

STANDARD BIDDING DOCUMENT

(TURNKEY CONTRACT)

FOR

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KARGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

VOLUME-I

(CONTRACT CONDITIONS & SCOPE OF WORKS)

Section-I :	Invitation for Bids (IFB)
Section-II :	Instruction to Bidders (ITB)
Section-III :	Bid Data Sheets (BDS)
Section-IV :	General Conditions of Contract (GCC)
Section-V :	Special Conditions of Contract (SCC)
Section-VI :	Sample Forms and Procedures
Section-VII :	Scope of Works

Tender Specification No.: No. RECPDCL/TECH/JKPDD/e-Tender/2017-18/1763 Dated:

21.08.2017

REC Power Distribution Company Limited



(Tender invited through e-Tendering mode only)

For

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KARGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

No. RECPDCL/TECH/JKPDD/e-Tender/2017-18/1763 Dated: 21.08.2017

REC Power Distribution Company Limited

(A wholly owned subsidiary of REC, a 'Navratna CPSE' Under the Ministry of Power, Govt of India)

Corporate office

A10, 4th Floor, KribhcoBhawan, Sector-1, Noida – 201301, Tele : 0120-4383783

Website : www.recpdcl.in

Description of task, Pre-qualifying criteria, e-tender submission format and procedure is available on RECPDCL website (www.recpdcl.in), REC website (www.recindia.com), Central Publication Portal (www.eprocure.gov.in)

Important Dates for E- Tendering mode	
Date of Release of NIT	21.08.2017
Last date for queries / seeking clarification	04.09.2017 at 1230 Hours
Pre Bid Meeting	04.09.2017 at 1300 Hours
Last date of submission of Tender	06.10.2017 at 1700 Hours
Date of Opening of Technical bid	06.10.2017 at 1730 Hours
Date of Opening of Financial bid	To be intimated later

Note:

Online registration shall be done on e-tendering website i.e. www.tenderwizard.com/REC & in general, activation of registration may takes 24 hours subject to the submission of all requisite documents required in the process.

**-Sd-
(Salil Kumar)
Addl. CEO**

[This document is meant for the exclusive purpose of Agencies participating against this bid and shall not be transferred, reproduced or otherwise used for purposes other than that for which it is specifically issued]

VOLUME-I: SECTION – I
INVITATION FOR BIDS (IFB)

SECTION-I
TENDER INFORMATION

Name of the assignment:

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KARGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

Important information

Si. No.	Event	Information to the agencies	
1	Date of Release of NIT	21.08.2017	
2	Last date for queries / seeking clarification	04.09.2017 at 1230 Hours	
3	Pre Bid Meeting	04.09.2017 at 1300 Hours	
4	Last date of submission of Tender	06.10.2017 at 1700 Hours	
5	Date of Opening of Technical bid	06.10.2017 at 1730 Hours	
6	Date of Opening of Financial bid	To be intimated later	
7	Pre- Bid Meeting Address	REC Power Distribution Company Limited, A10, 4th Floor, Kribhco Bhawan, Sector-1, Noida – 201301 Tele : 0120-4383783	
8	Tender Document	The details can be downloaded free of cost from the websites www.recpdcl.in , portal.recpdcl.in , www.recindia.nic.in , www.eprocure.gov.in , www.tenderwizard.com/REC (However bidder need to submit tender cost along with EMD at the time of submission of tender)	
9	Tender Cost	Rs 25,000/- (Rupees Twenty Five Thousand only)	
10	EMD #	Rs.27,37,012 /-(Rs. Twenty Seven Lakhs Thirty Seven Thousands Twelve Only)	
11	Address for Bid submission	Shri. Salil Kumar , Addl. Chief Executive Officer, REC Power Distribution Company Limited, A10, 4th Floor, Kribhco Bhawan, Sector-1, Noida – 201301 Tele : 0120-4383755 Email- jkpdd.projects@recpdcl.in / salil.kumar@recpdcl.in	
12	Contact Person	Shri Ajay Kr. Chief Technical Officer REC Power Distribution Company Limited (RECPDCL) Phone:0120-4383759/ Email- jkpdd.projects@recpdcl.in / ajay.kumar@recpdcl.in	Shri Dheeraj Anand , Manager (Technical) REC Power Distribution Company Limited (RECPDCL) Phone:0120-4383775 Email- jkpdd.projects@recpdcl.in / dheeraj.ana nd@recpdcl.in

The EMD (Earnest Money Deposit) is to be submitted by all the participating bidders in the form of demand draft or Bank Guarantee of an amount of Rs.27,37,012 /-(Rs. Twenty Seven Lakhs Thirty Seven Thousands Twelve Only) of any schedule Indian bank in favor of REC Power Distribution Company Limited, Payable at New Delhi .DD/BG needs to be submitted in hard form along with other copies submitted in soft form. The EMD of unsuccessful bidder will be returned within 180 days from the contract and EMD of successful bidder will also be returned after

acceptance of work order and submission of PBG (Performance Bank Guarantee) i.e. 10% of the Contract Value.

- The bid shall remain valid for a period of 180 days from the last date of bid opening and shall be extended for further period upto another 180 days on sole discretion of RECPDCL.
- The completion period for the rate contract shall be the period as specified in ITB Sub-Clause 24.1(c).
- Bidding will be conducted through the domestic competitive bidding procedures as per the provisions of ITB/BDS and the contract shall be executed as per the provisions of the Contract.
- The detailed Qualifying Requirements (QR) are given in the Bidding Document.
- The complete Bidding Documents including technical specifications are available at RECPDCL's website www.recpdcl.in, www.recindia.nic.in, www.eprocure.gov.in or www.tenderwizard.com/REC . Interested bidders can download the Bidding Documents and commence preparation of bids to gain time.
- A Single Stage Two Envelope e-bidding Procedure followed by e-bidding for price bids will be adopted and will proceed as detailed in the Bidding Documents.
- Bids shall be submitted electronically on e-tender web portal www.tenderwizard.com/REC by last date and time of submission of bids. Tender Cost, Bid security (i.e. EMD) and Integrity Pact shall be submitted by the bidder in a sealed envelope by last date and time of submission of bids. Techno commercial bid and price bid shall be uploaded on electronically on e-tender web portal www.tenderwizard.com/REC .

Techno Commercial Part shall be opened on the same day i.e. **06.10.2017** in the presence of the bidders' representatives who choose to attend in person at the address below at 1730 hours (IST). Price Bids shall be opened electronically on e-tender web portal in the presence of the bidders' representatives who choose to attend at the time and date at the address given in the intimation for opening of Price bids in accordance with Clause 25 of ITB.

- EMPLOYER reserves the right to cancel/withdraw this invitation for bids without assigning any reason and shall bear no liability whatsoever consequent upon such a decision.
- All correspondence with regard to the above shall be to the following address.

(By Post/In Person)

Shri Salil Kumar,
 Addl. Chief Executive Officer

REC Power Distribution Company Limited,
 A10, 4th Floor, Kribhco Bhawan,
 Sector-1, Noida – 201301
 Tele : 0120-4383755
 Email- jkpdd.projects@recpdcl.in/ salil.kumar@recpdcl.in
 Fax: 0120 4383768

For more information, visit our site at <http://www.recpdcl.in>

----- **End of Section-I (IFB)** -----

VOLUME-I: SECTION – II INSTRUCTION TO BIDDERS (ITB)

Table of Contents

Preamble:	3
(A) Introduction	3
1.0 General Instructions	3
2.0 Eligibility of Bidder:	3
3.0 Eligible Plant: Equipment and Services	4
4.0 Cost Of Bidding	4
(B) The Bidding Documents	4
5.0 Contents of bidding documents:	5
6.0 Clarifications on Bid Documents; and Pre-Bid Meeting:	6
7.0 Amendment to Bidding Document	7
(C) Preparation of Bids	7
8.0 Language of Bid	7
9.0 Documents Comprising The Bid	7
10.0 Bid Form and Price Schedules:	11
11.0 Bid Prices:	11
12.0 Bid Currencies	13
12.1 Prices shall be quoted in Indian Rupees Only.	13
13.0 BID security:	13
14.0 Period of Validity of Bid	14
15.0 Format and Signing of Bid	15
(D) Submission of Bids	15
16.0 Sealing and Marking of Bids	15
17.0 Deadline for Submission of Bids	15
18.0 Late Bids	16
19.0 Modification and Withdrawal of Bids	16
(E). Bid Opening and Evaluation	16
20.0 Opening of Bid Envelope by Employer	16
21.0 Clarification of Bids	16
22.0 Preliminary Examination of Bid Envelope	16
23.0 Qualification	17
24.0 Evaluation of Techno - Commercial Part (Bid envelop)	18
25.0 Opening of Price Schedules (ON-LINE) by Employer	19
26.0 Conversion to Single Currency	19
27.0 Evaluation of Price Bids	19
28.0 Purchase/ Domestic preference:	21
29.0 Confidentiality and Contacting the Employer	21
(F). Award of Contract	21
30.0 Award Criteria	21
31.0 Employer's Right to Accept any Bid and to Reject any or all Bids	22
32.0 Notification of Award	23
33.0 Signing the Contract Agreement	23
34.0 Performance Security	23
35.0 Fraud and Corruption	23

Volume-I: Section – II
INSTRUCTION TO BIDDERS (ITB)

Preamble:

This part, Instruction to Bidders (ITB), Section II of the Bidding Documents provides the information necessary for bidders to prepare responsive bids, in accordance with the requirements of the Employer. It also provides information on bid submission, opening and evaluation and on contract award. ITB Section II contains provisions that are to be used unchanged unless part Special Condition of Contract, Section V, which consists of provisions that supplement, amend, or specify in detail, information or requirements included in ITB Section II and that are specific to each procurement, states otherwise. If there is a conflict between the provisions of ITB Section – II & Special Condition of Contract Section – V, the provisions of Special Condition of Contract, Section – V shall prevail.

However, provisions governing the performance of the Contractor, payments under the contract or matters affecting the risks, rights and obligations of the parties under the contract are not included in this section but instead under Section – IV: General Conditions of Contract and/or Section – V: Special Conditions of Contract.

Further in all matters arising out of the provisions of this Section – II and the Section–III of the Bidding Documents, the laws of the Union of India shall be the governing laws and courts of New Delhi shall have exclusive jurisdiction.

(A) Introduction

1.0 General Instructions

1.1 The REC Power Distribution Company Limited (RECPDCL) hereinafter called 'Employer' on behalf of JKPDD (Power Development Department of State of Jammu & Kashmir) will receive bids in respect of materials to be procured as set-forth in the accompanying Specifications. All bids shall be prepared and submitted by bidders in accordance with these instructions.

1.2 Source of funds: The Owner named in the Bidding Documents intends to use the capital subsidy 85% of cost of the infrastructures in the project under **IPDS, PMDP-URBAN & DDUGJY** a Government of India flagship program for Strengthening and augmentation of sub-transmission & distribution network, 10% to be procured through loan from FIs/Bank and balance 5% shall be contributed by Utility for this project.

1.2.1 All the payments under the contract for the package for which this invitation for Bids is issued shall be made by the RECPDCL {who is also named as Project Implementing Agency (PIA) by Ministry of Power/GoI} on behalf of JKPDD

1.3 For the purpose of implementation of subject package, REC Power Distribution Company Limited (Central CPSUs) shall be referred as Employer and the State Government of concerned state where the works are to be executed shall be referred as "The Owner".

2.0 Eligibility of Bidder:

2.1 This Invitation for Bids, issued by Employer is open to all firms including company(ies), Government Owned Enterprises registered and incorporated in India as per Company Act, 1956/2013 (with amendment from time to time) barring Government department as well as foreign bidders/MNCs not registered and incorporated in India and those bidders with whom business is banned by the Employer.

2.2 A Bidder shall not have a conflict of interest. Any Bidders found to be have a conflict of interest shall be disqualified. The bidder may be considered to have conflict of interest with one or more parties in this bidding process, if:

2.2.1 They have a controlling partner in common,

- 2.2.2 They receive or have received any direct or indirect subsidy from any of them; or
- 2.2.3 They have the same legal representative for purpose of this bid; or
- 2.2.4 They have a relationship with each other, directly or through common third parties, that puts them in position to have access to information about or influence on the bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or
- 2.2.5 A bidder submits more than one bid in the bidding process, either individually [including bid submitted as agent /authorised representative on behalf of one or more manufacturer(s) or through Licensee – Licensor route, wherever permitted as per the provision of Qualification requirement for Bidders], or
- 2.2.6 A Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specification of the materials and services/works that are subject of the bid, or
- 2.2.7 The Bidder, directly or indirectly shall not be a dependent agency of the Employer.
- 2.2.8 A prequalification process will be conducted prior to the bidding process, or conducted during process of the bidding, this bidding is open only to prequalified Bidders.
- 2.3 This bidding is open to any manufacturer who provides satisfactory evidence concerning the following that he:
 - 2.3.1 is a qualified manufacturer who supply of the type specified and has adequate technical knowledge and practical experience;
 - 2.3.2 does not anticipate change in the ownership during the proposed period of work (if such a change is anticipated, the scope and effect thereof shall be defined);
 - 2.3.3 has adequate financial stability and status to meet the financial obligation pursuant to the scope of the works (the Bidders should upload their audited profit and loss account and balance sheet for the last five years);
 - 2.3.4 has adequate field services organisation to provide the necessary field erection and management services required to successfully erect, test and commission the equipment as required by the Specifications and Documents; and
 - 2.3.5 has established quality assurance systems and organisation designed to achieve high levels of equipment reliability, both during his manufacturing and field installation activities.
- 2.4 The above stated requirements are a minimum and Employer reserves the right to request for any additional information and also reserves the right to reject the Proposal of any Bidder, if in the opinion of Employer, the qualification data is incomplete or the Bidder is found not qualified to satisfactorily perform the Contract.

3.0 Eligible Plant: Equipment and Services

- 3.1 For the purposes of these Bidding Documents, the words "facilities," "plant and equipment," "installation services," etc., shall be construed in accordance with the respective definitions given to them in the General Conditions of Contract.
- 3.2 All plant and equipment to be supplied and installed and services carried out under the contract shall have their origin in our country only.

4.0 Cost Of Bidding

- 4.1 The Bidder shall bear all costs and expenses associated with preparation and submission of its bid including post-bid discussions, technical and other presentations etc, and Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

(B) The Bidding Documents

5.0 Contents of bidding documents:

- 5.1 The goods and services required, bidding procedures and Contract terms are prescribed in the Bidding Document. The Bidding Document is a compilation of the following and shall include amendments, if any, thereto:

VOLUME – I: Condition of contract:

- | | |
|--------------|---|
| Section I: | Invitation for Bid (Section - IFB) |
| Section II: | Instructions to Bidders (Section – ITB) |
| Section III: | Bid Data sheets (BDS) |
| Section IV: | General Conditions of Contract (GCC) |
| Section V: | Special Conditions of Contract (SCC) |
| Section VI: | Sample Forms and Procedures (FP) |
1. Bid Form & Price Schedule
 - 1.1 Bid Form
 - 1.2 Price Schedule
 2. Bid Security Form
 3. Form of Notification by the Employer to the Bank
 - 3.a Applicable for forfeiture of Bank Guarantee
 - 3.b Applicable for conditional claim pending extension of Bank Guarantee by the bidder.
 4. Form of 'Notification of Award of Contract'
 - 4(a) Form of 'Notification of Award of Contract' for Supply of Plant and equipment
 - 4(b) Form of 'Notification of Award of Contract' for Installation of Plant and equipment
 5. Form of Contract Agreement
 - Alternative A
 - Alternative B
 - 5.1 Appendix-1: Terms and Procedures of Payment:
 - Grid/Power Substation, and
 - 11KV, Distribution Transformer, LT and Service connection
 - 5.2 Appendix-2: Price Adjustment
 - 5.3 Appendix-3: Insurance Requirements
 - 5.4 Appendix-4: Time Schedule
 - 5.5 Appendix-5: List of Approved Subcontractors
 - 5.6 Appendix-6: Scope of Works and Supply by the Employer
 - 5.7 Appendix-7: List of Document for Approval or Review
 - 5.8 Appendix-8: Guarantees, Liquidated Damages for Non-Performance
 6. Performance Security Form
 7. Bank Guarantee Form for Advance Payment
 8. Form of Taking over Certificate
 9. Form of Indemnity Bond to be executed by the Contractor for the Equipment handed over in one lot by Employer for performance of its contract.
 10. Form of Indemnity Bond to be executed by the Contractor for the Equipment handed over in instalment by Employer for performance of its contract.
 11. Form of Authorisation Letter
 12. Form of Trust Receipt for Plant, Equipment and Materials received
 13. Form of Extension of Bank Guarantee
 14. Form of Power of Attorney for Joint Venture
 15. Form of Undertaking by the Joint Venture Partners
 16. Format for Evidence of Access to or Availability of Credit/ Facilities
 17. Form of Operational Acceptance
 18. Form of Safety Plan to be submitted by the Contractor within sixty days of award of contract
 19. Form of joint deed of undertaking by the Sub-contractor along with the bidder /contractor
 20. Form of Certificate of Financial Parameters for QR
- Section VII: Scope of Works

VOLUME-II: PMS, QUALITY ASSURANCE & EVALUATION MECHANISM, BID FORMS AND PRICE SCHEDULES

Section-I: PMS, Quality Assurance & Evaluation Mechanism (QAM), Documentation & PMA
 Section-II: Bid Forms
 Section-III: Price Schedules

Volume-III: TECHNICAL SPECIFICATONS & DRAWINGS

Section-I: Technical Specifications
 Section-II: Tender Drawings

- 5.2 Understanding of bid documents: A prospective Bidder is expected to examine all instructions, forms, terms, technical specifications, tender drawings and scope of works in the Bid documents and fully inform himself as to all the conditions and matters which may in any way affect the scope of work or the cost thereof. Failure to furnish all information required in the Bid document or submission of a Bid not substantially responsive to the Bid document in every respect will be at the Bidder's risk and may result in the rejection of its bid.

6.0 Clarifications on Bid Documents; and Pre-Bid Meeting:

- 6.1 If the prospective Bidder finds discrepancies or omissions, in specifications and document or is in doubt as to the true meaning of any part, he shall at once make a request, in writing, for an interpretation/clarification, to Employer at his mailing address indicated in Bidding Documents. Similarly, if a Bidder feels that any important provisions in the documents, such as Governing laws, Taxes and Duties, Defect Liability, Limitation of Liability, Settlement of Disputes, Arbitration, Form of Contract Agreement, Price Adjustment, Bid Guarantees, Contract Performance Guarantee, Compensation for Delay, Payments Terms, Schedule of Execution/Completion of works, will be unacceptable, such an issue should be raised as above. Employer, then, will issue interpretation(s) and clarification(s) as he may think fit in writing or modification of the Bidding Documents that it receives ~~no later than twenty-eight (28) days~~ prior to original deadlines prescribed for submission of bids by Employer. The Employer shall not obliged to respond to any request for clarification received later than the above period. Further, mere request for clarification received from the Bidder shall not be a ground for seeking extension in the deadline for submission of bids. Written copies of Employer's response (including an explanation of the query but not identification of its source) will be sent to all prospective bidders that have received the Bidding Documents / uploaded to the e-portal under amendment or addendum.
- 6.2 Verbal clarification and information given by Employer or his employee(s) or his representative(s) shall not in any way be binding on Employer.
- 6.3 LOCAL CONDITIONS: It will be imperative on each Bidder to fully inform himself of all local conditions and factors, which may have any effect on the execution of the Contract covered under these documents and specifications. Employer shall not entertain any request for clarifications from the Bidders, regarding such local conditions. It must be understood and agreed that such factors have properly been investigated and considered while submitting the Proposals. No claim for financial adjustment to the Contract, awarded under these specifications and documents, will be entertained by Employer. Neither any change in the time schedule of the Contract nor any financial adjustments arising thereof shall be permitted by the Employer, which are based on the lack of such clear information or its effect on the cost of the Works to the Bidder.
- 6.4 The bidder's designated representative(s) is/are invited to attend a pre-bid meeting, which, if convened, will take place at the venue and time specified in the Biding Documents. The purpose of the meeting shall be to clarify any issue regarding the Biding Documents in general and the Technical Specifications in particular. The Bidder is requested, as far as possible to submit any question in writing, to reach the Employer not later than one week before the meeting. Minutes of the Meeting, including the text of the questions raised (without identifying the name of the bidders) and the responses given, together with any responses prepared after the meeting, will be transmitted without any delay to all the purchasers of the Bidding Documents.

6.5 Non-attendance at the pre-bid meeting will not be a cause for disqualification of a bidder.

7.0 Amendment to Bidding Document

7.1 At any time prior to the deadline for submission of bids, the Employer may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding Document by amendment (s).

7.2 The amendment will be uploaded in e-portal (where tender is already uploaded). Bidders are required to regularly check / visit the web-portal for e-procurement and to immediately acknowledge receipt of any such amendments, and it will be assumed that the information contained therein will have been taken into account by the Bidder in its bid. The Employer will bear no responsibility or liability arising out of non-receipt of the same in time or otherwise.

7.3 In order to afford prospective Bidders reasonable time in which to take the amendment into account in preparing their bids, the Employer may, at its discretion, extend the deadline for the submission of bid, in such cases, the Employer shall notify / upload amended / extended deadline on web-portal for e-procurement and website of the employer.

7.4 All notifications and clarifications also be uploaded by Employer on his web portal / tender portal.

7.5 Such amendments, clarifications, etc, shall be binding on the Bidders and will be given due consideration by the Bidders while they submit their bids and invariably enclose such documents as a part of the bid.

(C) Preparation of Bids

8.0 Language of Bid

The bid prepared by the Bidder and all correspondences and documents relating to the bid, exchanged by the Bidder and Employer shall be written in the English language, provided that any printed literature furnished by the Bidder may be written in another language so long as accompanied by an English translation of its pertinent passages. Failure to comply with this may disqualify a bid. For purposes of interpretation of the bid, the English translation shall govern.

9.0 Documents Comprising The Bid

9.1 The bidding shall be e-tendering basis. On due date of submission of bids, bids shall be submitted by the bidder on e-tender web portal www.tenderwizard.com/REC. Bid security (i.e. EMD) and Integrity Pact in hard copy (in Original) shall be submitted by the bidder in a sealed envelope by the schedule date and time of submission of bids.

Techno-commercial bid and Price bid (i.e. Price Schedule) shall be uploaded electronically by bidder e-tender web portal www.tenderwizard.com/REC by schedule date and time of submission of bids. Techno-commercial bid shall be opened, in presence of eligible bidders on notified date, time and venue.

The locked price bid shall be opened on notified date and time in presence of participating bidders who have qualified technically and commercially. The price breakup shall be uploaded by bidders on-line on web portal on due date of submission of bids. The price bids shall be locked and opened on notified date and time pertains to technically and commercially cleared bidders only in presence of participating bidders. Due intimation shall be given to technically and commercially cleared bidders about date and time of opening of on-line bids. The bids shall comprise of the following documents:

Bid Envelope:

(a) **Tender Cost:** Tender Cost (Cost of bid document) in sealed separate Packet shall be furnished.

- (b) **Bid Security/EMD:** A bid security in sealed separate Packet shall be furnished in accordance with ITB Clause 13 & ITB Clause 16.
- (c) **Bid Integrity Pact:** The Bidder shall complete the accompanying Integrity Pact, which shall be applicable for bidding as well as contract execution, duly signed on each page by the person signing the bid and shall be returned by the Bidder in two (2) originals along with the Techno - Commercial Part in a separate packet, duly superscripted with 'Integrity Pact'. The Bidder shall submit the Integrity Pact on a non-judicial stamp paper of Rs. 100/-.

Inner Envelope-(a), Inner Envelope-(b) and Inner Envelope-(c) duly sealed and stamped shall be sealed in an outer envelope named as Bid Envelope.

" The name of the bidder and Tender No. shall be clearly written on all envelopes"

It may be noted that the hard copy should be an exact replica of the uploaded offer documents. For evaluation purposes the uploaded offer documents will be treated as authentic and final.

If the Bidder is a joint venture, the Integrity Pact shall be signed by all the partners or consortium members.

Bidder's failure to submit the Integrity Pact duly signed in Original along with the Bid or subsequently pursuant to ITB Sub-Clause 21 .1 shall lead to outright rejection of the Bid..

9.2 Alternative bids shall not be accepted,

9.3 Each Bidder shall upload with its Techno-commercial Part the following attachments online only on e-tender web portal www.tenderwizard.com/REC. Hard copy of techno-commercial bid shall not be acceptable.

- a. Attachment 1: Bid Security (If required): A bid security in uploaded in accordance with ITB Clause 13 & ITB Clause 16.
- b. Attachment 2: Power of Attorney: A power of attorney, duly notarized, indicating that the person(s) signing the bid has (ve) the authority to sign the bid and thus that the bid is binding upon the Bidder during full period of its validity, in accordance with ITB Clause 14.
- c. Attachment 3: Bidder's Eligibility and Qualifications: In the absence of prequalification, documentary evidence establishing that the Bidder is eligible to bid in accordance with ITB Clause 2 and is qualified to perform the contract in accordance with Annexure – A (BDS), if its bid is accepted.

The documentary evidence of the Bidder's eligibility to bid shall establish to the Employer's satisfaction that the Bidder, at the time of submission of its bid, is eligible as defined in ITB Clause 2.

The documentary evidence of the Bidder's qualifications to perform the contract, if its bid is accepted, shall establish to the Employer's satisfaction that the Bidder has the financial, technical, production, procurement, shipping, installation and other capabilities necessary to perform the contract, and, in particular, meets the experience and other criteria outlined in the Qualification Requirement for the Bidders in Annexure – A (BDS) and shall also include the complete annual reports together with Audited statement of accounts of the company for last five years of its own (separate) immediately preceding the date of submission of bid.

[Note I. In the event the Bidder is not able to furnish the above information of its own (i.e., separate), being a subsidiary company and its accounts are being consolidated with its Group/ Holding/ Parent company, the Bidder should submit the audited balance sheet, income statement, other information pertaining to it only (not of its

Group/Holding/Parent company) duly certified by any one of the authority [(i) Statutory Auditor of the Bidder/(ii) Company Secretary of the Bidder a (iii) A certified Public Accountant] certifying that such information/documents are based on the audited accounts as the case may be.

Note II. Similarly, if the Bidder happens to be a Group/Holding/ Parent company, the Bidder should submit the above documents/information of its own (i.e., exclusive of its subsidiaries) duly certified by any one of the authority mentioned in Note I above certifying that these information/documents are based on audited accounts, as the case may be.]

Unless otherwise mentioned in BDS, bids submitted by a joint venture having not more than three partners with one partner as lead partner, if allowed as per stipulated Qualification Requirements in Annexure-A (BDS), shall comply with the following requirements:

- i. The bid shall include all the information required for Attachment 3 as described above for each joint venture partner.
- ii. The bid shall be signed so as to be legally binding on all partners.
- iii. One of the partners responsible for performing a key component of the contract shall be designated as leader; this authorization shall be evidenced by submitting with the bid a power of attorney signed by legally authorized signatories as per Form-14 of Volume-I : Section-VI (Sample Forms and Procedures).
- iv. The leader shall be authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture, and the entire execution of the contract, including payment, shall be done exclusively with the leader, provided otherwise requested by the joint venture and agreed between the Employer and the leader.
- v. All partners of the joint venture shall be liable jointly and severally for the execution of the contract in accordance with the contract terms.
- vi. A copy of the agreement entered into by the joint venture partners shall be submitted with the bid as per Form-15 of Volume-I : Section-VI (Sample Forms and Procedures), including interalia delineation of responsibilities and obligations of each partners appended thereto, notwithstanding the joint and several liability.
- vii. The joint venture agreement should indicate precisely the responsibility of all members of JV in respect of planning, design, manufacturing, supply, installation, commissioning and training.
- viii. All members of JV should have active participation in execution during the currency of the contract. This should not be varied/modified subsequently without prior approval of the Employer; and
- ix. In order for a joint venture to qualify, each of its partners or combination of partners must meet the minimum criteria listed in the Qualification Requirement for the Bidder in enclosed Annexure-A (BDS) for an individual Bidder for the component of the contract they are designated to perform. Failure to comply with this requirement will result in rejection of the joint venture bid.
- x. A firm can be a partner in only one joint venture; bids submitted by joint ventures or consortia including the same firm as partner will be rejected.
- xi. In the case of a Bidder who offers to supply and/or install plant and equipment under the contract that the Bidder did not manufacture or

otherwise produce and/or install, the Bidder shall (i) have the financial and other capabilities necessary to perform the contract; (ii) have been duly authorized by the manufacturer or producer of the related plant and equipment or component as per proforma in attachment 8 to supply and/or install that item in the Employer's country; and (iii) be responsible for ensuring that the manufacturer or producer complies with the requirements of ITB Sub-Clause 3.2 and meets the minimum criteria listed for an individual Bidder for that item.

- d. Attachment 4: Eligibility and Conformity of the Facilities- Documentary evidence established in accordance with ITB Clause 3 that the facilities offered by the Bidder in its bid are eligible and conform to the Bidding Documents.

The documentary evidence of the eligibility of the facilities shall consist of a statement on the country of origin of the plant and equipment offered, which shall be confirmed by a certificate of origin issued at the time of shipment.

- e. Attachment 5: Subcontractors Proposed by the Bidder: The Bidder shall include in its bid details of all major items of supply or services that it proposes to purchase or sublet, and shall give details of the name and nationality of the proposed Subcontractor, including vendors, for each of those items. Bidders are free to list more than one Subcontractor against each item of the facilities. Their participation should be confirmed with a letter of intent between the parties, as needed, in Attachment 8. Quoted rates and prices will be deemed to apply to whichever Subcontractor is appointed, and no adjustment of the rates and prices will be permitted.

The Bidder shall be responsible for ensuring that any Subcontractor proposed complies with the requirements of ITB Clause 2, and that any plant, equipment or services to be provided by the Subcontractor comply with the requirements of ITB Clause 3 and Qualification Requirement for the Bidder, enclosed as Annexure-A(BDS).

The Employer reserves the right to delete any proposed Subcontractor from the list prior to award of contract, and after discussion between the Employer and the Contractor, the Appendix-5 of Volume-I:Section VI - Form of Contract Agreement shall be completed, listing the approved Subcontractors for each item concerned.

- f. Attachment 6: Deviations: In order to facilitate evaluation of bids, deviations, if any, from the terms and conditions or Technical Specifications shall be listed in Attachment 6 to the bid. The Bidder is required to provide the cost of withdrawal for such deviations. However, the attention of the bidders is drawn to the provisions of ITB Sub-Clause 22.3 regarding the rejection of bids that are not substantially responsive to the requirements of the Bidding Documents.

Bidder's attention is also drawn to the provisions of ITB Sub-Clause 22.3.1.

- g. Attachment 8: Manufacturer's Authorisation Form
- h. Attachment 9: Work Completion Schedule.
- i. Attachment 10: Guarantee Declaration.
- j. Attachment 11: Information regarding ex-employees of Employer in Bidder's firm.
- k. Attachment 12: Price Adjustment Data
- l. Attachment 14: Integrity Pact: The Bidder shall complete the accompanying Integrity Pact, which shall be applicable for bidding as well as contract execution, duly signed on each page by the person signing the bid and shall be returned by the Bidder in two (2) originals alongwith the Techno - Commercial Part in a separate

packet, duly superscripted with 'Integrity Pact'. The Bidder shall submit the Integrity Pact on a non-judicial stamp paper of Rs. 100/-.

If the Bidder is a joint venture, the Integrity Pact shall be signed by all the partners or consortium members.

Bidder's failure to submit the Integrity Pact duly signed in Original alongwith the Bid or subsequently pursuant to ITB Sub-Clause 21 .1 shall lead to outright rejection of the Bid.

- m. Attachment 15: Option for Initial Advance (either Interest Bearing Initial Advance or No Initial Advance) and Information for E-payment, PF details and declaration regarding Micro/Small & Medium Enterprises

In this Attachment, the Bidder is required to clearly mention whether the Bidder would opt for Interest bearing initial advance in addition to providing the other information as above.

- n. Attachment 16: Additional Information:
 - i. Certificate from their Banker(s) (as per prescribed formats in Form 16, Volume-I : Section-VI (Sample Forms and Procedures)) indicating various fund based/non fund based limits sanctioned to the Bidder and the extent of utilization as on date. Such certificate should have been issued not earlier than three months prior to the date of bid opening. Wherever necessary the Employer may make queries with the Bidders' Bankers.
 - ii. Detailed information on any litigation or arbitration arising out of contracts completed or under execution by it over the last five years. A consistent history of awards involving litigation against the Bidder or any partner of JV may result in rejection of Bid.
 - iii. Any other information which the Bidder intends to furnish.
- o. Attachment 17: Declaration for tax exemptions, reductions, allowances or benefits
- p. Attachment 18: Declaration
- q. Attachment 19: Bank Guarantee verification checklist

10.0 Bid Form and Price Schedules:

The Bidder shall complete the Bid Form(s) and submit online on e-tender web portal www.tenderwizard.com/REC on or before due date and time of submission of bid.

Only Tender Cost, Bid security/EMD and Integrity Pact shall be uploaded online and original of same to be submitted in hard copy with sealed Envelope on or before due date and time of submission of bid.

11.0 Bid Prices:

- 11.1 Unless otherwise specified in the Technical Specifications, bidders shall quote for the entire facilities on a "single responsibility" basis such that the total bid price covers all the Contractor's obligations mentioned in or to be reasonably inferred from the Bidding Documents in respect of the design, manufacture, including procurement and subcontracting (if any), delivery, construction, installation and completion of the facilities. This includes all requirements under the Contractor's responsibilities for testing, pre-commissioning and commissioning of the facilities and, where so required by the Bidding Documents, the acquisition of all permits, approvals and licenses, etc.; the operation, maintenance and training services and such other items and services as may be specified in the Bidding Documents, all in accordance with the requirements of the General Conditions of Contract.

Items against which no price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed to be covered by the prices for other items.

- 11.2 Bidders are required to quote the price for the commercial, contractual and technical obligations outlined in the Bidding Documents. If a Bidder wishes to make a deviation, such deviation shall be listed in Attachment 6 of its bid. The Bidder is required to provide the cost of withdrawal for such deviations.

- 11.3 Bidders shall give a breakdown of the prices in the manner and detail called for in the Price Schedules. ~~Where no Price Schedules are included in the Bidding Documents, Bidders shall present their prices in the following manner:~~

~~Separate numbered Schedules shall be up-loaded for each of the following elements. The total amount from each Schedule 1 to 4 shall be summarized in a grand summary of Price Proposal (Schedule 5) giving the total bid price(s) to be entered in the Bid Form.~~

~~Schedule 1: Plant and Equipment to be supplied~~

~~Schedule 2: Transportation, Insurance and other incidental services applicable for supply of Plant & Equipment~~

~~Schedule 3: Installation Services for Erection, Testing and Commissioning including Local Transportation,~~

~~Schedule 4: Taxes and Duties not included in Schedule 1 to 3~~

~~Schedule 5: Grand Summaries (Schedule Nos. 1 to 4)~~

~~Bidders shall note that the plant and equipment included in Schedule No. 1 above exclude materials used for civil, building and few other construction/erection works. All such materials shall be included and priced under Schedule No. 3, Installation Services.~~

- 11.3.1 It shall be the responsibility of the bidders to pay all statutory taxes, duties and levies to the concerned authorities for such surplus material, which would otherwise have been, lawfully payable. The bidders shall submit an indemnity bond to keep Employer harmless from any liability, before release of such material to the bidder by Employer.

- 11.3.2 Set/Lot/Lump-sum shall be governed as per the requirement of the corresponding item description read in conjunction with relevant provisions of Technical Specifications.

- 11.4 In the schedules, Bidder shall give the required details and a break-down of their price as follows:

- a. Plant and equipment shall be quoted on an EXW (ex-factory, ex-works, ex-warehouse or off-the-self, as applicable) basis and to be quoted in respective column of price bid.

In respect of direct transaction between the Employer and the Contractor as well as bought-out items, EXW price shall be **exclusive** of all cost as well as duties and taxes, etc. paid or payable on components, raw materials and any other items used for their consumption incorporated or to be incorporated in the Plant & Equipment.

Goods and Services Tax (GST) for equipment/items including any applicable taxes destination site/state shall not be included in the EXW price but shall be indicated in respective column of the price bid.

Whenever EXW price is quoted exclusive of taxes, then the due credit under the taxation scheme as per the relevant Government policies wherever applicable shall be taken into account by the Bidder while quoting bid price.

Imported goods shall not be acceptable. Only indigenous goods shall be acceptable in the contract.

However, octroi/entry tax as applicable for destination site/state shall not be included in the EXW price but shall be indicated separately in respective column of price bid.

~~Requisite Sales Tax Declaration forms for all the equipment/items to be supplied from within India shall be furnished by the Employer.~~

- b. Local transportation, insurance and other Services incidental to delivery of the Plant and Equipment to be supplied shall be quoted separately in respective column of price bid.
- c. Installation Charges shall be quoted and shall include rates and prices for all labour, Contractor's equipment, temporary works, materials, consumables and all matters and things of whatsoever nature, provision of operations and maintenance manuals, etc. wherever identified in the Bidding Documents as necessary for the proper execution of all installation services except those priced in other Schedules.
- ~~d. The break up of Training Charges shall be furnished separately in Schedule 4 for the training. Similarly, the break up of Type test charges shall be furnished separately in Schedule 7. – Not Applicable~~
- e. The bidder shall include the taxes on Works Contract, Turnover Tax or any other similar taxes under the Goods and Services Tax Act for services to be performed, as applicable in their quoted bid price and Employer would not bear any liability on this account. Employer on behalf of the Owner shall, however, deduct any applicable taxes at source as per the rules and issue Tax Deducted at Source (TDS) Certificate to the bidder.
- f. The Bidder shall include Service Tax and surcharge/cess etc. on it as applicable in their quoted bid price and Employer would not bear any liability whatsoever on this account. Employer (or the Employer on behalf of the Owner) shall, however, deduct such tax at source as per the rules and issue necessary Certificate to the Contractor.
- g. The Bidder shall include insurance charges in its bid prices as per insurance requirement mentioned in Section – IV: General Conditions of Contract (GCC) and Appendix-3: Insurance Requirements to Form of Contract Agreement as contained in Volume-I : Section VI (Sample Forms and Procedures) of the Bidding Documents. Bidder shall further note that the Employer shall not be liable to make any payment/ reimbursement to the Contractor whatsoever for insurance of Contractor's Plant and Machinery.

Discount(s)/rebate(s) offered by the bidder shall be indicated as a percentage of price component(s). Bidder shall also indicate in his bid, the price component(s) on which the discount is to be applied.

11.5 The prices shall be in accordance with the following:

The prices shall be in accordance with Appendix-2 of section-VI: Sample forms and procedures

12.0 Bid Currencies

12.1 Prices shall be quoted in Indian Rupees Only.

13.0 BID security:

13.1 The Bidder shall furnish, as part of its bid, a bid security in the amount and currency as stipulated in the Bid Documents. The bid security must be submitted in the form provided in the Bidding Documents.

13.2 The bid security shall, at the bidder's option, be in the form of a crossed bank draft/pay orders/bank guarantee in favour of Employer from a reputed **(i) Public Sector Bank located in India; or (ii)**

Scheduled Commercial Indian Private Bank *as per the attached list only* [List is placed at Annexure-I to Section-III (BDS)]. Bid security shall remain valid for a period of thirty (30) days beyond the original bid validity period, and beyond any extension subsequently requested under ITB Sub-Clause 14.2. In case of submission of the Bid Security in form of Bank Guarantee, bid security shall be submitted in standard format (Bid security form) provided at Volume-I:Section-VI "Sample forms and procedures".

The Bid Security shall be in favor of REC Power Distribution Company Limited payable at New Delhi.

- 13.3 Any bid not accompanied by a bid security or an acceptable bid security shall be rejected by the Employer as being nonresponsive, pursuant to ITB Sub-Clause 22.4. The bid security of a joint venture must be in the name of all the partners/lead partner in the joint venture submitting the bid.
- 13.4 The bid securities of unsuccessful bidders will be returned as promptly as possible, but not later than twenty-eight (28) days after the expiration of the bid validity period.
- 13.5 The successful Bidder shall be required to keep its bid security valid for a sufficient period till the performance security(ies) pursuant to ITB Clause 34 are furnished to the satisfaction of the Employer. The bid security of the successful Bidder will be returned when the Bidder has signed the Contract Agreement, pursuant to ITB Clause 33, and has furnished the required performance security, pursuant to ITB Clause 34.
- 13.6 The bid security may be forfeited
- (a) If the Bidder withdraws its bid during the period of bid validity specified by the Bidder in the Bid Form; or
 - (b) In case the Bidder does not withdraw the deviations proposed by him, if any, at the cost of withdrawal stated by him in the bid and/or accept the withdrawals/rectifications pursuant to the declaration/confirmation made by him in Attachment – Declaration of the Bid; or
 - (c) If a Bidder does not accept the corrections to arithmetical errors identified during preliminary evaluation of his bid pursuant to ITB Sub-Clause 27.2; or
 - (d) If, as per the requirement of Qualification Requirements the Bidder is required to submit a Deed of Joint Undertaking and he fails to submit the same, duly attested by Notary Public of the place(s) of the respective executant(s), within ten days from the date of intimation of post – bid discussion; or
 - (e) In the case of a successful Bidder, if the Bidder fails within the specified time limit
 - (i) to sign the Contract Agreement, in accordance with ITB Clause 33, or
 - (ii) to furnish the required performance security(ies), in accordance with ITB Clause 34 and/or to keep the bid security valid as per the requirement of ITB Sub-Clause 13.5.
- 13.7 No interest shall be payable by the Employer on the above Bid Security.

14.0 Period of Validity of Bid

- 14.1 Bids shall remain valid for the period of six months after the date of opening of Techno - Commercial Part pursuant to ITB Sub-Clause 20.1. A bid valid for a shorter period shall be rejected by the Employer as being non-responsive.
- 14.2 In exceptional circumstance, the Employer may solicit the Bidder's consent to an extension of the bid validity period. The request and responses thereto shall be made in writing or by e-mail. In case of requirement REPDCL may ask bidder to extend bid validity further. Bidder shall have to extend the validity of EMD & Bid accordingly.

15.0 Format and Signing of Bid

Each and every page of the bid document shall be duly signed & stamped by the authorized signatory and shall be uploaded with bid online.

The bid shall contain no alterations, omissions or additions, unless such corrections are initialed by the person or persons signing the bid.

16.0 Submission of Bids : Only Tender Cost, EMD and Integrity Pact shall be submitted in hard copies as per Clause no. 9.1 of ITB. Rest all the documents shall be submitted online as per Clause No. 9.3 and Clause No. 10 of ITB.

~~16.0 Sealing and Marking of Bids~~

~~Bid Envelope (Techno Commercial Part) consisting two inner envelopes with following Packets:~~

~~Inner Envelope-1:~~

- ~~a) Packet No. I mentioning on the envelope the following: "Packet No. I: Integrity Pact (Part of Bid Envelope Bid)"~~
- ~~b) Packet No. II : Bid Price (Cost of bid document, if not paid ON-LINE or proof of cost of bid document paid).~~
- ~~c) Packet No. III : Bid Security~~

~~Inner Envelope-2:~~

- ~~a) Packet No. I: Bid Form (Containing Pre-Qualification Requirements' documents as per 16 Nos. attachments as Attachment 7 and Attachment 13 of Bid forms not required)~~
- ~~b) Packet No. II : Techno-commercial offers (copy of entire bid document duly signed and stamped as token of unconditional acceptance to the terms and conditions of the contracts, technical specification, scope of contract, tender drawings, etc as per bid documents)~~

~~Inner Envelope-1 and Inner Envelope-2 duly sealed and stamped shall be sealed in an outer envelope named as Bid Envelope.~~

~~16.1 The inner and outer envelopes shall~~

- ~~(a) be addressed to the Employer at the address given in the BDS, and~~
- ~~(b) bear the contract name indicated in the BDS, the Invitation for Bids title and number indicated in the BDS, and the statement "Do Not Open Before [date]," to be completed with the time and date specified in the BDS, pursuant to ITB Sub-Clause 20.1.~~

~~16.2 All the inner envelopes shall also indicate the name and address of the Bidder so that the bid can be returned unopened in case it is declared "late."~~

~~16.3 If the outer envelope is not sealed and marked as required by ITB Sub-Clause 16.2 above, the Employer will assume no responsibility for the bid's misplacement or premature opening. If the outer envelope discloses the Bidder's identity, the Employer will not guarantee the anonymity of the bid submission, but this disclosure will not constitute grounds for bid rejection.~~

17.0 Deadline for Submission of Bids

17.1 Bids must be received by the Employer at the address specified under ITB Sub-Clause 16.2 no later than the time and date stated in the BDS. In the event of the specified date for the submission of bids being declared a holiday for the Employer, the bids will be received upto the appointed time on the next working day. Bids once received by the Employer shall not be returned except otherwise provided in the Bidding Documents.

17.2 The Employer may, at its discretion, extend this deadline for submission of bids by amending the Bidding Documents in accordance with ITB Sub-Clause 7.3 for the reasons specified therein at any time prior to opening of bids by the Employer pursuant to ITB Clause 20, in which case all rights and obligations of Employer and bidders will thereafter be subject to the deadline as extended.

18.0 Late Bids

Since bidder has to submitted bids online on e-tender web portal www.tenderwizard/REC so bidder will not be able to upload tender after due time for bid submission on the last date of bid submission. Accordingly bidder may submit their bid sufficiently advance in time to avoid last hour rush.

19.0 Modification and Withdrawal of Bids

19.1 The Bidder may modify or withdraw its bid after submission prior to the deadline prescribed for bid submission.

(E). Bid Opening and Evaluation

20.0 Opening of Techno-Commercial Bid by Employer

The Employer will open the Techno – Commercial Part online on e-portal www.tenderwizard/REC on scheduled date and time of opening of bid in the presence of bidders' designated representatives who choose to attend, at the time, date, and location stipulated in the BPS. The bidders' representatives who are present shall sign a register evidencing their attendance. In the event of the specified date for the submission of bids being declared a holiday for the Employer, the bids will be received upto the appointed time on the next working day.

20.1 On behalf of Employer, the Integrity Pact will be signed by its representative at the time of Bid Opening. One original of the Integrity Pact will be retained by Employer and the other original will be returned to the representative of the bidders present during bid opening. If the Bidder's representative is not present during the Bid Opening, the other original shall be sent to the bidder by post/courier.

20.2 The Employer shall prepare minutes of the bid opening in the form of Bid Opening Statement, including the information disclosed to those present in accordance with ITB Sub-Clause 20.1.

21.0 Clarification of Bids

21.1 During bid evaluation, the Employer may, at its discretion, ask the Bidder for a clarification of its bid. In case of erroneous/non submission of documents related to/identified in ITB Sub-Clause 9.3 (b), (n) and (r) or Deed of Joint Undertaking pursuant to ITB Sub-Clause 9.3 (c) & (e), required to be submitted by the Bidder as per the provisions of the Bidding Documents, the Employer may give the Bidder not more than 7 working days' notice to rectify/furnish such documents, failing which the bid shall be rejected. The request for clarification and the response shall be in writing, and no change in the price or substance of the bid shall be sought, offered or permitted.

22.0 Preliminary Examination of Bid Envelope

- 22.1 The Employer will examine the bids to determine whether they are complete, whether required sureties have been furnished, whether the documents have been properly signed and uploaded, and whether the bids are generally in order.
- 22.2 The Employer may waive any minor informality, nonconformity or irregularity in a bid that does not constitute a material deviation, whether or not identified by the Bidder in Attachment 6 to its bid, and that does not prejudice or affect the relative ranking of any Bidder as a result of the technical and commercial evaluation, pursuant to ITB Clause 24.
- 22.3 Prior to the detailed evaluation, the Employer will determine whether each bid is of acceptable quality, is complete and is substantially responsive to the Bidding Documents. Any deviations, conditionality or reservation introduced in Attachment-6 and/or in the Bid Form, Technical Data Sheets and covering letter, or in any other part of the bid will be reviewed to conduct a determination of the substantial responsiveness of the bidder's bid. For purposes of this determination, a substantially responsive bid is one that conforms to all the terms, conditions and specifications of the Bidding Documents without material deviations, objections, conditionalities or reservations. A material deviation, objection, conditionality or reservation is one (i) that affects in any substantial way the scope, quality or performance of the contract; (ii) that limits in any substantial way, inconsistent with the Bidding Documents, the Employer's rights or the successful Bidder's obligations under the contract; or (iii) whose rectification would unfairly affect the competitive position of other bidders who are presenting substantially responsive bids.
- 22.3.1 Bids containing deviations from critical provisions relating to GCC Clauses 2.14 (Governing Law), 8 (Terms of Payment), 9.3 (Performance Security), 10 (Taxes and duties), 21.2 (Completion Time Guarantee), 22 (Defect Liability), 23 (Functional Guarantee), 25 (Patent Indemnity), 26 (Limitation of Liability), 38 (Settlement of Disputes), 39 (Arbitration) and Appendix 2 to the Form of Contract Agreement (Price Adjustment) will be considered as non-responsive.
- 22.3.2 Regarding deviations, conditionality or reservations introduced in the bid, which will be reviewed to conduct a determination of substantial responsiveness of the Bidder's bid as stated in ITB Sub-Clause 22.3, the order of precedence of these documents to address contradictions, if any, in the contents of the bid, shall be as follows:
- I. Covering Letter
 - II. Bid Form
 - III. Attachment-6: Deviations
 - IV. Technical Data Sheet
- Contents of the document at Sr. No. I above will have overriding precedence over other documents (Sr. No. II to V above). Similarly, contents of document at Sr. No. II above will have overriding precedence over other documents (Sr. No. III to IV above), and so on.
- 22.4 If a bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by the Bidder by correction of the nonconformity. The Employer's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.

23.0 Qualification

- 23.1 The Employer will ascertain to its satisfaction whether Bidders determined having submitted substantially responsive bids are qualified, as per the Qualification Requirement specified in **Annexure – A (BDS)** to satisfactorily perform the contract. The Employer shall be the sole judge in this regard and the Employer's interpretation of the Qualification Requirement shall be final and binding.
- 23.2 The determination will take into account the Bidder's financial, technical capabilities including production capabilities, in particular the Bidder's contract work in hand, future commitments & current litigation and past performance during execution of contracts that have been awarded by the Employer on the Bidder. It will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder in Attachment 3 to the bid, as well as such other information as the Employer

deems necessary and appropriate. This shall, however, be subject to assessment that may be carried out, if required, by the Employer as per the provisions of Annexure -A (BDS).

- 23.3 The Employer may waive any minor informality, nonconformity or irregularity in a bid that does not constitute a material deviation, affecting the capability of the Bidder to perform the Contract.
- 23.4 An affirmative determination will be a prerequisite for the Employer to evaluate the Techno - Commercial Part and to intimate successful bidders to be present on new date, time & location to open the online price schedules of the Bidder. A negative determination will result in rejection of the Bidder's bid.
- 23.5 The bid from those bidders shall not be accepted who failed to submit Performance Security on issue of Letter of Intent (LoI)/Letter of Award (LoA) for any other contract of Employer in past 3 years.

24.0 Evaluation of Techno - Commercial Part

- 24.1 The Employer will carry out a detailed evaluation of the bids of the qualified bidders in order to determine whether the technical aspects are in accordance with the requirements set forth in the Bidding Documents. In order to reach such a determination, the Employer will examine the information supplied by the bidders, pursuant to ITB Clause 9, and other requirements in the Bidding Documents, taking into account the following factors:

- (a) overall completeness and compliance with the Technical Specifications and Drawings; deviations from the Technical Specifications as identified in Attachment 6 to the bid and those deviations not so identified; suitability of the facilities offered in relation to the environmental and climatic conditions prevailing at the site; and quality, function and operation of any process control concept included in the bid. The bid that does not meet minimum acceptable standards of completeness, consistency and detail will be rejected for non-responsiveness.
- (b) Achievement of specified performance criteria by the facilities
- (c) Compliance with the time schedule called for in the corresponding Appendix to the Form of Contract Agreement and evidenced as needed in a milestone schedule provided in the bid;

Time schedule (program of performance)

The plant and equipment covered by this bidding shall have the 'Taking Over' by the Employer after successful Completion within the period specified in **BDS**. Bidders are required to base their prices on the time schedule given in Appendix 4 [Volume-I : Section-VI (Sample Forms and Procedures)] to the Form of Contract Agreement (Time Schedule) or, where no time schedule is given in Appendix 4, on the Completion date(s) given above. No credit will be given to earlier completion. Bids offering completion beyond the specified period are liable to be rejected.

- (d) Type, quantity and long-term availability of mandatory and recommended spare parts and maintenance services
- (e) Any other relevant technical factors that the Employer deems necessary or prudent to take into consideration.
- (f) Any deviations to the commercial and contractual provisions stipulated in the Bidding Documents.
- (g) Details furnished by the bidder in response to the requirements specified in Volume-II of the Bidding Documents.
- (h) The acceptability of the vendors and subcontractors proposed in Attachment 5 to be used by the Bidder will be evaluated. Should a vendor or subcontractor, for the items other than those covered under Annexure-A (BDS), be determined to be unacceptable, the bid will not

be rejected, but the Bidder will be required to substitute an acceptable vendor or subcontractor without any change to the bid price.

- (ji) Bank Guarantee submitted against Bid Security shall be verified independently from issuing bank. On receipt of certification from issuing bank, eligibility of bidder shall be decided for opening of price bid.

25.0 Opening of Price Schedules (ON-LINE) by Employer

- 25.1 Price Part of only those Bidders shall be opened on-line who are determined as having submitted substantially responsive bids and are ascertained to be qualified to satisfactorily perform the Contract, pursuant to ITB Clause 23 and 24. Such Bidders shall be intimated about the date and time for opening of Price Part by the Employer. A negative determination of the bids pursuant to ITB Clause 23 and 24, shall be notified by the Employer to such Bidders and the price bid uploaded by them shall not be opened.
- 25.2 The Employer will on-line open Price Bid at the specified time and date in the presence of bidders' designated representatives who choose to attend, at the time, date, and location stipulated in the intimation for opening of price bid. The bidders' representatives who are present shall sign a register evidencing their attendance.
- 25.3 The bidders' names, the Bid Prices or any discounts, and any such other details as the Employer may consider appropriate, will be announced by the Employer at the opening. The prices and details as may be read out during the bid opening and recorded in the Bid Opening Statement would not be construed to determine the relative ranking amongst the Bidders, or the successful Bidder, and would not confer any right or claim whatsoever on any Bidder. The successful Bidder (also referred to as the L₁ Bidder) shall be determined as per the provisions of this Section – II and considered for award of contract as provided in ITB Clause 30.
- 25.4 The Employer shall prepare minutes of the bid opening, including the information disclosed to those present in accordance with ITB Sub-Clause 25.3.
- 25.5 Bids not opened and read out at bid opening shall not be considered further for evaluation, irrespective of the circumstances.

26.0 Conversion to Single Currency

- 26.1 This shall not be applicable as domestic firms are required to quote the prices in Indian Rupees only.

27.0 Evaluation of Price Bids

- 27.1 The Employer will examine the Price Bids to determine whether they are complete, whether any computational errors have been made and whether the bids are generally in order.

The Price Bids containing any deviations and omissions from the contractual and commercial conditions and the Technical Specifications which have not been identified in the Bid Forms are liable to be rejected.

- 27.2 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price, which is obtained by multiplying the unit price and quantity specified by the Employer, the unit price shall prevail, and the total price shall be corrected. However, in case of items quoted without indicating any quantity or the items for which the quantities are to be estimated by the Bidder, the total price quoted against such items shall prevail. If there is a discrepancy between words and figures, the amount in words will prevail.

The prices of all such item(s) against which the Bidder has not quoted rates/amount (viz., items left blank or against which '-' is indicated) in the Price Schedules will be deemed to have been included in other item(s).

If the discount(s)/rebate(s) offered by the Bidder is a percentage discount and the price component(s) on which the said discount is not indicated in the bid, the same shall be considered on the total bid price [i.e. proportionately on each price component], in the event of award. However, if lump-sum discount is offered, the same shall be considered in full on the Ex-works price component (by proportionately reducing Ex-works price of individual items), in case of award. Further, Conditional discounts/rebates, if any, offered by the bidder shall not be taken into consideration for evaluation. It shall, however, be considered in case of award.

In respect of taxes, duties and other levies indicated by the Bidder in the Bid, which are reimbursable in line with the provisions of the Bidding Documents, the applicable rate and amount thereof shall be ascertained by the Employer based on which, if required, necessary rectification and arithmetical correction shall be carried out by the Employer. The rate and amount so ascertained by the Employer shall prevail.

The subtotal, total price or the total bid price to be identified in Bid Form for this purpose, irrespective of the discrepancy between the amount for the same indicated in words or figures shall be rectified in line with the procedure explained above.

If the Bidder does not accept the correction of errors as per this clause, its bid will be rejected and the amount of Bid Security forfeited.

The Bidder should ensure that the prices furnished in various price schedules are consistent with each other. In case of any inconsistency in the prices furnished in the specified price schedules to be identified in Bid Form for this purpose, the Employer shall be entitled to consider the highest price for the purpose of evaluation and for the purpose of award of the Contract use the lowest of the prices in these schedules.

27.3 The comparison shall be on the total price in Price Schedule.

The comparison shall also include the applicable taxes, duties and other levies, which are reimbursable in line with the provisions of the Bidding Documents.

The Employer's comparison will also include the costs resulting from application of the evaluation procedures described in ITB Sub-Clause 27.4 & 27.5.

27.4 The Employer's evaluation of a bid will take into account, in addition to the bid prices indicated in Price Schedule Nos. 1 through 4 (online price schedules), the following costs and factors that will be added to each Bidder's bid price in the evaluation using pricing information available to the Employer, in the manner and to the extent indicated in ITB Sub-Clause 27.5 and in the Technical Specifications:

- (a) the cost of all quantifiable deviations and omissions from the contractual and commercial conditions and the Technical Specifications as identified in the evaluation of Bid Envelope, and other deviations and omissions not so identified;
- (b) ~~the functional guarantees of the facilities offered~~ - **deleted**
- (c) the performance of the equipment offered;

Bidder shall state the guaranteed performance or efficiency of the Equipment, named in the **BPS**, in response to the Technical Specifications. Equipment offered shall have a minimum (or a maximum, as the case may be) level of guarantees specified in the Technical Specifications to be considered responsive. Bids offering plant and equipment with guarantees less (or more) than the minimum (or maximum) specified shall be rejected.

