

NOTICE INVITING TENDER (NIT)

**RATE CONTRACT FOR SUPPLY & SUPERVISION
OF
11KV INDOOR & OUTDOOR RING MAIN UNIT'S**

**NIT NO: CMC/BY/25-26/RS/SkS/SV/47
[RFx Number: 2200000180]**

Due Date for Submission: 16.03.2026, 15:00 HRS

**BSES YAMUNA POWER LIMITED (BYPL)
CONTRACTS & MATERIALS DEPT.,
SHAKTI KIRAN BUILDING, KARKARDOOMA,
DELHI-110032**

CIN: U40109DL2001PLC111525

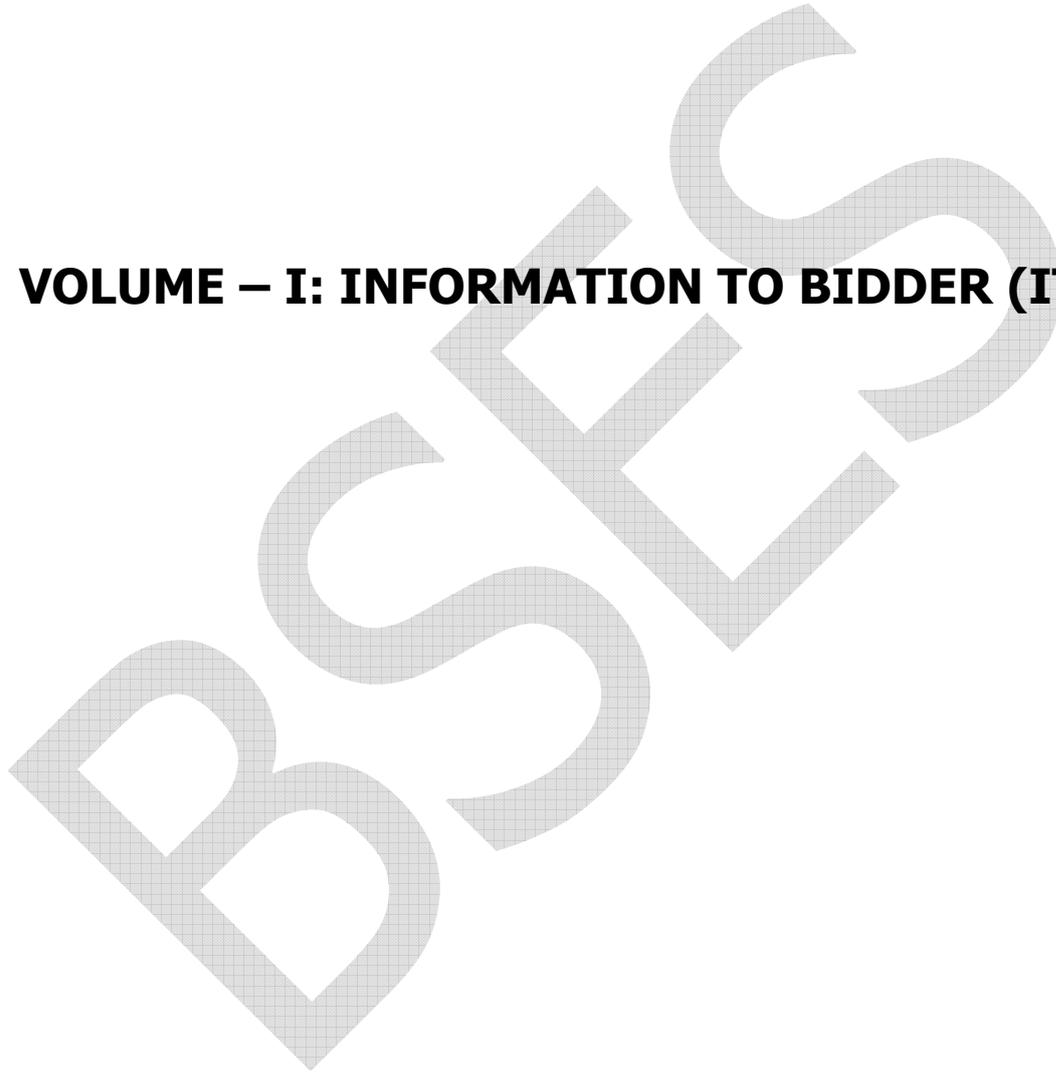
WEBSITE: www.bsesdelhi.com

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<p>INFORMATION TO BIDDER (ITB) NIT NO: CMC/BY/25-26/RS/SKS/SV/47 [RFx Number: 2200000180]</p>	<p>Page 1 of 18</p>	<p>Bidders seal & Signature</p>
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SECTION – I: REQUEST FOR QUOTATION

1.00 EVENT INFORMATION

- 1.01 BSES Yamuna Power Ltd (hereinafter referred to as “BYPL”) invites **Open Tender** in the E-Tender Bidding Process on a “Single Stage: Two Parts” from interested Bidders to enter into a **Rate contract valid for one year** as detailed below:

Tender Description	Tender Fee (₹)	Estimated Cost (₹)	EMD Amount (₹)	BYPL Delivery Location
Rate Contract for Supply & Supervision of 11kV Indoor & Outdoor Ring Main Unit's	1,180	17.00 Crore	17.00 Lakh	Delhi Store(s)/ Site(s)

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

- 1.02 The tender document can be downloaded from our website www.bsedelhi.com by navigating to → **BSES YAMUNA POWER LTD** → **Tender** → **Open Tenders** or access our e-tendering portal directly at <https://srmpdportal.bsedelhi.com/irj/portal> to view and participate in the tender.
- 1.03 **Tender Fee:** The bidder must compulsorily submit the non-refundable tender fee of ₹ 1,180/- either as a demand draft or via online transfer through IMPS, NEFT, or RTGS to cover the cost of bid documents. Bids submitted without the Tender fee will be rejected.
- 1.04 **Earnest Money Deposit (EMD)** as specified in Table 1, must be valid for 120 days from the bid submission due date. It should be submitted in the form of BG, FD, or online transfer of the required amount through IMPS, NEFT, or RTGS. Bids submitted without the EMD will be rejected.
- 1.05 **Time Schedule**

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

S. No.	Events	Due date & Time
1	Date of availability of tender documents from BYPL Website & SRM	up to 16.03.2026, 15:00 Hours
2	Date & Time of Pre-Bid Meeting Pre-Bid Meeting will be done online, Register in advance for this meeting via, the Zoom Meeting link: https://zoom.us/j/91667218514?pwd=TvnaY5mdaUMWblaaRBEbdqxEPD66jC.1 After registering, you will receive a confirmation email containing information about joining the meeting.	05.03.2026, 12:30 Hours
3	Last Date of receipt of pre-bid queries, if any (Queries to be submitted via e-mail)	05.03.2026 up to 18:00 Hours
4	Last Date of replies to all the pre-bid queries as received	09.03.2026 up to 17:00 Hours
5	Last date and time of receipt of Complete Bids (Tender Fees, EMD, Part A & Part B)	16.03.2026, 15:00HRS
6	Date & Time of Opening of PART A - EMD and Technical Bid	16.03.2026, 16:00HRS
7	Date & Time of opening of Price/RA of qualified bids	Will be notified to the qualified bidders through our website/e-mail

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

1.06 The Bid shall be submitted online in two (02) parts as detailed below:

- **Part A - Techno Commercial Bid**
- **Part B - Financial (Price) Bid**

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

However, documents that require original submission, such as the Tender Fee (in the form of DD), Earnest Money Deposit (EMD) (in the form of BG/FD/DD as applicable), samples (where applicable), and any other documents specified in the tender documents, must be delivered to the BYPL office at the address below on or before the bid submission deadline:

**Head of Department
Contracts & Materials Deptt.
BSES Yamuna Power Ltd
Reception, Ground Floor
Shaktikiran Building, Karkardooma
Delhi 110032**

Opening of Bids:

- **Part A (Techno-Commercial Bid):** Shall be opened online.
- **Part B (Financial Bid):** Shall be opened online only for Techno-Commercially qualified bidders. The date and time of opening Part B will be communicated separately in due course.

It shall be the sole responsibility of the bidder to ensure that the bid documents are submitted online and/or reach the above office on or before the last date and time specified.

All envelopes shall be duly superscribed "**NIT NO: CMC/BY/XX-XX/XX/XX/XX/XX [RFx No: 2200000XXX]**" "**NIT Description**"

1.07 BSES Yamuna Power Ltd reserves the right to accept or reject any or all tenders without assigning any reason thereof in the event of the following:

- Tender is received after the due date and time.
- Tender fee of requisite value is not submitted.
- Earnest Money Deposit (EMD) of requisite value & validity is not submitted.
- Financial Bid, as per the prescribed Price Schedule, is not submitted.
- The bid is incomplete in any respect.
- The required documents in support of the Qualification Requirements mentioned in Section 1, Clause 2.0 of this Tender Document are not furnished.
- Complete documents and details as per the Bid Index for Part-A (Technical Bid) at Appendix I – Annexure 1.01 are not enclosed.
- Filled in Schedule of Deviations as per Annexure is not submitted.

2.00 QUALIFICATION CRITERIA

The prospective bidder must qualify for all of the following requirements and shall be eligible to participate in the bidding who meets the following requirements and management has a right to disqualify those bidders who do not meet these requirements.

2.01 **Technical Criteria:**

S. No.	Criteria	Documents to be submitted by the Bidder
1	The bidder should have own manufacturing facility in India for RMU's since last 3 years.	i. OEM Valid Certificate of Incorporation & Factory (Manufacturing) Licence. ii. Detailed list of manufacturing units, their locations, and the specific works from which supplies shall be made against this tender, submitted by the OEM.
2	The Bidder should have supplied minimum 250 Nos of RMUs (motorized & manual) of similar rating or higher ratings in last 5 years from the date of bid opening to any utilities/SEB's/PSU's/reputed company wherein the end user shall be Utility/SEB's/PSU's.	i. Summary list of executed Purchase orders (Details to be submitted as per the format enclosed in APPENDIX I - ANNEXURE – 1.09) ii. Copies of the relevant Purchase Orders iii. Material delivery clearance certificate copy or Invoice Copies or Delivery completion/ Performance certificate
3	Performance certificate for minimum 2 year satisfactory performance for RMU of similar rating or higher ratings supplied in last 7 years from the date of bid opening from at least two utilities/SEB's/PSU's/ reputed company wherein the end user shall be utilities/SEB's/PSU's. In case of bidder has a previous association with BRPL/BYPL for similar product and service, the performance feedback for that bidder by BRPL/BYPL shall only be considered irrespective of performance certificate issued by any third organization.	Performance Certificates (Details to be submitted as per the format enclosed in APPENDIX I - ANNEXURE – 1.10)
4	The bidder should have manufacturing capacity of minimum 30 nos. RMU's per month	Installed Manufacturing Capacity (duly certified by the CE/CA/DIC/Self-Undertaking/Government Organization/others)
5	The bidder should have servicing, repairing, testing & refurbishment facility in INDIA with necessary spares and testing equipments for providing prompt after sales service for RMU.	Relevant Details/certificates/Undertaking (Details of the set-up available shall be brought out in the offer. the bidder shall also submit undertaking along with the bid confirming the infrastructure details submitted)
6	The bidder must possess valid ISO 9001:2015 certification or above.	Valid copy of Certification

2.02 **Commercial Criteria:**

S. No.	Criteria	Documents to be submitted by the bidder
7	The bidder must have an Average Annual Sales Turnover of Rs 500 Crores or more in the last three (3) Financial Years (i.e. FY 2022-23, 2023-24, and 2024-25).	i. Audited Balance Sheet and Profit & Loss Account Or ii. Duly certified CA certificate having UDIN to be submitted (Details to be submitted as per the format enclosed in APPENDIX I - ANNEXURE – 1.14)

8	The bidder must submit an undertaking stating that "No Litigation" is pending with BYPL or any of its group/associate companies as of the date of bid opening.	Self-Undertaking (as per the format enclosed in APPENDIX I - ANNEXURE – 1.15) (Details to be submitted as per the format enclosed in APPENDIX I - ANNEXURE – 1.14)
9	The bidder must submit an undertaking (self-certification) that they have not been blacklisted or debarred by any Central / State Government Institution or Electricity Utility in India as of the date of bid opening.	Self-Undertaking (as per the format enclosed in APPENDIX I - ANNEXURE – 1.15) (Details to be submitted as per the format enclosed in APPENDIX I - ANNEXURE – 1.14)
10	The bidder must hold a valid PAN and GST Registration Number, and shall undertake to comply with all other applicable statutory laws and regulations prior to commencement of supply/work.	i. Copies of PAN and GST registration certificates ii. Self-undertaking confirming compliance with all statutory obligations (as per the format enclosed in APPENDIX I - ANNEXURE – 1.15) (Details to be submitted as per the format enclosed in APPENDIX I - ANNEXURE – 1.14)

In case bidder is a 100% owned subsidiary of their parent company then the credentials of the parent organization shall be considered as compliance to the QC requirements. The QC parameters against which the bidder can submit the credential of their parent company are as below:

Sl No.	Criteria	Documents to be submitted by bidder
1	The Bidder should have supplied minimum 250 Nos of RMUs (motorized & manual) of similar rating or higher ratings in last 5 years from the date of bid opening to any utilities/SEB's/PSU's/reputed company wherein the end user shall be Utility/SEB's/PSU's.	i. Summary list of executed Purchase orders (Details to be submitted as per the format enclosed in APPENDIX I - ANNEXURE – 1.09) ii. Purchase order copies iii. Material delivery clearance certificate copy or Invoice Copies or Delivery completion/ Performance certificate
2	Performance certificate for minimum 2 year satisfactory performance for RMU of similar rating or higher ratings supplied in last 7 years from the date of bid opening from at least two utilities/ SEB's/ PSU's/ reputed company wherein the end user shall be utilities/SEB's/PSU's. In case of bidder has a previous association with BRPL/BYPL for similar product and service, the performance feedback for that bidder by BRPL/BYPL shall only be considered irrespective of performance certificate issued by any third organization.	Performance Certificates (Details to be submitted as per the format enclosed in APPENDIX I - ANNEXURE – 1.10)
3	Bidder should have an Average Annual Sales Turnover of Rs 500 Crores or more in the last three (3) Financial Years (i.e. FY 2022-23, 2023-24, and 2024-25).	Balance Sheet / Copy of audited P&L Account / Duly certified CA certificate having UDIN to be submitted

SI No.	Criteria	Documents to be submitted by bidder
		(Details to be submitted as per the format enclosed in APPENDIX I - ANNEXURE – 1.14)

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

3.01 BID SUBMISSION

BIDS ARE INVITED THROUGH THE E-PROCUREMENT PORTAL:

BSES will carry out E-Procurement through its e-procurement portal (<https://srmpportal.bsedelhi.com/irj/portal>).

Interested Non-registered bidders are requested to obtain the portal user name and password (if not available) for bid submission. For participating in e-Tenders of BYPL, please write a mail to

1. Mr Sumit Verma, E-mail: Sumit.Ra.Verma@reliancegroupindia.com
2. Mr Rakesh Sharma, E-mail: Rakesh.Ku.Sharma@reliancegroupindia.com, with your details as per below:

a) Existing Vendor Code with BYPL or its Group/Associates Companies (if available):

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b) Trade Name:

c) Address of Principal Place of Business:

d) Contact Person's Name:

e) Contact Person's Designation:

f) Contact Person's Mobile No.:

g) Contact Person's email ID:

h) Also, attach a valid copy of the Power of Attorney in favour of the above-mentioned Contact Person for being authorized to receive user ID and password on behalf of their organization.

The login ID details shall be sent through email to the email ID mentioned by you for the same.

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

However, documents that require original submission, such as the Tender Fee (in the form of DD), Earnest Money Deposit (EMD) (in the form of BG/FD/DD as applicable), samples (where applicable), and any other documents specified in the tender documents, must be delivered to the BYPL office at the address below on or before the bid submission deadline.

Please clearly mention the NIT Number: on the outer envelope and drop the same in the Tender Box placed at the **Reception, Ground Floor, BSES Yamuna Power Ltd., Shaktikiran Building, Karkardooma, Delhi-110032.**

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The bids documents and the outer envelope shall be addressed to the following:

Head of Department
Contracts & Materials Deptt.
BSES Yamuna Power Ltd, Shaktikiran Building, Karkardooma, Delhi 110032

Kindly Note:

- The bidder has to ensure that the tender documents is dropped in the correct box designated for tender submission only.
- BYPL shall not be responsible for any wrong placement of tender documents by the bidder.

This is a two-part bid process. Bidders must submit their bids online in two parts - Part-A: Technical Bid & Commercial Terms & Conditions, and Part-B: Financial Bid - on the designated folder/location of the e-procurement portal before the due date and time specified in the tender. For detailed instructions, please refer to the user manual available at <https://srmpdportal.bsedelhi.com/irj/portal> and enclosed with the tender documents.

PART A:: TECHNICAL BID comprising of the following, do not contain any cost information whatsoever and shall be submitted within the due date:

S. No.	Descriptions	Type of Documents/Format
A.1	Bid Details	
1	Bid Index for Part-A (Technical Bid)	In the prescribed format enclosed at APPENDIX I ANNEXURE – 1.01
2	Cover Letter, if any	Standard Format
3	Bid Form (Unpriced) Duly Signed	Duly Signed Bid Form as per enclosed format at APPENDIX I ANNEXURE – 1.02
4	Tender Fee	Non-refundable demand draft or online transfer of the requisite amount through IMPS/NEFT/RTGS for Rs 1,180/-, Duly filled and signed as per enclosed format at APPENDIX I ANNEXURE – 1.03
5	EMD	Online transfer of the requisite amount through IMPS/NEFT/RTGS or FD or BG in the prescribed stamp paper & format enclosed at APPENDIX I ANNEXURE – 1.05, EMD Details Duly filled and signed as per enclosed format at APPENDIX I ANNEXURE – 1.04
6	Power-of-Attorney/ Authorization Letter	In the standard stamp paper/letter
A.2	Technical Bid	
7	Communication Details of the Bidder	Duly filled and signed as per enclosed format at APPENDIX I ANNEXURE – 1.06
8	Manufacturer Authorization Form (as applicable)	Duly filled and signed as per enclosed format at APPENDIX I ANNEXURE – 1.07
9	Technical Qualifying Criteria Compliance Index & Documents	Documentary evidence in support of qualifying criteria mentioned in Section 1 Clause 2.00. Duly filled and signed as per enclosed format at APPENDIX I ANNEXURE – 1.08, ANNEXURE – 1.09 & ANNEXURE – 1.10
10	Schedule of Deviations - Technical	Duly filled and signed as per enclosed format at APPENDIX I ANNEXURE – 1.11
11	Technical Details/ Filled in Guaranteed Technical particulars (GTP) as per specification	Bidder shall submit duly filled GTP with all Technical documents
12	Technical Drawings as per specification	Bidder shall submit all Drawings as per the specification

13	Type Test Reports	Bidders shall submit a copy of type test reports in their technical bids in support of technical specifications. Duly filled and signed as per enclosed format at APPENDIX I ANNEXURE – 1.12
14	Sample Submission Details (if applicable as per specification)	Duly filled and signed as per enclosed format at APPENDIX I ANNEXURE – 1.13
15	Product Catalogue (If applicable)	Bidders shall submit a copy of the product catalogue in their technical bids in support of technical specifications
16	Manufacturer's Quality Assurance Plan	Bidders shall submit a copy of MQP in their technical bids in support of technical specifications
17	Other drawings/ documents mentioned in technical specification	Bidders shall submit a copy of documents in their technical bids in support of technical specifications
18	Testing Facilities	Bidder shall submit the details of testing facilities available at their works/factory.
A.3 Commercial Bid		
19	Company Profile, Organization Chart & Manpower Details.	Bidder shall submit the details of Organization & Manpower with qualification and experience.
20	Commercial Qualifying Criteria Compliance Index & Documents	Documentary evidence in support of qualifying criteria mentioned in Section 1 Clause 2.00. Duly filled and signed as per enclosed format at APPENDIX I ANNEXURE – 1.14
21	Undertakings	Duly signed self-undertakings as per enclosed format at APPENDIX I ANNEXURE – 1.15
22	Schedule of Deviations - Commercial	Duly filled and signed as per enclosed format at APPENDIX I ANNEXURE – 1.16
23	Acceptance Form For Participation in Reverse Auction Event	Duly signed Acceptance Form For Participation In Reverse Auction Event as per enclosed format at APPENDIX I ANNEXURE – 1.17
24	Commercial Terms and Conditions	Acceptance of Commercial Terms and Conditions viz. Delivery Schedule/Period, Payment terms, PBG etc. Duly filled and signed as per enclosed format at APPENDIX II ANNEXURE – 2.05
25	Unpriced Bid Duly Signed	Item wise marked as "Quoted" & Duly Signed Unpriced Bid as per enclosed format at VOLUME – II - FINANCIAL BID (PRICE FORMAT)
26	Signed Tender document	Original Tender documents duly stamped & signed on each page as a token of acceptance

PART B:: FINANCIAL BID comprising of

- Price strictly in the Format enclosed at VOLUME – II - FINANCIAL BID (PRICE FORMAT) indicating Break up of basic price, taxes & duties, etc.
- The Bidder has to submit the item-wise price bifurcation in the bid. An unpriced copy must be attached with the Part A (Technical Bid).

This will be opened internally after techno-commercial evaluation and only of the qualified bidders.

REVERSE AUCTION CLAUSE:: The Purchaser reserves the right to conduct a Reverse Auction through SAP-SRM as an integral part of the tendering process. All bidders who are declared techno-commercially qualified shall mandatorily participate in the Reverse Auction. The Reverse Auction shall be conducted either on an individual item-wise basis or on a package-wise basis, as decided by the Purchaser. Bidder is to submit their acceptance as per the format APPENDIX I ANNEXURE – 1.17.

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Notwithstanding anything stated above, the Purchaser reserves the right to assess the 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 THE DUE DATE AND TIME MAY BE LIABLE FOR REJECTION

4.00 AWARD DECISION

- 4.01 Purchaser intends to award the business on the lowest bid basis, so Bidders are encouraged to submit the bid competitively. The decision to place a LOI/Purchase Order solely depends on the 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 the purchaser (and/or its affiliates) and you subsequent DEFAULT on your bid; you will be required to pay the 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 If the performance of the awarded Bidder is found to be unsatisfactory during the execution or delivery period, the award may be cancelled, and BYPL reserves the right to reallocate the order to another Bidder considered suitable.
- 4.04 Rate Contract: The rate contract shall have a validity period of 12 months from the date of RC issued to the responsive, techno-commercially acceptable and evaluated to be the lowest bidder. Purchase Order (PO) shall be placed as per the requirement of BYPL.
- 4.05 Contract Price/Rate shall remain "FIRM" till the validity of the Contract.
- 4.06 Quantity Variation: The purchaser reserves the right to vary the quantity by (±) 30% of the tender quantity during the execution of the contract.
- 4.07 Quantity Splitting: The Purchaser reserves the right to distribute the procurable quantity among one or more eligible Bidders. In case of quantity splitting, the distribution shall be as follows:
a) If the quantity is split among 2 bidders, it will be done at 70:30 at the L1 price.
b) If the quantity is split among 3 bidders, it will be done at 50:30:20 at the L1 price.
Note: If quantity needs to be distributed and order splitting is required, quantity distribution shall be maximum among three (3) bidders.

5.00 MARKET INTEGRITY

- 5.01 We have a fair and competitive marketplace. The rules for bidders are outlined in the Terms & Conditions. Bidders must agree to these rules before participating. In addition to other remedies available, we reserve 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 & Conditions. Bidders who violate the marketplace rules or engage in behaviour that disrupts the fair execution of the marketplace restrict a bidder to the length of time, depending upon the seriousness of the violation. Examples of violations include, but are not limited to:
- Failure to honour prices submitted to the marketplace.
 - Breach of the terms of the published in Request for Quotation/NIT.

6.00 BIDDER CONFIDENTIALITY

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

- 6.02 All RFQ documents remain the property of BYPL and all Bidders are required to return these documents to BYPL upon request.
- 6.03 Bidders who do not honour these confidentiality provisions will be excluded from participating in future bidding events.

7.00 CONTACT INFORMATION

- 7.01 Any technical or commercial clarification pertaining to this RFQ shall be sought strictly in writing and forwarded by e-mail, post, or courier to the addresses specified below. Clarifications shall not be entertained through telephone communication.

Address	Name/ Designation	E-mail Address
Technical		
CES Dept. 3 rd Floor, B-Block, BSES Yamuna Power Ltd Shaktikiran Building, Karkardooma, Delhi 110032	Ashish Joshi GM (CES)	ashish.k.joshi@relianceada.com
	Puneet Duggal GM (CES)	puneet.duggal@relianceada.com
	Amit Tomer Asstt. VP (HOD-CES)	Amit.As.Tomar@reliancegroupindia.com
Commercial		
C&M Dept. 3 rd Floor, A-Block, BSES Yamuna Power Ltd Shaktikiran Building, Karkardooma, Delhi 110032	Sumit Verma GM (C&M)	Sumit.Ra.Verma@reliancegroupindia.com
	Santosh Singh Addl. VP (Head- Procurement)	Santosh.Kum.Singh@reliancegroupindia.com
	Robin Sebastian VP (HOD-C&M)	Robin.Sebastian@reliancegroupindia.com

SECTION – II: INSTRUCTION TO BIDDERS

A. GENERAL

1.00 BSES Yamuna Power Ltd (hereinafter referred to as "the Purchaser") intends to undertake various System Improvement, Repair & Maintenance works, etc., within its licensed distribution area in Delhi. Accordingly, the Purchaser has issued this tender for the procurement of materials as specified in the present bid document.

2.00 SCOPE OF SUPPLY/WORK

2.01 The scope broadly include Design, Manufacture, testing at works conforming to the Technical Specifications/IS along with Packing, Forwarding, Transportation and Unloading and proper stacking of the materials at Purchaser's stores/site.

3.00 DISCLAIMER

3.01 This Document includes statements, which reflect various assumptions, which may or may not be correct. Each Bidder should conduct its own estimation and analysis and should check the accuracy, reliability and completeness of the information in this Document and obtain independent advice from appropriate sources in their interest.

3.02 Neither Purchaser nor its employees will have any liability whatsoever to any Bidder or any other person under the law or contract, the principles of restitution or unjust enrichment or otherwise for any loss, expense or damage whatsoever which may arise from or be incurred or suffered in connection with anything contained in this document, any matter deemed to form part of this Document, provision of Services and any other information supplied by or on behalf of Purchaser or its employees, or otherwise arising in any way from the selection process for the Supply.

3.03 Though adequate care has been taken while issuing the Bid document, the Bidder should satisfy itself that the Documents are complete in all respects. Intimation of any discrepancy shall be given to this office immediately.

3.04 This Document and the information contained herein are Strictly Confidential and are for the use of only the person(s) to whom it is issued. It may not be copied or distributed by the recipient to third parties (other than in confidence to the recipient's professional advisors).

4 COST OF BIDDING

4.01 The Bidder shall bear all costs associated with the preparation and submission of its Bid and the Purchaser will in no case be responsible or liable for those costs.

B. BIDDING DOCUMENTS

5.00 BIDDING DOCUMENTS

5.01 The Scope of Supply/Work, Bidding Procedures and Contract Terms are described in the Bidding Documents.

5.02 The Bidder is expected to examine the Bidding Documents, including all Instructions, Forms, Terms and Specifications. Failure to furnish all information required by the Bidding Documents or submission of a Bid not substantially responsive to the Bidding Documents in every respect may result in the rejection of the Bid.

6.00 AMENDMENT OF BIDDING DOCUMENTS

- 6.01 At any time before the deadline for submission of Bids, the Purchaser may for any reason, whether at its initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding Documents by Amendment.
- 6.02 The Amendment shall be part of the Bidding Documents, pursuant to Clause 5.01, and it will be notified on the e-procurement portal or website www.bsesdelhi.com and the same will be binding on them.
- 6.03 To afford prospective Bidders reasonable time in which to take the Amendment into account in preparing their Bids, the Purchaser may, at its discretion, extend the deadline for the submission of Bids. The same shall be published as a corrigendum on the e-procurement portal or website www.bsesdelhi.com
- 6.04 Purchaser shall reserve the rights to the following:
a) Extend the due date of submission,
b) Modify the tender document in part/whole,
c) Cancel the entire tender
- 6.05 **Bidders are requested to visit the e-procurement portal or website regularly for any modification/clarification/corrigendum/addendum of the bid documents.**

C. PREPARATION OF BIDS

7.00 LANGUAGE OF BID

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

8.00 DOCUMENTS COMPRISING THE BID

- 8.01 The Bid prepared and submitted by the Bidder shall comprise the following components:
- (a) All the Bids must be accompanied by the required Tender Fees and EMD as mentioned in the tender.
- (b) PART A - Technical Bid and
- (c) PART B - Financial Bid

9.00 BID FORM

- 9.01 The Bidder shall submit the Bid Form with the Bidding Documents.

10.00 EMD

- 10.01 Pursuant to Clause 8.0(a) above, the bidder shall furnish, as part of its bid, an EMD amounting to as specified in Section I. The EMD is required to protect the Purchaser against the risk of Bidder's conduct which will warrant forfeiture.

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

- (a) Bank Guarantee drawn in favour of BSES Yamuna Power Ltd, payable at Delhi or
(b) Fixed Deposit (lien marked in favour of BSES Yamuna Power Limited) payable at Delhi.

- (c) Online transfer of requisite amount through IMPS/NEFT/RTGS to BYPL account mentioned herein in **Appendix II - BYPL BANK DETAILS WITH IFSC CODE.**

EMD shall be valid for One Hundred Twenty (120) days after the due date of submission drawn in favour of BSES Yamuna Power Ltd.

The EMD may be forfeited in the case of:

- (a) the Bidder withdraws its bid during the period of specified bid validity
or
(b) the case of a successful Bidder, if the Bidder does not
(i) Accept the Purchase Order, or
(ii) Furnish the required performance security BG.

11.00 BID PRICES

- 11.01 Bidders shall quote for the entire Scope of Supply/Work with a break-up of prices for individual items. The total Bid Price shall also cover all the Bidder's obligations mentioned in or reasonably to be inferred from the Bidding Documents in respect of Design, Supply, and Transportation to the site, all in accordance with the requirement of the Bidding Documents. The Bidder shall complete the appropriate Price Schedules included herein, stating the Unit Price for each item & total Price.
- 11.02 The prices offered shall be inclusive of all costs as well as Duties, Taxes or Levies paid or payable during the execution of the supply work, a breakup of price constituents, should be there.
- 11.03 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.**

12.00 BID CURRENCIES

- 12.01 Prices shall be quoted in Indian Rupees Only.

13.00 PERIOD OF VALIDITY OF BIDS

- 13.01 Bids shall remain valid for 120 days from the due date of submission of the Bid.
- 13.02 Notwithstanding Clause 13.01 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.

14.00 ALTERNATIVE BIDS

- 14.01 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.

15.00 FORMAT AND SIGNING OF BID

- 15.01 The original Bid Form and accompanying documents, must be received by the Purchaser at the

date, time and place specified pursuant to Clauses 15.0 and 16.0.

- 15.02 The original 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-Attorney accompanying the Bid. The Bid submitted on behalf of companies registered with the Indian Companies Act, for the time being in force, shall be signed by persons duly authorized to submit the Bid on behalf of the Company and shall be accompanied by certified true copies of the resolutions, extracts of Articles of Association, special or general Power of Attorney etc. to show clearly the title, authority and designation of persons signing the Bid on behalf of the Company. Satisfactory evidence of the authority of the person signing on behalf of the Bidder shall be furnished with the bid. A bid by a person who affixes to his signature the words 'President', 'Managing Director', 'Secretary', 'Agent' or other designations without disclosing his principal will be rejected.

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

- 15.03 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 initiated by the person or persons signing the Bid.

D. SUBMISSION OF BIDS

16.00 SEALING AND MARKING OF BIDS

- 16.01 Bid submission: Bids have to be mandatorily submitted only through the e-procurement portal of BSES Delhi. Bids submitted through any other form/ route shall not be admissible.
- 16.02 However, documents that necessarily have to be submitted in originals like EMD or Tender Fee (in the form of BG/ DD /FD as applicable) and any other documents mentioned in the tender documents have to be submitted at the BYPL office before the due date & time of submission. The Technical Documents and the EMD shall be enclosed in a sealed envelope and the said envelope shall be superscribed with — "Technical Bid & EMD". All the envelopes should bear the Name and Address of the Bidder and mark for the Original. The envelopes should be superscribed with — "Tender No. & Due date of opening".
- 16.03 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.

17.00 DEADLINE FOR SUBMISSION OF BIDS

- 17.01 The Bid must be received by the Purchaser on or before the due date & time of submission.
- 17.02 The Purchaser may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Documents in accordance with Clause 6.0, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

18.00 ONE BID PER BIDDER

- 18.01 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.

19.00 LATE BIDS

19.01 No Bid will be received by the Purchaser after the deadline for submission of Bids prescribed by the Purchaser, pursuant to Clause 17.0.

20.00 MODIFICATIONS AND WITHDRAWAL OF BIDS

20.01 The Bidder is not allowed to modify or withdraw its Bid after the Bid's due date & time of submission subject to any corrigendum/addendum/modifications in the tender documents uploaded to the website.

E. EVALUATION OF BID

21.00 PROCESS TO BE CONFIDENTIAL

21.01 Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process. Any effort by a Bidder to influence the Purchaser's processing of Bids or award decisions may result in the rejection of the Bidder's Bid.

