions with weights	
13.4.8	Detailed installation and commissioning instructions	

13.4.9	Quality plan	
13.5	Submittals required prior to dispatch	
	-Inspection and test reports, carried out in manufacturer's works	
	-Test certificates of all bought out items	
	-Operation and maintenance Instruction as well as trouble shooting charts/ manuals	
13.5	Drawing and document sizes	Standard size paper A3, A4
13.6	Number of Documents required at different stages shall be as specified above	
13.7	Bidder to submit the interconnection wiring scheme between the TBs of manual RMU and the TBs of SSIM for each type of RMUs. On completion of work bidder to submit the 4 copies of final as built termination drawing for type of RMU.	
Note :	Duly signed & stamped copies of the drawings / documentation are required to be submitted to BRPL for approval along with deviation sheet.	

## **Annexure A Scope of supply**

### **1.0 The scope of supply shall include following**

- 1.1 Carrying out Initial Survey of the list of locations as provided by BRPL for determining the actual quantity of the SSIMs to be supplied. The quantity indicated in BOQ is tentative and shall be finalized after initial survey.
- 1.2 Design, manufacture, testing at manufacturer works before dispatch, packing, delivery and submission of all documentation for the SSIM containing the FRTU, Modem, Battery and Battery Charger as per specification.
- 1.3 Supply of Modem (Single SIM, 4G and GSM) for communication with Control Centre as per specification. SIM card shall be provided by BSES.
- 1.4 Battery, Battery Charger
- 1.5 Installation, testing, commissioning and integration of the FRTU to the existing SCADA of the BRPL on IEC-60870-5-104 protocol is included in the scope of vendor including all control wiring from RMU to the SSIM and power wiring from the 230V AC Aux supply source provided by BRPL to SSIM. Wiring shall be done in conduits and the Wire shall be in the vendor scope. Vendor shall depute the service team with 1 day prior notice from owner.
- 1.6 Existing FPIs status inputs are to be integrated to SCADA. However wherever the existing FPIs are not working then :
  - a) Dismantling of faulty FPI & it's CBCT and deposit it in BRPL workshop/ stores.  
And
  - b) Supply & installation of new FPI along with CBCT/Phase CTs including any retrofit requirement shall be in the scope of bidder.
- 1.7 FRTU/Modem customization, parameterization along with integration of FRTU/Modem with Control Centre has to be carried out at all sites by vendor engineer.
- 1.8 Guarantee Period for Modem along with Battery Charger and Battery: 66 months from the date of supply or 60 months from date of commissioning, whichever is earlier.
- 1.9 Service Performance Requirements During Guarantee Period:
  - a) Battery/Battery charger: Complaint to be attended on urgent basis and to be resolved within 24hrs from intimation. Necessary spares may be maintained by vendor service team at Delhi.

- b) FRTU/Modem: After reporting of FRTU/Modem complaint / failure, within 24 hours FRTU/Modem to be rectified / replaced by vendor at site. Spare FRTUs/modems if required shall be maintained by the vendor at Delhi during the guarantee period.
- 1.10 All the accessories mentioned above shall be supplied along with SSIM. Inside the SSIM panel battery, battery charger, FRTU and modem shall be housed.
- 1.11 Supplier scope includes training of BSES team – 2 batches (each batch with 4-5 engineers or team member as per BRPL requirement.) for minimum 1 day at BRPL Store/Site for testing, commissioning, integration and maintenance trouble shooting for the modem integration with SCADA. This shall be carried out 1 week from date of 1st shipment/ dispatch. All the cost for trainer including transport, food, lodging etc. shall be in vendor scope. This is applicable for each and every PO.

## **2.0 Submission of documents**

	Along with offer	For Approval after award of contract	Final after approval
Documents as given in clause no 13 of specification	3 copies + 1 soft copy on CD	4 copies + 1 soft copy on CD	6 copies + 1 soft copy on CD for all type of documents

## **3.0 Delivery schedule**

4.1	Delivery period start date	-	from date of purchase order
4.2	Delivery period end date	-	as agreed with supplier
4.3	Material dispatch clearance	-	after inspection by purchaser



**Annexure B Technical particulars (Data by purchaser)**

<b>Sr No</b>	<b>Description</b>	<b>Data by purchaser</b>
1.	Reference design ambient temperature	40 deg C
2.	Maximum ambient temperature	50 deg c for Delhi
3.	Relative humidity	e.g. 85% for Delhi
4.	Seismic zone	e.g. 4 for Delhi
5	Minimum ambient temperature	0 deg C

## Annexure C Guaranteed Technical Particulars (Data by Supplier)

Bidder shall furnish the GTP format with all details against each clause.

Bidder shall not change the format of GTP or clause description.

Deviation sheets shall be submitted separately along with company seal and sign. Deviation mentioned in submitted GTP or any other documents except deviation sheet shall not be considered as a deviation.

Sr. No.	Description	Data to be filled by Manufacturer
1	Conformance to design standards as per specification clause no 2.0 –	Yes/No
2	Conformance to specification clause no 3.0 to 13.0 –	Yes/No
3	If NO for pt 1 or pt 2 above, Submission of deviation sheet for each specification clause no –	Yes/No
4	SSIM overall dimensions in mm	
	Width (measured from front)	
	Depth	
	Height	
5	Unit weight in kg	
6	Unit enclosure protection offered (Outdoor/Indoor)	
7	Heat generated by the panel in Kw	
8	<b>DC charger rating in amps</b>	Yes
A	MCB rating at 230v AC input of charger	Amp
B	MCB rating at 24v DC output of charger	Amp
C	Charger heat sink temperature rise (max 55 deg C above ambient 40 deg C)	
D	Voltage variation in 24v Dc output for Modem	(Max +/-1 V)
E	Charger with natural cooling (no cooling fans)	Yes/No
f	Charger tested for input supply voltage regulation test (input variation 150v-250v,	Yes/No

	output Dc voltage variation +/- 1 volt max)	
G	Charger temperature rise test certificate submitted	Yes/No
9	DC battery rating in Ah – Backup for 2 hrs	Yes/No
10	Labels & finish as per cl no 8	Yes / No
10A	Submission of component catalogue	Yes/No
11	Fault Passage Indicator (earth fault protection)	
11.1	CBCT	
A	Type	
B	Mounting Arrangement	
C	CT to indicator connection	
D	ID of sensor	
E	Make	As per Annexure-H
11.2	Earth Fault Indicator make	As per Annexure-H
A	Sensing Current Earth Fault	
B	Sensing Time (i) Earth Fault	
C	Indication	
D	Reset Time (i) Earth Fault	
E	Resetting Facility	
F	Output Contact	
G	Contact Rating	
H	Aux Power Supply	
I	Degree of Protection	
J	Mounting Arrangement	
K	Ambient Temperature	