- (d) the extra cost of work, services, facilities, etc., required to be provided by the Employer or third parties;
- (e) any other relevant factors listed in **BPS**.

The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the contract, shall not be taken into account in bid evaluation.

27.5 Pursuant to ITB Sub-Clause 27.4, the following evaluation methods will be followed:

(a) Contractual and commercial deviations

The evaluation shall be based on the evaluated cost of fulfilling the contract in compliance with all commercial, contractual and technical obligations under this Bidding Documents. In arriving at the evaluated cost, towards deviations identified in the evaluation of bid, the cost of withdrawal indicated by the bidder in Attachment-6 of the Bid Form will be used. If such a price is not given, the Employer will make its own assessment of the cost of such a deviation for the purpose of ensuring fair comparison of bids.

(b) Functional Guarantees of the facilities

For the purposes of evaluation, the adjustment specified in the Technical Specifications will be added to the bid price for each drop (or excess) in the responsive functional guarantees offered by the Bidder, below (or above) either a norm of one hundred (100) or the value committed in the responsive bid with the most performing functional guarantees, as specified in the Technical Specifications.

(c) Performance Guarantees of the Equipment

For the purposes of evaluation, the adjustment specified in the **BDS** will be added to the bid price.

(d) Work, services, facilities, etc., to be provided by the Employer

Where bids include the undertaking of work or the provision of services or facilities by the Employer in excess of the provisions allowed for in the Bidding Documents, the Employer shall assess the costs of such additional work, services and/or facilities during the duration of the contract. Such costs shall be added to the bid price for evaluation.

27.6 Any adjustments in price that result from the above procedures shall be added, for purposes of comparative evaluation only, to arrive at an "Evaluated Bid Price." Bid prices quoted by bidders and rectified as per ITB Sub Clause 27.2 shall remain unaltered.

28.0 Purchase/ Domestic preference:

No preference shall be given to any bidder

29.0 Confidentiality and Contacting the Employer

29.1 After the public opening of bids, information relating to the examination, clarification, and evaluation of bids and recommendations concerning awards shall not be disclosed to Bidders or other persons not officially concerned with this process until the publication of contract award. From the time of bid opening to the time of contract award, if any Bidder wishes to contact the Employer on any matter related to its bid, it should do so in writing.

29.2 Any effort by a Bidder to influence the Employer in the Employer's bid evaluation, bid comparison or contract award decisions may result in rejection of the Bidder's bid. The Employer shall be the sole judge in this regard.

(F). **Award of Contract**

30.0 Award Criteria

30.1 Subject to ITB Clause 31, the Employer will award the contract to the successful Bidder (also referred to as the L₁ Bidder) whose bid has been determined to be substantially responsive and to be the lowest

evaluated bid, further provided that the Bidder is determined to be qualified, as per the Qualification Requirement specified in Annexure-A (BDS) to perform the contract satisfactorily.

- 30.2 The Employer may request the Bidder to withdraw any of the deviations listed in the winning bid.

At the time of Award of Contract, if so desired by the Employer, the bidder shall withdraw the deviations listed in Attachment 6 to the Bid Form at the cost of withdrawal stated by him in the bid. In case the bidder does not withdraw the deviations proposed by him, if any, at the cost of withdrawal stated by him in the bid, his bid will be rejected and his bid security forfeited.

Bidder would be required to comply with all other requirements of the Bidding Documents except for those deviations which are accepted by the Employer.

- 30.3 The Employer reserves the right to vary the quantity of any of the spares and/or delete any items of spares altogether at the time of Award of Contract.

- 30.4 The mode of contracting with the successful bidder will be as per stipulation outlined in GCC Sub-Clause 2.1 and briefly indicated below:

- 30.4.1 The award shall be made as follows:

- (i) First Contract: For supply of all equipment and materials including applicable taxes and duties.
- (ii) Second Contract: For providing all services i.e. inland transportation for delivery at site, insurance, unloading, storage, handling at site, installation, Testing and Commissioning including performance testing in respect of all the equipment supplied under the "First Contract" and any other services specified in the Contract Documents.

Both contracts will contain a cross fall breach clause specifying that breach of one will constitute breach of the other.

- 30.5 **Contract Agreement Documentation:** The sequence of contract agreement documentation is given here under:

- a. Issuance of Letter of Intent (LoI) by owner and its unconditional acceptance by the bidder within two weeks from date of issuance of LoI
- b. Mutual agreement on PERT chart / Delivery Schedule duly signed and accepted by Supplier and Employer within two weeks from date of acceptance of LoI
- c. Submission of Contract Performance Security, within 28 days from date of LoI, against supply & erection contract as per clause 9.3.1 of GCC
- d. Letter of Award by owner and its unconditional acceptance by the bidder. Letter of Award shall be issued only after mutual agreement & acceptance on PERT chart/Delivery Schedule (as per 30.5 (b) above) and on timely submission of Contract Performance Security against the contract. The acceptance of LoA should be provided with 2 weeks from date of issue of LoA. LoA shall include details of
 - i. Pre-bid discussion
 - ii. Post-bid negotiation/discussions
 - iii. PERT chart
 - iv. Contract Performance Guarantee
- e. Contract Agreement shall be signed, on unconditional acceptance of Letter of Award by supplier, within 14 days from date of issue of Letter of Award and submission and acceptance of contract performance guarantees (against the contract).

31.0 Employer's Right to Accept any Bid and to Reject any or all Bids

- 31.1 The Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Employer's action.

32.0 Notification of Award

- 32.1 Prior to the expiration of the period of bid validity, the Employer will notify the successful Bidder in writing through Letter of Intent (LoI), that its bid has been technically and commercially accepted. The bidder shall provide unconditional acceptance of LoI within 2 weeks. Bidder will also submit PERT Chart/Delivery schedule within 2 weeks from date of LoI. PERT Chart/ Delivery schedule shall be signed, accepted and mutually agreed by successful bidder and owner within 2 weeks from date of acceptance by LoI. Contract Performance Security shall be submitted by the successful bidder within 28 days from date of LoI. Thereafter, detailed letter of award shall be issued by owner. On unconditional acceptance of Letter of Award, contract agreement shall be signed on submission and acceptance of contract performance security. The notification of award (Letter of Intent) will constitute the formation of the contract.
- 32.2 The Employer shall publish the results on its website, identifying the bid and Specification numbers and the following information: (i) name of each Bidder who submitted a Bid; (ii) bid prices as read out at bid opening; (iii) name and evaluated prices of each Bid that was evaluated; (iv) name of bidders whose bids were rejected and the reasons for their rejection; and (v) name of the winning Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded.

The Employer shall promptly respond in writing to any unsuccessful Bidder who, after notification of award in accordance with above, requests in writing the grounds on which its bid was not selected.

The Employer shall verify all the credentials submitted by the winning bidder in their bid from the document issuing authority/organisation to check their correctness and validity before execution of agreement.

- 32.3 Upon the successful Bidder's furnishing of the performance security pursuant to ITB Clause 34 and their independent verification from issuing bank and acceptance thereof, the Employer will promptly discharge the bid securities, pursuant to ITB Sub-Clause 13.4 & 13.5.

33.0 Signing the Contract Agreement

- 33.1 At the same time as the Employer notifies the successful Bidder that its bid has been accepted through Letter of Award, the Employer in consultation with the Bidder will prepare the Contract Agreement provided in the Bidding Documents, incorporating all agreements between the parties.
- 33.2 On unconditional acceptance of Letter of Award, contract agreement shall be signed on submission and acceptance of contract performance security within 2 weeks from date of issue of Letter of Award.

34.0 Performance Security

- 34.1 Within twenty-eight (28) days after receipt of the Notification of Award through LoI, the successful Bidder shall furnish the performance security for 10% (Ten percent) of the contract price in line with the requirement of Qualification Requirements, in the amount given in the **BDS** and in the form provided in Volume-I : Section VI, Sample Forms and Procedures, of the Bidding Documents. The performance security of a joint venture shall be in the name of **Lead Partner** of the joint venture.
- 34.2 Failure of the successful Bidder to comply with the requirements of ITB Clause 33 or Clause 34.1 shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security, in which event the Employer may make the award to the next lowest evaluated Bidder or call for new bids.
- 34.3 Till receipt and acceptance of contract performance securities of successful bidder, validity of all bids shall be kept valid to facilitate action as per clause 34.2 above.

35.0 Fraud and Corruption

It is the Employer's policy that requires the Bidders, suppliers and contractors and their subcontractors under the contracts to observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the Employer:

(a) defines, for the purpose of this provision, the terms set forth below as follows:

- (i) "corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- (ii) "fraudulent practice" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
- (iii) "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- (iv) "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- (v) "obstructive practice" is
 - (aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Employer's investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation;

or

- (bb) acts intended to materially impede the exercise of the Employer's inspection and audit rights.
- (b) will reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for the contract in question;
- (c) will sanction a firm or individual, including declaring ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for, or in executing, a contract; and
- (d) will have the right to require that the provision be included in Bidding Documents and in contracts, requiring Bidders, suppliers, and contractors and their sub-contractors to permit the Employer to inspect their accounts and records and other documents relating to bid submission and contract performance and to have them audited by auditors appointed by the Employer.

----- End of Section-II (ITB) -----

VOLUME-I: SECTION – III

BID DATA SHEETS (BDS)

BID DATA SHEETS (BDS)

The following bid specific data for the Plant and Equipment to be procured shall amend and/or supplement the provisions in the Instruction to Bidders (ITB)

Sl. No.	ITB Clause Ref. No.	Bid Data Details
1.	ITB 1.1	The Owner is: Power Development Department of Jammu & Kashmir Government (JKPDD)
2.	ITB 1.1	The Employer is: REC Power Distribution Company Limited, A10, 4th Floor, Kribhco Bhawan, Sector-1, Noida – 201301 Tele : 0120-4383755 Kind Attn.: Shri Salil Kumar , Addl. Chief Executive Officer, Telephone Nos.: 0120-4383755 E-mail: jkpdd.projects@recpdcl.in / salil.kumar@recpdcl.in Fax No.: 0120 4383768
3.	ITB 1.1	Supplementing ITB 1.1 with the following: For the purpose of execution of the contract, the contractual activities shall be performed by the Employer "for and on behalf of the Owner" except in cases where the Owner itself is statutorily required to do so.
4.	ITB 6.1	Address of the Employer: REC Power Distribution Company Limited, A10, 4th Floor, Kribhco Bhawan, Sector-1, Noida – 201301 Tele : 0120-4383755 Kind Attn.: Shri Salil Kumar , Addl. Chief Executive Officer, Telephone Nos.: 0120-4383755 E-mail: jkpdd.projects@recpdcl.in / salil.kumar@recpdcl.in Fax No.: 0120 4383768
5.	ITB 6.4	<u>Venue, date and time for Pre-bid Meeting:</u> The Bidder's designated representative is invited to attend a pre-bid meeting, which will take place at the venue and time as given below: Shri. Salil Kumar , Addl. Chief Executive Officer, REC Power Distribution Company Limited, A10, 4th Floor, Kribhco Bhawan, Sector-1, Noida – 201301 Tele : 0120-4383755 Email- jkpdd.projects@recpdcl.in /salil.kumar@recpdcl.in Date:04.09.2017 Time:1300 Hrs
6.	ITB 9.2	Alternative bids shall not be permitted
7.	ITB 9.3 (n)	Supplementing ITB clause 9.3(n) with the following: (iv) Bidder shall also furnish information/documentation in support that the Bidder have adequate design infrastructure and erection facilities and capacity and procedures including quality control related to the work.

Sl. No.	ITB Clause Ref. No.	Bid Data Details
		(v) The Bidder shall furnish the CV and experience details of a project manager with 15 years' experience in executing such contract of comparable nature including not less than five years as manager
8.	ITB 13.1	Amount of Bid Security: Rs.27,37,012 /-(Rs. Twenty Seven Lakhs Thirty Seven Thousands Twelve Only)
9.	ITB 16.2(a), ITB 16.2(b), ITB 17.1, ITB 19.3 (a) and ITB 20.1	<p>Address for submission of Bids and its modification and withdrawal, if any;</p> <p>Address in Person or by Post:</p> <p>Shri Salil Kumar, Addl. Chief Executive Officer, REC Power Distribution Company Limited, A10, 4th Floor, Kribhco Bhawan, Sector-1, Noida – 201301 Tele : 0120-4383755</p> <p>Deadline for submission of Bids and its modification and withdrawal, if any</p> <p>Upto 1700 Hrs on 06.10.2017 (Indian Standard Time)</p> <p>Address for Bid Opening:</p> <p>Shri Salil Kumar, Addl. Chief Executive Officer, REC Power Distribution Company Limited, A10, 4th Floor, Kribhco Bhawan, Sector-1, Noida – 201301</p> <p>Date : 06.10.2017 Time: 1730 Hrs (Indian Standard Time)</p> <p>(a) Bid Title: SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KARGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY</p> <p><u>BID ENVELOPE</u></p> <p>(b) Do not open before 1730 hours (Indian Standard Time) on 06/10/2017.</p>
10.	ITB 16.3	<p>Supplementing ITB clause 16.3 with the following:</p> <p>In case, pursuant to Ministry of Finance, GOI's Circular dated 17th July, 2012, the Bank Guarantee is issued using SFMS Platform by the bank's located in India, the copy of such Bank Guarantee shall be submitted by the bidder along with the Bid Envelope.</p>

Sl. No.	ITB Clause Ref. No.	Bid Data Details
11.	ITB 24.1 (c)	<p>The Time for Completion for all the Packages shall be A. 18 (Eighteen Months):</p> <ol style="list-style-type: none"> 1. Supply& Installation of energy meters 2. Replacement of defective consumer meters 3. Installation of new service connection 4. Shifting of consumer meters <p>Above shall be completed within 18 months of notification of award</p> <hr/> <p>B. 60 (Sixty Months)</p> <p>Contactor shall perform Operation & Maintenance (O&M) of service connections for a period of 60 months</p>
12.	ITB 27.2	<p>Supplementing ITB clause 27.2 with the following: The total charges for Supply, F&I, Erection, Testing & Commissioning for BPL service connection including Taxes & Duties should not be more than Rs. 3000/- per connection. In case, the charges quoted for the above exceed Rs. 3000/- per service connection then payment shall be restricted to Rs. 3000/-, which shall also be considered in evaluation.</p>
13.	ITB 27.4 (b)	Deleted as Functional Guarantees are not applicable.
14.	ITB 27.4(c)	Deleted.
15.	ITB 27.5 (b)	Deleted.
16.	ITB 27.5 (c)	Deleted.
17.	ITB 34.1	<p>In addition to the Performance Security of 10% of the Contract Price, the successful bidder is required to furnish additional performance security(ies), if applicable, as per Clause no. 4 of Joint Deed of Undertaking mentioned at Sl. No. 19 of Section – VI : Sample Forms and Procedures.</p>

----- End of Section-III (BDS) --

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KARGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

Qualification of bidder will be based on meeting the minimum pass/fail criteria specified in **1.0 Pre-qualifying criteria Part-A** and **2.0 Pre-qualifying criteria Part-B** as demonstrated by the Bidder's responses in the corresponding Bid Schedules. The bidder shall also be required.

Subcontractors' technical experience and financial resources shall not be taken into account in determining the Bidder's compliance with the qualifying criteria. The bid can be submitted by an Indian individual firm only or by Joint Venture firm having Indian partner firms only.

Notwithstanding anything stated herein above, the Employer reserves the right to assess the capacity and capability of the bidder, should the circumstances warrant such assessment in an overall interest of the Employer. The employer reserves the right to waive minor deviations if they do not materially affect the capability of the Bidder to perform the contract.

1.0 Pre-qualification criteria – Part A:

1.01 Technical:

- i. The bidder must have successfully erected, tested and commissioned/released service connections in **a single turnkey contract** in last 7 years as on the date of bid opening, having installation of **at least 50% quantity** of energy meters considered in proposed bid, and the system so created must be in satisfactory operation for at least one (1) year as on date of opening of bid,

Or

- ii. The bidder must have successfully erected, tested and commissioned/released service connections in **TWO turnkey contracts** in last 7 years as on the date of bid opening, each having installation of **at least 40% quantity** of energy meters considered in proposed bid, and the system so created must be in satisfactory operation for at least one (1) year as on date of opening of bid,

Or

- iii. The bidder must have successfully erected, tested and commissioned/released service connections in **THREE turnkey contracts** in last 7 years as on the date of bid opening, each having installation of **at least 30% quantity** of energy meters considered in proposed bid, and the system so created must be in satisfactory operation for at least one (1) year as on date of opening of bid,

- iv. Bids may also be submitted by joint venture firms (having not more than three partners with one partner as lead partner) wherein

- a) All the partners should jointly meet qualification requirements set forth in para (i) or (ii) or (iii) above,

AND

- b) **The lead partner** should have successfully erected, tested and commissioned/released service connections in **a single turnkey contract** in last 7 years as on the date of bid opening, having installation of **at least 40% quantity** of energy meters considered in

proposed bid, and the system so created must be in satisfactory operation for at least one (1) year as on date of opening of bid,

AND

- c) Each of the other partners should have successfully erected, tested and commissioned/released service connections in **a single turnkey contract** in last 7 years as on the date of bid opening, having installation of **at least 25% quantity** of energy meters considered in proposed bid, and the system so created must be in satisfactory operation for at least one (1) year as on date of opening of bid,

1.01.1 The bidder should possess "A" Class license issued by the Electrical inspectorate of Govt of (...) ¹ /Central Inspectorial organization of Govt. of India/ other state Govt. In case bid submitted joint venture firm, any of partner should possess "A" class electrical license as stated above.

1.01.2 Work experiences of the bidder as per above shall be considered only if the works have been executed under Govt./semi-Govt./autonomous body of Central/State Govt./Electricity Power Utility/ Power Deptt. in India only.

1.02 Commercial:

For the purpose of this bid, the bidder shall meet the following requirements:

1.02.1 For the purpose of this particular bid, bidder shall meet the following minimum commercial criteria in past 5 years as on date of opening of bid:

- i. Experience in **single completed work** of projects execution in electrical Transmission or sub-transmission & distribution sector costing not less than the amount equal to 50% of the estimated amount of the project.

Or

- ii. Experience in **two completed work** of projects execution each in electrical Transmission or sub-transmission & distribution sector costing not less than the amount equal to 40% of the estimated amount of the project individually.

Or

- iii. Experience in **three completed work** of projects execution each in electrical Transmission or sub-transmission & distribution sector costing not less than the amount equal to 30% of the estimated amount of the project individually.

In case a bidder is quoting for more than one project, Pre-Qualification requirement shall be examined on the basis of sum of project wise requirements of experience of all quoted projects

1.02.2 Net Worth for the **each of the** last three Financial Years should be **positive**. *Net worth means the sum total of the paid up capital and free reserves (excluding reserves created out of revaluation) reduced by aggregate value of accumulated losses (including debit balance in profit and loss account for current year) and intangible assets.*

1.02.3 Minimum Average Annual Turnover (MAAT) for best three years out of last five financial years of the bidder should not be less than Rs.4105 Lakhs i.e. 30% of the estimated cost of the project. In case a bidder is quoting for more than one project, Pre-Qualification requirement shall be examined on the basis of sum of project wise requirements of MAAT of all quoted projects.

¹ Name of state where work is to be executed.

- 1.02.4 Bidder shall have liquid assets (LA) and/ or evidence of access to or availability of fund based credit facilities of not less than Rs 1368 Lakhs i.e. 10% of the estimated cost of the project and the Banker should confirm that the Credit facility is earmarked for the Work specified under Bid on receipt of the Bid. Liquid assets would include cash (and equivalents), bank deposits, securities that can be freely traded and receivables which has general certainty of getting received. In case a bidder is quoting for more than one project, Pre-Qualification requirement shall be examined on the basis of sum of project wise requirements of LA of all quoted projects.
- 1.02.5 In case a bid is submitted by a Joint Venture (JV), all the partners of the JV shall meet, individually, the qualification set forth at para 1.02.1 & 1.02.2 above and collectively the requirement of para 1.02.3 & 1.02.4 above. The figures for each of the partner of the joint venture shall be added together to determine the bidder's compliance with the minimum qualifying criteria set out in para 1.02.3 & 1.02.4 above; however in order for a joint venture to qualify, the partner(s) of joint venture must meet the following minimum criteria:
- 1.02.5.1 At least one partner shall meet, not less than 40% of the minimum criteria given at Para 1.02.3 & 1.02.4 above
- AND**
- 1.02.5.2 Each of the other partner(s) shall meet not less than 25% of the criteria given at Para 1.02.3 & 1.02.4 above
- 1.02.6 Failure to comply with this requirement will result in rejection of the joint venture's bid. Sub contractors' experience and resources shall not be taken into account in determining the bidder's compliance with qualifying criteria.
- 1.02.7 One of the partners shall be nominated as lead partner, and the lead partner shall be authorized to incur liabilities and receive instruction for and on behalf of any and all partners of the joint venture and the entire execution of the contract including receipt of payment shall be done exclusively through the lead partner. This authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the partners as per proforma in section "Annexure" of Special Conditions of Contract-Vol.-IA.
- 1.02.8 All partner of the joint venture shall be liable jointly and severally for the execution of the contract in accordance with the contract terms and a copy of the agreement entered into by the joint venture partners having such a provision shall be submitted with the bid.
- 1.02.9 A statement to this effect shall be included in the authorization mentioned under para 1.02.7 above as well as in the Bid Form and in the Contract Form (in case of a successful bid);

2.0 Pre-qualification criteria – Part B:

The Bidder shall also furnish following documents/details with its bid:

- 2.01.1 A certificate from banker (as per format) indicating various fund based/non fund based limits sanctioned to the bidder and the extent of utilization as on date Such certificate should have been issued not earlier than three months prior to the date of bid opening. Wherever necessary, the employer may make queries with the Bidders' bankers.
- 2.01.2 The complete annual reports together with Audited statement of accounts of the company for last five years of its own (separate) immediately preceding the date of submission of bid.
- 2.01.3 Note:
- 2.01.3.1 In the event the bidder is not able to furnish the information of its own (i.e. separate), being a subsidiary company and its accounts are being consolidated with

its group/holding/parent company, the bidder should submit the audited balance sheets, income statements, other information pertaining to it only (not of its group/Holding/Parent Company) duly certified by any one of the authority [(i) Statutory Auditor of the bidder /(ii) Company Secretary of the bidder or (iii) A certified Public Accountant] certifying that such information/documents are based on the audited accounts as the case may be.

2.01.3.2 Similarly, if the bidder happens to be a Group/Holding/Parent Company, the bidder should submit the above documents/information of its own (i.e. exclusive of its subsidiaries) duly certified by any one of the authority mentioned in Note - 2.01.3.1 above certifying that these information/ documents are based on the audited accounts, as the case may be.

2.01.4 Litigation History:

2.01.4.1 The bidder should provide detailed information on any litigation or arbitration arising out of contracts completed or under execution by it over the last five years. A consistent history of awards involving litigation against the Bidder or any partner of JV may result in rejection of Bid.

2.01.4.2 Notwithstanding anything stated hereinabove, the Employer reserves the right to assess the capacity and capability of the bidder, should the circumstances warrant such assessment in an overall interest of the Employer. The Employer reserves the right to waive minor deviations if they do not materially affect the capability of the Bidder to perform the contract.

LIST OF ELIGIBLE SCHEDULED COMMERCIAL PRIVATE INDIAN BANKS

Sl. No.	Name of Banks
1	HDFC Bank Ltd.
2	Axis Bank Ltd.
3	Kotak Mahindra Bank Ltd.
4	Federal Bank Ltd.
5	Indusind Bank Ltd.
6	Development Credit Bank Ltd.
7	ING Vysya Bank Ltd.
8	Karnataka Bank Ltd.
9	Karur Vysya Bank Ltd.
10	Ratnakar Bank Ltd.
11	South Indian Bank Ltd.
12	Yes Bank Ltd.
13	ICICI Bank
14	IDFC Bank

**VOLUME-I: SECTION – IV
GENERAL CONDITIONS OF
CONTRACT (GCC)**

Table of Contents

Preamble.....	3
A. Definitions and Interpretation	3
1. Definitions	3
2. Interpretation	5
B. Subject Matter of Contract	8
3. Scope of Facilities.....	8
4. Time for Commencement and Completion	9
5. Contractor's Responsibilities	9
6. Employer's Responsibilities	11
C. Payment.....	13
7. Contract Price	13
8. Terms of Payment.....	13
9. Securities	13
10. Taxes and Duties	15
D. Intellectual Property	17
11. Copy Right.....	17
12. Confidential Information	17
E. Execution of the Facilities.....	18
13. Representatives	18
14. Work Program.....	19
15. Subcontracting.....	21
16. Design and Engineering	21
17. Plant and Equipment	23
18. Installation	26
19. Test and Inspection.....	37
20. Completion of the Facilities and Operational Acceptance	38
20A. Quantity Variation	42
20B. Electrical Inspector inspection:	42
F. Guarantees and Liabilities	43
21. Completion Time Guarantee	43
22. Defect Liability	44
23. Functional Guarantees	46
24. Equipment Performance Guarantees	47
25. Patent Indemnity	47
26. Limitation of Liability.....	48
G. Risk Distribution	48
27. Transfer of Ownership	48
28. Care of Facilities.....	49
29. Loss of or Damage to Property; Accident or Injury to Workers; Indemnification	49
30. Insurance	50
31. Change in Laws and Regulations.....	54
32. Force Majeure.....	54
H. Change in Contract Elements.....	55
33. Change in the Facilities	55
33A. Surplus Materials.....	57
34. Extension of Time for Completion	57
35. Suspension	58
36. Termination	58
37. Assignment.....	62
I. Resolution of Disputes	63
38. Settlement of Disputes.....	63
39. Arbitration	63
40. Up-front intimation of approved manufacturers and criterion for Fresh Vendor approval:	64
41. Up-front intimation of Guaranteed Technical Particulars:	65
42. Turnkey contractor's Store at Project site:	65
43. Handing over of assets:	65
44. Supply of Materials in lots:	66
45. Contract Closing:.....	66
46. Banning of business dealings.....	67

GENERAL CONDITIONS OF CONTRACT (GCC)

Preamble

The Section–IV of the Bidding Documents is named as General Conditions of Contract (GCC) and provides all the rights and obligations of the parties under the Contract. This Section contains provisions which are to be used unchanged unless Section – V named as Special Conditions of Contract (SCC) states otherwise as any changes in GCC or any complementary information that may be needed has been shown in SCC. If there is a conflict between the provisions of Section – IV & Section – V, the provisions of Section – V shall prevail.

In case, modification at any place is left inadvertently, then provision of revised guidelines shall prevail.

A. Definitions and Interpretation

1. Definitions

- 1.1. The following words and expressions shall have the meanings hereby assigned to them:
- (a) "Arbitrator" means the person or persons appointed by agreement between the Employer and the Contractor to make a decision on or to settle any dispute or difference between the Employer and the Contractor referred to him or her by the parties pursuant to GCC Sub-Clause 39.1 (Arbitration) hereof.
 - (b) "Associate" means a party who has been conjoined by the Contractor to independently execute a pre-selected part of facilities of the contract and grant him the associated contractual rights and obligations, without diluting the overall responsibility of the contractor in respect of the Facilities under the contract.
 - (c) "Collaborator" or "Parent Company" means the firms/corporations who has provided technological support to the manufacturer for establishing production line for the specific Equipment.
 - (d) "Commissioning" means operation of the Facilities or any part thereof, if any, as per GCC Sub-Clause 1.1(e) by the Contractor as specified in the Technical Specifications, which operation is to be carried out by the Contractor as provided in GCC Sub-Clause 20.1.3 (Commissioning), for the purpose of Trial – Operation (GCC Sub-Clause 20.1.4).
 - (e) "Completion" means that the Facilities (or a specific part thereof where specific parts are specified in the **SCC**) have been completed operationally and structurally and put in a tight and clean condition and that all works in respect of pre-commissioning of the Facilities (or a specific part thereof where specific parts are specified in the **SCC**) has been completed (wherever required, as per Technical Specifications) and Commissioning followed by Trial – Operation has been completed, as provided in GCC Sub-Clause 20.1 (Completion of Facilities) hereof.
 - (f) "Contract" means the Contract Agreement entered into between the Employer and the Contractor together with the Contract Documents referred to therein.
 - (g) "Contract Documents" means the documents listed in Clause 1.1 of Article 1 (Contract Documents) of the Form of Contract Agreement (including any amendments thereto); Volume-I:Section-VI.
 - (h) "Contract Price" means the sum specified in Clause 2.1 of Article 2 (Contract Price) of the Contract Agreement, subject to such additions or deductions therefrom, as may be made pursuant to the Contract. For the purpose of Liquidated Damages and Contract Performance Guarantee, the "Contract Price" means the sum specified in Clause 2.1 of Article 2 (Contract Price) of the Contract Agreement.
 - (i) "Contractor" means the firms whose bid to perform the Contract has been accepted by the Employer and is named in the Contract Agreement, and includes the legal successors or permitted assigns of the Contractor.
 - (j) "Contractor's Equipment" means all plant, facilities, equipment, machinery, tools, apparatus, appliances or things of every kind required in or for installation, completion and maintenance of Facilities that are to be provided by the Contractor,

but does not include Plant and Equipment, or other things intended to form or forming part of the Facilities.

- (k) "Contractor's Representative" means any person nominated by the Contractor and approved by the Employer in the manner provided in GCC Sub-Clause 13.2 (Contractor's Representative and Construction Manager) hereof to perform the duties delegated by the Contractor.
- (l) "Day" means calendar day of the Gregorian Calendar.
- (m) "Defect Liability Period" means the period of validity of the warranties given by the Contractor commencing at Completion of the Facilities or a part thereof, if any, as per GCC Sub-Clause 1.1(e), during which the Contractor is responsible for defects with respect to the Facilities (or the relevant part thereof) as provided in GCC Clause 22 (Defect Liability) hereof.
- (n) "Effective Date" means the date of Notification of Award from which the Time for Completion shall be determined.
- (o) "Employer" means the firm/corporation/ government entity, named in the **SCC**, who is responsible for getting the Facilities implemented. The Employer may be Owner himself or an agency appointed by the Owner (State/Central PSU) and shall include the legal successors or permitted assigns of the Employer.
- (p) "Facilities" means the Plant and Equipment to be supplied and installed, as well as all the Installation Services to be carried out by the Contractor under the Contract.
- (q) "GCC" means the General Conditions of Contract hereof.
- (r) "Guarantee Test(s)" means the test(s) specified in the Technical Specifications to be carried out to ascertain whether the Facilities or a specified part thereof is able to attain the Functional Guarantees specified in the Technical Specifications in accordance with the provisions of GCC Sub-Clause 20.2.1 (Guarantee Test) hereof during/after successful Commissioning followed by Trial - Operation.
- (s) "Installation Services" means all those services ancillary to the supply of the Plant and Equipment for the Facilities, to be provided by the Contractor under the Contract; e.g., transportation and provision of marine or other similar insurance, inspection, expediting, site preparation works (including the provision and use of Contractor's Equipment and the supply of all construction materials required), installation, testing, pre-commissioning, commissioning, operations, maintenance, the provision of operations and maintenance manuals, training, etc.
- (t) "Month" means calendar month of the Gregorian Calendar.
- (u) "Notification of Award" means the official notice issued by the Employer notifying the Contractor that his bid has been accepted.
- (v) "Operational Acceptance" means the acceptance by the Employer of the Facilities (or any part of the Facilities where the Contract provides for acceptance of the Facilities in parts), which certifies the Contractor's fulfillment of the Contract in respect of Functional Guarantees of the Facilities (or the relevant part thereof) in accordance with the provisions of GCC Sub-Clause 20.2.2 (Operational Acceptance) hereof after successful Commissioning followed by Trial - Operation.

- (w) "Owner" means the firm/corporation/government entity, named in the SCC, who has decided to set up the Facilities and shall include the legal successors or permitted assigns of the Owner.
- (x) "Plant and Equipment" means permanent plant, equipment, machinery, apparatus, articles and things of all kinds to be provided and incorporated in the Facilities by the Contractor under the Contract (including the spare parts to be supplied by the Contractor under GCC Sub-Clause 3.3 hereof), but does not include Contractor's Equipment.
- (y) "Pre-commissioning" means the testing, checking and other requirements specified in the Technical Specifications that are to be carried out by the Contractor in preparation for Commissioning as provided in GCC Sub-Clause 20.1.2 (Pre-Commissioning)hereof.
- (z) "Project Manager" or "Engineer" or "Engineer – in Charge" means the person appointed by the Employer in the manner provided in GCC Sub-Clause 13.1 hereof to perform the duties delegated by the Employer.
- (aa) "SCC" means the Special Conditions of Contract.
- (bb) "Site" means the land and other places upon which the Facilities are to be installed, and such other land or places as may be specified in the Contract as forming part of the Site.
- (cc) "Subcontractor"/"vendor"/"sub-vendor" means firms/ corporations/government entities to whom execution of any part of the Facilities, including preparation of any design or supply of any Plant and Equipment, is sub-contracted directly or indirectly by the Contractor with the consent of the Employer in writing, and includes its legal successors or permitted assigns.
- (dd) "Taking Over" means the Employer's written acceptance of the Facilities under the Contract, after successful Trial – Operation for the specified period in accordance with the Contract, as provided in GCC Sub-Clause 20.1.5.
- (ee) "Time for Completion" means the time within which Completion of the Facilities is to be attained in accordance with the scope of work and specifications, as a whole (or of a part of the Facilities where a separate Time for Completion of such part has been prescribed in the **SCC**) and "Taking Over" by the Employer is to be attained.

2. Interpretation

2.1 Contract

The Contracts to be entered into with the successful Bidder shall be as defined in **SCC**.

2.2 Contract Documents

All documents forming part of the Contract (and all parts thereof) are intended to be correlative, complementary and mutually explanatory, subject to Article 1.2 (Order of Precedence) of the Contract Agreement. The Contract shall be read as a whole.

2.3 Language

The ruling language of the Contract and the language for communications shall be English.

2.4 Singular and Plural

The singular shall include the plural and the plural the singular, except where the context otherwise requires.

2.5 Headings

The headings and marginal notes in the General Conditions of Contract are included for ease of reference, and shall neither constitute a part of the Contract nor affect its interpretation.

2.6 Entire Agreement

Subject to GCC Sub-Clause 12.4 hereof, the Contract constitutes the entire agreement between the Employer and Contractor with respect to the subject matter of Contract and supersedes all communications, negotiations and agreements (whether written or oral) of parties with respect thereto made prior to the date of Contract.

2.7 Amendment

No amendment or other variation of the Contract shall be effective unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party hereto.

2.8 Independent Contractor

The Contractor shall be an independent contractor performing the Contract. The Contract does not create any agency, partnership, joint venture or other joint relationship between the parties hereto.

Subject to the provisions of the Contract, the Contractor shall be solely responsible for the manner in which the Contract is performed. All employees, representatives or Subcontractors engaged by the Contractor in connection with the performance of the Contract shall be under the complete control of the Contractor and shall not be deemed to be employees of the Employer, and nothing contained in the Contract or in any subcontract awarded by the Contractor shall be construed to create any contractual relationship between any such employees, representatives or Subcontractors and the Employer.

2.9 Joint Venture

If the Contractor is a joint venture of two or more firms, all such firms shall be jointly and severally bound to the Employer for the fulfillment of the provisions of the Contract and shall designate one of such firms to act as a leader with authority to bind the joint venture. The composition or the constitution of the joint venture shall not be altered without the prior written consent of the Employer.

2.10 Non-Waiver

2.10.1 Subject to GCC Sub-Clause 2.10.2 below, no relaxation, forbearance, delay or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect or restrict the rights of that party under the Contract, nor shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.

2.10.2 Any waiver of a party's rights, powers or remedies under the Contract must be in writing, must be dated and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

2.11 Severability

If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

2.12 Country of Origin

"Origin" means the place where the materials, equipment and other supplies for the Facilities are mined, grown, produced or manufactured, and from which the services are provided. Plant and equipment are produced when, through manufacturing, processing or substantial and major assembling of components, a commercially recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.

2.13 Notices

2.13.1 Unless otherwise stated in the Contract, all notices to be given under the Contract shall be in writing, and shall be sent by personal delivery, special courier, telegraph, facsimile or Electronic Data Interchange (EDI) to the address of the relevant party set out in the Contract Agreement, with the following provisions:

- (a) Any notice sent by telegraph, facsimile or EDI shall be confirmed within two (2) days after dispatch by notice sent by special courier, except as otherwise specified in the Contract.
- (b) Any notice sent by special courier shall be deemed (in the absence of evidence of earlier receipt) to have been delivered ten (10) days after dispatch. In proving the fact of dispatch, it shall be sufficient to show that the envelope containing such notice was properly addressed, stamped and conveyed to the postal authorities or courier service for transmission by special courier. Provided further that whenever the postal authorities or courier service provide a proof of delivery, the same shall also be applicable for presenting the fact of dispatch.
- (c) Any notice delivered personally or sent by telegraph, facsimile or EDI shall be deemed to have been delivered on date of its dispatch.
- (d) Either party may change its postal, facsimile or EDI address or addressee for receipt of such notices by ten (10) days' notice to the other party in writing.

2.13.2 Notices shall be deemed to include any approvals, consents, instructions, orders and certificates to be given under the Contract.

2.14 Governing Law & its Jurisdiction

The Contract shall be governed by and interpreted in accordance with laws of J&K and the Courts of J&K shall have exclusive jurisdiction in all matters arising under this Contract.

B. Subject Matter of Contract

3. Scope of Facilities

- 3.1 Standards and Regulations: Following CEA regulations shall be applicable during execution of work **in addition to Jammu & Kashmir Electricity Act 2010.**
The Contract shall be governed by and interpreted in accordance with laws of Jammu and Kashmir and the Courts of J&K shall have exclusive jurisdiction in all matters arising under this Contract.
- a. Construction Regulation – Central Electricity Authority (Technical Standards for construction of electrical plants and electric lines) Regulation, 2010 (as amended time to time)
 - b. Safety Regulation for construction and O&M - Central Electricity Authority (Safety requirements for construction, Operation and Maintenance of electrical plants and electric lines) Regulation, 2011 (as amended time to time)
 - c. Connectivity Regulation – Technical Standard for connectivity to the grid (Amendment) Regulation 2013; Technical Standards for connectivity of the Distributed Generation resources, 2013; Central Electricity Authority (Grid Standard) Regulation, 2010 (as amended time to time)
 - d. Metering Regulations – Central Electricity Authority (Installation and Operation of meters) Regulations, 2006; Central Electricity Authority (Installation and Operation of meters) (Amendment) Regulations, 2010 and 2015 (as amended time to time)
 - e. Central Electricity Authority (Measures relating to safety and Electric supply regulations), 2010 and amendment regulation 2015 (as amended time to time)
- 3.2 Unless otherwise expressly limited in the Technical Specifications, the Contractor's obligation shall include the provision of all Plant and Equipment and the performance of all Installation Services required for the design, the manufacture (including procurement, quality assurance, construction, installation, associated civil works, Pre-commissioning and delivery) of the Plant and Equipment and the installation, completion, commissioning and performance testing of the facilities in accordance with the plans, procedures, specifications, drawings, codes and any other documents as specified in the Technical specifications. Such specifications include, but are not limited to, the provision of supervision and engineering services; the supply of labour, materials, equipment, spare parts (as specified in GCC Sub-Clause 3.3 below) and accessories; Contractor's Equipment; construction utilities and supplies; temporary materials, structures and facilities; transportation (including without limitation, custom clearance, port handling, unloading and hauling to, from and at the Site); storage and training except for those supplies, works and services that will be provided or performed by the Employer, as set forth in Appendix-6 (Scope of Works and Supply by the Employer) to the Contract Agreement.
- 3.3 The Contractor shall, unless specifically excluded in the Contract, perform all such work and/or supply all such items and materials not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining Completion of the Facilities as if such work and/or items and materials were expressly mentioned in the Contract.
- 3.4 The Contractor shall ensure the availability of spare parts required for the operation and maintenance of the Facilities to the Employer for a minimum period of 5 years from Completion of the Facilities. The Contractor shall carry sufficient inventories to ensure an ex-stock supply

of consumable spares for the plant and equipment. If so desired by the Employer, the Contractor shall submit the specifications, price and the terms and conditions relating to the supply thereof for such spares identified by the Employer with validity period of 6 months within 30 days of receipt of request from Employer for its consideration and placement of order.

- 3.5 The Contractor shall guarantee that in the event of termination of production of spare parts by the Contractor or his Sub-Contractor:
- (i) The Contractor shall send advance notification to the Employer of the pending termination, with 2 (two) years' time to permit the Employer to procure needed requirements, and
 - (ii) Following such termination, the Contractor shall furnish at no cost to the Employer the blueprints, drawings and specification of the spare parts, if requested.
- 3.6 In case the Contractor fails to supply the spares parts in accordance with the terms stipulated above, the Employer shall sanction the Contractor declaring them ineligible for a stated period of time for future projects.

4. Time for Commencement and Completion

- 4.1 The Contractor shall commence work on the Facilities from the Effective Date of Contract i.e. date of issuance of Letter of Intent (LoI) and without prejudice to GCC Sub-Clause 21.2 hereof, the Contractor shall thereafter proceed with the Facilities in accordance with the time schedule specified in the corresponding Appendix – 4 (Time Schedule) to the Contract Agreement of Volume-I : Section-VI (Sample Forms and Procedures).
- 4.2 The Contractor shall attain Completion of the Facilities (or of a part where a separate time for Completion of such part is specified in the Contract) within the time stated under Time for Completion or within such extended time to which the Contractor shall be entitled under GCC Clause 34 hereof.
- 4.3 The work under the contract shall preferably start from the "Sansad Adarsh Gram" in presence of public representatives of the project. Hon'ble sitting Member of Parliament and Hon'ble sitting member of State Legislative Assembly shall be cordially invited on the occasion.

5. Contractor's Responsibilities

- 5.1 The Contractor shall design, manufacture (including associated purchases and/or subcontracting), install and complete the Facilities with due care and diligence in accordance with the Contract.
- 5.2 The Contractor confirms that it has entered into this Contract on the basis of a proper examination of the data relating to the Facilities (including any data as to boring tests) provided by the Employer, and on the basis of information that the Contractor could have obtained from a visual inspection of the Site (if access thereto was available) and of other data readily available to it relating to the Facilities as of the date twenty-eight (28) days prior to bid submission. The Contractor acknowledges that any failure to acquaint itself with all such data and information shall not relieve its responsibility for properly estimating the difficulty or cost of successfully performing the Facilities.
- 5.3 The Contractor shall acquire in its name all permits, approvals and/or licenses from all local, state or national government authorities or public service undertakings in the country where the Site is located that are necessary for the performance of the Contract, including, without

limitation, visas for the Contractor's and Subcontractor's personnel and entry permits for all imported Contractor's Equipment. The Contractor shall acquire all other permits, approvals and/or licenses that are not the responsibility of the Employer under GCC Sub-Clause 6.3 hereof and that are necessary for the performance of the Contract.

- 5.4 The Contractor shall comply with all laws in force in India. The laws will include all local, state, national or other laws that affect the performance of the Contract and bind upon the Contractor. The Contractor shall indemnify and hold harmless the Employer from and against any and all liabilities, damages, claims, fines, penalties and expenses of whatever nature arising or resulting from the violation of such laws by the Contractor or its personnel, including the Subcontractors and their personnel, but without prejudice to GCC Sub-Clause 6.1 hereof.
- 5.5 Any Plant, Material and Services that will be incorporated in or be required for the Facilities and other supplies shall have their origin as specified under GCC Sub-Clause 2.12 (Country of Origin).
- 5.6 The Contractor shall permit the Employer to inspect the Contractor's accounts and records relating to the performance of the Contractor.
- 5.7 First-aid: The Contractor shall provide necessary first-aid facilities for all his employees, representatives and workmen working at the Site. Enough number of Contractor's personnel shall be trained in administering first-aid.
- 5.8 Cleanliness: The Contractor shall be responsible for keeping the entire area allotted to him clean and free from rubbish, debris etc. during the period of Contract. The Contractor shall employ enough number of special personnel to thoroughly clean his work-area atleast once in a day. All such rubbish and scrap material shall be stacked or disposed off in a place to be identified by the Project Manager. Materials and stores shall be so arranged to permit easy cleaning of the area. In areas where equipment might drip oil and cause damage to the floor surface, a suitable protective cover of a flame resistant, oil proof sheet shall be provided to protect the floor from such damage.

Similarly the labour colony, the offices and the residential areas of the Contractor's employees and workmen shall be kept clean and neat to the entire satisfaction of the Project Manager. Proper sanitary arrangement shall be provided by the Contractor, in the work-areas, office and residential areas of the Contractor.

- 5.9 Fire Protection: The work procedures that are to be used during the erection shall be those, which minimize fire hazards to the extent practicable. Combustible materials, combustible waste and rubbish shall be collected and removed from the Site at least once each day. Fuels, oils and volatile or inflammable materials shall be stored away from the construction and equipment and materials storage areas in safe containers. Un-treated materials shall not at all be used at Site for any other purpose unless otherwise specified. If any such materials are received with the equipment at the Site, the same shall be removed and replaced with acceptable materials before moving into the construction or storage area.

Similarly, corrugated paper fabricated cartons etc. will not be permitted in the construction area either storage or for handling of materials. All such materials used shall be of waterproof and flame resistant type. All other materials such as working drawings, plans etc., which are combustible but are essential for the works to be executed shall be protected against combustion resulting from welding sparks, cutting flames and other similar fire sources.

All the Contractor's supervisory personnel and sufficient number of workers shall be trained for firefighting and shall be assigned specific fire protection duties. Enough of such trained personnel must be available at the Site during the entire period of the Contract.

The Contractor shall provide enough fire protection equipment of the types and numbers for the warehouses, office, temporary structures, labour colony area etc. Access to such fire protection equipment shall be easy and kept open at all times.

- 5.10 Security: The Contractor shall have total responsibility for all equipment and materials in his custody/stores, loose, semi-assembled and/or erected by him at Site. The Contractor shall make suitable security arrangements including employment of security personnel to ensure the protection of all materials, equipment and works from theft, fire, pilferage and any other damages and loss. All materials of the Contractor shall enter and leave the project site only with the written permission of the Project Manager in the prescribed manner.

- 5.11 Contractor's Area Limits: The Project Manager will mark-out the boundary limits of access roads, parking spaces, storage and construction areas for the Contractor and the Contractor shall not trespass the areas not so marked out for him. The Contractor shall be responsible to ensure none of his personnel move out of the areas marked out for his operations. In case of such a need for the Contractor's personnel to work out of the areas marked out for him, the same shall be done only with the written permission of the Project Manager.

- 5.12 Contractor's Co-Operation with the Employer: In case where the performance of the erection work by the Contractor affects the operation of the system facilities of the Employer, such erection work of the Contractor shall be scheduled to be performed only in the manner stipulated by the Project Manager and the same shall be acceptable at all times to the Contractor. The Project Manager may impose such restrictions on the facilities provided to the Contractor such as electricity, water, etc. as he may think fit in the interest of the Employer and the Contractor shall strictly adhere to such restrictions and co-operate with the Project Manager. It will be the responsibility of the Contractor to provide all necessary temporary instrumentation and other measuring devices required during start-up and operation of the equipment systems, which are erected by him. The Contractor shall also be responsible for flushing and initial filling of all the oil and lubricants required for the equipment furnished and erected by him, so as to make such equipment ready for operation. The Contractor shall be responsible for supplying such flushing oil and other lubricants unless otherwise specified elsewhere in the document and specifications.

6. Employer's Responsibilities

- 6.1 The Employer shall ensure the accuracy of all information and/or data to be supplied by the Employer as described in the corresponding Appendix - 6 (Scope of Works and Supply by the Employer) to the Contract, except when otherwise expressly stated in the Contract.

- 6.2 The Employer shall be responsible for acquiring and providing legal and physical possession of the Site and access thereto, and for providing possession of and access to all other areas reasonably required for the proper execution of the Contract, including all requisite rights of way, as specified in the corresponding Appendix – 6 (Scope of Works and Supply by the Employer) to the Contract Agreement. The Employer shall give full possession of and accord all rights of access thereto on or before the date(s) specified in that Appendix.

- 6.3 The Employer shall acquire and pay for all permits, approvals and/or licenses from all local, state or national government authorities or public service undertakings in the country where the Site is located which such authorities or undertakings require the Employer to obtain them in the Employer's name, are necessary for the execution of the Contract (they include those required for the performance by both the Contractor and the Employer of their respective obligations under the Contract), including those specified in Appendix 6 (Scope of Works and Supply by the Employer) to the Contract Agreement.

- 6.4 If requested by the Contractor, the Employer shall use its best endeavors to assist the Contractor in obtaining in a timely and expeditious manner all permits, approvals and/or licenses necessary for the execution of the Contract from all local, state or national government authorities or public service undertakings that such authorities or undertakings require the Contractor or Subcontractors or the personnel of the Contractor or Subcontractors, as the case may be, to obtain.
- 6.5 Unless otherwise specified in the Contract or agreed upon by the Employer and the Contractor, the Employer shall provide sufficient, properly qualified operating and maintenance personnel; shall supply and make available all raw materials, utilities, lubricants, chemicals, catalysts, other materials and facilities; and shall perform all work and services of whatsoever nature, to enable the Contractor to properly carry out Commissioning, all in accordance with the provisions of Appendix 6 (Scope of Works and Supply by the Employer) to the Contract Agreement at or before the time specified in the program furnished by the Contractor under GCC Sub-Clause 14.2 (Program of Performance) hereof and in the manner thereupon specified or as otherwise agreed upon by the Employer and the Contractor.
- 6.6 The Employer shall be responsible for the continued operation of the Facilities after Taking Over, in accordance with GCC Sub-Clause 20.1.5.
- 6.7 All costs and expenses involved in the performance of the obligations under this GCC Clause 6 shall be the responsibility of the Employer.
- 6.8 facilities to be provided by the employer:

- a) Space: Land for Contractor's Office, Store, Workshop etc. –

The Project Manager shall at his discretion and for the duration of execution of the Contract make available at site, land for construction of Contractor's field office, workshop, stores, magazines for explosives in isolated locations, assembling yard, etc. required for execution of the Contract. Any construction of temporary roads, offices, workshop, etc. as per plan approved by the Project Manager shall be done by the Contractor at his cost.

- b) Electricity (Construction Power supply): Where power supply is available with the Employer for construction purpose the same will be provided at the job site at one point of the distribution system on chargeable basis for consumption in works. Electricity provided for construction site will be of 440 volts, 3 phase, 50 cycles and 230 volts, 1 phase, 50 cycles. Contractor shall provide and install all necessary switchgears, wiring fixtures, bulbs and other temporary equipment for further distribution and utilization of energy for power and lighting and shall remove the same on completion of the work. Should, however, electricity be used in the Contractor's labour/staff colony, the power so consumed shall be charged at the prevailing tariff rate of State as prevalent for that area at the time of its use; the supply may be withdrawn if the power is used for purposes other than for the work of the project.
- c) Water: Free supply of water will be made available for the construction purpose wherever water is available and the same shall be given at an agreed single point at the Site. Any further distribution will be the responsibility of the Contractor. Free drinking water, if available, will also be provided at one agreed point in the Site. Further distribution either to his labour colony or his work Site or to his office shall be the responsibility of the Contractor. If water source is not available with the employer at site for construction works, the contractor at his own cost shall arrange the water supply.

C. Payment

7. Contract Price

- 7.1 The Contract Price shall be as specified in Article 2 (Contract Price and Terms of Payment) of the Form of Contract Agreement.
- 7.2 The Contract Price shall be subject to adjustment in accordance with the provisions of Appendix 2 (Price Adjustment) to the Contract Agreement. The Contract Price shall be increased or reduced on account of variation in quantity in accordance with Clause 33 of GCC.
- 7.3 Subject to GCC Sub-Clauses 5.2 and 6.1 hereof, the Contractor shall be deemed to have satisfied itself as to the correctness and sufficiency of the Contract Price, which shall, except as otherwise provided for in the Contract, cover all its obligations under the Contract.

8. Terms of Payment

- 8.1 The Contract Price shall be paid as specified in the corresponding Appendix – 1 (Terms and Procedures of Payment) to the Contract Agreement of Volume-I: Section-VI (Sample Forms and Procedures). The procedures to be followed in making application for and processing payments shall be those outlined in the same Appendix.
 - 8.1.1 The mounting accessories/structure supplied along with any material like clamps, nuts & bolts, etc. as part of main material shall not be paid extra under Price Schedules. The material price in all such cases shall be inclusive of its mounting clamps and nuts & bolts. For example: if a material has been supplied along with its mounting structure, the contractor shall not be paid separately for mounting structure/accessories associate with the materials.
- 8.2 All payments shall be made in Indian Rupees under the Contract.
- 8.3 The Project Manager shall within twenty-one (21) days after receipt of invoices enclosing requisite documents as per payment terms release the payment through electronic mode in designated bank account of the contractor.

9. Securities

- 9.1 Issuance of Securities
The Contractor shall provide the securities specified below in favor of the Employer at the times, and in the amount, manner and form specified below.
- 9.2 Advance Payment Security
 - 9.2.1 The Contractor shall, within twenty-eight (28) days of the notification of contract award, provide a security in an amount equal to the advance payment calculated in accordance with the corresponding Appendix - 1 (Terms and Procedures of Payment) to the Contract Agreement, and in the same currency(ies) with initial validity of up to ninety (90) days beyond the date of Completion of the Facilities in accordance with GCC Sub-Clause 20.1. The same shall be extended by the Contractor time to time till ninety (90) days beyond the actual date of Completion of the Facilities, as may be required under the Contract.
 - 9.2.2 The security shall be in the Form of unconditional Bank Guarantee attached hereto in Volume-I: Section VI - Sample Forms and Procedures. The security shall be discharged after completion of the facilities or relevant part thereof. The advance guarantee shall be reduced

on two occasions. First reduction shall be on receipt of 50% supply cost of equipment and second reduction shall be on receipt of 75% supply cost of equipment. The advance BG shall also proportionately reduced to 50% and 25% value respectively of initial advance BG.

- Procedure for submission, reduction of Advance Payment Security is detailed in Appendix-1: Terms and Procedures of payments (refer Volume-I : Section-VI (Sample Forms and Procedures))

9.3 Performance Security

- 9.3.1 The Contractor shall, within twenty-eight (28) days of the notification of Letter of Intent, provide a performance security for the due performance of the Contract in the amount equivalent to Ten percent (10%) of the Contract Price, with a validity upto ninety (90) days beyond the Defect Liability Period. The same shall be extended by the Contractor time to time till ninety (90) days beyond the actual Defect Liability Period, as may be required under the Contract.

Apart from the Contractor's performance security, the Contractor shall be required to arrange additional performance securities, as specified in **SCC**, within twenty-eight (28) days of the notification of award in favour of the Employer in the form acceptable to the Employer.

- 9.3.2 The performance security shall be in the Form of unconditional Bank Guarantee attached hereto in the Volume-I : Section VI - Sample Forms and Procedures.

- 9.3.3 Reduction in the security pro rata to the Contract Price of any part of the Facilities is not admissible. However, if the Defects Liability Period has been extended on any part of the Facilities pursuant to GCC Sub-Clause 22.8 hereof, the Contractor shall issue an additional security in an amount proportionate to the Contract Price of that part. The security shall be returned to the Contractor immediately after its expiration, provided, however, that if the Contractor pursuant to GCC Sub-Clause 22, is liable for an extended warranty obligation, the performance security shall be reduced to ten percent (10%) of the value of the component covered by the extended warranty.

- 9.3.4 In case of award of the contract to a Joint Venture, the Bank Guarantees for performance security and the Bank Guarantee for advance payment shall be submitted in the name of all the partner(s) of the Joint Venture

9.4 Issuing Banks

The Bank Guarantee for Advance Payment Security and Performance Security are to be provided by the Contractor, which should be issued either:

- (a) by a Public Sector Bank located in India, or
- (b) a scheduled Indian Bank having paid up capital (net of any accumulated losses) of Rs. 1,000 Million or above (the latest annual report of the Bank should support compliance of capital adequacy ratio requirement) *as per attached list only* **[List is placed at Annexure-I to Section-V (SCC)]**, or

9.5 Indemnity

- 9.5.1 For the equipment/material to be provided by the Contractor as well as for owner free issued materials, it will be the responsibility of the Contractor to take delivery, unload and store the materials at Site and execute an Indemnity Bond and obtain authorization letter from Employer as per proforma enclosed at Serial No. 9 – 'Form for Indemnity Bond to be **No. RECPDCL/TECH/JKPDD/e-Tender/2017-18/1763 Dated: 21.08.2017**

executed by the Contractor' of Volume-I : Section VI (Sample Forms and Procedures), in favour of the Employer against loss, damage and any risks involved for the full value of the materials. This Indemnity Bond shall be furnished by the Contractor before commencement of the supplies/taking delivery from owner stores and shall be valid till the scheduled date of Taking Over of the equipment by the Employer.

- 9.5.2 In case of divisible Contracts, where the Employer hands over his equipment to the Contractor for executing the Contract, then the Contractor shall, at the time of taking delivery of the equipment through Bill of Landing or other dispatch documents, furnish trust Receipt for Plant, Equipment and Materials and also execute an Indemnity Bond in favour of the Employer in the form acceptable to the Employer for keeping the equipment in safe custody and to utilize the same exclusively for the purpose of the said Contract. Samples of proforma for the Trust receipt and Indemnity Bond are enclosed at Serial No. 10 of Volume-I : Section VI (Sample Forms and Procedures). The Employer shall also issue a separate Authorization Letter to the Contractor to enable him to take physical delivery of plant, equipment and materials from the Employer as per proforma enclosed under Section VI (Sample Forms and Procedures).

9A Acceptance of Bank Guarantees:-

IT enabled confirmation system shall be used in addition to existing paper based confirmation system for verification of Bank Guarantee from issuing bank as under:

- i. Getting confirmation through digitally signed secured e-mails from issuing banks;
- ii. Online verification on company portal with user id and password followed by 2nd stage authentication system generated One Time Password (OTP) on portal for reconfirmation;
- iii. E-mail confirmation followed by 2nd stage authentication by system generated SMS through registered mobile and confirmation through SMS to the verifying officer.

Employer shall evolve its own procedure adopting any one or more of the above methods for ensuring genuineness of Bank Guarantees, which is compatible with the guidelines of Banks / Reserve Bank of India in addition to existing paper based confirmation system.