22.00 CLARIFICATION OF BIDS

22.01 To assist in the examination, evaluation and comparison of Bids, the Purchaser may, at its discretion, ask the Bidder for a clarification of its Bid. All responses to requests for clarification shall be in writing and no change in the price or substance of the Bid shall be sought, offered or permitted.

23.00 PRELIMINARY EXAMINATION OF BIDS / RESPONSIVENESS

23.01 Purchaser will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed and whether the Bids are generally in order. Purchaser may ask for submission of original documents to verify the documents submitted in support of qualification criteria.

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

23.03 Prior to the detailed evaluation, Purchaser will determine the substantial responsiveness of each Bid to the Bidding Documents including production capability and acceptable quality of the Goods offered. A substantially responsive Bid is one, which conforms to all the terms and conditions of the Bidding Documents without material deviation.

23.04 Bid determined as not substantially responsive will be rejected by the Purchaser and/or the Purchaser and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

24.00 EVALUATION AND COMPARISON OF BIDS

24.01 The evaluation of Bids shall be done based on the delivered cost competitiveness basis.

24.02 The evaluation of the Bids shall be a stage-wise procedure. The following stages are identified for evaluation purposes: In the first stage, the Bids will be subjected to a responsiveness check. The Technical & qualifying Proposals and the Conditional ties of the Bidders will be evaluated.

INFORMATION TO BIDDER (ITB) NIT NO: CMC/BY/25-26/RS/SkS/SV/47 [RFx Number: 2200000180]	Page 15 of 18	Bidders seal & Signature
--	-----------------------------	--------------------------

Subsequently, the Financial Proposals along with Supplementary Financial Proposals, if any, of Bidders with Techno-commercially Acceptable Bids shall be considered for final evaluation.

24.03 The Purchaser's evaluation of a Bid will take into account, in addition to the Bid price, the following factors, in the manner and to the extent indicated in this Clause:

- (a) Delivery Schedule
- (b) Conformance to Qualifying Criteria
- (c) Deviations from Bidding Documents

Bidders shall base their Bid price on the terms and conditions specified in the Bidding Documents.

The cost of all quantifiable deviations and omissions from the specification, terms and conditions specified in the Bidding Documents shall be evaluated. **The Purchaser may make its own assessment of the cost of any deviation to ensure a fair comparison of Bids.**

24.04 Any price adjustments that result from the above procedures shall be added for comparative evaluation only to arrive at an "Evaluated Bid Price". Bid Prices quoted by Bidders shall remain unaltered.

F. AWARD OF CONTRACT

25.00 CONTACTING THE PURCHASER

- 25.01 If any Bidder wishes to contact the Purchaser on any matter related to the Bid, from the time of Bid opening to the time of contract award, the same shall be done in writing only.
- 25.02 Any effort by a Bidder to influence the Purchaser and/or in the Purchaser's decisions in respect of Bid evaluation, Bid comparison or Contract Award, will result in the rejection of the Bidder's Bid.

26.00 THE PURCHASER'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS

- 26.01 Submission of bids shall not automatically construe qualification for evaluation. The Purchaser reserves the right to accept or reject any Bid and to annul the Bidding process and reject all Bids at any time prior to the award of the 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.

27.00 AWARD OF CONTRACT

- 27.01 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 the order to other bidders in the tender, provided it is required for the timely execution of the project & provided he agrees to come to the lowest rate. Purchaser reserves the right to distribute the entire tender quantity at its own discretion without citing any reasons thereof.
- 27.02 The Purchaser reserves the right to issue either a single composite order or separate individual Purchase/Work Orders, which shall, inter alia, cover the Scope of Work as specified in the NIT, including:
 - a) Purchase Order for Supply
 - b) Work Order for Installation/Erection, Testing & Commissioning (wherever applicable)
 - c) Work Order for Civil (wherever applicable)

28.00 THE PURCHASER'S RIGHT TO VARY QUANTITIES

28.01 The Purchaser reserves the right to vary the quantity i.e. increase or decrease the numbers/quantities without any change in terms and conditions during the execution of the Order.

29.00 LETTER OF INTENT/ NOTIFICATION OF AWARD

29.01 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 3 days of the issue of the letter of intent /Notification of Award by Purchaser.

30.00 CONTRACT PERFORMANCE BANK GUARANTEE (CPBG)

30.01 To be submitted within twenty-eight (28) days from the date of issuance of the Letter of Intent/Award/RC. Bidder shall initially submit the performance bank guarantee (PBG) equivalent to 1% of RC Value (including GST) valid till RC validity period plus three months claim period. Upon receipt of the PBG by BYPL against RC, the EMD shall be released. Thereafter bidder shall submit PBG on Purchase Order (PO) basis equivalent to 10% of the PO value (including GST) valid for a period of 30 months from the date of last receipts at site/stores plus 3 months claim period.

31.00 CORRUPT OR FRAUDULENT PRACTICES

31.01 The Purchaser requires that the Bidders observe the highest standard of ethics during the procurement and execution of the Project. In pursuance of this policy, the Purchaser:

(a) Defines, for this provision, the terms set forth below as follows:

(i) "Corrupt practice" means behaviour on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving, or soliciting of anything of value to influence the action of any such official in the procurement process or contract execution; and

(ii) "Fraudulent practice" means a misrepresentation of facts to influence a procurement process or the execution of a contract to the detriment of the Purchaser, and includes collusive practice among Bidders (before or after Bid submission) designed to establish Bid prices at artificial non -competitive levels and to deprive the Purchaser of the benefits of free and open competition.

(b) Will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;

(c) Will declare a firm ineligible, either indefinitely or for a stated period, to be awarded a contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing a contract.

31.02 Furthermore, Bidders shall be aware of the provision stated in the Terms and Conditions of the Contract.

32.00 STATUTORY GUIDELINES & REGULATIONS

32.01 The bidder shall make himself fully aware & familiarize himself with all applicable laws/guidelines/regulations.

33.00 SAFETY

33.01 Safety related requirements as mentioned in our safety Manual put on the Company's website which can be accessed at <http://www.bsesdelhi.com>. All bidders shall strictly abide by the guidelines provided in the safety manual at all relevant stages during the contract period.

34.00 PRIORITY OF CONTRACT DOCUMENTS

34.01 The several documents forming the Agreement are to be taken as mutually explanatory of one another, but in case of ambiguities or discrepancies, the same shall be explained and adjusted by the company, who shall, accordingly, issue suitable instructions thereon to the Bidder. In such event, unless otherwise provided in the agreement or explained by way of instructions by the company, as mentioned above, the priority of the documents forming the Agreement shall be as follows:

- i) Contract Agreement/Purchase Order.
 - (a) Special Conditions of Contract
 - (b) General Conditions of Contract
- (ii) The Letter of Acceptance/ Intent
- (iii) Agreed Minutes of the Tender Negotiation Meetings
- (iv) Agreed Minutes of the Tender Technical Meetings
- (v) The Priced Bill of Quantities
- (vi) The Technical Specifications / Scope of work
- (vii) The Tender document, including all Appendices and/or Addenda, Corrigendum the latest taking precedence.

In the event of any conflict between the above-mentioned documents, the more stringent requirement or conditions which shall be favourable to the company shall govern and the decision of the company/BYPL shall be final and binding upon the parties. In case of ambiguity, interpretation shall be mutual and documented.

BID INDEX FOR PART-A (TECHNICAL BID)

(To be filled & submitted on Bidder Letter Head, Bidders document submission should have following main categories as outlined below and should have page numbers printed at the bottom of each page with this page as page number 1. The page number should be in "Page X of Y" format. Separator with document description shall be provided before each document)

NIT & RFX No.:

Bidder's Name:

Bidder's Bid Reference No. & Date:

S. No.	Particulars	Bid Pdf Page No.	
		From	To
A.1 Bid Details			
1.	Bid Index for Part-A (Technical Bid) as per APPENDIX I ANNEXURE - 1.01	1	
2.	Cover Letter, If any		
3.	Bid Form (Unpriced) Duly Signed as per APPENDIX I ANNEXURE - 1.02		
4.	Tender Fee Details as per APPENDIX I ANNEXURE - 1.03		
5.	EMD Details as per APPENDIX I ANNEXURE - 1.04 & 1.05		
6.	Power-of-Attorney / Authorization Letter		
A.2 Technical Bid			
7.	Communication Details of the Bidder as per APPENDIX I ANNEXURE - 1.06		
8.	Manufacturer Authorization Form (as applicable) as per APPENDIX I ANNEXURE - 1.07		
9.	Technical Qualifying Criteria Compliance Index & Documents as per APPENDIX I ANNEXURE - 1.08, 1.09, 1.10		
10.	Schedule of Technical Deviations (along with soft editable Excel copy) as per APPENDIX I ANNEXURE - 1.11		
11.	Guaranteed Technical particulars (GTP) as per specification		
12.	All Drawings as per specification		
13.	Type Test Reports (Sequence of Tests shall be strictly in accordance with relevant IS/IEC) as per APPENDIX I ANNEXURE - 1.12		
14.	Sample Submission Details (If applicable as per Specification) as per APPENDIX I ANNEXURE - 1.13		
15.	Product Catalogue (If applicable)		
16.	Manufacturer's quality assurance plan (as applicable)		
17.	Other drawings/ documents mentioned in technical specification		
18.	Testing Facilities		
A.3 Commercial Bid			
19.	Company Profile/Organogram/Organization Chart & Manpower Details		
20.	Commercial Qualifying Criteria Compliance Index & Documents as per APPENDIX I ANNEXURE - 1.14		
21.	Undertakings as per APPENDIX I ANNEXURE - 1.15		
22.	Schedule of Commercial Deviations (along with soft editable Excel copy) as per APPENDIX I ANNEXURE - 1.16		
23.	Acceptance form for participation in reverse auction event as per APPENDIX I ANNEXURE - 1.17		
24.	Acceptance of Commercial Terms and Conditions as per APPENDIX II ANNEXURE - 2.05		
25.	Unpriced Bid Duly Signed (Volume - II Financial Bid (Price Format))		
26.	NIT Document complete Signed & Stamped		

BID FORM

To

Head of Department
Contracts & Material Deptt.
BSES Yamuna Power Ltd
Shaktikiran Building, Karkardooma,
Delhi 110032

Sir,

1. We understand that BYPL is desirous of procuring.....
for it's licensed distribution network area in Delhi.
2. Having examined the Bidding Documents for the above-named works, we the undersigned, offer to deliver the goods in full conformity with the Terms and Conditions and technical specifications for the sum indicated in the Financial Bid or such other sums as may be determined in accordance with the terms and conditions of the contract. The amounts are in accordance with the Price Schedules attached herewith and are made part of this bid.
3. If our Bid is accepted, we undertake to deliver the entire goods as per the delivery schedule mentioned in Section IV from the date of award of the purchase order/letter of intent.
4. If our Bid is accepted, we will furnish a performance bank guarantee for due performance of the Contract in accordance with the Terms and Conditions.
5. We agree to abide by this Bid for 120 days from the due date of bid submission and 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 the supply/services 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 thereof, 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, by the Laws and Jurisdiction of Contract.

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

Signature..... In the capacity of

.....duly authorized to sign for and on behalf of

(IN BLOCK CAPITALS)

TENDER FEE DETAILS

- a. Amount (Rs.) : **1,180/- (One Thousand One Hundred Eighty Only)**
- b. Mode of Payment : DD or online transfer through IMPS/NEFT/RTGS (select any one)
- c. DD /UTR No. (As applicable) :
- d. Dated :
- e. Bidders Bank Account No. :
- f. Name of the Bank :
- g. Address of the Bank :
- h. IFSC Code of the Bank :
- i. SWIFT Code of the Bank :

EMD DETAILS

- a. EMD Amount (Rs.) :
- b. Mode of Payment : BG/FD/online transfer through IMPS/NEFT/RTGS (select any one)
- c. BG/FD/UTR No. (As applicable):
- d. Dated :
- e. BG valid up to :
- f. BG Claim period up to :
- g. Bidders Bank Account No. :
- h. Name of the Bank :
- i. Address of the Bank :
- j. IFSC Code of the Bank :
- k. SWIFT Code of the Bank :

(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*] (hereinafter called the "Bidder") has submitted its bid dated [*date of submission of bid*] for the supply of [*name and/or description of the goods*] (hereafter 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*] (hereinafter called the "Bank"), are bound unto BSES Yamuna Power Ltd., with its Corporate Office at Shaktikiran Building, Karkardooma, Delhi -110032, (hereinafter 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 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

COMMUNICATION DETAILS OF THE BIDDER

S. No.	Designation	Name	Mobile No.	E-mail id
1	CEO / MD			
2	Sales / Marketing Head			
3	Sales Representative / Key Account Manager (KAM)			
4	Technical Head			
5	Manufacturer Plant / Operations Head			
6	Post Order Execution In Charge			
7	Authorized contact person (Primary responsibility for the Bid)			
8	Authorized contact person (Secondary responsibility for the Bid)			

MANUFACTURER AUTHORIZATION FORM
(To be submitted on OEM's Letter Head)

Date:
Tender No.:

To

Head of Department
Contracts & Material Deptt.
BSES Yamuna Power Ltd
Shaktikiran Building, Karkardooma,
Delhi 110032

Sir,

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

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

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

Yours Sincerely,
For

Authorized Signatory

QUALIFYING CRITERIA COMPLIANCE INDEX - TECHNICAL CRITERIA				
S No	Qualifying Criteria Description as per section 1 clause 2.00	Documentary Proof Description	Documentary Proof Enclosed on Bid Page No.	
			From	To
1				
2				
3				
4				
5				

LIST OF PURCHASE ORDERS EXECUTED & DELIVERY DETAILS IN SUPPORT OF QUALIFYING REQUIREMENTS

S No	Item Details				PO & Execution Details					Customer Name	End User (shall be Utility/ SEB's/ PSU's) name and details	PO copy, MDCC /Delivery completion certificates/ Invoice Copies enclosed on Bid Page no.	
	Item	Model	Voltage Rating (kV)	Current Rating (A)	PO No	PO Date	PO Qty	Executed Qty	Execution Year			From	To
Total								Σ	Σ				

Note – Only items relevant as per qualifying requirements should be included in the list.

LIST OF PERFORMANCE CERTIFICATES IN SUPPORT OF QUALIFYING REQUIREMENT														
S No	Item Details				PO No	Supplied/ Commissioning		Performance Certificate Issue Date	Performance Certificate Issued By End User (Utility/SEB/Govt Org.)	Contact Details of Issuing Person			Enclosed on Bid Page No.	
	Item	Model	Voltage Rating (kV)	Current Rating (A)		Qty.	Date			Name	Email	Mobile	From	To
Total						Σ								

Note –

- 1. Only items relevant as per qualifying requirement should be included in the list.**
- 2. Only Performance certificates issued by End User (utilities/ SEB's/PSU's only) will be accepted as per qualifying requirement.**

SCHEDULE OF DEVIATIONS - TECHNICAL

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

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

Technical Deviations:-

S. No.	NIT Pdf Page No.	NIT Clause No.	NIT Clause Descriptions	Details of Clarification/deviation with justifications

Note – Please enclose detailed GTP and drawings as per specification after the technical deviation sheet

Seal of the Bidder:

Signature:

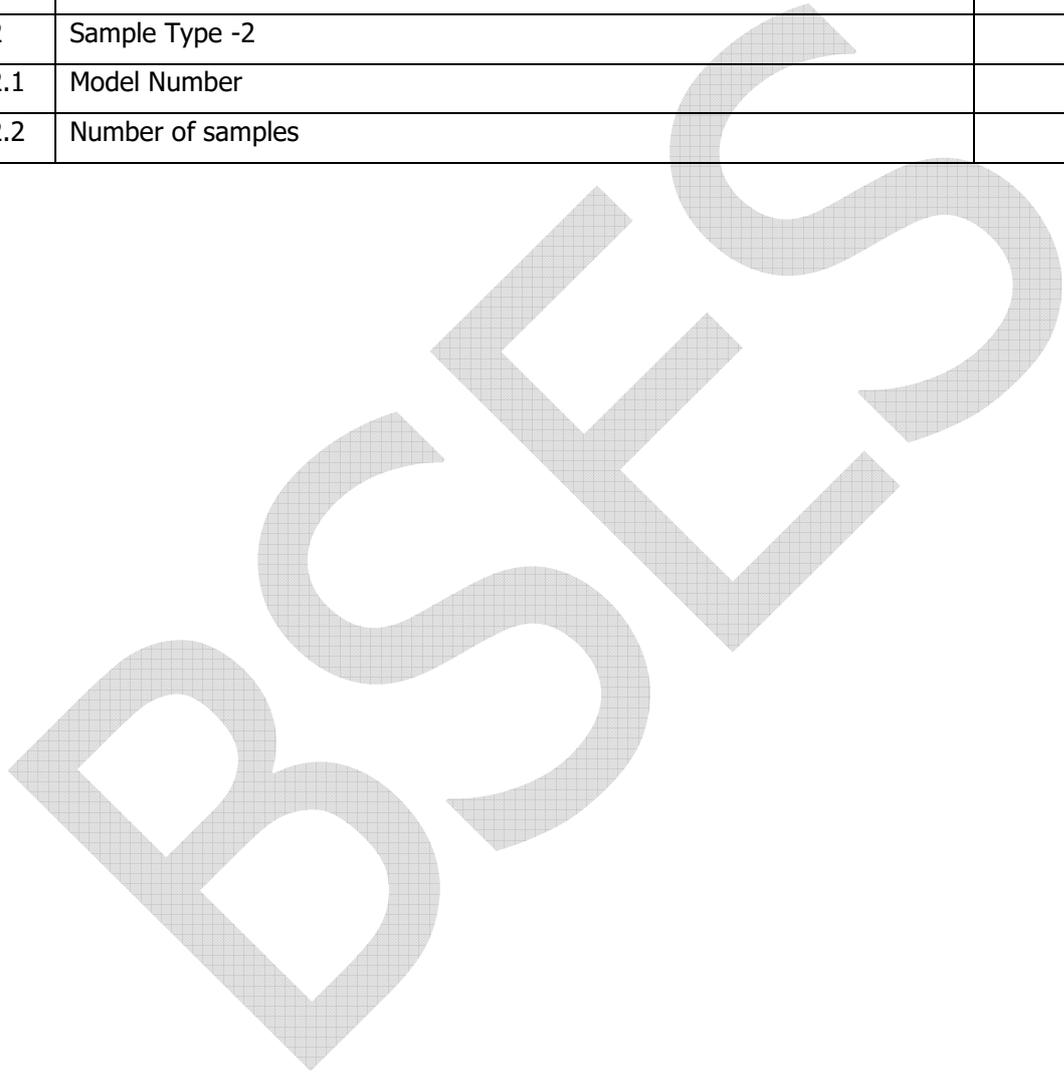
Name:

TYPE TEST REPORTS (SEQUENCE OF TESTS SHALL BE STRICTLY IN ACCORDANCE WITH RELEVANT IS/IEC)

S No	Test Description	Reference Standard	Reference Standard Clause No.	Name of Testing Lab	Test Report Reference Number	Date of Issue of Report	Report Enclosed on Bid Page No	
							From	To
1								
2								
3								
4								
5								
6								
7								



SAMPLE SUBMISSION DETAILS (IF APPLICABLE AS PER SPECIFICATION)		
S No	Description	Bidder's Response
1	Samples submitted with the bid	Yes/No
1	Sample Type -1	
1.1	Model Number	
1.2	Number of samples	
2	Sample Type -2	
2.1	Model Number	
2.2	Number of samples	



QUALIFYING CRITERIA COMPLIANCE INDEX - COMMERCIAL CRITERIA				
S No	Qualifying Criteria Description as per section 1 clause 2.00	Documentary Proof Description	Documentary Proof Enclosed on Bid Page No.	
			From	To
1				
2				
3				
4				
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UNDERTAKINGS
(To be submitted on Bidders Letter Head)

Date:

Tender No.:

To

Head of Department
Contracts & Material Deptt.
BSES Yamuna Power Ltd
Shaktikiran Building, Karkardooma,
Delhi 110032

Sir,

We *[name of bidder]*, , hereby undertake and confirm the following:

- *[name of bidder]* has "No Litigation" pending with the BYPL or its Group/Associates Companies as on the date of bid opening.
- *[name of bidder]* has not been blacklisted/debarred by any central/state government institution/Electricity utilities as on the date of bid opening.
- *[name of bidder]* shall comply with all the statutory compliances as per the laws/rules etc. before the start of the supply/work.
- All documents, certificates, and information submitted by us against this tender are genuine, true, and correct. Copies provided have been made from the original documents. In the event that any document, certificate, or information is found to be false, forged, or misleading, BYPL shall have the right, at its sole discretion, to take appropriate legal action, including forfeiture of EMD and disqualification from participation in future tenders of BYPL and its group companies, for an indefinite period or as decided by BYPL.

Yours Sincerely,

For

Authorized Signatory

Name : _____

Designation : _____

Seal : _____

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SCHEDULE OF DEVIATIONS - COMMERCIAL

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

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

Commercial Deviations:-

S. No.	NIT Pdf Page No.	NIT Clause No.	NIT Clause Descriptions	Details of Clarification/deviation with justifications

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

Seal of the Bidder:

Signature:

Name:

ACCEPTANCE FORM FOR PARTICIPATION IN REVERSE AUCTION EVENT

(To be signed and stamped by the bidder)

BSES Yamuna Power Ltd (hereinafter referred to as **"BYPL"**) intends to use the reverse auction through the SAP-SRM tool as an integral part of the entire tendering process. All the bidders who are found as techno commercial qualified based on the tender requirements shall be eligible to participate in the reverse auction event.

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

1. BYPL shall provide the user ID and password to the authorized representative of the bidder. (Authorization letter in lieu of the same be submitted along with the signed and stamped acceptance form)
2. BYPL will make every effort to make the bid process transparent. However, the award decision by BYPL would be final and binding on the bidder.
3. The bidder agrees to non-disclosure of trade information regarding the purchase, identity of BYPL, bid process, bid technology, bid documentation, bid details, etc.
4. The bidder is advised to understand the auto bid process to safeguard themselves against any possibility of non-participation in the auction event.
5. In case of bidding through internet medium, bidders are further advised to ensure availability of the entire infrastructure as required at their end to participate in the auction event. Inability to bid due to telephone line glitches, internet response issues, software or hardware hangs; power failure or any other reason shall not be the responsibility of BYPL.
6. In case of intranet medium, BYPL shall provide the infrastructure to bidders, further, BYPL has sole discretion to extend or restart the auction event in case of any glitches in infrastructure observed which has restricted the bidders from submitting the bids to ensure fair & transparent competitive bidding. In case an auction event is restarted, the best bid already available in the system shall become the start price for the new auction.
7. In case the bidder fails to participate in the auction event due to any reason whatsoever, it shall be presumed that the bidder has no further discounts to offer and the initial bid as submitted by the bidder as a part of the tender shall be considered as the bidder's final no regret offer. Any offline price bids received from a bidder in lieu of non-participation in the auction event shall be outright rejected by BYPL.
8. The bidder shall be prepared with competitive price quotes on the day of the reverse auction event.
9. The prices as quoted by the bidder during the auction event shall be inclusive of all the applicable taxes, duties and levies and shall be FOR Landed Cost basis at the BYPL site.
10. The prices submitted by a bidder during the auction event shall be binding on the bidder.
11. No requests for time extension of the auction event shall be considered by BYPL.
12. The original price bids submitted by the bidders shall be proportionately reduced for each line item, based on the final all-inclusive prices determined at the conclusion of the auction event, to arrive at the final contract value.

Signature & seal of the Bidder

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CODE OF CONDUCT FOR SUPPLIERS

BSES expects suppliers including their personnel (employees or sub-contractors) to support, embrace and enact the following Code of Conduct (CoC), apart from complying with all national and international regulations and laws that are applicable at any given time. BSES encourages its suppliers to go beyond compliance and embrace the principles of sustainability. BSES will support training and capacity-building programmes undertaken by suppliers, which promote awareness on sustainability and responsible business practices. BSES shall incorporate regulatory compliance and ESG performance as key criteria based on requirements as stated in the Code during evaluation of the suppliers.

A. Promote Environmental Sustainability

All suppliers support a precautionary approach to environmental issues and undertake initiatives to promote better environmental responsibility. To this end, suppliers will

1. Reduce resource consumption and conserve natural resources:
 - 1.1. Conduct all operations, sourcing, manufacture, distribution of products and the supply of services with the aim of protecting and preserving the environment.
 - 1.2. Use natural resources rationally and work towards reducing resource consumption (water, energy, fuel, electricity, other materials etc.) and GHG emissions.
 - 1.3. Identify environmental risks and set up appropriate prevention measures.
2. Prevent pollution and reduce waste generation
 - 2.1. Maintain all required official permits, licenses and registrations.
 - 2.2. Prevent contamination, limit waste generation, and avoid or minimise adverse impact on the environment and biodiversity by facilitating reusing and recycling material.
 - 2.3. Clearly monitor the precautions to be taken during operations & maintenance in case of emission of heat, vibrations, radioactive rays, noise or similar.
 - 2.4. Use only those chemicals and aerosols with very low or zero ODP (Ozone Depletion Potential), which are allowed as per the regulatory provisions.
 - 2.5. Ensure that all the chemical and hazardous substances are accompanied by the manufacturer MSDS (Material Safety Data Sheet) during transport, storage, use and disposal, and that instructions mandated be strictly followed. No chemical and hazardous substance shall be received without a MSDS document. All the applicable regulatory guidelines shall be adhered strictly for the procurement, transport, storage, use and disposal of such harmful and hazardous chemicals.
 - 2.6. Provide written instructions about handling and/or disposal of equipment and product during the life cycle if special handling is required.

B. Commitment to Human Rights, Labour and the Society

Suppliers shall support, respect and protect human and labour rights and make sure their organisation/entity is not complicit in any kind of abuses and/or violations. In this regard, the suppliers must:

1. Fair working conditions
 - 1.1. Provide and maintain healthy and safe working conditions and welfare facilities for the employees in its establishment.
 - 1.2. Ensure that that wages and benefits of their employees and subcontractors are fair and comply with applicable national and local laws as well as with contractual agreements.
 - 1.3. Provide all workers, both permanent and non-permanent, with employment documents that are freely agreed to and which respect their legal and contractual rights.
2. Health & Safety

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Ensure that the activities of suppliers do not harm the health and safety of their own employees, suppliers and subcontractors, local communities/population, and finally the users of its products and services, which is in accordance with the BSES's Mission Zero Harm in Health and Safety.

3. Child Labour

- 3.1. No person below 18 years shall be employed or permitted to work in any occupation or process.
- 3.2. Zero tolerance for any kind of child labour in their establishments and supply chain.

4. Forced Labour

- 4.1. Under no circumstance shall suppliers use forced labour¹, whether in form of compulsory or trafficked labour, indentured labour, bonded labour or other forms, through direct or indirect use of force and/or intimidation.
- 4.2. Any kind of slavery, mental and physical coercion, human trafficking and debt bondage in the supply chain shall not be tolerated.

5. Wages and Working hours

- 5.1. Ensure that all applicable regulations related to wages, overtime compensation and other legally mandated benefits of their employees and subcontractors are fair and comply with applicable national and local laws as well as with contractual agreements. Minimum wages are applicable as per applicable in central Act and State rules.
- 5.2. Ensure that maximum working hours laid down and are adhered to.

6. Freedom of Association and Collective Bargaining

- 6.1. Recognise and respect the rights of workers to freedom of association and collective bargaining. Workers are not intimidated or harassed in the exercise of their right to join or refrain from joining any organisation.
- 6.2. Ensure that all employees can communicate with the management regarding working conditions.

7. Non-Discrimination and Equal opportunity

- 7.1. Commit, within the scope of prevailing laws and statutes, to oppose all forms of discrimination².
- 7.2. Maintain a work environment free from any form of discrimination and harassment.
- 7.3. Refrain from discrimination in hiring and employment practices on grounds of skin colour, age, caste, gender, race, ethnicity, nationality, socio-economic background, physical or mental disability, religion, sexual orientation, marital status, pregnancy, dependants, political or religious opinion, ideology, union membership and personal or social circumstances. Special attention must be paid to the rights of workers most vulnerable to discrimination.

8. Zero Tolerance towards Harassment

- 8.1. Treat all employees with respect and dignity and furthermore ensure that their own suppliers treat their employees in the same manner.
- 8.2. No tolerance towards unacceptable treatment of employees, such as physical punishment or torture, sexual harassment³, or abuse, mental or physical coercion or verbal abuse, or the threat of any such treatment.
- 8.3. No worker should be subjected to any physical, sexual, psychological, or verbal harassment, abuse or other form of intimidation.

C. Ethical Integrity and Legality

Suppliers shall demonstrate the highest standard of integrity, ethics, and business conduct.

1. Compliance with Applicable laws and regulations:
 - 1.1. All activities must be carried out in compliance with the legislation that is applicable in the countries in which the suppliers operate.
 - 1.2. All other applicable international laws and regulations must be complied with, including those relating to international trade (such as those relating to sanctions, export controls and reporting obligations), data protection and antitrust/ competition laws.
 - 1.3. Avoid any conduct that could tarnish or damage the reputation of BSES.
2. Anti-Corruption & Anti Bribery
 - 2.1. All forms of bribery and corruption are prohibited
 - 2.2. Adequate measures and procedures should be in place to prevent bribery in all commercial dealings.
 - 2.3. Maintain a policy of 'Zero Tolerance' of any practice that may be deemed to be corruption, either active or passive.
 - 2.4. No tolerance for unacceptable conduct, which includes, but not limited to, non-compliance with anti- corruption laws and, directly or indirectly offering, promising, hiring or authorising payments in cash or in kind to any BSES employee, public official or any other person or entity, with intention of a) obtaining or retaining business b) Influencing business decisions; and/or c) securing an unfair advantage.
3. Conflict of Interest
 - 3.1. All and any conflict of interest in any business dealings with BSES, of which the suppliers are aware, should be declared to BSES so that appropriate action can be taken.
 - 3.2. Avoid a situation where there is a real or potential conflict of interest with BSES employees, or with their family or closely associated persons, that could affect the independence or objectivity of their professional actions or decisions. If avoidance is not possible, the suppliers should inform BSES of the situation so that appropriate action can be taken.
4. Insider Trading and Other Economic Crimes
 - 4.1. Ensure that all business and commercial dealings are transparently performed and accurately recorded in the books and records.
 - 4.2. Comply with applicable anti-money laundering laws, conduct business only with ethically responsible partners and receive funds only from legitimate sources.
 - 4.3. Avoid actual or attempted participation in economic offences, such as (but not limited to) money laundering, criminal breach of trust, counterfeiting, criminal misappropriation of properties, forgery, cheating, extortion, embezzlement and fraud.
 - 4.4. Refrain from insider trading. No confidential information regarding BSES is used to either engage, facilitate or support insider trading in BSES's shares.
 - 4.5. Take necessary measures to detect and prevent any illicit or suspicious forms of payment and inform and/or report through established channels if it has any suspicion or concern in this regard.
5. Gifts & Hospitality
 - 5.1. Any business entertaining/hospitality with BSES should be modest in value, appropriate, and compliant with the law and company policies, entirely for the purpose of maintaining good business relations and not intended to influence in any way BSES's decisions on future business relationship.
 - 5.2. Only gifts/honorarium of nominal value accepted or offered on festivals, at conferences, etc. will be permitted. Such gifts should comply with local laws and customs (including cultural and religious festivals) and should not be prohibited under applicable law and should not include cash or cash equivalents, gold or other precious metals, gems or stones.
 - 5.3. Neither receive nor offer or make, directly or indirectly, any illegal payments, remunerations, gifts, donations or comparable benefits that are intended, or perceived, to obtain

- uncompetitive favours for the conduct of its business with BSES.
- 5.4. Neither directly or indirectly offer any gift, entertainment, trip, discount, service, or other benefit to any official of BSES or his/her close relations which would or be capable of compromising, influencing, liable to corrupt the integrity and objectivity of that person.
6. Competition, Confidentiality and Data Privacy
- 6.1. All market survey/other entities information must be obtained and used legitimately and in compliance with all applicable laws and regulations.
- 6.2. No attempt should be made to divulge to BSES any information about any other entity in violation of any law or agreement.
- 6.3. Likewise, BSES's confidential information must not be shared with any Supplier unless expressly permitted by BSES in writing by authorised signatory under the respective purchase order or agreement, as the case may be.
7. Transparency and Ethics
- 7.1 Fair competition
Avoid any action that may constitute an illegal practice of unfair competition and ensure compliance with applicable competition laws.
- 7.2 Corporate image and reputation
Suppliers must NOT:
- Make false statements or provide any misleading information regarding its products/services.
 - Give the impression of representing or being the spokesperson of BSES while getting associated with any religious/political party or for activities in their personal capacity.
8. Protection of Intellectual Property and No Misuse or Improper use of BSES's assets/ property
- 8.1. Respect and protect all confidential information and intellectual property of BSES.
- 8.2. Do not misuse and share assets of BSES and employ them only for the purpose of conducting the business for which they are duly authorised by BSES. These include tangible assets such as equipment and machinery, systems, facilities, materials, and resources and intangible assets such as intellectual property rights, processes, know how & technology, proprietary information, etc.
- 8.3. Safeguard, secure, and protect BSES's assets and information technology from theft, destruction, misappropriation, wastage, and abuse.
- 8.4. Promptly report loss, theft or destruction of any intellectual property and data of the Company or that of any Supplier.
9. Financial Records and Accuracy in Books
- 9.1. Have accounting practices in place to ensure accuracy of its financial books and records.
- 9.2. Ensure accurate accounting and proper reporting of information pertaining to the business and financial results in accordance with applicable Accounting Standards [Generally Accepted Accounting Principles (GAAP)].
- 9.3. Ensure compliance to applicable laws and regulations with respect to accounting and taxation and timely discharge of tax liability.
10. Sanction Laws
- 10.1 Do not engage in any dealings or transactions with any person, or in any country or territory that are subject to global / regional sanctions as mentioned herein below in clause 10.2. BSES is vigilant of its suppliers who may be on a sanctions list or have a related company in a country subject to global/regional sanctions. In case of any concerns, the supplier should immediately report to BSES.
- 10.2 Do not be subject to or the target of any economic or financial sanctions or trade embargoes imposed, administered or enforced by the U.S. Government including without limitation by

the World Bank or by the United Nations Security Council, the European Union, the United Kingdom including by Her Majesty's Treasury or the Department of Business, Innovation and Skills, a relevant regulatory authority or the Minister of Foreign Affairs of Canada under the Special Economic Measures Act or the United Nations Act or legislation or regulations with similar purpose or effect or any other relevant sanctions authority of any other country (collectively, 'Sanctions Laws') nor is the Company or any of its subsidiaries / affiliates located, organised or resident in a country or territory that is the subject of the target of Sanctions Laws

10.3 Do not take any action which places or is likely to place BSES in violation of Sanctions Laws and/ or breaches affecting the reputation and/ or business interests of BSES

11. Responsible Sourcing

Ensure that goods and materials are not sourced in a suspicious or illegal way and implement measures for sustainable procurement practices³ to ensure compliance with laws and regulations.