# **Technical Specification For Integration of Substation and FPI status with SCADA in BRPL**

L	Make	As per Annexure-H
12	FRTU	
12.1	Make & Model No	As per Annexure-H
12.2	Type	
12.2.1	Type – 1 (16DI / 4DO)	
12.2.2	Type – 2 (32DI / 16DO)	
12.2.3	Type – 3 (48DI / 16DO)	
12.3	Make of Protocol converter	As per Annexure-H
12.4	Modem	Make -As per Annexure-H
	Type – 4G, GSM, Speed – 800/1900 MHZ	Yes / No Yes / No
12.5	Interposing Relay with freewheeling diode	
	Make	As per Annexure-H
	Rating	
	Model No	
12.6	Terminal Blocks, Disconnecting type fuses make	As per Annexure-H

Bidder / Vendor seal / signature

-----

Name of the bidder	
Address of bidder	
Name of contact person	
Telephone no & email id	

## **Annexure D Mandatory spares-**

List of mandatory spares to be supplied is as following:

Sr No	Description of spare part	Unit	Quantity
1	Battery Charger set	No	3 Nos of each type
2	Modem (4G, Single SIM,)	No	3
3	FRTU	No	1 No. of each type
4	Battery	No	3 Nos of each type
5	Auxiliary Relays	No	5

Note-Any additional spares, if required shall be separately listed by bidder and same shall be taken approval from BRPL during bid evaluation.

## Annexure E Specification for Modem

Modem	<p>4G GSM with backward compatible 3G/GSM GPRS (Single SIM)</p> <p>a) FDD LTE: B1 (1920-1980/2110-2170) / B3 (1710-1785/1805-1880) / B8 (880-915/925-960) / B20 (800) /B5 (850) MHz.</p> <p>b) TDD LTE: B38 (2570-2620) / B39 (1880-1920) / B40 (2300-2400) / B41 (2496-2690)</p> <p>c) HSPA / UMTS: B1 (2100) / B8 (900) /800/850/1900 MHz.</p> <p>d) GSM: 900/1800/ MHz Class 10</p> <p>Modem should be able to send a power failure signal in case when battery/battery charger fails before shutting down</p>
WAN Protocol	PPP/IPCP over Asynchronous HDLC with PAP/CHAP Authentication. Modem shall be compatible with IPv4 & IPv6 schema.
Console Interface	RS232 on RJ45 connector.
LAN Interface	10/100 Base-T complying to IEEE 802.3 / ANSI 8802-3 on RJ45 connector.
Protocols	<p>Support for SCADA Protocols in transparent pass through mode.</p> <p>Network Protocols: PPP, IPCP, PAP, CHAP, ARP, IP, ICMP, TCP, UDP, IPSEC, SNTP, TFTP.</p>
Others	<p>The Modem shall have a capability to restart itself on receiving SMS sent to the SIM inserted in the modem.</p> <p>Support for NAT and Port forwarding.</p> <p>Management: Serial, HTTP, Telnet &amp; via SMS, Port Mapping, Event Log &amp; Upload. Firmware Upgrade</p> <p>Modem shall have self-healing capability to recover from dead lock situation.</p> <p>Status Monitoring: ICMP to 4 destinations for Keep Alive &amp; Self Heal. Signal Strength &amp; LEDs.</p>
Make-	As per Annexure-H
RUIM Interface	External RUIM 3.0V
SMS	Supports Text
Data	Data circuit Asynchronous and non-transparent Up to 153.6 kbps Auto baud rate (2400, 4800, 9600, 19200, 38400, 57600 bps) Fixbaud rate (300, 600, 1200, 9600, 115200 bps)
AT Commands Interface	RS-232 port for supporting AT commands, PPP Protocol
Communication Interface	Remote management features like telnet & remotely download facility.
LED Indications	Power ON, Network–Signal strength, SIM availability, Ethernet Link

Connectors / Switches	RJ45 Ethernet Port, SIM Card Holder, DC power connector, SMA Antenna connector
Power Supply	6 – 30V DC (with reverse current protection)
Enclosure	Aluminium Extrusion
Mounting	DIN Rail Mounting
Temperature	Operating (-10 to 65 Degree Centigrade)
Antenna	Dual band Antenna with SMA connector. 12 dB High gain multi directional antenna with 15Mtr wire to be provided. Provision for taking antenna wire outside to be provided. Adequate accessories for mounting Antenna at appropriate Sub-station location (Roof/wall) for trouble free operation such as wall mounting bracket, roof mounting bracket etc.
Accessories	a) 1 Meter cable for connecting to external DC power source (5V – 30V) b) Standard RS232 serial data cable(1 Meter) c) 1 Meter Standard Ethernet (Straight) data cable d) Standard Console cable for diagnostic port of Modem

## Annexure F

### SERVICING AND WARRANTY REQUIREMENT- EQUIPMENT SUPPLY

#### INDEX

1.0 Purpose .....	25
2.0 Applicability .....	25
3.0 Priority .....	25
4.0 Liability .....	25
5.0 Warranty Requirements .....	26
6.0 Process Requirements .....	26
7.0 Documents/records/report submission .....	30
8.0 Qualification requirement for service engineers .....	30
9.0 Safety .....	30
10.0 Communication .....	30
11.0 Changes/revision management .....	30



## **1. Purpose**

This document is prepared to specify the servicing requirement and Warranty / Guarantee handling procedure in case of difficulty that arises in the supplied equipment within the useful service life of the equipment being procured by BSES Rajdhani Power Limited.

## **2. Applicability**

It is applicable to any equipment supplied directly or indirectly for installation / use in BSES Rajdhani Power Limited.

## **3. Priority**

This document which include service, warranty / guarantees management / handling procedures shall be considered a final in case of any contradiction with other contractual document.