10. Taxes and Duties

- 10.1 The Contractor shall be entirely responsible for payment of all taxes, duties, license fees and other such levies legally payable/incurred until delivery of the contracted supplies to the Employer.

If it is statutory requirement to make deductions towards such taxes and duties or any other applicable taxes and duties, the same shall be made by the Employer and a certificate for the same shall be issued to the Contractor.

- 10.2 The Contractor shall be solely responsible for the taxes that may be levied on the Contractor's persons or on earnings of any of his employees and shall hold the Employer indemnified and harmless against any claims that may be made against the Employer. The Employer does not take any responsibility whatsoever regarding taxes under Indian Income Tax Act, for the Contractor or his personnel. If it is obligatory under the provisions of the Indian Income Tax Act, deduction of Income Tax at source shall be made by the Employer.

- 10.3 In respect of direct transaction between the Employer and the Contractor or bought-out items, the ex-works price is **exclusive** of all cost as well as duties and tax (viz., custom duties & levies, duties, GST, etc.) paid or payable on components, raw materials and any other items used for their consumption incorporated or to be incorporated in the Plant & Equipment.

Goods and Services Tax (GST) for the Equipment including octroi/entry tax as applicable for destination site/state are not included in the ex-works price. These amounts will be payable (along with subsequent variation if any), by the Employer on the supplies made by the Contractor but limited to the tax liability on the transaction between the Employer and the Contractor. ~~The requisite Sales Tax declaration forms shall be issued as under:~~

- a) ~~When project implementing agency or employer is a Central Public Sector Undertaking, form shall be issued by State Distribution Company to Employer for onward issuance to contractor.~~
b) ~~When State Distribution Company is Employer, the form shall be issued by them.~~

If any tax exemptions, reductions, allowances or privileges may be available to the Contractor in the Country where the site is located, the Employer shall use its best endeavors to enable the Contractor to benefit from such tax savings to the maximum allowable extent.

For payment/reimbursement of Tax/GST, wherever applicable, in respect of dispatches made directly from Contractor's works, invoices raised by the Contractor shall be accepted as documentary evidence and for payment/reimbursement of tax, taxable invoices raised by the Contractor shall be accepted as documentary evidence. Similarly, pre-numbered invoices duly signed by authorized signatory shall be considered as evidence.

- 10.4 Octroi/entry tax as applicable for destination site/state on all items of supply including bought-out finished items, which shall be dispatched directly from the sub-vendor's works to the Employer's site (sale-in-transit) are not included in the Contract price. ~~The applicable octroi/entry tax in respect of all the items of supply would be reimbursed to the Contractor separately by the Employer subject to furnishing of documentary proof.~~
- 10.5 Employer would not bear any liability on account of Service Tax/GST. Employer shall, however, deduct such tax at source as per the rules and issue necessary Certificate to the Contractor.
- 10.6 Sales Tax/VAT/GST on Works Contract, Turnover Tax or any other similar taxes under the Sales Tax/VAT/GST Act for services to be performed in India, as applicable is included in Contract Price and Employer would not bear any liability on this account. Employer shall, however, deduct such taxes at source as per the rules and issue Tax Deduction at Source (TDS) Certificate to the Contractor.
- 10.7 For the purpose of the Contract, it is agreed that the Contract Price specified in Article 2(Contract Price and Terms of Payment) of the Contract Agreement is based on the taxes, duties, levies and charges prevailing at the date seven (07) days prior to the last date of bid submission (hereinafter called "Tax" in this GCC Sub-clause 10.7). If any rates of Tax are increased or decreased, a new Tax is introduced, an existing Tax is abolished, or any change in interpretation or application of any Tax occurs in the course of the performance of the Contract, which was or will be assessed on the Contractor in connection with performance of the Contract, an equitable adjustment of the Contract price shall be made to fully take into account any such change by addition to the Contract price or deduction therefrom, as the case may be, in accordance with GCC Clause 31 (Changes in Laws and Regulations) hereof. In the event of introduction of GST in the course of performance of contract, PIA shall examine its impact on the affected transactions under the contract in totality, for equitable adjustment in the contract price, if required. The contractor shall furnish the relevant

No. RECPDCL/TECH/JKPDD/e-Tender/2017-18/1763 Dated: 21.08.2017

details/documents for this purpose, as may be required by PIA. However, these adjustments would be restricted to direct transactions between the Employer and the Contractor for which the taxes and duties are reimbursable by the Employer as per the Contract. These adjustments shall not be applicable on procurement of raw materials, intermediary components etc by the Contractor and also not applicable on the bought out items dispatched directly from sub-vendor's works to site.

In respect of raw materials, intermediary components etc and bought out items, neither the Employer nor the Contractor shall be entitled to any claim arising due to increase or decrease in the rate of Tax, introduction of a new Tax or abolition of an existing Tax in the course of the performance of the Contract.

D. Intellectual Property

11. Copy Right

- 11.1 The copyright in all drawings, documents and other materials containing data and information furnished to the Employer by the Contractor herein shall remain vested in the Contractor or, if they are furnished to the Employer directly or through the Contractor by any third party, including supplies of materials, the copyright in such materials shall remain vested in such third party.

The Employer shall however be free to reproduce all drawings, documents and other material furnished to the Employer for the purpose of the Contract including, if required, for operation and maintenance.

- 11.2 The copyright in all drawings, documents and other materials containing data and information furnished to the Contractor by the Employer herein shall remain vested in the Employer.

12. Confidential Information

- 12.1 The Employer and the Contractor shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following termination of the Contract. Notwithstanding the above, the Contractor may furnish to its Subcontractor(s) such documents, data and other information it receives from the Employer to the extent required for the Subcontractor(s) to perform its work under the Contract, in which event the Contractor shall obtain from such Subcontractor(s) an undertaking of confidentiality similar to that imposed on the Contractor under this GCC Clause 12.
- 12.2 The Employer shall not use such documents, data and other information received from the Contractor for any purpose other than the operation and maintenance of the Facilities. Similarly, the Contractor shall not use such documents, data and other information received from the Employer for any purpose other than the design, procurement of Plant and Equipment, construction or such other work and services as are required for the performance of the Contract.
- 12.3 The obligation of a party under GCC Sub-Clauses 12.1 and 12.2 above, however, shall not apply to that information which

- (a) now or hereafter enters the public domain through no fault of that party

- (b) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party hereto
- (c) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.

12.4 The above provisions of this GCC Clause 12 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Facilities or any part thereof.

12.5 The provisions of this GCC Clause 12 shall survive termination, for whatever reason, of the Contract.

E. Execution of the Facilities

13. Representatives

13.1 If the Project Manager is not named in the Contract, then within fourteen (14) days of the Effective Date, the Employer shall appoint and notify the Contractor in writing of the name of Project Manager. The Employer may from time to time appoint some other person as the project Manager in place of the person previously so appointed, and shall give a notice of the name of such other person to the Contractor without delay. The Employer shall take all reasonable care to see that no such appointment is made at such a time or in such a manner as to impede the progress of work on the Facilities. The Project Manager shall represent and act for the Employer at all times during the currency of the Contract. All notices, instructions, orders, certificates, approvals and all other communications under the Contract shall be given by the Project Manager, except as herein otherwise provided.

All notices, instructions, information and other communications given by the Contractor to the Employer under the Contract shall be given to the Project Manager, except as herein otherwise provided.

13.2 Contractor's Representative & Construction Manager

13.2.1 If the Contractor's Representative is not named in the Contract, then within fourteen (14) days of the Effective Date, the Contractor shall appoint the Contractor's Representative and shall request the Employer in writing to approve the person so appointed. If the Employer makes no objection to the appointment within fourteen (14) days, the Contractor's Representative shall be deemed to have been approved. If the Employer objects to the appointment within fourteen (14) days giving the reason therefor, then the Contractor shall appoint a replacement within fourteen (14) days of such objection, and the foregoing provisions of this GCC Sub-Clause 13.2.1 shall apply thereto.

13.2.2 The Contractor's Representative shall represent and act for the Contractor at all times during the currency of the Contract and shall give to the Project Manager all the Contractor's notices, instructions, information and all other communications under the Contract. All notices, instructions, information and all other communications given by the Employer or the Project Manager to the Contractor under the Contract shall be given to the Contractor's Representative or, in its absence, its deputy, except as herein otherwise provided. The Contractor shall not revoke the appointment of the Contractor's Representative without the Employer's prior written consent, which shall not be unreasonably withheld. If the Employer consents thereto, the Contractor shall appoint some other person as the Contractor's Representative, pursuant to the procedure set out in GCC Sub-Clause 13.2.1.

13.2.3 The Contractor's Representative may, subject to the approval of the Employer (which shall not be unreasonably withheld), at any time delegate to any person any of the powers,

functions and authorities vested in him or her. Any such delegation may be revoked at any time. Any such delegation or revocation shall be subject to a prior notice signed by the Contractor's Representative, and shall specify the powers, functions and authorities thereby delegated or revoked. No such delegation or revocation shall take effect unless and until a copy thereof has been delivered to the Employer and the Project Manager. Any act or exercise by any person of powers, functions and authorities so delegated to him or her in accordance with this GCC Sub-Clause 13.2.3 shall be deemed to be an act or exercise by the Contractor's Representative.

- 13.2.3.1 Notwithstanding anything stated in GCC Sub-Clause 13.1 and 13.2.1 above, for the purpose of execution of Contract, the Employer and the Contractor shall finalize and agree to a Contract Co-ordination Procedure and all the communication under the Contract shall be in accordance with such Contract Coordination Procedure.

- 13.2.4 From the commencement of installation of the Facilities at the Site until Operational Acceptance, the Contractor's Representative shall appoint a suitable person as the construction manager, (hereinafter referred to as "the Construction Manager"). The Construction Manager shall supervise all work done at the Site by the Contractor and shall be present at the Site through-out normal working hours except when on leave, sick or absent for reasons connected with the proper performance of the Contract. Whenever the Construction Manager is absent from the Site, a suitable person shall be appointed to act as his or her deputy.

- 13.2.5 The Employer may by notice to the Contractor object to any representative or person employed by the Contractor in the execution of the Contract who, in the reasonable opinion of the Employer, may behave inappropriately, may be incompetent or negligent, or may commit a serious breach of the Site regulations provided under GCC Sub-Clause 18.3. The Employer shall provide evidence of the same, whereupon the Contractor shall remove such person from the Facilities.

- 13.2.6 If any representative or person employed by the Contractor is removed in accordance with GCC Sub-Clause 13.2.5, the Contractor shall, where required, promptly appoint a replacement.

14. Work Program

14.1 Contractor's Organization

The Contractor shall supply to the Employer and the Project Manager a chart showing the proposed organization to be established by the Contractor for carrying out work on the Facilities. The chart shall include the identities of the key personnel together with the curricula vitae of such key personnel to be employed within twenty-one (21) days of the Effective Date. The Contractor shall promptly inform the Employer and the Project Manager in writing of any revision or alteration of such an organization chart.

14.2 Program of Performance

Within twenty-eight (28) days after the date of Notification of Award, the Contractor shall prepare and submit to the Project Manager a detailed program of performance of the Contract (L2 Network) in the form of the Critical Path Method (CPM), the PERT network, or other internationally used programs and showing the sequence in which it proposes to design, manufacture, transport, assemble, install and pre-commissioning the Facilities, as well as the date by which the Contractor reasonably requires that the Employer shall have fulfilled its obligations under the Contract so as to enable the Contractor to execute the

Contract in accordance with the program and to achieve Completion, Commissioning and Acceptance of the Facilities in accordance with the Contract. The program so submitted by the Contractor shall accord with the Time Schedule included in Appendix-4 (Time Schedule) to the Contract Agreement and any other dates and periods specified in the Contract. The Contractor shall update and revise the program as and when appropriate or when required by the Project Manager, but without modification in the Times for Completion under GCC Sub-Clause 4.2 and any extension granted in accordance with GCC Clause 34, and shall submit all such revisions to the Project Manager.

In the PERT chart contractor shall highlight clearly timelines for requirement of major high value owner supplied materials.

14.3 Progress Report

The Contractor shall monitor progress of all the activities specified in the program referred to in GCC Sub-Clause 14.2 above, and supply a progress report to the Project Manager every month and as & when required.

The progress report shall be in a form acceptable to the Project Manager and shall indicate: (a) percentage completion achieved compared with the planned percentage completion for each activity; and (b) where any activity is behind the program, giving comments and likely consequences and stating the corrective action being taken.

14.4 Progress of Performance

If at any time the Contractor's actual progress falls behind the program referred to in GCC Sub-Clause 14.2, or it becomes apparent that it will so fall behind, the Contractor shall, at the request of the Employer or Project Manager, prepare and submit to the Project Manager a revised program, taking into account the prevailing circumstances, and shall notify the Project Manager of the steps being taken to expedite progress so as to attain Completion of the Facilities within the Time for Completion under GCC Sub-Clause 4.2, any extension thereof entitled under GCC Sub-Clause 34.1, or any extended period as may otherwise be agreed upon between the Employer and the Contractor.

14.5 Work Procedures

The Contract shall be executed in accordance with the Contract Documents and the procedures given in the section on Sample Forms and Procedures of the Contract Documents.

The Contractor may execute the Contract in accordance with its own standard project execution plans and procedures to the extent that they do not conflict with the provisions contained in the Contract.

- 14.6** It is emphasized to conduct monthly contract review meeting with senior most officers of turnkey contractor at their headquarters or at project site. Employer shall decide venue of such monthly contract review meeting. In this meeting, three months rolling plan of mobilization of materials and manpower shall be reviewed. Progress of works achieved on ground shall also be reviewed along with all pending issues related to availability of fronts, payments, contractual issues, if any, etc. Minutes of the meeting shall be issued by Employer within a week time. Performance of contractor shall be reviewed based on commitment and actual achievement on ground. Planning, commitment, review and evaluation of

performance of contractor through this meeting shall be under overall agreed project execution plan (PERT Chart).

- 14.7 It is also emphasized to conduct monthly contract review meeting with sub-contractor in presence of senior most officers of turnkey contractor at their headquarters or at project site. Employer shall decide venue of such review meeting. In this meeting, three months rolling plan of mobilization of materials and manpower shall be reviewed. Progress of works achieved on ground shall also be reviewed along with all pending issues related to availability of fronts, payments, contractual issues, if any, etc.

15. Subcontracting

The Contractor may, after informing the Project Manager and getting his written approval, assign or sub-let the Supply Contract or any part thereof other than for raw material, for minor details or for any part of the plant for which makes are identified in the Contract. Suppliers of the equipment not identified in the Contract or any change in the identified suppliers shall be subjected to approval by the Project Manager. The experience list of equipment vendors under consideration by the Contractor for this Contract shall be furnished to the Project Manager for approval prior to procurement of all such items/equipment.

Field execution of the contract shall not be sub-contracted without written permission of the Employer. On case to case basis, if employer gets satisfied with, permission for sub-contracting entire or part project execution work may be permitted (level-1). However, further sub-letting of field execution works by sub-contractor (Level-2) shall not be acceptable by employer. In case of further sub-letting of contract, it would be construed as non-performance and breach of the contract. Contractual action shall then be initiated as per provisions of the contract.

Such assignment/sub-letting shall not relieve the Contractor of any obligation, duty or responsibility under the Contract.

- 15.1 The corresponding Appendix (List of Approved Subcontractors) to the Contract Agreement specifies major items of supply or services and a list of approved Subcontractors against each item, including vendors. Insofar as no Subcontractors are listed against any such item, the Contractor shall prepare a list of Subcontractors for such item for inclusion in such list. The Contractor may from time to time propose any addition to or deletion from any such list. The Contractor shall submit any such list or any modification thereto to the Employer for its approval in sufficient time so as not to impede the progress of work on the Facilities. Such approval by the Employer for any of the Subcontractors shall not relieve the Contractor from any of its obligations, duties or responsibilities under the Contract.
- 15.2 For items or parts of the Facilities not specified in the corresponding Appendix (List of Approved Subcontractors) to the Contract Agreement **for Supply Contract(s)**, the Contractor may employ such Subcontractors as it may select, at its discretion.

16. Design and Engineering

- 16.1 Specifications and Drawings
- 16.1.1 The Contractor shall execute the basic and detailed design and the engineering work in compliance with the provisions of the Contract, or where not so specified, in accordance with good engineering practice.

The Contractor shall be responsible for any discrepancies, errors or omissions in the specifications, drawings and other technical documents that it has prepared, whether such specifications, drawings and other documents have been approved by the Project Manager or not, provided that such discrepancies, errors or omissions are not because of inaccurate information furnished in writing to the Contractor by or on behalf of the Employer.

- 16.1.2 The Contractor shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designated by or on behalf of the Employer, by giving a notice of such disclaimer to the Project Manager.

16.2 Codes and Standards

Wherever references are made in the Contract to codes and standards in accordance with which the Contract shall be executed, the edition or the revised version of such codes and standards current at the date twenty-eight (28) days prior to date of bid submission shall apply unless otherwise specified. During Contract execution, any changes in such codes and standards shall be applied after approval by the Employer and shall be treated in accordance with GCC Clause 33.

16.3 Approval/Review of Technical Documents by authorized representative of RECPDCL

- 16.3.1 The Contractor shall prepare (or cause its Subcontractors to prepare) and furnish to the Project Manager the documents listed in Appendix-7 (List of Documents for Approval or Review) to the Contract Agreement for its approval or review as specified and as in accordance with the requirements of GCC Sub-Clause 14.2 (Program of Performance).

Any part of the Facilities covered by or related to the documents to be approved by the Project Manager shall be executed only after the Project Manager's approval thereof.

GCC Sub-Clauses 16.3.2 through 16.3.7 shall apply to those documents requiring the Project Manager's approval, but not to those furnished to the Project Manager for its review only.

- 16.3.2 Within twenty one (21) days after receipt by the Project Manager of any document requiring the Project Manager's approval in accordance with GCC Sub-Clause 16.3.1, the Project Manager shall either return one copy thereof to the Contractor with its approval endorsed thereon or shall notify the Contractor in writing of its disapproval thereof and the reasons therefor and the modifications that the Project Manager proposes.

- 16.3.3 The Project Manager shall not disapprove any document, except on the grounds that the document does not comply with some specified provision of the Contract or that it is contrary to good engineering practice.

- 16.3.4 If the Project Manager disapproves the document, the Contractor shall modify the document and resubmit it for the Project Manager's approval in accordance with GCC Sub-Clause 16.3.2. If the Project Manager approves the document subject to modification(s), the Contractor shall make the required modification(s), and upon resubmission with the required modifications the document shall be deemed to have been approved.

The procedure for submission of the documents by the Contractor and their approval by the Project Manager shall be discussed and finalized with the Contractor.

- 16.3.5 If any dispute or difference occurs between the Employer and the Contractor in connection with or arising out of the disapproval by the Project Manager of any document and/or any modification(s) thereto that cannot be settled between the parties within a reasonable

period, then such dispute or difference may be referred to an Arbitrator for determination in accordance with GCC Sub-Clause 39 hereof. If such dispute or difference is referred to an Arbitrator, the Project Manager shall give instructions as to whether and if so, how, performance of the Contract is to proceed. The Contractor shall proceed with the Contract in accordance with the Project Manager's instructions, provided that if the Arbitrator upholds the Contractor's view on the dispute and if the Employer has not given notice under GCC Sub-Clause 39 hereof, then the Contractor shall be reimbursed by the Employer for any additional costs incurred by reason of such instructions and shall be relieved of such responsibility or liability in connection with the dispute and the execution of the instructions as the Arbitrator shall decide, and the Time for Completion shall be extended accordingly.

- 16.3.6 The Project Manager's approval, with or without modification of the document furnished by the Contractor, shall not relieve the Contractor of any responsibility or liability imposed upon it by any provisions of the Contract except to the extent that any subsequent failure results from modifications required by the Project Manager.
- 16.3.7 The Contractor shall not depart from any approved document unless the Contractor has first submitted to the Project Manager an amended document and obtained the Project Manager's approval thereof, pursuant to the provisions of this GCC Sub-Clause 16.3. If the Project Manager requests any change in any already approved document and/or in any document based thereon, the provisions of GCC Clause 33 shall apply to such request.

17. Plant and Equipment

- 17.1 Subject to GCC Sub-Clause 10.2, the Contractor shall manufacture or procure and transport all the Plant and Equipment in an expeditious and orderly manner to the Site.

- 17.2 Employer-Supplied Plant, Equipment, and Materials

If the corresponding Appendix – 6 (Scope of Works and Supply by the Employer) to the Contract Agreement provides that the Employer shall furnish any specific items of machinery, equipment or materials to the Contractor, the following provisions shall apply:

- 17.2.1 The Employer shall, at its own risk and expense, transport each item to the place on or near the Site as agreed upon by the parties and make such item available to the Contractor at the time specified in the program furnished by the Contractor, pursuant to GCC Sub-Clause 14.2, unless otherwise mutually agreed.
- 17.2.2 The equipment & materials to be furnished by the Employer shall be supplied to the Contractor at the depots established by the Contractor or the Employer. The Lorry Receipts for the materials will be handed over to the Contractor by the representative of the Employer as and when the same are received. The Contractor shall be responsible for taking delivery of these materials from the railways/road transporter, unloading them from the transporter, carting them to different stores built by him for the purpose, the unloading and cartage being at the cost of the Contractor. All wharfage and demurrage charges incurred due to delay in taking delivery will be to the Contractor's account, except those due to reasons beyond his control in which case the Contractor shall immediately intimate the Project Manager for settling the claims. The Contractor shall be responsible for proper handling and storage of these materials from the time of receipt upto the time of Taking Over of the Facilities by the Employer.
- 17.2.3 Yards and store provided by the Contractor for stacking and storage of materials shall be open for inspection by the Employer as and when required. The cost of handling and storage shall be to the Contractor's account.

- 17.2.4 Upon receipt of such item, the Contractor shall inspect the same visually and notify the Project Manager of any detected shortage, defect or default. For the material being arranged by the Employer and supplied to the Contractor for erection, are received short, broken or damaged, an entry shall be made in the delivery register of the railway authorities/road transporter as far as possible and a report of the same giving full details of shortage and damages along with a copy of report entered in the delivery register of the road transporter/railways shall be submitted by the Contractor to the Project Manager and Employer's consignee immediately. The Employer shall immediately remedy any shortage, defect or default, or the Contractor shall, if practicable and possible, at the request of the Employer, remedy such shortage, defect or default at the Employer's cost and expense. After inspection, such item shall fall under the care, custody and control of the Contractor. The provision of this GCC Sub-Clause 17.2.4 shall apply to any item supplied to remedy any such shortage or default or to substitute for any defective item, or shall apply to defective items that have been repaired.
- 17.2.5 The foregoing responsibilities of the Contractor and its obligations of care, custody and control shall not relieve the Employer of liability for any undetected shortage, defect or default, nor place the Contractor under any liability for any such shortage, defect or default whether under GCC Clause 22 or under any other provision of Contract.
- 17.3 Transportation
- 17.3.1 The Contractor shall at its own risk and expense transport all the Plant and Equipment (supplied by turnkey contractor or free supply by Employer) and the Contractor's Equipment to the Site by the mode of transport that the Contractor judges most suitable under all the circumstances.
- 17.3.2 Unless otherwise provided in the Contract, the Contractor shall be entitled to select any safe mode of transport operated by any person to carry the Plant and Equipment and the Contractor's Equipment.
- 17.3.3 Upon dispatch of each shipment of the Plant and Equipment and the Contractor's Equipment, the Contractor shall notify the Employer by e-mail, telex, facsimile or Electronic Data Interchange (EDI) of the description of the Plant and Equipment and of the Contractor's Equipment, the point and means of dispatch, and the estimated time and point of arrival in the country where the Site is located, if applicable, and at the Site. The Contractor shall furnish the Employer with relevant shipping documents to be agreed upon between the parties.
- 17.3.4 The Contractor shall be responsible for obtaining, if necessary, approvals from the authorities for transportation of the Plant and Equipment and the Contractor's Equipment to the Site. The Employer shall use its best endeavors in a timely and expeditious manner to assist the Contractor in obtaining such approvals, if requested by the Contractor. The Contractor shall indemnify and hold harmless the Employer from and against any claim for damage to roads, bridges or any other traffic facilities that may be caused by the transport of the Plant and Equipment and the Contractor's Equipment to the Site.
- 17.4 Delivery and Documents
- 17.4.1 Delivery Documents

Upon shipment, the Contractor shall notify the Employer with full details of the dispatch and shall furnish the documents as specified in the corresponding Appendix - 1 (Terms and Procedures of Payment) to the Contract Agreement

17.4.2 Packing

17.4.2.1 The Contractor shall provide such packing of the Goods as it is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods final destination and the absence of heavy handling facilities at all points in transit.

17.4.2.2 The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract and, subject to any subsequent instruction ordered by the Employer consistent with the requirements of the Contract.

17.4.3 Materials Handling and Storage:

All the equipment furnished under the Contract and arriving at Site (materials supplied by contractor as well as material free issued by Employer) shall be promptly received, unloaded, transported and stored in the storage spaces by the Contractor.

Contractor shall be responsible for examining all the shipment and notify the Project Manager immediately of any damages, storage, discrepancy etc, for the purpose of Project Manager's information only. The Contractor shall submit to the Project Manager every week a report detailing all the receipts during the week. However, the Contractor shall be solely responsible for any shortages or damages in transit, handling and/ or in storage and erection of the equipment at Site. Any demurrage, wharfage and other such charges claimed by the transporters, railways etc, shall be to the account of the Contractor.

The Contractor shall maintain an accurate and exhaustive record detailing out the list of all equipment received by him for the purpose of erection and keep such record open for the inspection of the Project Manager.

All equipment shall be handled very carefully to prevent any damage or loss. No bare wire ropes, slings, etc. shall be used for unloading and/or handling of the equipment without the specific written permission of the Project Manager. The equipment stored shall be properly protected to prevent damage either to the equipment or to the floor where they are stored. The equipment from the store shall be moved to the actual location at the appropriate time so as to avoid damage of such equipment at Site.

All electrical panels, control gears, motors and such other devices shall be properly dried by heating before they are installed and energized. Motor bearings, slip ring, commutators and other exposed parts shall be protected against moisture ingress and corrosion during storage and periodically inspected.

All the electrical equipment such as transformers, cables, insulators, motors, generators, etc. shall be tested for insulation resistance at least once in three months from the date of receipt till the date of commissioning and a record of such measured insulation values maintained by the Contractor. Such records shall be opened for inspection by the Project Manager.

The Contractor shall ensure that all the packing materials and protection devices, used for various equipment during transit and storage, are removed before the equipment are installed.

The consumable and other supplies likely to deteriorate due to storage must be thoroughly protected and stored in a suitable manner to prevent damage or deterioration in quality by storage.

All the materials stored in the open or dusty location must be covered with suitable weatherproof and flame proof covering material wherever applicable.

If the materials belonging to the Contractor are stored in areas other than those earmarked for him, the Project Manager will have the right to get it moved to the area earmarked for the Contractor at the Contractor's cost.

The Contractor shall be responsible for making suitable indoor storage facilities to store all equipment, which require indoor storage. Normally all the electrical equipment such as motors, control gears, generators, exciters and consumables like electrodes, lubricants etc. shall be stored in the closed storage space. The Project Manager, in addition, may direct the Contractor to move certain other materials, which in his opinion will require indoor storage, to indoor storage areas, which the Contractor shall strictly comply with.

18. Installation

18.1 Setting Out/Supervision/Labor

18.1.1 Bench Mark: The Contractor shall be responsible for the true and proper setting-out of the Facilities in relation to bench marks, reference marks and lines provided to it in writing by or on behalf of the Employer.

If, at any time during the progress of installation of the Facilities, any error shall appear in the position, level or alignment of the Facilities, the Contractor shall forthwith notify the Project Manager of such error and, at its own expense, immediately rectify such error to the reasonable satisfaction of the Project Manager. If such error is based on incorrect data provided in writing by or on behalf of the Employer, the expense of rectifying the same shall be borne by the Employer.

18.1.2 Contractor's Supervision: The Contractor shall give or provide all necessary superintendence during the installation of the Facilities, and the Construction Manager or its deputy shall be constantly on the Site to provide full-time superintendence of the installation. The Contractor shall provide and employ only technical personnel who are skilled and experienced in their respective callings and supervisory staff who are competent to adequately supervise the work at hand.

18.1.3 Labor:

- (a) The Contractor shall provide and employ on the Site in the installation of the Facilities such skilled, semi-skilled and unskilled labor as is necessary for the proper and timely execution of the Contract. The Contractor is encouraged to use local labor that has the necessary skills.
- (b) Unless otherwise provided in the Contract, the Contractor at its own expense shall be responsible for the recruitment, transportation, accommodation and catering of all

labor, local or expatriate, required for the execution of the Contract and for all payments in connection therewith.

- (c) The Contractor shall at all times during the progress of the Contract use its best endeavors to prevent any unlawful, riotous or disorderly conduct or behavior by or amongst its employees and the labor of its Subcontractors.
- (d) The Contractor shall, in all dealings with its labor and the labor of its Subcontractors currently employed on or connected with the Contract, pay due regard to all recognized festivals, official holidays, religious or other customs and all local laws and regulations pertaining to the employment of labor.

18.2 Contractor's Equipment

18.2.1 All Contractor's Equipment brought by the Contractor onto the Site shall be deemed to be intended to be used exclusively for the execution of the Contract. The Contractor shall not remove the same from the Site without the Project Manager's consent that such Contractor's Equipment is no longer required for the execution of the Contract.

18.2.2 Unless otherwise specified in the Contract, upon completion of the Facilities, the Contractor shall remove from the Site all Equipment brought by the Contractor onto the Site and any surplus materials remaining thereon.

18.2.3 The Employer will, if requested, use its best endeavors to assist the Contractor in obtaining any local, state or national government permission required by the Contractor for the export of the Contractor's Equipment imported by the Contractor for use in the execution of the Contract that is no longer required for the execution of the Contract.

18.3 Site Regulations and Safety

The Employer and the Contractor shall establish Site regulations setting out the rules to be observed in the execution of the Contract at the Site and shall comply therewith. The Contractor shall prepare and submit to the Employer, with a copy to the Project Manager, proposed Site regulations for the Employer's approval, which approval shall not be unreasonably withheld.

Such Site regulations shall include, but shall not be limited to, rules in respect of security, safety of the Facilities, gate control, sanitation, medical care, and fire prevention.

18.3.1 Compliance with Labour Regulations

18.3.1.1 During continuance of the contract, the Contractor and his sub-contractors shall abide at all times by all applicable existing labour enactments and rules made thereunder, regulations notifications and byelaws of the State or Central Government or local authority and any other labour law (including rules), regulations bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. The employees of the Contractor and the Sub-contractor in no case shall be treated as the employees of the Employer at any point of time.

18.3.1.2 The Contractor shall keep the Project Manager indemnified in case any action is taken against the Contractor by the competent authority on account of contravention of any of the provisions of any Act or rules made thereunder, regulations or notifications including amendments.

- 18.3.1.3 If the Project Manager/Employer is caused to pay under any law as principal employer such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/ byelaws/Acts/ Rules/regulations including amendments, if any, on the part of the Contractor, the Project Manager shall have the right to deduct any money due to the Contractor under this contract or any other contract with the Project Manager/Employer including his amount of performance security for adjusting the aforesaid payment. The Project Manager shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Project Manager/Employer.

Notwithstanding the above, the Contractor shall furnish to the Project Manager the details/documents evidencing the Contractor's compliance to the laws applicable to establishments engaged in building and other construction works, as may be sought by the Project Manager. In particular the Contractor shall submit quarterly certificate regarding compliance in respect of provisions of Employees' Provident Fund and Misc. Provisions Act 1952 or latest to the Project Manager.

- 18.3.1.4 Salient features of some major laws applicable to establishments engaged in building and other construction works
The laws mentioned in para 18.3.1.4 shall be replaced with equivalent laws in J&K:

- (a) **Workmen Compensation Act 1923 or latest:** The Act provides for compensation in case of injury by accident arising out of and during the course of employment.
- (b) **Payment of Gratuity Act 1972 or latest:** Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years' service or more or on death at the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.
- (c) **Employee P.F. and Miscellaneous Provision Act 1952 or latest:** The Act provides for monthly contribution by the turnkey contractor plus his workers @10% or 8.33%. The benefits under the Act are:
 - (i) Pension or family pension on retirement or death, as the case may be.
 - (ii) Deposit linked insurance on death in harness of the worker.
 - (iii) Payment of P.F. accumulation on retirement/death etc.
- (d) **Maternity Benefit Act 1951 or latest:** The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.
- (e) **Contract Labour (Regulation & Abolition) Act 1970 or latest:** The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by law. The Principal Employer is required to take Certification of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ 20 or more contract labour.
- (f) **Minimum Wages Act 1948 or latest:** The Contractor is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provision of the Act if

the employment is a scheduled employment. Construction of Buildings, Roads, Runways are scheduled employments.

- (g) **Payment of Wages Act 1936 or latest:** It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.
- (h) **Equal Remuneration Act 1979 or latest:** The Act provides for payment of equal wages for work of equal nature to Male and Female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.
- (i) **Payment of Bonus Act 1965 or latest:** The Act is applicable to all establishments employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of 8.33% of wages and maximum of 20% of wages to employees drawing Rs. 3500/- per month or less. The bonus is to be paid to employees getting Rs. 2500/- per month or above upto Rs. 3500/- per month shall be worked out by taking wages as Rs. 2500/- per month only. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act. The above guidelines shall be liable to change with the change in act/notification by relevant statutory authority.
- (j) **Industrial Dispute Act 1947** or latest: the Act lays down the machinery the procedure for resolution of Industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.
- (k) **Industrial Employment (Standing Orders) Act 1946** or latest: It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the employer (i.e. turnkey contractor) on matters provided in the Act and get the same certified by the designated Authority.
- (l) **Trade Unions Act 1926 or latest:** The Act lays down the procedure for registration of trade unions of workmen and contractors. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.
- (m) **Child Labour (Prohibition & Regulation) Act 1986** or latest: The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in Building and Construction Industry.
- (n) **Inter-State Migrant workmen's (Regulation of Employment & Conditions of Service Act 1979** or latest: The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home upto the establishment and back, etc.

- (o) **The Building and Other Construction workers (Regulation of Employment and Conditions of Service) Act 1996 or latest and the Cess Act of 1996 or latest:** All the establishments who carry on any building or other construction work and employ 10 or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The turnkey contractor of the establishment is required to provide safety measures at the electrical construction site, substations, building or construction work and other welfare measures, such as Canteens, First-Aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The turnkey contractor to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the government.
- (p) **Factories Act 1948 or latest:** The Act lays down the procedure for approval at plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power engaged in manufacturing process.

18.3.2 Protection of Environment

The Contractor shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as consequence of his methods of operation.

During continuance of the Contract, the Contractor and his Sub-contractors shall abide at all times by all existing enactments on environmental protection and rules made thereunder, regulations, notifications and bye-laws of the State or Central Government, or local authorities and any other law, bye-law, regulations that may be passed or notification that may be issued in this respect in future by the State or Central Government or the local authority.

Salient features of some of the major laws that are applicable are given below:

The Water (Prevention and Control of Pollution) Act, 1974 or latest, This provides for the prevention and control of water pollution and the maintaining and restoring of wholesomeness of water. 'Pollution' means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms.

The Air (Prevention and Control of Pollution) Act, 1981 or latest, this provides for prevention, control and abatement of air pollution. 'Air Pollution' means the presence in the atmosphere of any 'air pollutant', which means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.

The Environment (Protection) Act, 1986 or latest, this provides for the protection and improvement of environment and for matters connected therewith, and the prevention of hazards to human beings, other living creatures, plants and property. 'Environment' includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.

The Public Liability Insurance Act, 1991 or latest, This provides for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for matters connected herewith or incidental thereto. Hazardous substance means any substance or preparation which is defined as hazardous substance under Environment (Protection) Act, 1986 or latest, and exceeding such quantity as may be specified by notification by the Central Government.

18.3.3 Safety Precautions

18.3.3.1 The Contractor shall observe all applicable regulations regarding safety on the Site.

Unless otherwise agreed, the Contractor shall, from the commencement of work on Site until Taking Over, provide:

- a) Fencing, lighting, guarding and watching of the Works, and
- b) Temporary roadways, footways, guards and fences which may be necessary for the accommodation and protection of Employer / his representatives and occupiers of adjacent property, the public and others.

18.3.3.2 The Contractor shall ensure proper safety of all the workmen, materials, plant and equipment belonging to him or to Employer or to others, working at the Site. The Contractor shall also be responsible for provision of all safety notices and safety equipment required both by the relevant legislations and the Project Manager, as he may deem necessary.

18.3.3.3 The Contractor will notify well in advance to the Project Manager of his intention to bring to the Site any container filled with liquid or gaseous fuel or explosive or petroleum substance or such chemicals which may involve hazards. The Project Manager shall have the right to prescribe the conditions, under which such container is to be stored, handled and used during the performance of the works and the Contractor shall strictly adhere to and comply with such instructions. The Project Manager shall have the right at his sole discretion to inspect any such container or such construction plant/equipment for which material in the container is required to be used and if in his opinion, its use is not safe, he may forbid its use. No claim due to such prohibition shall be entertained by the Employer and the Employer shall not entertain any claim of the Contractor towards additional safety provisions/conditions to be provided for/constructed as per the Project Manager's instructions.

Further, any such decision of the Project Manager shall not, in any way, absolve the Contractor of his responsibilities and in case, use of such a container or entry thereof into the Site area is forbidden by the Project Manager, the Contractor shall use alternative methods with the approval of the Project Manager without any cost implication to the Employer or extension of work schedule.

18.3.3.4 Where it is necessary to provide and/or store petroleum products or petroleum mixtures and explosives, the Contractor shall be responsible for carrying-out such provision and/or storage in accordance with the rules and regulations laid down **in Petroleum Act 1934 or latest, Explosives Act, 1948** or latest and Petroleum and Carbide of Calcium Manual published by the Chief Inspector of Explosives of India. All such storage shall have prior approval of the Project Manager. In case, any approvals are necessary from the Chief Inspector (Explosives) or any statutory authorities, the Contractor shall be responsible for obtaining the same.

- 18.3.3.5 All equipment used in construction and erection by Contractor shall meet Indian/International Standards and where such standards do not exist, the Contractor shall ensure these to be absolutely safe. All equipment shall be strictly operated and maintained by the Contractor in accordance with manufacturer's Operation Manual and safety instructions and as per Guidelines/rules of Employer in this regard.
- 18.3.3.6 Periodical examinations and all tests for all lifting/hoisting equipment & tackles shall be carried-out in accordance with the relevant provisions of Factories Act 1948 or latest or latest, Indian Electricity Act 2003 and/or J&K Electricity Act 2010 and associated Laws/Rules in force from time to time. A register of such examinations and tests shall be properly maintained by the Contractor and will be promptly produced as and when desired by the Project Manager or by the person authorized by him.
- 18.3.3.7 The Contractor shall be fully responsible for the safe storage of his and his Sub-Contractor's radioactive sources in accordance with BARC/DAE Rules and other applicable provisions. All precautionary measures stipulated by BARC/DAE in connection with use, storage and handling of such material will be taken by the Contractor.
- 18.3.3.8 The Contractor shall provide suitable safety equipment of prescribed standard to all employees and workmen according to the need, as may be directed by the Project Manager who will also have right to examine these safety equipment to determine their suitability, reliability, acceptability and adaptability.
- 18.3.3.9 Where explosives are to be used, the same shall be used under the direct control and supervision of an expert, experienced, qualified and competent person strictly in accordance with the Code of Practice/Rules framed under Indian Explosives Act pertaining to handling, storage and use of explosives.
- 18.3.3.10 The Contractor shall provide safe working conditions to all workmen and employees at the Site including safe means of access, railings, stairs, ladders, scaffoldings etc. The scaffoldings shall be erected under the control and supervision of an experienced and competent person. For erection, good and standard quality of material only shall be used by the Contractor.
- 18.3.3.11 The Contractor shall not interfere or disturb electric fuses, wiring and other electrical equipment belonging to the Employer or other Contractors under any circumstances, whatsoever, unless expressly permitted in writing by Employer to handle such fuses, wiring or electrical equipment
- 18.3.3.12 Before the Contractor connects any electrical appliances to any plug or socket belonging to the other Contractor or Employer, he shall:
- a. Satisfy the Project Manager that the appliance is in good working condition;
 - b. Inform the Project Manager of the maximum current rating, voltage and phases of the appliances;
 - c. Obtain permission of the Project Manager detailing the sockets to which the appliances may be connected.
- 18.3.3.13 The Project Manager will not grant permission to connect until he is satisfied that;

- a. The appliance is in good condition and is fitted with suitable plug;
- b. The appliance is fitted with a suitable cable having two earth conductors, one of which shall be an earthed metal sheath surrounding the cores.

18.3.3.14 No electric cable in use by the Contractor/Employer will be disturbed without prior permission. No weight of any description will be imposed on any cable and no ladder or similar equipment will rest against or attached to it.

18.3.3.15 No repair work shall be carried out on any live equipment. The equipment must be declared safe by the Project Manager and a permit to work shall be issued by the Project Manager before any repair work is carried out by the Contractor. While working on electric lines/equipment, whether live or dead, suitable type and sufficient quantity of tools will have to be provided by the Contractor to electricians/workmen/officers.

18.3.3.16 The Contractors shall employ necessary number of qualified, full time electricians/electrical supervisors to maintain his temporary electrical installation.

18.3.3.17 The Contractor employing more than 250 workmen whether temporary, casual, probationer, regular or permanent or on contract, shall employ at least one full time officer exclusively as safety officer to supervise safety aspects of the equipment and workmen, who will coordinate with the Project Safety Officer. In case of work being carried out through Sub-Contractors, the Sub-Contractor's workmen/employees will also be considered as the Contractor's employees/workmen for the above purpose.

The name and address of such Safety Officers of the Contractor will be promptly informed in writing to Project Manager with a copy to Safety Officer-In charge before he starts work or immediately after any change of the incumbent is made during currency of the Contract.

18.3.3.18 In case any accident occurs during the construction/ erection or other associated activities undertaken by the Contractor thereby causing any minor or major or fatal injury to his employees due to any reason, whatsoever, it shall be the responsibility of the Contractor to promptly inform the same to the Project Manager in prescribed form and also to all the authorities envisaged under the applicable laws.

18.3.3.19 The Project Manager shall have the right at his sole discretion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and/or property, and/or equipment. In such cases, the Contractor shall be informed in writing about the nature of hazards and possible injury/accident and he shall comply to remove shortcomings promptly. The Contractor after stopping the specific work can, if felt necessary, appeal against the order of stoppage of work to the Project Manager within 3 days of such stoppage of work and decision of the Project Manager in this respect shall be conclusive and binding on the Contractor.

18.3.3.20 The Contractor shall not be entitled for any damages/compensation for stoppage of work due to safety reasons as provided in GCC Sub-Clause 18.3.3.19 above and the period of such stoppage of work will not be taken as an extension of time for completion of work and will not be the ground for waiver of levy of liquidated damages.

18.3.3.21 It is mandatory for the Contractor to observe during the execution of the works, requirements of Safety Rules which would generally include but not limited to following:

Safety Rules

- a) Each employee shall be provided with initial indoctrination regarding safety by the Contractor, so as to enable him to conduct his work in a safe manner.
- b) No employee shall be given a new assignment of work unfamiliar to him without proper introduction as to the hazards incident thereto, both to himself and his fellow employees.
- c) Under no circumstances shall an employee hurry or take unnecessary chance when working under hazardous conditions.
- d) Employees must not leave naked fires unattended. Smoking shall not be permitted around fire prone areas and adequate firefighting equipment shall be provided at crucial location.
- e) Employees under the influence of any intoxicating beverage, even to the slightest degree shall not be permitted to remain at work.
- f) There shall be a suitable arrangement at every work site for rendering prompt and sufficient first aid to the injured.
- g) The staircases and passageways shall be adequately lighted.
- h) The employees when working around moving machinery, must not be permitted to wear loose garments. Safety shoes are recommended when working in shops or places where materials or tools are likely to fall. Only experienced workers shall be permitted to go behind guard rails or to clean around energized or moving equipment.
- i) The employees must use the standard protection equipment intended for each job. Each piece of equipment shall be inspected before and after it is used.
- j) Requirements of ventilation in underwater working to licensed and experienced divers, use of gum boots for working in slushy or in inundated conditions are essential requirements to be fulfilled.
- k) In case of rock excavation, blasting shall invariably be done through licensed blasters and other precautions during blasting and storage/transport of charge material shall be observed strictly.

18.3.3.22 The Contractor shall follow and comply with all Employer Safety Rules, relevant provisions of applicable laws pertaining to the safety of workmen, employees, plant and equipment as may be prescribed from time to time without any demur, protest or contest or reservations. In case of any discrepancy between statutory requirement and Employer Safety Rules referred above, the latter shall be binding on the Contractor unless the statutory provisions are more stringent.

18.3.3.23 If the Contractor fails in providing safe working environment as per Employer Safety Rules or continues the work even after being instructed to stop work by the Project Manager as provided in GCC Sub-Clause 18.3.3.19 above, the Contractor shall promptly pay to Employer, on demand by the Employer, compensation at the rate of Rs. 5,000/- per day of part thereof till the instructions are complied with and so certified by the Project Manager. However, in case of accident taking place causing injury to any individual, the provisions contained in GCC Sub-Clause 18.3.3.24 shall also apply in addition to compensation mentioned in this Clause.

- 18.3.3.24 If the Contractor does not take adequate safety precautions and/or fails to comply with the Safety Rules as prescribed by the Employer or under the applicable law for the safety of the equipment and plant or for the safety of personnel or the Contractor does not prevent hazardous conditions which cause injury to his own employees or employees of other Contractors or Employer's employees or any other person who are at Site or adjacent thereto, then the Contractor shall be responsible for payment of a sum as indicated below to be deposited with the Employer, which will be passed on by the Employer to such person or next to kith and kin of the deceased:

a.	Fatal injury or accident causing death	Rs. 10,00,000/- per person
b.	Major injuries or accident causing 25% or more permanent disablement	Rs. 1,00,000/- per person

Permanent disablement shall have same meaning as indicated in Workmen's Compensation Act. The amount to be deposited with Employer and passed on to the person mentioned above shall be in addition to the compensation payable under the relevant provisions of the Workmen's Compensation Act and rules framed there under or any other applicable laws as applicable from time to time. In case the Contractor does not deposit the above mentioned amount with Employer, such amount shall be recovered by Employer from any monies due or becoming due to the Contractor under the contract or any other on-going contract.

- 18.3.3.25 If the Contractor observes all the Safety Rules and Codes, Statutory Laws and Rules during the currency of Contract awarded by the Employer and no accident occurs then Employer may consider the performance of the Contractor and award suitable 'ACCIDENT FREESAFETY MERITORIOUS AWARD' as per scheme as may be announced separately from time to time.

- 18.3.3.26 The Contractor shall also submit 'Safety Plan' as per proforma specified in Section – Sample Forms and Procedures of the Bidding Documents along with all the requisite documents mentioned therein and as per check-list contained therein to the Project Manager for its approval within 60 days of award of Contract.

Further, one of the conditions for release of first progressive payment / subsequent payment towards Services Contract shall be submission of 'Safety Plan' along with all requisite documents and approval of the same by the Project Manager.

18.4 Opportunities for Other Contractors

- 18.4.1 The Contractor shall, upon written request from the Employer or the Project Manager, give all reasonable opportunities for carrying out the work to any other contractors employed by the Employer on or near the Site.
- 18.4.2 If the Contractor, upon written request from the Employer or the Project Manager, makes available to other contractors any roads or ways the maintenance for which the Contractor is responsible, permits the use by such other contractors of the Contractor's Equipment, or provides any other service of whatsoever nature for such other contractors, the Employer shall fully compensate the Contractor for any loss or damage caused or occasioned by such other contractors in respect of any such use or service, and shall pay to the Contractor reasonable remuneration for the use of such equipment or the provision of such services.
- 18.4.3 The Contractor shall also so arrange to perform its work as to minimize, to the extent possible, interference with the work of other contractors. The Project Manager shall

determine the resolution of any difference or conflict that may arise between the Contractor and other contractors and the workers of the Employer in regard to their work.

- 18.4.4 The Contractor shall notify the Project Manager promptly of any defects in the other contractors' work that come to its notice, and that could affect the Contractor's work. The Project Manager shall determine the corrective measures, if any, required to rectify the situation after inspection of the Facilities. Decisions made by the Project Manager shall be binding on the Contractor.

18.5 Emergency Work

If, by reason of an emergency arising in connection with and during the execution of the Contract, any protective or remedial work is necessary as a matter of urgency to prevent damage to the Facilities, the Contractor shall immediately carry out such work.

If the Contractor is unable or unwilling to do such work immediately, the Employer may do or cause such work to be done as the Employer may determine is necessary in order to prevent damage to the Facilities. In such event the Employer shall, as soon as practicable after the occurrence of any such emergency, notify the Contractor in writing of such emergency, the work done and the reasons therefor. If the work done or caused to be done by the Employer is work that the Contractor was liable to do at its own expense under the Contract, the reasonable costs incurred by the Employer in connection therewith shall be paid by the Contractor to the Employer. In case such work is not in the scope of the Contractor, the cost of such remedial work shall be borne by the Employer.

18.6 Site Clearance

- 18.6.1 Site Clearance in Course of Performance: In the course of carrying out the Contract, the Contractor shall keep the Site reasonably free from all unnecessary obstruction, store or remove any surplus materials, clear away any wreckage, rubbish or temporary works from the Site, and remove any Contractor's Equipment no longer required for execution of the Contract.

- 18.6.2 Clearance of Site after Completion: After Completion of all parts of the Facilities, the Contractor shall clear away and remove all wreckage, rubbish and debris of any kind from the Site, and shall leave the Site and Facilities clean and safe.

18.7 Watching and Lighting

The Contractor shall provide and maintain at its own expense all lighting, fencing, and watching when and where necessary for the proper execution and the protection of the Facilities, or for the safety of the owners and occupiers of adjacent property and for the safety of the public.

18.8 Work at Night and on Holidays

- 18.8.1 Unless otherwise provided in the Contract, no work shall be carried out during the night and on public holidays of the country where the Site is located without prior written consent of the Employer, except where work is necessary or required to ensure safety of the Facilities or for the protection of life, or to prevent loss or damage to property, when the Contractor shall immediately advise the Project Manager, provided that provisions of this GCC Sub-Clause 18.8.1 shall not apply to any work which is customarily carried out by rotary or double-shifts.

- 18.8.2 Notwithstanding GCC Sub-Clauses 18.8.1 or 18.1.3, if and when the Contractor considers it necessary to carry out work at night or on public holidays so as to meet the Time for Completion and requests the Employer's consent thereto, the Employer shall not unreasonably withhold such consent.

19. Test and Inspection

- 19.1 The Contractor shall at its own expense carry out at the place of manufacture and/or on the Site all such tests and/or inspections of the Plant and Equipment and any part of the Facilities as are specified in the Contract.
- 19.2 The Employer and the Project Manager or their designated representatives shall be entitled to attend the aforesaid test and/or inspection, provided that the Employer shall bear all costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.
- 19.3 Whenever the Contractor is ready to carry out any such test and/or inspection, the Contractor shall give four weeks advance notice of such test and/or inspection and of the place and time thereof to the Project Manager. The Contractor shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Employer and the Project Manager (or their designated representatives) to attend the test and/or inspection.
- 19.4 The Contractor shall provide the Project Manager with a certified report of the results of any such test and/or inspection.
- If the Employer or Project Manager (or their designated representatives) fails to attend the test and/or inspection, or if it is agreed between the parties that such persons shall not do so, then the Contractor may proceed with the test and/or inspection in the absence of such persons, and may provide the Project Manager with a certified report of the results thereof.
- 19.5 The Project Manager may require the Contractor to carry out any test and/or inspection not required by the Contract, provided that the Contractor's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impedes the progress of work on the Facilities and/or the Contractor's performance of its other obligations under the Contract, due allowance will be made in respect of the Time for Completion and the other obligations so affected.
- 19.6 If any Plant and Equipment or any part of the Facilities fails to pass any test and/or inspection, the Contractor shall either rectify or replace such Plant and Equipment or part of the Facilities and shall repeat the test and/or inspection upon giving a notice under GCC Sub-Clause 19.3.
- 19.7 If any dispute or difference of opinion shall arise between the parties in connection with or arising out of the test and/or inspection of the Plant and Equipment or part of the Facilities that cannot be settled between the parties within a reasonable period of time, it may be referred to an Arbitrator for determination in accordance with GCC Sub-Clause 39.
- 19.8 The Contractor shall afford the Employer and the Project Manager, at the Employer's expense, access at any reasonable time to any place where the Plant and Equipment are being manufactured or the Facilities are being installed, in order to inspect the progress and the manner of manufacture or installation, provided that the Project Manager shall give the Contractor a reasonable prior notice.

19.9 The Contractor agrees that neither the execution of a test and/or inspection of Plant and Equipment or any part of the Facilities, nor the attendance by the Employer or the Project Manager, nor the issue of any test certificate pursuant to GCC Sub-Clause 19.4, shall release the Contractor from any other responsibilities under the Contract.

19.10 No part of the Facilities or foundations shall be covered up on the Site without the Contractor carrying out any test and/or inspection required under the Contract. The Contractor shall give a reasonable notice to the Project Manager whenever any such part of the Facilities or foundations are ready or about to be ready for test and/or inspection; such test and/or inspection and notice thereof shall be subject to the requirements of the Contract.

19.11 The Contractor shall uncover any part of the Facilities or foundations, or shall make openings in or through the same as the Project Manager may from time to time require at the Site, and shall reinstate and make good such part or parts.

If any parts of the Facilities or foundations have been covered up at the Site after compliance with the requirement of GCC Sub-Clause 19.10 and are found to be executed in accordance with the Contract, the expenses of uncovering, making openings in or through, reinstating, and making good the same shall be borne by the Employer, and the Time for Completion shall be reasonably adjusted to the extent that the Contractor has thereby been delayed or impeded in the performance of any of its obligations under the Contract.

20. Completion of the Facilities and Operational Acceptance

20.1 Completion of the Facilities

20.1.1 Physical Completion

20.1.1.1 As soon as the Facilities or any part thereof has, in the opinion of the Contractor, been completed operationally and structurally and put in a tight and clean condition as specified in the Technical Specifications, excluding minor items not materially affecting the operation or safety of the Facilities, the Contractor shall so notify the Employer in writing.

20.1.2 Pre-Commissioning

20.1.2.1 Within seven (7) days after receipt of the notice from the Contractor under GCC Sub-Clause 20.1.1.1, the Project Manager shall deploy the operating and maintenance personnel and other material if so specified in the corresponding Appendix – 6 (Scope of Works and Supply by the Employer) to the Contract Agreement for Pre-commissioning of the Facilities or any part thereof.

20.1.2.2 As soon as reasonably practicable after the operating and maintenance personnel have been deployed by the Employer and other materials have been provided by the Employer in accordance with GCC Sub-Clause 20.1.2.1, the Contractor shall commence Pre-commissioning of the Facilities or the relevant part thereof, in presence of the Employer's representatives, as per procedures detailed in Technical Specifications in preparation for Commissioning.

20.1.2.3 As soon as all works in respect of Pre-commissioning are successfully completed and, in the opinion of the Contractor, the Facilities or any part thereof is ready for Commissioning, the Contractor shall notify the Project Manager in writing.

- 20.1.2.4 The Project Manager shall, within fourteen (14) days after receipt of the Contractor's notice under GCC Sub-Clause 20.1.2.3, notify the Contractor in writing of any defects and/or deficiencies.
- 20.1.2.5 If the Project Manager notifies the Contractor of any defects and/or deficiencies, the Contractor shall then correct such defects and/or deficiencies, and shall repeat the procedure described in GCC Sub-Clause 20.1.2.2. If in the opinion of the Contractor, the Facilities or any part thereof is now ready for Commissioning, the Contractor shall again notify the Project Manager in writing. If further defects and/or deficiencies are not notified by the Project Manager and if the Project Manager is satisfied that the Pre-commissioning of Facilities or that part thereof have been successfully completed, the Project Manager shall, within seven (7) days after receipt of the Contractor's such notice, advise the Contractor to proceed with the Commissioning of the Facilities or part thereof.
- 20.1.2.6 If the Project Manager fails to inform the Contractor of any defects and/or deficiencies within fourteen (14) days after receipt of the Contractor's notice under GCC Sub-Clause 20.1.2.4 or within seven (7) days after receipt of the Contractor's notice on completion of repeat procedure under GCC Sub-Clause 20.1.2.5, then the Pre-commissioning of the Facilities or that part thereof shall be considered to have been successfully completed as of the date of the Contractor's notice.
- 20.1.2.7 As soon as possible after Pre-commissioning, the Contractor shall complete all outstanding minor items so that the Facilities are fully in accordance with the requirements of the Contract, failing which the Employer will undertake such completion and deduct the costs thereof from any monies owing to the Contractor.
- 20.1.2.8 In the event that the Contractor is unable to proceed with the Pre-commissioning of the Facilities pursuant to Sub-Clause 20.1.2 for reasons attributable to the Employer either on account of non-availability of other facilities under the responsibilities of other contractor(s), or for reasons beyond the Employer's control, the following provisions shall apply:

When the Contractor is notified by the Project Manager that he will be unable to proceed with the activities and obligations pursuant to above GCC Sub-Clause 20.1.2.8, the Contractor shall be entitled to the following:

- a) the Time of Completion shall be extended for the period of suspension without imposition of liquidated damages pursuant to GCC Sub-Clause 21.2.
- b) payments due to the Contractor in accordance with the provisions specified in Appendix I (Terms and Procedures of Payment) to the Contract Agreement, which would have not been payable in normal circumstances due to non-completion of the said activities and obligations, shall be released to the Contractor against submission of a security in the form of a bank guarantee of equivalent amount acceptable to the Employer, and which shall become null and void when the Contractor will have complied with its obligations regarding these payments, subject to the provisions of GCC Sub-Clause 21.2.9 below.
- c) the expenses payable by the Contractor to the Bankers toward the extension of above security and extension of other securities under the Contract, of which validity need to be extended, shall be reimbursed to the Contractor by the Employer against documentary evidence.
- d) the additional charges toward the care of the Facilities pursuant to GCC Sub-Clause 28.1 shall be reimbursed to the Contractor by the Employer for the period between

the notification mentioned above and the notification mentioned in GCC Sub-Clause 20.1.2.10 below. The provisions of GCC Sub-Clause 29.2 shall apply to the Facilities during the same period.