12. Quality of Product and Services

Products and services should meet the specifications, quality, safety and environmental criteria specified in the relevant contract documents and required by applicable laws

13. Corporate Citizenship

Suppliers shall be committed to be good corporate citizens, not only in compliance with all relevant laws and regulations, but also by assisting and supporting initiatives to improve the quality of life of local communities/regions in which it operates. The activities may be, but not limited to, community health and family welfare, vocational training, education and literacy and employment.

¹ 'Forced Labour' or 'Involuntary Labour' refers to all work or service that is extracted under the menace of penalty. It also includes terms such as, bonded labour and modern slavery. It also includes any labour for which the worker receives less than the government stipulated minimum wage.

² 'Discrimination' refers to unjust or prejudicial treatment of people, especially on the grounds of, but not limited to, caste, creed, gender, race, ethnicity, age, colour, religion, disability, socio-economic status or sexual orientation.

³ Sustainability shall mean to devise a practice & procedure proactively to sustain resources of organisation and society at present levels with reasonable degradation. Sustainable procurement or sourcing is the process of making purchasing decisions that meet an organisation's needs for goods and services in a way that benefits not only the organisation but society, while minimising its impact on the environment. Organisation integrates the sustainability into business model as a resultant of ESG principles. This is achieved by ensuring that the working conditions of its suppliers' employees are decent, the products or services purchased are sustainable, where possible, and that socio- economic issues, such as inequality and poverty, are addressed

**GENERAL CONDITIONS OF CONTRACT
(GCC)**

GENERAL CONDITIONS OF CONTRACT (GCC)

The General Condition of Contract shall form a part of specifications, contract document.

1. General Instructions & Applicability

- 1.1. All Bids shall be prepared and submitted strictly in accordance with these instructions. The Bidder shall be solely responsible for all expenses incurred in the preparation and submission of the Bid. Under no circumstances shall the Purchaser be held liable for such costs, regardless of the outcome of the bidding process.
- 1.2. The Purchaser reserves the right to seek clarifications or additional information from any Bidder at any stage of the evaluation process. The Purchaser may, at its discretion, reject any Bid that is incomplete, non-responsive, or fails to meet the requirements stated in the Bid Documents. The decision of the Purchaser regarding the responsiveness or rejection of any Bid shall be final and binding, without any financial or other obligation on its part.
- 1.3. The Bidder shall be deemed to have carefully examined, read, and fully understood all instructions, terms, conditions, and technical requirements specified in the Tender Documents prior to submission of its Bid.

2. Definitions and Interpretations

- 2.1. COMPANY / OWNER / PURCHASER / BUYER / CUSTOMER shall mean BSES Yamuna Power Limited (BYPL), a company incorporated under the Companies Act, 2013, having its registered office at Shakti Kiran Building, Karkardooma, Delhi – 110032. The expression shall include its authorized representatives, agents, successors, and permitted assigns.
- 2.2. BIDDER / SELLER / SUPPLIER / VENDOR / CONTRACTOR / AGENCY / MANUFACTURER shall mean the entity submitting a quotation or proposal in response to this bid enquiry issued by the Purchaser. The term Seller refers to the successful Bidder(s) whose bid has been accepted by the Purchaser and on whom the Letter of Acceptance or Letter of Award or Purchase Order is issued, and shall include the Seller's heirs, legal representatives, successors, and permitted assigns, wherever applicable.
- 2.3. OFFER SHEET shall mean the Bidder's formal and firm offer submitted to BYPL in accordance with the specifications set forth in the Bid Documents.
- 2.4. CONTRACT PRICE/RATE shall mean the price specified in the Letter of Intent, Letter of Award, Rate Contract, or Purchase Order, as applicable.
- 2.5. SITE shall mean the location(s) where the Works, Goods, or Services are to be delivered, installed, commissioned, or executed, as specified elsewhere in the Tender Documents.
- 2.6. STORE shall mean the designated area or location where goods and materials are stored, or as otherwise defined in the Contract.
- 2.7. ENGINEER IN CHARGE shall mean the Company's authorized or nominated representative responsible for supervising and administering the execution of the Works under the Contract.
- 2.8. APPLICABLE LAW shall mean the Constitution of India and all laws, rules, regulations, directives, notifications, codes, orders, or instructions having the force of law as issued by any competent legislative or governmental authority, including but not limited to laws relating to taxes, duties, assessments, expropriation, and compulsory acquisition, as amended from time to time. Any resulting implications shall constitute a Change in Law or Change in Permits, as applicable.

- 2.9. OTHER CLEARANCES shall mean all consents, approvals, permits, or authorizations required to be obtained from governmental or local authorities necessary for commencing or completing the work.
- 2.10. DEFECT LIABILITY PERIOD shall mean the period during which the Seller shall remain responsible for the repair or replacement of any defective part of the Works executed under the Contract, at no additional cost to the Purchaser.
- 2.11. TENDER SPECIFICATION shall mean the technical and commercial requirements, Indian Standard specifications, and description of works detailed in the Tender Documents, including all documents and references expressly or implicitly forming part of the Tender.
- 2.12. SPECIFICATIONS shall collectively mean all stipulations contained in the RFQ, Commercial Terms and Conditions, Instructions to Bidders, Technical Specifications, and any Amendments, Revisions, Deletions, or Additions issued by the Purchaser from time to time.
- 2.13. CODES AND STANDARDS shall mean all applicable codes and standards referred to or implied in the Specifications.
- 2.14. CHANGE OF WORK shall mean any addition, deletion, suspension, or modification to the scope, quality, functionality, or requirements of the Work as defined in the Contract, resulting in a corresponding change to the Technical Specifications and/or completion schedule.
- 2.15. GOOD INDUSTRY PRACTICE shall mean the level of skill, care, diligence, prudence, and foresight reasonably expected from a competent and experienced service provider engaged in similar activities under similar circumstances, in compliance with prevailing laws, regulations, and industry standards.
- 2.16. CONTRACT shall mean the agreement formed by the Letter of Award or Acceptance, Purchase Order or Work Order, Special Conditions of Contract (SCC), General Conditions of Contract (GCC), the Tender and its Annexures, and all addenda, corrigenda, and clarifications issued by the Purchaser.
- 2.17. EFFECTIVE DATE OF CONTRACT shall mean the date of issuance or award of the Contract, which shall also be deemed the Contract Commencement Date.
- 2.18. CONTRACT PERIOD shall mean the total duration agreed upon between the Seller and Purchaser for execution of the Contract, inclusive of any extended contract period for reason beyond the control of the Seller and/or Purchaser due to force majeure.
- 2.19. CONTRACT COMMENCEMENT DATE shall mean the date of issuance or award of the Contract, which shall be deemed the Effective Date of Contract.
- 2.20. CONTRACT COMPLETION DATE shall mean the date marking the expiry of the Guarantee or Defect Liability Period, which shall be deemed the Contract Completion Date.
- 2.21. ACCEPTANCE shall mean and deemed to include one or more of the following as will be stipulated in the specification:
- 2.21.1. Written approval by the Purchaser's Inspector authorizing dispatch of material from the Supplier's works.
- 2.21.2. Acceptance of material at Purchaser site stores after its receipt and due inspection/testing and release of material acceptance note.
- 2.21.3. In case of supply and installation contracts, acceptance shall mean issuance of the Equipment/Material Takeover Receipt after successful installation, commissioning, and final acceptance.

3. Contract Documents Priority & Formation

- 3.1. The documents forming the Contract shall be read as mutually explanatory. In case of any ambiguity or discrepancy, the same shall be clarified and resolved by the Purchaser, whose interpretation shall be final. Unless otherwise provided, the order of precedence of Contract documents shall be as follows:
- 3.1.1. Contract Agreement/Purchase Order/Work Order
 - 3.1.2. Letter of Acceptance / Letter of Intent / Letter of Award
 - 3.1.3. Agreed Minutes of the Tender Negotiation Meetings
 - 3.1.4. Agreed Minutes of the Tender Technical Meetings
 - 3.1.5. Priced Bill of Quantities
 - 3.1.6. Technical Specifications, Drawings, and Scope of Work
 - 3.1.7. Tender Document including all Appendices, Addenda, and Corrigenda (latest revisions to take precedence)
 - 3.1.8. Applicable Codes and Standards
- 3.2. In the event of any inconsistency, the interpretation most consistent with achieving the Project's technical, legal, and statutory objectives shall prevail. No oral communication or instruction shall supersede the written Contract documents.

4. Governing Laws & Dispute Resolution

- 4.1. The Contract shall be governed by and interpreted in accordance with the laws of India.
- 4.2. Any dispute, controversy, or claim arising out of or relating to this Contract, or the breach, termination, or invalidity thereof, shall first be sought to be resolved amicably through mutual consultation between the Parties.
- 4.3. In the event that an amicable resolution is not achieved within a reasonable period, the dispute shall be referred to arbitration in accordance with the provisions of the Arbitration and Conciliation Act, 1996, as amended by the Arbitration and Conciliation (Amendment) Act, 2023. The Arbitral Tribunal shall consist of three (3) arbitrators — one to be appointed by each Party, and the third, who shall act as the presiding arbitrator, to be jointly appointed by the two arbitrators so nominated.
- 4.4. The seat and venue of arbitration shall be New Delhi, India, and the language of proceedings shall be English. The arbitral award rendered by the Tribunal shall be final and binding upon both Parties.

5. Change in Law

- 5.1. Change in Law shall mean the occurrence of any of the following events after the Effective Date of the Contract:
- 5.1.1. The enactment or coming into force of any new Applicable Law.
 - 5.1.2. Any amendment, modification, alteration, or repeal of an existing Applicable Law, or the issuance of any new or revised directive, regulation, or order thereunder.
 - 5.1.3. Any change or variation in the rate, nature, or applicability of taxes, duties, levies, or charges payable in connection with this Contract.
- 5.2. In the event of any Change in Law, the impacted Party shall promptly notify the other Party in writing with relevant details.
- 5.3. If such Change in Law results in any increase or decrease in the cost, expense, or liability of the Seller in performing its obligations under the Contract, an equitable adjustment shall be made to the Contract Price and/or the Schedule of Completion as mutually agreed between the Parties.

5.4. The Parties agree to negotiate in good faith to reasonably compensate or adjust obligations affected by such Change in Law to ensure the fair performance of the Contract.

6. Language, Measurement & Precedence

6.1. The Contract issued by the Company to the Seller, along with all related correspondence, documents, instructions, and communications, shall be prepared and maintained in the English language. In case of any translation of Contract documents, the English text shall prevail and govern in the event of any conflict or ambiguity.

6.2. All dimensions, units, quantities, and measurements shall be expressed and interpreted strictly in accordance with the Metric System (International System of Units - SI). Any deviation or alternative units must be clearly specified and mutually agreed upon in writing.

7. Scope of Supply - General

7.1. The "Scope of Supply" shall be on the basis of Supplier's responsibility, completely covering the obligations, responsibility and supplies provided in this Bid enquiry whether implicit or explicit.

7.2. Supplier shall have to quote for the Bill of quantities as listed in Volume - II of this RFQ.

7.3. Quantity variation and additional requirements if any shall be communicated to Seller during execution.

7.4. All relevant drawings, data and instruction manuals.

8. Specifications, Codes & Standards

8.1. All applicable codes and standards referred to in the Contract Document shall be strictly followed. Codes and standards not specifically mentioned in the Contract Document may be adopted with prior written approval of BYPL, provided that the materials, supplies, and equipment conforming to such standards are equal to or better than the corresponding standards specified in the Contract.

8.2. Product manufacturer or brand names cited in the Contract Documents are intended solely to indicate the required type and quality of products. No substitution or alteration of the specified brands or product quality shall be made without the prior written consent of BYPL. All products and equipment shall be used or installed strictly in accordance with the original manufacturer's guidelines, unless otherwise directed by BYPL.

8.3. In all cases, compliance with the relevant codes, standards, and requirements prescribed by applicable government authorities shall be ensured

8.4. In the absence of specific BSES standards, the relevant Indian Standards (IS) or International Electrotechnical Commission (IEC) standards, as applicable, shall be followed.

9. Representations and Warranties

9.1. It is hereby represented and warranted that full legal capacity, along with all valid licenses, permits, and approvals required to perform the obligations under this Contract, are in place.

9.2. It is warranted that all Goods supplied under this Contract:

9.2.1. Are brand new and free from any defects in design, materials, and workmanship.

9.2.2. Fully conform to the specifications and requirements of the Contract.

9.2.3. Are suitable and fit for the intended purpose as specified in the Contract Documents.

9.3. It is further warranted that all Services performed shall be executed with the highest degree of skill, care, and diligence, in accordance with Good Industry Practice and prevailing professional standards.

10. Ethics, Integrity & Code of Conduct

10.1. Full compliance shall be ensured with all anti-bribery, anti-corruption, conflict of interest, gifts and gratuities, and integrity policies issued or communicated by the Purchaser. For Contracts exceeding the specified thresholds, execution of an Integrity Pact shall be mandatory in accordance with the Purchaser’s guidelines.

10.2. Any breach of these ethics and integrity obligations may result in disciplinary action, including but not limited to termination of the Contract, forfeiture of performance security deposits, recovery of losses incurred by the Purchaser, debarment from future procurement opportunities, and reporting to the relevant regulatory or enforcement authorities.

11. Sustainability, ESG & Legal Compliance

11.1. An Environmental, Social, and Governance (ESG) program appropriate to the scope of work shall be implemented, including but not limited to the following:

- 11.1.1. Compliance with applicable Extended Producer Responsibility (EPR), electronic waste, hazardous waste, plastic waste, and battery waste management regulations;
- 11.1.2. Adherence to RoHS/REACH standards where applicable;
- 11.1.3. Design and supply of energy-efficient products meeting prescribed star ratings or efficiency classes;
- 11.1.4. Provision for take-back and responsible disposal or recycling of packaging and end-of-life equipment, where mandated;
- 11.1.5. Implementation of Occupational health and safety management systems aligned with IS/ISO 45001;
- 11.1.6. Social safeguards including prohibition of child labour, forced labour, assurance of fair wages, and provision of safe and dignified workplaces.
- 11.1.7. Adoption of environmentally responsible practices such as waste minimization, recycling, and strict prohibition of hazardous materials usage, in accordance with relevant laws and regulations.

11.2. Support shall be extended to the Purchaser’s Scope-3 greenhouse gas emissions tracking efforts by submitting quarterly reports detailing, where available, the embodied carbon content of supplied goods (where available) and associated logistics emissions. The Seller shall provide reasonable assistance in this regard at no additional cost.

11.3. Priority shall be given to the use of recycled or returnable packaging materials, and single-use plastics shall be minimized except where necessary for product protection. All wooden packaging shall be sourced from legally compliant entities. Pallets, drums, and similar packaging materials shall be collected and returned for reuse or recycling, wherever feasible.

11.4. Accurate records, documentation, and evidence of compliance with all ESG requirements shall be maintained and furnished to BYPL or relevant authorities as reasonably requested, in the prescribed format and frequency.

12. Data & Cybersecurity

12.1. For any scope involving software, firmware, or networking components, the following requirements shall apply:

- 12.1.1. Provide comprehensive cyber hardening guidelines;
- 12.1.2. Maintenance of a vulnerability disclosure window of thirty-six (36) months from the date of delivery;

- 12.1.3. Timely provision of security patches and firmware updates as and when they become available;
- 12.1.4. Submission of a software Bill of Materials (SBOM) listing all included software components;
- 12.1.5. Confirmation that no hard-coded credentials exist in delivered software or devices.
- 12.1.6. Any connection to the Purchaser's network shall require prior written authorization before implementation.

12.2. Any personal data processed in relation to this Contract shall be handled in full compliance with applicable data protection laws, including the Digital Personal Data Protection Act, 2023, as amended from time to time. Appropriate technical and organizational security measures shall be implemented, and any data breach or security incident impacting Purchaser data shall be promptly notified to the Purchaser.

13. Local Content and Eligibility

- 13.1. Full compliance shall be ensured with the Public Procurement (Preference to Make in India) Order and related norms. This includes submission of accurate declarations of local content in goods and services, along with consent for verification and audit by the Purchaser or authorized agencies. Any false or misleading declaration shall entitle the Purchaser to disqualify the offer, terminate the Contract, and impose debarment in accordance with applicable regulations.
- 13.2. Entities originating from countries sharing land borders with India shall comply with the registration and eligibility criteria prescribed by the Government of India. Non-compliance with these requirements shall render the offer ineligible for consideration and may result in termination of the Contract if discovered after award.

14. Manufacturing Approvals & Clearances

- 14.1. Transmittal approval documents - including Guaranteed Technical Parameters (GTP), drawings, Quality Assurance Plans (QAP), and other relevant documents - shall be submitted within 15 days to the designated BYPL official for review and approval. BYPL shall provide approval or comments within seven (7) calendar days of the initial submission. Should resubmission be required, the Seller shall complete it within five (5) calendar days. Subsequent approvals or comments from BYPL on such resubmissions will be issued within five (5) calendar days. Repeated resubmissions are discouraged and may impact timelines.
- 14.2. Manufacturing activities shall commence only after the Seller receives formal transmittal approval and manufacturing clearance from BYPL.
- 14.3. All documents submitted for transmittal approval must reflect pre-award discussions and confirmations between BYPL and the Seller to ensure accuracy and compliance.
- 14.4. Post Order Transmittal Approval shall be completed within 04 weeks from the date of Rate Contract/Purchase Order. Delays in obtaining transmittal approval shall not be accepted as valid grounds for extension of delivery timelines or waiver of liquidated damages.

15. Errors, Omissions & Discrepancies

- 15.1. Sole responsibility shall rest for all discrepancies, errors, and omissions identified in the drawings, documents, or any other information submitted, irrespective of whether such submissions have been approved, reviewed, or accepted by BYPL. However, any design or drawing errors arising directly from inaccurate or incomplete data or written instructions provided by BYPL shall not be so attributed.

16. Quality Assurance, Inspection, Testing and Test Certificates

- 16.1. All equipment shall be procured solely from authentic sources approved by the Company and in accordance with Company specifications.
- 16.2. A detailed Quality Assurance Plan (QAP) and test procedures shall be prepared, identifying all stages of manufacturing, associated quality checks, raw material inspections, and Customer hold points. The document shall specify inspection methods, acceptance criteria, and applicable standards, and shall obtain Purchaser approval prior to commencement of manufacturing. The Purchaser reserves the right to review in-house inspection reports and quality checks at stages other than Customer hold points and may issue remarks requiring additional testing, rectification, or rejection, which shall be duly complied with.
- 16.3. Witness and Hold points represent critical inspections or tests during manufacturing, for which prior intimation shall be given to the Purchaser to facilitate witnessing. Final inspection shall constitute a mandatory hold point. No work shall proceed beyond any hold point without explicit clearance from the Purchaser or receipt of a witness waiver letter.
- 16.4. Any waiver by the Purchaser of a quality assurance activity at any stage shall not relieve responsibility for compliance with all Contract requirements, codes, and referenced standards, nor preclude the Purchaser from subsequently rejecting non-conforming materials or work.
- 16.5. All applicable test certificates and joint inspection reports related to equipment and materials shall be submitted.
- 16.6. Manufacture items shall not be dispatched without prior receipt of a Material Dispatch Clearance Certificate (MDCC) or explicit instructions from the Purchaser.
- 16.7. All in-house testing and inspections shall be conducted at no additional cost. Such inspections shall be overseen by the Purchaser or its authorized third-party inspection agency. Costs of futile or abortive inspection visits shall be deducted from invoices.
- 16.8. The Purchaser reserves the right to send any supplied material to recognized laboratories for testing at any time, with testing costs borne accordingly. In the event that materials fail to meet the specified technical requirements, all associated charges and penalties shall be borne as applicable. Wherever required, a representative shall be present to witness the sealing of materials at the storage site prior to dispatch for testing to avoid any dispute.

17. Inspection & Test Charges

- 17.1. The Goods shall be subjected to inspection by the Purchaser and/or a third-party inspection agency appointed by the Purchaser. Such inspections shall include stage-wise and final inspections as per the mutually agreed Quality Assurance/Quality Control (QA/QC) procedures. Additionally, inspections may be conducted at the Purchaser's site or storage facilities. Any damaged or rejected Goods shall be repaired or replaced to the satisfaction of the Purchaser at no additional cost.
- 17.2. Inspection charges are deemed to be included in the total Contract value, whereas third-party inspection fees shall be borne by the Purchaser. However, costs arising from futile or abortive visits by the Purchaser's inspectors to the premises shall be deducted from invoices.
- 17.3. No shipment of Goods, whether in whole or in part, shall be effected under this Purchase Order until a written Release for Shipment Notice has been received from the Purchaser or its authorized representative.

17.4. Requests for stage-wise or pre-dispatch inspections must be submitted to the Purchaser at least seven (7) days in advance, utilizing the official request format provided by BYPL.

18. Documentation

18.1. All materials and equipment shall be procured exclusively from BYPL-approved sources and shall strictly conform to BYPL specifications and Transmittal Approvals. Copies of all relevant Material and Type Test Certificates, Operation and Maintenance (O&M) Manuals, and approved as-built drawings for the supplied equipment shall be submitted. Compliance with BYPL specifications and Field Quality Procedures shall be mandatory and ensured throughout the execution of the project.

19. Packing, Handling, and Storage

19.1. Packing: All Commodities shall be packed in suitable crates, boxes, drums, containers, cartons, or other appropriate packaging to ensure safe transportation by road or rail to BYPL's Delhi/New Delhi stores or project site. The packaging shall provide adequate protection against damage during transit. Wherever feasible, biodegradable packaging materials shall be used in compliance with applicable environmental standards.

19.2. Packing List: Each package shall contain a detailed packing list itemizing the contents with exact weight, external dimensions (length, width, and height), Item SAP Code, Purchase Order number, and date. One copy of the packing list must be enclosed inside each package delivered.

19.3. Prior to commencement of supply, the Material Safety Data Sheet (MSDS), along with detailed handling and storage instructions or manuals (where applicable), shall be provided. Copies of these documents shall accompany the first lot of materials delivered and be maintained at the storage or project site location.

20. Delivery Terms & Address

20.1. The Goods shall be delivered to BYPL's designated Store(s) and/or Site(s). All shipments shall be made on a Free on Road (FOR) destination basis, inclusive of all applicable taxes and duties.

20.2. Responsibility for unloading of the Goods at the respective BYPL Store(s) or Site(s) shall rest accordingly.

20.3. Wherever applicable, all required transit documents, including E-Way Bills, shall be issued to ensure lawful transportation of the Goods. The logistics partner or transporter shall not be held liable for any loss, penalties, or confiscation arising from improper documentation or mis-declaration.

21. Transportation

21.1. Responsibility shall rest for arranging transportation of the Goods from the manufacturing works or warehouses to the Buyer's designated Store(s) or Site(s).

21.2. All charges related to transportation from the works to the Buyer's Store(s) or Site(s) shall be deemed included in the total Order value and shall not be claimed or billed separately

22. Transit Insurance

22.1. Transit Insurance shall be arranged for all materials and Goods.

22.2. In the event of damage to or loss of cargo during transit, coordination shall be undertaken with the relevant insurance company for obtaining coverage, lodging claims, and facilitating settlement. Irrespective of the insurance outcome, the damaged or lost Goods shall be replaced and delivered to the Purchaser within thirty (30) days of the incident, at sole cost and expense, including all associated costs of replacement and delivery.

23. Acceptance & Rejection of Goods

23.1. Goods shall be accepted only upon receipt of the Material Dispatch Clearance Certificate (MDCC).

23.2. The Purchaser shall not accept materials if LR / RR / Bilty and the Original Tax Invoice (Transporter Copy) are not handed over at store/site. The Seller shall draw all dispatch documents in favour of Purchaser as "Consigned to" and "Billed to".

23.3. The materials shall be supplied during working hours from 10AM to 5PM. No delivery shall be effected after this time unless prior intimation is given to the Purchaser.

23.4. Acknowledgement of receipt, duly signed by the authorized person at the store/site along with the Purchaser's seal, shall be obtained confirming receipt of materials and quantities. In the absence of such acknowledgement, payment shall not be processed.

23.5. Exact quantities shall be supplied as per the MDCC. In case of short supply, as verified at the store/site, the discrepancy shall be adjusted and payment shall be released on a net basis accordingly.

23.6. The Purchaser retains the exclusive right to reject any Goods that do not strictly comply with the terms and conditions of the Purchase Order.

24. Price Validity

24.1. The agreed prices shall remain firm and fixed for the entire duration of the Contract until its completion.

25. Prices/Rates/Taxes

25.1. Price basis for supply of Materials & Services:

25.1.1. The Contract price/rates finalized shall remain firm and fixed for the entire duration of the Contract and shall not be subject to any variation or escalation for any reason whatsoever.

25.1.2. The supply prices shall be inclusive of packing, forwarding, loading at the manufacturer's premises, payment of GST, freight, and all other applicable local charges. Octroi is presently not applicable in Delhi; however, if made applicable, it shall be reimbursed at actuals.

25.1.3. The supply prices shall also include unloading at BYPL Delhi/New Delhi stores/sites.

25.1.4. Transit insurance shall be arranged at no additional cost to the Purchaser.

25.1.5. GST is included in the total Contract price. GST payments shall be processed only upon submission of a valid GST registration certificate and a self-declaration on letterhead confirming compliance with GST provisions and deposit as per applicable laws. The GST registration number shall be provided.

25.1.6. Income Tax (IT) at applicable rates shall be deducted from invoices as Tax Deducted at Source (TDS), as per prevailing laws.

26. Taxes & Duties

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- 26.1. All taxes, duties, turnover tax, labour cess, etc. (except GST) levied by State or Central Governments or local bodies shall be borne by the Seller. Any new taxes and duties levied by the government during the term of this Agreement shall be borne by BYPL. Income tax and TDS will be deducted at source from the Seller's invoices as applicable. The Seller must furnish their GST registration number.
- 26.2. GST on actuals will be paid upon submission of GST registration and a self-declaration on the Seller's letterhead confirming that the tax has been or will be deposited as per applicable tax laws.
- 26.3. As per Notification No. 39/2021 # Central Tax dated 21st December 2021, effective from 01/01/2022, a registered person (i.e., Recipient/Purchaser) can claim input tax credit only for invoices reflected in GSTR2A or GSTR2B (which requires 100% matching of invoices). Sellers must deposit GST by filing GSTR-1 and GSTR-3B.
- 26.4. In case of non-compliance resulting in the Recipient/Purchaser being unable to avail input tax credit due to non-filing or non-compliance of GSTR-1 and GSTR-3B for the relevant month/quarter of supply, the Recipient/Purchaser reserves the right to withhold 100% of the GST amount from subsequent payments until such default is rectified.
- 26.5. For release of withheld payments under the GST Act, proof of tax payment shall be submitted through GST Portal screenshots reflecting the Recipient/Purchaser's name, along with copies of the relevant GSTR-1 and GSTR-3B returns for the applicable period. Payments shall not be released until such proof is furnished.
- 26.6. The Recipient/Purchaser further reserves the right to recover any financial loss incurred (including tax, interest, penalties, and loss of input tax credit) arising from non-compliance or non-filing of GSTR-1 and GSTR-3B.
- 26.7. For goods delivered on an FOR site basis, compliance with all applicable provisions relating to issuance of E-way Bills shall be ensured. Any violation may result in penalties and seizure of goods during transit. All penalties, pre-deposits, and related expenses arising from such violations shall be borne accordingly. Timely release of seized goods shall also be ensured. Any delay in supply due to such seizure shall attract liquidated damages as per Contract provisions.
- 26.8. For goods not covered under GST, applicable Excise Duty (ED), VAT, or CST shall be payable extra at prevailing rates.
- 26.9. BYPL Tax Details:
26.9.1. GSTIN: 07AABCC8569N1Z0
26.9.2. CST No.: 07740254593
26.9.3. TIN No.: 07740254593
26.9.4. PAN No.: AABCC8569N
- 26.10.A detailed statement of invoices and corresponding amounts shall be submitted to the concerned officer within seven (7) days after the end of each month pertaining to the supply period. Failure to submit the same shall be construed as no reconciliation requirement.

27. Variation in Taxes, Duties & Levies

- 27.1. The total order value shall be adjusted for any variations in statutory levies imposed by competent authorities through fresh notifications issued within the stipulated delivery period. In the event of any reduction in taxes, duties, or levies, such benefits shall be passed on to the Buyer.

- 27.2. No other taxes, duties, or levies beyond those specified shall be payable by the Buyer, except for new levies, taxes, or duties imposed by competent authorities via fresh notifications after the issuance of the purchase order but within the stipulated delivery period.
- 27.3. Any changes in taxes, duties, or levies shall only apply to the portion of the purchase order remaining unexecuted on the date of such notification. Changes occurring after the scheduled delivery date shall not affect the terms or value of the purchase order.
- 27.4. The purchase order value shall remain unaffected by any variations in exchange rates.

28. Taxes & Duties on Raw Materials and Bought-Out Components

- 28.1. Taxes and duties applicable to raw materials and bought-out components shall be deemed included within the total order value and shall not be subject to any escalation or variation for any reason throughout the duration of the contract.

29. Building and Other Construction Workers (BOCW) Act (Applicable for All Civil and Construction Works)

- 29.1. The Building and Other Construction Workers (BOCW) Act shall apply to any establishment employing or having employed ten (10) or more building workers at any time during the preceding twelve months in connection with any building or construction work. Where applicable, registration with the Registering Officer under Section 7 of the BOCW Act, along with compliance with relevant State Government rules, shall be obtained and the Registration Certificate issued by the concerned State Labour Department shall be submitted.
- 29.2. In accordance with the Act, cess at the rate of 1% of the cost of construction work shall be payable and shall be deducted from each interim bill. The cost of materials, when billed separately as a distinct schedule item, shall be excluded from the cess calculation. Full compliance with all applicable provisions of the BOCW Act shall be ensured.

30. Tax Indemnity Clause

- 30.1. The Seller (including its affiliates in India or overseas, agents, third-party Sellers, or any other persons appointed by such affiliates for this Agreement) shall bear sole responsibility for compliance with and payment of all taxes—direct or indirect—including but not limited to income tax, transfer pricing, value added tax, SGST, CGST, IGST, UTGST, GST Compensation Cess, customs duty, excise duty, Research and Development Cess, cesses, interest, penalties, or any other tax/duty/amount/charge/liability arising under laws or regulations applicable in India or overseas, or from demands or recoveries initiated by any revenue authority.
- 30.2. If any tax liability (including but not limited to income tax, transfer pricing, value added tax, SGST, CGST, IGST, UTGST, GST Compensation Cess, customs duty, excise duty, Research and Development Cess, etc.), cesses, interest, penalties, or other charges become payable by the Purchaser due to the Seller's or its affiliates' failure to comply with relevant laws or regulations, the Seller undertakes to indemnify the Purchaser for such amounts.
- 30.3. Furthermore, the Seller agrees to indemnify and keep indemnified the Purchaser against all actions, proceedings, claims, losses, damages, costs, and expenses directly or indirectly arising from any failure by the Seller or its affiliates to comply with applicable legal obligations.
- 30.4. The parties agree to the following procedure in the event the Purchaser receives any demand or notice relating to non-compliance by the Seller or its affiliates with tax laws:
30.4.1. The Purchaser shall notify the Seller in writing within five (5) common working days of receipt of such communication, or as soon as reasonably possible if the response time is shorter.

- 30.4.2. Upon receipt of notification, the Seller shall either accept the demand and reimburse the Purchaser within five (5) working days of payment or propose disputing the demand.
- 30.4.3. If the Seller opts to dispute the demand and the Purchaser agrees, the Purchaser will contest the demand following due legal process, refraining from paying the tax demand during litigation. The Seller shall reimburse all litigation costs incurred, including counsel fees and filing charges. Should any coercive recovery measures be initiated, the Purchaser may pay the sum and recover it from the Seller within five (5) working days.
- 30.4.4. If the demand is finally determined by a tribunal or authority and payment was made by the Purchaser, the Seller shall reimburse the amount within ten (10) days of payment. Conversely, if no amount is payable and a refund arises, the Purchaser shall pass the refund to the Seller within ten (10) days of receipt.