## **4. Liability**

- i) Supplier shall be liable to arrange OEM qualified service engineers as and when required by BSES Rajdhani Power Limited to attend defects, troubleshooting to restore equipment health to ensure 100 % capacity availability.
- ii) OEM shall be liable to provide essential spares at reasonable price for entire lifespan of the equipment.
- iii) Service call shall be attended within reasonable time frame as mentioned in this document.
- iv) Service cannot be denied by supplier/OEM till completion of useful life of the equipment.
- v) The commercial liability shall be restricted to supply/service contract provision.

It will be liability of manufacturer /vendor tie up with accessories / component manufacturer to full fill requirement stipulated this document.

## **5. Warranty Requirements**

- i) The equipment failed / malfunctioned within stipulated warranty period shall be attended free of cost for the reasons not attributed to BSES Rajdhani Power Limited.
- ii) The cost incurred for service, spares, transportation, consumable and manpower / labour shall be borne by supplier.
- iii) OEM is bound to send service engineer to site on request for troubleshooting promptly.
- iv) There is no cap on number of visit or spare replacement required to repair / trouble shoot the problem in the equipment during warranty period.
- v) Each break down / problem reported shall be analysed scientifically to establish the root cause of breakdown.
- vi) In case it is established that any component or accessories is not performing satisfactorily or causing repeated failure due to poor performance, manufacturing mistakes, design mistakes or not suitable to our environment condition applicable to NCR region, the OEM shall be liable to rectify or replace the same in all equipment supplied to BRPL irrespective of warranty period.
- vii) In case if supplier is not OEM of the equipment / accessories, the supplier will be liable to tie up with OEM to provide service / spares to meet warranty / servicing requirement stipulated in this documents.
- viii) Irrespective of onsite or workshop repairing, it will be responsibility of OEM to maintain work quality to ensure no compromise on performance and useful life of the equipment.

## **6. Process requirements**

### **6.1 Complaint Registration.**

- i) Supplier to provide communication details for complaint registration in O&M Manual, on website as well as shall be printed on the equipment. In case of changes, same shall be communicated to BRPL.
- ii) BRPL will register complaint through an e-mail / telephonic call to the call centre / service centre

## 6.2 Confirmation and Service time Schedule.

- i) All timing will be counted from date of call registration by BRPL till restoration of equipment health at respective site in operation condition satisfactory of BRPL engineer.
- ii) Service call confirmation & service engineer visit schedule shall be provided within two hour for working hour call (09:00AM to 06:00PM, Monday to Saturday) and before 10 AM next working day for off working hour calls.
- iii) Emergency trouble shooting calls - within 12 Hrs including spare arrangements.
- iv) Normal trouble shooting call - within 48 Hrs.
- v) On site repairing / component replacement - within 7 days.
- vi) OEM workshop repairing - within 30 days including returning to BRPL stores.
- vii) The service engineer shall intimate necessary requirement to attend call along with confirmations

## 6.3 Site visit & Investigation.

- i) The OEM shall depute qualified and experienced engineer to carryout trouble shoot as well as testing and collecting necessary data / details essential for root cause analysis.
- ii) The service engineer shall collect preliminary details to understand and estimate the spare requirement, shutdown time requirement from our respective area engineer whose details will be provided along with service call.
- iii) The necessary tools shall be carried by service engineer attending calls.
- iv) Service engineer to get call attendance certificate from respective area BRPL engineers.
- v) Service engineer to intimate necessary precaution required to prevent repetition of problem to respective area BRPL engineer as well as DMS Team.

- vi) Detailed technical report (root cause analysis) to be submitted to DMS Team for records and analysis against each call.

#### 6.4 Recommendation.

- i) Shall be based on scientific study / test results only.
- ii) Shall cover root cause analysis for failure.
- iii) Shall cover spares / component list for repairing.
- iv) Shall cover time requirement.
- v) Shall cover site preparation / condition requirement.
- vi) Other critical measures essential for quality work.

#### 6.5 On Site Repairing.

- i) All site repairing shall be under supervision of OEM engineer and shall meet all OEM recommendation to ensure quality of work.
- ii) All spares arrangement shall be carried out well in advance to minimize outage time. The list must be shared with DMS team
- iii) Necessary repairing process to be intimated to DMS team in advance. It shall include in process & final quality and performance checks / test.
- iv) The repairing process shall be certified by OEM design / quality expert.
- v) Detailed time schedule and spares arrangement details shall be submitted to DMS team for necessary planning.
- vi) The repairing work shall be witness by BRPL DMS engineer, who may insist in process / performance checks / test in addition to above if felt essential.
- vii) If BRPL engineer observed any quality problem / skill problem, may insist for repairing at OEM facility.

#### 6.6 Repairing at OEM facility.

Following requirement shall be fulfilled during OEM workshop repairing work: -

- i) During site inspection, if service engineer felt necessary to send equipment to OEM facility, the same shall be organized by OEM.

- ii) In case if BRPL felt that site repairing is not up to the required quality or felt necessary to analyze cause of failure, the same shall be organized by OEM.
- iii) Equipment unpacking, testing and opening for analysis inspection shall be carried out in presence of BRPL engineer. It shall be intimated to BRPL at least 3 days in advance for necessary travel arrangement.
- iv) If cause of failure observed due to design mistake / manufacturing mistakes, the same shall be rectified in all other similar design equipments without any cost to BRPL.
- v) OEM to intimate the final testing for inspection. BRPL may depute engineer or third party representative to carryout inspection / testing before dispatch.
- vi) Dispatch shall be carried out only after BRPL clearance.
- vii) Necessary lifting, shifting, loading / unloading & transportation arrangement shall be in the scope of OEM / supplier.
- viii) A document required essential for lifting and shifting of equipment will be intimated at least two days in advance.

#### **6.6 Witness / Inspection stages.**

Even though OEM is liable for overall quality of work, BRPL may witness / Inspection following activity:-

- i) On site inspection, repairing/replacement work.
- ii) Testing / inspection equipments / any accessories / component to establish the cause of failure.
- iii) Opening of equipment for internal part inspection.
- iv) Final testing/inspection before despatch.
- v) Testing / checking of the evidence causing failure / problem.

Note: It will be responsibility of OEM / Supplier to establish with facts, figure, photographs, and evidence to prove that cause of failure not attributed to design.