- 20.1.2.9 In the event that the period of suspension under GCC Sub-Clause 20.1.2.8 actually exceeds one hundred eighty (180) days, the Employer and the Contractor shall mutually agree to any additional compensation payable to the Contractor.
- 20.1.2.10 As and when, after the period of suspension under GCC Sub-Clause 20.1.2.8, the Contractor is notified by the Project Manager that the Facilities are ready for Pre-commissioning, the Contractor shall proceed without delay in performing all activities and obligations under the Contract.
- 20.1.3 Commissioning
 - 20.1.3.1 Commissioning of the Facilities or any part thereof shall be commenced by the Contractor immediately after being advised by the Project Manager, pursuant to GCC Sub-Clause 20.1.2.5 or immediately after the Pre-commissioning is considered to be completed under GCC Sub-Clause 20.1.2.6.
 - 20.1.3.1.1 Commissioning of the Facilities or any part thereof shall be completed by the Contractor as per procedures detailed in bid documents.
 - 20.1.3.2 The Employer shall, to the extend specified in Appendix – 6 (Scope of works and supply by the Employer), deploy the operating and maintenance personnel and supply all raw materials, utilities, lubricants, chemicals, catalysts, facilities, services and other materials required for commissioning.
 - 20.1.3.3 In the event that the Contractor is unable to proceed with the Commissioning of the Facilities pursuant to Sub-Clause 20.1.3 for reasons attributable to the Employer either on account of non-availability of other facilities under the responsibilities of other contractor(s), or for reasons beyond the Employer's control, the provisions of GCC Sub-Clause 20.1.2.8 to 20.1.2.9 shall apply.
 - 20.1.3.4 As and when, after the period of suspension under GCC Sub-Clause 20.1.2.8, the Contractor is notified by the Project Manager that the Facilities are ready for Commissioning, the Contractor shall proceed without delay in performing all activities and obligations under the Contract.
- 20.1.4 Trial - Operation
 - 20.1.4.1 Trial – Operation of the Facilities or any part thereof shall be commenced by the Contractor immediately after the Commissioning is completed pursuant to GCC Sub-Clause 20.1.3.1.1.
 - 20.1.4.2 Trial – Operation of the Facilities or any part thereof shall be completed by the Contractor for the period specified in Technical Specification (or for a continuous period of 24 hours where such period is not specified in Technical Specification) and as per procedures detailed in Technical Specifications.
 - 20.1.4.3 At any time after the events set out in GCC Sub-Clause 20.1.4.2 have occurred, the Contractor may give a notice to the Project Manager requesting the issue of an Taking Over Certificate in the form provided in the Bidding Documents or in another form acceptable to the Employer in respect of the Facilities or the part thereof specified in such notice as of the date of such notice.

- 20.1.4.4 The Project Manager shall within twenty-one (21) days after receipt of the Contractor's notice, issue an Taking Over Certificate.
- 20.1.5 Taking Over
 - 20.1.5.1 Upon successful Trial – Operation of the Facilities or any part thereof, pursuant to GCC Sub-Clause 20.1.4, the Project Manager shall issue to the Contractor a Taking Over Certificate as a proof of the acceptance of the Facilities or any part thereof. Such certificate shall not relieve the Contractor of any of his obligations which otherwise survive, by the terms and conditions of Contract after issue of such certificate.
 - 20.1.5.2 If within twenty one (21) days after receipt of the Contractor's notice, the Project Manager fails to issue the Taking Over Certificate or fails to inform the Contractor in writing of the justifiable reasons why the Project Manager has not issued the Taking Over Certificate, the Facilities or the relevant part thereof shall be deemed to have been Taken Over as at the date of the Contractor's said notice.
 - 20.1.5.3 Upon Taking Over of the Facilities or any part thereof, the Employer shall be responsible for the care and custody of the Facilities or the relevant part thereof, together with the risk of loss or damage thereto, and shall thereafter take over the Facilities or the relevant part thereof.
- 20.2 Operational Acceptance
 - 20.2.1 Guarantee Test
 - 20.2.1.1 The Guarantee Test (and repeats thereof), if any specified in the SCC and/or the Technical Specification, shall be conducted by the Contractor after successful Trial – Operation of the Facilities or the relevant part thereof to ascertain whether the Facilities or the relevant part can attain the Functional Guarantees specified in the Contract Documents or if otherwise required as per the Technical Specifications. The Contractor's and Project Manager's advisory personnel may witness the Guarantee Test. The Contractor shall promptly provide the Employer with such information as the Employer may reasonably require in relation to the conduct and results of the Guarantee Test (and any repeats thereof).
 - 20.2.1.2 If for reasons not attributable to the Contractor, the Guarantee Test of the Facilities or the relevant part thereof cannot be successfully completed within the time stipulated in the Technical Specifications the period for completing the same shall be as agreed upon by the Employer and the Contractor.
 - 20.2.2 Operational Acceptance
 - 20.2.2.1 Operational Acceptance shall occur in respect of the Facilities or any part thereof as mentioned below:
 - (I) In case no Functional Guarantees are applicable, Operational Acceptance shall occur when the Facilities or part thereof have been successfully Commissioned and Trial – Operation for the specified period have been successfully completed
 - (II) In case Functional Guarantees are applicable, Operational Acceptance shall occur when the Functional Guarantees are met or the Contractor has paid liquidated damages specified in GCC Sub-Clause 23.3 hereof; or

- 20.2.2.2 At any time after any of the events set out in GCC Sub-Clause 20.2.2.1 have occurred, the Contractor may give a notice to the Project Manager requesting the issue of an Operational Acceptance Certificate in the form provided in the Bidding Documents or in another form acceptable to the Employer in respect of the Facilities or the part thereof specified in such notice as of the date of such notice.
- 20.2.2.3 The Project Manager shall within seven (7) days after receipt of the Contractor's notice, issue an Operational Acceptance Certificate.
- 20.2.2.4 Upon Operational Acceptance, pursuant to GCC Sub-Clause 20.2.2.2, the Project Manager shall issue to the Contractor a Operational Acceptance Certificate as a proof of the final acceptance of the Plant and Equipment. Such certificate shall not relieve the Contractor of any of his obligations which otherwise survive, by the terms and conditions of Contract after issue of such certificate.
- 20.2.2.5 If within fourteen (14) days after receipt of the Contractor's notice, the Project Manager fails to issue the Operational Acceptance Certificate or fails to inform the Contractor in writing of the justifiable reasons why the Project Manager has not issued the Operational Acceptance Certificate, the Facilities or the relevant part thereof shall be deemed to have been accepted as at the date of the Contractor's said notice.
- 20.3 Partial Acceptance
- 20.3.1 If the Contract specifies that Commissioning shall be carried out in respect of parts of the Facilities, the provisions relating to Commissioning including the Trial – Operation and Guarantee Test shall apply to each such part of the Facilities individually, and the Operational Acceptance Certificate shall be issued accordingly for each such part of the Facilities.

20A. Quantity Variation

- I. The quantity of all equipment/materials given in the Price Schedules of the bidding documents are provisional. The variation in quantity shall be limited to plus/minus (+/-) twenty percent (20%) for the individual items, total variations in all items under the contract shall be limited to ten percent (10%) of the contract price. For quantity variation of the individual items beyond twenty percent (20%), the matter shall be referred to the Employer for mutually agreed rates.
- II. However, in case of highly quoted rate of individual item as compared to its estimated cost, efforts shall be made so that no positive deviation in quantity during execution shall be permitted to its award quantity. However, in case, deviations are found inevitable, present market rate analysis of the item shall be made.
- III. The Contractor shall be responsible for supply and execution of such final quantities for completion of the project and they shall be paid for such finalized quantity within plus ten percent (+) 10% overall deviation limit.

20B. Electrical Inspector inspection:

After successful completion of the work permission from State Electrical Inspectorate if required. Necessary fee etc. shall be paid by the Contractor.

Defects / in-complete works notified by Electrical Inspectorate shall be completed by the agency at no extra cost implication to Employer-

F. Guarantees and Liabilities

21. Completion Time Guarantee

21.1 The Contractor guarantees that it shall attain Completion of the Facilities (or a part for which a separate time for completion is specified in the SCC) within the Time for Completion specified in the **SCC** pursuant to GCC Sub-Clause 4.2, or within such extended time to which the Contractor shall be entitled under GCC Clause 34 hereof.

21.2 If the Contractor fails to comply with the Time for Completion in accordance with Clause GCC 21 for the whole of the facilities, (or a part for which a separate time for completion is agreed) then the Contractor shall pay to the Employer a sum equivalent to half percent (0.5%) of the Contract Price **for the whole of the facilities, (or a part for which a separate time for completion is agreed)** as liquidated damages for such default and not as a penalty, without prejudice to the Employer's other remedies under the Contract, for each week or part thereof which shall elapse between the relevant Time for Completion and the date stated in Taking Over Certificate of the whole of the Works (or a part for which a separate time for completion is agreed) subject to the limit of five percent (5%) of Contract Price **for the whole of the facilities, (or a part for which a separate time for completion is agreed)**. The Employer may, without prejudice to any other method of recovery, deduct the amount of such damages from any monies due or to become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works, or from any other of his obligations and liabilities under the Contract.

21.3 No bonus will be given for earlier Completion of the Facilities or part thereof.

21A. Pre-dispatch Inspection:

Pre-dispatch inspection shall be performed on various materials at manufacturer's work place for which contractor shall be required to raise requisition giving at least 10-day time. Depending on requirement, inspection shall be witnessed by representatives of Employer, TPIA and/or REC/PFC/MoP. Inspection by representative of "Owner" shall be mandatory.

The contractor shall ensure receipt of material at site within 21 days from date of receipt of dispatch instructions. In case materials are not received within 21 days from date of issue of dispatch instruction, the dispatch instruction shall stand cancelled. All expenditure incurred by Employer in performance of dispatch instruction shall be recovered from turnkey contractor.

The turnkey contractor shall ensure that pre-dispatch inspection for materials are intimated only when the material is completely ready for inspection. On due date of inspection, if it is found that materials are not ready in required quantities or the inspection could not be carried out due to non-availability of requisite calibrated certificate of instruments with manufacturer, closing of works on scheduled date of inspection, non-availability of sufficient testing/material handling staff at manufacturer works etc, all expenditures incurred on deployment of various inspecting officials along with a fine of Rs 50,000/- shall be recovered from the bills of the agency and re-inspection shall be carried out on expense of contractor. 2nd such situation at same manufacturer/supplier shall result in rejection of name of manufacturer from list of approved vendors/sub-vendors. In case sub-standard materials (old component, re-cycled materials, re-used core material, re-used transformer coil material etc) offered for inspection and are noticed during the inspection, materials shall be rejected and approval of sub-vendor shall also be cancelled for all DDUGJY/IPDS projects.

22. Defect Liability

22.1 The Contractor warrants that the Facilities or any part thereof shall be free from defects in the design, engineering, materials and workmanship of the Plant and Equipment supplied and of the work executed.

22.1.1 Volume of concreting: If it was observed by employer, quality monitoring agencies and/or REC/MoP that volume and quality of concreting used in foundation of support, equipment foundation, gantry structure foundation, stay set etc. are not as per requirement specified in the scope of work/technical specifications, the contractor has to dismantle the supports, foundation and redo the concreting of all the supports in that particular section of line/redo all the foundations in that particular substation at his own cost. To ensure this, the employer reserves the right to withhold the payment of contractor for such defective works till such time the contractor conforms to scope of works, technical specification and tender drawings.

22.1.2 Galvanization of metallic structure: All Metallic structures& fabricated items excluding metallic supports (Steel tubular poles/H-Beam) must be galvanized. In case any metallic item found rusted during execution of works, the contractor has to replace the item used at all places. To ensure this, the employer reserves the right to withhold the payment of contractor for such works till such time the contractor conforms to scope of works, technical specification and tender drawings.

22.1.3 Painting of metallic supports (Steel tubular poles/H-Beam): Painting of metallic supports in overhead lines, distribution transformer substation and Power substation shall be ensured as per specifications. In case metallic supports found rusted during execution of works, the contractor has to remove inferior painting, clean the surface and re-paint it as per given specifications. To ensure this, the employer reserves the right to withhold the payment of contractor for such works till such time the contractor conforms to scope of works, technical specification and tender drawings.

22.2 The Defect Liability Period shall be **Twelve (12) months** from the date of successful installation, testing, commissioning of material at site (or any part thereof).

If during the Defect Liability Period any defect should be found in the design, engineering, materials and workmanship of the Plant and Equipment supplied or of the work executed by the Contractor, the Contractor shall promptly, in consultation and agreement with the Employer regarding appropriate remedying of the defects, and at its cost, repair, replace or otherwise make good (as the Contractor shall, at its discretion, determine) such defect as well as any damage to the Facilities caused by such defect. The Contractor shall not be responsible for the repair, replacement or making good of any defect or of any damage to the Facilities arising out of or resulting from any of the following causes:

- (a) improper operation or maintenance of the Facilities by the Employer
- (b) operation of the Facilities outside specifications provided in the Contract
- (c) normal wear and tear.

22.3 The Contractor's obligations under this GCC Clause 22 shall not apply to

No. RECPDCL/TECH/JKPDD/e-Tender/2017-18/1763 Dated: 21.08.2017

- (a) any materials that are supplied by the Employer under GCC Sub-Clause 17.2, are normally consumed in operation, or have a normal life shorter than the Defect Liability Period stated herein
- (b) any designs, specifications or other data designed, supplied or specified by or on behalf of the Employer or any matters for which the Contractor has disclaimed responsibility herein
- (c) any other materials supplied or any other work executed by or on behalf of the Employer, except for the work executed by the Employer under GCC Sub-Clause 22.7.
- (d) bidder shall coordinate with the employer fortnightly basis to collect the faulty material in a lot of minimum 100 meters and replace/repair within 1 month.

22.4 The Employer shall give the Contractor a notice stating the nature of any such defect together with all available evidence thereof, promptly following the discovery thereof. The Employer shall afford all reasonable opportunity for the Contractor to inspect any such defect.

22.5 The Employer shall afford the Contractor all necessary access to the Facilities and the Site to enable the Contractor to perform its obligations under this GCC Clause 22. The Contractor may, with the consent of the Employer, remove from the Site any Plant and Equipment or any part of the Facilities that are defective if the nature of the defect, and/or any damage to the Facilities caused by the defect, is such that repairs cannot be expeditiously carried out at the Site.

22.6 If the repair, replacement or making good is of such a character that it may affect the efficiency of the Facilities or any part thereof, the Employer may give to the Contractor a notice requiring that tests of the defective part of the Facilities shall be made by the Contractor immediately upon completion of such remedial work, whereupon the Contractor shall carry out such tests.

If such part fails the tests, the Contractor shall carry out further repair, replacement or making good (as the case may be) until that part of the Facilities passes such tests.

22.7 If the Contractor fails to commence the work necessary to remedy such defect or any damage to the Facilities caused by such defect within a reasonable time (which shall in no event be considered to be less than fifteen (15) days), the Employer may, following notice to the Contractor, proceed to do such work, and the reasonable costs incurred by the Employer in connection therewith shall be paid to the Employer by the Contractor or may be deducted by the Employer from any monies due the Contractor or claimed under the Performance Security.

22.8 If the Facilities or any part thereof cannot be used by reason of such defect and/or making good of such defect, the Defect Liability Period of the Facilities or such part, as the case may be, shall be extended by a period equal to the period during which the Facilities or such part cannot be used by the Employer because of any of the aforesaid reasons.

Upon correction of the defects in the Facilities or any part thereof by repair/replacement, such repair/replacement shall have the Defect Liability Period extended by a period mentioned in GCC Sub-Clause 22.2 from the time of such replacement/repair of the facilities or any part thereof.

- 22.8.1 At the end of the Defect Liability Period, the Contractor's Liability ceases except for latent defects. The Contractor's liability for latent defects warranty shall be limited to period of ten (10) years from the end of Defect Liability Period. For the purpose of this clause, the latent defects shall be the defects inherently lying within the material or arising out of design deficiency, which do not manifest themselves during the Defect Liability Period defined in this GCC Clause 22, but later.
- 22.9 Except as provided in GCC Clauses 22 and 29, the Contractor shall be under no liability whatsoever and howsoever arising, and whether under the Contract or at law, in respect of defects in the Facilities or any part thereof, the Plant and Equipment, design or engineering or work executed that appear after Defect Liability Period except for the liability towards obligations that may survive in terms of the Contract after Defect Liability Period, except where such defects are the result of the gross negligence, fraud, criminal or willful action of the Contractor.

23. Functional Guarantees

- 23.1 The Contractor guarantees that the Facilities and all parts thereof shall attain the Functional Guarantees specified in the Technical Specifications, subject to and upon the conditions therein specified.
- 23.2 If, for reasons attributable to the Contractor, the minimum level of the Functional Guarantees specified in the Technical Specifications are not met either in whole or in part, the Contractor shall at its cost and expense make such changes, modifications and/or additions to the Plant or any part thereof as may be necessary to meet at least the minimum level of such Guarantees. The Contractor shall notify the Employer upon completion of the necessary changes, modifications and / or additions, and shall request the Employer to repeat the Guarantee Test until the minimum level of the Guarantees has been met. If the Contractor eventually fails to meet the minimum level of Functional Guarantees, the Employer may consider termination of the Contract pursuant to GCC Sub-Clause 36.2.2 and recover the payments already made to the Contractor.
- 23.3 If, for reasons attributable to the Contractor, the Functional Guarantees specified in the Technical Specifications are not attained either in whole or in part, but the minimum level of the Functional Guarantees specified in the Technical Specifications is met, the Contractor shall, at the Contractor's option, either
- (a) make such changes, modifications and/or additions to the Facilities or any part thereof that are necessary to attain the Functional Guarantees at its cost and expense within a mutually agreed time and shall request the Employer to repeat the Guarantee Test, or
 - (b) pay liquidated damages to the Employer in respect of the failure to meet the Functional Guarantees in accordance with the provisions in the **SCC**.
- 23.4 In case the Employer exercises its option to accept the equipment after levy of liquidated damages, the payment of liquidated damages under GCC Sub-Clause 23.3, upto the limitation of liability specified in the **SCC**, shall completely satisfy the Contractor's guarantees under GCC Sub-Clause 23.3, and the Contractor shall have no further liability whatsoever to the Employer in respect thereof. Upon the payment of such liquidated damages by the Contractor, the Project Manager shall issue the Operational Acceptance Certificate for the Facilities or any part thereof in respect of which the liquidated damages have been so paid.

24. Equipment Performance Guarantees

- 24.1 The Contractor guarantees that the Equipment, named in the SCC, shall attain the rating and performance requirements specified in Appendix – 8 (Guarantees, Liquidated Damages for Non – Performance) to the Contract Agreement, subject to and upon the conditions therein specified.
- 24.2 If the guarantees specified in Appendix – 8 (Guarantees, Liquidated Damages for Non – Performance) to the Contract Agreement are not established, then the Employer shall reject the equipment.
- 24.3 In case the Employer rejects the equipment, the Contractor shall at its cost and expense make such changes, modifications and/or additions to the equipment or any part thereof as may be necessary to meet the specified guarantees. The Contractor shall notify the Employer upon completion of the necessary changes, modifications and/or additions, and shall request the Employer to repeat the Test until the level of the specified guarantee has been met.
- 24.4 Whenever the Employer exercises its option to accept the equipment after levy of liquidated damages, the payment of liquidated damages under GCC Sub-Clause 24.2, upto the limitation of liability specified in the SCC, shall completely satisfy the Contractor's guarantees under GCC Sub-Clause 24.2, and the Contractor shall have no further liability whatsoever to the Employer in respect thereof.

25. Patent Indemnity

- 25.1 The Contractor shall, subject to the Employer's compliance with GCC Sub-Clause 25.2, indemnify and hold harmless the Employer and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, which the Employer may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright or other intellectual property right registered or otherwise existing at the date of the Contract by reason of: (a) the installation of the Facilities by the Contractor or the use of the Facilities in the country where the Site is located; and (b) the sale of the products produced by the Facilities in any country.

Such indemnity shall not cover any use of the Facilities or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, any infringement resulting from the use of the Facilities or any part thereof, or any products produced thereby in association or combination with any other equipment, plant or materials not supplied by the Contractor, pursuant to the Contract Agreement.

- 25.2 If any proceedings are brought or any claim is made against the Employer arising out of the matters referred to in GCC Sub-Clause 25.1, the Employer shall promptly give the Contractor a notice thereof, and the Contractor may at its own expense and in the Employer's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim. If the Contractor fails to notify the Employer within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Employer shall be free to conduct the same on its own behalf. Unless the Contractor has so failed to notify the Employer within the twenty-eight (28) day period, the Employer shall make no admission that may be prejudicial to the defense of any such proceedings or claim.

The Employer shall, at the Contractor's request, afford all available assistance to the Contractor in conducting such proceedings or claim, and shall be reimbursed by the Contractor for all reasonable expenses incurred in so doing.

- 25.3 The Employer shall indemnify and hold harmless the Contractor and its employees, officers and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, which the Contractor may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Employer.

26. Limitation of Liability

- 26.1 Except in cases of gross negligence or willful misconduct,
- (a) the Contractor and the Employer shall not be liable to the other party for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Contractor to pay liquidated damages to the Employer and
 - (b) the aggregate liability of the Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the Contractor to indemnify the Employer with respect to patent infringement.
- 26.2 All payments to subcontractor shall be made by contractor. Contractor shall indemnify Employer from any legal issues related to delay in payment or not making any payment to sub-vendor/sub-contractor.

G. Risk Distribution

27. Transfer of Ownership

- 27.1 Imported finished items are not covered under the contract. Only indigenous finished items are covered under the contract.
- 27.2 Ownership of the Plant and Equipment (including spare parts) procured in India, shall be transferred to the Employer upon loading on to the mode of transport to be used to carry the Plant and Equipment from the works to the site and upon endorsement of the dispatch documents in favour of the Employer.
- 27.3 Ownership of the Contractor's Equipment used by the Contractor and its Subcontractors in connection with the Contract shall remain with the Contractor or its Subcontractors.
- 27.4 Ownership of any Plant and Equipment in excess of the requirements for the Facilities shall revert to the Contractor upon Completion of the Facilities or at such earlier time when the Employer and the Contractor agree that the Plant and Equipment in question are no longer required for the Facilities provided quantity of any Plant and Equipment specifically stipulated

in the Contract shall be the property of the Employer whether or not incorporated in the Facilities.

- 27.5 Notwithstanding the transfer of ownership of the Plant and Equipment, the responsibility for care and custody thereof together with the risk of loss or damage thereto shall remain with the Contractor pursuant to GCC Clause 28 (Care of Facilities) hereof until Completion of the Facilities and Taking Over pursuant to GCC Clause 20 or the part thereof, if any, as per GCC Sub-Clause 1.1(e) in which such Plant and Equipment are incorporated.

28. Care of Facilities

- 28.1 The Contractor shall be responsible for the care and custody of the Facilities or any part thereof until the date of Taking Over Certificate pursuant to GCC Clause 20 or, where the Contract provides for Completion of the Facilities in parts, until the date of Completion of the relevant part, and shall make good at its own cost any loss or damage that may occur to the Facilities or the relevant part thereof from any cause whatsoever during such period. The Contractor shall also be responsible for any loss or damage to the Facilities caused by the Contractor or its Subcontractors in the course of any work carried out, pursuant to GCC Clause 22. Notwithstanding the foregoing, the Contractor shall not be liable for any loss or damage to the Facilities or that part thereof caused by any use or occupation by the Employer or any third party (other than a Subcontractor) authorized by the Employer of any part of the Facilities.

29. Loss of or Damage to Property; Accident or Injury to Workers; Indemnification

- 29.1 The Contractor shall indemnify and hold harmless the Employer and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, in respect of the death or injury of any person or loss of or damage to any property (other than the Facilities whether accepted or not), arising in connection with the supply and installation of the Facilities and by reason of the negligence of the Contractor or its Subcontractors, or their employees, officers or agents, except any injury, death or property damage caused by the negligence of the Employer, its contractors, employees, officers or agents.

- 29.2 If any proceedings are brought or any claim is made against the Employer that might subject the Contractor to liability under GCC Sub-Clause 29.1, the Employer shall promptly give the Contractor a notice thereof and the Contractor may at its own expense and in the Employer's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

If the Contractor fails to notify the Employer within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Employer shall be free to conduct the same on its own behalf. Unless the Contractor has so failed to notify the Employer within the twenty-eight (28) day period, the Employer shall make no admission that may be prejudicial to the defense of any such proceedings or claim.

The Employer shall, at the Contractor's request, afford all available assistance to the Contractor in conducting such proceedings or claim, and shall be reimbursed by the Contractor for all reasonable expenses incurred in so doing.

- 29.3 Notwithstanding anything in this Contract to the contrary, it is agreed that neither the Contractor nor the Employer shall be liable to the other party for loss of production, loss of profit, loss of use or any other indirect or consequential damages.

30. Insurance

30.1 To the extent specified in the corresponding Appendix-3 (Insurance Requirements) to the Contract Agreement, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified in the said Appendix. The identity of the insurers and the form of the policies shall be subject to the approval of the Employer, who should not unreasonably withhold such approval.

(a) Marine Cargo Policy/Transit Insurance Policy:

(I)(i) Marine Cargo policy for imported equipment

Since imported finished materials are not permitted under the contract, this policy shall not be applicable,

(I)(ii) Transit Insurance Policy for indigenous equipment

Transit Insurance Policy shall be taken wherein only inland transit is involved for the movement of Plant and Equipment supplied from within India. The policy shall cover movement of Plant and Equipment from the manufacturer's works to the project's warehouse at final destination site. Inland Transit Clause(ITC) 'A' along with war & Strike Riots & Civil Commotion (SRCC) extension cover shall be taken. The policy shall cover movement of Plant and Equipment from the manufacturer's works to the project's warehouse at final destination site. The policy shall cover all risk for loss or damage that may occur during transit of Plant and Equipment from the Contractor/sub-Contractor's works or stores until arrival at project's warehouse/ store at final destination. Institute Cargo Clause (ICC) 'A' along with war & Strike Riots & Civil Commotion (SRCC) cover shall be taken.

The policy shall also cover all risk for loss or damage that may occur during transit of Energy Meters (provided by RECPDCL for installation under the project) from the Contractor/sub-Contractor's works or stores until arrival at project's warehouse/store at final destination.

(II) If during the execution of Contract, the Employer requests the Contractor to take any other add-on cover(s)/ supplementary cover(s) in aforesaid insurance, in such a case, the Contractor shall promptly take such add-on cover(s)/ supplementary cover(s) and the charges towards such premium for such add-on cover(s)/ supplementary cover(s) shall be reimbursed to the Contractor on submission documentary evidence of payment to the Insurance company. Therefore, charges towards premium for such add-on cover(s)/ supplementary cover(s) are not included in the Contract Price.

(III) The Contractor shall take the policy in the joint names of Employer and the Contractor. The policy shall indicate the Employer as the beneficiary. However, if the Contractor is having an open policy for its line of business, it should obtain an endorsement of the open cover policy from the insurance company indicating that the dispatches against this Contract are duly covered under its open policy and include the name of the Employer as jointly Insured in the endorsements to the open policy.

(b) Erection All Risk Policy/Contractor All Risk Policy:

No. RECPDCL/TECH/JKPDD/e-Tender/2017-18/1763 Dated: 21.08.2017

(I) The policy should cover all physical loss or damage to the facility at site during storage, erection and commissioning covering all the perils as provided in the policy as a basic cover and the add on covers as mentioned at Sl. No. (III) below.

(II) The Contractor shall take the policy in the joint name of Employer and the Contractor. All these policies shall indicate Employer as the beneficiary. The policy shall be kept valid till the date of the Operational Acceptance of the project and the period of the coverage shall be determined with the approval of the Employer.

If the work is completed earlier than the period of policy considered, the Contractor shall obtain the refund as per provisions of the policy and pass on the benefit to Employer. In case no refund is payable by the insurance company then the certificate to that effect shall be submitted to Employer at the completion of the project.

(III) The following add-on covers shall also be taken by the Contractor:

- i) Earthquake
- ii) Terrorism
- iii) Escalation cost (approximately @10% of sum insured on annual basis)
- iv) Extended Maintenance cover for Defect Liability Period
- v) Design Defect
- vi) Other add-on covers viz., 50-50 clause, 72 hours clause, loss minimization clause, waiver of subrogation clause (for projects of more than 100 crores, cover for offsite storage/fabrication (over 100 crores).

(IV) Third Party Liability cover with cross Liability within Geographical limits of India as on ADD-on cover to the basic EAR cover:

The third party liability add-on cover shall cover bodily injury or death suffered by third parties (including the Employer's personnel) and loss of or damage to property (including the Employer's property and any parts of the Facilities which have been accepted by the Employer) occurring in connection with supply and installation of the Facilities.

(V) ~~As per para 30.8 below, below, the cost of insurance premium is to be reimbursed to the Contractor for Employer Supplied Materials (OSM) for which the insurer is to be finalized by the Contractor as detailed therein. Alternatively, the Contractor may take a single policy covering the entire cost of the project including the cost of OSM. For this purpose, the Contractor shall submit documentary evidence for the premium paid for the entire project to the Employer and Employer shall reimburse to the Contractor the proportion of premium equal to value of OSM to total sum insured.~~

(VI) If during the execution of Contract, the Employer requests the Contractor to take any other add-on cover(s)/ supplementary cover(s) in aforesaid

insurance, in such a case, the Contractor shall promptly take such add-on cover(s)/ supplementary cover(s) and the charges towards such premium for such add-on cover(s)/ supplementary cover(s) shall be reimbursed to the Contractor on submission documentary evidence of payment to the Insurance company. Therefore, charges towards premium for such add-on cover(s)/ supplementary cover(s) are not included in the Contract Price.

(c) Automobile Liability Insurance

The Contractor shall ensure that all the vehicles deployed by the Contractor or its Subcontractors (whether or not owned by them) in connection with the supply and installation of the Facilities in the project are duly insured as per RTA act. Further the Contractor or its Subcontractors may also take comprehensive policy (own damage plus third party liability) of each individual vehicles deployed in the project on their own discretion in their own name to protect their own interest.

(d) Workmen Compensation Policy:

(I) Workmen Compensation Policy shall be taken by the Contractor in accordance with the statutory requirement applicable in India. The Contractor shall ensure that all the workmen employed by the Contractor or its Subcontractors for the project are adequately covered under the policy.

(II) The policy may either be project specific covering all men of the Contractor and its Subcontractors. The policy shall be kept valid till the date of Operational Acceptance of the project.

Alternatively, if the Contractor has an existing 'Workmen Compensation Policy' for all its employees including that of the Subcontractor(s), the Contractor must include the interest of the Employer for this specific Project in its existing 'Workmen Compensation Policy'.

(III) Without relieving the Contractor of its obligations and responsibilities under this Contract, before commencing work the Contractor shall insure against liability for death of or injury to persons employed by the Contractor including liability by statute and at common law. The insurance cover shall be maintained until all work including remedial work is completed including the Defect Liability Period. The insurance shall be extended to indemnify the Principal for the Principal's statutory liability to persons employed by the Contractor.

The Contractor shall also ensure that each of its Subcontractors shall effect and maintain insurance on the same basis as the 'Workmen Compensation Policy' effected by the Contractor.

(e) Contractor's Plant and Machinery (CPM) Insurance

The Employer (including without limitation any consultant, servant, agent or employee of the Employer) shall not in any circumstances be liable to the Contractor for any loss of or damage to any of the Contractor's Equipment or for any losses, liabilities, costs, claims, actions or demands which the Contractor may incur or which may be made against it as a result of or in connection with any such loss or damage.

- 30.2 The Employer shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GCC Sub-Clause 30.1, except for the Third Party Liability, Workmen Compensation Policy Insurances, and the Contractor's Subcontractors shall be named as co-insureds under all insurance policies taken out by the Contractor pursuant to GCC Sub-Clause 30.1 except for the Cargo Insurance During Transport, Workmen Compensation Policy Insurances. All insurer's rights of subrogation against such co-insureds for losses or claims arising out of the performance of the Contract shall be waived under such policies.
- 30.3 The Contractor shall, in accordance with the provisions of the corresponding Appendix – 3 (Insurance Requirements) to the Contract Agreement, deliver to the Employer certificates of insurance (or copies of the insurance policies) as evidence that the required policies are in full force and effect. The certificates shall provide that no less than twenty-one (21) days' notice shall be given to the Employer by insurers prior to cancellation or material modification of a policy.
- 30.4 The Contractor shall ensure that, where applicable, its Subcontractor(s) shall take out and maintain in effect adequate insurance policies for their personnel and vehicles and for work executed by them under the Contract, unless such Subcontractors are covered by the policies taken out by the Contractor.
- 30.5 The Employer shall at its expense take out and maintain in effect during the performance of the Contract those insurances specified in the corresponding Appendix – 3 (Insurance Requirements) to the Contract Agreement, in the sums and with the deductibles and other conditions specified in the said Appendix. The Contractor and the Contractor's Subcontractors shall be named as co-insureds under all such policies. All insurers' rights of subrogation against such co-insureds for losses or claims arising out of the performance of the Contract shall be waived under such policies. The Employer shall deliver to the Contractor satisfactory evidence that the required insurances are in full force and effect. The policies shall provide that not less than twenty-one (21) days' notice shall be given to the Contractor by all insurers prior to any cancellation or material modification of the policies. If so requested by the Contractor, the Employer shall provide copies of the policies taken out by the Employer under this GCC Sub-Clause 30.5.
- 30.6 If the Contractor fails to take out and/or maintain in effect the insurances referred to in GCC Sub-Clause 30.1, the Employer may take out and maintain in effect any such insurances and may from time to time deduct from any amount due the Contractor under the Contract any premium that the Employer shall have paid to the insurer, or may otherwise recover such amount as a debt due from the Contractor. If the Employer fails to take out and/or maintain in effect the insurances referred to in GCC 30.5, the Contractor may take out and maintain in effect any such insurances and may from time to time deduct from any amount due the Employer under the Contract any premium that the Contractor shall have paid to the insurer, or may otherwise recover such amount as a debt due from the Employer.
- 30.7 Unless otherwise provided in the Contract, the Contractor shall prepare and conduct all and any claims made under the policies effected by it pursuant to this GCC Clause 30, and the monies payable by any insurers under all the insurance except Third Party Liability Insurance and Workmen Compensation Policy, shall be paid to the joint account of the Employer and the Contractor as mutually agreed and such amounts paid shall be apportioned between the Employer and the Contractor in accordance with the respective responsibilities under the Contract. The Employer shall give to the Contractor all such reasonable assistance as may be required by the Contractor. With respect to insurance claims in which the Employer's interest is involved, the Contractor shall not give any release or make any compromise with the insurer without the prior written consent of the Employer. With respect to insurance claims in

which the Contractor's interest is involved, the Employer shall not give any release or make any compromise with the insurer without the prior written consent of the Contractor.

- 30.8 Further all equipment and materials being supplied by Employer for the erection (as per Technical Specification) shall be kept insured by the Contractor against any loss, damage, pilferage, theft, fire, etc. from the point of unloading up to the time of taking over by Employer including handling, transportation, storage, erection, testing and commissioning etc. ~~The premium paid to the Insurance company by the Contractor for such insurance shall be reimbursed by Employer to the Contractor. The Contractor shall obtain competitive quotation for such insurance and shall take prior approval from Employer before taking the insurance. The insurable value of the equipment being supplied by Employer shall be intimated to the Contractor for arranging the insurance.~~
- 30.9 It will be the responsibility of the Contractor to lodge, pursue and settle all claims with the insurance company in case of any damage, loss, theft, pilferage or fire during execution of Contract and Employer shall be kept informed about it. The Contractor shall replace the lost/damaged materials promptly irrespective of the settlement of the claims by the underwriters and ensure that the work progress is as per agreed schedules. The losses, if any, in such replacement will have to be borne by the Contractor.

31. Change in Laws and Regulations

- 31.1 If, after the date seven (07) days prior to the date of Bid Opening, any law, regulation, ordinance, order or by-law having the force of law is enacted, promulgated, abrogated or changed in India (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the costs and expenses of the Contractor and/or the Time for Completion, the Contract Price shall be correspondingly increased or decreased, and/or the Time for Completion shall be reasonably adjusted to the extent that the Contractor has thereby been affected in the performance of any of its obligations under the Contract. However, these adjustments would be restricted to direct transactions between the Employer and the Contractor and not on procurement of raw materials, intermediary components etc. by the Contractor for which the Employer shall be the sole judge. Notwithstanding the foregoing, such additional or reduced costs shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with the Appendix-2 to the Contract Agreement.

32. Force Majeure

- 32.1 "Force Majeure" shall mean any event beyond the reasonable control of the Employer or of the Contractor, as the case may be, and which is unavoidable notwithstanding the reasonable care of the party affected, and shall include, without limitation, the following:
- (a) war, hostilities or warlike operations (whether war be declared or not), invasion, act of foreign enemy and civil war,
 - (b) rebellion, revolution, insurrection, mutiny, usurpation of government, conspiracy, riot and civil commotion,
 - (c) earthquake, landslide, volcanic activity, flood or cyclone, or other inclement weather condition, nuclear and pressure waves or other natural or physical disaster,
- 32.2 Neither party shall be considered to be in default or in breach of his obligations under the Contract to the extent that performance of such obligation is prevented by any circumstances of Force majeure, which arises after date of Notification of Award.

- 32.3 If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within fourteen (14) days after the occurrence of such event.
- 32.4 The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The Time for Completion shall be extended in accordance with GCC Clause 34.

H. Change in Contract Elements

33. Change in the Facilities

- 33.1 Introducing a Change
- 33.1.1 Subject to GCC Sub-Clause 33.2.5, the Employer shall have the right to propose, and subsequently require, that the Project Manager order the Contractor from time to time during the performance of the Contract to make any change, modification, addition or deletion to, in or from the Facilities (hereinafter called "Change"), provided that such Change falls within the general scope of the Facilities and does not constitute unrelated work and that it is technically practicable, taking into account both the state of advancement of the Facilities and the technical compatibility of the Change envisaged with the nature of the Facilities as specified in the Contract.
- 33.1.2 The Contractor may from time to time during its performance of the Contract propose to the Employer (with a copy to the Project Manager) any Change that the Contractor considers necessary or desirable to improve the quality, efficiency or safety of the Facilities. The Employer may at its discretion approve or reject any Change proposed by the Contractor, provided that the Employer shall approve any Change proposed by the Contractor to ensure the safety of the Facilities.
- 33.1.3 Changes made necessary because of any default of the Contractor in the performance of its obligations under the Contract shall be not be deemed to be a Change, and such change shall not result in any adjustment of the Contract Price or the Time for Completion.
- 33.1.4 The procedure on how to proceed with and execute Changes is specified in GCC Sub-Clauses 33.2 and 33.3.
- 33.2 Changes Originating from Employer
- 33.2.1 The pricing of any Change shall, as far as practicable, be calculated in accordance with the rates and prices included in the Contract. If such rates and prices are inequitable, the parties thereto shall agree on specific rates for the valuation of the Change.
- 33.2.2 The Contract Price for (i) the items for which quantities have been indicated as lumpsum or lot or set and/or (ii) where the quantities are to be estimated by the Contractor shall remain constant unless there is change made in the Scope of Work by Employer. The quantities and unit prices (i) subsequently arrived while approving the Bill of Quantities (BOQ)/Billing breakup of lumpsum quantities/lot/Set and/or (ii) estimated by the Contractor shall be for on account payment purpose only. In case additional quantities, over and above the quantities in BOQ/billing breakup and /or estimated by the Contractor, are required for successful completion of the scope of work as per Technical Specification, the Contractor shall execute

additional quantities of these items for which no additional payment shall be made over and above the lumpsum Contract Price. In case quantities of these items supplied at site are in excess of that required for successful completion of scope of work, such additional quantities shall be the property of the Contractor and they shall be allowed to take back the same from the site for which no deduction from the lumpsum Contract Price shall be made. Further, in case actual requirement of quantities for successful completion of scope of work is less than the quantities identified in the approved BOQ /billing breakup and/or estimated by the Contractor, the lumpsum contract price shall remain unchanged and no deduction shall be made from the lumpsum price due to such reduction of quantities.

It shall be the responsibility of the Contractor to pay all statutory taxes, duties and levies to the concerned authorities for such surplus material which would otherwise have been, lawfully payable in case of non-deemed export contracts. The Contractor shall submit an indemnity bond to keep Employer harmless from any liability, before release of such material to the Contractor by Employer.

Set/Lot/Lumpsum shall be governed as per the requirement of the corresponding item description read in conjunction with relevant provisions of Technical Specifications and the Billing breakup referred to above shall be issued by the Employer based on Contractor's request, if and as may be required during the currency of the Contract.

- 33.2.3 If before or during the preparation of the Change Proposal it becomes apparent that the aggregate effect of compliance therewith and with all other Change Orders that have already become binding upon the Contractor under this GCC Clause 33 would be to increase or decrease the Contract Price as originally set forth in Article 2 (Contract Price and Terms of Payment) of the Contract Agreement by more than the percentage specified in **SCC**, the Employer and the Contractor shall mutually agree on specific rates for valuation of the Change beyond the specified percentage.

For the said purpose, the Contract Price means the Contract Price of the Facilities notwithstanding the Construction of the Contract.

- 33.2.4 If rates and prices of any change are not available in the Contract, the parties thereto shall agree on specific rates for the valuation of the change and all matters therein related to the change. Based on the same, the Employer shall, if it intends to proceed with the Change, issue the Contractor with a Change Order.

- 33.2.5 The Employer shall issue the Contractor with a Change Order pursuant to GCC Sub-Clause 33.2 by way of amendment to the Contract or in any other manner deemed appropriate. Even if the Employer and the Contractor cannot reach agreement on the price for the Change, an equitable adjustment to the Time for Completion, or any other matters related to the Change Proposal, the Employer may nevertheless instruct the Contractor to proceed with the Change by issue of a "Pending Agreement Change Order" ("Pending Agreement Amendment").

Upon receipt of a Pending Agreement Change Order, the Contractor shall immediately proceed with effecting the Changes covered by such Order. The parties shall thereafter attempt to reach agreement on the outstanding issues under the Change Proposal.

If the parties cannot reach agreement within sixty (60) days from the date of issue of the Pending Agreement Change Order, then the matter may be referred to the Arbitrator in accordance with the provisions of GCC Clause 38 & 39.

- 33.3 Changes Originating from Contractor

No. RECPDCL/TECH/JKPDD/e-Tender/2017-18/1763 Dated: 21.08.2017

33.3.1 If the Contractor proposes a Change pursuant to GCC Sub-Clause 33.1.2, the Contractor shall submit to the Project Manager a written "Request for Change Proposal", giving reasons for the proposed Change and which shall include the following:

- (a) brief description of the Change
- (b) effect on the Time for Completion
- (c) estimated cost of the Change
- (d) effect on Functional Guarantees (if any)
- (e) effect on any other provisions of the Contract.

Upon receipt of the Request for Change Proposal, the parties shall follow the procedures outlined in GCC Sub-Clauses 33.2.1 and 33.2.5. However, should the Employer choose not to proceed, the Contractor shall not be entitled to recover the costs of preparing the Request for Change Proposal.

33A.Surplus Materials

- a. On completion of the works all such materials supplied by contractor for erection that remain unutilized, if any, shall be taken back by Contractor after detailed materials and payment reconciliations.
- b. The Contractor, within two (2) months from the taking over of the equipment/ materials under the package, shall submit payment and materials account for the reconciliations, failing which necessary recoveries will be made from the outstanding bills of the Contractor for the cost of the materials left unaccounted as decided by the Project Manager.

34. Extension of Time for Completion

34.1 The Time(s) for Completion specified in the SCC shall be extended if the Contractor is delayed or impeded in the performance of any of its obligations under the Contract by reason of any of the following:

- (a) any Change in the Facilities as provided in GCC Clause 33
- (b) any occurrence of Force Majeure as provided in GCC Clause 32
- (c) any suspension order given by the Employer under GCC Clause 35 hereof or reduction in the rate of progress pursuant to GCC Sub-Clause 35.2 or
- (d) any changes in laws and regulations as provided in GCC Clause 31 or
- (e) any other matter specifically mentioned in the Contract

by such period as shall be fair and reasonable in all the circumstances and as shall fairly reflect the delay or impediment sustained by the Contractor.

34.2 Except where otherwise specifically provided in the Contract, the Contractor shall submit to the Project Manager a notice of a claim for an extension of the Time for Completion, together with particulars of the event or circumstance justifying such extension as soon as reasonably practicable after the commencement of such event or circumstance. As soon as reasonably practicable after receipt of such notice and supporting particulars of the claim, the Employer

and the Contractor shall agree upon the period of such extension. In the event that the Contractor does not accept the Employer's estimate of a fair and reasonable time extension, the Contractor shall be entitled to refer the matter to Arbitration, pursuant to GCC Sub-Clause 39.

- 34.3 The Contractor shall at all times use its reasonable efforts to minimize any delay in the performance of its obligations under the Contract.

35. Suspension

- 35.1 The Employer may request the Project Manager, by notice to the Contractor, to order the Contractor to suspend performance of any or all of its obligations under the Contract. Such notice shall specify the obligation of which performance is to be suspended, the effective date of the suspension and the reasons therefor. The Contractor shall thereupon suspend performance of such obligation (except those obligations necessary for the care or preservation of the Facilities) until ordered in writing to resume such performance by the Project Manager.

If, by virtue of a suspension order given by the Project Manager, other than by reason of the Contractor's default or breach of the Contract, the Contractor's performance of any of its obligations is suspended for an aggregate period of more than ninety (90) days, then at any time thereafter and provided that at that time such performance is still suspended, the Contractor may give a notice to the Project Manager requiring that the Employer shall, within twenty-eight (28) days of receipt of the notice, order the resumption of such performance or request and subsequently order a change in accordance with GCC Clause 33, excluding the performance of the suspended obligations from the Contract.

If the Employer fails to do so within such period, the Contractor may, by a further notice to the Project Manager, elect to treat the suspension, where it affects a part only of the Facilities, as a deletion of such part in accordance with GCC Clause 33 or, where it affects the whole of the Facilities, as termination of the Contract under GCC Sub-Clause 36.1.

- 35.2 If the Contractor's performance of its obligations is suspended or the rate of progress is reduced pursuant to this GCC Clause 35, then the Time for Completion shall be extended in accordance with GCC Sub-Clause 34.1, and any and all additional costs or expenses incurred by the Contractor as a result of such suspension or reduction shall be paid by the Employer to the Contractor in addition to the Contract Price, except in the case of suspension order or reduction in the rate of progress by reason of the Contractor's default or breach of the Contract.
- 35.3 During the period of suspension, the Contractor shall not remove from the Site any Plant and Equipment, any part of the Facilities or any Contractor's Equipment, without the prior written consent of the Employer.

36. Termination

- 36.1 Termination for Employer's Convenience
- 36.1.1 The Employer may at any time terminate the Contract for any reason by giving the Contractor a notice of termination that refers to this GCC Sub-Clause 36.1.
- 36.1.2 Upon receipt of the notice of termination under GCC Sub-Clause 36.1.1, the Contractor shall either immediately or upon the date specified in the notice of termination

- (a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the Facilities already executed, or any work required to leave the Site in a clean and safe condition
- (b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) (ii) below
- (c) remove all Contractor's Equipment from the Site, repatriate the Contractor's and its Subcontractors' personnel from the Site, remove from the Site any wreckage, rubbish and debris of any kind, and leave the whole of the Site in a clean and safe condition
- (d) In addition, the Contractor, subject to the payment specified in GCC Sub-Clause 36.1.3, shall
 - (i) deliver to the Employer the parts of the Facilities executed by the Contractor up to the date of termination
 - (ii) to the extent legally possible, assign to the Employer all right, title and benefit of the Contractor to the Facilities and to the Plant and Equipment as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors
 - (iii) deliver to the Employer all non-proprietary drawings, specifications and other documents prepared by the Contractor or its Subcontractors as at the date of termination in connection with the Facilities.

36.1.3 In the event of termination of the Contract under GCC Sub-Clause 36.1.1, the Employer shall pay to the Contractor the following amounts:

- (a) the Contract Price, properly attributable to the parts of the Facilities executed by the Contractor as of the date of termination
- (b) the costs reasonably incurred by the Contractor in the removal of the Contractor's Equipment from the Site and in the repatriation of the Contractor's and its Subcontractors' personnel
- (c) any amounts to be paid by the Contractor to its Subcontractors in connection with the termination of any subcontracts, including any cancellation charges
- (d) costs incurred by the Contractor in protecting the Facilities and leaving the Site in a clean and safe condition pursuant to paragraph (a) of GCC Sub-Clause 36.1.2
- (e) the cost of satisfying all other obligations, commitments and claims that the Contractor may in good faith have undertaken with third parties in connection with the Contract and that are not covered by paragraphs (a) through (d) above.

36.2 Termination for Contractor's Default

36.2.1 The Employer, without prejudice to any other rights or remedies it may possess, may terminate the Contract forthwith in the following circumstances by giving a notice of termination and its reasons therefor to the Contractor, referring to this GCC Sub-Clause 36.2:

- (a) if the Contractor becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or, if the Contractor is a corporation, a

resolution is passed or order is made for its winding up (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), a receiver is appointed over any part of its undertaking or assets, or if the Contractor takes or suffers any other analogous action in consequence of debt

- (b) if the Contractor assigns or transfers the Contract or any right or interest therein in violation of the provision of GCC Clause 37.
- (c) if the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.
- (d) If the contractor fails to achieve mutually agreed deadline (as set in mutually agreed Project Execution Plan/PERT chart) for consecutive 3 months, Employer shall issue contract termination notice giving suitable time to contractors which may be up to time agreed between employer and contractor. In case, contractor does not improve its performance as per contract termination notice, which shall be within overall plan under mutually agreed project execution plan, employer will terminate the contract and encash performance securities.

For the purpose of this Sub-Clause:

“corrupt practice” is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

“fraudulent practice” is any act or omission, including a misrepresentation, that knowingly or recklessly misleads or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

“collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

“coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

“obstructive practice” is

- (aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Employer’s investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation;

or

- (bb) acts intended to materially impede the exercise of the Employer’s inspection and audit rights.

In pursuance of its policy, the Employer will sanction a firm or individual, including declaring ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for, or in executing, a contract.

36.2.2 If the Contractor

- (a) has abandoned or repudiated the Contract
- (b) has without valid reason failed to commence work on the Facilities promptly or has suspended (other than pursuant to GCC Sub-Clause 35.2) the progress of Contract performance for more than twenty-eight (28) days after receiving a written instruction from the Employer to proceed
- (c) persistently fails to execute the Contract in accordance with the Contract or persistently neglects to carry out its obligations under the Contract without just cause
- (d) refuses or is unable to provide sufficient materials, services or labor to execute and complete the Facilities in the manner specified in the program furnished under GCC Sub-Clause 14.2 at rates of progress that give reasonable assurance to the Employer that the Contractor can attain Completion of the Facilities by the Time for Completion as extended,

then the Employer may, without prejudice to any other rights it may possess under the Contract, give a notice to the Contractor stating the nature of the default and requiring the Contractor to remedy the same. If the Contractor fails to remedy or to take steps to remedy the same within fourteen (14) days of its receipt of such notice, then the Employer may terminate the Contract forthwith by giving a notice of termination to the Contractor that refers to this GCC Sub-Clause 36.2.

36.2.3 Upon receipt of the notice of termination under GCC Sub-Clauses 36.2.1 or 36.2.2, the Contractor shall, either immediately or upon such date as is specified in the notice of termination,

- (a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the Facilities already executed, or any work required to leave the Site in a clean and safe condition
- (b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) below
- (c) deliver to the Employer the parts of the Facilities executed by the Contractor up to the date of termination
- (d) to the extent legally possible, assign to the Employer all right, title and benefit of the Contractor to the Facilities and to the Plant and Equipment as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors
- (e) deliver to the Employer all drawings, specifications and other documents prepared by the Contractor or its Subcontractors as of the date of termination in connection with the Facilities.

36.2.4 The Employer may enter upon the Site, expel the Contractor, and complete the Facilities itself or by employing any third party. The Employer may, to the exclusion of any right of the Contractor over the same, take over and use with the payment of a fair rental rate to the Contractor, with all the maintenance costs to the account of the Employer and with an indemnification by the Employer for all liability including damage or injury to persons arising out of the Employer's use of such equipment, any Contractor's Equipment owned by the

Contractor and on the Site in connection with the Facilities for such reasonable period as the Employer considers expedient for the supply and installation of the Facilities.

Upon completion of the Facilities or at such earlier date as the Employer thinks appropriate, the Employer shall give notice to the Contractor that such Contractor's Equipment will be returned to the Contractor at or near the Site and shall return such Contractor's Equipment to the Contractor in accordance with such notice. The Contractor shall thereafter without delay and at its cost remove or arrange removal of the same from the Site.

36.2.5 Subject to GCC Sub-Clause 36.2.6, the Contractor shall be entitled to be paid the Contract Price attributable to the Facilities executed as of the date of termination, the value of any unused or partially used Plant and Equipment on the Site, and the costs, if any, incurred in protecting the Facilities and in leaving the Site in a clean and safe condition pursuant to paragraph (a) of GCC Sub-Clause 36.2.3. Any sums due to the Employer from the Contractor accruing prior to the date of termination shall be deducted from the amount to be paid to the Contractor under this Contract.

36.2.6 If the Employer completes the Facilities, the cost of completing the Facilities by the Employer shall be determined.

If the sum that the Contractor is entitled to be paid, pursuant to GCC Sub-Clause 36.2.5, plus the reasonable costs incurred by the Employer in completing the Facilities, exceeds the Contract Price or the entire Facilities if entire Facilities have been completed or the price for part of the Facilities if part of the Facilities have been completed, the Contractor shall be liable for such excess.

If such excess is greater than the sums due the Contractor under GCC Sub-Clause 36.2.5, the Contractor shall pay the balance to the Employer, and if such excess is less than the sums due the Contractor under GCC Sub-Clause 36.2.5, the Employer shall pay the balance to the Contractor. For facilitating such payment the Employer shall encash the Bank Guarantees of the Contractor available with the Employer and retain such other payments due to the Contractor under the Contract in question or any other Contract that the Employer may have with the Contractor.

The Employer and the Contractor shall agree, in writing, on the computation described above and the manner in which any sums shall be paid.

36.3 In this GCC Clause 36, the expression "Facilities executed" shall include all work executed, Installation Services provided, and all Plant and Equipment acquired (or subject to a legally binding obligation to purchase) by the Contractor and used or intended to be used for the purpose of the Facilities, up to and including the date of termination.

36.4 In this GCC Clause 36, in calculating any monies due from the Employer to the Contractor, account shall be taken of any sum previously paid by the Employer to the Contractor under the Contract, including any advance payment paid pursuant to the corresponding Appendix (Terms and Procedures of Payment) to the Contract Agreement.

37. Assignment

37.1 Neither the Employer nor the Contractor shall, without the express prior written consent of the other party (which consent shall not be unreasonably withheld), assign to any third party the Contract or any part thereof, or any right, benefit, obligation or interest therein or thereunder, except that the Contractor shall be entitled to assign either absolutely or by way

of charge any monies due and payable to it or that may become due and payable to it under the Contract.

I. Resolution of Disputes

38. Settlement of Disputes

- 38.1 If any dispute of any kind whatsoever shall arise between the Employer and the Contractor in connection with or arising out of the Contract, including without prejudice to the generality of the foregoing, any question regarding its existence, validity or termination, or the execution of the Facilities, whether during the progress of the Facilities or after their completion and whether before or after the termination, abandonment or breach of the Contract, the parties shall seek to resolve any such dispute or difference, to the extent possible, amicably by mutual consultation.
- 38.2 If the parties fail to resolve such a dispute or difference by mutual consultation at the execution site level, then the dispute shall be referred by the Contractor to the Project Manager, who, within a period of thirty (30) days after being requested by Contractor to do so, shall give written notice of his decision.
- 38.2.1 The decision/instruction of the Project Manager shall be deemed to have been accepted by the Contractor unless notified by the Contractor of his intention to refer the matter for Arbitration within thirty (30) days of such decision/instruction.
- 38.2.2 In the event the Project Manager fails to notify his decision as aforesaid within thirty (30) days, the Contractor, if he intends to go for Arbitration, shall notify his intention to the Project Manager within 30 days of expiry of the first mentioned period of thirty days failing which it shall be deemed that there are no dispute or difference between the Employer and the Contractor.
- 38.3 In case of dispute or difference between the Employer and the Contractor, if the Employer intends to go for Arbitration, he shall notify such intention to the Contractor.

39. Arbitration

- 39.1 All disputes or differences in respect of which the decision, if any, of the Project Manager and/or the Head of the Implementing Authority has not become final or binding as aforesaid shall be settled by arbitration in the manner provided herein below:
- 39.2 The arbitration shall be conducted by three arbitrators, one each to be nominated by the Contractor and the Employer and the third to be appointed by both the arbitrators in accordance with the **J&K Arbitration Act**. If either of the parties fails to appoint its arbitrator within sixty (60) days after receipt of a notice from the other party invoking the Arbitration clause, the arbitrator appointed by the party invoking the arbitration clause shall become the sole arbitrator to conduct the arbitration.
- 39.3 The language of the arbitration proceedings and that of the documents and communications between the parties shall be English. The arbitration shall be conducted in accordance with the provisions of the **J&K Arbitration Act and Conciliation Act, 1996** or any statutory modification thereof. The venue of arbitration shall be headquarter of Employer.
- 39.4 The decision of the majority of the arbitrators shall be final and binding upon the parties. In the event of any of the aforesaid arbitrators dying, neglecting, resigning or being unable to

act for any reason, it will be lawful for the party concerned to nominate another arbitrator in place of the outgoing arbitrator.

- 39.5 During settlement of disputes and arbitration proceedings, both parties shall be obliged to carry out their respective obligations under the Contract.

40. ~~Up-front intimation of approved manufacturers and criterion for Fresh Vendor approval:~~

~~Employer shall up-front intimate list containing name of already approved vendors/manufacturers of various sub-transmission and distribution materials. Employer shall upload the list on their web-portal. The turnkey contractor shall choose one or more than one vendors from the pre-approved lists depending upon capacity and capability of vendors to supply the materials for DDUGJY & IPDS works. No separate approval for vendor shall be required from Employer.~~

~~Also, normal procedure being followed for empanelment of new vendors shall be uploaded and up-front intimated to all turnkey contractors. In case turnkey contractor desires to add new vendor, up-front intimation shall be available on criterion and procedure for selection of vendors.~~

Approved vendors/manufacturers and criterion for acceptance

The Following is the criteria for selection of vendors for supplying of all equipments and materials required for the project.