31. Invoicing Instructions

- 31.1. Invoices shall be prepared in triplicate - (1) Original for the recipient, (2) Duplicate for the transporter, and (3) Triplicate for the Seller - and delivered to: BSES YAMUNA POWER LIMITED, SHAKTI KIRAN BUILDING, KARKARDOOMA, DELHI - 110032. Separate Material Dispatch Clearance Certificates (MDCC) shall be issued for Capex and Opex, and invoices shall be submitted accordingly
- 31.2. GST registration shall be obtained in the State from which the supply is made. A valid GST registration number shall be maintained, and GST tax invoices along with supporting documents shall be issued in compliance with the SGST Act, CGST Act, IGST Act, UTGST Act, GST Compensation Cess Act, and applicable Rules. Failure to submit GST-compliant invoices shall result in withholding of applicable tax components (SGST, CGST, IGST, UTGST, GST Compensation Cess) during payment processing.
- 31.3. Invoices shall be issued in the name of BSES YAMUNA POWER LIMITED, with the Store/Site address as specified in the MDCC. All invoices must comply with GST requirements relating to Invoices, Debit Notes, and Credit Notes, including details such as GSTIN, HSN/SAC codes, item description, tax rates, and other particulars as prescribed under applicable regulations and the GST INV-01 template.
- 31.4. Applicable CGST, SGST, UGST, IGST, and GST Compensation Cess shall be charged correctly, as per prevailing laws.
- 31.5. Timely Issuance of Invoices/Debit/Credit Notes:
- 31.5.1. Invoices and debit/credit notes shall be issued promptly to enable the Purchaser to claim input tax credit within prescribed timelines under GST laws. All adjustments (credit notes, purchase returns, debit notes) shall be processed within statutory time limits.
- 31.5.2. In case of advance payments, a tax invoice shall be raised as per GST provisions. Upon payment of advance, a payment voucher shall be issued by the Purchaser as per applicable GST rules. Four copies of invoices shall be provided, including the Electronic Reference Number where mandated. Persons in charge of conveyance shall carry all required documents and devices as prescribed under law.
- 31.6. Transit Documents and E Way Bills: Wherever applicable, all required transit documents/E-Way Bills shall be issued in compliance with statutory provisions for movement of goods. Logistics partners or transporters shall not be held liable for losses or confiscation arising from improper documentation or misdeclaration. Compliance with all E-Way Bill regulations shall be ensured. Any violation may attract penalties and seizure of goods, and all such penalties, pre-deposits, and related costs shall be borne accordingly. Timely release of seized goods

from authorities (CGST/SGST, etc.) shall be ensured. Delays arising from seizure shall attract liquidated damages as per Contract provisions.

31.7. All Suppliers/Service Providers must include the following minimum details in invoices to be submitted:

- 31.7.1. Invoice/Credit Note number and date
- 31.7.2. Supplier/service provider address and GSTN
- 31.7.3. Customer name and address as per GST registration and GST registration number
- 31.7.4. 'Shipped to' and 'Billed to' addresses
- 31.7.5. Place of supply
- 31.7.6. Description of goods/services with units of measurement
- 31.7.7. HSN/SAC codes
- 31.7.8. Taxable value (gross and discount detailed separately if applicable)
- 31.7.9. Tax rate and amount for CGST, SGST, and IGST separately
- 31.7.10. Authorized signature (for e-invoices, a physical signature is not required)
- 31.7.11. Indication of reverse charge applicability, if any.

32. Bill Submission Procedure

- 32.1. All monitoring, measurement, billing, and payment processes shall be carried out through BYPL's IT-enabled platform in accordance with Company guidelines issued from time to time, and strict adherence to the same shall be ensured. The Company reserves the right to modify the bill submission procedure, and bills shall be submitted as per the procedure stipulated by the Company from time to time.
- 32.2. All bills shall be uploaded on the BYPL portal (BTS – Bill Tracking System) for certification by the Engineer In-Charge or Package Engineer.
- 32.3. In addition, the original bill (hard copy), along with all supporting documents, shall be submitted to the Vendor Support Cell of BYPL. Bills shall be raised in favour of BSES Yamuna Power Ltd., Shakti Kiran Building, Karkardooma, New Delhi – 110032.
- 32.4. Each bill shall be complete in all respects, including compliance with ESI, HR, Quality, HSE, Stores, and Finance requirements. The site follows an established procedure for bill processing. Incomplete bills or invoices shall not be processed for payment.

33. Terms of Payment and Billing

33.1. For Supply Of Equipment/Materials

100% payment shall be made within 45 days from the date of receipt & acceptance of material at store(s)/site(s) on against submission of following documents against dispatch of each consignment at our Vendor Support Cell (VSC):

- a) Signed copy of accepted Rate Contract / Purchase Order (for first payment)
- b) PBG equivalent to 1% of RC Value (including GST) valid till RC validity period, as applicable
- c) LR / RR / BL as applicable
- d) Challan, as applicable
- e) One (01) copy of the detailed tax invoice showing commodity description, quantity, unit price, total price, and basis of delivery, covering 100% of the consignment value claimed
- f) One (01) copy of the transporter's invoice duly receipted by BYPL Store and original certificate issued by BYPL confirming receipt and acceptance of the material at Store/Site as per Contract provisions
- g) One (01) copy of Packing List / Detailed Packing List
- h) Approved Test Certificates / Quality Certificates, wherever applicable
- i) Certificate of Origin, wherever applicable
- j) Material Dispatch Clearance Certificate (MDCC)
- k) Warranty / Guarantee Certificate, wherever applicable
- l) Checklist for bill submission

- 33.2. The Purchaser reserves the right to recover any tax loss, interest, or penalty suffered due to non-compliance with tax laws. In the event input tax credit is denied due to any shortcoming (which otherwise would have been available in the normal course), such shortcoming shall be rectified at own cost and effort. If rectification is not possible, the financial loss suffered by the Purchaser on account of denied tax credit shall be made good. In such cases, any amount paid shall first be appropriated towards the GST component charged in the invoice, and the balance shall be treated towards the value of supply of goods/services.
- 33.3. The Purchaser shall deduct Tax Deducted at Source (TDS), wherever applicable, at rates prescribed under GST laws or any other applicable Indian law, and remit the same to the Government. Necessary TDS certificates shall be issued as per statutory provisions.
- 33.4. Any liability arising out of disputes relating to tax rate, HSN classification, calculation, or payment of tax to the Government shall be borne accordingly.
- 33.5. Where supply of Goods is liable to GST under the Reverse Charge Mechanism (RCM), the applicable category of registration shall be clearly indicated, along with a declaration stating that "the liability of payment of GST is on the Recipient of Supply."

34. Performance Guarantee

- 34.1. To be submitted within twenty-eight (28) days from the date of issuance of the Letter of Intent/Award/RC. Bidder shall initially submit the performance bank guarantee (PBG) equivalent to 1% of RC Value (including GST) valid till RC validity period plus three months claim period. Upon receipt of the PBG by BYPL against RC, the EMD shall be released. Thereafter bidder shall submit PBG on Purchase Order (PO) basis equivalent to 10% of the PO value (including GST) valid for a period of 30 months from the date of last receipts at site/stores plus 3 months claim period.
- 34.2. All Bank Guarantees shall be issued in favour of BSES Yamuna Power Ltd. and shall strictly conform to the format prescribed by BYPL.
- 34.3. Performance Guarantee Forfeiture: Each Performance Bank Guarantee furnished under Clause 34.1 shall contain a provision for automatic and unconditional forfeiture, without recourse, upon presentation by BYPL to the issuing bank along with a simple statement that there has been failure to comply with any term or condition of the Contract.
- 34.4. The Performance Bank Guarantee shall be liable for automatic and unconditional forfeiture, without recourse, if BYPL, at its sole discretion, determines non-compliance with any term or condition of the Contract.
- 34.5. Performance Guarantee Release: All Performance Bank Guarantees shall be released without interest within seven (7) days after expiry of the validity period specified under Clause 34.1, except in cases covered under Clause 34.4.

35. Defects Liability Period/ Warranty / Guarantee

- 35.1. The materials/items supplied shall be guaranteed against any defect or failure arising from faulty materials, workmanship, or design for the entire Defects Liability Period. The Defects Liability Period shall be sixty-six (66) months from the date of delivery at Store(s)/Site(s).
- 35.2. If, during the Defects Liability Period, any goods are found to be defective, they shall be promptly replaced or rectified at own cost, including dismantling and reinstallation, as directed by the Purchaser. Where removal from site is required, the goods shall be returned at own cost within the agreed timeline from receipt of intimation.

- 35.3. In case of emergencies, service personnel shall be deputed within forty-eight (48) hours, and adequate manpower and spares shall be ensured throughout the warranty period.
- 35.4. If, in the sole discretion of BYPL, the situation warrants emergency restoration, BYPL reserves the right to take immediate action to identify the fault and restore the system using available resources, materials, or through any third-party agency, under due intimation. All associated costs of replacement, substitution, shipping, labour, taxes, levies, and other related expenses, along with 15% of the expenses as administrative overheads, shall be borne accordingly. BYPL may recover such costs by charging the same, setting off against any amounts payable, or deducting from the Performance Bank Guarantee (PBG). The recoverable amount shall be paid within thirty (30) days of intimation.
- 35.5. Fault root cause analysis shall be conducted jointly by BYPL's CES, O&M, OET, OEM teams, and concerned representatives. In cases where faults are attributable to reasons other than defective material, design, or workmanship, further liability or cost shall not arise.

36. Support beyond the Guarantee Period

- 36.1. Availability of spare parts and necessary technical support shall be ensured for a minimum period of ten (10) years after completion of the equipment guarantee period under the Contract. At least twelve (12) months' prior notice shall be given to BYPL before declaration of End of Life (EOL) support for the supplied product or technology.

37. Return, Replacement or Substitution

- 37.1. BYPL shall promptly notify upon identification of any defective commodity. At its sole discretion, BYPL may return such defective commodities for replacement at no cost to BYPL or reject the commodities and procure the same or similar items from a third party. In the event of third-party procurement, proof of the replacement purchase cost shall be provided.
- 37.2. All costs associated with replacement, substitution, shipping, labour, and other related expenses incurred in connection with return, replacement, or third-party procurement of the commodity shall be borne accordingly. BYPL reserves the right to deduct such costs from any payments due or recover the same from the Performance Bank Guarantee.
- 37.3. Where the cost of the substitute commodity exceeds the quoted price, the differential amount shall be reimbursed to BYPL.
- 37.4. At BYPL's sole discretion, materials or goods rejected and not collected within forty-five (45) days from the date of rejection notification may be disposed of by BYPL at the associated risk and cost.

38. Effective Date of Commencement of Contract

- 38.1. The Contract shall be deemed to commence on the date of issuance of the Letter of Intent, Letter of Acceptance, or Purchase Order, whichever is earlier, and this date shall be considered as the effective commencement date for all contractual obligations.

39. Time - The Essence of Contract

- 39.1. The date specified for completion of the "Project" in the Letter of Intent/Acceptance or Purchase Order shall be deemed to be the essence of the Contract. Completion of the Project shall be ensured on or before the stipulated schedule and completion date.

40. Delivery Completion Timelines

- 40.1. The contractual delivery for the Goods or Services shall adhere strictly to the defined schedule.

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41. Extension of Time and Time Overrun

41.1. Extension of time may be granted at the Company's discretion in cases where delays are not attributable to reasons within control, subject to submission of detailed justification within ten (10) days of occurrence of the delay. Grant of such extension shall not entitle any increase in the Contract price and shall not prejudice the Company's right to recover liquidated damages, wherever applicable.

42. Liquidated Damages

42.1. In the event of delay in supply of items/equipment beyond the schedule stipulated in the Purchase Order, liability shall arise to pay, as penalty for delay, a sum equivalent to 1% (one percent) of the basic (ex-works) price of the undelivered units, or part thereof, for each week of delay against the respective milestone deliveries.

42.2. The total penalty for delay under the Contract shall be subject to a maximum of ten percent (10%) of the basic (ex-works) price of the total undelivered units.

42.3. The Purchaser may, without prejudice to any other method of recovery, deduct such damages from any amount due or becoming due, recover the same from the Performance Bank Guarantee, or initiate appropriate claims.

42.4. Where penalty is levied in accordance with the Order terms and conditions, BYPL shall raise an invoice for the penalty amount along with applicable GST. After adjustment of the penalty invoice amount, the net payment shall be released accordingly.

43. Recoveries

43.1. Whenever any sum becomes recoverable under this Contract, the Purchaser shall be entitled to recover such amount by appropriating, in whole or in part, any sums due or that may become due under the Contract. In the event such sums are insufficient to cover the total recoverable amount, the outstanding balance shall be paid to the Purchaser upon demand.

44. The Micro, Small and Medium Enterprises (MSME)

44.1. Where the establishment falls within the scope of the Micro, Small and Medium Enterprises Development Act, 2006 and its amendments, such status shall be declared at the time of submission of the bid. Failure to declare the same shall be deemed as confirmation of non-MSME status. A copy of the Udyog Aadhaar (UA) and Udyam Registration Number, along with the PAN number, shall be submitted as applicable.

45. Transfer and Subcontracting

45.1. The Contract or any part thereof shall not be subcontracted, transferred, assigned, or otherwise parted with, whether directly or indirectly, without the prior written approval of the Purchaser.

45.2. Notwithstanding any approved subcontracting, full responsibility shall remain for the execution, completion, and satisfactory performance of the Work in strict compliance with the Purchase Order, specifications, approved drawings, and data sheets. Complete accountability shall also extend to any acts, omissions, defaults, or negligence of any subcontractor.

46. Intellectual Property Rights and Royalties

46.1. Indemnity shall be provided to the Purchaser and the Purchaser's Representative against all claims and proceedings arising from infringement or alleged infringement of any patent rights,

registered designs, copyright, trademarks, trade names, know-how, or other intellectual property rights (collectively referred to as "Intellectual Property Rights") in relation to the Works, equipment, machinery, methods, plant, materials, or any item required for execution of the Works. In the event of infringement, the infringing item shall, at own cost, be rectified, modified, or replaced so that the infringement ceases, or necessary rights/licences shall be procured from the concerned third party.

- 46.2. Prompt notice shall be given of any such claim. At own cost, negotiations for settlement and any litigation or arbitration arising therefrom shall be undertaken. The Purchaser or the Purchaser's Representative shall not make any admission prejudicial to such defence unless there is failure to assume conduct of negotiations, litigation, or arbitration within a reasonable time after request. In the event of inaction, the Purchaser shall have full liberty to deduct the claimed amount from any sums due under this or any other contract, and any remaining balance shall be treated as a debt recoverable.
- 46.3. Intellectual Property Rights in any plant, materials, drawings, designs, plans, documents, specifications, data, know-how, charts, or information provided by the Purchaser shall remain the sole property of the Purchaser. Usage rights shall be limited strictly to execution of the Works.
- 46.4. Intellectual Property Rights in any plant, materials, drawings, designs, plans, calculations, documents, know-how, or information proprietary in nature ("Proprietary IPR") shall continue to vest with the respective owner and/or third-party licensors. A worldwide, perpetual, royalty-free, non-exclusive licence (including the right to sub-license) shall be granted and/or procured, at own cost, in favour of the Purchaser for use, operation, maintenance, and repair of the Works.
- 46.5. If any patent, trademark, trade name, registered design, or software is specifically developed for execution of the Works, all Intellectual Property Rights therein shall vest absolutely with the Purchaser and shall not be utilized or retained for any other purpose without prior written consent of the Purchaser.
- 46.6. Where proprietary software (customized or off-the-shelf) is used for storing or utilizing records relating to the Works, a worldwide, perpetual, royalty-free licence or sublicense (including the right to sub-license) shall be obtained at own expense in favour of the Purchaser. Such licence may restrict usage to purposes connected with design, construction, reconstruction, manufacture, installation, completion, reinstatement, extension, repair, and operation of the Works or any part thereof.
- 46.7. Where software used in execution of the Works is subject to pre-existing rights held by any party, a worldwide, perpetual, royalty-free licence shall be obtained in favour of the Purchaser for the right to use and apply such software, including any modifications, improvements, or developments thereof.

47. Vendor Code of Conduct

- 47.1. Seller acknowledges having reviewed the BYPL policy on legal and ethical code required to be followed by Sellers encapsulated in the "Vendor/Supplier Code of Conduct" displayed on the official website of BYPL (www.bsedelhi.com) also, which shall be treated as a part of the agreement/contract/PO/WO.
- 47.2. Seller undertakes that he shall adhere to the Supplier Code of Conduct and also agrees that any violation of the Supplier Code of Conduct shall be treated as breach of the agreement/contract/PO/WO.
- 47.3. In event of any such breach, irrespective of whether it causes any loss/damage, company (BYPL) shall have the right to recover loss/damage including liquidated damages from Seller.

47.4. The Seller hereby indemnifies and agrees to keep indemnified the company (BYPL) against any claim/litigation/liability/penalty including litigation cost arising out of any violation of Supplier Code of Conduct by the Seller or its officers, agents & representatives etc.

48. Limitation of Liability

48.1. Except in cases of willful misconduct, fraud, or gross negligence, neither Party shall be liable to the other for loss of use of any works, loss of profit, loss of contracts, or any other indirect or consequential damages arising out of or in connection with the Contract. The total liability under this Contract shall not exceed the Contract Value.

48.2. Notwithstanding the above, the limitation of liability shall not apply in the following cases:

48.2.1. Fraud, willful misconduct, or unlawful acts

48.2.2. Acts or omissions that violating fundamental rules of diligence expected under similar circumstances

48.2.3. Intellectual property infringement

48.2.4. Breach of confidentiality or data security obligations

48.2.5. Tax and statutory dues liabilities

48.2.6. Recovery of liquidated damages

48.2.7. Third-party death or personal injury

49. Liability of Suppliers/Contractors

49.1. Subject to due discharge of obligations under the Contract and except in cases of willful misconduct, fraud, or gross negligence, liability for any loss or damage caused to the Purchaser's property or the Site shall be limited as follows:

a) No liability shall arise for any indirect or consequential loss or damage; and

b) Liability for direct loss or damage shall not exceed:

i. The total payments made and expected to be made under the Contract, including reimbursements, if any; or

ii. The insurance claim proceeds receivable under any insurance policy obtained to cover such liability, whichever is higher.

49.2. This limitation of liability shall not affect the supplier's liability, if any, for damage to third-party property or injury or death of a person due to negligence of the Contractor or any Person or firm acting on behalf of the supplier in executing the order.

49.3. Notwithstanding anything contained in the Contract, the Supplier shall not be liable for any gross negligence or willful misconduct on the part of the Purchaser or any of its affiliates, any vendor, or any party, other than Supplier and/or, its directors, officers, agents or representatives or its affiliates, or SubSupplier, or the vendor or any third party engaged by it.

49.4. Notwithstanding anything contained in the Contract, including but not limited to approval by the Purchaser of any drawings, documents, vendor list, supply of information or data or the participation of the Purchaser in any meeting and/or discussion or otherwise, shall not absolve the Supplier from any of its liabilities or responsibilities arising in relation to or under the Contract.

50. Indemnification

50.1. The Supplier shall indemnify and hold harmless the Company from and against any and all liabilities, claims, damages, losses, or expenses arising out of or resulting from:

50.1.1. any breach non-observance or non-performance by Supplier or its employees or agents of any of the provisions of this Work Order.

50.1.2. any act or omission of Supplier or its employees or agents.

50.1.3. any negligence or breach of duty on the part of Supplier, its employees or agents including any wrongful use by it or them of any property or goods belonging to or by COMPANY.

50.1.4. Any damages or loss related to free-issued materials, for which the Supplier shall submit an Indemnity Bond.

50.2. The Supplier shall at all times indemnify the Company against all liabilities to third parties, including employees or agents of the Company or the Supplier, for bodily injury, property damage, or any other loss arising out of or in connection with the execution or completion of the Works. This includes all costs, charges, and expenses incurred by the Company due to claims from such persons.

51. Events of Default

51.1. Each of the following events or occurrences shall constitute an event of default under the Contract:

51.1.1. The Supplier fails or refuses to pay any amounts due under the Contract;

51.1.2. The 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 valid extension thereof;

51.1.3. The 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;

51.1.4. The Supplier fails to complete the works in accordance with the approved schedule of works.

51.1.5. The Supplier fails to comply with any reasonable instructions or directions issued by the Company in connection with the execution of the works.

51.1.6. The 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 BYPL specifying the failure.

52. Consequences of Default

52.1. If any Event of Default occurs and continues, BYPL may, by written notice, terminate the Contract forthwith.

52.2. Upon occurrence of an Event of Default, BYPL may, without prejudice to any other rights or remedies available under law or the Contract, exercise one or more of the following remedies;

52.2.1. Invoke and present the Performance Bond for payment;

52.2.2. Procure the same or equivalent Commodities from any third-party source; and/or

52.2.3. Recover from the Supplier any losses, damages, or additional expenses incurred as a result of the Supplier's default.

53. Force Majeure

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

53.1.1. 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 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.

53.1.2. 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.

53.1.3. Such event is not the direct or indirect result of the failure of such Party to perform any of its obligations under this Contract.

53.1.4. Such Party has given the other Party prompt notice describing such events, the effect thereof and the actions being taken to comply with the above clause.

53.2. Specific Events of Force Majeure

53.2.1. 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:

53.2.1.1. Natural elements or other acts of God, such as storms, floods, earthquakes, lightning, cyclones, landslides, or other natural disasters.

53.2.1.2. Explosions or fires.

53.2.1.3. Epidemics, pandemics, or plagues.

53.2.1.4. Declared war by the Government of India.

53.2.1.5. Dangers of navigation or perils of the sea.

53.2.1.6. Cyber security incidents impacting grid operations.

53.2.1.7. Pandemic-related lockdowns.

53.2.1.8. Climate change events beyond traditional natural disasters.

53.2.1.9. Embargoes.

53.2.1.10. Supply chain or industrial disturbances beyond reasonable control.

53.2.2. Note: Force Majeure shall not apply to financial inability, labour shortages, power failures, strikes, accidents, or subsupplier defaults.

53.3. Notice of Events of Force Majeure

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

53.3.1.1. 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

53.3.1.2. 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.

53.3.1.3. Use all reasonable efforts to resume full performance of the obligation as soon as practicable

53.3.1.4. Keep the other party informed of all such efforts to resume full performance of the obligation on a regular basis.

53.3.1.5. Provide prompt notice of the resumption of full performance or obligation to the other party.

53.4. Mitigation of Events of Force Majeure

53.4.1. Each Party shall:

53.4.1.1. 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;

53.4.1.2. 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

53.4.1.3. 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.

53.5. Burden of Proof

53.5.1. 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.

53.6. Termination for Certain Events of Force Majeure

53.6.1. 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 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.

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

53.6.2.1. Supplier fails to complete the execution of works within the approved schedule of works, terms and conditions.

53.6.2.2. In case the Supplier commits any Act of Insolvency, or is adjudged insolvent

53.6.2.3. Has abandoned the contract

53.6.2.4. Has failed to commence work or has suspended the progress of works

53.6.2.5. Has failed to proceed with the works with due diligence and failed to make such due progress

53.7. Limitation of Force Majeure event

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

53.8. Extension of Contract Period due to Force Majeure event

53.8.1. 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.

53.9. Effect of Events of Force Majeure

53.9.1. 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 the failure to perform such obligations shall be due to an event of "Force Majeure".

54. Suspension or Extension

54.1. The Purchaser reserves the right to suspend or reinstate execution of the whole or any part of the Works without affecting the validity of the Contract provisions. Any orders for suspension or reinstatement shall be provided to the Supplier in writing. The completion time for the Works will be extended by a period equivalent to the duration of the suspension.

54.2. For any aggregate suspension period less than six (6) months, the Supplier shall not be entitled to claim reimbursement. If the suspension of the Works extends beyond six (6) months, the Purchaser will reimburse the Supplier only for necessary and demonstrable direct costs incurred, subject to satisfactory substantiation. Overheads, incidentals, and profit shall not be considered. The Purchaser's decision regarding such claims will be final and binding. The Purchaser shall bear no liability for suspension or delay arising from any default on the part of the Supplier or its sub-Suppliers; the Purchaser's decision in this respect shall also be final and binding.

55. Severability

55.1. If any provision of this Agreement is found to be invalid, illegal, or unenforceable by a court of competent jurisdiction, such invalidity or unenforceability shall not affect the remaining provisions of the Agreement, which shall continue to be valid and enforceable to the fullest extent permitted by law.

56. Waiver of Rights

56.1. No failure or delay by either Party in enforcing any provision of this Agreement shall be deemed a waiver of that provision or of any subsequent breach. Any waiver granted must be expressly made in writing and shall apply only to the specific instance and shall not constitute a waiver of any other rights or breaches occurring thereafter.

57. Patent Rights and Royalty

57.1. In the event that the Supplier, during the course of performing its obligations under this GCC, acquires, invents, or develops any proprietary knowledge, information, process, or invention which qualifies, or may qualify, as a trademark, copyright, patent, trade secret, geographical indication, or any other intellectual property right, the Supplier shall promptly disclose such creation to BYPL. All title, interest, and rights to such intellectual property shall vest exclusively in BYPL, and the Supplier shall execute all documents necessary to ensure BYPL's sole ownership without delay.

57.2. The Supplier warrants that, in performing its obligations, no intellectual property rights of any third party shall be infringed, whether by violation of statute, passing off, or otherwise. The Supplier shall bear sole responsibility for any infringement claims, and shall fully indemnify and hold BYPL harmless from and against any and all losses, damages, liabilities, costs, or expenses (including reasonable legal fees) incurred as a result of any such infringement. Any compensation, damages, or expenses paid by BYPL to third parties in connection with such infringement shall be recoverable in full from the Supplier.

58. Confidentiality/Secrecy

58.1. The Supplier shall not, without the Company's prior written consent, disseminate, publish, or otherwise utilize in any form of advertising, publicity, sales release, or media any photograph, reproduction, or description of the Items/Works under this Contract, nor disclose the site details, dimensions, quantities, or other related information concerning the Items/Works.

58.2. The Supplier, along with its employees and representatives, shall maintain strict confidentiality regarding all information encountered in the execution of the Contract, as detailed below.

58.2.1. Documents: All maps, plans, drawings, specifications, schemes, and other documents or information related to the Contract/Project, including any material supplied to the Supplier by BYPL for contract execution, shall be treated as confidential and remain the property of BYPL. Such documents shall be used solely for purposes of the Contract and shall not be disclosed or used for any other purpose. Disclosure to third parties is permitted solely where such disclosure is necessary for the execution of the Work, and only upon the third party's execution

of a confidentiality agreement acceptable to BYPL, explicitly committing to uphold confidentiality obligations equivalent to those set forth herein.

- 58.2.2. Geographical Data: Maps, layouts, site photographs, and regional imagery depicting installations of national or BYPL significance shall not be published, disclosed, or exported without BYPL's prior written approval. Any necessary disclosure to third parties shall be subject to confidentiality agreements satisfactory to BYPL, executed prior to disclosure.
- 58.2.3. Violation: In the event of any breach of these confidentiality provisions, the Supplier shall indemnify and hold the Company harmless from any loss, cost, damage, or claim (including claims asserted by third parties) arising as a result of such breach. Any actual or suspected data breach or cyber incident must be promptly notified to BYPL and investigated at the Supplier's expense.

58.3. Furthermore, the Supplier shall be liable for compensation or damages as determined by the competent authority of BYPL.

59. Progress Reports of Work Execution and Information

- 59.1. Throughout the manufacturing and dispatch stages of the Items/Equipment under this Contract, periodic progress reports shall be submitted at own cost, as reasonably required by the Purchaser. Such reports shall include relevant supporting documents such as production schedules, inspection status, test certificates, photographs of critical manufacturing stages, and dispatch details. The format, content, and number of copies of such reports shall be as specified by the Purchaser.
- 59.2. Quantitative progress reports shall be aligned with the agreed delivery schedule and shall provide sufficient detail to enable the Purchaser to assess manufacturing progress, plan inspections/witness dates, and review dispatch forecasts, including status of key bought-out components, wherever applicable. Review meetings may be convened within seven (7) days of report submission, or at other times as reasonably required by the Purchaser, to discuss progress.
- 59.3. Weekly or periodic progress reports (as applicable) shall include, but not be limited to:
- 59.3.1. Executive summary of manufacturing and supply status.
 - 59.3.2. Description of manufacturing activities completed during the reporting period and materials/components procured.
 - 59.3.3. Photographs of critical stages of manufacture and testing, as and when required by the Purchaser, clearly indicating date, description, and stage of manufacture.
 - 59.3.4. Updated delivery schedule showing percentage completion against milestones, planned inspection dates, and dispatch targets for the subsequent period.
 - 59.3.5. Identification of any anticipated delays or constraints that may impact manufacturing or delivery schedules.
 - 59.3.6. Any other information or supporting documentation reasonably required to verify timely manufacture, inspection, testing, and delivery in accordance with the Contract.
- 59.4. The Purchaser shall specify the number of copies (hard/soft) of progress reports to be submitted and, where relevant, the communication matrix indicating recipients. The format of monthly progress reports shall also be communicated by the Purchaser.
- 59.5. In addition to the above, all reports, records, and information as may be requested shall be furnished promptly in the format and frequency prescribed. The Purchaser reserves the right to revise reporting requirements, and compliance with such revised obligations shall be ensured.

60. Dispute Resolution & Arbitration

- 60.1. The Parties shall make all reasonable efforts to resolve amicably, through mutual discussions, any disputes or differences arising out of or in connection with this Contract. In the event that such disputes remain unresolved for thirty (30) days from the date either Party notifies the other in writing of the dispute, either Party may refer the matter to arbitration.
- 60.2. Arbitration shall be conducted by a tribunal comprising two arbitrators - one to be appointed by each Party. The two arbitrators thus appointed shall mutually select a third individual to act as the presiding arbitrator prior to entering upon reference, if and when required. The arbitration proceedings shall be undertaken in accordance with the provisions of the Indian Arbitration and Conciliation Act, 1996 and its 2015 and 2019 amendments. The seat and venue of arbitration shall be New Delhi, India. The language of all proceedings, documents, and communications shall be English. The arbitral process shall be completed within a maximum period of three (3) months from constitution of the arbitral tribunal.
- 60.3. Reference to negotiation and/or arbitration may proceed regardless of whether the Supply/Works have been completed, provided that the contractual obligations of both the Purchaser and the Supplier shall remain unaffected during pendency of arbitration. Under no circumstances shall the Supplier suspend execution of the Supply/Works, in whole or in part, on account of ongoing arbitration. Payments due to the Supplier shall continue to be made as per the terms of the Contract.
- 60.4. All disputes arising out of or in relation to this Contract that require recourse to judicial proceedings shall be subject to the exclusive jurisdiction of the courts at Delhi, India.

61. Termination for convenience of Purchaser

- 61.1. Purchaser at its sole discretion may terminate the contract by giving 30 days prior notice in writing or through email to the Supplier. Purchaser shall pay the Supplier for all the supplies/ services rendered till the actual date of contract termination against submission of invoice by the Supplier to that effect.
- 61.2. Payment of such compensation is the sole and exclusive remedy of the Supplier for termination of this Agreement by Purchaser hereunder and the Supplier shall not be entitled to, and hereby waives, claims for lost profits and all other damages and expenses.
- 61.3. Supplier hereby agrees that substantiation for settlement of any claims submitted by Supplier shall be complete and in sufficient detail to allow Purchaser's evaluation. Terminate all sub-contracts except those that have been/ to be assigned to the Purchaser all rights, titles and benefits of the Suppliers/Vendor as the case may be.

62. Entire Agreement & Amendment

- 62.1. This Agreement constitutes the entire understanding between BYPL and the Supplier regarding the subject matter herein and supersedes all prior agreements, whether written or oral, that relate to such matters. Any modification, amendment, or alteration to this Agreement shall be valid only if documented in writing and duly executed by authorized representatives of both BYPL and the Supplier.

63. Notice & Communication

- 63.1. Any notice or other formal communication under this Agreement shall be in writing, signed by or on behalf of the party issuing it, and shall be sent by registered post with acknowledgement due (A.D.) to the addresses of the Supplier or BYPL as stated herein, or to

such other addresses as may be mutually agreed upon in writing by the Parties from time to time.

- 63.2. Notices and formal communications may also be transmitted via the official email addresses of the authorized representatives of the Supplier or BYPL. Such electronic communications shall be deemed duly delivered upon successful transmission and acknowledgement by the recipient.
- 63.3. All communications, correspondence, and documentation pertaining to the Purchase Order shall be directed strictly as specified in this Agreement.

64. Acceptance

- 64.1. The Supplier hereby acknowledges and confirms review of BYPL's Policy on legal and ethical standards for Suppliers, as set forth in the "Vendor/Supplier Code of Conduct" displayed on BYPL's official website (www.bsesdelhi.com). The Supplier agrees that the Supplier Code of Conduct shall form an integral part of the Contract, Purchase Order (PO), or Work Order (WO). The Supplier undertakes to fully comply with the Vendor/Supplier Code of Conduct, and acknowledges that any violation shall constitute a breach of the Contract/PO/WO. In the event of such breach, whether or not it causes any actual loss or damage, BYPL reserves the right to recover any loss or damage from the Supplier. The Supplier shall indemnify and hold harmless BYPL against any claims, litigation, or other consequences arising out of any breach or violation of the Supplier Code of Conduct by the Supplier, its officers, agents, or representatives.
- 64.2. Acceptance of the Contract includes acceptance of all terms and conditions referenced therein, including technical specifications, drawings, general conditions, detailed scope of supply/work, and any equipment drawings provided to the Supplier.
- 64.3. The contractual obligations of BYPL and the Supplier are strictly limited to the terms and conditions set forth in the Contract. No amendment, modification, or alteration to the Contract shall be valid unless made in writing and signed by authorized representatives of both Parties.
- 64.4. All services and supplies under this Contract are expected to be fully aligned with BYPL's Vision, Mission, and Values. These can be reviewed at <https://www.bsesdelhi.com/web/bypl/about-bses>.