## **7 .0 Documents / records / report submission**

The following be recorded and provided to BRPL by OEM against each call / repairing / rectification works for BRPL clearance and future reference:-

- i) Root cause analysis report.
- ii) All test report.
- iii) Minutes of meeting.
- iv) Spares / accessories test report / calibration certificates.
- v) Proof of expenditure for cost incurred to BRPL.
- vi) Copy of transportation documents.
- vii) All technical details of parts / accessories being replaced.

## **8.0 Qualification requirements for service engineers**

All work must be carried out by only qualified, experience engineer certified by OEM. BRPL may request qualification and experience details if felt necessary.

## **9.0 Safety.**

- i) All necessary personal protective equipments requirement for the personal and labour will be in the scope of OEM / supplier.
- ii) It will be liability of OEM / Supplier to meet the necessary safety norms, standards, rules & regulation.
- iii) BRPL may audit the same during on site work.

## **10.0 Communications.**

For better coordination, single channel communication must be followed. BRPL and OEM / Supplied to communicate to each other their team for communication time to time in case of any changes.

At present, all warranty related communication is to be done with DMS team.

## **11.0 Changes / revision management.**

Necessary approval of O&M analytic cell is essential for changes in this document. In case if any stack holders do not agree or wish to amend its content may send request to BRPL O&M analytic cell for approval. The request will be in effect only on consideration and authorized release of revision in document by O&M analytic cell.

## Annexure G Specification for FRTU

### Specification for FRTU

## Index

1.0.0	Feeder Remote Terminal Units.....	34
1.1.0	FRTU Architecture .....	34
1.1.1	Central Processing Module .....	34
1.1.2	I/O Module .....	34
1.1.3	FRTU Time and Date Facility .....	35
1.2.0	Functional Requirements.....	35
1.2.1	Input / Output Point Types .....	35
1.2.2	Status Inputs.....	35
1.2.3	Control Outputs .....	36
1.2.4	Input / Output Point Counts .....	37
1.2.5	Analog Inputs.....	37
1.2.6	Programmable Logic Control (PLC).....	37
1.2.7	FRTU Data Communications.....	38
1.2.8	Wifi Connectivity for local access .....	38
1.2.9	Cyber Security .....	39
1.3	FRTU Enclosures .....	39
1.4	FRTU Power Supply .....	39
1.5	FRTU Test Systems .....	40
1.6	Software / Firmware .....	40
1.6.1	General.....	41
1.6.2	Diagnostic Software.....	41
1.7	FRTU Testing .....	42
1.8	FRTU Spares:.....	43
1.9	FRTU Types: .....	43
1.10	High Gain Antenna .....	43
1.11	Accessories .....	43
Annexure – 1: Guaranteed Technical Particulars.....		44
Annexure – 2: IO List .....		45
Annexure - H: Make List .....		48
Annexure - I: Deviation Sheet Format.....		49





**Technical Specification For Integration of Substation and FPI status with SCADA in BRPL**

Special Conditions: ..... 50



**Technical Specification For Integration of Substation and FPI status with SCADA in BRPL**

**Record of Revision**


## **1.0.0 Feeder Remote Terminal Units**

This specification encompasses the requirements for Feeder Remote Terminal Units (FRTU's) for acquisition of real time status and control functions associated with selected 11 kV Ring Main Units (for sites where 11 kV/415 V distribution transformers or capacitors are installed). Make of FRTU shall be As per Annexure-H.

### **1.1.0 FRTU Architecture**

The FRTU's shall have an architecture that supports convenient installation, maintenance and expansion features. Their configuration shall include a central processing module, I/O module, time / date facilities, data storage capacity etc.

#### **1.1.1 Central Processing Module**

The central processing module (CPM) shall handle all protocol emulation, perform data acquisition, and execute control requests. It shall accept commands from the master station, perform address recognition, assemble response messages in accordance with the received command messages, and transmit these messages to the SCADA/DMS master station. The CPM shall also provide interfaces for a time standard and a test set.

The CPM shall have user configurable routines / procedures to carry out connection establishment, link failure detections and reconnection after failures for dialup connectivity. The parameters viz: user name & password, baud rate, no. of retries after link failure shall be user configurable.

The CPM shall manage communications between all other functional modules of the FRTU and shall determine the integrity of the FRTU. The processor shall provide diagnostic information in the message structure that the SCADA/DMS shall monitor. A flag shall be set if the FRTU performs a restart for any reason including power failure.

The CPM shall be programmable in a high level language like C. BRPL shall be able to program the FRTU and manage the FRTU database from the FRTU test set and download parameters and configuration data from the SCADA/DMS system.

#### **1.1.2 I/O Module**

Each I/O module shall be capable of interfacing with digital inputs, control output points and combinations of point types. I/O modules shall be replaceable without reprogramming, redefinition of configuration parameters or rewiring.

A control disable switch shall be provided within each I/O module. When the switch is in the control position, the SCADA/DMS or test set shall have control of the digital control outputs. When the switch is in the disable position, the digital control outputs shall be disabled. A status input contact shall be available to monitor the position of this switch. The switch position shall be reported to the SCADA/DMS system. The required number of points shall be the responsibility of the Contractor.

### **1.1.3 FRTU Time and Date Facility**

The FRTU shall have an internal clock for data collection coordination and time tagging. This shall include support for feeder fault detection. The FRTU internal clock time shall be maintained within hundred (100) millisecond of the same time reference used by the respective SCADA/DMS. The FRTU synchronization shall be accomplished by the communication protocol.

## **1.2.0 Functional Requirements**

The FRTU's shall include all hardware, software, and firmware necessary to meet the Input/Output(I/O) point requirements including input and output cards and output relays.

### **1.2.1 Input / Output Point Types**

The FRTU's shall include facilities for handling status input and control output points. Requirements for each type of I/O point are described in the following sub-sections.

### **1.2.2 Status Inputs**

The Contractor shall supply the necessary sensing voltage, current limiting, input isolation, and bounce filtering for all status inputs. The debounce time period for each status input shall be individually configurable. The input circuit of the status input modules shall be optically isolated from the external signal. In addition, each input circuit shall include an LED indicator next to the circuit terminations to show the status of the associated input contact.

The state of each status point shall be reported to the SCADA/DMS on a contention basis. That is, a status point shall not be reported unless the point state has changed from the last scan. The FRTU shall also report the state of selected status points upon receipt of a demand scan request from the SCADA/DMS.