1. The vendors/manufacturers who figures in the list of REC approved vendors.
2. The vendors/manufacturers of various sub transmission and distribution materials supplying materials to Procurement and Material Management Wing of JKPDD qualify for supplying of materials with the documentation required for acceptance of the employer or his nominated officer
3. The vendors/manufacturers of various sub transmission and distribution materials who are approved vendors of CPSU like NHPC, NTPC, PGCIL being implemented by these agencies.
4. The vendors/manufacturers of various sub transmission and distribution materials who are approved vendors of SPSU involved in implementation of RGGVY, RAPDRP projects in other states as well as in state of J&K i.e JKSPDC etc.

The contractor will have to submit following documents for acceptance of employer for choosing the vendor.

1. A copy of registration of the vendors/manufacture with the Industries department / Department mandated to register the industries for manufacturing and the activities of fabrication/manufacturing of required equipments and materials with plant capacity and details of present commitments.
2. The document depicting the vendor approval of above agencies or supply orders with a certificate from the order placing authority or his authorized representative that the vendors/manufacture has successfully completed the supply order within stipulated time frame.
3. Type test report and Drawings of the material/equipment which should be in consonance with the conditions as envisaged in Quality Control Manual for RGGVY schemes issued by REC India and annexed with the bid document. The type test reports and connected relevant drawings should have been attested with seal and signature of competent authority of authorized test

No. RECPDCL/TECH/JKPDD/e-Tender/2017-18/1763 Dated: 21.08.2017

house. The type tests should have been carried out only at Govt. testing laboratories such as CPRI, ERTL, ERDA for equipments and for other materials, NABL Accredited Laboratories type tests are also acceptable.

4. No type testing is envisaged in the projects. But material having type tested design shall only be acceptable. Hence, the supplier has to submit type test certificate in support of materials like Battery, CTs, PTs, Power and Control cables, isolators, insulators LAs, etc .

5. Quality assurance programme of vendors/manufacturer for acceptance. The same should be broadly in consonance with the quality assurance programme of different manufacturing processes of equipments, materials etc as envisaged in Quality Control Manual for DDUGJY schemes issued by REC India and annexed with the bid document.

6. Firm shall not be barred/ blacklisted in any of the Govt. organizations/CPSU of India.

41. Up-front intimation of Guaranteed Technical Particulars:

Technical Specifications are enclosed with the bid documents. ~~Employer shall up-front intimate acceptable Guaranteed Technical Particulars of various materials through their web portal.~~

The turnkey contractor will examine these documents and supply only those materials which meets the above acceptable criterion. ~~In case there are Employer's approved vendor(s) (one or more) through which turnkey contractor wish to procure the materials and are complying with the acceptable GTP parameters of Employer as available on their web portal, there would not be any formality needed like approval of sub-vendor or approval of GTP again.~~

In event of change in name of vendor ~~or change in GTP parameter~~, separate approval of Employer shall be sought by successful turnkey contractor.

42. Turnkey (Semi-Turnkey) contractor's Store at Project site:

"Project wise separate Site Stores shall be maintained and manned by turnkey contractor. Same store shall not be used for more than one projects even if neighboring districts' projects are awarded to the same agency. The turnkey contractor shall deploy his own manpower in stores for round the clock security and for its day to day operation through trained Store-ki-per.

Since materials received in this stores are owned by Employer (including owner's free issued material) and are pre-dispatch inspected by Employer's representative, materials in a lot shall not be issued to the sub-contractor for physical execution by turnkey contractor. Instead, day to day requirements shall be issued to the working teams of sub-vendors by authorized store-ki-per. In exceptional cases, on prior written permission of Employer, materials for a week time may be issued to working team of sub-vendor. Daily accounting of materials receipt, materials issues, materials in custody of sub-vendors are to be maintained by turnkey contractor. Handing over of Stores shall, in no circumstances, be off loaded.

In no case, inter-project transfer of materials shall be permitted.

43. Handing over of assets:

On completion of erection and testing of a section of line, DTR substation, power substation, contracting agency shall submit digital photographs in soft copies of each and every support structures along-with submission of completion report in support of their claim for energisation and handing over of assets. Project Manager within a week time, shall review the photographs

for acceptance of quality of works and shall immediately deploy officials for joint measurement and inspection of executed works for energisation. ~~In parallel, a requisition to State Electrical Inspectorate shall also be submitted by Project Manager.~~

~~While offering section of work / substation for commissioning and handing over, turnkey contractor shall provide pre-commissioning test reports and detail checklist (format provided along with quality guidelines at Volume II : Section I).~~

44. Supply of Materials in lots:

Item wise mobilization of materials shall be planned in 6 lots. Employer shall arrange pre-dispatch inspections for 6 lots ~~at his own expenditure~~. Any additional resource mobilization for inspection of materials by employer beyond 6 lots shall be chargeable at actual. However, in case of approved quantity variation, employer may consider to increase the number of Lots.

45. Contract Closing:

On completion of handing over formality and successfully completion of defect liability / guarantee period, the contract shall be closed on completion of following formality:

- I. Material reconciliation of owner free issued materials as well as material supplied by turnkey contractor,
- II. Payment reconciliations, submission and verifications that reconciliation of payment toward statutory provisions like GST/Entry Tax, any other dues etc. Reconciliation statement shall be verified and vetted by chartered accountant.
- III. Approval for extension of Completion period, with or without compensation, as required.
- IV. Certification from agency regarding payment of dues to its
 - i. Sub-vendors
 - ii. Workers/ contract laborers,
 - iii. Payment of statutory dues toward Provident Funds, wages etc as required.
- V. Certification of Project Manager & agency to the effect that erection, testing and commissioning of the equipment have been completed as per specifications laid down in the contract and defects noted at the time of commissioning and notified to the agency have been liquidated to the satisfaction of Employer.
- VI. Removal of construction meant for site stores, hutment, labour colony etc. in the premises of EMPLOYER.
- VII. Certificate from Project Manager in charge regarding final amendment of drawings and detailed of such amendments,
- VIII. Drawing receipt certificate by the Project Manager,
- IX. Receipt of compliance report on Quality Assurance Mechanism along with photograph, Assurance documents by Project Manager
- X. Shortfall in equipment / Line performance Certificate issued by Project Manager,
- XI. No demand certificate issued by contractor,

No. RECPDCL/TECH/JKPDD/e-Tender/2017-18/1763 Dated: 21.08.2017

- XII. Certificate about completion of Defect Liability Period of the package by Project Manager,
- XIII. Certificate regarding return of Performance Security / Indemnity Bond by Project Manager/Employer.

46. Banning of business dealings

- 46.1. Employer shall ban business dealings with contractor on following grounds for the period as decided by Project Manager:-
- a. If the contractor fails to submit Performance Security after issuance of Letter of Intent (LoI) within 28 days.
 - b. If the Contractor fails to accept the award of contract or has abandoned or repudiated the Contract.
 - c. If the Contractor is found to be non-performing in execution of contract by the Employer.
 - d. If a disaster / major failure / accident / collapse of a structure / system is caused during erection or during defect liability period due to negligence of contractor or design deficiency or poor quality of execution.
 - e. Misbehavior or physical manhandling by the Contractor or his representative or any person acting on his behalf with any official of the Company dealing with the concerned contract is established.
 - f. If the Director / Owner of the Contractor, proprietor or partner of the Contractor, is convicted by a court of law for offences involving corrupt and fraudulent practices including moral turpitude in relation to its business dealings with the government or State Public Sector Undertakings or Central Public Sector Undertakings or Employer or Employer's group companies, during the last five years.
 - g. If the proprietors of the Contractor have been guilty of malpractices such as bribery, corruption, fraud, substitution of the tenders, interpolations, etc.
 - h. If the Contractor continuously refuses to return / refund the dues of Employer or Employer's group companies, without showing adequate reason and this is not due to any reasonable dispute which would attract proceedings in arbitration or court of Law;
 - i. If the Contractor employs a public servant dismissed / removed or employs a person convicted for an offence involving corruption or abetment of such offences;
 - j. If business dealings with the Contractor have been banned by the Ministry of Power or Government of India and the ban is still in force,
 - k. If it is established that Contractor has resorted to corrupt, fraudulent practices including misrepresentation of facts;
 - l. If the Contractor uses intimidation/threatening or brings undue outside pressure on the Project Manager or his authorised representatives or its officials in acceptance / performance of the job under the contract.
 - m. If the Contractor indulges in repeated and / or deliberate use of delay tactics in complying with contractual stipulations;

- n. If the Contractor is found to be involved in cartel formation during bidding.
- o. On wilful indulgence by the Contractor in supplying sub-standard material with respect to Technical Specifications under the Contract irrespective of whether pre-dispatch inspection was carried out by Employer or not;
- p. If the Contractor is declared bankrupt or insolvent or its financial position has become unsound, and in the case of a limited company, it is wound up or liquidated.
- q. Established litigant nature of the Contractor to derive undue benefit;
- r. Continued poor performance of the Contractor;
- s. If the Contractor violates the provisions of the Integrity Pact provided in the Contract.
- t. If the Contractor commits fraud as defined under the Fraud Prevention Policy of Employer.
- u. If the Contractor has assigned or transferred the contract or engaged subcontractor(s) without the prior approval of the Competent Authority in violation of the provisions of the contract.
- v. If the Contractor misuses the premises or facilities of the Employer, forcefully occupies, tampers or damages the Employer's properties including land, water resources, forests / trees, etc.
- w. If the security consideration, including questions of loyalty of the Contractor to the state, so warrants;

----- End -----

VOLUME-I: SECTION – V

SPECIAL CONDITIONS OF CONTRACT (SCC)

SPECIAL CONDITIONS OF CONTRACT (SCC)

The following bid specific data for the Plant and Equipment to be procured shall amend and/or supplement the provisions in the General Conditions of Contract (GCC)

Sl. No.	GCC Clause Ref. No.	Amendment/Supplement to GCC	
1.	GCC 1.1(o)	Supplementing Sub-Clause GCC 1.1(o) The Employer is: REC Power Distribution Company Limited, A10, 4th Floor, KribhcoBhawan, Sector-1, Noida – 201301 Tele : 0120-4383755 Email- jkpdd.projects@recpdcl.in / salil.kumar@recpdcl.in Fax:0120 4383768 For the purpose of execution of the contract, the contractual activities shall be performed by the Employer "for and on behalf of the Owner" except in cases where the Owner itself is statutorily required to do so.	
2.	GCC 1.1(w)	Supplementing Sub-Clause GCC 1.1(w) The Owner is: Power development Department of Jammu & Kashmir Government.	
3.	GCC 1.1 (ee)	Supplementing Sub-Clause GCC 1.1(ee) <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KARGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY </div> <div style="width: 35%;"> <p style="text-align: center;">Time for Completion</p> <p>A. 18 (Eighteen Months) :</p> <ol style="list-style-type: none"> Supply & Installation of energy meters Replacement of defective consumer meters Installation of new service connection Shifting of consumer meters <p>Above shall be completed within 18 months of notification of award</p> <p>B. 60 (Sixty Months)</p> <p>Contactor shall perform Operation & Maintenance (O&M) of service connections for a period of 60 months</p> </div> </div>	
4.	GCC 2.1	GCC 2.1.1 The Contracts to be entered into with the successful Bidder shall be as under : <ul style="list-style-type: none"> - First Contract: For Ex-Works supply of all equipment and materials (Ex-Works Supply Contract) - Second Contract: For providing all erection services including inland transportation for delivery at site, insurance, unloading, storage, handling at site, installation, Testing and Commissioning including performance testing in respect of all the equipment supplied under the "First Contract", and any other services specified in the Contract Documents (Services Contract). 	

Sl. No.	GCC Clause Ref. No.	Amendment/Supplement to GCC
		<p>GCC 2.1.2 The award of two separate Contracts shall not in any way dilute the responsibility of the Contractor for the successful completion of the facilities as per Specification and a breach in one Contract shall automatically be construed as a breach of the other Contract(s) which will confer a right on the Employer to terminate the other Contract(s) also at the risk and the cost of the Contractor.</p> <p>GCC 2.1.3 The Contract will be signed in two originals and the Contractor shall be provided with one signed original and the second will be retained by the Employer.</p> <p>GCC 2.1.4 The Contractor shall provide free of cost to the Employer all the engineering data, drawing and descriptive materials submitted with the bid, in at least two (2) copies to form a part of the Contract immediately after Notification of Award.</p> <p>GCC 2.1.5 Subsequent to signing of the Contract, the Contractor at his own cost shall provide the Employer with at least Two (2) true copies of Contract Agreement within fifteen (15) days after signing of the Contract.</p>
5.	GCC 8.3	<p>Addition of following new Sub-Clause after GCC 8.2:</p> <p>All the payments up to 85% of project cost of infrastructure to the Contractor shall be made by RECPDCL, New Delhi strictly out of the funds received from REC/PFC on behalf of the Owner, 10% of infrastructure cost shall be arranged by owner from REC loan/loan from other FIs/own resources and 5% of infrastructure cost shall be arrange by utility from own resources.</p>
6.	GCC 9.3.1	<p>Supplementing Sub-Clause GCC 9.3.1</p> <p>In addition to the above, the Contractor shall arrange to provide additional Performance Security(ies), if applicable, as per Clause no. 4 of Joint Deed of Undertaking mentioned at Sl. No. 19 of Volume-I : Section-VI (Sample Forms and Procedures). The said security(ies) shall be required to be extended time to time till ninety (90) days beyond the actual Defect Liability Period, as may be required under the Contract.</p> <p>The Performance Security(ies) to be furnished by the Contractor under the Contract shall be in favour of the Employer. The Owner shall also be entitled to enforce these performance security(ies).</p>
7.	GCC 10.3	<p>Supplementing Sub-Clause GCC 10.3</p> <p>The requisite Sales Tax declaration forms shall be issued as under:</p> <p>a) When project implementing agency or Employer is a Central Public Sector Undertaking, form shall be issued by State Distribution Company to Employer for onward issuance to contractor</p> <p>b) When State Distribution Company is Employer, the form shall be issued by them.</p> <p>c) JKPDD /RECPDCL shall not provide Sales Tax declaration forms to the bidders.</p>

Sl. No.	GCC Clause Ref. No.	Amendment/Supplement to GCC														
8.	GCC 10.6	Supplementing the Clause GCC 10.6 the recovery of TDS under GST/CST/VAT/WCT/Income Tax Act and any other acts as per Govt. regulation related to this work shall be done by RECPDCL on behalf of JKPDD. TDS so deducted by RECPDCL on behalf of JKPDD shall be deposited with the relevant tax authorities and TDS certificates shall be issued on behalf JKPDD using PAN, TIN, TAN of JKPDD. Relevant challans and copies of the TDS certificates shall be forwarded to JKPDD for filling necessary returns. In case, wherever E-filling system is applicable, the relevant information would be given to the Owner for issuing TDS certificate, filling returns, etc.														
9.	GCC 11	At all places in the clause, replace the word "Employer" with "Employer/Owner/State Distribution Utility in case employer is a Central Public Undertaking.														
10.	GCC 22.4, 22.5, 22.6 & 22.7	At all places in the clause, replace the word "Employer" with "Employer/Owner/State Distribution Utility in case employer is a Central Public Undertaking'.														
11.	GCC 24.1	-														
12.	GCC 24.2 (b) & GCC 24.3	Supplementing Clause GCC 24.2 (b) LD for Non-Performance of the Equipment The guaranteed loss at rated voltage for each equipment shall be corrected in accordance with IS2026, Part I for the purpose of comparison of guaranteed losses with measured losses for levy of liquidated damages. However, the equipment (i.e. Power Transformer/Station Transformer) under no circumstances shall be accepted if the measured losses are more than +15 percent of the guaranteed losses at rated voltage, specified in Appendix 8 (Guarantees, Liquidated Damages for Non-Performance) to the Contract Agreement. In case of Distribution Transformer, the equipment under no circumstances shall be accepted if the total losses exceed the max. limit specified in Technical Specifications. Differential Price Factors for Liquidated Damages Liquidity damage for delay in supplies as per schedule if not delivered by the bidder than a penalty of 0.5% of the contract value per week or part thereof subject to maximum of 5% of the contract value may be levied from the bill of the contractor.														
13.	GCC 33.2.3	Supplementing Sub-Clause GCC 33.2.3 Percentage for the Change Proposal under this Clause shall be limited to Ten (10) percent.														
14.	Annexure-I to SCC	Enclosed herewith														
15.	Others	Rating of Transformers—Standard Ratings of Distribution & Power Transformers as per IS are covered in bid documents. Transformer ratings must be confirming to IS specifications. Non-Standard ratings shall not be permitted. The Distribution Transformers shall be BIS certified in line with Electrical Transformers (Quality Control) order, 2015 (along with its latest amendments) issued by Department of Heavy Industries, Ministry of Heavy Industries & Public Enterprise, Govt of India.														
16.	Climate Condition	<table><tr><td colspan="2">The service conditions shall be as follows</td></tr><tr><td>Maximum altitude above sea level</td><td>5000m</td></tr><tr><td>Maximum ambient air temperature</td><td>50° C</td></tr><tr><td>Maximum daily average ambient air temperature</td><td>40° C</td></tr><tr><td>minimum ambient air temperature</td><td>-30° C</td></tr><tr><td>Maximum temperature attainable by an object exposed to the sun</td><td>60 ° C</td></tr><tr><td>Maximum yearly weighted average ambient temperature</td><td>32° C</td></tr></table>	The service conditions shall be as follows		Maximum altitude above sea level	5000m	Maximum ambient air temperature	50° C	Maximum daily average ambient air temperature	40° C	minimum ambient air temperature	-30° C	Maximum temperature attainable by an object exposed to the sun	60 ° C	Maximum yearly weighted average ambient temperature	32° C
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Maximum daily average ambient air temperature	40° C															
minimum ambient air temperature	-30° C															
Maximum temperature attainable by an object exposed to the sun	60 ° C															
Maximum yearly weighted average ambient temperature	32° C															

Sl. No.	GCC Clause Ref. No.	Amendment/Supplement to GCC	
		Maximum relative humidity	100%
		Average number of thunder storm days per annum (isokeraunic level)	70
		average number of rainy days per annum	120
		average annual rain fall	1500 mm
		Maximum wind pressure	260Kg/m ²
		The climatic conditions mentioned in SCC shall supersede any other climatic condition mentioned in the SBD or technical Specifications.	

----- **End of Section-V (SCC)** -----

VOLUME-I: SECTION – VI

SAMPLE FORMS AND PROCEDURES
(FORMS)

Table of Contents

SAMPLE FORMS AND PROCEDURES (FORMS)	2
1. BID FORMS AND PRICE SCHEDULES	3
2. BID SECURITY FORM.....	4
3a. FORM OF NOTIFICATION BY THE EMPLOYER TO THE BANK	7
3b. FORM OF NOTIFICATION BY THE EMPLOYER TO THE BANK	8
4. FORM OF 'NOTIFICATION OF AWARD OF CONTRACT'	9
5. FORM OF CONTRACT AGREEMENT	17
[Alternative – a].....	17
[Alternative – b].....	22
Appendix-1: TERMS AND PROCEDURES OF PAYMENT	27
Appendix-2 : PRICE ADJUSTMENT	33
Appendix-3 : INSURANCE REQUIREMENTS	39
Appendix-4 : TIME SCHEDULE.....	43
Appendix-5 : LIST OF APPROVED SUBCONTRACTORS	44
Appendix-6 : SCOPE OF WORKS AND SUPPLY BY THE EMPLOYER	45
Appendix-7 : LIST OF DOCUMENTS FOR APPROVAL OR REVIEW.....	46
Appendix-8 : GUARANTEES, LIQUIDATED DAMAGES FOR NON – PERFORMANCE	47
6. PERFORMANCE SECURITY FORM.....	48
7. BANK GUARANTEE FORM FOR ADVANCE PAYMENT.....	48
8. FORM OF TAKING OVER CERTIFICATE.....	51
9. FORM OF INDEMNITY BOND TO BE EXECUTED BY THE CONTRACTOR FOR THE EQUIPMENT HANDED OVER IN ONE LOT BY(abbreviated name of the Employer)..... FOR PERFORMANCE OF ITS CONTRACT 52	
10. FORM OF INDEMNITY BOND TO BE EXECUTED BY THE CONTRACTOR FOR THE EQUIPMENT HANDED OVER IN INSTALLMENTS BY(abbreviated name of the Employer)..... FOR PERFORMANCE OF ITS CONTRACT	55
11. FORM OF AUTHORISATION LETTER	58
12. FORM OF TRUST RECEIPT FOR PLANT, EQUIPMENT AND MATERIALS RECEIVED	59
13. FORM OF EXTENSION OF BANK GUARANTEE.....	60
14. FORM OF POWER OF ATTORNEY FOR JOINT VENTURE.....	62
15. FORM OF UNDERTAKING BY THE JOINT VENTURE PARTNERS.....	64
16. FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF CREDIT/FACILITIES.....	67
17. FORM OF OPERATIONAL ACCEPTANCE	68
18. FORM OF SAFETY PLAN TO BE SUBMITTED BY THE CONTRACTOR WITHIN SIXTY DAYS OF AWARD OF CONTRACT	69
19. FORM OF JOINT DEED OF UNDERTAKING BY THE SUB-CONTRACTOR ALONGWITH THE BIDDER/CONTRACTOR	80
20. FORM OF CERTIFICATE OF FINANCIAL PARAMETERS FOR QR	82

SAMPLE FORMS AND PROCEDURES (FORMS)

Preamble

This Section (Section –VI) of the Bidding Documents [named as Sample Forms and Procedures (FORMS)] provides proforma to be used by the bidders at the time of their bid preparation and by the Contractor subsequent to the award of Contract.

The Bidder shall complete, sign and submit with its bid the relevant FORMS to be used un-amended, in accordance with the requirements included in the Bidding Documents.

The Bidder shall provide the Bid Security, either in the form included hereafter or in another form acceptable to the Employer, pursuant to the provisions in the instructions to Bidders.

The Form of Contract Agreement shall be used un-amended, except for the need to complete Article 1.1 (Contract Documents), as appropriate and as may be required to suit the specific requirement of the Contract. The form shall also include the Appendices listed, as required, which should be completed according to the instructions for their completion provided at the beginning of each Appendix. The Price Schedule deemed to form part of the contract shall be modified according to any corrections or modifications to the accepted bid resulting from price corrections, pursuant to the provisions of the Instructions to Bidders.

The Performance Security(ies) and Bank Guarantee for Advance Payment forms should not be completed by the bidders at the time of their bid preparation. Only the successful Bidder will be required to provide the Performance Security(ies) and Bank Guarantee for Advance Payment, according to one of the forms indicated herein or in another form acceptable to the Employer and pursuant to the provisions of the General and Special Conditions of Contract, respectively.

Depending on specific facts and circumstances related to the Bid, other specific agreement, if any, and the contract, the text of the Forms herein may need to be modified to some extent. The Employer reserves the right to make such modifications in conformity with such specific facts and circumstances and rectify and consequent discrepancies, if any. However, modifications, if any, to the text of the Forms that may be required in the opinion of the Bidder/Contractor shall be effected only if the same is approved by the Employer. The Employer's decision in this regard shall be final and binding.

1. BID FORMS AND PRICE SCHEDULES

1.1 Bid Form

Please see Volume – III.

1.2 Price Schedule

Please see Volume - III

2. BID SECURITY FORM

(To be stamped in accordance with Stamp Act, the Non-Judicial Stamp Paper should be in the name of the issuing Bank)

Bank Guarantee No.:

Date:

To: *(insert Name and Address of Employer)*

WHEREAS M/s. *(insert name of Bidder)*..... having its Registered/Head Office at *(insert address of the Bidder)* *(hereinafter called "the Bidder")* has submitted its Bid for the performance of the Contract for.....*(insert name of the Package)*.....under.....*(insert Specification No)*..... *(hereinafter called "the Bid")*

KNOW ALL PERSONS by these present that WE *(insert name & address of the issuing bank)* having its Registered/Head Office at*(insert address of registered office of the bank)*..... *(hereinafter called "the Bank")*, are bound unto*(insert name of Employer)*..... *(hereinafter called "the Employer")* in the sum of*(insert amount of Bid Security in figures & words)*..... for which payment well and truly to be made to the said Employer, 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 in the Bid Form; or
- (2) In case the Bidder does not withdraw the deviations proposed by him, if any, at the cost of withdrawal stated by him in the bid and/or accept the withdrawals/rectifications pursuant to the declaration/confirmation made by him in Attachment – Declaration of the Bid; or
- (3) If the Bidder does not accept the corrections to arithmetical errors identified during preliminary evaluation of his bid pursuant to ITB Clause 27.2; or
- (4) If, as per the requirement of Qualification Requirements the Bidder is required to submit a Deed of Joint Undertaking and he fails to submit the same, duly attested by Notary Public of the place(s) of the respective executant(s) or registered with the Indian Embassy/High Commission in that Country, within ten days from the date of intimation of post – bid discussion; or
- (5) in the case of a successful Bidder, if the Bidder fails within the specified time limit
 - (i) to sign the Contract Agreement, in accordance with ITB Clause 33, or
 - (ii) to furnish the required performance security, in accordance with ITB Clause 34.
 or
- (6) In any other case specifically provided for in ITB.

WE undertake to pay to the Employer up to the above amount upon receipt of its first written demand, without the Employer having to substantiate its demand, provided that in its demand the Employer will note that the amount claimed by it is due to it, owing to the occurrence of any of the above-named CONDITIONS or their combination, and specifying the occurred condition or conditions.

This guarantee will remain in full force up to and including *(insert date, which shall be the date 30 days after the period of bid validity)*....., and any demand in respect thereof must reach the Bank not later than the above date.

For and on behalf of the Bank

[Signature of the authorised signatory(ies)]

Signature_____

Name_____

Designation_____

POA Number_____

Contact Number(s): Tel._____ Mobile_____

Fax Number_____

email _____

Common Seal of the Bank_____

Witness:

Signature_____

Name_____

Address_____

Contact Number(s): Tel._____ Mobile_____

email _____

Note:

1. In case the bid is submitted by a Joint Venture, the bid security shall be in the name of the Joint Venture and not in the name of the Lead Partner or any other Partner(s) of the Joint Venture.
2. The Bank Guarantee should be in accordance with the proforma as provided. However, in case the issuing bank insists for additional paragraph for limitation of liability, the following may be added at the end of the proforma of the Bank Guarantee *[i.e., end paragraph of the Bank Guarantee preceding the signature(s) of the issuing authority(ies) of the Bank Guarantee]*:

Quote

"Notwithstanding anything contained herein:

1. Our liability under this Bank Guarantee shall not exceed _____ *(value in figures)* _____
[_____ (value in words)].
2. This Bank Guarantee shall be valid upto _____ *(validity date)* _____.

3. *We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only & only if we receive a written claim or demand on or before _____ (validity date) _____."*

Unquote

3a. FORM OF NOTIFICATION BY THE EMPLOYER TO THE BANK
(Applicable for Forfeiture of Bank Guarantee)

To: *(insert Name and Address of the issuing Bank)*

Ref.: Forfeiture of Bid Security Amount against Bank Guarantee No. dated for
....., issued by you on behalf of M/s.*(insert name of the Bidder)*

Dear Sirs,

Please refer to the subject Bank Guarantee executed by you in our favour for as Bid Security for
the bid submitted by M/s.*(insert name of the Bidder)* against *(insert name of the Package)*
..... ; Specification No.

As per the terms of the said guarantee, the bank has guaranteed and undertaken to pay immediately on demand
by the Employer the amount of without any reservation, protest, demur and recourse. Further, any
demand made by the Employer shall be conclusive and binding on the Bank irrespective of any dispute or
difference raised by the Bidder.

In terms of the said guarantee, we hereby submit our claim/demand through this letter for remittance of Bid
Security amount to *(insert name of the Employer)* owing to the occurrence of the condition referred to
at Sl. No. The Bank is requested to remit the full guaranteed sum towards proceeds of
the bid security in the form of Demand Draft in favour of '.... *(insert name of the Employer)*', payable at
....*(insert place of the Employer)*....'

Thanking you,

For.....*(Name of the Employer)*

(AUTHORISED SIGNATORY)

Copy to:

.....*(Registered Office of the Bank)*....

3b. FORM OF NOTIFICATION BY THE EMPLOYER TO THE BANK

(Applicable for conditional claim pending extension of Bank Guarantee by the Bidder)

To: *(insert Name and Address of the issuing Bank)*

Ref.: Conditional Claim against Bank Guarantee No. dated for valid up to issued by you on behalf of M/s. *(insert name of the Bidder)*

Dear Sirs,

Please refer to the subject Bank Guarantee executed by you in our favour on behalf of M/s. *(insert name of the Bidder)*, who have submitted this Bank Guarantee to us towards Bid Security against *(insert name of the Package)* ; Specification No.

We, *(insert name of the Employer)* do hereby request you to lodge our claim/demand against the subject Bank Guarantee for full guaranteed sum. Kindly note that this claim/demand against the subject Bank Guarantee is without any further notice in case the amendment to Bank Guarantee No. dated extending its validity upto is not got arranged by *(insert name of the Bidder)* in our favour and are not received by us upto In such an event you are requested to remit the full guaranteed amount in terms of the subject guarantee in its letter and spirit and proceeds of this Bank Guarantee shall be forwarded to us in form of demand draft in favour of '.... *(insert name of the Employer)*, payable at *(insert place of the Employer)*....'.

This is without prejudice to our right under this guarantee and under the law.

Thanking you,

For.....*(Name of the Employer)*

(AUTHORISED SIGNATORY)

Copy to:

(insert Name and Address of the Bidder)

- You are requested to do the needful so that the amendment to the subject Bank Guarantee extending the validity up to is received by us by

4. FORM OF 'NOTIFICATION OF AWARD OF CONTRACT'

4a. FORM OF 'NOTIFICATION OF AWARD OF CONTRACT' FOR SUPPLY OF PLANT AND EQUIPMENT

Ref. No. :

Date :

.....(*insert Contractor's Name & Address*).....

.....

.....

[in case of Joint Venture, the aforesaid details shall be of the Lead Partner and the following shall also be included:

(Lead Partner of the Joint Venture of M/s. and M/s.)]

Attn : Mr.....

Sub. : Notification of Award for Ex-works Supply Contract for (*insert name of the Package*)
Specification No.: Domestic Competitive Bidding. (Project Funding: Domestic).

Dear Sir,

1.0 REFERENCE

This has reference to the following:

1.1 Our Invitation for Bids (IFB) dated

1.2 Bidding documents for the subject package issued to you vide our letter Ref. No. dated, comprising the following:

- a) Conditions of Contract Volume-I
(Document Code No.)
- b) Technical Specifications, Drawings Volume-II
(Document Code No.)
- c) Bid Form, Price Schedules Volume-III
& Technical Data Sheets
(Document Code No.)

1.2.1 Amendment/Errata No. to Bidding Documents issued to you vide our letter no. dated
(Applicable only if any Errata/Amendment to the Bidding Documents has been issued subsequently)

1.2.2 Clarifications to the Bidding Documents, pursuant to pre-bid conference held on, issued to you vide our letters no. dated *(Use as applicable)*

(Applicable only if any clarification to the Bidding Documents has been issued subsequently)
(INCLUDE AS FURTHER SUB-PARAGRAPHS ANY OTHER CORRESPONDENCE MADE TO THE BIDDER AFTER ISSUANCE OF BIDDING DOCUMENTS UP TO BID OPENING)

1.3 First envelope of your Bid submitted/the Bid submitted by the Joint Venture (JV) of M/s. (Lead Partner) and M/s. (Other Partner) for the subject package under Proposal reference no. dated was opened on *(Use as applicable)*

- 1.4 Intimation for Opening of Price Schedule issued to you vide our letter no. dated
- 1.5 Your Bid/the Bid by the Joint Venture (JV) of M/s. (Lead Partner) and M/s. (Other Partner) under proposal reference no. dated was opened on.....(*Use as applicable*)
- 1.6 Post bid discussions we had with you on various dates from to resulting into the Minutes of Meeting/ Record Notes of Post Bid Discussions enclosed as APPENDIX (NOA)-1with this Notification of Award.

2.0 AWARD OF CONTRACT AND ITS SCOPE

- 2.1 We confirm having accepted your Bid/Bid of the Joint Venture (JV) of M/s. (Lead Partner) and M/s. (Other Partner) (*Use as applicable*) (referred to at para 1.3 & 1.5 above) read in conjunction with all the specifications, terms & conditions of the Bidding Documents (referred to at para 1.2, 1.2.1 & 1.2.2 [*modify as applicable*] above) and specific confirmations recorded in the Record Notes of Post Bid Discussions (referred to at para 1.6 above), and award on you/the JV(*use as applicable*) the 'Ex-works Supply Contract' (also referred to as the 'First Contract') covering inter-alia Ex-works supply of all equipment and materials including Type Testing to be conducted, required for the complete execution of the (*insert name of Package alongwith name of the Project*), as detailed in the documents referred hereinabove. The scope of work inter-alia includes the following:

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KARGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

The scope of work under this Notification of Award (NOA) shall also include all such items which are not specifically mentioned in the Bidding Documents and/or your bid but are necessary for the successful completion of your scope under the Contract for the construction of (*insert name of Package alongwith name of the Project*), unless otherwise specifically excluded in the Bidding Documents or in this NOA.

- 2.1.1 You, the Lead Partner of the JV, along with M/s., the Other Partner of JV, shall be liable jointly and severally for the execution of the Contract in accordance with terms and conditions of the Contract. As per the Power of Attorney furnished in your favour by the Joint Venture, as enclosed with Bid Proposal of the JV, you shall act as the Partner In-charge (Lead Partner) of the above Joint Venture for execution of the Contract. (*This provision shall be included only in case the Bidder is a Joint Venture*)
- 2.2 The notification for award of Contract for performance of all other activities, as set forth in the Bidding Documents, viz.
..... (*Indicate brief scope of work of the Second Contract*)
has been issued on you vide our NOA no. dated (hereinafter called the "Second Contract" or "Services Contract").

Notwithstanding the award of work under two separate Contracts in the aforesaid manner, you/the JV (*use as applicable*) shall be overall responsible to ensure the execution of both the Contracts to achieve successful completion and taking over of the works under the package by the Employer as per the requirements stipulated in the Bidding Documents. It is expressly understood and agreed by you/the JV (*use as applicable*) that any default or breach under the 'Second Contract' shall automatically be deemed as a default or breach of this 'First Contract' also and vice-versa, and any such default or breach or occurrence giving us a right to terminate the 'Second Contract', either in full or in part, and/or recover damages there under, shall give us an absolute right to terminate this Contract, at your/JV's

(*use as applicable*) risk, cost and responsibility, either in full or in part and/or recover damages under this 'First Contract' as well. However, such default or breach or occurrence in the 'Second Contract', shall not automatically relieve you/the JV (*use as applicable*) of any of your/JV's (*use as applicable*) obligations under this 'First Contract'. It is also expressly understood and agreed by you/the JV (*use as applicable*) that the equipment/materials supplied by you/the JV (*use as applicable*) under this 'First Contract', when erected, installed & commissioned by you under the 'Second Contract' shall give satisfactory performance in accordance with the provisions of the Contract.

3.0 **CONTRACT PRICE**

3.1 The total Contract Price for the entire scope of work under this Contract shall be (*Specify the currency and the amount in figures & words*) as per the following break-up:

Sl. No.	Price Component	Amount
1.	Ex-Works Price component	
2.	Type Test Charges	Not Applicable
Total for Ex-works Supply Contract		

3.2 Notwithstanding the break-up of the Contract Price, the Contract shall, at all times, be construed as a single source responsibility Contract and any breach in any part of the Contract shall be treated as a breach of the entire Contract.

4.0 You/The JV (*use as applicable*) are/is required to furnish at the earliest a Performance Security(ies), as per the Bidding Documents, for an amount of (*Specify the value*) i.e. equal to 10% (Ten percent) of the Contract Price, and valid upto and including and any other securities as per the Bidding Documents.
(In case any other performance security is required to be furnished, the same is to be mentioned here)

5.0 For release of advance payment (admissible as per the Bidding Documents) equal to% of the Ex-works Price component of the Contract Price, you are, inter-alia, required to furnish a Bank Guarantee for the equivalent advance amount. The validity of the Advance Bank Guarantee shall be up to and including Further, please note that furnishing of all the Contract Performance Securities under the 'First Contract' and 'Second Contract' shall be one of the conditions precedent to release of advance under this Contract.

6.0 All the bank guarantees shall be furnished from an eligible bank as described in the Bidding Documents.

7.0 The schedule for Taking Over/Completion of Facilities by the Employer upon successful completion of the (*insert name of Package alongwith name of the Project*) shall be ... (*indicate the completion schedule*) months from the date of issue of this Notification of Award for all contractual purposes.

8.0 This Notification of Award constitutes formation of the Contract and comes into force with effect from the date of issuance of this Notification of Award.

9.0 You shall enter into a Contract Agreement with us within twenty-eight (28) days from the date of this Notification of Award.

10.0 This Notification of Award is being issued to you in duplicate. We request you to return its duplicate copy duly signed and stamped on each page including the enclosed Appendix as a token of your acknowledgement.

Please take the necessary action to commence the work and confirm action.

Yours faithfully,

For and on behalf of

.....(Name of the Employer).....
(Authorised Signatory)

Enclosures:

APPENDIX (NOA) – 1 - Record Notes of Post - Bid Discussions held on various dates from
to

**4b. FORM OF 'NOTIFICATION OF AWARD OF CONTRACT' FOR INSTALLATION OF PLANT AND
EQUIPMENT**

No. RECPDCL/TECH/JKPDD/e-Tender/2017-18/1763 Dated: 21.08.2017

Ref. No. :

Date :

.....(*insert Contractor's Name & Address*).....

.....

.....

[in case of Joint Venture, the aforesaid details shall be of the Lead Partner and the following shall also be included:

(Lead Partner of the Joint Venture of M/s. and M/s.)]

Attn : Mr.....

Sub. : Notification of Award for Services Contract for (*insert name of the Package*) Specification No.: Domestic Competitive Bidding. (Project Funding: Domestic).

Dear Sir,

1.0 REFERENCE

This has reference to the following:

1.1 Our Invitation for Bids (IFB) dated

1.2 Bidding documents for the subject package issued to you vide our letter Ref. No. dated, comprising the following:

a) Conditions of Contract Volume-I
(Document Code No.)

b) Technical Specifications Volume-II
(Document Code No.)

c) Bid Form, Price Schedules Volume-III
& Technical Data Sheets
(Document Code No.)

1.2.1 Amendment/Errata No. to Bidding Documents issued to you vide our letter no. dated

(Applicable only if any Errata/Amendment to the Bidding Documents has been issued subsequently)

1.2.2 Clarifications to the Bidding Documents, pursuant to pre-bid conference held on, issued to you vide our letters no. dated *(Use as applicable)*

(Applicable only if any clarification to the Bidding Documents has been issued subsequently)

(INCLUDE AS FURTHER SUB-PARAGRAPHS ANY OTHER CORRESPONDENCE MADE TO THE BIDDER AFTER ISSUANCE OF BIDDING DOCUMENTS UP TO BID OPENING)

1.3 First envelope of your Bid submitted/the Bid submitted by the Joint Venture (JV) of M/s. (Lead Partner) and M/s. (Other Partner) for the subject package under Proposal reference no. dated was opened on *(Use as applicable)*

- 1.4 Intimation for Opening of Price Schedule issued to you vide our letter no. dated
- 1.5 Your Bid/the Bid by the Joint Venture (JV) of M/s. (Lead Partner) and M/s. (Other Partner) under proposal reference no. dated was opened on.....(*Use as applicable*)
- 1.6 Post bid discussions we had with you on various dates from to resulting into the Minutes of Meeting/ Record Notes of Post Bid Discussions enclosed as APPENDIX (NOA)-1with this Notification of Award.

2.0 **AWARD OF CONTRACT AND ITS SCOPE**

- 2.1 We confirm having accepted your Bid/Bid of the Joint Venture (JV) of M/s. (Lead Partner) and M/s. (Other Partner) (*Use as applicable*) (referred to at para 1.3 & 1.5 above) read in conjunction with all the specifications, terms & conditions of the Bidding Documents (referred to at para 1.2, 1.2.1 & 1.2.2 [*modify as applicable*] above) and specific confirmations recorded in the Record Notes of Post Bid Discussions (referred to at para 1.6 above), and award on you/the JV(*use as applicable*) the 'Services Contract' (also referred to as the 'Second Contract') for performance of all other activities, as set forth in the documents, viz. (*Indicate brief scope of work*) for the (*insert name of Package alongwith name of the Project*)....

The scope of work under this Notification of Award (NOA) shall also include all such items which are not specifically mentioned in the Bidding Documents and/or your bid but are necessary for the successful completion of your scope under the Contract for the construction of (*insert name of Package alongwith name of the Project*), unless otherwise specifically excluded in the Bidding Documents or in this NOA.

- 2.1.1 You, the Lead Partner of the JV, along with M/s., the Other Partner of JV, shall be liable jointly and severally for the execution of the Contract in accordance with terms and conditions of the Contract. As per the Power of Attorney furnished in your favour by the Joint Venture, as enclosed with Bid Proposal of the JV, you shall act as the Partner In-charge (Lead Partner) of the above Joint Venture for execution of the Contract. (*This provision shall be included only in case the Bidder is a Joint Venture*)
- 2.2 The notification for award of Contract for Ex-works Supply of all equipment and materials including Type Testing to be conducted, as set forth in the documents, viz.

..... (*Indicate brief scope of work of the First Contract*)

has been issued on you vide our NOA no. dated (hereinafter called the "Ex-works Supply Contract" or "First Contract").

Notwithstanding the award of work under two separate Contracts in the aforesaid manner, you/the JV (*use as applicable*) shall be overall responsible to ensure the execution of both the Contracts to achieve successful completion and taking over of the works under the package by the Employer as per the requirements stipulated in the Bidding Documents. It is expressly understood and agreed by you/the JV(*use as applicable*) that any default or breach under the 'First Contract' shall automatically be deemed as a default or breach of this 'Second Contract' also and vice-versa, and any such default or breach or occurrence giving us a right to terminate the 'First Contract', either in full or in part, and/or recover damages there under, shall give us an absolute right to terminate this Contract, at your/JV's (*use as applicable*) risk, cost and responsibility, either in full or in part and/or recover damages under this 'Second Contract' as well. However, such default or breach or occurrence in the 'First Contract', shall not automatically relieve you/the JV(*use as applicable*) of any of your obligations under this 'Second Contract'. It is also expressly understood and agreed by you/the JV(*use as applicable*) that the equipment/materials supplied by you/the JV(*use as applicable*) under the 'First Contract', when erected,

installed & commissioned by you/the JV(*use as applicable*) under this 'Second Contract' shall give satisfactory performance in accordance with the provisions of the Contract.

3.0 **CONTRACT PRICE**

- 3.1 The total Contract Price for the entire scope of work under this Contract shall be (*Specify the currency and the amount in figures & words*) as per the following break-up:

Sl. No.	Price Component	Amount
1.	Local Transportation, Insurance and other Incidental Services (including port clearance etc)	
2.	Installation Services	
3.	Training Charges	Not Applicable
Total for Services Contract		

- 3.2 Notwithstanding the break-up of the Contract Price, the Contract shall, at all times, be construed as a single source responsibility Contract and any breach in any part of the Contract shall be treated as a breach of the entire Contract.
- 4.0 You/the JV(*use as applicable*)are/is required to furnish at the earliest a Performance Security(ies), as per the Bidding Documents, for an amount of (*Specify the value*) i.e. equal to 10% (Ten percent) of the Contract Price, and valid upto and including and any other securities as per the Bidding Documents.
- (*In case any other performance security is required to be furnished, the same is to be mentioned here*)
- 5.0 All the bank guarantees shall be furnished from an eligible bank as described in the Bidding Documents.
- 6.0 The schedule for Taking Over/Completion of Facilities by the Employer upon successful completion of the (*insert name of Package alongwith name of the Project*) shall be ... (*indicate the completion schedule*) months from the date of issue of this Notification of Award for all contractual purposes.
- 7.0 This Notification of Award constitutes formation of the Contract and comes into force with effect from the date of issuance of this Notification of Award.
- 8.0 You shall enter into a Contract Agreement with us within twenty-eight (28) days from the date of this Notification of Award.
- 9.0 This Notification of Award is being issued to you in duplicate. We request you to return its duplicate copy duly signed and stamped on each page including the enclosed Appendix as a token of your acknowledgement.

Please take the necessary action to commence the work and confirm action.

Yours faithfully,

For and on behalf of

.....(*Name of the Employer*).....

(*Authorised Signatory*)

Enclosures:

APPENDIX (NOA) – 1 - Record Notes of Post - Bid Discussions held on various dates from
to

Note:

- (1) Instructions indicated in italics in this notification of award are to be taken care of by the issuing authority.
The Forms may be modified appropriately to suit the specific requirement of the Contract.

5. FORM OF CONTRACT AGREEMENT

[Alternative – a]

SUPPLY CONTRACT AGREEMENT BETWEEN(*Name of Employer*) AND M/s. (*Name of Contractor*)/JOINT VENTURE (JV) OF M/s. (*Name of Lead Partner*)... (THE LEAD PARTNER OF THE JV) AND M/s.(*Name of Other Partner*)..... (THE PARTNER OF THE JV) [*Use as applicable*]

THIS CONTRACT AGREEMENT No. (also referred to as 'Ex-Works Supply Contract/the First Contract') is made on the day of 20....

BETWEEN

(1)(*Name of Employer*)..... a company incorporated under the laws of Companies Act 1956/2013 (with amendment from time to time) and having its Registered Office at(*registered address of the Employer*) and its Corporate Office at(*address of the Employer*)..... (hereinafter called "the Employer" and also referred to as ".....(*insert abbreviated name of the Employer*)")

and

(2) M/s(*Name of Contractor*), a company incorporated under the laws of Companies Act 1956/2013 (with amendment from time to time) and having its Principal place of business at(*Address of Contractor*) and Registered Office at(*Registered address of Contractor*) (hereinafter called "the Contractor" and also referred to as ".....(*insert abbreviated name of the Contractor*)")

or

Joint Venture (JV) of M/s(*Name of Lead Partner*) (the Lead Partner of JV), a company incorporated under the laws of Companies Act 1956 and having its Principal place of business at(*Address of Lead Partner*) and Registered Office at(*Registered address of Lead Partner*) and M/s (*Name of Other Partner*) (the Partner of JV), a company incorporated under the laws of Companies Act 1956/2013 (with amendment from time to time) and having its Principal place of business at(*Address of Other Partner*) and Registered Office at(*Registered address of Other Partner*) (hereinafter called "the Contractor" and also referred to as "Joint Venture"/the 'JV')
(Applicable only in case of Joint Venture)

WHEREAS the Employer desires to engage the Contractor for the supply of all equipment and materials including taxes and duties as applicable, Type Testing to be conducted inter-alia including (*Indicate brief scope of work*) for the complete execution of the (*insert name of Package alongwith name of the Project*)..... as detailed in the Contract Document ("the Facilities"), and the Contractor has agreed to such engagement upon and subject to the terms and conditions hereinafter appearing.

NOW IT IS HEREBY AGREED as follows:

Article 1. Contract Documents

1.1 Contract Documents (Reference GCC Clause 2.2)

The following documents shall constitute the Contract between the Employer and the Contractor, and each shall be read and construed as an integral part of the Contract:

VOLUME – A

1. This Contract Agreement and the Appendices thereto.
2. Invitation for bids (Reference No..... dated.....)
3. Pre-bid clarification (Reference No..... dated.....)
4. Letter of Intent (Reference No..... dated.....)
5. Mutually agreed contract execution plan/PERT chart (Reference No..... dated.....)
6. Contract Performance Securities (Reference No..... dated.....)
7. Letter of Award (Reference No..... dated.....)

VOLUME – B

3. "Bidding Documents" comprising of the following:

The Bidding Document is a compilation of the following and shall include amendments.... to, if any, thereto:

- a. VOLUME – I: Condition of contract** (Document Code No.:):
- | | |
|--------------|---|
| Section I: | Invitation for Bid (Section - IFB) |
| Section II: | Instructions to Bidders (Section – ITB) |
| Section III: | Bid Data sheets (BDS) |
| Section IV: | General Conditions of Contract (GCC) |
| Section V: | Special Conditions of Contract (SCC) |
| Section VI: | Sample Forms and Procedures (FP) |
1. Bid Form & Price Schedule
 - 1.1 Bid Form
 - 1.2 Price Schedule
 2. Bid Security Form
 3. Form of Notification by the Employer to the Bank
 - 3.a Applicable for forfeiture of Bank Guarantee
 - 3.b Applicable for conditional claim pending extension of Bank Guarantee by the bidder.
 4. Form of 'Notification of Award of Contract'
 - 4(a) Form of 'Notification of Award of Contract' for Supply of Plant and equipment
 - 4(b) Form of 'Notification of Award of Contract' for Installation of Plant and equipment
 5. Form of Contract Agreement
 - Alternative A
 - Alternative B
 - 5.1 Appendix-1: Terms and Procedures of Payment:
 - Grid/Power Substation, and 11KV, Distribution Transformer, LT and Service connection
 - 5.2 Appendix-2: Price Adjustment
 - 5.3 Appendix-3: Insurance Requirements
 - 5.4 Appendix-4: Time Schedule
 - 5.5 Appendix-5: List of Approved Subcontractors
 - 5.6 Appendix-6: Scope of Works and Supply by the Employer
 - 5.7 Appendix-7: List of Document for Approval or Review
 - 5.8 Appendix-8: Guarantees, Liquidated Damages for Non-Performance
 6. Performance Security Form
 7. Bank Guarantee Form for Advance Payment
 8. Form of Taking over Certificate

9. Form of Indemnity Bond to be executed by the Contractor for the Equipment handed over in one lot by Employer for performance of its contract
10. Form of Indemnity Bond to be executed by the Contractor for the Equipment handed over in installments by Employer For performance of its contract
11. Form of Authorisation Letter
12. Form of Trust Receipt for Plant, Equipment and Materials received
13. Form of Extension of Bank Guarantee
14. Form of Power of Attorney for Joint Venture
15. Form of Undertaking by the Joint Venture Partners
16. Format for Evidence of Access to or Availability of Credit/Facilities
17. Form of Operational Acceptance
18. Form of Safety Plan to be submitted by the Contractor within sixty days of award of contract
19. Form of joint deed of undertaking by the Sub-contractor along with the bidder /contractor
20. Form of Certificate of Financial Parameters for QR

Section VII: Scope of works,

- b. VOLUME-II: Bid –Proposal Sheets**(Document Code No.:):
- Section I: Project Management System (PMS), Quality Assurance & Evaluation Mechanism, Documentation & PMA
- Section II: Bid Forms
- Section III: Price Schedules
- c. Volume-III: Technical Specifications, Drawings** (Document Code No.:):
- Section I: Technical Specifications
- Section II: Tender Drawings
- Section III: Technical Specifications for IPDS

VOLUME – C

4. Bid Submitted by the Contractor.

(Only relevant extracts are attached herewith for easy reference. Should the circumstances warrant, the original Bid along with the enclosures thereof, shall be referred to.).

1.2 Order of Precedence (Reference GCC Clause 2)

In the event of any ambiguity or conflict between the Contract Documents listed above, the order of precedence shall be the order in which the Contract Documents are listed in Article 1.1 (Contract Documents) above.

1.3 Definitions (Reference GCC Clause 1/SCC Clause 1)

- 1.3.1 Capitalized words and phrases used herein shall have the same meanings as are ascribed to them in the General Conditions of Contract/Special Conditions of Contract.

Article 2. Contract Price and Terms of Payment

2.1 Contract Price (Reference GCC Clause 7)

The Employer hereby agrees to pay to the Contractor the Contract Price in consideration of the performance by the Contractor of its obligations hereunder. The Contract Price shall be the aggregate of (*amount in words*) (*amount in figures*)), or such other sums as may be determined in accordance with the terms and conditions of the Contract. The break-up of the Contract price is as under:

Sl. No.	Price Component	Amount
1.	Ex-Works Price Component	
2.	Type Test Charges	Not Applicable
Total for Ex-Works Supply Contract		

The detailed break-up of Contract Price is given in the relevant Appendices hereto.

2.2 Terms of Payment (Reference GCC Clause 8)

The terms and procedures of payment according to which the Employer will reimburse the Contractor are given in Appendix 1 (Terms and Procedures of Payment) hereto.

Article 3. Effective Date for Determining Time for Completion

3.1 Effective Date (Reference GCC Clause 1)

The Time of Completion of Facilities shall be determined from the date of the Notification of Award i.e., from

Article 4. Appendices

The Appendices listed in the List of Appendices, as mentioned below, shall be deemed to form an integral part of this Contract Agreement.

Reference in the Contract to any Appendix shall mean the Appendices attached hereto, and the Contract shall be read and construed accordingly.

List of Appendices

Appendix 1	Terms and Procedures of Payment
Appendix 2	Price Adjustment
Appendix 3	Insurance Requirements
Appendix 4	Time Schedule
Appendix 5	List of Approved Subcontractors
Appendix 6	Scope of Works and Supply by the Employer
Appendix 7	List of Document for Approval or Review
Appendix 8	Guarantees, Liquidated Damages for Non-Performance

Article 5.

The Contract Agreement No. has also been made on the day of 20..., between the Employer and the Contractor for the Services Contract (hereinafter referred to as the "Second Contract") for the subject package which includes performance of all the services interalia including (*Indicate brief scope of work*) for the complete execution of the (*insert name of Package alongwith name of the Project*).....

Notwithstanding the award of contract under two separate contracts in the aforesaid manner, the Contractor shall be overall responsible to ensure the execution of both the contracts to achieve successful completion and taking over of the facilities by the Employer as per the requirements stipulated in the Contract. It is expressly understood and agreed by the Contractor that any default or breach under the 'Second Contract' shall automatically be deemed as a default or breach of this 'First Contract' also and vice-versa and any such breach or occurrence or default giving the Employer a right to terminate the 'Second Contract' either in full or in part, and/or recover damages there under that Contract, shall give the Employer an absolute right to terminate this Contract at the Contractor's risk, cost and responsibility, either in full or in part and /or recover damages under this 'First Contract' as well. However, such breach or default or occurrence in the 'Second Contract' shall not automatically relieve the Contractor of any of its responsibility/ obligations under this 'First Contract'. It is also expressly understood and agreed by the Contractor that the equipment /materials supplied by the Contractor under this 'First Contract' when installed and commissioned by the Contractor under the 'Second Contract' shall give satisfactory performance in accordance with the provisions of the Contract.

IN WITNESS WHEREOF the Employer and the Contractor have caused this Agreement to be duly executed by their duly authorized representatives the day and year first above written.

Signed by for and
on behalf of the Employer

.....
Signature

.....
Title
in the presence of

Signed by for and
on behalf of the Contractor

.....
Signature

.....
Title
in the presence of

5. FORM OF CONTRACT AGREEMENT

[Alternative – b]

SERVICES CONTRACT AGREEMENT BETWEEN(Name of Employer) AND M/s.
 (Name of Contractor)/JOINT VENTURE (JV) OF M/s. (Name of Lead Partner).... (THE LEAD
 PARTNER OF THE JV) AND M/s.(Name of Other Partner)..... (THE PARTNER OF THE JV) [Use as applicable]

THIS CONTRACT AGREEMENT No. (also referred to as 'Services Contract/the Second Contract') is
 made on the day of 20....

BETWEEN

(1)(Name of Employer)..... a company incorporated under the laws of Companies Act
 1956/2013 (with amendment from time to time) and having its Registered Office at(registered address of
 the Employer) and its Corporate Office at(address of the Employer)..... (hereinafter
 called "the Employer" and also referred to as ".....(insert abbreviated name of the Employer)")

and

(2) M/s(Name of Contractor), a company incorporated under the laws of Companies Act
 1956/2013 (with amendment from time to time) and having its Principal place of business at(Address of
 Contractor) and Registered Office at(Registered address of Contractor)
 (hereinafter called "the Contractor" and also referred to as ".....(insert abbreviated name of the Contractor)
")

or

Joint Venture (JV) of M/s(Name of Lead Partner) (the Lead Partner of JV), a company
 incorporated under the laws of Companies Act 1956 and having its Principal place of business at
(Address of Lead Partner) and Registered Office at(Registered address of
 Lead Partner) and M/s (Name of Other Partner) (the Partner of JV), a
 company incorporated under the laws of Companies Act 1956/2013 (with amendment from time to time) and
 having its Principal place of business at(Address of Other Partner) and Registered
 Office at(Registered address of Other Partner) (hereinafter called "the Contractor" and
 also referred to as "Joint Venture"/the 'JV')
 (Applicable only in case of Joint Venture)

WHEREAS the Employer desires to engage the Contractor for providing all the services inter-alia including
 (Indicate brief scope of work) for the complete execution of the
 (insert name of Package alongwith name of the Project)..... as detailed in the Contract Document ("the
 Facilities"), and the Contractor has agreed to such engagement upon and subject to the terms and conditions
 hereinafter appearing.

NOW IT IS HEREBY AGREED as follows:

Article 1. Contract Documents

1.1 Contract Documents (Reference GCC Clause 2.2)

The following documents shall constitute the Contract between the Employer and the Contractor, and
 each shall be read and construed as an integral part of the Contract:

VOLUME – A

1. This Contract Agreement and the Appendices thereto.
2. Invitation for bids (Reference No..... dated.....)
3. Pre-bid clarification (Reference No..... dated.....)
4. Letter of Intent (Reference No..... dated.....)
5. Mutually agreed contract execution plan/PERT chart (Reference No..... dated.....)
6. Contract Performance Securities (Reference No..... dated.....)
7. Letter of Award (Reference No..... dated.....)