1 BRIEF SCOPE OF WORK (SOW) FOR SUPPLY & SUPERVISION OF TESTING AND COMMISSIONING

1.0 The scope of supply shall include following

- 1.1 Design, manufacture, testing at manufacturer works before dispatch, packing, delivery and submission of all documentation the 11kv Ring Main Unit (RMU).
- 1.2 11kv RMU shall be as per scheme enclosed as Annexure E of Specification
- 1.3 FRTU along with necessary software's and hardware shall be provided as per detailed specification in Annexure H
- 1.4 Supply of dual SIM Modem (Auto change over, 4G/5G and GSM) for FRTU communication with MCC/BCC as per specification in Annexure G. SIM card shall be provided by BSES.
- 1.5 Battery, Battery Charger and BHMU
- 1.6 Configuration of 11kv RMU shall be as per the Purchase Requisition.
- 1.7 Testing & commissioning supervision of all motorized RMUs at site included in the scope of vendor including all operational checks, LV wiring checks, battery / charger checks, VPI , FPI, self powered relay. Supervision of testing & commissioning of all the panels at site. Vendor shall depute the service team with 2 days prior notice from owner.
- 1.8 FRTU customization, parameterization along with integration of FRTU with MCC/BCC has to be carried out at all sites by bidder and OEM engineer.
- 1.9 Guarantee Period for RMU along with FRTU & Modem: 66 months from the date of supply.
- 1.10 Service Performance Requirements During Guarantee Period:
 - a) RMU including battery charger: Complaint to be attended on urgent basis and to be resolved within 24hrs, 1day from intimation. Adequate quantity of necessary spare should be maintain by bidder service team at Delhi till completion of guarantee period.
 - b) FRTU: After reporting of FRTU modules compliant / failure, within 24 hours FRTU modules shall be replaced by vendor at site. Adequate quantity of necessary spare should be maintain by bidder service team at Delhi till completion of guarantee period.
 - c) Modem: After reporting of Modem compliant / failure, within 24 hours Modem should be rectified / replaced by bidder service team at site. Adequate quantity of necessary spare should be maintain by bidder service team at Delhi till completion of guarantee period.
- 1.11 Each RMU shall be supplied with 2 sets of Operating Handle.
- 1.12 All the accessories mentioned above shall be supplied along with RMU's as a composite unit. Inside the composite unit, battery and battery charger shall be inbuilt inside RMU compartment and FRTU, modem shall be inbuilt inside LV compartment.
- 1.13 Supplier scope includes training of BSES team -- 4 batches (each batch with 4-6 engineers or team member as per BSES requirement.) for minimum 3 days each at factory as well as at BSES site for erection, testing commissioning and maintenance trouble shooting mechanism of Motorized RMU including Automation part. This shall be carried out 1 week from date of 1st shipment/ dispatch. Supplier shall also provide training for Self Powered relay

& FRTU at respective manufacturer' factory as well as at BSES site for minimum 3 days for BSES team -- 4 batches (each batch with 4-6 engineers or team member as per BSES requirement.) . This is applicable for each and every P.O. of Motorized RMU's.

- 1.14 Unit price for Conversion kit should be offered separately for converting the RMU from single cable termination design to double cable termination design, at site.

2.0 The scope of Services shall include following

- 2.1 Testing & commissioning supervision of all motorized RMUs at site included in the scope of vendor including all operational checks, LV wiring checks, battery / charger checks, VPI , FPI, self powered relay. Supervision of testing & commissioning of all the panels at site. Vendor shall depute the service team with 2 days prior notice from owner. For details scope refer Annexure-A.
- 2.2 Testing and commissioning of FRTU. Unit price for each configuration as per the BOQ shall be provided. Assisting BYPL automation team for interfacing / implementing DMS with existing control room. Existing DMS software is from ABB. Communication with central control room is on IEC 104 protocol. For details scope refer Annexure-B.

Annexure-A

Scope for Supervision of testing and commissioning of Motorized RMU

1. Supervision of installation, testing and commissioning of Motorized RMU. Activity shall be performed after installation of RMU and before energization of unit.

2. Scope of Visual Examination by Supplier's representative

- a. Complete checking of RMU installation
- b. Gas pressure.
- c. Battery and cabling of FPI and relay.
- d. Proper Earthing of RMU.
- e. Cable terminations and clamping of cable.

3. Scope of Witness of Pre-commissioning Tests by supplier's representative.

- a. Hi voltage tests.
- b. IR test before and after HV test.
- c. Operation of Motorized load break switches through mechanical, Electrical local and Remote SCADA
- d. Operation of Circuit breakers
- e. Checking of all electrical/ mechanical interlocks.
- f. Operational checks of Motor control card/Interlocking card
- g. Operational checks of Battery and Battery charger
- h. Operation of all auxiliary contacts.
- i. Checking of all control wiring (i.e. continuity test)
- j. Functional Operation of relay and FPI by PI.
- k. Resistance of main and earthing circuit before and after operation test.

Annexure-B

Scope for Commissioning and Testing of FRTU with motorised RMU

• **Pre-commissioning requirement of FRTU:-**

- 1) Permanent reliable power supply to FRTU shall be provided.
- 2) Earthing of FRTU, communication system and equipment shall be proper.
- 3) Signal strength shall be checked at site and gain of dual band Antenna shall be 12 dBi /24 dBi as modem shall be kept in FRTU panel only.

• **Configuration, Commissioning & testing of FRTU**

- 1) Configuration shall be done as per Cat-1 approved drawing/ documents and schematics of RMU& FRTU. If any changes are required with respect to Cat-1 approved documents, same shall be properly communicated to BSES and re-configuration shall be done accordingly in concurrence with BSES only.
- 2) Testing of FRTU shall be done based on following checklist---

a. Visual Inspection

- i. General arrangement check as per Cat-1 approved drawing/document

ii. External checks for:

1. Physical damages
2. Function of door locks
3. Texts on legend plates and labels
4. Physical dimensions

iii. Internal checks for :

1. Equipment mounting as per Cat-1 approved drawing/document
2. Lighting
3. Wiring arrangement
4. Terminal block locations

b. Wiring Check:

- i. For FRTU wiring check done as per Cat-1 approved drawing/document

c. Functional tests

- i. Communication modules
- ii. Processor modules
- iii. Power Supply modules
- iv. Digital Input modules
- v. Digital Output Modules
- vi. Analog Input Modules
- vii. DC to DC converter
- viii. Industrial Grade AC kit

- 3) Simulation of all configured signals on simulator available with vendor (same master/ slave configuration settings) shall be done

• **Configuration, Commissioning & testing of FRTU along with RMU**

- 1) During commissioning of FRTU along with RMU system, if any modification required to be done in configuration of FRTU or any hardware failure of FRTU / RMU, same shall be re-configured or replacement of hardware for FRTU/ RMU shall be done immediately by vendor of RTU/RMU (whoever is responsible) to not to stop the process of commissioning. Testing shall not be continued further by making temporary arrangement of hardware or by doing temporary configuration.
- 2) If it is not possible to replace hardware of FRTU/RMU at the same time by vendor, whole testing process will be repeated by vendor and both vendors ie of RMU and FRTU shall be present during testing.
- 3) All interlocks shall be tested locally through FRTU along with vendor of RMU/FRTU.

- 4) All operations of RMU shall be tested first through actuators provided on RMU itself then only testing shall be done from FRTU.

- **Testing of FRTU along with RMU from System operation(MCC)**

Simulation of all configured signals on simulator available with vendor (same master/ slave configuration settings) shall be done on IEC 104 protocol before testing with system operation.

- 1) All signals of FRTU shall be tested from system operation in presence of vendor of RMU/FRTU.
- 2) If any punch point is found, same shall be rectified immediately by vendor of RTU/RMU (whoever is responsible). If it is not possible to resolve it immediately by vendor of RTU/RMU, whole testing process will be repeated and both vendors ie of RMU and FRTU shall be present during testing.
- 3) Battery backup shall be observed for recommended operation of Isolaters of RMU by BSES O&M.
- 4) All interlocks shall be tested from remote along with vendor of RMU/FRTU.

- **Drawing & Documents:**

- 1) As-built drawing of FRTU and configured file shall be handed over.
- 2) FRTU configuration for supplied equipments to be explained by vendor after commissioning and testing.

Performance observation to be done as per SAT document after handing over of signed commissioning report.

After all above mentioned tests/checks, joint team of user group (BSES SCADA Team/BSES Protection Team/BSES O&M team) and vendors of RMU/FRTU shall sign the commissioning report and declare FRTU along with RMU fit for energization and operation. Abnormality, if any shall be clearly brought out in commissioning report in writing.

QUANTITY AND DELIVERY REQUIREMENTS

Sl. No.	BYPL SAP Code	Item Description	Specification	Total Qty. (Nos)	Tentative Delivery Schedule	Destination
1	2100257698	SUPPLY & SUPERVISION OF 11KV INDOOR MOTORIZED RMU WITH FRTU & MODEM TYPE 4 WAY		1		
2	2100243613	SUPPLY & SUPERVISION OF 11KV INDOOR MOTORIZED RMU WITH FRTU & MODEM TYPE 3 WAY		1		
3	-	SUPPLY & SUPERVISION OF 11KV INDOOR MOTORIZED RMU TYPE 1 WAY		1		
4	2100257699	SUPPLY & SUPERVISION OF 11KV OUTDOOR MOTORIZED RMU WITH FRTU & MODEM TYPE 4 WAY		70		
5	2100257700	SUPPLY & SUPERVISION OF 11KV OUTDOOR MOTORIZED RMU WITH FRTU & MODEM TYPE 3 WAY	BSES-TS-18-MRMU-R1	50	Delivery for the Ist Lot of 30 nos RMU's shall be within 05 Month from the PO date and completion @50 Nos per month in lots thereafter.	BYPL Delhi Store(s)/ Site(s)
6	-	SUPPLY & SUPERVISION OF 11KV OUTDOOR MOTORIZED RMU TYPE 1 WAY		1		
7	2100228837	SUPPLY & SUPERVISION OF 11KV OUTDOOR MOTORIZED RMU WITH FRTU & MODEM TYPE 3 WAY AND METERING 30/5A		7		
8	2100228838	SUPPLY & SUPERVISION OF 11KV OUTDOOR MOTORIZED RMU WITH FRTU & MODEM TYPE 3 WAY AND METERING 60/5A		2		

The delivery schedule shown above is tentative. PO(s) will be released as per the actual requirement. However, the Supplier has to deliver the material within the delivery schedule provided.

Schemes may be executed in a phased manner.

APPENDIX II

ANNEXURE – 2.01

FORMAT OF PERFORMANCE BANK GUARANTEE
(To be executed on a Non-Judicial Stamp Paper of appropriate value)

This Guarantee made at _____ this [____] day of [____] 20XX

1. WHEREAS M/s BSES Yamuna Power Limited, a Company incorporated under the provisions of Companies Act, 2013 having its Registered Office at Shaktikiran Building, Karkardooma, Delhi 110032, India hereinafter referred to as the " Owner ", (which expression shall unless repugnant to the context or meaning thereof include its successors, administrators, executors and assigns).
2. AND WHEREAS the Owner has entered into a contract for _____ (Please specify the nature of contract here) vide Contract No. _____ dated _____ (hereinafter referred to as the "Contract") with M/s. _____, (hereinafter referred to as "the Supplier", which expression shall unless repugnant to the context or meaning thereof be deemed to mean and include each of their respective successors and assigns) for providing services on the terms and conditions as more particularly detailed therein.
3. AND WHEREAS as per clause ____ of Conditions of Contract, the Suppliers are obliged to provide to the Owners an unconditional bank guarantee for an amount equivalent to ten percent (10%) of the total Contract Value for the timely completion and faithful and successful execution of the Contract from [_____] *pl. specify the name of Bank*) having its head/registered office at [_____] through its branch in _____ (*pl. specify the name of Branch through which B.G is issued*) hereinafter referred to as "the Bank", (which expression shall unless it be repugnant to the context or meaning thereof be deemed to include its successors and permitted assigns).
4. NOW THEREFORE, in consideration inter alia of the Owner granting the Suppliers the Contract, the Bank hereby unconditionally and irrevocably guarantees and undertakes, on a written demand, to immediately pay to the Owner any amount so demanded (by way of one or more claims) not exceeding in the aggregate [Rs.].....(*in words*) without any demur, reservation, contest or protest and/or without reference to the Supplier and without the Owner needing to provide or show to the Bank, grounds or reasons or give any justification for such demand for the sum/s demanded.

APPENDIX II NIT NO: CMC/BY/25-26/RS/SKS/SV/47 [RFx Number: 2200000180]	Page 1 of 7	Bidders seal & Signature
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5. The decision of the Owner to invoke this Guarantee and as to whether the Supplier has not performed its obligations under the Contract shall be binding on the Bank. The Bank acknowledges that any such demand by the Owner of the amounts payable by the Bank to the Owner shall be final, binding and conclusive evidence in respect of the amounts payable by the Supplier to the Owner. Any such demand made by the Owner on the Bank shall be conclusive and binding, notwithstanding any difference between the Owner and the Supplier or any dispute raised, invoked, threatened or pending before any court, tribunal, arbitrator or any other authority.
6. The Bank also agrees that the Owner at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor without proceeding against the Suppliers notwithstanding any other security or other guarantee that the Owner may have in relation to the Supplier's liabilities.
7. The Bank hereby waives the necessity for the Owner first demanding the aforesaid amounts or any part thereof from the Suppliers before making payment to the Owner and further also waives any right the Bank may have of first requiring the Owner to use its legal remedies against the Suppliers, before presenting any written demand to the Bank for payment under this Guarantee.
8. The Bank's obligations under this Guarantee shall not be reduced by reason of any partial performance of the Contract. The Bank's obligations shall not be reduced by any failure by the Owner to timely pay or perform any of its obligations under the Contract.
9. The Bank further unconditionally and unequivocally agrees with the Owner that the Owner shall be at liberty, without the Bank's consent and without affecting in any manner its rights and the Bank's obligation under this Guarantee, from time to time, to:
 - (i) vary and/or modify any of the terms and conditions of the Contract;
 - (ii) Forebear or enforce any of the rights exercisable by the Owner against the Suppliers under the terms and conditions of the Contract; or
 - (iii) Extend and/or postpone the time for performance of the obligations of the Suppliers under the Contract;

and the Bank shall not be relieved from its liability by reason of any such act or omission on the part of the Owner or any indulgence shown by the Owner to the Suppliers or any other reason whatsoever which under the law relating to sureties would, but for this provision, have the effect of relieving the Bank of its obligations under this Guarantee.

10. This Guarantee shall be a continuing bank guarantee and shall not be discharged by any change in the constitution or composition of the Suppliers, and this Guarantee shall not be affected or discharged by the liquidation, winding-up, bankruptcy, reorganization, dissolution or insolvency of the Suppliers or any of them or any other circumstances whatsoever.
11. This Guarantee shall be in addition to and not in substitution or in derogation of any other security held by the Owner to secure the performance of the obligations of the Suppliers under the Contract.
12. NOTWITHSTANDING anything herein above contained, the liability of the BANK under this Guarantee shall be restricted to _____ *(insert an amount equal to ten percent (10%) of the Contract Value)* and this Guarantee shall be valid and enforceable and expire on _____ *(pl. specify date)* or unless a suit or action to enforce a claim under this Guarantee is filed against the Bank on or before the date of expiry.
13. On termination of this Guarantee, all rights under the said Guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities hereunder.
14. The Bank undertakes not to revoke this Guarantee during its validity except with the prior written consent of the Owner and agrees that any change in the constitution of the Bank or the Suppliers shall not discharge our liability hereunder.
15. This Guarantee shall be governed by the laws of India. Any suit, action, or other proceeding arising out of, connected with, or related to this Guarantee or the subject matter hereof shall be subject to the exclusive jurisdiction of the courts of **Delhi**, India.

Dated this day of 20XX at

(Signature)

.....
(Name)

.....
(Designation with Bank Stamp)

Attorney as per
Power of Attorney No.....

Date.....

BYPL BANK DETAILS WITH IFSC CODE:

1. Name of the Bank: State Bank Of India
2. Branch Name & Full Address: 14-15th Floor, Jawahar Vyapar Bhawan, 1, Tolstoy Marg,
Janpath, New Delhi 110001
3. Bank Account No: 10277791808
4. IFS Code: SBIN0009601
5. MICR Code: 110002188
6. Swift Code: SBININBB132
7. Email ID: sbi.09601@sbi.co.in

FORMAT OF WARRANTY/GUARANTEE CERTIFICATE

BSES YAMUNA POWER LIMITED Shaktikiran Building, Karkardooma, Delhi -110032.

Ref. Purchase Order No. :

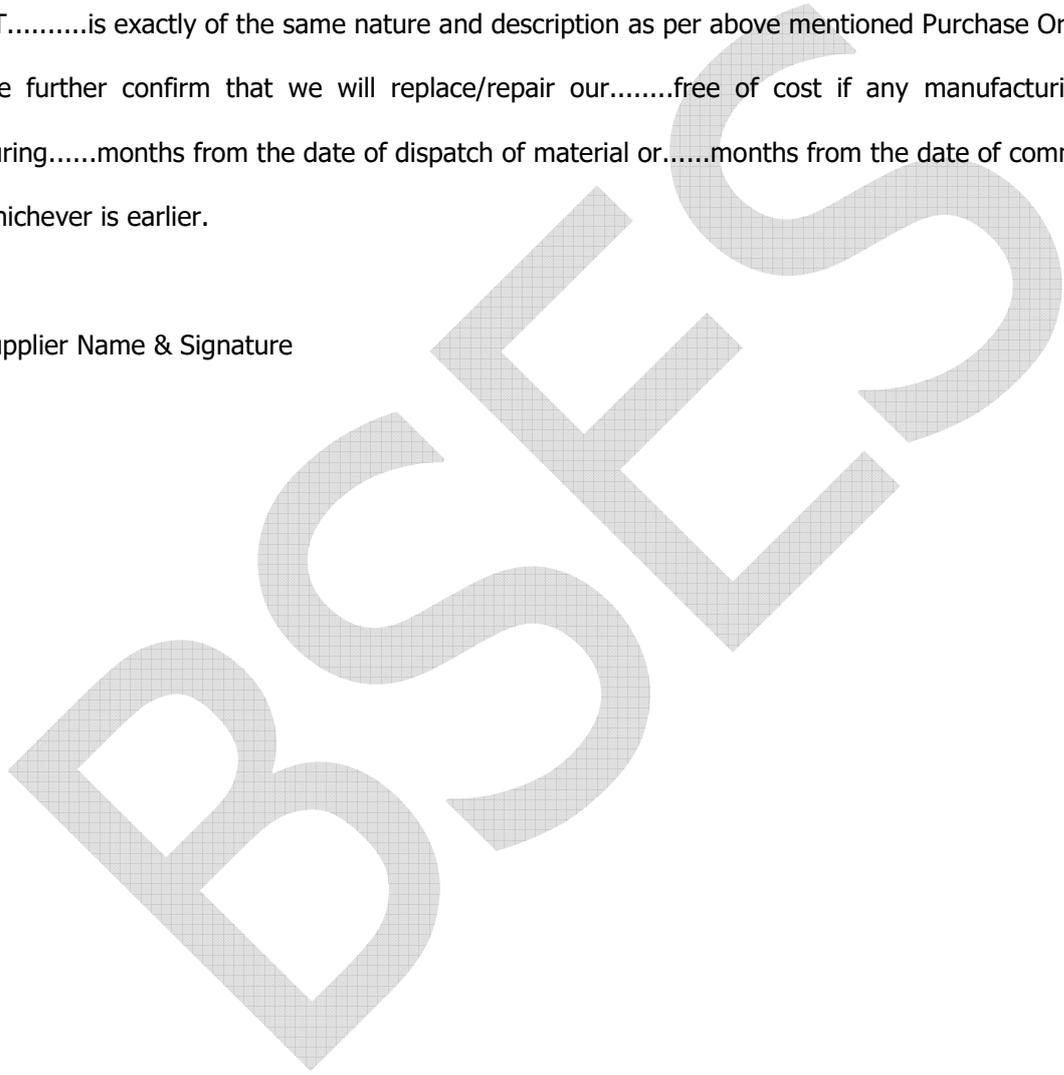
Dear Sir,

We hereby confirm that the.....dispatched to BSES YAMUNA POWER LTD vide invoice no.....

DT.....is exactly of the same nature and description as per above mentioned Purchase Order.

We further confirm that we will replace/repair our.....free of cost if any manufacturing defect during.....months from the date of dispatch of material or.....months from the date of commissioning whichever is earlier.

Supplier Name & Signature



GST UNDERTAKING

The Supplier shall give an undertaking in the following words on each invoice in the absence of which tax payment as on the Supplier's invoice may be withheld.

"The tax component as mentioned in the invoice shall be deposited with the GST Department as per law by way of actual payment or by way of legal set off as per law. The turnover billed shall be duly declared in my GST returns a copy of which shall be filed with the Purchaser. Should the input tax credit to the Purchaser be denied by way of any lapse on the part of the Supplier, the same shall be paid on demand and in any case the Purchaser is authorized to deduct the tax equivalent amount from the amount payable to the Supplier"

SUMMARY OF COMMERCIAL TERMS AND CONDITIONS

SL NO	PARTICULARS	CLAUSE AS PER TENDER	BIDDER'S CONFIRMATION
1	Validity of Bid	120 days from the date of submission of the bid.	
2	Rate Contract	The rate contract shall have a validity period of 12 months from the date of LOI/RC issued to the responsive, techno-commercially acceptable and evaluated to be the lowest bidder. Purchase Orders (PO) will be placed as per BYPL's requirements. The rate will remain Firm throughout the validity period of the Rate Contract.	
3	Price Basis	"Firm" , FOR Delhi store(s)/site(s) basis. Prices shall be inclusive of all taxes & duties, freight up to Delhi store(s)/site(s).	
4	Unloading	Unloading at stores/sites shall be in the Seller's scope.	
5	Transit Insurance	Transit insurance shall be in the vendor's scope.	
6	Payment Terms	100% payment shall be paid in 45 days from the date of receipt and acceptance of GOODS at the store(s)/site(s) against submission of documents.	
7	Delivery Schedule	<ul style="list-style-type: none"> - Vendor shall submit Transmittal Approval Documents (GTP/Drawings/QAP/etc.) within 15 days from the LOI/PO to the concerned BYPL officials. - BYPL shall review and either approve or provide comments on the submitted documents within 7 days of the initial submission. - If resubmission is required, vendor shall complete the resubmission within 5 days from the receipt of the comments. - For subsequent resubmissions, BYPL shall respond within 5 days. - Repeated rejections due to non-compliance is not desirable. - Delivery for the 1st Lot of 30 nos RMU's shall be within 05 Month from the PO date and completion @50 Nos per month in lots thereafter or completion as per the schedule provided by BYPL. 	
8	Defect Liability Period	66 months from the date of receipt of equipment/item at store(s)/site(s).	
9	Liquidated Damages	1% (One) of the basic value (ex-works value) of undelivered units per week of delay or part thereof, subject to maximum of 10% (Ten) of the total basic value (ex-works value) of undelivered units.	
10	Performance Bank Guarantee	To be submitted within twenty-eight (28) days from the date of issuance of the Letter of Intent/Award/RC. Bidder shall initially submit the performance bank guarantee (PBG) equivalent to 1% of RC Value (including GST) valid till RC validity period plus three months claim period. Upon receipt of the PBG by BYPL against RC/PO, the EMD shall be released. Thereafter bidder shall submit PBG on Purchase Order (PO) basis equivalent to 10% of the PO value (including GST) valid for a period of 30 months from the date of last receipts at site/stores plus 3 months claim period.	
11	Reverse Auction	Acceptance for participation in Reverse Auction event.	

Seal of the Bidder:

Signature:

Name:

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VOLUME – II

FINANCIAL BID (PRICE FORMAT)

ALL PRICES IN INR (₹)

S. No.	DESCRIPTION OF GOODS	HSN CODE (8 Digit Mandatory)	UoM	QTY (A)	UNIT BASIC PRICE INCL FREIGHT (₹) (B)	UNIT GST & CESS AS APPLICABLE (CGST & SGST/UTGST or IGST) (₹) (C)		UNIT LANDED RATE (All Inclusive) (₹) (D = B+C)	TOTAL LANDED VALUE (₹) (E = DXA)
						%	AMT		
1	SUPPLY & SUPERVISION OF 11KV INDOOR MOTORIZED RMU WITH FRTU & MODEM TYPE 4 WAY		Nos	1					
2	SUPPLY & SUPERVISION OF 11KV INDOOR MOTORIZED RMU WITH FRTU & MODEM TYPE 3 WAY		Nos	1					
3	SUPPLY & SUPERVISION OF 11KV INDOOR MOTORIZED RMU TYPE 1 WAY		Nos	1					
4	SUPPLY & SUPERVISION OF 11KV OUTDOOR MOTORIZED RMU WITH FRTU & MODEM TYPE 4 WAY		Nos	70					
5	SUPPLY & SUPERVISION OF 11KV OUTDOOR MOTORIZED RMU WITH FRTU & MODEM TYPE 3 WAY		Nos	50					
6	SUPPLY & SUPERVISION OF 11KV OUTDOOR MOTORIZED RMU TYPE 1 WAY		Nos	1					
7	SUPPLY & SUPERVISION OF 11KV OUTDOOR MOTORIZED RMU WITH FRTU & MODEM TYPE 3 WAY AND METERING 30/5A		Nos	7					
8	SUPPLY & SUPERVISION OF 11KV OUTDOOR MOTORIZED RMU WITH FRTU & MODEM TYPE 3 WAY AND METERING 60/5A		Nos	2					
9	MANDATORY & RECOMMENDED SPARES AS PER TS ^^		Lot	1					
GRAND TOTAL LANDED VALUE (₹)									
In words									

^^ MANDATORY & RECOMMENDED SPARES AS PER TS

ALL PRICES IN INR (₹)

S. No.	DESCRIPTION OF GOODS	HSN CODE (8 Digit Mandatory)	UoM	QTY	UNIT BASIC PRICE INCL FREIGHT (₹)	UNIT GST & CESS AS APPLICABLE (CGST & SGST/UTGST or IGST) (₹)		UNIT LANDED RATE (All Inclusive) (₹)	TOTAL LANDED VALUE (₹)	
						(C)	(D = B+C)			
						%	AMT			
						(A)	(B)	(E = DXA)		

Mandatory Spares

1	FRTU (with DI/DO/AI card)		Nos	1					
2	MODEM with Antenna		Nos	1					
3	High Gain Antenna		Nos	1					
4	Single Phase Transformer as per tender requirement		Nos	1					
5	HRC Fuses for Aux. TF		Nos	1					
6	AUX RELAYS		Nos	1					
7	Interlock Card		Nos	1					
8	MOTOR KIT FOR LBS		Nos	1					
9	BATTERY CHARGER SET FOR RMU (2 nos. of Charger)		Nos	1					
10	SPD each type		Nos	1					
11	BHMU		Nos	1					

Recommended Spares

1	FPI		Nos	1					
2	VPIS		Nos	1					
3	MANOMETER WITH PRESSURE INDICATOR SWITCH		Nos	1					
4	SELF POWERED RELAY		Nos	1					
5	AUX SWITCHES		Nos	1					
6	CPU WITH POWER SUPPLY CARD, I/O ADAPTOR BOARD, RACK ETC		Nos	1					

S. No.	DESCRIPTION OF GOODS	HSN CODE (8 Digit Mandatory)	UoM	QTY (A)	UNIT BASIC PRICE INCL FREIGHT (₹) (B)	UNIT GST & CESS AS APPLICABLE (CGST & SGST/UTGST or IGST) (₹) (C)		UNIT LANDED RATE (All Inclusive) (₹) (D = B+C)	TOTAL LANDED VALUE (₹) (E = DXA)
						%	AMT		
7	Battery - 24VDC, 26Ah		Nos	1					
GRAND TOTAL LANDED VALUE (₹)									
In words									

The above-mentioned list of spares is indicative in nature. Bidders may include additional spares based on their recommendations.

The Un-priced bid should be marked as **"Quoted"** and be submitted with Part – A.

We declare that the following are our quoted prices in INR for the entire package.

Date:

Bidders Name:

Place:

Bidders Address:

Signature:

Designation:

Printed Name:

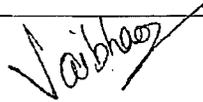
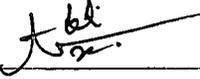
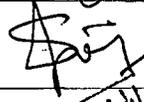
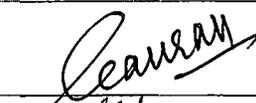
Common Seal:

VOLUME – III
TECHNICAL SPECIFICATIONS



**Specification of
11 kV Ring Main Unit**

Specification no – BSES-TS-18-MRMU-R1

Rev		1
Date:		07/12/2022
Pages		70
Prepared by	Vaibhav Vaish	
	Abhishek Harsh	
Reviewed by	Srinivas Gopu	
	Nirmal K Gupta	
Approved by	Gaurav Sharma	
	Gopal Nariya	

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4.0 11kv RMU System layout.....	5
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Technical Specification of 11 kV Ring Main Unit**Record of Revision**

Revision No	Item / clause no.	Nature of Change	Approved By
1	6.13.1.2	Li-Ion Battery (LIB) to be provided	GS/GN
2	12.1	FRTU – Ashida make included	GS/GN
3	12.3	Relay – C&S (CSDPR-V2-500) make included	GS/GN

Technical Specification of 11 kV Ring Main Unit**1.0 Scope of work**

- 1.1 11kV Motorized RMU with FRTU & Modem shall be supplied as per the specification.
- 1.2 Metering Cubicle (Only with Outdoor RMU, if specified with purchase requisite)
- 1.3 Design, construction, Complete Installation Testing & commissioning of all Motorized RMUs with FRTU at site along with interconnection of all components, DI/DO/AI signals, status monitoring signals to FRTU. Integration of FRTU with SCADA.
- 1.4 FRTU, Modem and Relay Licensed software for programming, configuration, troubleshooting and diagnosis shall be provided.
- 1.5 For scope of supply, refer annexure – A
- 1.6 Mandatory spares shall be supplied along with the RMU 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 60265 part 1	High voltage switches
IEC 60056	High voltage alternating current circuit breakers
IEC 60059	Preferred current ratings of high voltage switchgear
IS 16227/IEC 61869	Current transformers
IS 3156	Voltage Transformer
IEC 60694	Specification for high voltage switchgear
IEC 60298	AC metal enclosed switchgear
IEC 60129	Ac disconnecter and earth switches
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

Technical Specification of 11 kV Ring Main Unit

	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

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. Specification including applicable codes & standards
- iii. Approved Vendor Drawings
- iv. Other documents

3.0 Electrical Distribution System Data

3.1	Supply	3 phase AC, 3 wire
3.2	Voltage	11000 volt $\pm 10\%$
3.3	Frequency	50 Hz $\pm 5\%$
3.4	System neutral	Earthed at upstream 11kv source

4.0 11kv RMU System layout

4.1	RMU Configuration	As per scheme given in Annexure E & type as per Purchase requisition
4.1.1	1 Way RMU (Transformer feeder)	Motorized VCB with manual operation facility. Self power relay with protection CTs to be provided. The extension panel DI/DO/AI/Modbus communication signals are to be at single point at RMU for SCADA communication using existing FRTU panel.
4.1.2	3 Way RMU, all are VCB modules.	
4.1.2.1	Cable feeder 1	Motorized VCB with manual operation facility. FPI and CBCT/Phase Sensors to be provided.
4.1.2.2	Cable feeder 2	Motorized VCB with manual operation facility. FPI and CBCT/Phase Sensors to be provided.
4.1.2.3	Transformer feeder	Motorized VCB with manual operation facility. Self power relay with protection CTs to be provided.

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4.1.3	4 Way RMU, all are VCB modules.	
4.1.3.1	Cable feeder 1	Motorized VCB with manual operation facility. FPI and CBCT/Phase Sensors to be provided.
4.1.3.2	Cable feeder 2	Motorized VCB with manual operation facility. FPI and CBCT/Phase Sensors to be provided.
4.1.3.3	Transformer feeder 1	Motorized VCB with manual operation facility. Self power relay with protection CTs to be provided.
4.1.3.4	Transformer feeder 2	Motorized VCB with manual operation facility. Self power relay with protection CTs to be provided.
4.2	Extensibility	Both side extensible for 1Way RMU One side extensible for 3Way and 4 Way RMU
4.3	Circuit breaker, disconnecter & earth switch in RMU panel	All shall be non draw out type, fixed position
4.4.1	Insulation medium for panel	SF6 gas in sealed metallic tank
4.4.2	Breakers	Vacuum type (with disconnecter & earth switch)
4.5	Arc interruption chamber for breaker	i) Separate for each breaker ii) Arc interruption chamber of breakers shall be separate from the main insulated tank. (Desirable feature)
4.6	Maximum dimensions for a 3 way panel (3 CBs)	
4.6.1	Width (measured from front)	1250 mm
4.6.2	Depth	800 mm
4.6.3	height	2000 mm
4.7	FRTU	FRTU shall be provided and integrated with RMU and LV compartment with completely wired along with Modem suitable for communicating over 4G/5G (If available during detail engineering, without any price implication) GSM network. Bidder shall demonstrate the data communication of FRTU modem with MCC/BCC for the proposed modem for approval of owner in the Pre Order technical evaluation stage. For detailed specification of FRTU, I/O requirements , refer standard specification of Annexure H
4.8	Modem	Modem should be dual SIM 4G/5G (If available during detail engineering, without any price implication) and shall also have compatibility of 3G/2G network. For detailed technical specification of modem, please refer Annexure G
4.9	Auxiliary transformer	Resin cast

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		To be provided as per tender requirement
4.9.1	Rating	11kV/230V
4.9.2	burden	500VA
4.9.3	Primary Fuses	To be provided
4.9.4	2 pole MCB	To be provided for secondary side of the Aux Transformer
4.9.5	Compartment	Separate compartment with padlocking arrangement to be provided.