The FRTU's shall include the following types of status input points:

- 1) Single Contact, Two-State Status: For single contact, two-state status points, a single contact shall represent both states of the monitored device. One position of the contact shall indicate an alarm or failure condition, while the opposite state of the contact shall indicate the normal condition.
- 2) Double Contact, Two-State Status: For double contact, two-state status input points; separate contacts shall be provided for representing each state of the monitored device. One contact shall indicate an OPEN condition of the monitored device. The other shall indicate a CLOSED condition. The contacts shall be treated as a complimentary pair. Conflicting contact positions (e.g., either indicates CLOSED or OPEN) shall be labeled INVALID.

### 1.2.3 Control Outputs

The FRTU's shall include on/off device control points to support control actions initiated from the SCADA/DMS master stations. The FRTU's shall perform on/off control actions using complimentary pairs of contact outputs. One contact output shall perform the ON control action, and a second output contact shall perform the OFF control action. The FRTU's shall be designed such that only one output in a complimentary pair can be activated at a time. For single point indications FRTU shall also support single command output.

To support the above capabilities, the FRTU's shall include momentary control outputs as required by the feeder device being controlled. Each momentary control output shall provide a contact closure (pulse) that shall have programmable pulse duration. The pulse duration shall be adjustable on an individual point basis from 0.1 to 60 seconds in increments of 0.01 seconds.

FRTU control outputs shall be equipped with high power relays with free-wheeling diodes that are integral to the FRTU so that external auxiliary control relays are not required. The associated high and low control power shall be obtained from the dc power supply in the switch. The voltage rating of the control output contacts shall be 24 V DC. All control outputs shall be capable of driving a load of eight (8) amps at the primary control voltage with provision for an additional NO contact for DI status of Command Execute Acknowledgement wired up to terminal blocks. External auxiliary control relays are not preferred, but may be applied if integral relays do not satisfy the above ratings. These relays shall be supplied by the Contractor.

All control points shall follow a Select - Check back – Before - Operate (SCBO) procedure for control operation. The SCBO procedure shall be equivalent to the following:

1. The point selection command is received from the SCADA/DMS master station.
2. The FRTU checks that no other point is selected.
3. The FRTU selects the addressed point and transmits a selection confirmation to the SCADA/DMS.

4. The FRTU starts the command receipt timer and checks that only the required point remains selected and no other points become selected.
5. The operate command is received from the SCADA/DMS.
6. The FRTU verifies the operate command and energizes the selected control point relay for a predetermined time.

Point selection shall be cancelled automatically following the completion of the control action, and re-selection of the point shall be required for subsequent control actions.

### **1.2.4 Input / Output Point Counts**

The FRTU's shall be equipped to handle the I/O point requirements as per each FRTU types described in Sr.No. 1.9 of index.

All I/O channels provided (used as well as additional / spares) irrespective of immediate application shall be wired from FRTU I/O card along with interposing relays for DOs to the associated terminal strips in the cabinet with proper segregation and identification of Digital inputs and Digital outputs.

It shall be possible to expand the FRTU capacity by an additional twenty percent (20%) of the initially delivered (including spares) I/O points by providing space for adding cards and terminations at future date.

### **1.2.5 Analog Inputs**

FRTU shall be able to capture Analog values from current & voltage transducers and communicate the Analog Measured Information (AMI) to control centre through communication media in the intervals of 10 minutes.

Unipolar and bipolar analog measurements shall be collected by the AI cards. Input to the cards shall be programmable for various mA and V input ranges.

### **1.2.6 Programmable Logic Control (PLC)**

The FRTU shall be provided with a PLC Module. The PLC module shall have access to the controlling process via its process interface imaged in the FRTU process DB actualized by the internal communication. That allows to use nearly all process information from direct connected process signals as well as from process data points received via serial communication line. Control information for actuators to the process will be handled in the same way from the PLC to the physical output signals etc. The overall transaction time for a PLC task is therefore to be given by the PLC cycle time plus the update time between the process actuators and sensors and the PLC's FRTU process DB.

Programming of the PLC program is to be done by a specific PLC programming tool. The integration of the PLC task and the link between the IO interfaces of the PLC to the real process signals is to be supported by FRTU Configuration Utility together with the PLC programming tool.

More than one PLC task shall be active. The FRTU shall allow to have more than one PLC module in the FRTU running.

### **1.2.7 FRTU Data Communications**

The communication between the FRTU's and BCC/MCC shall be through all 4G GSM cellular network using Wireless VPN. Alternatively FRTU's shall also communicate with BCC/MCC wherever all 4G GSM cellular communication/Optical fiber network is available. The FRTU's shall support communications using the IEC 608705-104 and Modbus set of protocols. Contractor shall provide Interoperability document specifying all the sets of parameters / functions implemented by its device. The message security defined in the protocol should be fully implemented, and if needed later, a convenient means of changing the communication protocol in the field should be provided.

The FRTU's shall have three (3) number serial ports, one port used for communication with slave device and one port for communication with BCC and MCC, and one RS485 port for Modbus communication with IEDs. The FRTU shall also have one Ethernet port for diagnostic and communication with MCC / BCC in addition to the serial ports. Each of the serial ports shall be individually selectable in RS-232 or RS485 mode and for operation from 9,600 to 38,400 bps. FRTU's shall support communication with redundant masters installed at both BCC and MCC ie. 4 masters. The FRTU shall support IEC 61131-3 PLC programming for incorporation of peer to peer communication & achieve Self Healing Grid (SHG) automation logic.

For remote access of IED and Modem for diagnosis and configuration, a provision of web access / telnet shall be provided for remote viewing and downloading of logs and configuration.

### **1.2.8 Wifi Connectivity for local access**

An inbuilt wifi communication modem shall be offered in FRTU for local access via hand held devices (Tablet / smart phone / etc..). It shall be secured by means of

- Activation/deactivation from the SCADA
- SSID visibility configurable
- Passphrase
- Automatic disconnection by timeout

### 1.2.9 Cyber Security

In order to secure all controls and data acquisition, the FRTU shall be designed to be compliant with NERC and IEC62351-5 requirements. The FRTU shall support secure access based on RBAC, with the possibility to configure the roles.

Local and remote access connection shall be secured for maintenance (locally and remotely)

### 1.3 FRTU Enclosures

FRTU shall be provided inside the SSIM module panel.