VOLUME – B

3. "Bidding Documents" comprising of the following:

The Bidding Document is a compilation of the following and shall include amendments.... to, if any, thereto:

- a. **VOLUME – I:**
 - Section I: Invitation for Bid (Section - IFB)
 - Section II: Instructions to Bidders (Section – ITB)
 - Section III: Bid Data sheets (BDS)
 - Section IV: General Conditions of Contract (GCC)
 - Section V: Special Conditions of Contract (SCC)
 - Section VI: Sample Forms and Procedures (FP)
 1. Bid Form & Price Schedule
 - 1.1 Bid Form
 - 1.2 Price Schedule
 2. Bid Security Form
 3. Form of Notification by the Employer to the Bank
 - 3.a Applicable for forfeiture of Bank Guarantee
 - 3.b Applicable for conditional claim pending extension of Bank Guarantee by the bidder.
 4. Form of 'Notification of Award of Contract'
 - 4(a) Form of 'Notification of Award of Contract' for Supply of Plant and equipment
 - 4(b) Form of 'Notification of Award of Contract' for Installation of Plant and equipment
 5. Form of Contract Agreement
 - Alternative A
 - Alternative B
 - 5.1 Appendix-1: Terms and Procedures of Payment: Grid/Power Substation, and 11KV, Distribution Transformer, LT and Service connection
 - 5.2 Appendix-2: Price Adjustment
 - 5.3 Appendix-3: Insurance Requirements
 - 5.4 Appendix-4: Time Schedule
 - 5.5 Appendix-5: List of Approved Subcontractors
 - 5.6 Appendix-6: Scope of Works and Supply by the Employer
 - 5.7 Appendix-7: List of Document for Approval or Review
 - 5.8 Appendix-8: Guarantees, Liquidated Damages for Non-Performance
 6. Performance Security Form
 7. Bank Guarantee Form for Advance Payment
 8. Form of Taking over Certificate

9. Form of Indemnity Bond to be executed by the Contractor for the Equipment handed over in one lot by Employer for performance of its contract
10. Form of Indemnity Bond to be executed by the Contractor for the Equipment handed over in installments by Employer For performance of its contract
11. Form of Authorisation Letter
12. Form of Trust Receipt for Plant, Equipment and Materials received
13. Form of Extension of Bank Guarantee
14. Form of Power of Attorney for Joint Venture
15. Form of Undertaking by the Joint Venture Partners
16. Format for Evidence of Access to or Availability of Credit/Facilities
17. Form of Operational Acceptance
18. Form of Safety Plan to be submitted by the Contractor within sixty days of award of contract
19. Form of joint deed of undertaking by the Sub-contractor along with the bidder /contractor
20. Form of Certificate of Financial Parameters for QR

Section VII: Scope of works

- d. VOLUME-II: Bid –Proposal Sheets** (Document Code No.:):
- Section I: Project Management System (PMS), Quality Assurance & Evaluation Mechanism, Documentation & PMA
- Section II: Bid Forms
- Section III: Price Schedules
- e. Volume-III: Technical Specifications, Drawings** (Document Code No.:):
- Section I: Technical Specifications
- Section II: Tender Drawings
- Section III: Technical Specifications for IPDS

VOLUME – C

4. Bid Submitted by the Contractor.

(Only relevant extracts are attached herewith for easy reference. Should the circumstances warrant, the original Bid along with the enclosures thereof, shall be referred to.).

1.2 Order of Precedence (Reference GCC Clause 2)

In the event of any ambiguity or conflict between the Contract Documents listed above, the order of precedence shall be the order in which the Contract Documents are listed in Article 1.1 (Contract Documents) above.

1.3 Definitions (Reference GCC Clause 1/SCC Clause 1)

- 1.3.1 Capitalized words and phrases used herein shall have the same meanings as are ascribed to them in the General Conditions of Contract/Special Conditions of Contract.

Article 2. Contract Price and Terms of Payment

2.1 Contract Price (Reference GCC Clause 7)

The Employer hereby agrees to pay to the Contractor the Contract Price in consideration of the performance by the Contractor of its obligations hereunder. The Contract Price shall be the aggregate of (*amount in words*) (*amount in figures*)), or such other sums as may be determined in accordance with the terms and conditions of the Contract. The break-up of the Contract price is as under:

Sl. No.	Price Component	Amount
1.	Local Transportation, Insurance and other Incidental Services	
2.	Installation Services	
3.	Training Charges (if required)	Not Applicable
Total for Services Contract		

The detailed break-up of Contract Price is given in the relevant Appendices hereto.

2.2 Terms of Payment (Reference GCC Clause 8)

The terms and procedures of payment according to which the Employer will reimburse the Contractor are given in Appendix 1 (Terms and Procedures of Payment) hereto.

Article 3. Effective Date for Determining Time for Completion

3.1 Effective Date (Reference GCC Clause 1)

The Time of Completion of Facilities shall be determined from the date of the Notification of Award i.e., from

Article 4. Appendices

The Appendices listed in the List of Appendices, as mentioned below, shall be deemed to form an integral part of this Contract Agreement.

Reference in the Contract to any Appendix shall mean the Appendices attached hereto, and the Contract shall be read and construed accordingly.

List of Appendices

Appendix 1	Terms and Procedures of Payment
Appendix 2	Price Adjustment
Appendix 3	Insurance Requirements
Appendix 4	Time Schedule
Appendix 5	List of Approved Subcontractors
Appendix 6	Scope of Works and Supply by the Employer
Appendix 7	List of Document for Approval or Review
Appendix 8	Guarantees, Liquidated Damages for Non-Performance

Article 5.

The Contract Agreement No. has also been made on the day of 20...., between the Employer and the Contractor for the Ex-Works Supply Contract (hereinafter referred to as the "First Contract") for the subject package which includes Ex-works supply of all equipment and

materials including Type Testing to be conducted interalia including (*Indicate brief scope of work*) for the complete execution of the (*insert name of Package alongwith name of the Project*).....

Notwithstanding the award of contract under two separate contracts in the aforesaid manner, the Contractor shall be overall responsible to ensure the execution of both the contracts to achieve successful completion and taking over of the facilities by the Employer as per the requirements stipulated in the Contract. It is expressly understood and agreed by the Contractor that any default or breach under the 'First Contract' shall automatically be deemed as a default or breach of this 'Second Contract' also and vice-versa and any such breach or occurrence or default giving the Employer a right to terminate the 'First Contract' either in full or in part, and/or recover damages there under that Contract, shall give the Employer an absolute right to terminate this Contract at the Contractor's risk, cost and responsibility, either in full or in part and /or recover damages under this 'Second Contract' as well. However, such breach or default or occurrence in the 'First Contract' shall not automatically relieve the Contractor of any of its responsibility/ obligations under this 'Second Contract'. It is also expressly understood and agreed by the Contractor that the equipment /materials supplied by the Contractor under the 'First Contract' when installed and commissioned by the Contractor under this 'Second Contract' shall give satisfactory performance in accordance with the provisions of the Contract.

IN WITNESS WHEREOF the Employer and the Contractor have caused this Agreement to be duly executed by their duly authorized representatives the day and year first above written.

Signed by for and
on behalf of the Employer

Signed by for and
on behalf of the Contractor

.....
Signature

.....
Signature

.....
Title

.....
Title

in the presence of

in the presence of

(Separate Contract Agreements shall be executed by the Employer and the Contractor in accordance with the Construction of the Contract stipulated at BDS Clause [ITB 30.4]. The forms of Contract under both Alternative i.e., a & b shall be used).

Appendix-1: TERMS AND PROCEDURES OF PAYMENT

- I. "Billable Items" are worked out and attached to Price Schedule. Items otherwise required for completion of work but not listed in the Price Schedule shall also be in the scope of the contractor. The costs of such "Non- billable Items" may be included in the quoted price of "Billable Items" by the bidder in the Price Schedule. The payment shall be made on billable item wise basis only as indicated in Price Schedule.
- II. The payment to the Contractor under the contract will be made by the Employer in line with Clause 8, Section GCC, Vol.-I and as per the guidelines and conditions specified hereunder.
- III. All progressive payments shall be released on validity of Contract Performance Security and securities against Initial Advance.
- IV. The interest rate on advance payment shall be SBI's Base rate on the date of disbursement of advance payment. The interest accrued on interest bearing advance shall be adjusted first before releasing any payment. The interest rate shall be calculated on the daily progressive balances outstanding as on the date of recovery/adjustment i.e. on daily rest basis.
- V. Upon award of the contract, contractor shall be free to take on the work at all the fronts or at specified fronts as advised by Project Manager.
- VI. Unmeasured ad-hoc payment: The employer, at his discretion in exigencies, to ensure liquidity of funds with the contractor may accept un-measured ad-hoc bill of the contractor. In this method, following methodology shall be adopted:
 - a. Submission of certificate on measurement book by Project Manager that materials under consideration have been erected, tested and commissioned as per technical specification, scope of work & approved drawings.
 - b. Quantum and completion of works is certified by Project Manager jointly with contractor and eligible amount of such works are computed as per approved payment terms.
 - c. 50% of such eligible amount shall be released to the contractor immediately within a week. The amount of un-measured bill should not be more than average of previous two measured bill.
 - d. Next bill of the work shall invariably be a measured bill in which, various quantities of unmeasured bill shall be verified and measured jointly by Project Manager and contractor.

A. Supply, Erection, Testing and Commissioning of works under DDUGJY/IPDS:

1. Advance payment (Optional):

- i. For Ex-works Supply contract, initial interest bearing adjustable Mobilization Advance of 15% of ex-works contract cost excluding taxes and duties shall be released for all the materials in two tranches of 7.5% each, First installment of 7.5% of ex-works price component shall be released on presentation of the following:
 - a. Unconditional acceptance of the Letter of Award and signing of contract agreement by the Contractor.

- b. Contractor's detailed invoice.
- c. Submission and acceptance of unconditional & irrevocable part Bank Guarantees (as many number as proposed recovery installments and should be of 110% amount of each installment) in favor of employer with total amounting to 110% of total advance amount as per proforma attached with Section-VI of Vol.-I (Conditions of Contract). The said Bank Guarantees shall be initially valid upto end of ninety (90) days after the scheduled month of supply of materials and shall be extended from time to time till ninety (90) days beyond revised scheduled month of supply of materials, as may be required under the Contract.
- d. An unconditional & irrevocable Bank Guarantee for ten percent (10%) of the total Contract price towards Contract Performance Guarantee (CPG) in accordance with the provisions of Clause 34.1, Section ITB and as per proforma attached with Section-VI of Vol.-I (Conditions of Contract). The said bank guarantee shall be initially valid up to ninety (90) days after expiry of the Warranty Period and shall be extended from time to time till ninety (90) days beyond successful completion of warranty period, as may be required under the Contract.
- e. Detailed PERT Network/Bar chart and its approval by the Employer.

The bidder must utilize first advance installment of 7.5% of ex-works supply component before requesting for second advance installment. Second installment of 7.5% shall be released on presentation of contractor's invoice and satisfactory utilization certificate supported with documentary evidences of first advance installment.

- ii. For Services Contract, initial interest bearing adjustable Mobilization Advance of 10% of erection contract price excluding taxes and duties shall be released for all the works in two tranches of 5% each. First installment of 5% of total erection price shall be released on presentation of the following:
 - a. Submission of detailed invoice for advance payment.
 - b. Establishment of Contractor's site offices and certification by Engineer that satisfactory mobilization for erection exists.
 - c. Submission and acceptance of unconditional & irrevocable part Bank Guarantees (as many number as proposed recovery installments and should be of 110% amount of each installment) in favor of employer with total amounting to 110% of total advance amount as per proforma attached with Section-VI of Vol.-I (Conditions of Contract). The said Bank Guarantees shall be initially valid up to end of ninety (90) days after the scheduled month of erection of materials and shall be extended from time to time till ninety (90) days beyond revised scheduled month of erection of materials, as may be required under the Contract.
 - d. Submission of an unconditional & irrevocable Bank Guarantee in favor of Employer for ~~ten percent (10%)~~ of the total Contract price towards Contract Performance Guarantee (CPG) in accordance with Clause 34.1 of Section-ITB, Vol.-I and as per proforma attached with Section-VI of Volume-I (Conditions of Contract). The said Bank Guarantee shall be initially valid up to 90 (ninety) days after the expiry of warranty period and shall be extended from time to time till ninety (90) days beyond successful completion of warranty period, as may be required under the Contract.

The bidder must utilize first advance installment of 5% of total erection price before requesting for second advance installment. Second installment of 5% shall be released on presentation of contractor's invoice and satisfactory utilization certificate of first advance installment.

2. Progressive payments (Supply):

2.1. First Installment(60%) : Sixty percent (60%) payments against various items of price schedule 1 including 100% Excise Duty, Taxes etc shall be paid on receipt and acceptance of Materialson submission of documents indicated herein under:

- a. Unconditional acceptance of the Letter of Award and signing of contract agreement by the Contractor.
- b. An unconditional & irrevocable Bank Guarantee for ten percent (10%) of the total Contract price towards Contract Performance Guarantee (CPG) in accordance with the provisions of Clause 34.1, Section ITB and as per proforma attached with Section-VI of Vol.-I (Conditions of Contract). The said bank guarantee shall be initially valid upto ninety (90) days after expiry of the Warranty Period and shall be extended from time to time till ninety (90) days beyond successful completion of warranty period, as may be required under the Contract.
- c. Detailed Project Execution Plan/PERT chart and its approval by the Employer.
- d. Evidence of dispatch (R/R or receipted L/R)
- e. Contractor's detailed invoice & packing list identifying contents of each shipment.
- f. Invoice certifying payments of ED, Taxes for the direct transaction between Employer and Contractor,
- g. Copy of Certificate to the effect of payments of State/ Central taxes, duties, levies etc have been made against supply of materials through sub-vendors under the contract.
- h. Certified copy of Insurance policy/Insurance Certificate.
- i. Manufacturer's/Contractor's guarantee certificate of Quality.
- j. Material Dispatch Clearance Certificate (MDCC) / Dispatch Instructions (DI) for dispatch of materials from the manufacturer's works. MDCC/DI shall be issued by authorized officer of Employer
- k. Manufacturer's copy of challan
- l. submission of the certificate by the Employer's representative that the item(s) have been received,
- m. Submission of certificate by Project Manager that materials have been supplied as per technical specification, scope of work & approved drawings enclosing certified copy of inspection reports and dispatch clearances.
 - a. 60% of proportionate Mobilization Advance against Supply shall be adjusted while making payments of this installment. In case of delay of project, the entire

mobilization advance shall get recovered from the contractor as per supply and erection contracts' works completion schedule respectively.

2.2. Second Installment (30%): Thirty percent (30%) payments against various items of price schedule 1 shall be paid on following conditions:

- a. Unconditional acceptance of the Letter of Award and signing of contract agreement by the Contractor.
 - b. An unconditional & irrevocable Bank Guarantee for ten percent (10%) of the total Contract price towards Contract Performance Guarantee (CPG) in accordance with the provisions of Clause 34.1, Section ITB and as per proforma attached with Section-VI of Vol.-I (Conditions of Contract). The said bank guarantee shall be initially valid upto ninety (90) days after expiry of the Warranty Period and shall be extended from time to time till ninety (90) days beyond successful completion of warranty period, as may be required under the Contract.
 - c. Detailed Project Execution Plan/PERT chart and its approval by the Employer.
 - d. Evidence of dispatch (R/R or receipted L/R)
 - e. Contractor's detailed invoice & packing list identifying contents of each shipment.
 - f. Invoice certifying payments of ED, Taxes for the direct transaction between Employer and Contractor,
 - g. Copy of Certificate to the effect of payments of State/ Central taxes, duties, levies etc have been made against supply of materials through sub-vendors under the contract.
 - h. Certified copy of Insurance policy/Insurance Certificate.
 - i. Manufacturer's/Contractor's guarantee certificate of Quality.
 - j. Material Dispatch Clearance Certificate (MDCC) / Dispatch Instructions (DI) for dispatch of materials from the manufacturer's works. MDCC/DI shall be issued by authorized officer of Employer
 - k. Manufacturer's copy of challan
 - l. submission of the certificate on measurement book by the Project Manager that the item(s) have been received,
 - m. Submission of certificate on measurement book by Project Manager that materials under consideration have been erected, tested and commissioned as per technical specification, scope of work & approved drawings.
 - n. Test check certification on Measurement Book be recorded by officers in hierarchy with the claim as per policy.
- While releasing 2nd installment of 30% supply payment following adjustment shall be made:
- a. Balance initial mobilization advance shall be adjusted. Also, up-to-date accrued interest shall also be recovered.
 - b. In case of delay of project, the entire mobilization advance shall get recovered at this stage.

2.3. Third and Final Installment (10%):

- a. The balance ten percent (10%) of payment against Supply contracts excluding Excise Duty, Taxes etc shall be reimbursable on successful supply, erection, testing and commissioning of the works in the project and issuance of Taking over Certificate by the Employer.
- b. 'Commissioning' for the purpose of payments shall mean satisfactory completion of all supplies, erection, commissioning checks and successful completion of all site tests and continuous energisation of the equipment/ materials at rated voltage as per the Contract and to the satisfaction/approval of the Employer.
- c. On submission of the certificate by the Project Manager that the item(s) have been received, erected, tested and commissioned.
- d. On certification by Project Manager for validity of an unconditional & irrevocable Bank Guarantee for ten percent (10%) of the total Contract price towards Contract Performance Guarantee (CPG) in accordance with the provisions of Clause 34.1, Section ITB and as per proforma attached with Section-VI of Vol.-I (Conditions of Contract). The said bank guarantee shall be initially valid upto ninety (90) days after expiry of the Warranty Period and shall be extended from time to time till ninety (90) days beyond successful completion of warranty period, as may be required under the Contract.
- e. In case, for any reason not attributable to the contractor, the commissioning and charging of equipment/materials is delayed beyond 120 days of successful completion of final checking and testing of works, the balance 10% payment shall be released against an unconditional & irrevocable bank guarantee of equivalent amount initially valid till 6 months from the readiness of works for commissioning and charging at rated voltage, to be extended till 90 days beyond actual commissioning & taking over.

3. Progressive payments (Erection):

3.1. First Installment (90%) : Ninety percent (90%) payments against Erection contracts shall be paid on erection, testing and commissioning of works and on submission of documents of all villages indicated herein under:

- a. Unconditional acceptance of the Letter of Award and signing of contract agreement by the Contractor.
- b. Detailed Project Execution Plan/PERT chart and its approval by the Employer.
- c. An unconditional & irrevocable Bank Guarantee for ten percent (10%) of the total Erection Contract price towards Contract Performance Guarantee (CPG) in accordance with the provisions of Clause 34.1, Section ITB and as per proforma attached with Section-VI of Vol.-I (Conditions of Contract). The said bank guarantee shall be initially valid upto ninety (90) days after expiry of the Warranty Period and shall be extended from time to time till ninety (90) days beyond successful completion of warranty period, as may be required under the Contract.
- d. Certified copy of Insurance policy/Insurance Certificate.
- e. Material reconciliation statement consisting of the materials utilized for erection, testing & commissioning vis-à-vis erection activity of the lot of villages.

- o. Submission of certificate on measurement book by Project Manager that materials under consideration have been erected, tested and commissioned as per technical specification, scope of work & approved drawings.
- p. Test check certification on Measurement Book be recorded by officers in hierarchy with the claim as per policy.

While releasing 1st installment of 90% erection payment following adjustment shall be made:

- b. 100% Mobilization Advance against Erection shall be fully adjusted while making payments of first installment. Also, up-to-date accrued interest shall also be recovered.
- c. In case of delay of project, the entire mobilization advance shall get recovered from the contractor as per supply and erection contracts' works completion schedule respectively.

3.2. Second and Final Installment (10%):

- a. The balance ten percent (10%) of payment against Erection contract shall be released on successful commissioning of the works in the project and issuance of Taking over Certificate of the project.
- b. 'Commissioning' for the purpose of payments shall mean satisfactory completion of all supplies, erection, commissioning checks and successful completion of all site tests and continuous energisation of the equipment/ materials at rated voltage as per the Contract and to the satisfaction/approval of the Employer.
- c. On submission of the certificate by the Project Manager that the equipment/materials have been erected, tested and commissioned.
- d. On certification by Project Manager for validity of an unconditional & irrevocable Bank Guarantee for ten percent (10%) of the total Contract price towards Contract Performance Guarantee (CPG) in accordance with the provisions of Clause 34.1, Section ITB and as per proforma attached with Section-VI of Vol.-I (Conditions of Contract). The said bank guarantee shall be initially valid upto ninety (90) days after expiry of the Warranty Period and shall be extended from time to time till ninety (90) days beyond successful completion of warranty period, as may be required under the Contract.
- e. On certification of Project Manager for reconciliation of materials and payments.
- f. On certification of Project Manager that assets under the project are created and are taken over by Employer.
- g. However, in case, for any reason solely attributable to the Owner/Employer, the commissioning of equipment/materials is delayed beyond 120 days of successful completion of final checking and testing of line for the purpose of commissioning as defined in bid documents, the balance 10% payment shall be released against an unconditional & irrevocable bank guarantee of equivalent amount initially valid till 6 months from the readiness of transmission lines/ distribution transformer/ service connections for commissioning and charging at rated voltage, to be extended till 90 days beyond actual commissioning & taking over.

Appendix-2 :PRICE ADJUSTMENT

The prices for execution of the entire works covered under the scope of this work shall be quoted by the Bidder in the manner specified, in the BPS. The Ex-works price component, less advance will be subject to price adjustment, only for equipment/materials/items of work specifically stated under clause 1.0 below, (for which the bidder shall quote a base price), based on separate formulae as per price adjustment provisions given herein.

Prices for Ex-works price component for all other equipment/items except specified at Clause 1.0 below, Charges for Erection, Inland Freight & Insurance etc shall be FIRM and no price adjustment shall be applicable for these components for the entire duration of the Contract.

No price adjustment shall be applicable on the portion of the Contract Price payable to the Contractor as advance payment.

1.0 **Materials and Labour portion:**

1.0.1 **For ACSR Conductor**

The price adjustment on the Ex-works price component, less advance, of Conductor shall be as follows:

$$dECc = ECc [0.80 \times \{(A_1 - A_0) / A_0\} + 0.05 \times \{(L_1 - L_0) / L_0\}]$$

Where,

dECc = Price adjustment amount payable on Ex-works price of Conductor, shipment wise (if it works out negative, that would mean the amount to be recovered by the employer from the contractor).

ECc = Ex-works price for Conductor, shipment wise, less advance (Quoted Price)

A = Published price indices for EC-grade aluminum ingots as published by IEEMA

L = All India consumer price index for industrial workers as published by Labour Bureau, Shimla (Govt. of India)

Fixed portion of the ex-works price component shall be 0.15. This shall not be subject to any adjustment.

In the above price adjustment formulae:

Subscript '0' refers to indices as on 30 days prior to date of bid opening (referred to as base date indices),

Subscript '1' refers to indices as on 60 days prior to date of shipment.

1.0.2 **For Station/ Power Transformer (Copper Wound)**

The price adjustment on the Ex-works price component, less advance, of Transformers shall be as follows:

1.0.2.1 **For power transformer (Copper wound)**

$$dP = P_0 \times [0.15 + 0.23 \times (C_1 / C_0) + 0.26 \times (ES_1 / ES_0) + 0.08 \times (IS_1 / IS_0) + 0.05 \times (IM_1 / IM_0) + 0.11 \times (TB_1 / TB_0) + 0.12 \times (L_1 / L_0)] - P_0$$

Where,

dP = Price adjustment amount shipment wise,

P_0 = Ex works price component of Transformer (Quoted Price),

C, ES, IS, IM, TB & L are the price indices for material and labour as below,

C = Price of copper wire bars, in Rupees per MT, as published by
 IEEMA,

ES = Price of Electrical steel sheets, C&F price of M4 grade Electrical
 Steel Sheets in Rupees per MT, as published by IEEMA,

IS (Iron & Steel) = Wholesale Price Index Number for 'Iron & Steel'
 (Base 2004-05 = 100), as published by IEEMA,

IM (Insulating Materials) = Price of Insulating Materials, as published by
 IEEMA,

TB = Price of Transformer Oil Base Stock (TOBS) in Rs./KL, as
 published by IEEMA,

L = All India Average Consumer Price Index Number, for Industrial
 Workers (base 2001=100) as published / declared by Labour Bureau,
 Shimla, GOI and circulated by IEEMA.

In the above price adjustment formulae:

Subscript '0' refers to indices as on 30 days prior to date of bid opening (referred to as base
 date indices),

Subscript '1' refers to indices as on 60 days prior to date of shipment.

1.0.3 **Station / Distribution Transformer (Aluminium Wound)**

The price adjustment on the Ex works price component, less advance, of Transformers shall be as
 follows:

1.0.3.1 For station/distribution transformer(Aluminium wound) (of rating up to 160 kVA and voltage up
 to 33 kV)

$$dP = P_0 \times [0.13 + 0.27 \times (A_1/A_0) + 0.31 \times (ES_1/ES_0) + 0.09 \times (IS_1/IS_0) + 0.02 \times (IM_1/IM_0) + 0.06 \times (TB_1/TB_0) + 0.12 \times (L_1/L_0)] - P_0$$

Where,

dP = Price adjustment amount shipment wise,

P_0 = Ex works price component of Transformer (Quoted Price),

C, ES, IS, IM, TB & L are the price indices for material and labour as below,

A = Published price indices for EC grade aluminum ingots as
 published by IEEMA

ES = Price of Electrical steel sheets, C&F price of M4 grade Electrical Steel Sheets in Rupees per MT, as published by IEEMA,

IS (Iron & Steel) = Wholesale Price Index Number for 'Iron & Steel' (Base 2004-05 = 100), as published by IEEMA,

IM (Insulating Materials) = Price of Insulating Materials, as published by IEEMA,

TB = Price of Transformer Oil Base Stock (TOBS) in Rs./KL, as published by IEEMA,

L = All India Average Consumer Price Index Number, for Industrial Workers (base 2001=100) as published / declared by Labour Bureau, Shimla, GOI and circulated by IEEMA.

In the above price adjustment formulae:

Subscript '0' refers to indices as on 30 days prior to date of bid opening (referred to as base date indices),

Subscript '1' refers to indices as on 60 days prior to date of shipment.

1.0.4 Cables

The price adjustment on the Ex-works price component, less advance, of Cables shall be as follows:

$$dP = P_0 \times \{0.85 + 0.15 \times (A_1/A_0)\} - P_0 + (M_1 - M_0),$$

Where,

dP	=	Price Adjustment amount per kilometer of cable,
P0	=	Ex-works price per kilometer of cable (Quoted Price)
A	=	Price Index for PVC / XLPE as published by IEEMA,
M1-M0	=	Change in metal component of the ex-works price of particular type and size of cable,
M	=	(Weight in MT of metal per kilometer of cable) x (published price index of metals per MT as published by IEEMA)

The bidder has to specify in his bid the metal component per km for each type and size of cable.

In the above price adjustment formulae:

Subscript '0' refers to indices as on 30 days prior to date of bid opening (referred to as base date indices),

Subscript '1' refers to indices as on 60 days prior to date of shipment.

1.0.5 Steel Structure

Steel structure (excluding nuts, bolts) used in fabrication work at various places in Sub Transmission and Distribution network (such as lattice structure used in ST&D network/line, switchyard etc.), which are billable items in the Bill of quantity (BOQ) shall be covered under this head. The price adjustment formula for such structural steel items shall be as mentioned hereinafter.

The price component of the structural steel for any shipment/ dispatch comprises of a fixed portion (designated as 'F' and the value of which is specified hereunder) and a variable portion linked with the indices for respective materials and labour (description and co-efficient as enumerated below):

The amount of price adjustment towards variable portion payable/recoverable on each shipment/dispatch shall be computed as under:

$$EC = EC1 - EC0$$

EC1 will be computed as follows in any of appropriate manner as applicable (a or b or c):

a) For structure using both heavy and lighter angles:

$$EC1 = EC0 * [F + 0.18 * (HA1/HA0) + 0.40 * (LA1/LA0) + 0.16 * (Zn1/Zn0) + 0.11 * (L1/L0)]$$

b) For structure using only heavy angles:

$$EC1 = EC0 * [F + 0.58 * (HA1/HA0) + 0.16 * (Zn1/Zn0) + 0.11 * (L1/L0)]$$

c) For structure using only lighter angles:

$$EC1 = EC0 * [F + 0.58 * (LA1/LA0) + 0.16 * (Zn1/Zn0) + 0.11 * (L1/L0)]$$

Where

EC = Adjustment to Ex Works price component payable to contractor for each shipment/dispatch

EC1 = Adjusted amount of Ex works price component of Contract payable to Contractor for each shipment / dispatch.

EC0 = Ex-works price for the respective item of the Contract, Shipment/dispatch wise (quoted price).

F = Fixed portion of the ex-works/FOB component of the Contract Price (F) shall be 0.15.

HA = Price of Heavy angle steel, as published by IEEMA

LA = Price of Lighter angle steel, as published by IEEMA

Zn = Price of electrolytic high grade zinc, as published by IEEMA

L = All India average Consumer Price Index Number for Industrial Workers (base 2001=100) as published/declared by Labour Bureau, Shimla, Government of India and circulated by IEEMA.

For the indices, subscript 'o' refers to indices as on 30 days prior to date set for opening of bids. Subscript '1' refers to indices as of

(a) two months/sixty (60) days prior to the date of shipment/dispatch for labour, and

(b) at the expiry of two third (2/3) period from the date of Notification of Award to the date of shipment/dispatch, for material.

For the purpose of this clause the date of shipment/ dispatch shall mean the Schedule date of shipment/dispatch or actual date of shipment/dispatch, whichever is earlier. The schedule date of shipment/dispatch shall be as identified in line with provisions of Time Schedule in the Contract Agreement.

In case of shipments/ dispatches which are delayed beyond the schedule date of shipment/dispatch for reasons attributable to the Contractor, the price adjustment provision shall not be applicable for the period of time between the schedule date of shipment/dispatch and the actual date of shipment/dispatch.

Note: As per IEEMA Circular No. IEEMA(PVC)/TLT/(R)/02/2007-

- 1) Heavy Steel Angles of size 150mm*150mm*12mm as per IS-2062 has been categorized as Heavy Angles (HA).
- 2) Re-rolled steel angles of size 50mm*50mm*4 mm Lighter has been categorized as Lighter Angles (LA).
- 3) Input costs for all heavy angles of size above 110mm*110mm are deemed to be related to the price under Sr No.1.
- 4) Input costs for all lighter angles of size below & including 110mm*110mm are deemed to be related to the price under Sr No.2.

1.0.6 66/11 KV & 33/11 KV Switchgear (indoor/outdoor) including 66/33/11 KV Circuit Breakers, RMU, Sectionalizer and Isolators:

The Contract Price shall be subject to price adjustment during performance of the Contract to reflect changes in the cost of labour and material components in accordance with the provisions described below.

The Ex-Works price of 66/11 KV & 33/11 KV Switchgear (Indoor/Outdoor), Circuit Breakers, RMU, Sectionalizer and Isolators excluding Mandatory Spares and Type Tests Charges (if any) will be subject to Price adjustment. The price adjustment formula for the components of the Contract Price, as mentioned above shall be as stipulated hereinafter.

The price component of the equipment for any shipment/ dispatch comprises of a fixed portion (designated as 'F' and the value of which is specified hereunder) and a variable portion linked with the indices for various materials and labour (description and co-efficient as enumerated below).

The amount of price adjustment towards variable portion payable/recoverable on each shipment/dispatch shall be computed as under:

$$EC = EC_1 - EC_0$$

EC₁ will be computed as follows:

$$EC_1 = EC_0 * [F + 0.17 * (IS_1/IS_0) + 0.18 * (C_1/C_0) + 0.10 * (AL_1/AL_0) + 0.13 * (ER_1/ER_0) + 0.17 * (L_1/L_0)]$$

Where

EC = Adjustment to Ex-Works price component payable to contractor for each shipment/dispatch

EC₁ = Adjusted amount of Ex-works price component of Contract payable to Contractor for each shipment / dispatch.

EC₀ = Ex-works price for the respective equipment of the Contract, shipment/dispatch wise.

F = Fixed portion of the ex-works/FOB component of the Contract Price (F) shall be 0.25.

IS = Wholesale Price Index Number for 'Iron & Steel' (Base 2004-05=100), as published by IEEMA

C = Price of copper wire bars, as published by IEEMA

AL = Price of EC grade Aluminium rods, as published by IEEMA

ER = Price of Insulating Materials (epoxy resin), as published by IEEMA

L = All India average Consumer Price Index Number for Industrial Workers (base 2001=100) as published/declared by Labour Bureau, Shimla, Government of India and circulated by IEEMA.

For the indices, subscript 'o' refers to indices as on 30 days prior to date set for opening of bids.

Subscript '1' refers to indices as of:

three months/ninety (90) days prior to the date of shipment/dispatch for labour, and

at the expiry of two third (2/3) period from the date of Notification of Award to the date of

shipment/dispatch, for material.

~~For the purpose of this clause the date of shipment/dispatch shall mean the Schedule date of shipment/dispatch or actual date of shipment/dispatch, whichever is earlier. The schedule date of shipment/dispatch shall be as identified in line with provisions of Time Schedule in the Contract Agreement.~~

~~In case of shipments/dispatches which are delayed beyond the schedule date of shipment/dispatch for reasons attributable to the Contractor, the price adjustment provision shall not be applicable for the period of time between the schedule date of shipment/dispatch and the actual date of shipment/dispatch.~~

- 1.0.7 The price adjustment amount towards price components of aforesaid materials ~~i.e. conductor, transformers,~~ cable, ~~Steel structure and 66/11 KV & 33/11 KV Switchgear~~ shall be subject to a ceiling of twenty percent (20%) of Ex-works price component of the corresponding Contract Price.
- 1.0.8 For the purpose of price adjustment for Ex-works price component, the date of shipment for goods shall mean the scheduled date of shipment or actual date of shipment, whichever is earlier. Scheduled date of shipment will be ex-works date of dispatch, governed by the approved Bar Chart.
- 1.0.9 No price increase shall be allowed beyond the original delivery dates unless specifically stated in the Time Extension letter, if any, issued by the Employer. The Employer will, however, be entitled to any decrease in the Contract price which may be caused due to lower price adjustment amount in case of delivery beyond the original delivery dates. Therefore, in case of delivery of goods beyond the original delivery dates, the liability of the Employer shall be limited to the lower of the price adjustment amount which may be worked out either on scheduled date or actual date of dispatch of goods.
- 1.0.10 In case of non-publication of applicable indices on a particular date, which happens to be the applicable date for price adjustment purposes, the published indices prevailing immediately prior to the particular date shall be applicable.
- 1.0.11 If the price adjustment amount works out to be positive, the same is payable to the Contractor by the Employer and if it works out to be negative, the same is to be recovered by the Employer from the Contractor without any ceiling.
- 1.0.12 The Contractor shall promptly submit the price adjustment invoices for the supplies made and works executed at site, positively within three (3) months from the date of shipment/work done whether it is positive or negative.
- 1.0.13 Bids shall conform to the price adjustment provisions detailed above. Bids specifying prices for items on variable basis run the risk of rejection. A bid submitted on a fixed price basis will not be rejected but the price adjustment will be treated as zero.

Appendix-3 : INSURANCE REQUIREMENTS**A) Insurances to be taken out by the Contractor**

In accordance with the provisions of GCC Clause 30, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified. The identity of the insurers and the form of the policies shall be subject to the approval of the Employer, such approval not to be unreasonably withheld. The inability of the insurers to provide insurance cover in the sums and with the deductibles and other conditions as set forth below, shall not absolve the Contractor of his risks and liabilities under the provisions of GCC Clause 30. However, in such a case the Contractor shall be required to furnish to the Employer documentary evidence from the insurer in support of the insurer's inability as aforesaid.

(a) Marine Cargo Policy/Transit Insurance Policy:**(I) Transit Insurance Policy for indigenous equipment**

Similarly, Transit Insurance Policy shall be taken wherein only inland transit is involved for the movement of Plant and Equipment supplied from within India. The policy shall cover movement of Plant and Equipment from the manufacturer's works to the project's warehouse at final destination site. Inland Transit Clause(ITC) 'A' along with war & Strike Riots & Civil Commotion (SRCC) extension cover shall be taken.

Amount	Deductible Limits	Parties insured	From	To
120% of Ex-work Price of all the Plant and Equipment to be supplied from within India plus Excise Duty and Sales Tax/ VAT etc., if additionally payable.	Nil	Contractor & Employer	Mfrs ware-house	Project's ware-house store at final destination

(II) If during the execution of Contract, the Employer requests the Contractor to take any other add-on cover(s)/ supplementary cover(s) in aforesaid insurance, in such a case, the Contractor shall promptly take such add-on cover(s)/ supplementary cover(s) and the charges towards such premium for such add-on cover(s)/ supplementary cover(s) shall be reimbursed to the Contractor on submission documentary evidence of payment to the Insurance company. Therefore, charges towards premium for such add-on cover(s)/ supplementary cover(s) are not included in the Contract Price.

(III) The Contractor shall take the policy in the joint names of Employer and the Contractor. The policy shall indicate the Employer as the beneficiary. However, if the Contractor is having an open policy for its line of business, it should obtain an endorsement of the open cover policy from the insurance company indicating that the dispatches against this Contract are duly covered under its open policy and include the name of the Employer as jointly Insured in the endorsements to the open policy.

(b) Erection All Risk Policy/Contractor All Risk Policy:

(I) The policy should cover all physical loss or damage to the facility at site during storage, erection and commissioning covering all the perils as provided in the policy as a basic cover and the add on covers as mentioned at Sl. No. (III) below.

Amount	Deductible limits	Parties insured	From	To
105% of Ex-work Price of all the Plant and Equipment to be supplied from within India plus Excise Duty and Sales Tax/ VAT etc., if additionally payable. and 100% of erection price component	Nil	Contractor & Employer	Receipt at site of first lot of the Plant and Equipment	Up to Operational Acceptance

- (II) The Contractor shall take the policy in the joint name of Employer and the Contractor. All these policies shall indicate Employer as the beneficiary. The policy shall be kept valid till the date of the Operational Acceptance of the project and the period of the coverage shall be determined with the approval of the Employer.

If the work is completed earlier than the period of policy considered, the Contractor shall obtain the refund as per provisions of the policy and pass on the benefit to Employer. In case no refund is payable by the insurance company then the certificate to that effect shall be submitted to Employer at the completion of the project.

- (III) The following add-on covers shall also be taken by the Contractor:

- i) Earthquake
- ii) Terrorism
- iii) Escalation cost (approximately @10% of sum insured on annual basis)
- iv) Extended Maintenance cover for Defect Liability Period
- v) Design Defect
- vi) Other add-on covers viz., 50-50 clause, 72 hours clause, loss minimization clause, waiver of subrogation clause (for projects of more than Rs.100 crores, cover for offsite storage/fabrication (over Rs.100 crores).

- (IV) ***Third Party Liability cover with cross Liability within Geographical limits of India as on ADD-on cover to the basic EAR cover.***

The third party liability add-on cover shall cover bodily injury or death suffered by third parties (including the Employer's personnel) and loss of or damage to property (including the Employer's property and any parts of the Facilities which have been accepted by the Employer) occurring in connection with supply and installation of the Facilities.

Amount	Deductible limits	Parties insured	From	To
<ul style="list-style-type: none"> For projects upto Rs. 100 crores, the third party liability limit shall be 10% of the project value for single occurrence/ multiple occurrences in aggregate during the entire policy period. For projects from Rs. 100 crores to Rs. 500 crores, the third party liability limit shall be Rs. 10 crores for single occurrence/multiple occurrences in aggregate during 	Nil	Contractor/ Sub-contractor	Receipt at site	Upto Defect Liability Period.

entire policy period. For projects of more than Rs.500 crores, the third party liability limit shall be Rs. 25 crores for single occurrence/ multiple occurrences in aggregate during entire policy period.				
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- (V) ~~As per GCC Clause 30.8, the cost of insurance premium is to be reimbursed to the Contractor for Owner Supplied Materials (OSM) for which the insurer is to be finalized by the Contractor as detailed therein. Alternatively, the Contractor may take a single policy covering the entire cost of the project including the cost of OSM. For this purpose, the Contractor shall submit documentary evidence for the premium paid for the entire project to the Employer and Employer shall reimburse to the Contractor the proportion of premium equal to value of OSM to total sum insured.~~

If during the execution of Contract, the Employer requests the Contractor to take any other add-on cover(s)/ supplementary cover(s) in aforesaid insurance, in such a case, the Contractor shall promptly take such add-on cover(s)/ supplementary cover(s) and the charges towards such premium for such add-on cover(s)/ supplementary cover(s) shall be reimbursed to the Contractor on submission documentary evidence of payment to the Insurance company. Therefore, charges towards premium for such add-on cover(s)/ supplementary cover(s) are not included in the Contract Price.

(The contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, Insurance of materials issued/provided by RECPDCL/JKPDD as free issue items to be used under the scheme)

(c) **Automobile Liability Insurance**

The Contractor shall ensure that all the vehicles deployed by the Contractor or its Subcontractors (whether or not owned by them) in connection with the supply and installation of the Facilities in the project are duly insured as per RTA act. Further the Contractor or its Subcontractors may also take comprehensive policy (own damage plus third party liability) of each individual vehicles deployed in the project on their own discretion in their own name to protect their own interest.

(d) **Workmen Compensation Policy:**

- (I) Workmen Compensation Policy shall be taken by the Contractor in accordance with the statutory requirement applicable in India. The Contractor shall ensure that all the workmen employed by the Contractor or its Subcontractors for the project are adequately covered under the policy.
- (II) The policy may either be project specific covering all men of the Contractor and its Subcontractors. The policy shall be kept valid till the date of Operational Acceptance of the project.

Alternatively, if the Contractor has an existing 'Workmen Compensation Policy' for all its employees including that of the Subcontractor(s), the Contractor must include the interest of the Employer for this specific Project in its existing 'Workmen Compensation Policy'.

- (III) Without relieving the Contractor of its obligations and responsibilities under this Contract, before commencing work the Contractor shall insure against liability for death of or injury to persons employed by the Contractor including liability by statute and at common law. The insurance cover shall be maintained until all work including remedial work is completed including the Defect Liability Period. The insurance shall be extended to indemnify the Principal for the Principal's statutory liability to persons employed by the Contractor.

The Contractor shall also ensure that each of its Subcontractors shall effect and maintain insurance on the same basis as the 'Workmen Compensation Policy' effected by the Contractor.

(e) **Contractor's Plant and Machinery (CPM) Insurance**

The Employer (including without limitation any consultant, servant, agent or employee of the Employer) shall not in any circumstances be liable to the Contractor for any loss of or damage to any of the Contractor's Equipment or for any losses, liabilities, costs, claims, actions or demands which the Contractor may incur or which may be made against it as a result of or in connection with any such loss or damage.

The Employer shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GCC Sub-Clause 30.1, except for the Third Party Liability, Workmen Compensation Policy Insurances, and the Contractor's Subcontractors shall be named as co-insureds under all insurance policies taken out by the Contractor pursuant to GCC Sub-Clause 30.1 except for the Cargo Insurance During Transport and Workmen Compensation Policy Insurances. All insurer's rights of subrogation against such co-insureds for losses or claims arising out of the performance of the Contract shall be waived under such policies.

B) Insurances to be taken out by the Employer

The Employer shall at its expense take out and maintain in effect during the performance of the Contract the following insurances.

Amount	Deductible limits	Parties Insured	From	To
_____ NIL _____				

-- End --

Appendix-4 : TIME SCHEDULE

1. The Project Completion Schedule shall be as follows:

Sl. No.	Activities	Duration in Months from the effective date of Contract
1	Taking Over by the Employer upon successful Completion of:	Within 15 days from the date of installation, sub-division wise completion will be taken over by RECPDCL subject to verification
2.	SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M OF SERVICE CONNECTIONS FOR A PERIOD OF FIVE YEARS AT LEH & KARGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY [Specification No.:XXXXXXX].	A. 18 (Eighteen Months): <ol style="list-style-type: none"> 1. Supply and Installation of energy meters 2. Replacement of defective consumer meters 3. Installation of new service connection 4. Shifting of consumer meters Above shall be completed within 18 months of notification of award
		B. 60 (Sixty Months) Contactor shall perform Operation & Maintenance (O&M) of service connections for a period of 60 months

- 1.1 The activity(ies) under the Contractor's programme for Project Completion shall be in the form a PERT chart and shall identify the various activities like engineering, vendor finalization, placement of orders to sub-vendors, survey, Resource mobilization, erection, testing & commissioning including submission of closure proposals. Format of PERT chart is enclosed at Annexure-A. The PERT Chart shall conform to the above Project Completion Schedule.

This PERT Chart shall be discussed and agreed before Award in line with above, engineering drawing and data submission schedule shall also be discussed and finalised before Award. Liquidated damages for delay in successful Completion of the Facilities or specific part thereof (where specific parts are specified in SCC) and Operational Acceptance at rates specified in Clause 21 of GCC shall be applicable beyond the date specified above.

- 1.2 The Employer reserves the right to request minor changes in the work schedule at the time of Award of Contract to the successful Bidder.
- 1.3 The successful Bidder shall be required to prepare detailed PERT Chart and finalise the same with the Employer as per the requirement, which shall form a part of the Contract.

Appendix-5 : LIST OF APPROVED SUBCONTRACTORS

Prior to award of Contract, the following details shall be completed indicating those sub-contractors proposed by the Bidder by Attachment to its bid that are approved by the Employer for engagement by the Contractor during the performance of the contract.

The following Subcontractors are approved for carrying out the item of the facilities indicated. Where more than one Subcontractor is listed, the Contractor is free to choose between them, but it must notify the Employer of its choice in good time prior to appointing any selected Subcontractor. In accordance with GCC Sub-Clause 15.1, the Contractor is free to submit proposals for Subcontractors for additional items from time to time. No Subcontracts shall be placed with any such Subcontractors for additional items until the Subcontractors have been approved in writing by the Employer and their names have been added to this list of Approved Subcontractors.

Item of Facilities	Approved Subcontractors	Nationality

Further, erection portion of the contract shall not be subcontracted without the prior approval of the Employer. However, such approval shall not be necessary for engaging labour.

Appendix-6 : SCOPE OF WORKS AND SUPPLY BY THE EMPLOYER

The following personnel, facilities, works and supplies will be provided/supplied by the Employer, and the provisions of GCC 6, 16, 17 and 20 as well as Employer responsibilities stated in technical specifications shall apply as appropriate.

All personnel, facilities, works and supplies will be provided by the Employer in good time so as not to delay the performance of the Contractor in accordance with the approved Time Schedule and Program of Performance pursuant to GCC Sub-Clause 14.2.

Unless otherwise indicated, all personnel, facilities, works and supplies will be provided free of charge to the Contractor.

Personnel	Charge to Contractor – None
-----NIL-----	

Facilities	Charge to Contractor - None except as noted
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Electricity and Water	Charge to Contractor - as noted
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The Contractor shall be entitled to use for the purposes of the facilities such supplies of electricity and water as may be available on the Site and shall provide any apparatus necessary for such use. The Contractor shall pay the Employer at the applicable tariff plus Employer's overheads, if any, for such use. Where such supplies are not available, the Contractor shall make his own arrangement for provision of any supplies he may require.

Works	Charge to Contractor - None
-----NIL-----	

Supplies	Charge to Contractor – None
-----NIL-----	

Appendix-7 :LIST OF DOCUMENTS FOR APPROVAL OR REVIEW

Pursuant to GCC Sub-Clause 16.3.1, the Contractor shall prepare, or cause its Subcontractor to prepare, and present to the Project Manager in accordance with the requirements of GCC Sub-Clause 14.2 (Program of Performance), the following documents for:

A. Approval

- 1.
- 2.
- 3.

B. Review

- 1.
- 2.
- 3.

Note:

Bidder shall furnish the exhaustive list, which shall be discussed and finalised for incorporation into the Contract Agreement.

Appendix-8 : GUARANTEES, LIQUIDATED DAMAGES FOR NON — PERFORMANCE

1. The equipment offered shall meet the rating and performance requirements stipulated in Technical Specification for various equipment or indicated in Data requirement.
2. The ratings and performance figures of the below mentioned equipment are guaranteed as per losses given in respective Indian Standard (up to date) by bidder.

Sl. No.	Description
A.	12/10/8/6.3/5/3.15/1.6 MVA 33/11kV, 3 ph. Power Transformer
B.	1000/630/500/315/200/100/63/25/16 KVA, 11/0.433kV, 3 phase Station & Distribution Transformer
C.	16/10KVA, 11/0.250kV, 1 phase Distribution Transformer

3. If the aforementioned guarantees are not established at factory tests, then the Employer shall reject the equipment.

6. PERFORMANCE SECURITY FORM

PERFORMA FOR PERFORMANCE PAYMENT BANK GUARANTEE

M/s. REC Power Distribution Company Ltd.
4th Floor, KribhcoBhawan,
A-10, Sector-1, Noida - 201301
Uttar Pradesh, India

(With due Rs.100/- stamp duty, if applicable)

OUR LETTER OF GUARANTEE No. :Date:

Amount:

Valid Date:

Bank Name & Address:

In consideration of REC Power Distribution Company Ltd. having its office at 4th Floor, KribhcoBhawan, A-10, Sector-1, Noida – 201301, U.P. (hereinafter referred to as “RECPDCL” which expression shall unless repugnant to the content or meaning there of include all its successors, administrators and executors) and having entered into an agreement dated _____/issued Work Order No. _____ dated _____ with/on as _____ (hereinafter referred to as “The service” which expression unless repugnant to the content or meaning thereof, shall include all the successors, Administrators and executors).

WHEREAS the Agency having unequivocally accepted to supply the materials as per terms and conditions given in the Agreement accepted to providing service as per terms and conditions given in the Agreement dated _____ /Work Order No. _____ dated _____ and RECPDCL having agreed that the Agency shall furnish to RECPDCL a Performance Guarantee for the faithful performance of the entire contract, to the extent of 10% (ten percent) (or the percentage as per the individual case) of the value of the Work Order i.e. for _____.

We, _____ (The Bank) which shall include OUR successors, administrators and executors herewith establish an irrevocable Letter of Guarantee No. _____ in your favour for account of _____ (The Agency) in cover of performance guarantee in accordance with the terms and conditions of the Agreement/work Order.

Hereby, we undertake to pay upto but not exceeding _____ (say _____ only) upon receipt by us of your first written demand accompanied by your declaration stating that the amount Claimed is due by reason of the Agency having failed to perform the Agreement and despite any contestation on the part of above named Agency.

This Letter of Guarantee will expire on _____ including 30 days of claim period and any claims made hereunder must be received by us on or before expiry date after which date this Letter of Guarantee will become of no effect whatsoever whether returned to us or not.

Authorized Signature
Chief Manager/Manger
Seal of Bank

7. BANK GUARANTEE FORM FOR ADVANCE PAYMENT

Bank Guarantee No.

Date.....

Contract No.....

.....[Name of Contract].....

To: [Name and address of the Employer]

Dear Ladies and/or Gentlemen,

We refer to the Contract ("the Contract") signed on(insert date of the Contract)..... between you and M/s (Name of Contractor), having its Principal place of business at(Address of Contractor) and Registered Office at(Registered address of Contractor) ("the Contractor") concerning (Indicate brief scope of work) for the complete execution of the (insert name of Package alongwith name of the Project).....

Whereas, in accordance with the terms of the said Contract, the Employer has agreed to pay or cause to be paid to the Contractor an Advance Payment in the amount of(Amount in figures and words).....

By this letter we, the undersigned,(insert name & address of the issuing bank), a Bank (which expression shall include its successors, administrators, executors and assigns) organized under the laws of and having its Registered/Head Office at(insert address of registered office of the bank)..... do hereby irrevocably guarantee repayment of the said amounts upon the first demand of the Employer without cavil or argument in the event that the Contractor fails to commence or fulfill its obligations under the terms of the said Contract, and in the event of such failure, refuses to repay all or part (as the case may be) of the said advance payment to the Employer.

Provided always that the Bank's obligation shall be limited to an amount equal to the outstanding balance of the advance payment, taking into account such amounts, which have been repaid by the Contractor from time to time in accordance with the terms of payment of the said Contract as evidenced by appropriate payment certificates.

This Guarantee shall remain in full force from the date upon which the said advance payment is received by the Contractor upto ninety (90) days beyond the date on which the entire advance so advanced alongwith the interest if any due thereon has been fully adjusted in terms of the Contract i.e., upto of ninety (90) days beyond the date of Completion of the Facilities under the Contract. This Guarantee may be extended from time to time, as may be desired by M/s. on whose behalf this Guarantee has been issued.

Any claims to be made under this Guarantee must be received by the Bank during its period of validity, i.e. upto ninety (90) days beyond the date of Completion of the Facilities by the Employer i.e. upto and inclusive of (dd/mm/yy).

For and on behalf of the Bank

[Signature of the authorised signatory(ies)]

Signature_____

Name_____

Designation_____

POA Number_____

Contact Number(s): Tel._____ Mobile_____

Fax Number_____

email _____

Common Seal of the Bank_____

Witness: _____

Signature_____

Name_____

Address_____

Contact Number(s): Tel._____ Mobile_____

email _____

Note:

1. For the purpose of executing the Bank Guarantee, the non-judicial stamp papers of appropriate value shall be purchased in the name of Bank who issues the 'Bank Guarantee'.
2. The Bank Guarantee shall be signed on all the pages by the Bank Authorities indicating their POA nos. and should invariably be witnessed.
3. The Bank Guarantee should be in accordance with the proforma as provided. However, in case the issuing bank insists for additional paragraph for limitation of liability, the following may be added at the end of the proforma of the Bank Guarantee [*i.e., end paragraph of the Bank Guarantee preceding the signature(s) of the issuing authority(ies) of the Bank Guarantee*]:

Quote

"Notwithstanding anything contained herein:

1. Our liability under this Bank Guarantee shall not exceed _____ (*value in figures*) _____ [*value in words*] _____.
2. This Bank Guarantee shall be valid upto _____ (*validity date*) _____.
3. We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only & only if we receive a written claim or demand on or before _____ (*validity date*) _____."

Unquote

8. FORM OF TAKING OVER CERTIFICATE

Date.....
Name of Contract.....
Contract No.....

To :

(Name and address of the Contractor)

Dear Ladies and/or Gentlemen,

Pursuant to GCC 20 (Completion of the Facilities) of the General Conditions of the Contract entered into between yourselves and the Employer dated relating to the (*insert brief description of the Facilities*)..... we hereby notify you that the following part(s) of the Facilities was (were) complete on the date specified below, and that, in accordance with the terms of the Contract, the Employer hereby takes over the said part(s) of the Facilities, together with the responsibility for care and custody and the risk of loss thereof on the date mentioned below :

1. Description of the Facilities or part thereof
2. Date of Completion :.....

However, you are required to complete the outstanding items listed in the attachment hereto as soon as practicable.

This letter does not relieve you of your obligation to complete the execution of the Facilities in accordance with the Contract nor of your obligations during the Defects Liability Period.

Very truly yours,

Title
(Project Manager)

9. FORM OF INDEMNITY BOND TO BE EXECUTED BY THE CONTRACTOR FOR THE EQUIPMENT HANDED OVER IN ONE LOT BY(abbreviated name of the Employer)..... FOR PERFORMANCE OF ITS CONTRACT

INDEMNITY BOND

THIS INDEMNITY BOND is made this..... day of 20..... by a Company registered under the Companies Act, 1956/2013 (with amendment from time to time)/Partnership firm/proprietary concern having its Registered Office at.....(hereinafter called as 'Contractor' or "Obligor" which expression shall include its successors and permitted assigns) in favour of (*insert name of the Employer*)....., a Company incorporated under the Companies Act, 1956/2013 (with amendment from time to time) having its Registered Office at(*insert registered address of the Employer*) and its project at (hereinafter called ".....(*abbreviated name of the Employer*)....." which expression shall include its successors and assigns):

WHEREAS(*abbreviated name of the Employer*)..... has awarded to the Contractor a Contract for..... vide its Notification of Award/Contract No..... dated..... and its Amendment No. (applicable when amendments have been issued) (hereinafter called the "Contract") in terms of which(*abbreviated name of the Employer*)..... is required to hand over various Equipment to the Contractor for execution of the Contract.

And WHEREAS by virtue of Clause No.....of the said Contract, the Contractor is required to execute an Indemnity Bond in favour of(*abbreviated name of the Employer*)..... for the Equipment handed over to it by(*abbreviated name of the Employer*)..... for the purpose of performance of the Contract/Erection portion of the contract (hereinafter called the "Equipment").

AND THEREFORE, This Indemnity Bond witnesseth as follows:

1. That in consideration of various Equipment as mentioned in the Contract, valued at (amount in words.....) handed over to the Contractor for the purpose of performance of the Contract, the Contractor hereby undertakes to indemnify and shall keep(*abbreviated name of the Employer*)..... indemnified, for the full value of the Equipment. The Contractor hereby acknowledges receipt of the Equipment as per despatch title documents handed over to the Contractor duly endorsed in their favour and detailed in the Schedule appended hereto. It is expressly understood by the Contractor that handing over of the despatch title documents in respect of the said Equipments duly endorsed by(*abbreviated name of the Employer*)..... in favour of the Contractor shall be construed as handing over of the Equipment purported to be covered by such title documents and the Contractor shall hold such Equipment in trust as a Trustee for and on behalf of(*abbreviated name of the Employer*).....
2. That the Contractor is obliged and shall remain absolutely responsible for the safe transit/protection and custody of the Equipment at(*abbreviated name of the Employer*)..... project Site against all risks whatsoever till the Equipment are duly used/erected in accordance with the terms of the Contract and the Plant/Package duly erected and commissioned in accordance with the terms of the Contract, is taken over by(*abbreviated name of the Employer*)..... The Contractor undertakes to keep(*abbreviated name of the Employer*)..... harmless against any loss or damage that may be caused to the Equipment.
3. The Contractor undertakes that the Equipment shall be used exclusively for the performance/execution of the Contract strictly in accordance with its terms and conditions and no part of the equipment shall be utilised for any other work of purpose whatsoever. It is clearly understood by the Contractor that non-observance of the obligations under this Indemnity Bond by the Contractor shall inter-alia constitute a criminal breach of trust on the part of the Contractor for all intents and purpose including legal/penal consequences.

4. That(*abbreviated name of the Employer*).....is and shall remain the exclusive Employer of the Equipment free from all encumbrances, charges or liens of any kind, whatsoever. The equipment shall at all times be open to inspection and checking by the Employee or Employer's Representative in this regard. Further,(*abbreviated name of the Employer*)..... shall always be free at all times to take possession of the Equipment in whatever form the equipment may be, if in its opinion, the Equipment are likely to be endangered, misutilised or converted to uses other than those specified in the Contract, by any acts of omission or commission on the part of the Contractor or any other person or on account of any reason whatsoever and the Contractor binds himself and undertakes to comply with the directions of demand of(*abbreviated name of the Employer*).....to return the equipment without any demur or reservation.