5.0 RMU panel construction

5.1	Panel type	Metal enclosed, framed, Compartmentalized panel construction.
5.2	Service Location	Indoor, non air conditioned environment / Outdoor with continuous ambient temperature of 50 deg C and shall be suitable for external climatic condition Resistant to water ultraviolet radiation (Canopy shall be provided for outdoor application)
5.3	Mounting	Free Standing
5.4	Overall Enclosure Protection	IP 4X minimum, vermin proof IP 54 minimum (For outdoor duty).
5.5	Doors	Front access with anti theft hinge arrangement, Minimum three hinges. Hinges arrangement shall ensure that door cannot be removed.
5.6	Covers	Bolted for rear access, with handles. Support for handle shall be provided at suitable place on RMU body. All the accessible bolts / screws shall be vandal proof. One set of required Special tools per RMU (if any) shall be in the scope of supply. All kind of nuts and bolts must be stainless steel
5.7	Construction	Indoor RMU: Sheet metal 2.5mm thick CRCA. Outdoor RMU: Pre Galvanized sheet 2.5mm thick with 275GSM Stainless steel tank. 3.0 mm thickness shall be based on validated type tests for 21kA 1sec IAC test and 20kA, 3sec short ckt tests.)
5.8	Base frame	For Panel type design:- Common Base frame shall be made with 75mm ISMC/ISA channel for both Indoor and Outdoor type RMU for holding the both RMU with FRTU compartment. Proper Bolted fixing arrangement shall be provided for erection on RCC foundation. Also, base frame shall be painted with 2 coats of anti rust red oxide and 2 coats of bitumen paint shall be provided.

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		<p>For T-type design:- 300 mm - 450 mm height (made with ISA / ISMC) for Indoor & Min. 500 mm for outdoor. Height of the base frame shall be enough to ensure height to suit the operator's convenience.</p> <p>Frame shall be completely covered from all the four sides by MS plate / sheet. Cable box compartment should be extended up-to base-frame bottom to have metallic separation between each of the feeders at base frame level too. Painting should match with RMU shade</p> <p>With fixing bolt for RMU & frame (in case the frame is supplied loose) & foundation bolts.</p>
5.9	Power Cable Clamping Arrangement	Shall be provided for each power cable along with HDPE cable clamps (to suit the cable size from 150 to 400 sq mm PILC / XLPE cable. Exact size shall be provided during drawing approval stage), also cleat shall be adjustable vertically.
5.10	Lifting lugs	Four numbers
5.11	Cable Entry	Bottom
		3mm metallic gland plate, removable type & split type in two parts, with 1no. 90 mm diameter knocks out punch/hole in the centre (For double cable boxes, Un-drilled gland plate to be supplied. Approval should be taken for the same during drawing submission)
5.12	Cable type & size	3c x 150 / 240 / 300 /400 sq mm Aluminum conductor XLPE/ PILC with armor & PVC outer sheath
5.13	Terminals for 11kv cable termination	Suitable for Ring Type Bimetallic lug as per annexure F
5.13.1	Terminals	M16 size Set of required size of stud suitable for M 16 size Ring type lug & bimetallic washers.
5.13.2	Bimetallic washers	Required (Not applicable for silver quoted bushing)
5.13.3	Right angled boots	Single piece cold shrink type. Minimum 20mm spacing between boots preferred. Type test reports, maintenance replacement plan shall be submitted.
5.13.4		
5.13.5	Cable Test Plug	Preferred with cable test plug facility, without opening of cable compartment
5.13.6	Termination type	suitable for heat shrinkable type
5.13.7	Termination height	For Indoor / Outdoor : Min. height from gland plate shall be 900mm

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5.14	Bus bar	Copper (Sizing Calculation to be submitted in support of its Guaranteed S.C. rating / Capability)
5.14.1	Bus bar continuous rated current	630amp (at designed 40 deg.C ambient)
5.14.2	Bus bar short time withstand capacity	20 KA for 3 sec
5.14.3	Bus bar support insulator material	SMC / DMC resin
5.14.4	Maximum temperature rise above reference ambient 40 deg C	In line with Table 3 of IEC62271-1
5.15	Earth bus bar	Aluminium/Tinned Copper flat sized for rated fault duty for 3 sec
5.16	Earth bus internal connection to all non current carrying metal parts	By 2.5 sq mm copper flexible wire, Earth connection point maximum 1 meter away from cable test facility
5.17	Earth bus external connection to owners earth	Studs on both sides with holes for M10 bolt + hardware to readily receive purchaser earth connection
5.18	Cooling arrangement	By natural air without fan
5.19	Panel internal wiring	a) Multi strand flexible color coded PVC insulated Cu wire 1 sq mm (SCADA) b) 1.1KV , PVC insulated 2.5 sq mm cu cable for CT connection. c) Colour of wire (R phase - Red, Y phase – Yellow, B phase – Blue, AC- black, DC – grey, Earth – green) with ferrules at both ends.
5.20	Hardware (Nut, bolts & handle)	Stainless steel (Except termination nut-bolts which are Brass / Tinned Copper)
5.21	Gasket	Neoprene rubber
5.22	Marshalling terminal blocks	1 Sq mm, Nylon 66 material, screw type + 20% spare in each row of TB. Disconnecting type Terminal block to be provided for CT connections
5.23	Panel cover fixing bolts	Allen head 6mm with hexagonal slot. Seals shall be provided between the Panel and removable covers to avoid theft. The seals shall be opened/broken by using specific equipment.

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5.24	Padlock facility	Required for all earth switches & all handles
5.25	Bushings for future extensions of RMU	RHS extensible. Should be duly insulated & covered with metallic covers in unused condition, In addition a removable boot cover shall be provided on the extensible bushings.
5.26	Internal Arc classification	
5.26.1	Explosion vents	To ensure operator's safety, design should ensure that gases / flames generated during flash over / blast in any of the compartment, must not come out from the front of RMU as well shall not go to adjacent cable compartment. Internal arc test report (for Cable compartment & other compartments) must be submitted to support above, along with RMU GA drawing indicating these vents. There shall not be any type of holes, gaps etc on the walls of cable termination compartment.
5.26.2	Internal Arc rating	20 kA for 1s
5.26.3	Internal arc classification	Shall comply to the requirements of IEC 62271-200, Accessibility type AFLR. Operators of equipment shall be protected against the effects of an arcing fault in any of the MV compartment at all times , including while carrying out the maintenance works on other compartments
5.27	SF6 Gas Annual Loss	< 0.1% of total mass. Pressure of SF6 gas shall be above the operating limit throughout the life of the equipment.
5.28	VPIS	VPIS shall be provided with terminals facility for phasing purpose. VPIS sensor shall be installed on screened bushing NO/NC Contact shall be provided with VPIS for taking the Live line indication status to remote SCADA through FRTU.
5.29	Push Buttons	On/Off PBS shall be shrouded / covered to prevent accidental operation.

6.0 Circuit breaker (TCB / FCB)

6.1	Type	Three pole, operated simultaneously by a common shaft
6.2	Arc interruption in dielectric medium	Vacuum Bottle
6.3.1	Operating mechanism	Manual and Motorized spring charged stored energy type, remote electrical close / open operation possible.
6.3.2	Manual operation	Possible without removal of motor
6.3.3	Addition / removal of motor	Without overhaul of operating mechanism

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6.3.4	Motor rated voltage	24V DC
6.4	ON/OFF push button	On panel front with Protective flap/shrouded to prevent any accidental tripping of breaker.
6.5.1	Continuous rating at design 40 deg C ambient	630amp
6.5.2	Short time withstand capacity	20 KA for 3 sec
6.6	Minimum number of operations at rated current (as per IEC 62271-100)	Mechanical Endurance – Class M1 (2000 operations) Electrical Endurance – Class E2
6.7	Fault making capacity	50 KA peak
6.8	Fault breaking capacity	20 KA Minimum
6.9	Maximum number of operations at rated Fault current (as per IEC 62271-100)	Electrical Endurance – Class E2. To be guaranteed by manufacturer with authorized lab test reports
6.10	Breaker status auxiliary contact	2NO + 2NC wired to terminal block
6.11	For Cable feeder circuit breaker module	
6.11.1	Self powered relay	Not required
6.11.2	CTs	Not required
6.11.3	Fault passage indicator (FPI)	To be provided cable feeders
6.11.4	Fault passage indicator (FPI) (Earth fault and over current protection type)	a) To be provided on each and every cable feeder for RMU. FPI shall be earth fault and over current protection type and shall be suitable for remote load monitoring at SCADA for cable feeders. b) CBCT – Split open type suitable for mounting without disconnection of cable for EF. c) Phase sensor – 3 Nos. split open type for short ckt. purpose with mounting arrangement
6.11.5	Connection of CBCT with FPI	Cable connection of FPI with CBCT shall be of pre moulded type on the CBCT side. Cable shall be 2.5 sq.mm cu cable or fiber cable.
6.11.6	Fault Passage Indicator	a) 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. FPI shall be powered with 24V DC in all motorized RMU. b) FPI shall be suitable for remote load monitoring at SCADA for Cable feeder. FPI shall be provided with Remote communication capability with SCADA on

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		Modbus Protocol. The Load current as measured by FPI shall be communicated to SCADA.
6.11.6.1	Earth Fault Indicator	
6.11.6.1.1	Sensing Current	50 to 400A
6.11.6.1.2	Sensing Time	30 to 100 ms in steps of 10ms.
6.11.6.1.3	Reset Time	0.5 -1-2-3-4 hr
6.11.6.1.4	Resetting Facility	a) Self reset after reset time b) Self reset after restoration of voltage c) Manual d) Remote resetting
6.11.6.1.5	Contact Rating	1A at 230 V
6.11.6.1.6	Degree of Protection	IP 54
6.11.6.1.7	Mounting Arrangement	Surface or Flush Mounting
6.11.6.1.8	Ambient Temperature	-20 to 55 Deg C
6.11.6.2	Short Ckt indicator	
6.11.6.2.1	Sensing Current	200 to 1200 A
6.11.6.2.2	Sensing Time	30 to 100 ms in steps of 10 ms
6.11.6.2.3	Reset time	0.5-1-2-3-4 hr
6.11.6.8	Data by Purchaser	
6.11.6.8.1	System Fault Level	2kA – 8.75kA
6.11.6.8.2	Type of Grounding	Solidly Grounded
6.11.6.8.3	Fault clearing time	100ms
6.11.6.8.4	Cable Type	XLPE , 70 sq.mm to 400 sq.mm
6.12	For Transformer feeder breaker module	
6.12.1	Current transformer	a) 75-150-400 / 1 amp b) Resin Cast Ring type c) Considering three core cable terminations, mounting flexibility shall be provided for CT's (in horizontal & vertical direction both). Additionally, CAUTION marking (by sticker/ paint) shall be provided to avoid CT's installation above the screen of cable. (i.e. earth potential point.) d) Disconnecting type terminal block shall be provided for CT Circuit. e) Change in CT ratio shall be possible from the disconnecting type TB. Any change in CT ratio from CT secondary will not be acceptable.
6.12.2	CT accuracy class	5P10 minimum
6.12.3	CT burden	CT burden should be 20% higher than the connected relay burden.
6.12.4	Protection relay	a) Self powered, Microprocessor based Numerical relay (with backlit LCD display), IDMT over current / earth fault protection with high set element, manual reset type, flush mounted on panel front

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		<ul style="list-style-type: none"> b) Relay Setting 10 % to 250% In insteps of 1% c) The relay should record atleast 10 fault events on FIFO basis d) Relay auxiliary supply shall be 24V DC for all motorized RMU. For non Motorized RMU relay shall be with 240V AC auxiliary for remote tripping e) RS-485 Port to be provided on the Relay for remote communication of the parameters to the SCADA through FRTU over IEC103 Protocol. Necessary internal wiring also shall be done between Relay and FRTU. f) Licensed software shall be provided for Relay communication with Laptop along with necessary cables for interconnection between Laptop and Relay (Based on requirement). g) Appropriate wiring to be done to connect all the relays to the FRTU.
6.12.5	Relay auxiliary contacts for remote indication	Potential free contact 1NO + 1NC wired to terminal block
6.12.6	Shunt trip 24V DC (for WTI trip & door limit switch & for remote trip from SCADA.)	To be wired to terminal blocks
6.12.7	Breaking Timing	40 to 60 ms
6.13	FRTU and Associated equipment battery, BHMU and battery charger	
6.13.1	Battery	
6.13.1.1	Battery type	Li-Ion/SMF lead acid battery
6.13.1.2	Rating	<ul style="list-style-type: none"> a) Li-ion battery(LIB) (R1) b) 24VDC, 26Ah(Min) c) Battery provided in enclosure shall be rated for 10 close & 10 open operations of CB as well as 3 hrs backup for all equipment installed inside FRTU Cabinet (mini FRTU load shall be consider as 50W) d) However the actual battery and battery charger sizing shall be finalized by owner during detail engineering and bidder has to supply the finalized size of battery and battery charger without any price implication.
6.13.1.3	Location	Battery shall be kept in shielded compartment in FRTU panel and fixed with rivet and nut bolt. Individual battery terminal shall be wired upto terminal blocks mounted in FRTU cabinet.
6.13.2	Battery Health Monitoring Unit (BHMU)	<ol style="list-style-type: none"> 1. BHMU will have Auto / Manual test facility. In Auto Mode it ensures battery automatic discharge at preset set period with 100W discharge resistor along with suitable algorithm to check the healthiness based on

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		<p>rate of discharge.</p> <ol style="list-style-type: none"> 2. In manual Mode PB provided for battery testing. 3. Provision for Bypass mode of BHMU shall also be provided. 4. Output contacts :230V/24V DC -5A <ol style="list-style-type: none"> a. Battery Fail: 1 CO b. Test In process 5. Indications: <ol style="list-style-type: none"> a. BHMU healthy. b. Battery Fail c. Battery Low d. Test On.
6.13.3	Battery charger	2 no's chargers with auto change over using 10A diodes.
6.13.3.1	MCBs at charger input & output supply	Required 2 nos DP MCB for AC Incoming supply All the MCBs shall be easily accessible for operation, with proper labeling. MCB location shall be preferably away from Battery charger location.
6.13.3.2	Charger temperature rise at heat sink at full load for 2 hours	Maximum 55 deg C above ambient of 40 deg C
6.13.3.3	Battery charger cooling method	Natural without any fans
6.13.3.4	Individual CBs DC control	Required with MCB
6.13.3.5	DC power supply for FRTU	24v DC +/- 1 volt thru 2 Amp MCB. FRTU functionality should not effect during DC voltage supply range 18 to 30V DC.
6.13.4	FRTU	FRTU shall be provided and integrated with RMU and LV compartment with completely wired along with Modem suitable for communicating over GSM network. Bidder shall demonstrate the data communication of FRTU modem with MCC/BCC for the proposed modem for approval of owner in the Pre Order technical evaluation stage. For detailed specification of FRTU, I/O requirements , refer standard specification of Annexure H
6.13.5	Modem	Modem should be dual sim 4G/5G (If available during detail engineering, without any price implication) and shall also have compatibility of 3G/2G network. For detailed technical specification of modem, please refer Annexure G
6.13.6	Transducer	DC voltage transducer (4-20mA) for monitoring of DC battery bus voltage.

7.0 Earth switch (ES)

7.1	Type	Three Pole, operated simultaneously by a common shaft, for each Circuit breaker & Load break switch.
7.2	Switching in dielectric medium	Dry Air in sealed medium or SF6 gas

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7.3	Operating mechanism for close & open	Manual
7.4	Fault making capacity	50 kA (Desirable)
7.5	Auxiliary contacts	1NO+1NC wired to terminal block
7.6	Disconnect switch (if provided in series with vacuum bottle)	Desirable to be located on purchaser cable connection side of vacuum bottle
7.7	Minimum number of operations at no load (as per IEC 62271-102)	Mechanical Endurance – Class M0(1000 operations)
7.8	Making capacity endurance of earth switch (as per IEC IEC 62271-102)	Class E2 (Min 10 operations)

8.0 Requirements of sealed housing live parts

8.1	Enclosure	Stainless steel enclosure ensure Degree of protection IP67. Non ferrite & Non magnetic grade 304 stainless steel of minimum 3mm thickness. Stainless steel enclosure welding shall be robotic welding type.
8.2	SF6 gas pressure low alarm	To be given along with NO and NC Contracts
8.3	Provision for SF6 gas filling	NRV
8.4	Provision for SF6 gas pressure indication	Analog Manometer with non return valve Manometer with integrated pressure density switch and temperature compensation required
8.5	Arc interruption method for Vacuum circuit breaker	Puffer type / rotating arc type vacuum interrupter
8.6	Potential free contacts for SF6 gas pressure low	1NO +1NC (Desirable) Two distinct SF6 pressure low Potential Free contacts to be provided.

9.0 Operational interlocks

9.1.1	Interlock type	Mechanical. All interlocks shall be preferably guarded by flap, so as to prevent insertion of handle for wrong operation.
9.1.2	Circuit breaker & respective earth switch	Only one in 'close' condition at a time
9.3	Prevent the removal of respective cable covers if circuit breaker is 'ON'	Electrical / Mechanical
9.3	Prevent the closure of circuit breaker if	Electrical / Mechanical

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	respective cable cover is open	
9.4	Cable test plug for CB accessible only if Earth switch connected to earth	Mechanical
	For motorized RMUs	
9.5	Prevent motorized operation of CB during manual operation	Electrical / Mechanical Electrical signal shall cut-off completely during manual operation. If CB fail to operate, the supply to motor shall be disconnected after certain time period to prevent burning of motor due to continuous supply.
9.6	Prevent motorized operation of more than one CB at a time	Necessary feature (Electrical)

10.0 Indication & signals (for SCADA / Local)

10.1	Operation counter on front / Inside the RMU LT chamber	To be provided for each Circuit breaker, with minimum four digits & non resettable type
10.2	Cable charge status indication for all CB	Capacitor type voltage indicators with LED on all the phases (Shall be clearly visible in day light)
10.3	Spring charge status indication	On front for breaker
10.4	Earth switch closed indication (For Each CB)	On front
10.5	Circuit breaker On/OFF indication	Green for OFF / Red for ON
10.6	Circuit breaker protection relay operated on fault	Flag
10.7	Fault passage indication on CB	Flag
10.8	Status signals to SCADA-to be wired to marshalling terminal block	2NO + 2NC
10.8.1	CB close / open	potential free contacts
10.8.2	CB Disconnecter Close/Open	Potential free contacts
10.8.3	CB Earth Switch close /open	potential free contacts
10.8.4	Auto trip	potential free contacts
10.8.5	Battery charger Fail	potential free contacts
10.8.6	Protection relay	potential free contacts

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	operated	
10.8.7	FPI operated (both E/F and S/C)	potential free contacts
10.8.8	SF6 gas pressure low	potential free contacts (Desirable)
	Spring Charge Status	Potential free contacts
10.8.9	Ready to close signal to control centre to indicate all interlocks are OK	Potential free contacts. Signal to indicate Ready for remote operation from Scada required for entire closing and entire tripping ckt. with all interlocks accounted for (Make : Gogate with P Card / Eqvt after approvals)
10.8.10	Local / Remote Switch (Motorized RMU only)	<ol style="list-style-type: none"> 1. L/R switch is lockable type 2. A manual Local / Remote selector switch shall be provided for each breaker to disable all control outputs by breaking the power supply connection to the control outputs. 3. When in the "Local" position, the Local/ remote switch shall allow testing of all the control outputs of breaker without activating the control outputs to field devices. A status input indication shall be provided for the Local/ Remote switch to allow the SCADA system to monitor the position of the switch. 4. The status of Local/ Remote switch should be wired and configured in FRTU.
10.8.11	Battery charger 1 and 2	Potential Free contacts
10.8.12	Battery	Potential Free contacts
10.8.13	Battery Health Monitoring Unit	Required
10.8.14	Auxiliary Circuit Healthy	Potential free contacts
10.8.15	FRTU Door open	Potential Free Contacts
10.8.16	Interlock Card Operation fail	Potential Free Contacts
10.8.17	Command Acknowledgement	Potential free Contacts
10.9	Commands from SCADA- to be wired to marshalling terminal block	Cable feeder close / open
		Transformer feeder close / open
		FPI Reset
		Interlocking card reset
10.9	RS 485 MODBUS output of Protection relay/FPI	Required

Technical Specification of 11 kV Ring Main Unit**11.0 Mimic diagram, labels & finish**

11.1	Mimic	<ol style="list-style-type: none">1. Mimic diagram (Shall not be accepted with Stickers)2. On panel front with description of function & direction of operation of handles/buttons3. The paint of Mimic shall be same as RMU external paint
11.2	Operating Instructions	Operating instruction chart and Do's & Don'ts in Hindi / local language to be displayed on left / front side of panel enclosure on anodized Al Sheet 16SWG, duly affixed on panel.
11.3	Name plate on panel front	Fixing by rivet only
11.3.1	Material	Anodized aluminum 16SWG / SS
11.3.2	Background	SATIN SILVER
11.3.3	Letters, diagram & border	Black
11.3.4	Process	Etching
11.3.5	Name plate details	<ol style="list-style-type: none">1. Purchaser Name2. Order no and Date3. Month & year of manufacture,4. Equipment type, input & output rating,5. Guarantee period6. SLD7. CT rating8. Aux PT rating9. Manufacturer serial no.10. Breaker operation at rated load, making operation and no load operation
11.4	Labels for meters & indications	The label shall be riveted and not pasted on the panel compartment door. Preferable the labels shall be engraved on the plate. Anodized aluminum with white character on black background OR 3 ply lamicoid
11.5	Danger plate on front & rear side	Anodized aluminum 16 SWG with white letters on red background
11.6	Painting surface preparation	Shot blasting or chemical 7 tank process for CRCA sheet
11.7	Painting external finish	Powder coated epoxy polyester base grade A, shade -RAL 7032, uniform thickness 60 micron minimum
11.8	Painting internal finish	Powder coated epoxy polyester base grade A, shade -white, uniform thickness 60 micron minimum

12.0 Approved makes

12.1	FRTU	ABB / Schneider/ Siemens/Phoenix/Ashida (R1)
12.2	FPI(E/F & S/C)	EMG/Schneider/SIEMENS/C&S

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12.3	Self Powered O/C & E/F Relay	Ashida ADR241S -761/C&S (CSDPR-V2-500) (R1)
12.4	Battery Charger	Allan/Gogate
12.5	Boots	3M/Raychem/KD joshi/Shine
12.6	Vacuum Interrupter	CG/ABB/Schneider/BEL
12.7	Modem (GSM 4G+)	Niseva/Lantronix/Pheonix
12.8	Terminals block	Connectwell/Wago/Phoenix/Elmex
12.9	CT and Aux PT	Narayan Power Tech (NPT)/Gilbert Maxwell, Pragati, Nortex
12.10	Interposing relay with freewheeling diode	ABB/Tyco/OEN
12.11	CBCT (Both for Earth fault and Over current protection)	EMG/Schneider/SIEMENS/C&S
12.12	Battery	HBL/Exide
12.13	Wire	Polycab/Havells/Finolex/KEI
12.14	AC & DC MCB	SIEMENS/Havells/C&S/ Schneider
12.15	Disconnecting type fuses	Connectwell/Wago/Phoenix/Elmex
12.16	Protocol converter	ABB/Tyco/OEN
12.17	DC power connector	Wago/Havells/Connectwell
12.18	Battery Health Monitoring Unit	GOGATE/Allan
12.19	Surge protector	Phoenix

Note – Any other make of component offered by the bidder maybe reviewed & approved by purchaser

13.0 Quality assurance

13.1	Vendor quality plan	To be submitted for purchaser approval
13.2	Inspection points in quality plan	To be mutually identified & agreed
13.3	Quality – Process Audits	BSES shall carryout vendor process audits.
13.4	Field quality plan	Bidder to submit field quality plan along with the bid
13.5	Maintenance manual	Bidder to submit maintenance manual along with the bid

14.0 Inspection & testing

14.1	Type test	1. Equipment of type tested quality only, including internal arc test on various compartments like cable
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		chamber, SF6 gas tank etc.
		2. Type test certificate to be submitted along with offer for scrutiny.
		3. <u>For motorized RMUs – Bidder to submit following test report for DC charger.</u> a) temperature rise test b) voltage regulation test
		4. FRTU type tests as detailed in specification attached in Annexure H
14.2	Routine test	As per relevant Indian standard
14.3	Acceptance test	To be performed in presence of purchaser at manufacturer works. BSES may carry out integration of the FRTU/Modem and BSES SCADA during Inspection stage. OEM to carry out the configuration of both Modem and FRTU in this case to establish connection between FRTU and SCADA. SIM shall be provided by BSES
		1. Physical inspection & BOM, wiring check
		2. Insulation resistance test (Before & after HV test)
		3. HV test for one minute,
		4. Operation & interlock check
		5. Measurement of resistance of main circuit
		6. Voltage Indication check
		7. Functional testing of Fault passage Indicator for Alarm
		8. Primary current injection test for each circuit breaker feeder with relay
		9. Breaker closing & opening time measurement
		10. Functional test of FRTU
		11. Motor Operation
		12. Raw material docs verification

15.0 Shipping, Handling and Site support

15.1	Packing Protection	Against corrosion, dampness, heavy rains, breakage and vibration
15.2	Packing for accessories and spares	Robust wooden non returnable packing case with all the above protection & identification Label
15.3	Packing Identification Label (Anodized Aluminum Plate)	On each packing case, following details are required:
		1. Individual serial number
		2. Purchaser's name
		3. PO number (along with SAP item code, if any) & date
		4. Equipment Tag no. (if any)
		5. Destination

Technical Specification of 11 kV Ring Main Unit

		6. Manufacturer / Supplier's name
		7. Address of Manufacturer / Supplier / it's agent
		8. Description (Configuration of RMU; e.g. 2CCB + 1 FCB, Motorized / Non Motorized, Extensible / Non Extensible) and Quantity must be prominently displayed at least 3 sides of packing box & on top.
		9. Country of origin
		10. Month & year of Manufacturing
		11. Case measurements
		12. Gross and net weights in kilograms
		13. All necessary slinging and stacking instructions
15.4	Shipping	The seller shall be responsible for all transit damage due to improper packing.
15.5	Handling and Storage	1. Manufacturer instruction shall be followed. 2. Detail handling & storage instruction sheet / manual to be furnished before commencement of supply.

16.0 Deviations

16.1	<p>a) Deviations from this specification shall be listed separately by bidder clause wise (as mentioned in below) 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>
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Sl. No.	Document Name	Clause No.	Deviation	Reason	Merit to BSES

Technical Specification of 11 kV Ring Main Unit**17.0 Drawings Submission**

S.no	Documents to be submitted	With the bid	After Award	
			For Approval	Dispatch
1	Copy of specification along with company seal & signature on each page.	✓		
2	Detailed reference list of customers using the offered product during the last 5 years with similar design and rating	✓		
3	GA / cross sectional drawing of product showing all the views / sections	✓	✓	
4	Manufacturer's quality assurance plan and certification for quality standards	✓	✓	
5	Type test reports for the type, size & rating of product / equipment offered	✓	✓	
6	Complete product catalogue and Manual.	✓	✓	
7	Recommended spare parts and consumable items for five years of operation and spare parts catalogue with price list	✓	✓	
8	BOM	✓	✓	
9	Schematic and wiring drawings for all components		✓	
10	Terminal arrangement & cable box details including gland plate arrangement etc		✓	
11	Quality Assurance plan	✓	✓	
12	Recommended spare parts and consumable items for five years of operation and spare parts catalogue with price list	✓	✓	
13	Detailed installation and commissioning instructions			✓
14	Battery and battery charger sizing calculations			✓
15	Detailed loading drawing to enable the buyer to design and construct foundations		✓	
16	Transport / Shipping dimensions with weights, wheel base details, un tanking height		✓	

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S.no	Documents to be submitted	With the bid	After Award	
			For Approval	Dispatch
17	Deviation Sheet (if any)	✓	✓	
18	Inspection and test reports, carried out in manufacturer's works			✓
19	Test certificates of all bought out items			✓
20	Operation and maintenance Instruction as well as trouble shooting charts/ manuals			✓
21	As built Drawings (one set) along with each RMU hard copy			✓
22	As built Drawings soft copy			✓
23	IO termination chart shall be provided along with the schematic drawing for approval. IO Termination chart shall be provided on the inside of FRTU Compartment door.			✓
24	The FRTU and modem Configuration file for every FRTU shall be shared with BSES after successful on-site integration with SCADA			✓
25	FRTU and modem licensed software to be provided to BSES. Any future software upgrades and support to be provided to BSES without any cost implication till warranty period.			✓

18.0 Equipment ID

13.1	Equipment ID	<p>a) A Slot shall be provided on the Compartment door at a clearly readable height from the base level of FRTU compartment. This slot shall be provided with a Fibre card which shall be accessible from inside only but shall be visible outside. Equipment ID shall be painted/printed on the Fibre Card and</p> <p>b) Equipment ID shall be painted on any appropriate face of RMU at a clearly readable height from the base level. Front recommended type face for the signage is True type or Post script</p> <p>c) Font Size: All painting should be in UPPERCASE. Recommended height of 50 mm with spacing between alphabets of 3 mm.</p>
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Technical Specification of 11 kV Ring Main Unit

- | | | |
|--|--|---|
| | | <ul style="list-style-type: none">d) Total No's of Character: 18e) Height of Font: 50 mmf) Height of Base: 100 mmg) Spacing between alphabets: : 3 mmh) Paint: Base coat – Dense Yellow. Letters – Black Quick Drying paint 2 coats.i) Equipment ID shall be separately provided by BSESj) Equipment ID painting shall complete at factory by seller on each and every motorized RMU before dispatch. |
|--|--|---|

Annexure A Scope of supply

1.0 The scope of supply shall include following

- 1.1 Design, manufacture, testing at manufacturer works before dispatch, packing, delivery and submission of all documentation the 11kV Ring Main Unit (RMU).
- 1.2 11kV RMU shall be as per scheme enclosed as Annexure E.
- 1.3 FRTU along with necessary software's and hardware shall be provided as per detailed specification in Annexure H
- 1.4 Supply of dual SIM Modem (Auto change over, 4G/5G and GSM) for FRTU communication with MCC/BCC as per specification in Annexure G. SIM card shall be provided by BSES.
- 1.5 Battery, Battery Charger and BHMU
- 1.6 Configuration of 11kV RMU shall be as per Purchase Requisition.
- 1.7 Testing & commissioning supervision of all motorized RMUs at site included in the scope of vendor including all operational checks, LV wiring checks, battery / charger checks, VPI , FPI, self powered relay. Supervision of testing & commissioning of all the panels at site. Vendor shall depute the service team with 2 days prior notice from owner.
- 1.8 FRTU customization, parameterization along with integration of FRTU with Control centre has to be carried out at all sites by bidder and OEM engineer.
- 1.9 Guarantee Period for RMU along with all hardware installed inside the FRTU cabinet: 66 months from the date of supply or 60 months from date of commissioning, whichever is earlier.
- 1.10 Service Performance Requirements During Guarantee Period:
 - a) RMU including battery charger: Complaint to be attended on urgent basis and to be resolved within 24 hrs, 1 day from intimation. Adequate quantity of necessary spare should be maintain by bidder service team at Delhi till completion of guarantee period.
 - b) FRTU: After reporting of FRTU modules compliant / failure, within 24 hours FRTU modules shall be replaced by vendor at site. Adequate quantity of necessary spare should be maintain by bidder service team at Delhi till completion of guarantee period.
 - c) Modem: After reporting of Modem compliant / failure, within 24 hours Modem should be rectified / replaced by bidder service team at site. Adequate

Technical Specification of 11 kV Ring Main Unit

quantity of necessary spare should be maintain by bidder service team at Delhi till completion of guarantee period.