The dimensions shall be suitable to accommodate FRTU CPM and I/O modules, power supply accessories, terminal blocks, communication modem with power adaptor, Ethernet switch for FO connection and ease of intra-panel wiring/termination and maintenance thereafter. Suitably sized PVC perforated channels to be used for routing intra-panel wiring.

The front access door shall be hinged on cabinet with a common lock & key arrangement.

Removable type gland plates shall be provided at bottom of enclosure with 3-4 nos. knock out holes suitable for gland for control cable entry. Provision of entry shall be kept for extending GSM modem antenna outside the enclosure. Alternately BRPL shall also have an option to mount communication switch connecting to optical fiber network.

Suitable ventilation, if necessary forced ventilation, and louver with dust filters shall be provided to maintain operating temperature under permissible limits of electronic components.

Alternately Fiber Reinforced Plastic (FRP) enclosure with suitable thickness and dimension may also be quoted.

### 1.4 FRTU Power Supply

Power supply for FRTU shall be on 24V DC system which would be made wired from Battery Charger system to FRTU cabinet.

The main DC circuits shall be protected by incoming circuit breakers. Each circuit shall be tapped through single pole MCBs so as to provide an individual DC feed to each of the I/O modules, modems and protocol converters. Contractor shall provide maximum power consumption data of each of the type of FRTU.

Type 3 Pluggable Surge Protection Device in accordance with IEC 61643 with KEMA & UL approval must be installed at the incoming power supply of FRTU. DIN Rail Mounted Suitable Surge Protection must be installed on all communication lines (Ethernet/RS 485)



## 1.5 FRTU Test Systems

The Contractor shall supply FRTU test systems for performing the functions listed below. Portable computers shall be used for this purpose. The FRTU test system shall comply with the following requirements:

1. Each test system shall support all maintenance aspects: verifying proper operation, troubleshooting, reconfiguring, and setting operational parameters for the FRTU's.
2. The test systems shall support all functional capabilities of the FRTU's, including functions which are not explicitly required in these Technical Specifications and functions which may not be included in the delivered FRTU's.
3. It shall be possible to use a test system locally at the site of the FRTU under test, and also remotely wherever access can be obtained to the communication channel of the FRTU.
4. All the required data rates shall be easily selectable.
5. It shall be possible to use the test systems to monitor communications between the respective SCADA/DMS and the FRTU's by selecting specific data streams, or portions of such data streams, both to and from FRTU. The data shall be displayed in a form that is easy for the user to interpret.
6. It shall be possible to connect the test system directly to the FRTU and to use the test system to perform all necessary FRTU management and expansion functions, monitor all stored data, monitor FRTU inputs, exercise FRTU outputs, and diagnose and troubleshoot the FRTU. It shall also be possible to use the test system as a local user interface at the FRTU location.
7. No programming skills shall be required to use the field test system. Interactive procedures relying mostly on pull down menus shall be used. The user shall not be required to type in commands, and shall be prompted when data entry is needed.
8. The test system shall be ruggedly constructed and suitable for field work and transportation in trucks. All cables, connectors, equipment, and documentation associated with their operation shall be included and stored either within the test system package or in suitable separate containers.

The test systems shall operate on internal battery and 220 V. AC, 50 Hz

## 1.6 Software / Firmware

The term software is used in this Technical Specification to mean software or software implemented through firmware. All software shall be implemented according to the Contractor's latest established

design and coding standards. Complete and comprehensive documentation shall be provided for all software. Contractor may consider providing windows based software as it is preferred for its user friendliness. All the related software and related communication ports shall be provided to BRPL by OEM with latest version till warranty period without any cost implications to BRPL.

Contractor shall provide Licensed version of all the software and firmware required for the troubleshooting, configuration and restoring the functionality of the IED, modem etc. Contractor shall provide the complete documentation for all the software and firmware. He shall also provide the step-by-step procedure document to install, use the software and download the firmware etc.

### **1.6.1 General**

A real-time non-proprietary operating system that is capable of managing the FRTU applications shall be provided.

This software shall provide automatic restart of the FRTU upon power restoration, memory parity errors, hardware failures, and manual request. The software shall initialize the FRTU and begin execution of the FRTU functions without intervention by the SCADA/DMS master station. All restarts shall be reported to the SCADA/DMS.

The software shall be prepared in a high level language and shall be documented in detail. No separate licensing charges or agreements shall attach to the FRTU software or its underlying operating system. In order to easily support the system under continuously changing site conditions all protocol, configuration, and application data must be contained in easily programmable non-volatile memory such as Flash EPROM.

The FRTU design shall be independent of any communication protocol that would impose restrictions on the flexibility or functionality of the FRTU. Protocol changes shall be accomplished by software/firmware changes only.

ALL FRTU cards to be coated with conformal coating for protection against weather related deterioration.

FRTU to have capability of reporting to four distinct IP addresses of same or different domains.

### **1.6.2 Diagnostic Software**

Software shall be provided to continuously monitor operation of the FRTU and report FRTU hardware errors to the SCADA/DMS. The software shall check for memory, processor, and input/output errors

and failures. It is desirable that internal diagnostics be sufficiently detailed to detect malfunctions to the level of the smallest replaceable component.

The FRTU shall facilitate isolation and correction of all failures and shall include features that promote rapid fault isolation and component replacement. All functional module nodes shall be designed with integrated on-line diagnostic functions. The results of these diagnostics shall be reported to the central processing module. The central module shall store this information and report it to the SCADA/DMS as permitted by the protocol. FRTU shall be able to access from remote (BCC/MCC) for down loading configuration.

## **1.7 FRTU Testing**

### **1.7.1 Type Tests**

The FRTU controller shall be KEMA /CPRI/ERDA Certified and in accordance with IEC 255-4, 255-5, 255-6, 801-2, and 801-3 to demonstrate that the FRTU's comply with the ratings stated in these standards. As a minimum, certificates for the following type tests shall be furnished:

1. Dielectric test
2. Impulse voltage withstand test
3. High frequency disturbance test
4. Thermal requirement test
5. Mechanical requirement test
6. Limiting dynamic value test
7. Contact performance test
8. Electromagnetic radiation susceptibility test
9. Electrostatic discharge susceptibility test
10. EMI free & EMC Compatible

### **1.7.2 Routine Tests**

The FRTU's shall pass the Manufacturer's standard routine tests in accordance with the referenced standards.