5. That this indemnity Bond is irrevocable. If at any time any loss or damage occurs to the Equipment or the same or any part thereof is misutilised in any manner whatsoever, then the Contractor hereby agrees that the decision of the Employer's Representative as to assessment of loss or damage to the Equipment shall be final and binding on the Contractor. The Contractor binds itself and undertakes to replace the lost and/or damaged Equipment at his own cost and/or shall pay the amount of loss to(*abbreviated name of the Employer*)..... without any demur, reservation or protest. This is without prejudice to any other right or remedy that may be available to(*abbreviated name of the Employer*)..... against the Contractor under the Contract and under this Indemnity Bond.

6. NOW THE CONDITION of this Bond is that if the Contractor shall duly and punctually comply with the terms and conditions of this Bond to the satisfaction of(*abbreviated name of the Employer*)....., THEN, the above Bond shall be void, but otherwise, it shall remain in full force and virtue.

IN WITNESS WHEREOF, the Contractor has hereunto set its hand through its authorized representative under the common seal of the Company, the day, month and year first above mentioned.

SCHEDULE

Particulars of the Equipment handed over	Quantity	Particulars of Despatch title Documents		Value of the Equipment	Signature of the Attorney in token of receipt
		RR/GR No. date of lading	Carrier		

For and on behalf of
M/s.....

WITNESS

1. Signature.....

Signature.....

Name.....

Name.....

Address.....

Address.....

2. Signature.....

Authorised representative

Name.....

(Common Seal)

Address.....

(In case of Company)

Indemnity Bonds are to be executed by the authorised person and (i) in case of contracting Company under common seal of the Company or (ii) having the power of attorney issued under common seal of the company with authority to execute Indemnity Bonds, (iii) In case of (ii), the original Power of Attorney if it is specifically for this Contract or a Photostat copy of the Power of Attorney if it is General Power of Attorney and such documents should be attached to Indemnity Bond.

10. FORM OF INDEMNITY BOND TO BE EXECUTED BY THE CONTRACTOR FOR THE EQUIPMENT HANDED OVER IN INSTALLMENTS BY(abbreviated name of the Employer)..... FOR PERFORMANCE OF ITS CONTRACT

INDEMNITY BOND

THIS INDEMNITY BOND is made this day of 20..... by a Company registered under the Companies Act, 1956/2013 (with amendment from time to time)/Partnership firm/proprietary concern having its Registered Office at(hereinafter called as 'Contractor' or 'Obligor' which expression shall include its successors and permitted assigns) in favour of (*insert name of the Employer*)....., a company incorporated under the Companies Act, 1956/2013 (with amendment from time to time) having its Registered Office at (*insert registered address of the Employer*)..... and its project at (hereinafter called ".....(*abbreviated name of the Employer*)....." which expression shall include its successors and assigns):

WHEREAS(*abbreviated name of the Employer*)..... has awarded to the Contractor a Contract forvide its Notification of Award/Contract No.datedand Amendment No. (applicable when amendments have been issued) (hereinafter called the "Contract") in terms of which(*abbreviated name of the Employer*)..... is required to handover various Equipment to the Contractor for execution of the Contract.

AND WHEREAS by virtue of Clause No.....of the said Contract, the Contractor is required to execute an Indemnity Bond in favour of(*abbreviated name of the Employer*)..... for the Equipment handed over to it by(*abbreviated name of the Employer*)..... for the purpose of performance of the contract/Erection portion of the Contract (hereinafter called the "Equipment").

NOW THEREFORE, This Indemnity Bond witnesseth as follows:

1. That in consideration of various Equipments as mentioned in the Contract, valued at (amount in words _____) to be handed over to the Contractor in installments from time to time for the purpose of performance of the contract, the Contractor hereby undertakes to indemnify and shall keep(*abbreviated name of the Employer*)..... indemnified, for the full value of Equipment. The Contractor hereby acknowledges receipt of the initial installment of the equipment per details in the schedule appended hereto. Further, the Contractor agrees to acknowledge receipt of the subsequent installments of the Equipment as required by(*abbreviated name of the Employer*)..... in the form of Schedules consecutively numbered which shall be attached to this Indemnity bond so as to form integral parts of this Bond. It is expressly understood by the Contractor that handing over the despatch title documents in respect of the said Equipments duly endorsed by(*abbreviated name of the Employer*)..... in favour of the Contractor shall be construed as handing over the Equipment purported to be covered by such title documents and the Contractor shall hold such Equipments in trust as a Trustee for and on behalf of(*abbreviated name of the Employer*).....
2. That the Contractor is obliged and shall remain absolutely responsible for the safe transit/protection and custody of the Equipment at(*abbreviated name of the Employer*)..... project Site against all risks whatsoever till the Equipment are duly used/erected in accordance with the terms of the Contract and the Plant/Package duly erected and commissioned in accordance with the terms of the Contract, is taken over by(*abbreviated name of the Employer*)..... The Contractor undertakes to keep(*abbreviated name of the Employer*)..... harmless against any loss or damage that may be caused to the Equipment.
3. The Contractor undertakes that the Equipment shall be used exclusively for the performance/execution of the Contract strictly in accordance with its terms and conditions and no part of the equipment shall be utilised for any other work or purpose whatsoever. It is clearly understood by the Contractor that non-observance of the obligations under this Indemnity Bond by the Contractor shall inter-alia

constitute a criminal breach of trust on the part of the Contractor for all intents and purpose including legal/penal consequences.

4. That(*abbreviated name of the Employer*)..... is and shall remain the exclusive Employer of the Equipment free from all encumbrances, charges or liens of any kind, whatsoever. The equipment shall at all times be open to inspection and checking by the Employer or Employer's Representative in this regard. Further,(*abbreviated name of the Employer*)..... shall always be free at all times to take possession of the Equipment in whatever form the Equipment may be, if in its opinion, the Equipment are likely to be endangered, misutilised or converted to uses other than those specified in the Contract, by any acts of omission or commission on the part of the Contractor or any other person or on account of any reason whatsoever and the Contractor binds himself and undertakes to comply with the directions of demand of(*abbreviated name of the Employer*)..... to return the equipment without any demur or reservation.

5. That this indemnity Bond is irrevocable. If at any time any loss or damage occurs to the Equipment or the same or any part thereof is misutilised in any manner whatsoever, then the Contractor hereby agrees that the decision of the Employer's Representative as to assessment of loss or damage to the Equipment shall be final and binding on the Contractor. The Contractor binds itself and undertakes to replace the lost and/or damaged Equipment at its own cost and/or shall pay the amount of loss to(*abbreviated name of the Employer*)..... without any demur, reservation or protest. This is without prejudice to any other right or remedy that may be available to(*abbreviated name of the Employer*)..... against the Contractor under the Contract and under this Indemnity Bond.

6. NOW THE CONDITION of this Bond is that if the Contractor shall duly and punctually comply with the terms and conditions of this Bond to the satisfaction of(*abbreviated name of the Employer*)....., THEN, the above Bond shall be void, but otherwise, it shall remain in full force and virtue.

IN WITNESS WHEREOF, the Contractor has hereunto set its hand through its authorised representative under the common seal of the Company, the day, month and year first above mentioned.

SCHEDULE No. 1

Particulars of the Equipment handed over	Quantity	Particulars of Despatch title Documents		Value of the Equipment	Signature of the Attorney in token of receipt
		RR/GR No. date of lading	Carrier		

For and on behalf of
M/s.....

WITNESS

1. Signature.....

Name.....

Address.....

Signature.....

Name.....

Address.....

2. Signature.....

Authorised representative

Name.....

(Common Seal)

Address.....

(In case of Company)

Indemnity Bonds are to be executed by the authorised person and (i) in case of contracting Company under common seal of the Company or (ii) having the power of attorney issued under common seal of the company with authority to execute Indemnity Bonds, (iii) In case of (ii), the original Power of Attorney if it is specifically for this Contract or a photostat copy of the Power of Attorney if it is General Power of Attorney and such documents should be attached to Indemnity Bond.

11. FORM OF AUTHORISATION LETTER

Ref. No:

Date :

To

M/s.....

REF.: Contract No. dated for awarded by(*insert name of the Employer*).....

Dear Sir,

Kindly refer to Contract No. dated for You are hereby authorised on behalf of(*Name of Employer*)..... a company incorporated under the laws of Companies Act 1956/2013 (with amendment from time to time) and having its Registered Office at(*registered address of the Employer*) and its Project at to take physical delivery of materials/equipments covered under Despatch Document/Consignment Note No.*..... datedand as detailed in the enclosed schedule for the sole purpose of successful performance of the aforesaid contract and for no other purpose, whatsoever.

(Signature of Project Authority)**

Designation.....

Date.....

Encl: As Above.

** To be signed not below the rank of Manager.

* Mention LR/RR No.

Schedule of Material/Equipment covered under Despatch Title Document (RR No./LR No.)

Sl. No.	Contract Name	NOA No./ CA No.	Description of Materials/ Equipments	Spec. No.	Qty.	Value	Remarks

(Signature of the Project Authority)

(Designation)

(Date)

12. FORM OF TRUST RECEIPT FOR PLANT, EQUIPMENT AND MATERIALS RECEIVED

We M/s.(*insert name of the Contractor*) having our Principal place of business at having been awarded a Contract No. dated for (*insert Package name alongwith name of the Project*)..... by(*insert name of the Employer*)

We do hereby acknowledge the receipt of the Plant, Equipment and Materials as are fully described and mentioned under Documents of Title/RR/LR etc. and in the schedule annexed hereto, which shall form an integral part of this receipt as "Trustee" of(*insert name of the Employer*)..... The aforesaid materials etc. so received by us shall be exclusively used in the successful performance of the aforesaid Contract and for no other purpose whatsoever. We undertake not to create any charge, lien or encumbrance over the aforesaid materials etc, in favour of any other person/institution(s)/Banks.

For M/s
(*Contractor's Name*)

Dated :

(AUTHORISED SIGNATORY)

Place :

SEAL OF COMPANY

13. FORM OF EXTENSION OF BANK GUARANTEE

Ref. No.....

Dated:.....

To: *[Name and address of the Employer]*

Dear Sirs,

Sub.: Extension of Bank Guarantee No. dated for, issued to you on behalf of M/s.*(insert name of the Contractor)* in respect of Contract No. dated for *(insert name of the Package alongwith the Project name)* (hereinafter called original Bank Guarantee).

At the request of M/s..... *(insert name of the Contractor)*, We*(insert name & address of the issuing bank)*, a Bank organized under the laws of and having its Registered/Head Office at*(insert address of registered office of the bank)*..... do hereby extend our liability under the above-mentioned Guarantee No. Dated for a further period of Years/Months from to expire on Except as provided above, all other terms and conditions of the original Bank Guarantee No. datedshall remain unaltered and binding.

Please treat this as an integral part of the original Guarantee to which it would be attached.

For and on behalf of the Bank

[Signature of the authorised signatory(ies)]

Signature_____

Name_____

Designation_____

POA Number_____

Contact Number(s): Tel._____ Mobile_____

Fax Number_____

email _____

Common Seal of the Bank_____

Witness:

Signature_____

Name_____

Address_____

Contact Number(s): Tel._____ Mobile_____

email _____

Note:

1. For the purpose of executing the Bank Guarantee, the non-judicial stamp papers of appropriate value shall be purchased in the name of Bank who issues the 'Bank Guarantee'.
2. The Bank Guarantee shall be signed on all the pages by the Bank Authorities indicating their POA nos. and should invariably be witnessed.

14. FORM OF POWER OF ATTORNEY FOR JOINT VENTURE

KNOW ALL MEN BY THESE PRESENTS THAT WE , the Partners whose details are given hereunder have formed a Joint Venture under the laws of and having our Registered Office(s)/Head Office(s) at (hereinafter called the 'Joint Venture' which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators and assigns) acting through M/s being the Partner in-charge do hereby constitute, nominate and appoint M/s..... a Company incorporated under the laws of and having its Registered/Head Office at as our duly constituted lawful Attorney (hereinafter called "Attorney" or "Authorised Representative" or "Partner In-charge") to exercise all or any of the powers for and on behalf of the Joint Venture in regard to Specification No..... Package the bids for which have been invited by (insert name of the Employer alongwith address) (hereinafter called the 'Employer') to undertake the following acts :

- i) To submit proposal and participate in the aforesaid Bid Specification of the Employer on behalf of the "Joint Venture".
- ii) To negotiate with the Employer the terms and conditions for award of the Contract pursuant to the aforesaid Bid and to sign the Contract with the Employer for and on behalf of the "Joint Venture".
- iii) To do any other act or submit any document related to the above.
- iv) To receive, accept and execute the Contract for and on behalf of the "Joint Venture".

It is clearly understood that the Partner In-charge (Lead Partner) shall ensure performance of the Contract(s) and if one or more Partner fail to perform their respective portions of the Contract(s), the same shall be deemed to be a default by all the Partners.

It is expressly understood that this Power of Attorney shall remain valid binding and irrevocable till completion of the Defect Liability Period in terms of the Contract.

The Joint Venture hereby agrees and undertakes to ratify and confirm all the whatsoever the said Attorney/Authorised Representatives/Partner in-charge quotes in the bid, negotiates and signs the Contract with the Employer and/or proposes to act on behalf of the Joint Venture by virtue of this Power of Attorney and the same shall bind the Joint Venture as if done by itself.

IN WITNESS THEREOF the Partners Constituting the Joint Venture as aforesaid have executed these presents on thisday of under the Common Seal(s) of their Companies.

for and on behalf of the
Partners of Joint Venture

.....
.....
.....

The Common Seal of the above Partners of the Joint Venture:

The Common Seal has been affixed there unto in the presence of:

WITNESS

1. Signature.....
Name
Designation
Occupation
2. Signature.....
Name
Designation
Occupation

Note:

1. For the purpose of executing the Agreement, the non-judicial stamp papers of appropriate value shall be purchased in the name of Joint Venture.
2. The Agreement shall be signed on all the pages by the authorised representatives of each of the partners and should invariably be witnessed.

15. FORM OF UNDERTAKING BY THE JOINT VENTURE PARTNERS

THIS JOINT DEED OF UNDERTAKING executed on this..... day of..... Two Thousand and..... by a company incorporated under the laws of and having its Registered Office at(hereinafter called the "Party No.1" which expression shall include its successors, executors and permitted assigns) and M/s.....a company incorporated under the laws of and having its Registered Office at (hereinafter called the "Party No.2" which expression shall include its successors, executors and permitted assigns) and M/s.. .. a Company incorporated under the laws of and having its Registered Office at (hereinafter called the "Party No.3" which expression shall include its successors, executors and permitted assigns) for the purpose of making a bid and entering into a contract [hereinafter called the "Contract" {in case of award}] against the Specification No..... for (*insert name of the package alongwith project name*)of (*insert names of the Employer*), a Company incorporated under the Companies Act of 1956/2013 (with amendment from time to time) having its registered office at(*insert registered address of the Employer*)..... (hereinafter called the "Employer").

WHEREAS the Party No.1, Party No.2 and Party No.3 have entered into an Agreement dated.....

AND WHEREAS the Employer invited bids as per the above mentioned Specification for the design, manufacture, supply, erection, testing and commissioning of Equipment/ Materials stipulated in the Bidding Documents under (*insert name of the package alongwith project name*)

AND WHEREAS Clause 9.3, Section-ITB and BDS (documents establishing the Qualification of Bidder) & Qualification Criteria in Annexure-A to BDS forming part of the Bidding Documents, inter-alia stipulates that an Undertaking of two or more qualified manufacturers as partners, meeting the requirements of Qualification Criteria in Annexure-A to BDS, as applicable may bid, provided, the Joint Venture fulfills all other requirements under Clause 9.3 (c) of ITB and Qualification Criteria in Annexure-A to BDS and in such a case, the Bid Forms shall be signed by all the partners so as to legally bind all the Partners of the Joint Venture, who will be jointly and severally liable to perform the Contract and all obligations hereunder.

The above clause further states that this Undertaking shall be attached to the bid and the Contract performance guarantee will be as per the format enclosed with the Bidding Documents without any restrictions or liability for either party.

AND WHEREAS the bid is being submitted to the Employer vide proposal No.....dated by Party No.1 based on this Undertaking between all the parties; under these presents and the bid in accordance with the requirements of Clause 9.3, Section-ITB and BDS (documents establishing the Qualification of Bidder) & Qualification Criteria in Annexure-A to BDS, has been signed by all the parties.

NOW THIS UNDERTAKING WITNESSETH AS UNDER:

In consideration of the above premises and agreements all the parties of this Deed of Undertaking do hereby declare and undertake:

1. In requirement of the award of the Contract by the Employer to the Joint Venture Partners, we, the Parties do hereby undertake that M/s..... the Party No.1, shall act as Lead Partner and further declare and confirm that we the parties to the Joint Venture shall jointly and severally be bound unto the Employer for the successful performance of the Contract and shall be fully responsible for the design, manufacture, supply and successful performance of the equipment in accordance with the Contract:
2. In case of any breach or default of the said Contract by any of the parties to the Joint Venture, the party(s) do hereby undertake to be fully responsible for the successful performance of the Contract and to carry out all the obligations and responsibilities under the Contract in accordance with the requirements of the Contract.

3. Further, if the Employer suffers any loss or damage on account of any breach in the Contract or any shortfall in the performance of the equipment in meeting the performances guaranteed as per the specification in terms of the Contract, the Party(s) of these presents undertake to promptly make good such loss or damages caused to the Employer, on its demand without any demur. It shall not be necessary or obligatory for the Employer to proceed against Lead Partner to these presents before proceeding against or dealing with the other Party(s), the Employer can proceed against any of the parties who shall be jointly and severally liable for the performance and all other liabilities/obligations under the Contract to the Employer.
4. The financial liability of the Parties of this Deed of Undertaking to the Employer, with respect to any of the claims rising out of the performance or non-performance of the obligations set forth in this Deed of Undertaking, read in conjunction with the relevant conditions of the Contract shall, however not be limited in any way so as to restrict or limit the liabilities or obligations of any of the Parties of this Deed of Undertaking.
5. It is expressly understood and agreed between the Parties to this Undertaking that the responsibilities and obligations of each of the Parties shall be as delineated in Appendix – I *(to be suitably appended by the Parties alongwith this Undertaking in its bid)* to this Deed of Undertaking. It is further undertaken by the parties that the above sharing of responsibilities and obligations shall not in any way be a limitation of joint and several responsibilities of the Parties under the Contract.
6. It is also understood that this Undertaking is provided for the purposes of undertaking joint and several liabilities of the partners to the Joint Venture for submission of the bid and performance of the Contract and that this Undertaking shall not be deemed to give rise to any additional liabilities or obligations, in any manner or any law, on any of the Parties to this Undertaking or on the Joint Venture, other than the express provisions of the Contract.
7. This Undertaking shall be construed and interpreted in accordance with the provisions of the Contract.
8. In case of an award of a Contract, we the parties to this Deed of Undertaking do hereby agree that we shall be jointly and severally responsible for furnishing a Contract performance security from a bank in favour of the Employer in the currency/currencies of the Contract.
9. It is further agreed that this Deed of Undertaking shall be irrevocable and shall form an integral part of the bid and shall continue to be enforceable till the Employer discharges the same or upon the completion of the Contract in accordance with its provisions, whichever is earlier. It shall be effective from the date first mentioned above for all purposes and intents.

IN WITNESS WHEREOF, the Parties to this Deed of Undertaking have through their authorised representatives executed these presents and affixed Common Seals of their companies, on the day, month and year first mentioned above.

Common Seal of
 has been affixed in my/ our
 presence pursuant to Board of
 Director's Resolution dated

For Lead Partner (Party No.-1)
 For and on behalf of M/s

Name

Designation

Signature

(Signature of the authorized
 representative)

WITNESS :

I.

II.

Common Seal of
has been affixed in my/ our
presence pursuant to Board of
Director's Resolution dated

For Party No.-2
For and on behalf of M/s.....

(Signature of the authorized
representative)

Name

Designation

Signature

WITNESS :

I.

II.

Common Seal of
has been affixed in my/ our
presence pursuant to Board of
Director's Resolution dated

For Party No.-3
For and on behalf of M/s.
.....

(Signature of the authorized
representative)

Name

Designation

Signature

WITNESS :

I.

II.

Note:

1. For the purpose of executing the Joint Deed of Undertaking, the non-judicial stamp papers of appropriate value shall be purchased in the name of Joint Venture.
2. The Undertaking shall be signed on all the pages by the authorised representatives of each of the partners and should invariably be witnessed.

16. FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF CREDIT/FACILITIES

BANK CERTIFICATE

This is to certify that M/s. _____ (*insert Name & Address of the Contractor*) _____ who have submitted their bid to(*insert name of the Employer*)..... against their tender specification Vide ref. No. for (*insert name of the package alongwith the project name*) is our customer for the past years.

Their financial transaction with our Bank have been satisfactory. They enjoy the following fund based and non fund based limits including for guarantees, L/C and other credit facilities with us against which the extent of utilization as on date is also indicated below:

Sl. No.	Type of Facility	Sanctioned Limit as on Date	Utilisation as on Date

This letter is issued at the request of M/s. _____.

Signature _____

Name of Bank _____

Name of Authorised Signatory

Designation _____

Phone No. _____

Address _____

SEAL OF THE BANK

17. FORM OF OPERATIONAL ACCEPTANCE

Date.....

Name of Contract.....

Contract No.....

To :

(Name and address of the Contractor)

Dear Ladies and/or Gentlemen,

Pursuant to GCC 20 (Completion of the Facilities) of the General Conditions of the Contract entered into between yourselves and the Employer dated relating to the (*insert brief description of the Facilities*)..... we hereby notify you that the we System tests and Acceptance tests of the following part(s) of the Facilities were satisfactorily completed on the date specified below :

1. Description of the Facilities or part thereof
.....
2. Date of Operational Acceptance:.....

This letter does not relieve you of your obligation during the Defects Liability Period and Latent Defect warranty.

Very truly yours,

Title
(Project Manager)

18. FORM OF SAFETY PLAN TO BE SUBMITTED BY THE CONTRACTOR WITHIN SIXTY DAYS OF AWARD OF CONTRACT

[TO BE EXECUTED ON A NON JUDICIAL STAMP PAPER WORTH RS. TWENTY ONLY]

SAFETY PLAN

THIS SAFETY PLAN is made this day of 20..... by a Company registered under the Companies Act, 1956/2013 (with amendment from time to time)/Partnership firm/proprietary concern having its Registered Office at[*to be modified suitably for JV Contractor*] (hereinafter called as 'Contractor' which expression shall include its successors and permitted assigns) for approval of(*insert name of the Employer*)....., a company incorporated under the Companies Act, 1956/2013 (with amendment from time to time) having its Registered Office at(*insert registered address of the Employer*)..... for its Contract for(*insert package name, project name alongwith Specification number of the Contract*).....

WHEREAS(*abbreviated name of the Employer*)..... has awarded to the Contractor the aforesaid Contract vide its Notification of Award/Contract No. datedand Amendment No. (applicable when amendments have been issued) (hereinafter called the "Contract") in terms of which the Contractor is required to submit 'Safety Plan' alongwith certain documents to the Engineer In-Charge/Project Manager of the Employer within Sixty (60) days of Notification of Award for its approval.

NOW THEREFORE, the Contractor undertakes to execute the Contract as per the safety plan as follows:

1. THAT the Contractor shall execute the works as per provisions of Bidding Documents including those in regard to Safety Precautions / provisions as per statutory requirements.
2. THAT the Contractor shall execute the works in a well planned manner from the commencement of Contract as per agreed mile stones of work completion schedule so that planning and execution of construction works goes smoothly and consistently through out the contract duration without handling pressure in last quarter of the financial year/last months of the Contract and the shall be finalized in association with XXXX (*Name of Employer*) Engineer In-charge/Project Manager from time to time as required.
3. THAT the Contractor has prepared the safe work procedure for each activity i.e. foundation works including civil works, erection, stringing (as applicable), testing & commissioning, disposal of materials at site / store etc. to be executed at site, which is enclosed at **Annexure – 1A (SP)** for acceptance and approval of Engineer In-charge/Project Manager. The Contractor shall ensure that on approval of the same from Engineer In-charge/Project Manager , the approved copies will be circulated to Employer's personnel at site [Supervisor(s)/Executive(s)] and Contractor's personnel at site [Gang leader, supervisor(s) etc.] in their local language / language understood by gang.

THAT the Contractor has prepared minimum manpower deployment plan, activity wise as stated above, which is enclosed at **Annexure – 1B (SP)** for approval of Engineer In-charge/Project Manager.

4. THAT the Contractor shall ensure while executing works that they will deploy minimum 25% of their own experienced work force who are on the permanent roll of the company and balance 75% can be a suitable mixed with the hired gangs / local workers / casual workers if required. The above balance 75% work force should be provided with at least 10 days training by the construction agencies at sites and shall be issued with a certificate. No worker shall be engaged without a valid certificate. Hired gang workers shall also follow safe working procedures and safety norms as is being followed by company's workmen. It should also be ensured by the contractor that certified **workers** fitters who are climbing towers / doing stringing operations can be easily identifiable with a system like issue of Badge / Identification cards (ID cards) etc. Colour identification batches should be worn by the workers.

Contractor has to ensure that inexperience workers / unskilled workers should not be deployed for skilled job.

5. THAT the Contractor's Gang leader / Supervisor / Senior most member available at every construction site shall brief to each worker daily before start of work about safety requirement and warn about imminent dangers and precautions to be taken against the imminent dangers (Daily Safety Drill). This is to be ensured without fail by Contractor and maintain record of each gang about daily safety instructions issued to workers and put up to XXXX(Name of Employer) site In-charge for his review and record.
6. THAT the Contractor shall ensure that working Gangs at site should not be left at the discretion of their Gang Leaders who are generally hired and having little knowledge about safety. Gang leader should be experienced and well versed with the safe working procedures applicable for transmission line/ Sub Station works. In case gang is having Gang leader not on permanent roll of the company then additional Supervisor from company's own roll having thorough knowledge about the works would be deployed so as to percolate safety instructions upto the grass root level in healthy spirits. Contractor has to ensure close supervision while executing critical locations of transmission lines / sub stations and ensures that all safety instructions are in place and are being followed.
7. THAT the Contractor shall maintain in healthy and working condition all kind of Equipments / Machineries / Lifting tools / Lifting tackles / Lifting gears / All kind of Ropes including wire ropes / Polypropylene ropes etc. used for Lifting purpose during execution of the project and get them periodically examined and load tested for safe working load in accordance with relevant provisions and requirement of Building & other construction workers Regulation of Employment and Conditions of Services Act and Central Rule 1998 or latest, Factories Act 1948 or latest, Indian Electricity Act 2003 before start of the project. A register of such examinations and tests shall be properly maintained by the contractor and will be promptly produced as and when desired by the Engineer In-charge/Project Manager or by the person authorised by him. The Contractor has to ensure to give special attention on the formation / condition of eye splices of wire rope slings as per requirement of IS 2762 Specification for wire rope slings and sling legs.

THAT the Contractor has prepared a list of all Lifting machines, lifting Tools / Lifting Tackles / Lifting Gears etc. / All types of ropes and Slings which are subject to safe working load is enclosed at **Annexure – 2 (SP)** for review and approval of Engineer In-charge/Project Manager.

8. THAT the Contractor has to procure sufficient quantity of Personal Protective Equipment (PPE) conforming to Indian / International standards and provide these equipment to every workman at site as per need and to the satisfaction of Engineer-in-charge/Project Manager of **XXXX (Name of the Employer)**. The Contractor's Site Supervisor/ Project Manager has to ensure that all workmen must use Personal Protective Equipment at site. The Contractor shall also ensure that Industrial Safety helmets are being used by all workmen at site irrespective of their working (at height or on ground). The Contractor shall further ensure use of safety shoes by all ground level workers and canvas shoes for all workers working at height, Rubber Gum Boots for workers working in rainy season and concreting job, Use of Twin Lanyard Full body Safety Harness with attachment of light weight such as aluminium alloy etc. and having features of automatic locking arrangement of snap hook, by all workers working at height for more than three meters and also for horizontal movement on tower shall be ensured by contractor. The Contractor shall not use ordinary half body safety harness at site. The Contractor has to ensure use of Retractable type fall arrestors by workers for ascending / descending on suspension insulator string and other similar works etc., Use of Mobile fall arrestor for ascending / descending from tower by all workers. The contractor has to provide cotton / leather hand gloves as per requirement, Electrical Resistance Hand gloves for operating electrical installations / switches, Face shield for protecting eyes while doing welding works and Dust masks to workers as per requirement. The Contractor will have to take action against the workers not using Personal Protective Equipment at site and those workers shall be asked to rest for that day and also their Salary be deducted for that day. **XXXX (Name of the Employer)** may issue warning letter to Project Manager of contractor in violation of above norms.

THAT the Contractor shall prepare a detailed list of PPEs, activity wise, to commensurate with manpower deployed, which is enclosed at **Annexure – 3 (SP)** for review and approval of Engineer In-charge/Project Manager. It shall also be ensured that the sample of these equipment shall be got approved from **XXXX (Name of the Employer)** supervisory staff before being distributed to workers. The contractor shall submit relevant test certificates as per IS / International Standard as applicable to PPEs used during execution of work. All the PPE's to be distributed to the workers shall be checked by **XXXX (Name of the Employer)** supervisory staff before its usage.

The Contractor also agrees for addition / modification to the list of PPE, if any, as advised by Engineer In-Charge/Project Manager.

9. THAT the Contractor shall procure, if required sufficient quantity of Earthing Equipment / Earthing Devices complying with requirements of relevant IEC standards (Generally IECs standards for Earthing Equipments / Earthing Devices are – 855, 1230, 1235 etc.) and to the satisfaction of Engineer In-Charge/ Project Manager and contractor to ensure to maintain them in healthy condition.

THAT the Contractor has prepared / worked out minimum number of healthy Earthing Equipments with Earthing lead confirming to relevant IS / European standards per gang wise during stringing activity/as per requirement, which is enclosed herewith at **Annexure – 4 (SP)** for review and acceptance of Engineer In-Charge/ Project Manager prior to execution of work.

10. THAT the Contractor shall provide communication facilities i.e. Walky – Talkie / Mobile Phone, Display of Flags / whistles for easy communication among workers during Tower erection / stringing activity, as per requirement.
11. THAT the Contractor undertakes to deploy qualified safety personnel responsible for safety as per requirements of Employer/Statutory Authorities.

THAT the Contractor employing more than 250 workmen whether temporary, casual, probationer, regular or permanent or on contract, shall employ at least one full time officer exclusively as qualified safety officer having diploma in safety to supervise safety aspects of the equipment and workmen who will coordinate with Engineer In-charge /Project Manager/Safety Co-ordinator of the Employer. In case of work being carried out through sub contractors the sub – contractor's workmen / employees will also be considered as the contractor's employees / workmen for the above purpose. If the number of workers are less than 250 then one qualified safety officer is to be deployed for each contract. He will report directly to his head of organization and not the Project Manager of contractor. He shall also not be assigned any other work except assigning the work of safety. The curriculum vitae of such person shall be got cleared from **XXXX (Name of the Employer)** Project Manager / Construction staff.

The name and address of such safety officers of contractor will be promptly informed in writing to Engineer In-charge with a copy to safety officer - In-charge before start of work or immediately after any change of the incumbent is made during the currency of the contract. The list is enclosed at **Annexure – 5A (SP)**.

THAT the Contractor has also prepared a list including details of Explosive Operator (if required), Safety officer / Safety supervisor / nominated person for safety for each erection / stringing gang, list of personnel trained in First Aid Techniques as well as copy of organisation structure of the Contractor in regard to safety. The list is enclosed at **Annexure – 5B (SP)**.

12. The Project Manager shall have the right at his sole discretion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and/or property, and/or equipment. In such cases, the Contractor shall be informed in writing about the nature of hazards and possible injury/accident and he shall comply to remove shortcomings promptly. The Contractor after stopping the specific work can, if felt necessary, appeal against the order of stoppage of

work to the Project Manager within 3 days of such stoppage of work and decision of the Project Manager in this respect shall be conclusive and binding on the Contractor.

13. THAT, if, any Employer's Engineer/ supervisor at site observes that the Contractor is failing to provide safe working environment at site as per agreed Safety Plan / **XXXX (Name of the Employer)** Safety Rule/ Safety Instructions / Statutory safety requirement and creates hazardous conditions at site and there is possibility of an accident to workmen or workmen of the other contractor or public or the work is being carried out in an un safe manner or he continues to work even after being instructed to stop the work by Engineer / Supervisor at site / RHQ / Corp. Centre, the Contractor shall be bound to pay a penalty of Rs. 10,000/- per incident per day till the instructions are complied and as certified by Engineer / Supervisor of Employer at site. The work will remain suspended and no activity will take place without compliance and obtaining clearance / certification of the Site Engineer / Supervisor of the Employer to start the work.

14. THAT, if the investigation committee of Employer observes any accident or the Engineer In-charge/Project Manager of the Employer based on the report of the Engineer/Supervisor of the Employer at site observes any failure on the Contractor's part to comply with safety requirement / safety rules/ safety standards/ safety instruction as prescribed by the Employer or as prescribed under the applicable law for the safety of the equipment, plant and personnel and the Contractor does not take adequate steps to prevent hazardous conditions which may cause injury to its own Contractor's employees or employee of any other Contractors or Employer or any other person at site or adjacent thereto, or public involvement because of the Contractor's negligence of safety norms, the Contractor shall be liable to pay a compensation of Rs. 10,00,000/- (Rupees Ten Lakh only) per person affected causing death and Rs. 1,00,000/- (Rupees One Lakh only) per person for serious injuries / 25% or more permanent disability to the Employer for further disbursement to the deceased family/ Injured persons. The permanent disability has the same meaning as indicated in Workmen's Compensation Act 1923 or latest. The above stipulations is in addition to all other compensation payable to sufferer as per workmen compensation Act / Rules

THAT as per the Employer's instructions, the Contractor agrees that this amount shall be deducted from their running bill(s) immediately after the accident, That the Contractor understands that this amount shall be over and above the compensation amount liable to be paid as per the Workmen's Compensation Act /other statutory requirement/ provisions of the Bidding Documents.

15. THAT the Contractor shall submit Near-Miss-Accident report alongwith action plan for avoidance such incidence /accidents to Engineer – In-charge/ Project Manager. Contractor shall also submit Monthly Safety Activities report to Engineer – In-charge/ Project Manager and copy of the Monthly Safety Activities report also to be sent to Safety In-charge at RHQ of the Employer for his review record and instructions.

16. THAT the Contractor is submitting a copy of Safety Policy/ Safety Documents of its Company which is enclosed at **Annexure – 6 (SP)** and ensure that the safety Policy and safety documents are implemented in healthy spirit.

17. THAT the Contractor shall make available of First Aid Box [Contents of which shall be as per Building & other construction workers (Regulation of Employment and Conditions of Services Act and Central Rule 1998 or latest / **XXXX (Name of the Employer)** Guidelines)] to the satisfaction of Engineer In-Charge/ Project Manager with each gang at site and not at camp and ensures that trained persons in First Aid Techniques with each gang before execution of work.

18. THAT the Contractor shall submit an 'Emergency Preparedness Plan' for different incidences i.e. Fall from height, Electrocution, Sun Stroke, Collapse of pit, Collapse of Tower, Snake bite, Fire in camp / Store, Flood, Storm, Earthquake, Militancy etc. while carrying out different activities under execution i.e. foundation works including civil works, erection, stringing (as applicable), testing & commissioning, disposal of materials at site / store etc. which is enclosed at **Annexure – 7 (SP)** for approval of the Engineer In-Charge/ Project Manager before start of work.

19. THAT the Contractor shall organise Safety Training Programs on Safety, Health and Environment and for safe execution of different activities of works i.e. foundation works including civil works, erection, stringing (as applicable), testing & commissioning, disposal of materials at site / store etc. for their own employees including sub-contractor workers on regular basis.

The Contractor, therefore, submits copy of the module of training program, enclosed at **Annexure – 9 (SP)**, to Engineer In-charge/Project Manager for its acceptance and approval and records maintained.

20. THAT the Contractor shall conduct safety audit, as per Safety Audit Check Lists enclosed at **Annexure – 8 (SP)**, by his Safety Officer(s) every month during construction of Transmission Lines / Sub Stations / any other work and copy of the safety audit report will be forwarded to the Employer's Engineer In-charge / Site In-charge/Project Manager for his comments and feedback. During safety audit, healthiness of all Personal Protective Equipment (PPEs) shall be checked individually by safety officer of contractor and issue a certificate of its healthiness or rejection of faulty PPEs and contractor has to ensure that all faulty PPEs and all faulty lifting tools and tackles should be destroyed in the presence of **XXXX (Name of the Employer)** construction staff. Contractor has to ensure that each gang be safety audited at least once in two months. During safety audit by the contractor, Safety officer's feedback from **XXXX (Name of the Employer)** concerned shall be taken and recorded. The Employer's site officials shall also conduct safety audit at their own from time to time when construction activities are under progress. Apart from above, the Employer may also conduct surveillance safety audits. The Employer may take action against the person / persons as deemed fit under various statutory acts/provisions under the Contract for any violation of safety norms / safety standards.
21. THAT the Contractor shall develop and display Safety Posters of construction activity at site and also at camp where workers are generally residing.
22. THAT the Contractor shall ensure to provide potable and safe drinking water for workers at site / at camp.
23. THAT the Contractor shall do health check up of all workers from competent agencies and reports will be submitted to Engineer In-Charge within fifteen (15) days of health check up of workers as per statutory requirement.
24. THAT the Contractor shall submit information alongwith documentary evidences in regard to compliance to various statutory requirements as applicable which are enclosed at **Annexure – 10A (SP)**.
- The Contractor shall also submit details of Insurance Policies taken by the Contractor for insurance coverage against accident for all employees are enclosed at **Annexure – 10B (SP)**.
25. THAT a check-list in respect of aforesaid enclosures alongwith the Contractor's remarks, wherever required, is attached as **Annexure – Check List** herewith.

THE CONTRACTOR shall incorporate modifications/changes in this 'Safety Plan' necessitated on the basis of review/comments of the Engineer In-Charge/Project Manager within fourteen (14) days of receipt of review/comments and on final approval of the Engineer In-Charge/Project Manager of this 'Safety Plan', the Contractor shall execute the works under the Contract as per approved 'Safety Plan'. Further, the Contractor has also noted that the first progressive payment towards Services Contract shall be made on submission of 'Safety Plan' alongwith all requisite documents and approval of the same by the Engineer In-Charge/Project Manager.

IN WITNESS WHEREOF, the Contractor has hereunto set its hand through its authorised representative under the common seal of the Company, the day, month and year first above mentioned.

For and on behalf of

M/s.....

WITNESS

1. Signature.....

Signature.....

Name.....

Name.....

Address.....

Address.....

2. Signature.....

Authorised representative

Name.....

(Common Seal)

Address.....

(In case of Company)

Note:

All the annexure referred to in this "Safety Plan" are required to be enclosed by the contractor as per the attached " Check List "

1. Safety Plan is to be executed by the authorised person and (i) in case of contracting Company under common seal of the Company or (ii) having the power of attorney issued under common seal of the company with authority to execute such contract documents etc., (iii) In case of (ii), the original Power of Attorney if it is specifically for this Contract or a Photostat copy of the Power of Attorney if it is General Power of Attorney and such documents should be attached to this Safety Plan.
2. For all safety monitoring/ documentation, Engineer In-charge / Regional In-charge of safety at RHQ will be the nodal Officers for communication.

CHECK LIST FOR SEFETY PLAN

S. N.	Details of Enclosure	Status of Submission of information/ documents	Remarks
1.	Annexure – 1A (SP) Safe work procedure for each activity i.e. foundation works including civil works, erection, stringing (as applicable), testing & commissioning, disposal of materials at site / store etc. to be executed at site.	Yes/No	
2.	Annexure – 1B (SP) Manpower deployment plan, activity wise foundation works including civil works, erection, stringing (as applicable), testing & commissioning, disposal of materials at site / store etc.	Yes/No	
3.	Annexure – 2 (SP) List of Lifting Machines i.e. Crane, Hoist, Triffor, Chain Pulley Blocks etc. and Lifting Tools and Tackles i.e. D shackle, Pulleys, come along clamps, wire rope slings etc. and all types of ropes i.e. Wire ropes, Poly propylene Rope etc. used for lifting purposes along with test certificates.	Yes/No	
4.	Annexure – 3 (SP) List of Personal Protective Equipment (PPE), activity wise including the following along with test certificate of each as applicable: <ol style="list-style-type: none"> 1. Industrial Safety Helmet to all workmen at site. (EN 397 / IS 2925) with chin strap and back stay arrangement. 2. Safety shoes without steel toe to all ground level workers and canvas shoes for workers working on tower. 3. Rubber Gum Boot to workers working in rainy season / concreting job. 4. Twin lanyard Full Body Safety harness with shock absorber and leg strap arrangement for all workers working at height for more than three meters. Safety Harness should be with attachments of light weight such as of aluminium alloy etc. and having a feature of automatic locking arrangement of snap hook and comply with EN 361 / IS 3521 standards. 5. Mobile fall arrestors for safety of workers during their ascending / descending from tower / on 	Yes/No	

S. N.	Details of Enclosure	Status of Submission of information/ documents	Remarks
	<p>tower. EN 353 -2 (Guided type fall arresters on a flexible anchorage line.)</p> <p>6. Retractable type fall arrestor (EN360: 2002) for ascending / descending on suspension insulator string etc.</p> <p>7. Providing of good quality cotton hand gloves / leather hand gloves for workers engaged in handling of tower parts or as per requirement at site.</p> <p>8. Electrical Resistance hand gloves to workers for handling electrical equipment / Electrical connections. IS : 4770</p> <p>9. Dust masks to workers handling cement as per requirement.</p> <p>10. Face shield for welder and Grinders. IS : 1179 / IS : 2553</p> <p>11. Other PPEs, if any, as per requirement etc.</p>		
5.	<p>Annexure – 4 (SP)</p> <p>List of Earthing Equipment / Earthing devices with Earthing lead conforming to IECs for earthing equipment are – (855, 1230, 1235 etc.) gang wise for stringing activity/as per requirement</p>	Yes/No	
6.	<p>Annexure – 5A (SP)</p> <p>List of Qualified Safety Officer(s) alongwith their contact details</p>	Yes/No	
7.	<p>Annexure – 5B (SP)</p> <p>Details of Explosive Operator (if required), Safety officer / Safety supervisor for every erection / stringing gang, any other person nominated for safety, list of personnel trained in First Aid as well as brief information about safety set up by the Contractor alongwith copy of organisation of the Contractor in regard to safety</p>	Yes/No	
8.	<p>Annexure – 6 (SP)</p> <p>Copy of Safety Policy/ Safety Document of the Contractor's company</p>	Yes/No	
9.	<p>Annexure – 7 (SP)</p> <p>'Emergency Preparedness Plan' for different incidences i.e. Fall from height, Electrocution, Sun Stroke, Collapse of pit, Collapse of Tower, Snake bite, Fire in camp / Store, Flood, Storm, Earthquake, Militancy etc. while carrying out different activities under execution i.e. foundation works including civil works, erection, stringing (as applicable), testing & commissioning, disposal of materials at site / store etc.</p>	Yes/No	

S. N.	Details of Enclosure	Status of Submission of information/ documents	Remarks
10.	Annexure – 8 (SP) Safety Audit Check Lists (Formats to be enclosed)	Yes/No	
11.	Annexure – 9 (SP) Copy of the module of Safety Training Programs on Safety, Health and Environment, safe execution of different activities of works for Contractor's own employees on regular basis and sub-contractor employees.	Yes/No	
12.	Annexure – 10A (SP) Information alongwith documentary evidences in regard to the Contractor's compliance to various statutory requirements including the following:		
(i)	Electricity Act 2003 _____ <i>[Name of Documentary evidence in support of compliance]</i>	Yes/No	
(ii)	Factories Act 1948 or latest _____ <i>[Name of Documentary evidence in support of compliance]</i>	Yes/No	
(iii)	Building & other construction workers (Regulation of Employment and Conditions of Services Act and Central Act 1996 or latest) and Welfare Cess Act 1996 or latest with Rules. _____ <i>[Name of Documentary evidence in support of compliance]</i>	Yes/No	
(iv)	Workmen Compensation Act 1923 or latest and Rules. _____ <i>[Name of Documentary evidence in support of compliance]</i>	Yes/No	
(v)	Public Insurance Liabilities Act 1991 or latest and Rules. _____ <i>[Name of Documentary evidence in support of compliance]</i>	Yes/No	

S. N.	Details of Enclosure	Status of Submission of information/ documents	Remarks
	<i>compliance]</i>		
(vi)	Indian Explosive Act 1948 or latest and Rules. _____ <i>[Name of Documentary evidence in support of compliance]</i>	Yes/No	
(vii)	Indian Petroleum Act 1934 or latest and Rules. _____ <i>[Name of Documentary evidence in support of compliance]</i>	Yes/No	
(viii)	License under the contract Labour (Regulation & Abolition) Act 1970 or latest and Rules. _____ <i>[Name of Documentary evidence in support of compliance]</i>	Yes/No	
(ix)	Indian Electricity Rule 2003 and amendments if any, from time to time. _____ <i>[Name of Documentary evidence in support of compliance]</i>	Yes/No	
(x)	The Environment (Protection) Act 1986 or latest and Rules. _____ <i>[Name of Documentary evidence in support of compliance]</i>	Yes/No	
(xi)	Child Labour (Prohibition & Regulation) Act 1986 or latest. _____ <i>[Name of Documentary evidence in support of compliance]</i>	Yes/No	
(xii)	National Building Code of India 2005 or latest (NBC 2005). _____ <i>[Name of Documentary evidence in support of compliance]</i>	Yes/No	

S. N.	Details of Enclosure	Status of Submission of information/ documents	Remarks
(xiii)	Indian standards for construction of Low/ Medium/ High/ Extra <div style="border-bottom: 1px solid black; width: 100%;"></div> <i>[Name of Documentary evidence in support of compliance]</i>	Yes/No	
(iv)	Any other statutory requirement(s) <i>[please specify]</i> <div style="border-bottom: 1px solid black; width: 100%;"></div> <i>[Name of Documentary evidence in support of compliance]</i>	Yes/No	
13.	Annexure – 10B (SP) Details of Insurance Policies alongwith documentary evidences taken by the Contractor for the insurance coverage against accident for all employees as below:		
(i)	Under Workmen Compensation Act 1923 or latest and Rules. <div style="border-bottom: 1px solid black; width: 100%;"></div> <i>[Name of Documentary evidence in support of insurance taken]</i>	Yes/No	
(ii)	Public Insurance Liabilities Act 1991 or latest <div style="border-bottom: 1px solid black; width: 100%;"></div> <i>[Name of Documentary evidence in support of insurance taken]</i>	Yes/No	
(iii)	Any Other Insurance Policies <div style="border-bottom: 1px solid black; width: 100%;"></div> <i>[Name of Documentary evidence in support of insurance taken]</i>	Yes/No	

19. FORM OF JOINT DEED OF UNDERTAKING BY THE SUB-CONTRACTOR ALONGWITH THE BIDDER/CONTRACTOR

THIS DEED OF UNDERTAKING executed this day of Two Thousand and by M/s., a Company incorporated under the laws of and having its Registered Office at (hereinafter called the "**Sub-contractor**" which expression shall include its successors, executors and permitted assigns), and M/s., a Company incorporated under the laws of having its Registered Office at (hereinafter called the "**Bidder**"/"**Contractor**" which expression shall include its successors, executors and permitted assigns) in favour of **XXXX (Name of the Employer)** a Company incorporated under the Companies Act of 1956/2013 (with amendment from time to time) having its registered office at **XXXX (Registered Address of the Employer)** (hereinafter called the "**Employer**" which expression shall include its successors, executors and permitted assigns)

WHEREAS the "**Employer**" invited Bid as per its Specification No.....for **DDUGJY/IPDS works of including installation of Sub-stations, lines, bays, DTs and providing service connections etc.**

AND WHEREAS Clause No., Section, of, Vol.-I... forming part of the Bid Documents inter-alia stipulates that the Bidder and/or Sub-contractor must fulfill the Qualifying Requirements and be jointly and severally bound and responsible for the quality and timely execution of **DDUGJY/IPDS works** in the event the Bid submitted by the Bidder is accepted by the Employer resulting in a Contract.

AND WHEREAS the Bidder has submitted its Bid to the Employer vide Proposal No. dated based on tie-up with the **Sub-contractor** for execution of aforesaid **DDUGJY/IPDS works**.

NOW THEREFORE THIS UNDERTAKING WITNESSETH as under:

- 1.0 In consideration of the award of Contract by the Employer to the Bidder (hereinafter referred to as the "**Contract**") we, the **Sub-contractor** and the Bidder/Contractor do hereby declare that we shall be jointly and severally bound unto the **XXXX (Name of the Employer)**, for **execution of DDUGJY/IPDS works** in accordance with the Contract Specifications.
- 2.0 Without in any way affecting the generality and total responsibility in terms of this Deed of Undertaking, the **Sub-contractor** hereby agrees to depute their representatives from time to time to the Employer's Project site as mutually considered necessary by the Employer, Bidder/Contractor and the **Sub-contractor** to ensure proper quality, manufacture, testing and supply on FOR destination delivery at site basis and successful performance of **DDUGJY/IPDS works** in accordance with Contract Specifications. Further, if the Employer suffers any loss or damage on account of non-performance of the material fully meeting the performance guaranteed as per Bid Specification in terms of the contract. We the **Sub-contractor** and the Contractor jointly and severally undertake to pay such loss or damages to the Employer on its demand without any demur.
- 3.0 This Deed of Undertaking shall be construed and interpreted in accordance with the laws of India and the Courts in xxxxx (Headquarter of Employer) shall have exclusive jurisdiction in all matters arising under the Undertaking.
- 4.0 We, the Bidder/Contractor and **Sub-contractor** agree that this Undertaking shall be irrevocable and shall form an integral part of the Contract and further agree that this Undertaking shall continue to be enforceable till the Employer discharges it. It shall become operative from the effective date of Contract.

IN WITNESS WHEREOF the **Sub-contractor** and/or the Bidder/Contractor have through their Authorised Representatives executed these presents and affixed Common seals of their respective Companies, on the day, month and year first above mentioned.

WITNESS	(For Sub-contractor)
Signature	(Signature of the authorized representative)
Name	Name
Office Address	Common Seal of Company

WITNESS	(For Bidder)
Signature	(Signature of the authorized representative)
Name	Name
Office Address	Common Seal of Company

Note:

1. For the purpose of executing the Deed of Joint Undertaking, the non-judicial stamp papers of appropriate value shall be purchased in the name of executant(s).
2. The Undertaking shall be signed on all the pages by the authorised representatives of each of the partners and should invariably be witnessed.
3. This Deed of Joint Undertaking duly attested by Notary Public of the place(s) of the respective executant(s), shall be submitted alongwith the bid.
4. In case the bid is submitted by a Joint Venture (JV) of two or more firms as partners, then the Joint deed of undertaking shall be modified accordingly.

20. FORM OF CERTIFICATE OF FINANCIAL PARAMETERS FOR QR
(as per clause ref. no. 1.02 and 2.0 of Annexure-A(BDS))

(Rupees in Lakhs)

S. No.	Financial parameters	2014-15	2013-14	2012-13	2011-12	2010-11
1.	Net Worth					
a)	Paid up Capital					
b)	Free Reserves and Surplus*					
c)	Misc expenses to the extent not written off					
	Net Worth (a+b-c)					
2.	Annual Turnover **					
3.	Liquid Asset (Total Current Asset – Inventories)					

* Free Reserve and Surplus should be Exclusive of Revaluation Reserve, written back of Depreciation Provision and Amalgamation.

** Annual total Income/ turnover as incorporated in the Profit and Loss Account excluding non recurring income, i.e. sale of fixed asset etc.

It is certified that all the figures are based on audited accounts read with auditors report and Notes to Accounts etc.

Date

Certified By

Place

(Chartered Accountants)

Membership No.

Seal

PERT Chart Format under IPDS Schemes

Name of State
Name of Project
Reference No. of PERT Chart (unique code to be
given by Employer)
Version of PERT Chart

Name of Employer
Name of Turnkey Contractor (TC)

Date of approval of PERT Chart
LoI No. and date

S. NO.	Activity	Responsibility	Unit	Qty as per Scope	Month																							
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	Letter of Intent (zero date)	Employer																										
2	PERT Chart	TC / E																										
3	Submission of CPG	TC																										
4	Upfront sharing of approved sub-vendors by PIA	Employer																										
5	Up-Front sharing of existing approved GTPs of Employer	Employer																										
6	LoA	Employer																										
7	Contract Agreement	TC/E																										
8	Finalisation of Subcontract & Vendors	TC/E																										
9	Submission of Engineering Drawing (other than existing approved)	TC																										
10	Approval of Engineering Drawings (other than existing approved)	Employer																										
11	Submission of GTP (other than existing approved)	TC																										
12	Approval of GTP (other than existing approved)	Employer																										
13	Placement of Award for following Key Materials:																											
13-01	Poles																											
13-02	Conductor																											
13-03	Power Transformer																											
13-04	Distribution Transformer																											
13-05	Steel Structure Materials																											
13-06	Vacuum circuit-breakers																											
13-07	GI-wires																											
13-08	Insulators																											
13-09	Meters																											
13-1	Power & Control Cables																											
13-11	Distribution Box																											
13-12	Line Equipments (LA, Isolator, AB-switch, CT/PT)																											
13-13	Earthing Materials																											
13-14	Stay Sets																											
14	Establishment of Site Office, Office infrastructure, Vehicle																											
15	Deployment of manpower at site																											
16	Survey																											
16-01	Field survey																											
16-02	Approval of Survey report																											
17	Receipt of following Key Materials at Site:																											
17-01	Poles																											
17-02	Conductor																											
17-03	Power Transformer																											
17-04	Distribution Transformer																											
17-05	Steel Structure Materials																											
17-06	Vacuum circuit-breakers																											
17-07	GI-wires																											
17-08	Insulators																											
17-09	Meters																											
17-1	Power & Control Cables																											
17-11	Distribution Box																											
17-12	Line Equipments (LA, Isolator, AB-switch, CT/PT)																											
17-13	Earthing Materials																											
17-14	Stay Sets																											
18	Erection, testing & Commissioning of following works																											
18-01	33 KV Lines																											
18-02	33/11 KV or 66/11 KV Substations																											
18-03	11 KV Lines																											
18-04	DTR Substation																											
18-05	LT Line																											
18-06	HVDS																											
18-07	Metering																											
18-08	Aux/ R&M of Power Substation																											
18-09	Aux/ R&M of DTR Substation																											
19	Submission of reconciliation & closure proposal																											

(Employer)
Signature
Name of Authorised Signatory
Designation

(Turnkey Contractor)
Signature
Name of Authorised Signatory
Designation

Note-

- 1 Approving authority of Employer shall sign and stamp the PERT chart on approval.
- 2 approved PERT chart shall be part of contract agreement.
- 3 Original PERT chart shall not be changed during execution of project.
- 4 Revision in PERT chart or acceptance of catch up plan, shall be within overall contract execution period of the project.
- 5 Revised PERT chart / catch up plan shall be signed by same authorities of Employer and Turnkey contractor.
- 6 Approved PERT chart shall be basic document to take a decision on extension of time for contract and to evaluate performance of project execution contractor.
- 7 Unapproved PERT chart shall be considered null and void.
- 8 Clear time line to be agreed for various activities between Employer and Turnkey Contractor
- 9 Unique reference no. to be assigned with date to approved PERT chart by Employer.
- 10 No revision should be clearly assigned with unique reference no., date and revision no. (R1/R2/R3 etc)
- 11 Items specified may be customised based on project formation.

VOLUME-I: SECTION – VII

SCOPE OF WORKS

BRIEF SCOPE OF WORK

RECPDCL envisages engaging an external agency with sufficient experience, technical competence & expertise, financial strength and related infrastructure facilities for carrying out Supply /installation/replacement of electrical energy meters along with all associated accessories on turnkey basis in **2 Districts/Towns** under **IPDS, PMDP-U& DDUGJY** in **Leh & Kargil** region of the state Jammu & Kashmir including O&M of service connections for a period of five years.

As the work shall be executed turnkey basis, all the associated materials shall be procured & maintained by the contractor as per the provision of tender. All the facilities required to execute the work properly shall be engaged by the contractor without any extra cost implication to RECPDCL. The contractor shall also do ground survey on the basis of data/list provided by RECPDCL and prepare the BOQ/BOM and get it approved from RECPDCL.

The work under this project includes, but is not specifically limited to, the following scope.

PART-1 Supply of Energy Meters

Accordingly, scope of works under this contract is as under:

1. Supply, Inland transport, Insurance, Delivery and unloading of all energy meters along with CMRI and meter seals as per tender document.
2. A set of drawings are enclosed with this bid document. These are tender drawings and are to be approved by the authorized representative of RECPDCL. These drawings are indicative in nature and therefore, must be referred while preparing drawings for approval.
3. The Manufacturing Quality Plan (MQP) shall be finalized by the Employer in consultation with the contractor/manufacturer in line with the Technical Specifications.

The detailed scope of works covered is as under:

The Scope of Work shall include but will not be limited to Design, engineering, manufacture, inspection, testing and supply of Single phase two wire current rating 10-60 Amp. And three phase four wire current rating 20-100 Amp. Solid state (static) whole current electrical energy meters of accuracy class 1.0 with backlit LCD display and communication port for data downloading as per requirement given in the technical specification

CMRI along with necessary software for downloading the data through CMRI and uploading to computer/server shall be provided. No extra cost shall be charged for providing the CMRI and required software. Bidder shall supply **CMRI** including user manual, AA size batteries & a set of direct communication cords along with the first lot of delivery of meters.

Polycarbonate seals along with sealing wire and seal tracking software shall be provided. No extra cost shall be charged for providing the Seals. Bidder shall supply seals **200%** of the quantity of meters.

Quantity of work as mentioned below:

S.no	Item	UOM	Quantity
1	2	3	4
1	Single phase 2 wire(10-60Amp) whole current class 1 AC Static Electrical Energy Meter as per NIT specs along with service cable and meter box	Nos	48,134
2	Three phase 4 wire(20-100Amp) whole current class 1 AC Static Electrical Energy Meter as per NIT specs along with service cable and meter box	Nos	1,110
3	Polycarbonate Seals as per NIT specs	Nos	98,488
4	Portable Common Meter Reading Instrument (CMRI) as per NIT specs	Nos	30

PART-2 Meters & Accessories Installation Services**A. Installation of new energy meters of unmetered consumers**

The contractor shall install new energy meter primarily on nearest LT pole of the unmetered consumer subject to site conditions as per installation guidelines issued by JKPPD. New service cable provisioned under the contract shall be used at supply side of the meter and existing service line shall be used at load side i.e. consumer side. The new meters shall be tested prior to installation. The testing shall be carried out under the supervision of authorized representatives of RECPDCL.