- 1.11 Each RMU shall be supplied with 2 sets of Operating Handle.
- 1.12 All the accessories mentioned above shall be supplied along with RMU's as a composite unit. Inside the composite unit, battery and battery charger shall be inbuilt inside RMU compartment and FRTU, modem shall be inbuilt inside LV compartment.
- 1.13 Supplier scope includes training of BSES team – 4 batches (each batch with 4-6 engineers or team member as per BSES requirement.) for minimum 3 days each at factory as well as at BSES site for erection, testing commissioning and maintenance trouble shooting mechanism of Motorized RMU including Automation part. This shall be carried out 1 week from date of 1st shipment/ dispatch. Supplier shall also provide training for Self Powered relay & FRTU at respective manufacturer' factory as well as at BSES site for minimum 3 days for BSES team – 4 batches (each batch with 4-6 engineers or team member as per BSES requirement.) . This is applicable for each and every P.O. of Motorized RMU's.
- 1.14 Unit price for Conversion kit should be offered separately for converting the RMU from single cable termination design to double cable termination design, at site.
- 1.15 BOQ as following –

Sr No	Purchaser Equipment Tag No / SAP code	RMU standard configuration Type	Unit	Quantity
1		<i>Example – Type A2</i>	No	<i>e.g. 1</i>
2		<i>Example – Type R5</i>		
3				
4				

2.0 Submission of documents

	Along with offer	For Approval after award of contract	Final after approval
Documents as given in clause no 17 of specification	3 copies + 1 soft copy in USB	4 copies + 1soft copy in USB	6 copies + 1 soft copy in USB for all type of documents

Technical Specification of 11 kV Ring Main Unit**3.0 Delivery schedule**

3.1	Delivery period start date	-	from date of purchase order
3.2	Delivery period end date	-	as agreed with supplier
3.3	Material dispatch clearance	-	after inspection by purchaser

Annexure B Technical particulars (Data by purchaser)

Sr No	Description	Data by purchaser
1.	Reference design ambient temperature	40 deg C
2.	Maximum ambient temperature	50 deg C
3.	Relative humidity	85%
4.	Seismic zone	Zone IV

Technical Specification of 11 kV Ring Main Unit**Annexure C Guaranteed Technical Particulars (Data by Supplier)**

- a. Bidder shall furnish the GTP format with all details against each clause.
- b. Bidder shall not change the format of GTP or clause description.
- c. 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	11kv RMU (as per scope of supply annexure A)	Separate GTP to be filled for each type of RMU
2	Equipment make	
	Equipment type / brand name	
3	Conformance to design standards as per specification clause no 2.0 –	Yes/No
4	Conformance to specification clause no 3.0 to 17.0 –	Yes/No
5	If NO for pt 3 or pt 4 above, Submission of deviation sheet for each specification clause no –	Yes/No
6	Panel overall dimensions in mm	
6.1	Width (measured from front)	
6.2	Depth	
6.3	height	
7	Panel weight in kg	
8	Panel extensible on both sides – Yes / No	
9	Panel enclosure protection offered	
10	Panel tested for internal arc (Cable & other compartments) –Yes / No	
11	Heat generated by the panel in Kw	
12	Insulation level for complete panel	
12.1	Impulse withstand (Kv peak) -70kvp min	
12.2	Power frequency withstand (Kv rms) – 28kv min	
13	Bus bar	
13.1	Material & grade	
13.2	Bus bar cross section area in sq mm	
13.3	Bus bar rated current in amp i) at designed 40 deg.C ambient	

Technical Specification of 11 kV Ring Main Unit

Sr. No.	Description	Data to be filled by Manufacturer
	ii) at 50 deg.C ambient	
13.4	Max temperature rise above reference ambient of 50 deg C	
13.5	Short time current withstand capacity for 3 seconds (in KA)	
13.6	Bus bar clearances in mm P-P / P-E	
13.7	Bus bar with insulation sleeve / barriers	
13.8	Bus bar support insulator type	
13.9	Bus bar support insulator voltage class	
13.10	Bus bar support insulator minimum creepage distance / mm	
13.11	Earth bus bar material	
13.12	Earth bus bar size	
13.13	Cable compartment	
13.13.1	C-C distance between bushings	
13.13.2	Phase to Phase Clearance (Min)	
13.13.3	Phase to Earth (Min) Clearance	
13.13.4	Impulse Withstand Voltage of design tested	
13.13.5	IAC level – Cable compartment / RMU Tank	
14	Circuit breaker type – VCB	
14.1	Rated voltage & frequency	
14.2	Rated current in amp	
14.3	Rated breaking current – KA rms symmetrical	
14.4	Short time withstand capacity in KA for 3 sec	
14.5	Rated making current - KA peak	
14.6	Breaker total opening time at rated breaking capacity (in milliseconds)	
14.7	Number of breaks per pole	
14.8	Total length of contact travel in mm	
14.9	No of circuit breaker operation cycles (close & open) guaranteed at rated current, Electrical endurance class	25% rated current -
		50% rated current -
		75% rated current -
		100% rated current -

Technical Specification of 11 kV Ring Main Unit

Sr. No.	Description	Data to be filled by Manufacturer
14.10	No of breaker opening operations guaranteed at rated fault current, Electrical Endurance Class	
14.11	No of breaker mechanical operation cycles (close & open) guaranteed at zero current , Mechanical endurance class	
14.12	Contact material	
14.13	Operating mechanism – trip free	
14.14	Motorized/Manual Spring charge type	
14.14.1	Spring charging motor rating - Watt	
14.14.2	Spring charging motor rated DC voltage	
14.14.3	Closing coil wattage & rated DC voltage	
14.14.4	Trip coil wattage & rated DC voltage	
14.14.5	Operating motor voltage with acceptable % variation	
14.15	Minimum permissible SF6 gas pressure (For SF6 type RMU only)	
14.16.1	Capacitor type cable voltage indication provided?	Yes / No
14.16.2	Voltage Presence Indicator- Make / Model	
14.17	Operation counter provided	Yes/ No
15.1	Disconnect switch continuous rating (Amp)	
15.2	Disconnect switch Short time withstand rating -20kA for 3 sec minimum	Yes / No
16	Earth Switch	
16.1	Minimum number of operations at no load- Mechanical Endurance class	
16.2	Making capacity endurance of earth switch – Electrical endurance class	
17	Self Powered Relay – Make / Model	
17.1	CT Input	
17.2	IDMT Setting Range 4 element – Over Current & Earth fault & steps	Overcurrent- Earth Fault- Instantaneous O/C- Instantaneous E/F-
17.3	Operating Time	Over Current – Curves Instantaneous

Technical Specification of 11 kV Ring Main Unit

Sr. No.	Description	Data to be filled by Manufacturer
17.4	Pick up Current	
17.5	Resetting Current	
17.6	Relay Burden	
17.7	Time Accuracy	
17.8	Tripping Coil O/P – type & duration	
17.9	Fault Current Display	
17.10	No of Fault Current Latching with time stamping	
17.11	Display Facility / Type	
17.12	Operational Indicators	
17.13	Potential Free Output Contacts	
17.14	Thermal Withstand Capacity of Relay	
18	Current Transformer- Make	
18.1	Ratio	
18.2	Burden	
18.3	Accuracy Class	
19	Fault Passage Indicator (shall be for both earth fault and over current protection)	
19.1	CBCT	
19.1.1	Type	
19.1.2	Mounting Arrangement	
19.1.3	CT to indicator connection	
19.1.4	ID of sensor	
19.2	Earth Fault/Short Circuit Indicator make	Make / Model
19.2.1	Sensing Current (i) Earth Fault (ii) Short Ckt Indicator	
19.2.2	Sensing Time (i) Earth Fault (ii) Short Ckt Indicator	
19.2.3	Indication	
19.2.4	Reset Time (i) Earth Fault (ii) Short Ckt Indicator	
19.2.5	Resetting Facility	
19.2.6	Output Contact	

Technical Specification of 11 kV Ring Main Unit

Sr. No.	Description	Data to be filled by Manufacturer
19.2.7	Contact Rating	
19.2.8	Aux Power Supply	
19.2.9	Degree of Protection	
19.2.10	Mounting Arrangement	
19.2.11	Ambient Temperature	
20	DC charger rating in amps – min 10 Amp Dual	Yes/No
20.1	MCB rating at 230V AC input of charger	Amp
20.2	MCB rating at 24V DC output of charger	Amp
20.3	Charger heat sink temperature rise (max 55 deg C above ambient 40 deg C)	
20.4	Voltage variation in 24V Dc output for FRTU	(Max +/-1 V)
20.4.5	Charger with natural cooling (no cooling fans)	Yes/No
20.4.6	Charger tested for input supply voltage regulation test (input variation 150V-250V, output Dc voltage variation +/- 1 volt max)	Yes/No
20.4.7	Charger temperature rise test certificate submitted	Yes/No
20.5	DC battery rating in Ah – 26Ah (mini) OR as approved battery sizing during detail engineering, whichever is higher.	Yes/No
20.6	DC charger changeover – Diode rating 10A min OR as approved during detail engineering whichever is higher.	Yes/No
21.1	Cable termination – Height of power terminal from gland plate	mm
21.2	Torque required for tightening terminal lug	
22	Mimic diagram, labels & finish as per cl no 11	Yes / No
23	Submission of RMU / component catalogue	Yes/No
24	Unit price for Conversion kit offered separately for converting the RMU from single cable termination design to double cable termination design	Yes / No
25	FRTU	
25.1	Make & Model No	
25.2	No of DI Modules	

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Sr. No.	Description	Data to be filled by Manufacturer
25.3	No of DO Modules	
25.4	No of AI Modules	
25.5	Make of Protocol converter	
25.6	Modem	Ethernet Type
25.6.1	Type – Dual SIM 4G/5G and compatible to 3G & 2G Refer Modem Specifications	Yes / No
25.6.2	Make	
25.6.3	Serial port Isolator provided	Yes / No
25.7	Interposing Relay with freewheeling diode	
25.7.1	Make	
25.7.2	Rating	
25.7.3	Model No	
25.8	Terminal Blocks, Disconnecting type	
25.9	MCB make	
26	Surge Protection devices required for	
26.1	Each Serial Ports	
26.1.1	Quantity	
26.1.2	Make and Model	
26.2	Each RJ pot	
26.2.1	Quantity	
26.2.2	Make and Model	
26.3	Charger Output	
26.3.1	Quantity	
26.3.2	Make and Model	

Bidder / Vendor seal / signature

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

Technical Specification of 11 kV Ring Main Unit**Annexure D Mandatory Spares and Recommended spares****1.0 Mandatory Spares (To be supplied with RMU supply)**

Sr No	Description of spare part	Unit	Quantity
1	FRTU (with DI/DO/AI cards)	Nos	Minimum 2 no's of Each type or 5% whichever is higher
2	Modem	Nos	Minimum 2 no's or 5% whichever is higher
3	High gain Antenna	Nos	5
4	Single Phase Transformer as per tender requirement	Nos	1
5	HRC Fuses for Aux Transformer	Nos	20
6	Auxiliary relays	Nos	Minimum 10 no's or 5% whichever is higher
7	Interlock card	Nos	Minimum 2 no's or 5% whichever is higher
8	Motor kit of each type	Nos	Minimum 2 no's or 5% whichever is higher
9	Battery Charger	Nos	Minimum 2 no's or 5% whichever is higher
10	SPD (each type)	Nos	Minimum 2 no's or 10% whichever is higher
11	BHMU Module	Nos	Minimum 2 no's or 5% whichever is higher

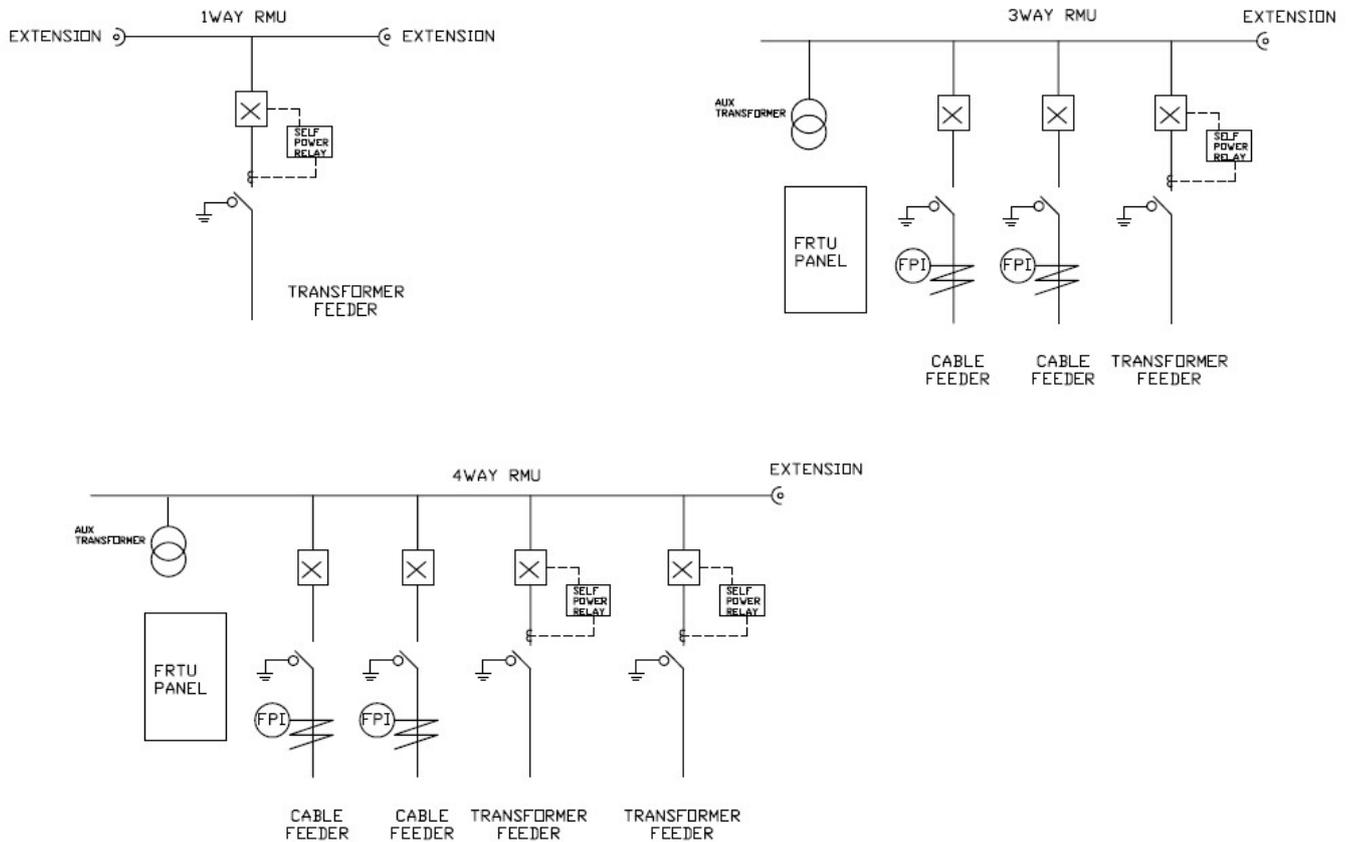
2.0 List of recommended spares as following

Sr No	Description of spare part	Unit	Quantity
1	FPI	Nos	limited to 10% of order quantity of RMU
2	VPIS	Nos	limited to 10% of order quantity of RMU
3	Manometer with pressure indicator switch	Nos	limited to 10% of order quantity of RMU
4	Self Powered Relay	Nos	limited to 10% of order quantity of RMU
5	Aux Switches	Nos	limited to 10% of order quantity of RMU
6	CPU with Power Supply Card, I/O Adapter Board, rack, relay board etc	Nos	limited to 10% of order quantity of RMU
7	Battery	Nos	limited to 10% of order quantity of RMU

Any additional spares, if required shall be separately listed by bidder. Unit price for each spare item to be provided.

Technical Specification of 11 kV Ring Main Unit

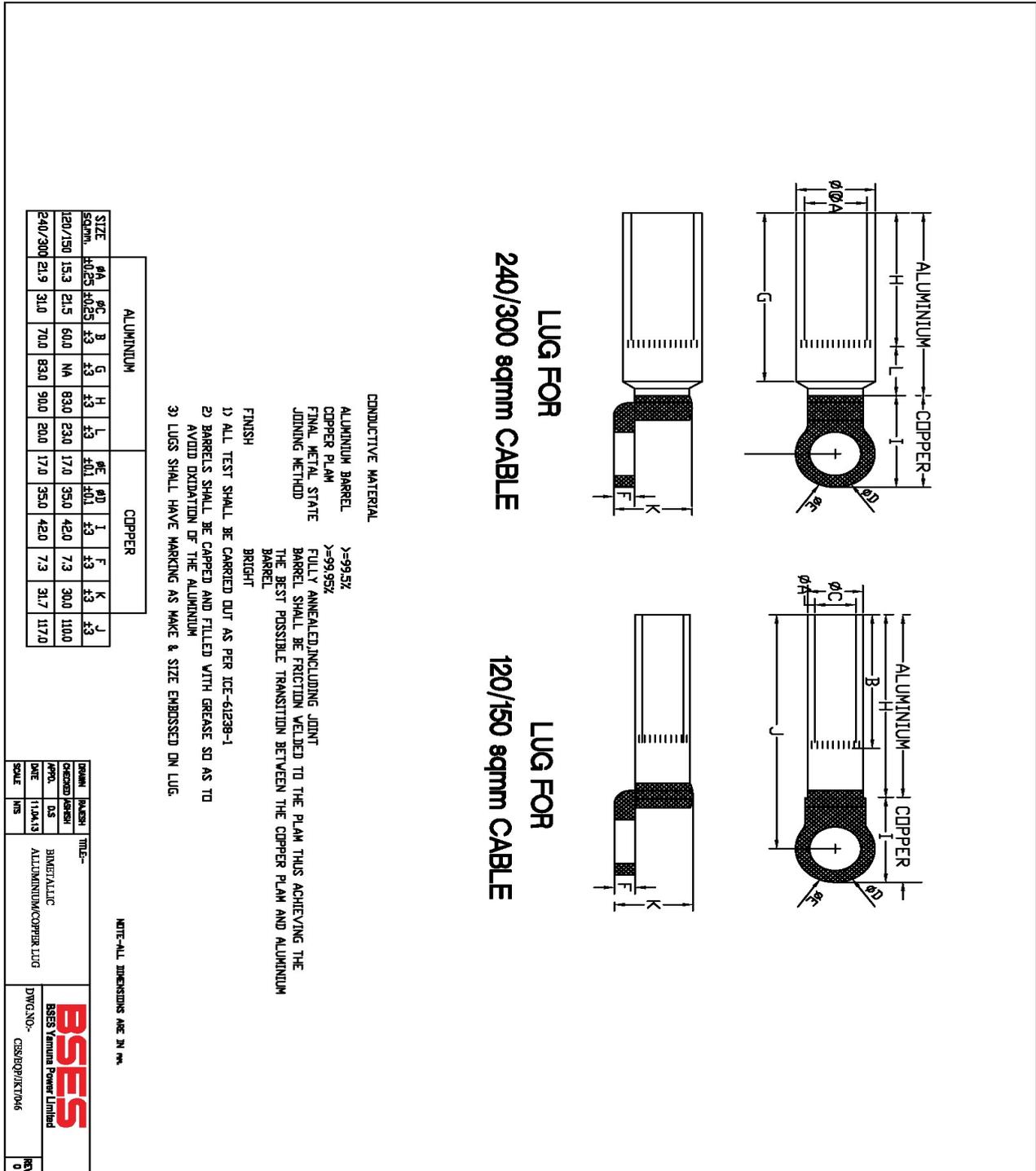
Annexure E Typical scheme of RMU



- a) 11kV RMU shall have Feeder Circuit breaker (FCB) and Transformer circuit breakers (TCB) all are motorized
- c) 1Way RMU is extensible on both sides and 3Way 4Way RMU shall be suitable for extension on one sides for addition of TCB or FCB.
- d) Self Power relay is provided for transformer circuit breaker feeder.
- e) Fault passage indicator (FPI) including associated CT & connecting cable is shown by letter 'FPI'.

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Annexure F Drawing of Bimetallic Ring Type Lug



Annexure G Specification of 4G Ethernet Modem for FRTU

1. **Module:** 4G Dual SIM with compatible 3G /GSM GPRS
 - a) FDD LTE: B1 (1920-1980/2110-2170) / B3 (1710-1785/1805-1880) / B8 (880-915/925-960) / B20 (800) MHz
 - b) TDD LTE: B38 (2570-2620) / B39 (1880-1920) / B40 (2300-2400) / B41 (2496-2690)
 - c) HSPA / UMTS: B1 (2100) / B8 (900) /800/850/1900 MHz
 - d) GSM: 900/1800/ MHz Class 10
2. WAN Protocol: PPP/IPCP over Asynchronous HDLC with PAP/CHAP Authentication.
3. Modem shall be compatible with IPv4 & IPv6 scheme
4. Console Interface: RS232 on RJ45 connector.
5. LAN Interface: 10/100 Base-T complying to IEEE 802.3 / ANSI 8802-3 on RJ45 connector.
6. Support for SCADA Protocols in transparent pass through mode.
7. Network Protocols: PPP, IPCP, PAP, CHAP, ARP, IP, ICMP, TCP, UDP, IPSEC, SNTP, TFTP.
8. Support for NAT and Port forwarding.
9. Management: Serial, HTTP,HTTPS, Telnet & via SMS, Port Mapping, Event Log & Upload. Firmware Upgrade
10. Modem shall have self healing capability to recover from dead lock situation.
11. Status Monitoring: ICMP to 4 destinations for Keep Alive & Self Heal. Signal Strength & LEDs.
12. SIM Interface: External with locking provision.
13. AT Commands Interface: Supporting AT commands for dialing from FRTU through RS-232 serial port to modem.
14. Communication Interface: Remote management features like telnet & remote download facility
15. LED Indications: Power ON, Network–Signal strength, SIM availability, Ethernet link
16. Connectors: RJ45 Ethernet Port, SIM Card Holder, DC power connector, SMA Antenna connector

Technical Specification of 11 kV Ring Main Unit

17. Power Supply: 24V DC (with reverse current protection) with 2 numbers Terminal Block without adapter. Modem functionality shall not affect during DC voltage supply range of 18 to 30V DC.
18. Enclosure: Metallic Extrusion
19. Mounting: DIN Rail Mounting
20. Temperature: Operating (-10 to 70 Degree Centigrade), 95% Humidity
21. Antenna: 12dB High Gain Antenna with SMA connector. 15mtr wire length to be provided with the High Gain Antenna.
22. Accessories:
 - a) 1 Meter cable for connecting to external DC power source (24 V)
 - b) 1 Meter Standard Ethernet (Straight) data cable
 - c) Standard Console cable for diagnostic port of Modem
 - d) 1 Meter serial cable for dialing modem from FRTU
23. Certification:
 - a) Conducted Immunity : IEC61000-4-6
Measure emission of the device (referenced to earth) on power mains and to compare them with specified limits to ascertain that the device will not disturb other equipments
Frequency : 0.15MHz to 80MHz
Modulation : 80% AM at 1 KHz
Test Voltage : 3V
 - b) Electrostatic Discharge (ESD):IEC61000-4-2
Check immunity against discharge of static electricity that may occur when a charged operator touches the device
Contact Discharge : 4KV
Air Discharge : 8KV
No of Discharge : 10 at pre-selected spots
Positive & Negative Polarity
 - c) EN55022 CLASS B
Immunity characteristics of the device when subjected to continuous conducted noise
Conducted Emission : Frequency - 150 KHz - 30 MHz
Radiation Emission : Frequency – 30 MHz - 1000 MHz
24. Warranty period: 5 years

Annexure H Specification for Feeder Remote Terminal Unit for RMU

1.0.0 Scope of Supply & Work

This document defines the scope of supply, including spares and scope of work of installation, testing & commissioning including interfacing/ integration with RMU and owners SCADA system for acquisition of real time status and control functions associated with the same.

1.0.1 Scope of Supply

The specification covers design, engineering, manufacturing, FAT, SAT, packaging and delivery of FRTU for RMU automation. The system should be completely wired up with all the required accessories to make the system capable of SCADA data acquisition and controlling of all components of RMU system. The scope of supply also covers the required spares that are to be supplied along with the system as per detail given under Spares, Accessories & Tools, refer clause 1.6.0.

1.0.2 Scope of Work

- a) The specification covers engineering, installation, testing and commissioning of FRTU system, to make the system capable of SCADA data acquisition and controlling of complete accessories of RMU system at site.
- b) The scope also covers the interfacing/ inter-connecting of FRTU with RMU. The details are as per the clause 1.5.3. SAT is also included in the scope of work as defined in the document.
- c) Any firmware up-gradation meets the protocol requirement of MCC/ BCC communication protocol (IEC 60870-5-104) to be made available by the supplier engineer.
- d) End to end testing from MCC/ BCC to be carried out in presence of the supplier engineer. If any change is required for operation and monitoring of the RMU system to be made by the bidder without any price implication to owner.

1.1.0 Applicable Standards

FRTU shall comply with the requirements stated in the latest editions of the following recommendations, standard and specifications:

- a) International Electro technical Commission (IEC),
- b) Institute of Electrical and Electronics Engineering (IEEE),
- c) American National Standards Institute (ANSI),
- d) National Equipment Manufacturers Association (NEMA) standards

1.2.0 Technical Requirements

1.2.1 FRTU Functionalities:

FRTU shall contain all the functions required for SCADA data acquisition and controlling/monitoring of the complete accessories used in RMU.

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- a) It should be capable of handling minimum 250 DP(data point) respectively.
- b) FRTU shall have serial port, configurable RS485/RS232 for MODBUS serial and IEC 103 protocol communication.
- c) FRTU shall have TCP/IP port for Modbus TCP/IP and IEC 61850 communication.
- d) Ethernet ports for interfacing with IEC 60870-5-104 protocol to communicate with MCC and BCC.
- e) Ethernet port should be configured for IEC 60870-5-104 protocol as a slave.
- f) Built in optical couplers to isolate the field signals and field communication channels.
- g) FRTU shall support event storage capacity as measured events (500), system events (50), alarms (50) and normal events (250). Events should be stored on the basis of FIFO.
- h) Local viewing of all events shall be possible.
- i) FRTU DI/ DO and AI communication channel capacity should be such that it can fulfill automation of complete substation system.
- j) FRTU shall support web based monitoring from remote as well as local.
- k) All DI/ DO and AI communication channels should have individual LED indications.
- l) FRTU shall support feature of remote configuration as well as diagnosis.
- m) FRTU system shall support communication with 4 Nos. master stations simultaneously.
- n) All DI/DO/AI communication card installed in FRTU shall support HOT swap feature.
- o) As the SCADA/ DMS system will use public domain such as RF/ GPRS etc., therefore it is mandatory to guard the data/ equipment from intrusion/ damage/ breach of security & shall have SSL VPN based security.
- p) FRTU shall support SNMP (Simple Network Management Protocol).
- q) Capability of time synchronization with GPS receiver and SCADA MCC/ BCC.
- r) FRTU system should be modular and expandable.
- s) FRTU should be capable to store the configuration program in detachable flash memory card.
- t) FRTU shall have console port with console cable.

1.2.2 CPU Module:

- a) 32 bit ARM core CPU, operating @ minimum 450 MHz.
- b) Internal memory minimum 128MB and RAM 64MB, suitable for handling the RMU data acquisition and controlling the RMU, DT monitoring, ACB, LT panel and APFC used in substation.
- c) Real Time Clock (RTC)
- d) Display to show the error code and status of the processor.

1.2.3 Communication Ports:

- a) FRTU shall have the following port for communications

S. No	Communication With	Communication Protocol	Physical Layer		Connecting Cable	Required Qty
			Interface	Physical		

Technical Specification of 11 kV Ring Main Unit

				Port		
1	Master station(s)	IEC 60870-5-104	Ethernet	RJ45	CAT VI	1
2	LT panel/ Transformer	IEC 61850	Ethernet	RJ45	CAT VI	1
3	Local Configuration	_	RS232	USB/DB9	Console Cable	1
4	Protection relays	IEC 103	RS485	Terminal Block	Shielded RS485 Twisted Copper Cable	1
5	MFM/FPI	MODBUS	RS485	Terminal Block	Shielded RS485 Twisted Copper Cable	1
6	LT panel/Transformer	MODBUS	RS485	Terminal Block	Shielded RS485 Twisted Copper Cable	1
Total						6

- b) Each Serial port should be capable of handling minimum 10 Nos. devices on the network with same communication settings.
- c) The settings of Ethernet and serial ports should be programmable.
- d) System should have the capability to increase TCP/ IP Ethernet and serial ports for communication by addition of communication modules.

1.2.4 MCC/ BCC Communication Protocol:

- a) FRTU system shall be configured to communicate with MCC/ BCC simultaneously on IEC 60870-5-104 protocol.
- b) FRTU shall support periodic reporting of analog data that shall be configurable upto 1 hour poling delay.
- c) Digital status data shall have higher priorities as compared to the analog data.
- d) Dead band for reporting analog values shall be programmable for the full scale value.

1.2.5 Communication between FRTU, MFMs and Protection Relays:

- a) FRTU can acquire analog values from MFMs/FPIs and protection relay through RS485 serial communication port using MODBUS and IEC 103 protocol respectively.
- b) Communication of ACB/MCCBs on Modbus TCP/IP / IEC 61850 protocol.
- c) MFM/FPI and protection relay will act as slaves to the FRTU. The FRTU shall transmit these analog values to master station by using IEC 60870-5-104 protocol.
- d) To protect the serial communication port(s), optical isolation is required which is mandatory to avoid damage to FRTU channels.

Technical Specification of 11 kV Ring Main Unit**1.2.7 Digital Input Module:**

- a) FRTU shall be capable of accepting isolated potential free contact status inputs.
- b) FRTU shall provide necessary sensing voltage, current, optical isolation for each status input.
- c) FRTU shall be capable to configure re-bounce filtering for each input.
- d) The sensing voltage of input module should be 24V DC.
- e) The FRTU shall accept two types of status input: Single point and double point.
- f) Single point status input represented by 1 Bit in the protocol message whereas double point status input represented by 2 Bits in the protocol message.
- g) FRTU configuration software shall have the capability to invert the DI signal value required in the configuration.
- h) There shall be channel wise visual indication on all DI module installed in the FRTU panel for troubleshooting problems.
- i) Digital Input module should have hot swap compliance.

1.2.8 Digital Output Module:

- a) FRTU shall provide the capability for master station to select and change the state of Digital output points.
- b) These control outputs shall be used to control power system devices such as circuit breakers, isolators and other two state devices which shall be supported by FRTU.
- c) FRTU should also support single command output to reset FPI operation.
- d) The output contact shall be rated to operate RMU motor, ACB, LT MCCB, APFC and other signals used in substation.
- e) In case control output module of FRTU does not provide potential free control output of required rating then separate control output relays shall be provided.
- f) There shall be channel wise visual indication of DOs available in FRTU panel and command issued for any digital channel for troubleshooting the problem.
- g) DO modules should have the capability to configure for a single as well as double command output.
- h) Digital Output module should have hot swap compliance.

1.2.9 Analog Module:

- a) FRTU analog module should be capable of connecting universal type of analog value ($\pm 20\text{mA}$, $\pm 10\text{V}$).
- b) FRTU should have the capability to configure the analog channel for any value of universal analog input through the FRTU configuration software.
- c) Analog module should be 16 Bit, bipolar.
- d) Analog module should have hot swap compliance.
- e) There shall be channel wise visual indication of AIs card available in FRTU panel.

1.2.10 Interfacing of FRTU system with RMU

- a) RMU signal connections should be terminated in RMU bay wise and extension of the signals from the each equipment TB (Terminal Block) to FRTU TB through cable connectors, bay wise.

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- b) Separate multi-core cable for Interconnection of FRTU with RMU with suitable size and length.
- c) Male and female connector with cable for interconnection should be provided in FRTU panel.
- d) Minimum 2.5/ 4 sqmm multi-strand copper wire/ cable of suitable length for connecting the battery bank and battery charger placed in FRTU cabinet.
- e) Supply and dressing of inter-connecting cables through suitable size PVC duct are in the supplier scope.
- f) Interconnections should have proper lugs, ferrules etc.

1.2.11 Troubleshooting:

- a) FRTU should be configurable using web based configuration and maintenance tool.
- b) FRTU shall have proper diagnosis tool for troubleshooting the failures related to the following from remotely as well as locally. Supplier shall consider all required configuration and diagnosis cable and software with each supplied FRTU with license if any.
- c) Communication of FRTU with master
- d) Communication of MFM with FRTU
- e) Communication of DI/ DO/AI
- f) Communication with Protection Relay

1.2.12 Programmable Logic Control (PLC):

- a) FRTU shall be provided with the PLC license.
- b) FRTU should have the functionality of logic development and perform the task using its own CPU.
- c) FRTU should have the capability to run more than one PLC tasks at a time.

1.2.13 Cyber Security:

The FRTU shall support the advanced cyber security standard ISO 27002 2005 (previously known as ISO IEC 17799 2005), NERC CIP-009-1 and ISA-99.02.01[5]-[7].

FRTU should have following features:

- a) User level configuration
- b) User wise authentication like system admin, configuration admin, control, operator.
- c) Disabling the DNS
- d) Disabling, enabling & configuration of TCP/ IP and UDP ports.
- e) Door lock alarm integration with FRTU.

1.3.0 General Construction of Enclosure:

- a) FRTU system housed in suitably sized panel, fabricate steel plate with mini 2mm thick frame and 2.0 mm thick CRCA sheet with seven tank process for indoor and for outdoor of protection mini IP 54 with safety lock of good quality. The cabinet

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- shall have adequate space for installation of other hardware's like modem, battery charger and battery as well as shall have at least 10% spare space.
- b) It is suitable class of IP 54 protection as per indoor and outdoor applications.
 - c) Enclosure fabricated with double door, swing frame type with proper pad lock arrangement to avert the theft of the equipment fitted inside.
 - d) The component and accessories to be mounted on mounting plate of FRTU.
 - e) Enclosure should have proper illumination, universal type socket and laptop stand and Drawing pocket.