In addition to the tests described in the IEC standards, the routine tests and test report of the FRTU's shall include the following:

1. Visual tests to confirm that construction and sizing requirements have been met.

2. Rigorous testing of each input and output function of the FRTU's. This shall include the fault detection and the disturbance data storage functions as well as the operation and performance of the FRTU time and date facilities.
3. Verification of the use of the FRTU test equipment for maintenance and testing.
4. Verification of the ability to download parameters and configuration data from the SCADA/DMS master station.
5. Verification that FRTU software and firmware support FRTU sizing and expansion requirements.
6. Verification of successful communications (i.e. protocols) at all the required data rates.
7. Testing for secure operation, including verification that: a) Communication errors are detected. b) SCBO procedures are properly performed for control outputs. c) No erroneous control operation occurs and no incorrect data is generated when power is turned on or off or when operating on low battery voltage.

## **1.8 FRTU Spares:**

Bidder shall supply spares for 5 years trouble free operations as per the spares list given in this tech spec.

## **1.9 FRTU Types:**

FRTU's are categorized as type 1 to 3 in this specification, according to their DI/ DO/AI Channel requirements as indicated in the annexure –1. FRTU shall be modular construction type.

## **1.10 High Gain Antenna**

12 dB High gain multi directional antenna with 15Mtr wire to be provided. Provision for taking antenna wire outside to be provided. Adequate accessories for mounting Antenna at appropriate Sub-station location (Roof/wall) for trouble free operation such as wall mounting bracket, roof mounting bracket etc.

## **1.11 Accessories**

- 10-15 Meter cable for connecting to external DC power source (5V – 30V)
- Standard RS232 serial data cable(10 Meter)

Scope of work:

- a. Transportation of material to designated locations
- b. Outdoor Installation of High gain antenna near roof of substation on DIN rail
- c. Saddling/Dressing of antenna cable rout between Modem& outdoor installation.
- d. Testing and handover

Supporting ladder, its carriage, tools for installations, consumables like DIN rail, saddles, etc required for complete wall mounted installations shall be in vendor's scope.

Vendor shall be responsible for safety of his personnel. They shall use PPE all the time while execution.

## Annexure – 1: Guaranteed Technical Particulars

FRTU Types	Digital Input Channels	Digital Output Channels	Analogue Channels
1	16	4	-
2	32	16	8
3	48	16	8

(Vendors shall furnish the General Technical Particulars along with their offer. Any kind of deviation along with offer shall be listed and submitted separately clause wise as per the deviation format given in this specification for approval of BRPL. Deviation shall not be considered which mentioned in any other submitted bid documents)

Sr. No.	Description	Buyer's Requirement	Vendors Data
1	Vendors Name		
2	Guarantee period	5 yrs.	
3	Make of FRTU base module	As per Annexure-H	
4	No. of DI modules		
	Type 1	16	
	Type 2	32	
	Type 3	48	
5	No. of DO modules		
	Type 1	4	
	Type 2 & 3	16	
6	No. of AI modules		
	Type 2 & 3	8	
7	Dimensions &Weight of Modem		
	Type 1	Vendor shall Provide	
	Type 2	Vendor shall Provide	
	Type 3	Vendor shall Provide	
8	Interposing relay with freewheeling diode		

	Make	As per Annexure-H	
	Capacity	>8 A	
	Model	CR-P with 2C/O contacts / Eqv	
10	AC & DC MCB	As per Annexure-H	
11	Terminal Blocks	As per Annexure-H	
12	Enclosure		
	Sheet steel thickness	As per type test design	
	Painting process	As per Clause 6.0	
	Construction of steel according to IEC 529 , index of protection	As per Clause 6.0	
	Shade	As per Clause 6.0	
	Louvers with filters	2 Nos	

## Annexure – 2: IO List

Signals for FRTU

a) Type -1

Digital Inputs	Equipments	Signals	DI Requirement	
	Isolator	Isolator ON	DI1, DI2	2
		Earth Switch ON	DI3, DI4	2
		FPI operated (E/F or S/C)	DI5, DI6	2
	Circuit Breaker	CB ON	DI7, DI8	2
		Disconnecter ON	DI9, DI10	2
		Earth Switch ON	DI11, DI12	2
	Common Signals	DC Fail	DI13	1
		SF6 Low	DI14	1
		MOG Alarm from field (2 DTs)	DI15,16	2
			Total	16
	Spare DI			0

Digital Outputs	Signals	DO Requirement	
	FPI1 Reset	DO1	1
	FPI2 Reset	DO2	1
	CB1 Trip (through Shunt trip coil)	DO3	1
	CB2 Trip (through Shunt trip coil)	DO4	1
		total	4
	Spare DO		0

Serial Port	DT Energy Meter Data	SP1
	Relay of RMU	SP2

b) Type – 2 & 3

	Equipments	Signals	Type 2		Type 3	
Digital Inputs	Isolator	Isolator ON	DI1, DI2	2	DI1, DI2	2
		Isolator OFF	DI3, DI4	2	DI3, DI4	2
		Earth Status	DI5, DI6	2	DI5, DI6	2
		FPI operated (E/F)	DI7, DI8	2	DI7, DI8	2
		FPI Operated (S/C)	DI9, DI10	2	DI9, DI10	2
		Local/Remote	DI11, DI12	2	DI11, DI12	2
		VPIS Status	DI13, DI14	2	DI13, DI14	2
	Circuit Breaker	CB ON	DI15	1	DI15, DI16	2
		CB OFF	DI16	1	DI17, DI18	2
		Disconnecter Open	DI17	1	DI19, DI20	2
		Disconnecter Close	DI18	1	DI21, DI22	2
		Earth Status	DI19	1	DI23, DI24	2
		Ready to Close Signal to control centre to indicate all interlocks are OK (including spring charge and trip ckt healthy)	DI20	1	DI25, DI26	2
		Auto Trip	DI21	1	DI27, DI28	2
		Local/Remote	DI22	1	DI29, DI30	2
		SF6 Low	DI23	1	DI31	1
		VPIS Status	DI24	1	DI32, DI33	2
	Common Signals	AC Fail	DI25	1	DI34	1
		Battery Charger-1 Fail	DI26	1	DI35	1
		Battery Charger-2 Fail	DI27	1	DI36	1
		Command Acknowledgement	DI28	1	DI37	1
		Battery Health Monitoring Unit/Battery in Trouble	DI29	1	DI38	1
		FRTU Door Open	DI30	1	DI39	1
		Interlock Card operation Fail	---	0	---	0
		Auxiliary Circuit Healthy (Control Ckt healthy)	DI31	1	DI40	1
		MOG Alarm from field	DI32	1	DI41, DI42	2
		WTI Alarm from field	DI33	1	DI43, DI44	2
	APFC	APFC Incomer MCCB Trip	DI34	1	DI45, DI46	2
		APFC Fan MCCB Trip+Other common alarm	DI35	1	DI47, DI48	2
		Total		35	total	48