1.4.0 FRTU Power Supply

- a) Power supply for FRTU shall be on 24V DC system which would be made wired from Battery Charger/batteries housed in FRTU cabinet.
- b) 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. To protect the batteries from the theft the battery in RMU compartment should have separate pad lock arrangement.
- c) Power supply system should have redundant battery charger to provide the supply to FRTU system as well as to charge the battery.
- d) 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 (i.e. on Ethernet/RS 485 lines)

1.5.0 FRTU Type and Routine Tests

1.5.1 Type Tests

The FRTU's shall have passed type tests carried out by government accredited labs 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:

- a) Dielectric test
- b) Impulse voltage withstand test
- c) High frequency disturbance test
- d) Thermal requirement test
- e) Mechanical requirement test
- f) Limiting dynamic value test
- g) Contact performance test
- h) Electromagnetic radiation susceptibility test
- i) Electrostatic discharge susceptibility test

1.5.2 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:

- a) Visual tests to confirm that construction and sizing requirements have been met.
- b) 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.
- c) Verification of the use of the FRTU test equipment for maintenance and testing.
- d) Verification of the ability to download parameters and configuration data from the SCADA/DMS master station.
- e) Verification that FRTU software and firmware support FRTU sizing and expansion requirements.
- f) Verification of successful communications (i.e. protocols) at all the required data rates.
- g) Testing for secure operation, including verification that
 - i) Communication errors are detected.
 - ii) SCBO procedures are properly performed for control outputs.
 - iii) 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.

1.5.3 SAT

This document exclusively covers the SAT for FRTU system.

After the successful commissioning and testing of the FRTU system and liquidation of all punch points, the system will be put on continuous running mode for a cycle of minimum thirty (30) days after clearance on punch-points. During this period, if the FRTUs performance due to configuration and/ or hardware does not meet the criteria as per Technical Requirements of this document, the cycle will be reset.

During the cycle, availability and operational efficacy in regard of the supplied FRTU system will be checked and after successful validation, SAT will be concluded.

SAT will include the validation of the following:

1. Network
2. FRTU availability and operational efficacy
3. Validation of SOE
4. Indication, Command and Measured data

BSES reserves the right to financially penalize the supplier on failure of SAT as per the technical and tender document.

1.6.0 Spares, Accessories & Tools:

- a) Bidder should provide mandatory spare (refer annexure D) of each and every equipment's and parts of the equipment for 5 years for trouble free operations.
- b) The recommended spares of FRTU and accessories to be approved by the engineering in-charge of SCADA- DMS.
- c) The cost of spares is part of the tender and should not be considered separately.
- d) All software license shall be provided for programing, configuration, troubleshooting and diagnosis shall not be hardware/Machine specific. In case software's are machine or hardware specific mini two numbers of such software shall be supplied.
- e) The bidder shall provide all license software package (system/application/antivirus) required by the system for meeting the intent, functional, parametric and performance requirement of the specification. As a customer support, the bidder shall periodically inform and upgrade the provided software till completion of warranty period.

1.7.0 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 should provide windows based software as it is preferred for its user friendliness.

1.7.1 General

- a) A real-time non-proprietary operating system that is capable of managing the FRTU applications shall be provided.
- b) 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.
- c) 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.
- d) 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.
- e) 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.

1.7.2 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

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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.

1.8.0 Service Life and Warranty Support

Service Life:

BSES prefers that the major equipments of FRTU system shall be capable of complying with this standard, including performing its intended purpose, for a minimum of 5 years from the date of supply.

The supplier shall provide a service support letter containing:

- a) The date at which the product was released for sale.
- b) The anticipated date at which the product will be withdrawn from sale, but support will continue to be supplied.
- c) The anticipated date of when the product support will be withdrawn i.e. spares will no longer be available and technical support will no longer be provided.

1.9.0 Trainings & Hands-on

The supplier personnel who are experienced instructors and who speak understandable English shall conduct training. The supplier shall arrange on its own cost all hardware training platform required for successful training and understanding at BSES works. The supplier shall provide all necessary training material. Each trainee shall receive individual copies of all technical manuals and all other documents used for training. These materials shall be sent to BSES at least one (1) months before the scheduled commencement of the particular training course. Class materials, including the documents sent before the training courses as well as class handouts, shall become the property of BSES. BSES reserves the right to copy such materials, but for in-house training and use only. Hands-on training shall utilize equipment identical to that being supplied to BSES. The schedule, location, and detailed contents of each course will be finalized during BSES and supplier's discussions. If the supplier has utilized 3rd party equipment or outsourced work to a 3rd party then experienced instructors of the 3rd party are required to be part of the training sessions.

1.9.1 FRTU System Hardware Course

A computer system hardware course shall be offered, but at the system level. The training course shall be designed to give BSES hardware personnel sufficient knowledge of the overall design and operation of the system, so that they can correct obvious problems, configure the hardware, perform preventive maintenance, run diagnostic programs, and communicate with contract maintenance personnel. The following shall be covered:

- a) System hardware design architecture overview: Configuration of the system hardware.

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- b) Equipment Maintenance: Basic theory of operation, maintenance techniques and diagnostic procedures for each element of the computer system, e.g., processors, auxiliary memories, Ethernet, routers and printers. Configuration of all the hardware equipment.
- c) System Expansion: Techniques and procedures to expand and add equipment such as loggers, monitors and communication channels.
- d) System Maintenance: Theory of operation, maintenance techniques and practices, diagnostic procedures and (where applicable) expansion techniques and procedures. Classes shall include hands-on training for the specific subsystems that are part of BSES equipment or part of similarly designed and configured subsystems. All interfaces to the computing equipment shall be taught in detail.
- e) Operational Training: Practical training on preventive and corrective maintenance of all equipment, including use of special tools and instruments. This training shall be provided on BSES equipment or on similarly configured systems.

1.9.2 FRTU System Software Course

The contractor shall provide a computer system software course that covers the following subjects:

- a) System Programming: Including all applicable programming languages and all stand-alone service and utility packages provided with the system. An introduction to software architecture, effect of tuning parameters (OS software, Network software, database software etc.) on the performance of the system.
- b) Operating System: Including the user aspects of the operating system, such as program loading and integrating procedures, scheduling, management, service and utility functions and system expansion techniques and procedures.
- c) System Initialization and Failover: Including design, theory of operation and practice
- d) Diagnostics: Including the execution of diagnostic procedure and the interpretation of diagnostic outputs.
- e) Software Documentation: Orientation in the organization and use of system software documentation.
- f) Hands-on Training: One week, with allocated computer time for trainee performance of unstructured exercises and with the course instructor available for assistance as necessary.

1.9.3 FRTU Application Software Course

The supplier shall provide comprehensive application software courses covering all applications including the database and display building course. The training shall include:

- a) Overview: Block diagrams of the application software and data flows. Programming standards and program Interface conventions.
- b) Application Functions: Functional capabilities, design and major algorithm. Associated maintenance and expansion techniques.

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- c) Software Development: Techniques and conventions to be used for the preparation and integration of new software functions.
- d) Software Generation: Generation of application software from source code and associated software configuration control procedures.
- e) Software Documentation: Orientation in the organization and use of functional and detailed design documentation and of programmer and user manuals.
- g) Hands-on Training: One week, with allocated computer time for trainee performance of unstructured exercises and with the course instructor available for assistance as necessary.

1.9.4 Requirement of Training

The supplier shall provide training for a batch (maximum of 10 people) for five (5) days in two slots (Time of which will be decided by BSES and supplier) on the following courses.

Name of Course:

- a) System Hardware
- b) System Software
- c) Application Software

1.10.0 Drawings & Documents

The bidder shall submit all the standard and customised FRTU documents for review and approval which includes the following:

- a) FRTU function design document
- b) FRTU hardware description document & all the documents referred there in to meet all the clauses of the specification.
- c) FRTU Test equipment user documents
- d) FRTU user guide
- e) FRTU Operation & Maintenance document
- f) FRTU training documentation
- g) FRTU database document
- h) FRTU I/O list (as build) after the execution
- i) FRTU Test procedures
- j) Data Requirement Sheet (DRS) of all items
- k) Protocol documentation including implementation profile etc.
- l) FRTU installation and layout, GA, BOQ, schematics and internal wiring drawings for each FRTU site

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Following Technical documents shall be submitted in addition to Commercial Documentation based on Statutory Requirements and shall be submitted along with the bid:

S. No.	Description	For Approval	For Review	Final Submission
1	GTP	✓		✓
2	GA Drawing	✓		✓
3	Installation Instruction			✓
4	Manual/ Catalogues		✓	✓
5	Dimension drawing		✓	✓
6	QA & QC plan	✓	✓	✓
7	Test Certificates	✓	✓	✓

After the award of the contract, bidder shall submit 4 copies of Drawings describing the equipment in detail and forward for approval before final dispatch of the equipment. Soft copy of all the Drawings, GTP, Test certificates shall be submitted for final approval by BSES. All the documents & drawings shall be in English language.

1.11.0 FRTU DI/DO/AI list

RMU configuration	FRTU DI/DO/AI requirement		
	Digital Input Channels	Digital Output Channels	Analogue Channels
3Way & 4Way RMU	48	16	6
5Way	64	32	6
6Way	80	40	6

FRTU configuration DI/ DO/AI Channel requirement is indicated in the Table given below

Signals List for Motorized RMU						
Digital Inputs	Equipments	Signals	DI for 3Way		DI for 4Way	
	Cable Circuit Breaker		CBON	DI1, DI2	2	DI1, DI2
		CBOFF	DI3, DI4	2	DI3, DI4	2
		Disconnecter Open	DI5, DI6	2	DI5, DI6	2
		Disconnecter Close	DI7, DI8	2	DI7, DI8	2
		Earth Status	DI9, DI10	2	DI9, DI10	2
		FPI operated (E/F)	DI11, DI12	2	DI11, DI12	2

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		FPI Operated (S/C)	DI13,DI14	2	DI13, DI14	2
		Local/Remote	DI15, DI16	2	DI15, DI16	2
		VPIS Status	DI17, DI18	2	DI17, DI18	2
Circuit Breaker	CB ON	DI19	1	DI19, DI20	2	
	CB OFF	DI20	1	DI21, DI22	2	
	Disconnecter Open	DI21	1	DI23, DI24	2	
	Disconnecter Close	DI22	1	DI25, DI26	2	
	Earth Status	DI23	1	DI27, DI28	2	
	Ready to Close Signal to control centre to indicate all interlocks are OK (including spring charge and trip ckt healthy)	DI24	1	DI29, DI30	2	
	Auto Trip	DI25	1	DI31, DI32	2	
	Local/Remote	DI26	1	DI33, DI34	2	
	SF6 Low	DI27	1	DI35	1	
	VPIS Status	DI28	1	DI36, DI37	2	
	Common Signals	AC Fail	DI29	1	DI38	1
		Battery Charger-1 Fail	DI30	1	DI39	1
		Battery Charger-2 Fail	DI31	1	DI40	1
Command Acknowledgement		DI32	1	DI41	1	
Battery Health Monitoring Unit/Battery in Trouble		DI33	1	DI42	1	
FRTU Door Open		DI34	1	DI43	1	
Interlock Card operation Fail		---	0	---	0	
Auxiliary Circuit Healthy (Control Ckt healthy)		DI35	1	DI44	1	
MOG Alarm from field		DI36	1	DI45	1	
WTI Alarm from field		DI37	1	DI46	1	
APFC	APFC Incomer MCCB Trip	DI38	1	DI47	1	
	APFC Fan MCCB Trip+Other common alarm	DI39	1	DI48	1	
	Total		39	Total	48	
Spare DI			9		0	
TOTAL			48		48	

Signals List for Motorized RMU

Digital Outputs	Signals	DO for 3 way		DO for 4Way	
	Cable CBON	DO1, DO2	2	DO1, DO2	2
Cable CBOFF	DO3, DO4	2	DO3, DO4	2	
FPI Reset	DO5, DO6	2	DO5, DO6	2	

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Transformer CB ON	DO7	1	DO7, DO8	2
Transformer 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	13	total	16
Spare DO	DO14-DO16	3	DO16	0

Analog Inputs	LT Palm Temp	AI1
	Oil Temp of Trf.	AI2
	Oil Level	AI3
	Spare	AI4 to AI6

Serial Port	DT Energy Meter Data	SP1
	Relay and FPIs of RMU (Both relays and FPIs to be connected to FRTU through daisy chain)	SP2
	LT ACB/field Data	SP3

1.12.0 Guaranteed Technical Documents

(Vendors shall furnish the General Technical Particulars along with their offer)

Sr. No.	Description	Buyer's Requirement	Vendors Data
1	Vendors Name		
2	Guarantee period	5 yrs	
3	Make of FRTU base module		
4	No. of DI modules	3 x 16	
5	No. of DO modules	2 x 8	
6	No. of AI modules	1x 6	
7	Dimensions & Weight of FRTU	Vendor shall provide	
8	Dimensions of FRTU panel	Vendor shall Provide	
9	Make of protocol converter	Vendor shall provide	

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10	Interposing relay with freewheeling diode		
10.1	Make	ABB / SCHNEIDER/SIEMENS	
10.2	Capacity	>8 A	
10.3	Model	CR-P with 2C/O contacts / Eqv	
11	AC & DC MCB	Merlin & Gerin / Protec / Indokopp	
12	Terminal Blocks	Elmex / Connectwell / Phoenix	
13	Disconnecting type fuses	Elmex / Connectwell / Phoenix	
14	Enclosure		
14.1	Indoor		
14.1.1	Sheet steel thickness	Mini 2 mm	
14.1.2	Painting process	7 tank	
14.2	Outdoor		
14.2.1	Galvanized sheet (120GSM min)	Mini 2 mm	
14.2.2	Powder Coating	80 Microns	
14.3	Construction of steel according to IEC 529 , index of protection	IP55	
14.4	Shade	RAL-7035	
14.5	Louvers with filters	2 Nos	

Technical Specification of 11 kV Ring Main Unit**Annexure 'I' 11 kV Metering Cubicle****1.0 General Requirement**

1	Panel Type	Outdoor, Metal enclosed, framed, Compartmentalized panel construction
2	Service Location	Outdoor
3	Mounting	Free Standing
4	Overall Enclosure Protection	IP 54 Minimum (Complete unit i.e. RMU coupled to Metering unit shall be IP54)
5	Panel Fabrication	The metering cubicle shall be fabricated with 2.0mm CRC sheet. Load bearing members and high voltage compartments shall be 3.0 mm. The panel shall be vermin proof and totally enclosed. CT/PT compartment shall be fabricated after bending the M.S. Sheets on three sides and fourth side shall be welded to make the complete assembly tamper proof. Pressure release device/ explosion vent should be provided on the CT PT compartment at the rear side.
6	Compartmentalized panel construction	The panel shall have four separate compartments. All the compartments shall be completely segregated from each other. 1. Meter Compartment 2. CT- PT compartment 3. Incoming 4. Outgoing
7	Meter Compartment	The Upper compartment i.e. the "meter compartment" shall be suitable for housing 3 phase 4 wire Energy Meter (energy meter not in bidder's scope of supply) and associated wiring.
7.1	Double door	1. Double door arrangement as front and back door to meet IP54 requirement. Both the doors should have 02 no's concealed type (Anti Theft) hinges. 2. Front door should have at least 01 no's padlocking and 02 no's sealing arrangements.

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7.2	Meter reading Window	<p>Provided on front and back door to enable the meter reader to perform inspection of meter compartment and note down the reading of meter.</p> <ol style="list-style-type: none"> 1. Front Door: window of size 350 (W) X 300 (H) mm approximately with colour-less transparent acrylic sheet and wire mesh welded from inside. 2. Back door: window of size 350 (W) X 300 (H) mm approximately with colour-less transparent acrylic sheet. 																								
7.3	Data Downloading slot	<p>Slot to facilitate installation of data downloading cable with DB9 serial connector.</p> <ol style="list-style-type: none"> 1. Front door: Slot of size 25mm X10 mm (+/- 2 mm) should be provided on front door with sealable cover. 2. Back door: Slot of size 30 mm X 50 mm shall be provided to facilitate installation of data downloading cable. 																								
7.4	Meter hanging arrangement	The meter compartment shall contain hanger arrangement of slotted angle for mounting meter so that meter can be adjusted vertically and horizontally. Two horizontal and two vertical slotted channels should be provided for the same.																								
8	CT PT Compartment	The CT/PT compartment shall be completed welded type and house the 11 KV dry type current transformers (3 no's) and 3 phase dry type potential transformer.																								
8.1	Current Transformers	The metering current transformers shall be suitable for 11 KV; 50Hz effectively earthed neutral system. The CT shall be single core, epoxy resin cast, copper wound primary type with rated burden 5VA and accuracy class 0.5s or better conforming to IS:2705 (Part-I&II). Instrument security factor shall be less than or equal to 10. CTs should have solid copper bus bar type primary terminals for connection with main busbar/bushing terminal. Secondary terminals of CTs should be made of copper or brass.																								
8.2	STC of CT	<table border="1"> <thead> <tr> <th>SL</th> <th>CT ratio</th> <th>Short time rating</th> <th>Size of main Bus bar</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>15 / 5 A</td> <td>6 KA for 1 sec.</td> <td>30 x 4 sqmm</td> </tr> <tr> <td>2</td> <td>30 / 5 A</td> <td>6 KA for 1 sec.</td> <td>30 x 4 sqmm</td> </tr> <tr> <td>3</td> <td>60 / 5 A</td> <td>18KA for 1 seconds</td> <td>30 x 4 sqmm</td> </tr> <tr> <td>4</td> <td>100 / 5A</td> <td>18KA for 1 seconds</td> <td>30 x 4 sqmm</td> </tr> <tr> <td>5</td> <td>150 / 5 A</td> <td>18KA for 1 seconds</td> <td>30 x 4 sqmm</td> </tr> </tbody> </table>	SL	CT ratio	Short time rating	Size of main Bus bar	1	15 / 5 A	6 KA for 1 sec.	30 x 4 sqmm	2	30 / 5 A	6 KA for 1 sec.	30 x 4 sqmm	3	60 / 5 A	18KA for 1 seconds	30 x 4 sqmm	4	100 / 5A	18KA for 1 seconds	30 x 4 sqmm	5	150 / 5 A	18KA for 1 seconds	30 x 4 sqmm
SL	CT ratio	Short time rating	Size of main Bus bar																							
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Technical Specification of 11 kV Ring Main Unit

		6	300 / 5 A	18KA for 1 seconds	40 x 6 sqmm
		7	400 / 5 A	21KA for 1 seconds	40 x 6 sqmm
8.3	Potential Transformer	The Potential Transformer shall be dry type Epoxy resin cast, Copper wound suitable for 3 phase 11KV, 50Hz effectively earthed neutral system. The PT shall be connected in star to have ratio $11KV/\sqrt{3} / 110/\sqrt{3}$ V with rated burden of 10VA per phase and accuracy class 0.5 or better conforming to IS:3156 (Part I & II). Primary terminal of PT should be of copper. Secondary terminals of PT should be made of copper or brass.			
8.4	Pressure release device	Pressure release device/ explosion vent should be provided on the CT PT compartment at the rear side.			
9	Incoming	<ol style="list-style-type: none"> 1. Coupled to the breaker module of RMU. 2. Coupling arrangement should meet the IP54 requirement. 			
10	Outgoing	Cable compartment with cover/ door.			
10.1	Cable type & size	3C x 400 sq mm Aluminum conductor XLPE with armor & PVC outer sheath			
10.1	Cable Entry	<ol style="list-style-type: none"> 1. Bottom 2. Gland plate - 3mm metallic, removable & split type in two parts, with 1no. 90 mm diameter knocks out punch/hole in the centre. Approval should be taken for the same during drawing submission 			
10.2	Cable support	'HDPE' cleat(s) shall be provided.			
10.3	Termination Type	Suitable for heat shrinkable type			
10.4	Terminals for 11kV cable termination	<ol style="list-style-type: none"> 1. Suitable for Ring Type Bimetallic lug. 2. Material of Nut, bolts and spring washer- Brass 3. Size of Nut bolt- M16 			
10.5	Termination height	From gland plate 900 mm minimum			
10.6	Right angled boots	Single piece cold shrink type (make – 3M or Raychem)			
11	Panel Wiring	<ol style="list-style-type: none"> 1. Secondary wiring of CTs and PTs shall be done with 2.5 sq. mm PVC insulated cables with stranded copper conductor. 2. CT and PT wiring should run in independent rigid steel conduit pipes of appropriate size from CT/PT compartment 			

Technical Specification of 11 kV Ring Main Unit

		<p>to meter compartment.</p> <ol style="list-style-type: none">3. Conduit pipes shall be clamped with the inner wall of the panel and shall be so laid that none of the wires can be tampered from outside.4. Current transformer and Potential transformer secondary wiring shall be colour coded as per IS and shall be suitably ferruled for identification.5. No link or test terminals shall be provided in wire from CT/PT to meter terminals.
12	Earthing	<ol style="list-style-type: none">1. The assembly comprising of the chassis, framework and the fixed parts of the metal casing shall be provided with two separate earthing terminals of M10 or above.2. These terminals shall be provided over and above all other means provided for securing and earthing metallic enclosures (armour or other metallic coverage) or current-carrying cables.3. The earthing terminals shall be readily accessible and so placed that the earth connection of the CT/ PT chamber is maintained when the cover or any other movable part is removed.4. The earthing terminals shall be protected against corrosion and shall be metallically clean.5. Earth continuity shall be provided to all Gasketed joints by copper braid suitable for rated fault current.6. Under no circumstances shall a movable metal part of the enclosure be insulated from the part carrying the earthing terminals when the movable part is in place.7. The earthing terminals shall be identified by means of the symbol marked in a legible and indelible manner on or adjacent to the terminals.
13	Bushing	<p>Bushing should be made of homogeneous epoxy / polymeric material free from laminations, cavities and other flaws or imperfections that might affect the mechanical or dielectric quality. Bushings shall be designed to have ample insulation level, mechanical strength and rigidity for the conditions under which they will be used. The hollow porcelain bushings shall conform to IS-5621.</p> <p>Bushing clamping accessories, bolts, studs etc shall be hot dip galvanized. All the nuts and washer shall be SS-304. All iron parts shall be hot tin galvanized and all points shall be airtight. All current carrying contact surfaces shall be silver</p>

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		plated. The creepage distance of the bushing shall not be less than 31 mm/KV. Bushing shall be tested in accordance with IS-2099. Routine as well as type tests reports in conformity with IS-2099 shall be furnished to the purchaser.
14	Connections	<ol style="list-style-type: none"> 1. No joint in the primary winding of CT shall be acceptable. 2. Connection between CT terminal and bushing terminals shall be done with solid copper busbar of adequate size. 3. Flexible copper strip / rope are not acceptable for primary connection. 4. PT should be connected to primary busbar through bus bar of appropriate size (connections using flexible conductor are not acceptable). 5. All bus bars/ connections in the CT/PT compartment shall be encapsulated in epoxy.
15	Lifting Lug	<ol style="list-style-type: none"> 1. 04 No's lifting lugs shall be provided at the top of the metering cubicle for transportation. 2. All nuts, bolts, flat and spring washers shall be SS only.
16	Height of the Base frame	The total height including base channel shall not be more than 2000 mm. Width and depth should be minimum possible and may be increased suitably to accommodate CT's/PT's.
17	Provision for Sealing	<p>Welded Stud with nut must be provided for the purpose of sealing on the following compartments/ locations.</p> <ol style="list-style-type: none"> 1. Meter compartment 2. Coupling arrangement of RMU and metering cubicle. 3. Outgoing cable compartment

2.0 Labels & painting

1	Name plate	The metering cubicles shall be provided with a non detachable type nameplate with legible and indelible marking fixed on the enclosure sheet with welded arrangement so that in case name plate is removed no passage holes are left. (separate name plate should be provided for RMU & metering cubicle)
2.1	Location	Name plate having complete data shall be provided outside as well as inside the metering cubicle at a suitable place where it can be easily read.
2.2	Material	Anodized aluminum 16SWG / SS

Technical Specification of 11 kV Ring Main Unit

2.3	Background	SATIN SILVER
2.4	Letters, diagram & border	Black
2.5	Process	Etching
2.6	Name plate details	<ol style="list-style-type: none">1. BSES Property2. Supplier's name3. P.O. No. & Year of manufacturing4. Sr. No. of metering cubicle5. Particulars of CT's such as ratio, VA burden, accuracy class, SC rating, BIL.6. Particulars of PT's such as ratio, accuracy class, VA burden, BIL.7. Standard connection diagram8. Consumer account no9. Sanctioned load.10. Date of release of connection.
2.7	Labels for CT Ratio	On CT PT compartment by anodized aluminum with white character on black background OR 3 ply lamicoid
2.8	Danger plates	<ol style="list-style-type: none">1. On CT PT compartment and each cable compartment2. Anodized aluminum 16 SWG with white letters on red background
2.9	BSES Insignia	<ol style="list-style-type: none">a) 01 no'sb) Shall be etched on anodized aluminium 16SWG / SS plate.c) Details shall be finalized during drawing approval.
2.10	Enclosure painting surface preparation	Shot blasting or 7 tank chemical process
2.11	Enclosure painting internal/ external finish Powder coated epoxy polyester base	Hot dip galvanizing – 80 micron thick grade A, shade - RAL 7032, uniform thickness 60 micron minimum.

Technical Specification of 11 kV Ring Main Unit**3.0 Technical requirement of CT and PT**

SL	Description	Requirement for CT	Requirement for PT
1	Nominal System Voltage (KV rms)	11KV	11KV
2	Highest System Voltage (KV rms)	12KV	12KV
3	Type	Single phase Indoor CT's	Three phase Star/Star PT.
4	Ration	As specified in purchase enquiry	
5	Accuracy Class	0.5s	0.5
6	Primary fuses		3A
7	Rated frequency	50Hz	50Hz
8	Rated Secondary Current Amp.	5 Amp	N / A
9	Rated continuous thermal current	1.2 times of rated primary current,	NA
10	Max Ratio error	As per IS 2705	As per IS 3156
11	Max Phase angle error	As per IS 2705	As per IS 3156
12	Rated burden	5VA at 0.8 pf (Lag)	10VA/ phase at 0.8 pf (Lag)
13	Rated voltage factor	N / A	1.2 times continuous and 1.5 times for 30 seconds
14	Short time current rating		
14.1	Thermal rating	As provided in section 3.2	N / A
14.2	Dynamic rating	2.55 times of short time thermal current rating	N / A
15	One minute high voltage power frequency withstand voltage		
15.1	On primary winding KV rms On secondary winding KV rms	28KV (rms) for 1 minute for 11 KV class 3KV (rms) for 1 minute	28KV (rms) for 1 minute for 11 KV class 3KV (rms) for 1 minute
15.2	1.2 / 50 impulse withstand voltage	75 KV (peak) for 11 KV class	75 KV (peak) for 11 KV class

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16	Winding materials	Copper	Copper
17	Insulation class	Class B	Class B
18	Insulation security factor	< 10	N / A

4.0 Inspection & testing

1	Type test	<ol style="list-style-type: none">1. Metering cubicle shall be type tested as per IS 34272. CT and PTs shall be type tested as per IS2705 and IS3156 respectively.3. Bushings shall be type tested in accordance with IS2099.4. Type tests should not pertain to period earlier than five Years.
2	Routine test	<ol style="list-style-type: none">1. Metering cubicle shall be tested as per IS 34272. CT and PTs will be tested in accordance with IS2705 and IS3156 respectively.3. Temperature rise test will have to be carried out during Inspection.4. During inspection, all routine and acceptance tests shall be carried out in presence of purchaser's representative.
3	Physical Inspection	<ol style="list-style-type: none">1. Checks of all mounting plates / fasteners.2. Checking of components as per drawing.3. Electrical circuit's fasteners tightness / surface area contacts.4. Labels / identification / nameplates.5. All doors checks – safety and accessibility.6. Panel surface finish / smoothness.
4	Right to waive off tests	Reserved by Purchaser

Technical Specification of 11 kV Ring Main Unit**5.0 Guaranteed Technical Particulars (Data by Supplier)**

SL	Description	Requirement	Data By Supplier
1	Name of Manufacturer		
2	Type and Designation	Outdoor type with resin cast CT and PT	
3	Normal system voltage	11KV	
4	Highest system voltage	12KV	
5	Frequency	50Hz	
6	Insulation Class		
7	Impulse Withstand Voltage (On assembled CT-PT set)	75 KV peak	
7.1	One minute power frequency dry withstand voltage (On assembled CT-PT set Primary)	28KV rms	
7.2	Secondary	3KV rms	
8	Current Transformers:	(3 nos. total, 01 no. per phase)	
8.1	Type	Resin cast wound type	
8.2	Transformation ratio (CT Ratio)	As per requirement	
8.3	Rated Output (VA Burden)	5VA	
8.4	Class of accuracy	0.5s	
8.5	Rated continuous thermal current	1.2 times of rated primary current	
8.6	Short time thermal current rating for one second	As per CT ratio and specification	
8.7	Rated Dynamic current	2.55 times of short time thermal current rating	
8.8	Security factor	Less than 10	
8.9	Insulation level	28KV for 1 min	

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SL	Description	Requirement	Data By Supplier
8.10	No. of cores	One	
8.11	Max Ratio error	As per IS:2705/1992	
8.12	Max phase angle error	As per IS:2705/1992	
8.13	Max. temp rise over max ambient temp of 50 deg C at rated continuous thermal current at rated frequency & withstand burden	As per IS:2705/1992	
8.14	Make and Grade of epoxy resin		
9	Potential Transformers	(3 Phase 4 wire unit)	
9.1	Burden in VA/Phase	10 VA/phase	
9.2	Transformation ratio	11KV/110V (L-L)	
9.3	Primary Fuse	3A	
9.4	Class of accuracy	0.5	
9.5	Winding connection	Star/Star	
9.6	Insulation level	28KV for 1 min	
9.7	Rated voltage factor and time	1.2 continuous and 1.5 for 30 seconds	
9.8	Temp rise over max ambient temp	Within limits of IS-3156/1992	
9.9	Max phase angle error	Within limits of IS-3156/1992	
9.10	Max Ratio error	Within limits of IS-3156/1992	
9.11	Make and Grade of epoxy resin		
10	Size of main busbar		
10.1	For CT ratio less than and equal to 150/5	30 x 4mm (minimum)	
10.2	For CT ratio of 300/5 and	40 x 6mm (minimum)	

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SL	Description	Requirement	Data By Supplier
	400/5		
11	Core material	CRGO (Virgin grade)	
12	Minimum creepage for HT Bushing	31mm/kV	
13	Clearances a. Phase to phase clearance b. Phase to earth clearance		
14	No. of Paint coats a. Primer b. Enameled RAL 7032	2 coats 2 coats	
15	Weight of complete unit		
16	Gauge of a. Meter box b. HT compartments	2mm (min) 3 mm (min)	
17	Dimensions of complete Metering cubicle a. Height (mm) b. Breadth (mm) c. Length (mm)		
18	Meter compartment		
18.1	Dimensions of meter compartment with double door (minimum sheet thickness 2mm) a. Height (mm) b. Breadth (mm) c. Length (mm)		
18.2	Protection class	IP 5X	
18.3	Provision of Acrylic window		
18.4	Provision of slotted channel (40*12mm) suitable for 6mm bolts (4 Nos)	Required	
18.5	Provision of Pad locking & sealing arrangement of door		
18.6	Provision of mounting metering reading port on door.		
19	Metering cubicle mounting	Floor mounting	

Annexure J Service and Warranty requirement**INDEX**

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

Technical Specification of 11 kV Ring Main Unit**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/ BSES Yamuna Power Limited.

2. Applicability

It is applicable to any equipment supplied directly or indirectly for installation / use in BSES Rajdhani Power Limited/ BSES Yamuna 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/ BSES Yamuna Power Limited to attend defects, trouble shooting 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.
- 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.

Technical Specification of 11 kV Ring Main Unit

- 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 BSES irrespective of warranty period.
- vii) In case if RMU 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 Complain 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 BSES.
- ii) BSES will register complain through a 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 BSES till restoration of equipment health at respective site in operation condition satisfactory of BSES 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 BSES stores.
- vii) Replacement of complete RMU - within 45 days including delivery to BSES Stores
- viii) The service engineer shall intimate necessary requirement to attend call along with confirmations

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- ix) Site visit & Investigation.
- x) 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.
- xi) 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.
- xii) The necessary tools shall be carried by service engineer attending calls.
- xiii) Service engineer to get call attendance certificate from respective area BSES engineers.
- xiv) Service engineer to intimate necessary precaution required to prevent repetition of problem to respective area BSES engineer as well as CES Team.
- xv) Detailed technical report (root cause analysis) to be submitted to CES Team for records and analysis against each call.

6.3 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.

6.4 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 CES team
- iii) Necessary repairing process to be intimated to CES 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 CES team for necessary planning.

Technical Specification of 11 kV Ring Main Unit

- vi) The repairing work shall be witness by BSES CES engineer, who may insist in process / performance checks / test in addition to above if felt essential.
- vii) If BSES 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 BSES 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 BSES engineer. It shall be intimated to BSES 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 BSES.
- v) OEM to intimate the final testing for inspection. BSES may depute engineer or third party representative to carryout inspection / testing before dispatch.
- vi) Dispatch shall be carried out only after BSES 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.

6.5 Witness / Inspection stages.

Even though OEM is liable for overall quality of work, BSES 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.
- i) Testing / checking of the evidence causing failure / problem.

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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. Documents / records / report submission

The following be recorded and provided to BSES by OEM against each call / repairing / rectification works for BSES 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 BSES.
- vi) Copy of transportation documents.
- vii) All technical details of parts / accessories being replaced.

8. Qualification requirements for service engineers

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

9. 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) BSES may audit the same during on site work.

10. Communications.

For better coordination, single channel communication must be followed. BSES 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 CES team.

11. 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 BSES 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