	<b>Spare DI</b>	<b>5</b>		<b>0</b>
	<b>TOTAL</b>	<b>40</b>		<b>40</b>

<b>Digital Outputs</b>	<b>Signals</b>	<b>Type - 2</b>		<b>Type - 3</b>	
	Isolator ON	DO1, DO2	2	DO1, DO2	2
	Isolator OFF	DO3, DO4	2	DO3, DO4	2
	FPI Reset	DO5, DO6	2	DO5, DO6	2
	CB ON	DO7	1	DO7, DO8	2
	CB OFF	DO8	1	DO9, DO10	2
	Interlock card remote reset	DO9	1	DO11	1
	Modem interlock card remote reset	DO10	1	DO12	1
	Modem Remote Reboot	DO11	1	DO13	1
	FRTU Remote Reboot	DO12	1	DO14	1
	Auto Trip Reset	DO13	1	DO15, DO16	2
		total	<b>13</b>	total	<b>16</b>
	Spare DO	DO14-DO16	3	DO16	0
<b>TOTAL</b>			<b>16</b>		<b>16</b>

<b>Serial Port</b>	DT Energy Meter Data	SP1
	Relay of RMU	SP2

<b>Analog Inputs</b>	LT Palm Temp	AI1
	Oil Temp of Trf.	AI2
	Oil Level	AI3
	<b>Spare</b>	AI4 to AI8



**Annexure - H: Make List**

<b>Make List of RMU's Accessories</b>		
Sl. No.	Descriptions	Make
1	FPI(Both for Earth fault and Over current protection)	EMG/Schneider/SIEMENS/C&S
2	CBCT (Both for Earth fault and Over current protection)	EMG/Schneider/SIEMENS/C&S
3	Modem (4G, Single SIM)*	Niseva (XE33)*/Any reputed make*
4	FRTU	Type – 1 Phoenix (ILC 131 ETH) Any reputed make*  Type – 2 & 3 Schneider - HUA/HUBI ABB - RTU520 CG - USP-020i Wago (Model-750) Phoenix (ILC 171 ETH 2TX) Ashida (AFRTU2) L&T E&A (iLT-ADAM-5630)
4	Battery	GOGATE/Allan/HBL
5	Battery Charger	GOGATE/Allan/Mahamai
6	Wire	Polycab/Havells/Finolex
7	AC & DC MCB	Merlin & Gerin / SIEMENS/Havells/C&S
8	Disconnecting type fuses	Connectwell/Wago
9	TB (disconnecting type)	Connectwell/Wago
10	DC power connector	Wago/Havells/Connectwell
11	Battery Health Monitoring Unit	GOGATE/Allan
12	Surge Protection Device	Phoenix / Any reputed make

\* - Modem & FRTU shall be provided only after successful POC in BRPL. Also, Performance certificate from any other utilities for supply of 50 Nos Modems/FRTUs in last 1 years to be provided.



## Technical Specification For Integration of Substation and FPI status with SCADA in BRPL

### Annexure - I: Deviation Sheet Format

**(To be filled in by Vendor with submission of Offer)**

We hereby confirm compliance of our product / system with BRPL Technical Specifications / GTP / BOQ / QAP / Approved Drawings, if any (strike off whichever not applicable) -- in all respects / subject to the following Deviations listed below till closing of contract.

Sl. no.	Document Name	Clause No.	Deviation	Reason	Merit to BRPL

**Special Conditions:**

Sl. No	Descriptions
1	All the communicable accessories shall have Latch contact
2	<p>--Bidders shall have additional MODEM/BATTERY/CHARGER readily available of each type to replace under warranty in case it is repairable at OEM factory</p> <p>--In case of under warranty failure and if the faulty equipment is repairable only at OEM factory, bidder has to replace the faulty SSIM Panel with new/ operable same type of equipment within the time period mentioned in the tech spec warranty clauses.</p> <p>--BRPL shall not issue any equipment from their assets for replacement activity. In case of delay, penalty shall be imposed as per this corrigendum sl no 9</p> <p>--After Warranty period completion (5 years), these clause shall not be applicable to OEM</p>
3	Sample SSIM
3.1	1 sample of each type Unit shall be manufactured as per BRPL specification after award of PO. BRPL will do the routine testing and inspection of the sample Unit and if found satisfactory as per BRPL specification, BRPL will give clearance/ approval for bulk manufacturing
3.2	During inspection of the sample Unit, BRPL may ask the vendor to modify/ change the design as per BRPL requirement including the make of accessories mentioned in the specification. OEM is liable to modify the design irrespective of the offer submitted during tender stage. However, BRPL will not ask for the requirement beyond the technical specification.
3.3	The lead time required to arrange the accessories/ to modify the design required as per BRPL requirement shall be in the account of bidder.
3.4	BRPL is not liable to bear any extra cost out of the PO for the approval of sample Unit and the bulk quantity afterwards.
3.5	The sample will not be used in BRPL network. Fresh Units as per the approved sample shall be supplied in line with PO quantity.
3.6	During bulk manufacturing and PO execution, BRPL may ask necessary changes to be done (if required). Bidder is liable to provide the required changes as per the BRPL requirement irrespective of the offer / design given during tendering stage without any cost implication to BRPL. However, BRPL will not ask any changes out of BRPL Technical specification
4	Warranty clause's terms & conditions mentioned in the technical specification Annexure- G(1), Clause no-6.2 shall be strictly followed by the OEM, in the event of violation of warranty clauses, BRPL is liable to impose penalty with 1% of Composite Unit rate per day basis (Unit rate shall be considered as per the PO)
5	Submission of 3 nos as built drawing to BRPL before dispatch of first lot of material is mandatory.