Few meters have already been procured by JKPPD. Contractor shall ensure to install those meters too as mentioned above.

B. Replacement of defective consumer meters and installation of new meters

The contractor shall identify all the failed (burnt/stop/defective)/electromechanical energy meters installed inside consumer premises as well as outside consumer premises or on pole and shall replace those meters with new energy meters as per installation guidelines issued by JKPPD..

The new meters shall be installed on the nearest LT pole of the consumers. New service cable procured under the contract shall be used at supply side of the meter and existing service line shall be used at load side i.e. consumer side. All the unused dismantled materials shall be deposited to concerned stores of RECPDCL/JKPPD.

C. Installation of new service connection release/to be released by JKPPD

The contractor shall install meters for new service connection released/to be released as guided by RECPDCL as per the standard installation practices of JKPPD.

The new meters shall be installed primarily on the nearest LT pole of the consumers. New service cable procured under the contract shall be used at supply side of the meter as well as consumer side upto supply point at consumer premises.

D. Shifting of consumer meters on poles at accessible height.

The contractor shall identify all the energy meters which are not accessible for meter reading and shift those energy meters outside consumer premises primarily on nearest LT pole of the consumers at accessible height as per installation guidelines issued by JKPPD. New service cable procured under the contract shall be used at supply side of the meter and existing service line shall be used at load side i.e. consumer side. Metal boxes may be provided by JKPPD subject to availability in their stock.

E. Seal Management System.

The contractor shall ensure rigorous seal management system to avoid misuse of seals and also ensure seal security system that will cover overall management process and will help to ensure the prevention of unauthorized access. Contractor will maintain database system to record log books for outbound seal recording and a separate log book for inbound seal ensuring proper tracking of seals. Seals shall be provided as per Section 12 of CEA Metering Regulation 2006 and Seal Tracking software shall be provided as per these regulation.

F. IT - Based Inventory and Online MIS System

The contractor shall provide an IT system based inventory and MIS system to maintain daily activity record/tickets of consumers identified for meter replacement, status of approval, meter stock status, record of meter installation/replacements and other allied activities at field, status of defective meter returned, seal management etc. for day to day work.

PART-3: MANAGING THE MAINTENANCE OF METERING INFRASTRUCTURE

Operation & Maintenance (O&M) of service connections to consumers.

To upkeep existing & upcoming metering infrastructure, proper maintenance of meters is vital for the health of the Power Department and therefore IT system-based monitoring of the Metering Infrastructure is to be continued as part O&M services for 05 years

The contractor shall carry out operation and maintenance (O&M) service of all the service connections released as well as to be released to the consumers in **2 Districts/Towns** under **IPDS, PMDP-U& DDUGJY** in **Leh & Kargil** region of the state Jammu & Kashmir for a period of five (05) years. The scope of services broadly covers:

- a. The Scope of Services shall include other meters of the respective region irrespective of replacement / installation being undertaken by installation agencies.
- b. Managing sub-agencies / manpower in various circles/divisions/sub-divisions resources for timely replacement of damaged/defective/ faulty/ burnt / stop meters at each of the towns under R-APDRP & IPDS Towns.
- c. Lead agency may appoint other sub-agencies for replacement of damaged/defective/ faulty/ burnt / stop meters etc. meters. The cost of appointing such agencies shall be borne by lead agency.
- d. Providing appropriate resources for effective monitoring of Consumer Metering Process. The prime responsibility of these resources shall be maintenance and upkeep the healthy

conditions of the Meters, identification and replacement of damaged/defective/ faulty/ burnt meters, ensure and managing warranty compliance of meter and materials (either replacement or rectification), meter and associated material stock status, record of meter installation/replacements at field, status of defective / old meter returned, seal management etc. and other day to day work.

- e. Lead Agency shall provide a Management Dashboard/MIS/Report to RECPDCL to monitor the Status of Consumer and daily progress of the aforementioned works carried out by the agency.
- f. Providing appropriate dedicated resource at RECPDCL Offices to coordination of aforementioned work and activities allocated to the bidder.

Lead Agency shall analyze the reasons for meter failure and prepare a consolidated report for RECPDCL. In case the failure is due to reasons attributable to consumer, the same shall be analyzed and informed to RECPDCL for further necessary action.

To carry out the above work, the contractor shall procure all the associated materials required to complete the above work as per the technical specification of the tender. It would be the responsibility of contractor to maintain safe custody and transit from store to the site, where these meters are to be installed.

Bidder will be responsible to collect the old/scrap/removed material from site and safely transport and deposit the same to the RECPDCL store.

The contractor shall also arrange and maintain a dedicated store with adequate security arrangements at each electricity division of JKPDD in Leh & Kargil region to ensure proper storage of materials procured by them as well as the materials provided by RECPDCL/JKPDD. Daily/Weekly/Monthly accounting of materials receipt, materials issues, materials in custody of sub-contractors are to be maintained by the contractor and shall be submitted to RECPDCL whenever asked for.

Bidder shall provide access to all its offices/store/site to the authorized representative of RECPDCL at any point of time.

The contractor shall arrange and maintain their project office at each electricity division of JKPDD in Jammu region to performed day to day routine activities.. Division wise Project Managers/Site-In-charge shall also be deputed by the contractor for smooth functioning, proper monitoring and coordination with RECPDCL/JKPDD representatives. The contractor shall arrange sufficient manpower to execute the work and complete the project as per the time schedule specified in the tender.

For installation of fresh/replacement of defective meters, the contractor shall follow the guidelines issued by JKPDD as well as any fresh guidelines issued further during the contract.

1.1 TOWNS OF KASHMIR TO BE COVERED

S.No.	Name of Town	Region	Circle	Name of Division	Name of Sub Division
1	Leh	Kashmir	Circle Leh	Leh	Leh-I
		Kashmir	Circle Leh		Leh-II
2	Kargil	Kashmir	Circle Leh	Kargil	Kargil-I
		Kashmir	Circle Leh		Kargil-II

Annexure-A to
VOLUME – I : Section-VII

General Technical Instructions

(This document is meant for the exclusive purpose of bidding against this Package and shall not be transferred, reproduced or otherwise used for purposes other than that for which it is specifically issued.)

Technical Specification of DDUGJY/IPDS

Contents

1.1	33 KV Line support	2
1.2	11 KV line Support including Distribution Substation support	3
1.3	Route And Terrain	3
1.4	Detailed Survey	3
1.5	Profile Plotting.....	4
1.6	Road Crossing	4
1.7	Railways Crossings	4
1.8	Telecommunication, LT or HT Line Crossing	4
1.9	Details En-route	4
1.10	Clearances - General.....	5
1.11	Electrical System Data	6
1.12	Pole Location	6
1.13	Construction	6
1.14	Erection of DP Structure for Angle Locations	7
1.15	Concreting	7
1.16	Providing Of Guys To Supports	7
1.17	Guy Strain Insulators	8
1.18	Fixing Of Cross-Arms	8
1.19	Insulators And Bindings	8
1.20	Conductor Erection	9
1.21	Tensioning and Sagging Operations	10
1.22	Clipping In	10
1.23	Fixing of Conductors and Earthwire Accessories	10
1.24	Replacement.....	10
1.25	Tying Of Conductor On Pin Insulators.....	11
1.26	Kind And Size Of Tie Wire To Be Used	11
1.27	Rules Of Good Tying Practice.....	11
1.28	Conductors At Different Voltages On Same Supports	11
1.29	Earthing	12
1.30	Anti-Climbing Devices	12
1.31	Testing And Commissioning.....	13
1.32	River Crossing	13
1.33	Guarding	14
1.34	Repair to conductors.....	14
1.35	LT Lines and Service connection	14

General Technical Instructions

Following CEA regulations shall be applicable during execution of work:

- a. **Construction Regulation – Central Electricity Authority (Technical Standards for construction of electrical plants and electric lines) Regulation, 2010 (as amended time to time)**
- b. **Safety Regulation for construction and O&M - Central Electricity Authority (Safety requirements for construction, Operation and Maintenance of electrical plants and electric lines) Regulation, 2011 (as amended time to time)**
- c. **Connectivity Regulation – Technical Standard for connectivity to the grid (Amendment) Regulation 2013; Technical Standards for connectivity of the Distributed Generation resources, 2013; Central Electricity Authority (Grid Standard) Regulation, 2010 (as amended time to time)**
- d. **Metering Regulations – Central Electricity Authority (Installation and Operation of meters) Regulations, 2006; Central Electricity Authority (Installation and Operation of meters) (Amendment) Regulations, 2010 and 2015 (as amended time to time)**
- e. **Central Electricity Authority (Measures relating to safety and Electric supply regulations), 2010 and amendment regulation 2015 (as amended time to time)**

1.1 — 33 KV Line support

- 1.1.1. ~~9.1 meter long PCC Pole or 11 KV long PCC pole (or PCC Pole as per state practice shall be used for 33 KV line support). 152x152mm H Beam (37.1kg/m)¹ can also be used as support in urban/forest area and or Steel Tubular Poles may be used in hilly area where head load shifting is the only option. Cement concreting shall be used for 33 KV support foundations in mixture 1:3:6 (1: cement, 3: coarse sand and 6 Stone ballast 40mm sizes). Each support shall be concrete (0.5mx0.5mx2m) = 0.5 cmt. 0.014 cmt shall also be used in mugging of the support. PCC pole shall not be provided with mugging.~~
- 1.1.2. ~~Pole base plates as per specifications shall be used.~~
- 1.1.3. ~~Pole earthing shall be performed through earthing coil duly connected with 8 SWG wire. The GI wires between pole structure and the earthing coil should not be used in cut length. Wherever, cut is evitable, proper nut bolt, washer and binding should be made as per REC specifications. The GI wire between support and earth coil should be placed 1 meter below the ground level.~~
- 1.1.4. ~~Earth coil should be inserted 1200 mm away from pole.~~

¹ In hilly and difficult terrain, steel tubular support may be accepted, they shall be concreted as per speculations,

1.2 11 KV line Support and DTR Substation support

- 1.2.1. 8.0 meters or equivalent PCC Poles² as per prevailing practices of the state shall be used for 11 KV line and substation support. 152x152mm H-Beam (37.1kg/m)³ can also be used as support in urban/forest area and or Steel Tubular Poles may be used in hilly area where head load shifting is the only option.

The single PCC pole supports shall be erected with Stone bolder/stone ballast mixed with excavated earth in normal soil. PCC poles in Double Pole structures, turning point structure, Distribution Transformer Substation structure shall be grouted in cement concrete mixture of 1:3:6 (1: cement, 3: coarse sand and 6 Stone ballast 40mm sizes). Single pole supports in water logging area shall also be grouted in cement concrete mixture of 1:3:6 (1: cement, 3: coarse sand and 6 Stone ballast 40mm sizes). PCC pole shall be grouted with concrete (0.6mx0.6mx1.35m) = 0.486 cmt.. In special location, wherever, Project Manager specifically decides, to enhance additional strength, concreting may be used as support foundation.

In forest, wherever special care is to be made for elephant corridors, 13m long, 152x152mm RS Joist (37.1kg/m) may be used for 11 KV line support.

152x152mm H-Beam (37.1kg/m)⁴ and Steel Tubular Poles shall be grouted in cement concrete mixture of 1:3:6 (1: cement, 3: coarse sand and 6 Stone ballast 40mm sizes) in all the formation.

- 1.2.2. Pole base plates as per specifications shall be used.
- 1.2.3. Pole earthing shall be performed through earthing coil duly connected with 8 SWG wire. The GI wires between pole structure and the earthing coil should not be used in cut length. Wherever, cut is evitable, proper nut bolt, washer and binding should be made as per REC specifications. The GI wire between support and earth coil should be placed 1 meter below the ground level.
- 1.2.4. Earth coil should be inserted 1200 mm away from pole.

1.3 Route And Terrain

- 1.3.1. The scope of HT/LT length of feeder are enclosed with the tender documents. On award of the contract, contractor shall perform foot survey to access the route, pole location and thus Single Line Diagram of the line works. The survey shall be approved by Project Manager. Accordingly requirements of materials shall be finalized by the turnkey contractor in association with Project Manager.

1.4 Detailed Survey

- 1.4.1. The detailed survey shall be carried out for the approved feeders/spur lines by the contractor and submitted for owner approval.

² In hilly and difficult terrain, steel tubular support may be accepted, they shall be concreted as per speculations,

³ In hilly and difficult terrain, steel tubular support may be accepted, they shall be concreted as per speculations,

⁴ In hilly and difficult terrain, steel tubular support may be accepted, they shall be concreted as per speculations,

1.5 Profile Plotting

- 1.5.1. Span: The number of consecutive spans between the section points shall not exceed design length considering wind pressure, type of poles and size of conductor.
- 1.5.2. Extension: An individual span shall be as near to the normal design span as possible. In case an individual span becomes too short with normal supports on account of undulation in ground profile, one or both the supports of the span may be extended by inserting standard body extension designed for the purpose according to technical specification.
- 1.5.3. Loading: There shall not be any upward force on poles under normal working conditions and the suspension poles shall support at least the minimum weight span as provided in the design. In case uplift is unavoidable, it shall be examined if the same can be overcome by adding standard body extensions to the poles failing which tension poles designed for the purpose shall be employed at such positions.
- 1.5.4. Horizontal Tensions on pin insulators are to be avoided by proper alignment of the line. In case where installation of DP structure is not possible to erect for turning the line, "two pins" arrangement with suitable jumpering shall be provided at all those locations where pins are subjected to horizontal tension. Bridling type V Cross arms for such installations shall be used by the agency accordingly.

1.6 Road Crossing

At all road crossings, the poles shall be fitted with horizontally aligned disc type tension insulator string(s) or bridling V-cross arm supports using double pin insulator per phase depending on the type of poles and line but the ground clearance at the roads under maximum temperature and in still air shall be such that it should not fall below 6.1m in case of 33 KV and 11 KV lines. Also, cradle guarding is to be used at all the road crossing locations as per drawings / specifications enclosed.

1.7 Railways Crossings

Railway Crossings at pre-planned locality shall be selected in such a way that minimum feeder length shall be re-routed. The line crossing should be executed as per prevailing practices and approved drawings of railways. Railways crossing shall preferably be executed through underground cabling. Horizontal drill machine shall be used for this purpose. Required permission to block the Railways traffic and approval for railway crossing shall be arranged by the owner at his own cost. All liaison works shall be performed by turnkey contractor.

1.8 Telecommunication, LT or HT Line Crossing

The angle of crossing shall be as near 90 degrees as possible. However, deviation to the extent of 30 degree may be permitted under exceptionally difficult situations. Cradle guarding is to be used at all such crossing locations as per drawings / specifications enclosed.

1.9 Details En-route

All topographical details, permanent features, such as well, trees, building etc. 75 m on either side of the alignment shall be detailed on the profile plan.

1.10 Clearances - General

For the purpose of computing the vertical clearance of an over-head line, the maximum sag of any conductor shall be calculated on the basis of the maximum sag in still air and the maximum design temperature. Similarly, for the purpose of computing any horizontal clearance of an over-head line, the maximum deflection of any conductor shall be calculated on the basis of the wind pressure specified by the State Government under rule 76 (2) (a) [or may be taken as 35°, whichever is greater]. Following clearances shall be maintained by the contractor while executing the work:

- 1.10.1. CLEARANCE ABOVE GROUND OF THE LOWEST CONDUCTOR: No conductor of an over-head line, including service lines, erected across a street shall at any part thereof be at a height less than
- | | |
|--------------------------------------|------------|
| (a) For low and medium voltage lines | 5.8 metres |
| (b) For high voltage lines | 6.1 metres |
- 1.10.2. No conductor of an over-head line, including service, lines, erected along any street shall at any part thereof be at a height less than

a.	For low, medium and high voltage lines upto and including 11,000 volts, if bare -	4.6 metres
b.	For low, medium and high voltage lines Upto and including 11,000 volts, if insulated -	4.0 metres
c.	For high voltage lines above 11,000 volts -	5.2 metres

For extra-high voltage lines the clearance above ground shall not be less than 5.2 meters plus 0.3 meter for every 33,000 volts or part thereof by which the voltage of the line exceeds 33,000 volts:

Provided that the minimum clearance along or across any street shall not be less than 6.1 meters.

- 1.10.3. CLEARANCE FROM BUILDINGS OF LOW AND MEDIUM VOLTAGE LINES AND SERVICE LINES:

Where line is to cross over another line of the same voltage or lower voltage, pole with suitable extensions shall be used. Provisions to prevent the possibility of its coming into contact with other overhead lines shall be made in accordance with the latest CEA regulations (as amended from time to time). The contractor will required to under cross higher voltage lines by erecting gantries/suitable Rail Pole structures.

Where a low or medium voltage over-head line passes above or adjacent to or terminates on any building, the following minimum clearances from any accessible point, on the basis of maximum sag, shall be observed:-

- a) For any flat roof, open balcony, verandah roof and lean-to-roof
- When the line passes above the building a vertical clearance of 2.5 meters from the highest point; and
 - When he line passes adjacent to the building a horizontal clearance of 1.2 meters from the nearest point, and
- b) For pitched roof

- i. When the line passes above the building a vertical clearance of 2.5 meters immediately under the lines, and
- ii. When the line passes adjacent to the building a horizontal clearance of 1.2 meters.

The horizontal clearance shall be measured when the line is at a maximum deflection from the vertical due to wind pressure.

1.10.4. CLEARANCE FROM BUILDINGS OF HIGH AND EXTRA-HIGH VOLTAGE LINES:

Where a high or extra-high voltage over-head line passes above or adjacent to any building or part of building it shall have on the basis of maximum sag a vertical clearance above the highest part of a building immediately under such line, of not less than

(a)	For High Voltage Lines up to and including 33,000 volts	3.7 m
(b)	For Extra High Voltage Lines	3.7 m plus 0.3 m for every additional 33 KV or part thereof.

1.11 Electrical System Data

	<u>33 KV</u>	11KV
Nominal voltage	33 kV	11KV
Maximum system voltage	36 kV	12KV
BIL (Impulse)	170 kVp	75KV
Power frequency withstand voltage (wet)	75 kV (rms)	28KV
Minimum corona extinction voltage for condition (rms) phase to earth	Not less than 27 kV, 50 Hz ac system under Dry	
Radio interference voltage at one MHz for 27 kV (dry condition)	Not exceeding 1000 micro-volts	

1.12 Pole Location

In locating poles on lines, the following general principles should be kept in mind:-

1. Keep spans uniform in length as far as possible.
2. Locate to give horizontal grade.
3. By locating the poles on high places short poles can be used and will maintain proper ground clearance at the middle of the span. In extremely hilly or mountainous country, poles are located on ridges there by greatly increasing the spans without greatly increasing the pull on the conductor. This is possible because the sag can be made very large and will maintain the required ground clearance. Special attention should be given to the locations of poles, where the ground washes badly. Poles should not be placed along the edges of cuts at or embankment or along the banks of creeks of streams.

1.13 Construction

The construction of overhead-lines may be divided into the following parts:-

- (1) Pit marking, pit digging.
- (2) Erection of supports and concreting.

- (3) Providing of guys to supports.
- (4) Mounting cross-arms, pin and insulators, and pin binding.
- (5) Paying and stringing of the conductor.
- (6) Sagging and Tensioning of Conductors.
- (7) Crossings.
- (8) Guarding.
- (9) Earthing.
- (10) Testing and Commissioning.

1.14 Erection of DP Structure for Angle Locations

For angles of deviations more than 10 degree, DP structure may be erected. The pit digging should be done along the bisection of angle of deviation.

After the poles are erected, the horizontal/cross bracings should be fitted and the supports held in a vertical position with the help of temporary guys of Manila rope 20/25 mm dia.

Wherever space is not found sufficient to install double Pole structure, single pole cut point may be installed. The support so erected must be grouted.

1.15 Concreting

The concreting mixture of one cum 1:3:6 ratios would mean 1 part cement, 3 parts coarse sand and 6 part 40 mm aggregate size stones. It may be noted that while preparing the concrete mixture, large quantities of water should not be used as this would wash away cement and sand.

1.16 Providing Of Guys To Supports

Guys are installed at locations where terminal poles are erected at sectional cut points. These cut points may be in same alignment or at turn points. Guys are installed to nullify tension on supports resulted due to conductors tension. In spite of careful planning and alignment of line route, certain situations arise where the conductor tries to tilt the pole from its normal position due to abnormal wind pressure and deviation of alignment, etc. When these cases of strain arise, the pole is strengthened and kept in position by guys. One or more guys will have to be provided for all supports where there is unbalanced strain acting on the support, which may result in tilting/uprooting or breaking of the support.

Guys are braces fastened to the pole. In this work anchor type guy sets are to be used. These guys are provided at (i) angle locations (ii) dead end locations (iii) T - off points (iv) Steep gradient locations and (v) where the wind pressure is more than 50 kg / Sq.m.

The fixing of guys stays will involve (i) pit digging and fixing stay rod (ii) fastening guy wire to the support (iii) Tightening guy wire and fastening to the anchor. The marking of guy pit, digging and setting of anchor rod must be carefully carried out. The stay rod should be placed in a position so that the angle of rod with the vertical face of the pit is 30°/45° as the case may be.

Before start of erection of Stay sets, required concreting materials like Cement, Sand, Stone Chips and Construction water need to be made available near the pit.

G.I. stay wires of size 7/3.15 mm (10 SWG) & 7/4.00 mm (8 SWG), for 16 mm/20 mm stay rods respectively, are to be provided. 8.5 Kg. Stay Wire (7/4.00 mm) per Stay with 20 mm Stay rod for 33 KV line and 5.5 Kg. Stay Wire (7/ 3.15 mm) per Stay with 16 mm

Stay rod for 11 KV lines are to be used. For double pole structure (DP), four stays along the line, two in each direction and two stays along the bisection of the angle of deviation (or more) as required depending on the angle of deviation are to be provided. Hot dip galvanized stay sets are to be used. One stay to counter the angular deformation force shall be used.

After concreting, back filling and ramming must be done well and allowed 7 days to set. The free end of the guy wire/stay wire is passed through the eye of the anchor rod, bent back parallel to the main portion of the stay/guy and bound after inserting the G.I. thimble, where it bears on the anchor rod. If the guy wire proves to be hazardous, it should be protected with suitable asbestos pipe filled with concrete of about 2 m length above the ground level, painted with white and black strips so that, it may be visible at night. The turn buckle shall be mounted at the pole end of the stay and guy wire so fixed that the turn buckle is half way in the working position, thus giving the maximum movement for tightening or loosening.

1.17 Guy Strain Insulators

Guy insulators are placed to prevent the lower part of the Guy from becoming electrically energized by a contact of the upper part of the guy when the conductor snaps and falls on them or due to leakage. No guy insulator shall be located less than 2.6 m from the ground. Guy insulators are to be used in stay wires only. All stay conductors are to be provided with guy insulators as per following specifications.

11 KV line stay	Type C guy insulator (1 No)
33 KV line stay	Type C guy insulators (2Nos)

1.18 Fixing Of Cross-Arms

After the erection of supports and providing guys, the cross-arms are to be mounted on the support with necessary clamps, bolts and nuts. The practice of fixing the cross arms before the pole erection is also there. In case, the cross-arm is to be mounted after the pole is erected, the lineman should climb the pole with necessary tools. The cross-arm is then tied to a hand line and pulled up by the ground man through a pulley, till the cross-arm reaches the line man. The ground man should station himself on one side, so that if any material drops from the top of the pole, it may not strike him. All the materials should be lifted or lowered through the hand line, and should not be dropped.

1.19 Insulators And Bindings

Line conductors are electrically insulated from each other as well as from the pole by 'Insulators'. Following two type of insulators shall be used for the line insulation:

- (1) Pin type
- (2) Strain type

The pin type insulators will be used for straight stretch of line. The insulator and its pin should be mechanically strong enough to withstand the resultant force due to combined effect of wind pressure and weight of the conductor in the span.

The strain insulators are intended for use at terminal locations or dead end locations and where the angle of deviation of line is more than 10°. Strain insulators are also intending to use at major road crossing locations.

The pins for insulators are fixed in the holes provided in the cross-arms and the pole top brackets. The insulators are mounted in their places over the pins and tightened. In the case of strain or angle supports, where strain fittings are provided for this purpose, one

strap of the strain fittings is placed over the cross-arm before placing the bolt in the hole of cross-arms. The nut of the straps is so tightened that the strap can move freely in horizontal direction.

All HT/LT insulators shall be tested for insulation tests before installation on line. They shall be dipped into water for 24 hrs and then tested for insulation resistance tests at the stores. The insulators found fit in IR testing shall be sent to site for erection. 11KV na d33 KV insulators shall be tested by at-least 1 KV megger whereas LT insulators shall be tested by 500 Volts megger.

1.20 Conductor Erection

The main operations are:-

- (a) Transportation of Conductor to works site.
- (b) Paying and Stringing of Conductor
- (c) Jointing of Conductor
- (d) Tensioning and Sagging of Conductor

While transporting conductors drums to site, precautions are to be taken so that the conductor does not get damaged/injured. The drum could be mounted on cable drum support, which generally is made from crow-bar and wooden slippers for small size conductor drums. The direction of rotation of the drum has to be according to the mark in the drum so that the conductor could be drawn. While drawing the conductor, it should not rub causing damage. The conductor could be passed over poles on wooden or aluminum snatch block (pulley) mounted on the poles for this purpose.

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

The mid span jointing is done through compressions or if helical fittings are used the jointing could be done manually. After completing the jointing, tensioning operation could be commenced. The conductor is pulled through come-along clamps to stringing the conductor between the tension locations.

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

All the joints on the conductor and earth-wire shall be of the compression type, in accordance with the recommendations of the manufacturer, for which all necessary tools and equipment like compressors, dies, etc., shall be obtained by the Contractor. Each part of the joint shall be cleaned by wire brush till it is free of rust or dirt, etc., and be properly greased with anti-corrosive compound. If required and as recommended by the manufacturer, before the final compression is carried out with the compressors.

All the joints or splices shall be made at least 15 meters away from the pole. No joints or splices shall be made in spans crossing over main roads, railways and small river spans. Not more than one joint per sub-conductor per span shall be allowed. The compression type fittings shall be of the self-centering type or care shall be taken to mark the conductors to indicate when the fitting is centered properly. During compression or splicing operation, the conductor shall be handled in such a manner as to prevent lateral or vertical bearing against the dies. After compressing the joint, the aluminum sleeve shall have all corners rounded; burrs and sharp edges removed and smoothened.

During stringing of conductor to avoid any damage to the joint, the contractor shall use a suitable protector for mid span compression joints in case they are to be passed over pulley blocks / aerail rollers. The pulley groove size shall be such that the joint along with protection can be passed over it smoothly.

1.21 Tensioning and Sagging Operations

The tensioning and sagging shall be done in accordance with the approved stringing charts or sag tables. The "initial" stringing chart shall be used for the conductor and "final" stringing chart for the earth-wire. The conductors shall be pulled up to the desired sag and left in running blocks for at least one hour after which the sag shall be rechecked and adjusted, if necessary, before transferring the conductors from the running blocks to the suspension clamps. The conductor shall be clamped within 36 hours of sagging in.

The sag will be checked in the first and the last section span for sections up to eight spans and in one additional intermediate span for sections with more than eight spans. The sag shall also be checked when the conductors have been drawn up and transferred from running blocks to the insulator clamps.

At sharp vertical angles, conductor and earth-wire sags and tensions shall be checked for equality on both sides of the angle and running block. The suspension insulator assemblies will normally assume verticality when the conductor is clamped.

Tensioning and sagging operations shall be carried out in calm weather when rapid changes in temperature are not likely to occur.

1.22 Clipping In

Clipping of the conductors into position shall be done in accordance with the manufacturer's recommendations. Jumpers at section and angle towers shall be formed to parabolic shape to ensure maximum clearance requirements. Fasteners in all fittings and accessories shall be secured in position. The security clip shall be properly opened and sprung into position.

1.23 Fixing of Conductors and Earthwire Accessories

Conductor and earth-wire accessories supplied by the Contractor shall be installed by the Contractor as per the design requirements and manufacturer's instruction within 24hours of the conductor / earth-wire clamping. While installing the conductor and earth-wire accessories, proper care shall be taken to ensure that the surfaces are clean and smooth and that no damage occurs to any part of the accessories or of the conductors.

1.24 Replacement

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

Sagging of conductor has to be in accordance to the Sag Tension chart. In order to achieve it, it is preferred to pull the conductor to a tension a little above the theoretical value so that while transferring it from the snatch blocks to the pit insulators and to take care of temperature variation. Proper sag could achieve. Sagging for 33/11 KV line is mostly done by "Sighting". A horizontal strip of wood is fixed below the cross-arm on the pole at the required sag. The lineman sees from other end and the sag is adjusted by increasing or decreasing the tension. The tension clamps could then be finally fixed and

conductor be fixed on pin-insulators. All fittings, accessories like guys, cross-arms, etc., could be checked as they should not have de-formalities.

The maximum permissible spans for all the lines of 33/11/0.4 KV are prescribed according to the design of the supports. Sag-tension charts for these conductors are to be followed.

1.25 Tying Of Conductor On Pin Insulators

Conductors should occupy such a position on the insulator as will produce minimum strain on the tie wire. The function of the wire is only to hold the conductor, in place on the insulator, leaving the insulator and pin to take the strain of the conductor.

In straight line, the best practice is to use a top groove insulator. These insulators will carry grooves on the side as well. When the conductor is placed on the top groove, the tie wire serves only to keep the conductor from slipping out.

On corners and angles (below 5 degree deviations) the conductors should be placed on the outside of the insulators. On the far side of the pole, this pulls the conductor against the insulator instead of away from the insulator.

1.26 Kind And Size Of Tie Wire To Be Used

Helically formed fittings are to be used for tying the insulators, end terminal connectors etc.. The tie should always be made of soft annealed wire so that it may not be brittle and injure the line conductor. A tie wire should never be used for second time. Specifications of helically formed fittings are given in this section.

1.27 Rules Of Good Tying Practice

- a. Use only helically formed fittings.
- b. Use of size of tie wire which can be readily handled yet one which will provide adequate strength.
- c. Use length of tie wire sufficient for making the complete tie, including an allowance for gripping with the hands. The extra length should be cut from each end if the tie is completed.
- d. A good tie should
 - (a) Provide a secure binding between line wire insulator and tie wire.
 - (b) Have positive contacts between the line wire and the tie wire so as to avoid any chattering of the contacts.
 - (c) Re-enforce line wire in the vicinity of insulator.
- e. Apply without use of pliers.
- f. Do not use the wire which has been previously used.
- g. Do not use hard drawn wires for typing.

1.28 Conductors At Different Voltages On Same Supports

In urban area, lines are to be erected with provision for forming lines of two different gradients as under

- a) 11 KV Line and LT Lines
- b) 33 KV Line and LT Lines

Where conductors forming parts of systems at different voltages are erected on the same supports, the contractor shall make adequate provision to guard against danger to

linesmen and others from the lower voltage system being charged above its normal working voltage by leakage from or contact with the higher voltage system; and the methods of construction and the clearances between the conductors of the two systems shall be as described in the specifications.

The agency shall be intimated by the Project Manager in writing about the locations where such provisions is intended by him. At all such locations, the contractor shall make adequate provision to guard against danger to linesmen and others from the lower voltage system being charged above its normal working voltage by leakage from or contact with the higher voltage system.

1.29 Earthing

Earthing shall generally be carried out in accordance with the requirements of latest CEA regulations (as amended from time to time) and the relevant regulations of the Electricity Supply Authority concerned and as indicated below:

- a) All metallic supports shall be earthed.
- b) For PCC poles the metal cross-arms and insulator pins shall be bonded and earthed at every pole for HT lines.
- c) All special structures on which switches, transformers, fuses, etc., are mounted / likely to mount should be earthed.
- d) The supports on either side of the road, railway or river crossing should be earthed.
- e) All supports (Steel & PCC) HT lines passing through inhabited areas, road crossings and along such other places, where Earthing of all poles is considered desirable from safety considerations should be earthed.
- f) In special locations and special structures, road crossings etc., pipe/rod Earthing should be done on either side of the construction.
- g) At other locations the coil Earthing may be adopted. The coil Earthing consists of 10 m length of 8 SWG. G.I. wire compressed into a coil 450 mm length and 50 mm dia and buried 1500 mm deep as per REC standard J-1.

Following shall be the earthing requirements:

No	Description	Type of Earthing
1	Single Pole - PCC/RS Joist/steel tubular	1 No. Coil/Spike Earthing at each SP
2	Double pole - PCC/RS Joist/steel tubular	2 Nos. Coil/Spike Earthing at each DP
3	Substation Poles structure - PCC/RS Joist/steel tubular	GI Pipe Earthing 3 Nos
4	Road crossing	GI Pipe earthing on either side one each
5	Telephone line crossing	GI Pipe earthing on either side one each
6	DP with Isolating switch	Coil/Spike earthing 2 Nos and GI Pipe earthing 1 No

1.30 Anti-Climbing Devices

In order to prevent unauthorized persons from climbing any of the supports of HT lines without the aid of a ladder or special appliance, certain anti-climbing devices are provided

to the supports. Barbed wire binding is to be adopted for this purpose at a distance of 30 to 40 cm at a height of 3.5 to 4 m from ground level. The barbed wire shall conform to IS – 278 (Grade A1). The barbed wire shall be given chromatin dip as per procedure laid down in IS: 1340. At-least 3.5 kgs barbed wire is to be used per pole for the purpose.

1.31 Testing And Commissioning

When the line is ready for energisation, it should be thoroughly inspected in respect of the following:-

- a) Poles-Proper alignment, concerting and muffing.
- b) Cross-arms – Proper alignment.
- c) Finishing of fabricated steel items used.
- d) Insulators – Proper finish, cleanliness, insulation resistance.
- e) Binding, clamps and jumpers – To check whether these are in reach.
- f) Conductor and earth wire – Proper sag to check whether there are any cuts, etc.
- g) Guys: To check whether the Guy wire is tight and whether the Guy insulators are in tact.
- h) Earthing System: To check whether the earthing connections of supports and fittings are intact. Measure earth resistance with earth tester.

After the visual inspection is over and satisfied, the conductor is tested for continuity/ground, by means of megger. At the time of testing through megger person should not climb on the pole or touch the guarding, conductor, guy wire etc.

- a. Before charging any new line, it should be ensured that the required inspection fee for the new line is paid to the Electrical Inspector and approval obtained from him for charging the line.
- b. The line should be energized before the officer who has been authorized by the Project Manager in this regard.
- c. Before energizing any new line, the contractor of the line shall notify to the workmen that the line is being energized and that it will no longer be safe to work on line. Acknowledgement of all the workmen in writing should be taken in token of having intimated them.
- d. Wide publicity by Tom-toming should be arranged in all the localities through which the line, that is to be energized passes, intimating the time and date of energizing and warning public against the risk in meddling with the line.
- e. The Officer-in-charge of the line shall personally satisfy himself that the same is in a fit state to be energized.

1.32 River Crossing

No special structures are to be erected for this work. River crossing more than normal span of poles are not considered under the package. For small rivers etc., data for the highest flood-level should be obtained for previous years. The structures should be located at such places that they should be approached under flood condition. Normal DP structures are to be used for such crossings on approval of Project Manager.

In case of river crossing with longer span, special designed structures are to be used for the purpose.

1.33 Guarding

Guarding is to be provided for the lines, so that a live conductor, when accidentally broken, is prevented to come in contact with other electric lines, telephone or telegraph lines, roads, and persons or animals and carriages moving along the road, by providing a sort of cradle below the main electric line.

Guarding is not required for crossings of 66 KV and higher voltage lines where the transmission line is protected by fast acting relay operated circuit breaker of modern design with a tripping time of the order of 0.25 sec. from occurrence of fault to its clearance. For all other crossings, guarding is essential for all telecommunication lines and major road crossing.

The guarding shall consist of GI guard cross arm of length 2.5 mtrs made out of 65x65x6 mm angle & shall be hot dipped galvanized generally conforming to IS : 2633/72. The clamps shall also be hot dipped galvanized generally conforming to IS: 2633/72 & suitable for 13 m 52 kgs/m rail pole & for 8.0 meters long RCC poles. Guarding shall be erected with ground & line clearances as per the I.E. rules. Cradle guard wire should be of 8 SWG GI Wire provided with lashing of 10 SWG GI wire at a distance of 2 m along the length of the guarding. Tension clamps, threaded eye bolts, turn buckles, thimble, tying wires and hardware are as per specified in the specifications. A sketch showing arrangement of guarding at road crossing is enclosed with tender drawing.

The minimum height between any guard wires and live crossing conductor shall not be less than 1.5 m in case of a railway crossing.

1.34 Repair to conductors

The conductor shall be continuously observed for loose or broken strands or any other damage during the running out operations. Repair to conductors, if necessary, shall be carried out with repair sleeves. Repairing of the conductor surface shall be carried out only in case of minor damage, scuff marks, etc. The final conductor surface shall be clean, smooth and free from projections, sharp points, cuts, abrasions, etc. The Contractor shall be entirely responsible for any damage to the poles during stringing.

1.35 LT Lines and Service connection

- 1.35.1. The LT line shall be erected of single phase or three phase arrangements through AB Cable depending on site requirements. Every 6th pole of LT line shall be earthed with GI spike/GI Coil as per specifications.
- 1.35.2. In all those locations where LT AB cable is to be erected on the same support in which 11KV or 33KV line is also erected, proper isolation is to be maintained.
- 1.35.3. All single phase service connections released under the DDUGJY/IPDS schemes shall be provided with one earth point near the energy meter. This point is connected with the proper earthing system through GI wires. 10mm diameter earth knob in form of bolt and nut is to be installed on energy meter board. This earth point is to be maintained by service providing Distribution Company after installation and energisation. In up-stream network, this earth point is to be connected with earth point.
- 1.35.4. Service connection is to be issued on proper surveying of the location so that excessive erection of LT line or 11 KV line may be avoided. The service wire is to be hanged on supportive GI wire between pole support and the house. Before installing service wires and GI wire, GI pipe on the consumer premises is to be erected using clamps/ nails/proper

binding etc. In case of hut or poor structure at consumer premises, GI pipe is to clamp on wooden planks/wooden structure existing in the house. The GI pipe should be supported for neutralizing tension by means of GI tie wire support. In pukka/brickwork/cement concrete foundations, house, GI support pipe is to be clamped by means of MS clips.

- 1.35.5. The consumer meter shall be installed at the premises of consumers at suitable height and at place which is not in direct approach of sun-light and rain water. Meters should be installed under the covering shade.

STANDARD BIDDING DOCUMENT

(TURNKEY CONTRACT)

FOR

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

VOLUME-II

(PMS, QUALITY ASSURANCE & EVALUATION MECHANISM, BID FORMS AND PRICE SCHEDULES)

- Section-I :** PMS, Quality Assurance & Evaluation Mechanism (QAM), Documentation & PMA
- Section-II :** Bid Forms
- Section-III :** Price Schedules

Tender Specification No.: No. RECPDCL/TECH/JKPDD/e-Tender/2017-18/1763 Dated:

21.08.2017

VOLUME-II: SECTION – I

PROJECT MANAGEMENT SYSTEM

(PMS),

QUALITY ASSURANCE &

EVALUATION MECHANISM (QAM),

DOCUMENTATION & PMA

PROJECT MANAGEMENT SYSTEM, QUALITY ASSURANCE AND DOCUMENTATION

This section describes the project management system, quality assurance and documentation requirements for the project.

1. Project Management System

1.1. General

The Contractor shall assign a project manager with the authority to make commitments and decisions that are binding on the Contractor. Employer will designate a project manager to coordinate all employer project related activities. All communications between employer and the Contractor shall be coordinated through the project managers. The project managers shall also be assisting employer in communicating project related information to other stake holders.

Bidder shall submit the manpower deployment plan along with the bids, describing the key roles of each person.

The role and responsibilities of contractor shall be as follows:

- a) To prepare, maintain and update project detailed Work Execution Plan for successful implementation of project like approval of GTP, approval of sub-contractor, approval of drawings, supply of materials, mobilization of men, material and equipment etc. at site for successful completion of works, Compile and up-load physical as well as financial progresses, compile the progress of works at Employer level and to assist in forwarding it to all stake holders.
- b) To actively participate with employer in resolving all issues relating to project implementation including ROW, Forest Clearances, Railway Crossings, and Payments to contractors/vendors and policy matters.
- c) To actively participate in monitoring, reviewing and analysing the physical, financial and quality assurances works' progress of PMDP/IPDS/DDUGJY works and also to take suitable measures on compliance of observations being raised during monitoring/review meetings with employer.
- d) To implement and maintain a dedicated centralized bank account for the project, upload and up-date project wise physical progress in PMDP/IPDS/DDUGJY web portal. Physical as well as financial progresses shall be uploaded in standard Bill of Material format of the contract. Also, to submit claims as per release PMDP/IPDS/DDUGJY guidelines to Employer for release of payments/funds.
- e) To oversee the progress and compliance of the Quality Assurance Mechanism as per PMDP/IPDS/DDUGJY guidelines.

1.2. Project Schedule

As per the schedule the bidder shall submit a preliminary implementation plan along with the bid. The detailed project implementation schedule shall be submitted by the contractor after the award for employer's approval, which shall include at least the following activities:

- (a) Surveying of site.
- (b) Documents submission and approval schedule
- (c) Type Testing Schedule
- (d) Dispatch Schedule
- (e) Installation & commissioning schedule
- (f) Training schedule, if any.

The project schedule shall include the estimated period for completion of project and its linkage with other activities.

1.3. **Progress Report**

A progress report shall be prepared by the Contractor each month against the activities listed in the project schedule. The report shall be made available to employer on a monthly basis, e.g., the 10th of each month. The progress report shall include all the completed, ongoing and scheduled activities.

1.4. **Transmittals**

Every document, letter, progress report, change order, and any other written transmissions exchanged between the Contractor and employer shall be assigned a unique transmittal number. The Contractor shall maintain a correspondence index and assign transmittal numbers consecutively for all Contractor documents. Employer will maintain a similar correspondence numbering scheme identifying documents and correspondence that employer initiates.

2. **Quality Assurance and Evaluation Mechanism**

The Project Implementation Agency (PIA) shall be solely responsible & accountable for assuring quality in **PRIME MINISTER'S DEVELOPMENT PACKAGE (PMDP)** works. Project Implementing Agency (PIA) shall formulate a detailed comprehensive Quality Assurance (QA) plan for the works to be carried out under PMDP scheme with an objective to create quality infrastructure works. The QA and Inspection Plan shall be integral part of the contract agreement with turnkey contractor or equipment supplier and erection agency as the case may be in case of turnkey/ or departmental execution of works. PIA has to ensure that the quality of materials/equipment supplied at site and execution of works carried out at field under PMDP scheme is in accordance to Manufacturing Quality Plan (MQP)/Guaranteed Technical Particulars (GTP) and Field Quality Plan (FQP)/Approved Drawings/Data Sheets respectively.

2.1. **Quality checks to be ensured by PIA/Turnkey Contractor:**

PIA & Turnkey Contractor shall strictly ensure QA checks during the day to day course of project execution, which are as follows:

- a. 100% pre-dispatch inspections of all materials viz. as per MQP/ Approved Drawings/ Technical Specifications/Datasheet/GTP/applicable national & international standards.
- b. 100% villages with all infrastructures are to be verified for quality as per MQP/Datasheet/GTP/ Approved Drawings/Technical Specifications and FQP.
- c. 100% of all 66/11 or 33/11 kV sub stations (New & Augmented) for quality of material as per MQP/Approved Drawings/Technical Specifications/Datasheet/GTP and erection works in the field as per FQP/approved survey drawings/layout.
- d. 100% verification of BPL HHs connections released.
- e. 100% verifications feeders created under the scheme.
- f. 100% verification of materials utilised under the scheme.
- g. 100% verification of works done in Metering, SAGY & System Strengthening.

Also, PIA & Turnkey Contractor have to carry out quality assurance of village electrification and substation works as per the checklist provided at Annexure-A.

- 2.1.1. **Vendor approval:** All the materials procured for PMDP works shall be purchased from the authorised vendors approved by their Quality Assurance Department of PIA. Approved vendors list is to be uploaded periodically (monthly) on the PIA web portal.

New vendors/suppliers may be approved by PIAs, provided capability of manufacturer's is assessed suitably by visiting the factory premises and checking the testing facility available before accepting it as approved vendor. If required, State Electricity Board/Power Department/ Distribution Companies may adopt vendors already approved by CPSUs.

- 2.1.2. **Material Inspection:** All six materials of 33/11kV or 66/11kV substations and materials required for Village Electrification shall be inspected at manufacturer works/premises before dispatch at site. The materials to be used under the scheme shall be as per Technical Specification attached with Standard Bidding Document of PMDP scheme or as per latest relevant Indian Standards/approved Datasheet/drawings/GTP/MQP.

Note: PIA to perform one stage inspection of Power/Distribution transformer for each manufacturer.

- 2.1.3. **FQP for Civil works:** PIA shall prepare a separate FQP for civil works supported with drawings which shall be approved by their competent authority which shall be uploaded at web portal. The turnkey contractor shall adhere to this FQP while carrying out physical works.
- 2.1.4. **FQP for testing & commissioning:** PIA shall prepare a comprehensive FQP for testing & commissioning of 33/11kV or 66/11kV substation, Distribution transformer Substation etc. as well as infrastructure created during electrification of villages/habitations. The electrical system shall be energized only after performing all tests as described in the FQP. Proper records in this regard, including tests on earth resistance, insulation resistance of 11 kV line & Distribution Transformer etc. shall be maintained, jointly signed by PIA and turnkey contractor representatives.
- 2.1.5. **QA documentation:** All the quality assurance checks shall be conducted in the field as per approved Field Quality Plan(FQP) and shall be documented properly and signed by the quality engineer of the turnkey contractor & countersigned by PIA's representative and shall be kept for future reference. These documents shall be maintained by PIAs in proper order and shall be made available at site for verification by Quality Monitors during inspection.

2.2. **Quality Assurance Mechanism to be envisaged by PFC/REC/MoP for PMDP Projects**

PMDP Projects shall have a single tier Quality Assurance Mechanism (QAM). The single tier QAM shall exclude the in-house process quality checks followed by the Project Implementation Agency (PIA) during the physical execution of the project.

PFC, the nodal agency for the PMDP scheme shall operate for Quality Assurance Mechanism. REC shall designate a senior officer (ZM/CPM of the state) as REC State Quality Assurance Coordinator (RSQAC) at its State level Zonal/Project office. REC corporate office shall designate a senior officer not below the level of AGM/GM as RQAC.

Under this mechanism, *RQM shall oversee the compliance of PMDP guidelines*, adherence to system procedures etc. shall be verified by an independent inspecting agency.

REC shall outsource independent agency(ies) designated as REC Quality Monitors (RQM) to ensure quality of materials procured and shall also verify quality of works carried out under the PMDP scheme. RQM shall carry out pre-dispatch inspection of six materials randomly in a single lot containing minimum 10% materials at manufacturer works. RQM shall also verify quality of works carried out in the Project, which are as follows:

- 100% of the Un-electrified and 10% of Intensive Electrified villages where electrification works has been carried out excluding SAGY villages,
(Note: Villages includes Habitations/Dhani/Majra/Tolas/Thandas etc.)
- 10% of Feeders created under Feeder Separation,
- 1% Consumer Meters & 10% of Industrial/Commercial Meters or 3-Phase Distribution Transformer Meters,
- 100% works carried out in Sansad Adarsh Gram Yojana (SAGY) ,
- 100% of new substations (66/11 or 33/11kV),
- 25% of augmented substations (66/11 or 33/11kV),

- 2.2.1. **Material Inspection:** Six important materials of 33/11kV or 66/11kV substation including materials to be used for village electrification shall be inspected at manufacturer premises before dispatch.

2.2.1.1. **Inspection of substation materials:** Following materials have been identified as important materials for 33/11 or 66/11kV Substation:

- i. Power Transformer,
- ii. Circuit Breaker,
- iii. Insulators,
- iv. Cables
- v. Conductor
- vi. Control & Relay Panel,

2.2.1.2. **Inspection of Village Electrification Materials:** The materials which have been identified for pre-dispatch inspection at manufacture premises is as follows:

- i. Distribution Transformer,
- ii. Overhead Conductor,
- iii. Energy Meter,
- iv. Pole,
- v. Insulators,
- vi. Cables,

At least one type from each of the aforesaid 6 (six) materials to be utilized in substations and villages' electrification shall be inspected by the RQM as per MQP. The inspection/testing/witnessing of acceptance tests shall be as per approved Drawings/Technical Specifications/Datasheet/GTP/ and applicable national & international standard.

2.2.1.3. **Sampling from field:** Any material, including materials listed below, may be picked from site for testing at test laboratory chosen by inspecting official.

- i. Distribution Transformer,
- ii. Overhead Conductor,
- iii. Energy Meter,
- iv. Pole,
- v. Insulators,
- vi. Cables,
- vii. Circuit Breaker

All expenditures that shall incurred towards packing, transport, inspection, testing charges etc. are to be borne by the PIA.

2.2.2. Villages' inspections are to be done as per approved FQP/Drawings/Technical Specifications/Datasheet/survey report. The villages inspection that shall be carried out by REC Quality Monitors, which are as hereunder:

2.2.2.1. 100% Un-Electrified (UE) and 10% of Intensive Electrified (IE) villages are to be inspected in 2 (two) stages including SAGY villages. Stage-I & Stage-II inspections shall cover 50%UE & 5% of IE villages respectively.

2.2.2.2. **Stage-I** inspection of RQM shall commence in a project when 50% of UE & 30% of IE villages are completed in all respect. Five (5) nos. of villages in a project are to be thoroughly inspected at the very beginning when the same is completed in a project. *These villages after rectification of defects will become modal quality village. The findings of inspection of these five villages shall be used as training resource and necessary improvement in Quality Assurance.*

2.2.2.3. **Stage-II** inspection of RQM shall commence and end in a project when 100 % of UE & 70% of IE villages are completed in all respect.

2.2.2.4. (a) Inspection of 100% new (33/11 or 66/11 kV) substation for quality works as per FQP.

(b) Inspection of 25% augmented (33/11 or 66/11 kV) substation for quality works as per FQP.

2.2.3. Inspection of 100% works carried out in Sansad Adarsh Gram Yojana(SAGY) including HT Lines, LT lines, Distribution Transformer Substation, BPL HHS connection released or any other works not stated herein but have been carried out under the scheme in that village(s).

2.2.4. In 100% UE & 10% IE villages of the project; 100% verification of BPL connections, 100% of Distribution Transformer Substations, 1km(for hilly areas)/2km (for plain areas) of 33kV Lines, 100% verification of LT Lines and 100% of the 11KV lines attributed to the village (emanating from cut-point/grid substation) as well as the 11 KV line laid within the village, verification of village energisation & BPL beneficiaries, installation of service connections in public places, hours of supply in the village, time taken by DISCOM to raise first energy bill in favor of beneficiaries.

2.2.5. REC Quality Monitor shall also oversee the Contract Management Part of PIA like adherence to Standard Bidding Document, PMA appointment, adherence to Quality Assurance Mechanism of PMDP scheme, Contractual provisions pertaining to defects identification and rectification, resolution of project related issues and action on delayed project. In their visit, RQM would give thrust on adherence on systems and procedures of PMDP schemes by PIA and turnkey contractors during project implementation. Also, RQM would ensure availability and awareness of project specific drawings, documents, quality assurance plans among all stake holders in PIA contractor staff/workers.

2.2.6. REC Quality Monitors shall oversee the progress of up-loading of monitoring observations raised by inspectors during inspection and submission of compliance by PIA with supporting site photographs details in PMDP web portal.

2.3. GENERAL

2.3.1. To ensure that the equipment and services under the scope of this Contract whether manufactured or performed within the Contractor's Works or at his Sub-contractor's premises or at the Employer's site or at any other place of Work are in accordance with the specifications, the Contractor shall adopt suitable quality assurance programme to control such activities at all points necessary. Such programme shall be broadly outlined by the contractor and finalized after discussions before the award of contract. The detailed programme shall be submitted by contractor after the award of contract and finally accepted by the Employer after discussions. A quality assurance programme of the contractor shall generally cover the following:

- a) His organization structure for the management and implementation of the proposed quality assurance programme :
- b) Documentation control system;
- c) Qualification data for bidder's key personnel;
- d) The procedure for purchases of materials, parts components and selection of sub-Contractor's services including vendor analysis, source inspection, incoming raw material inspection, verification of material purchases etc.
- e) System for shop manufacturing and site erection controls including process controls and fabrication and assembly control;
- f) Control of non-conforming items and system for corrective actions;
- g) Inspection and test procedure both for manufacture and field activities.
- h) Control of calibration and testing of measuring instruments and field activities;
- i) System for indication and appraisal of inspection status;
- j) System for quality audits;
- k) System for authorizing release of manufactured product to the Employer.

- l) System for maintenance of records;
- m) System for handling storage and delivery; and
- n) A manufacturing quality plan detailing out the specific quality control measures and procedures adopted for controlling the quality characteristics relevant to each item of equipment furnished and/or services rendered.
- o) A Field quality Plan covering field activities

2.3.2. The manufacturing & Field quality Plans shall be mutually discussed and approved by the Employer after incorporating necessary corrections by the Contractor as may be required.

2.3.3. The Employer or his duly authorized representative reserves the right to carry out quality audit and quality surveillance of the system and procedure of the Contractor/his vendor's quality management and control activities.

2.3.4. The Contractor would be required to submit all the Quality Assurance documents as stipulated in the Quality Plan at the time of Employer's Inspection of equipment/material.

2.4. TYPE & ACCEPTANCE TESTS

The following type, acceptance and routine tests and tests during manufacture shall be carried-out on the material. For the purpose of this clause:

2.4.1. Contractor shall supply the materials of type & design which has already been Type Tested. Contractor shall provide copy of such tests at site in support of type-tested materials supplied under the contract. No extra payment or time shall be granted for type testing of materials. In exceptional case to case basis, employer will decide to permit type testing of material at contractor's cost.

2.4.1.1. Acceptance Tests shall mean those tests which are to be carried out on samples taken from each lot offered for pre-dispatch inspection, for the purposes of acceptance of that lot.

2.4.1.2. Routine Tests shall mean those tests, which are to be carried out on the material/equipment to check requirements which are likely to vary during production.

2.4.1.3. Tests during Manufacture shall mean those tests, which are to be carried out during the process of manufacture and end inspection by the Contractor to ensure the desired quality of the end product to be supplied by him.

2.4.1.4. The norms and procedure of sampling for these tests will be as per the Quality Assurance Programme to be mutually agreed to by the Contractor and the Owner.

2.4.1.5. The standards and norms to which these tests will be carried out are listed against them. Where a particular test is a specific requirement of this Specification, the norms and procedure of the tests shall be as per IS/IEC Standard this specification or as mutually agreed to between the Contractor and the Owner in the Quality Assurance Programme.

2.4.1.6. For all type test and acceptance tests, the acceptance values shall be the values specified in this Specification, Approved Quality Plan or guaranteed by the Bidder, as applicable.

2.5. TYPE TESTING, INSPECTION, TESTING & INSPECTION CERTIFICATE

2.5.1. All equipment being supplied shall conform to type tests including additional type tests, if any as per technical specification and shall be subject to routine tests in accordance with requirements stipulated under respective sections. Employer reserves the right to witness any or all the type tests. The Contractor shall intimate the Employer the detailed program about the tests at least three (3) weeks in advance in case of domestic supplies & six (6) weeks in advance in case of foreign supplies.

- 2.5.2. The reports for all type tests and additional type tests as per technical specification shall be furnished by the Contractor alongwith equipment/material drawings. The type tests conducted earlier should have either been conducted in accredited laboratory (accredited based on ISO/IEC Guide 25/17025 or EN 45001 by the national accreditation body of the country where laboratory is located) or witnessed by the representative(s) of Employer or Utility. The test-reports submitted shall be of the tests conducted within last 10 (ten) years prior to the date of bid opening. In case the test reports are of the test conducted earlier than 10 (ten) years prior to the date of bid opening, the contractor shall repeat these test(s) at no extra cost to the Employer
- 2.5.3. In the event of any discrepancy in the test reports i.e. any test report not acceptable due to any design/manufacturing changes (including substitution of components) or due to non-compliance with the requirement stipulated in the Technical Specification or any/all additional type tests not carried out, same shall be carried out without any additional cost implication to the Employer.
- 2.5.4. The Employer, his duly authorized representative and/or outside inspection agency acting on behalf of the Employer shall have at all reasonable times free access to the Contractor's/sub-vendors premises or Works and shall have the power at all reasonable times to inspect and examine the materials and workmanship of the Works during its manufacture or erection if part of the Works is being manufactured or assembled at other premises or works, the Contractor shall obtain for the Engineer and for his duly authorized representative permission to inspect as if the works were manufactured or assembled on the Contractor's own premises or works. Inspection may be made at any stage of manufacture, dispatch or at site at the option of the Employer and the equipment if found unsatisfactory due to bad workmanship or quality, material is liable to be rejected.
- 2.5.5. The Contractor shall give the Employer/Inspector ten (10) days written notice of any material being ready for joint testing including contractor and Employer. Such tests shall be to the Contractor's account except for the expenses of the Inspector. The Employer/Inspector, unless witnessing of the tests is virtually waived, will attend such tests within thirty (30) days of the date of which the equipment is notified as being ready for test /inspection, failing which the Contractor may proceed alone with the test which shall be deemed to have been made in the Inspector's presence and he shall forthwith forward to the Inspector duly certified copies of tests in triplicate.
- 2.5.6. The Employer or Inspector shall, within fifteen (15) days from the date of inspection as defined herein give notice in writing to the Contractor, of any objection to any drawings and all or any equipment and workmanship which in his opinion is not in accordance with the Contract. The Contractor shall give due consideration to such objections and shall either make the modifications that may be necessary to meet the said objections or shall confirm in writing to the Employer/Inspector giving reasons therein, that no modifications are necessary to comply with the Contract. If any modification is made on the equipment on the basis of test results not in conformity with the contract, the modified equipment shall be subject to same sequence of test again without any additional cost to Employer.
- 2.5.7. When the factory tests have been completed at the Contractor's or Sub-Contractor's works, the Employer/Inspector shall issue a certificate to this effect within fifteen (15) days after completion of tests but if the tests are not witnessed by the Employer/Inspector, the certificate shall be issued within fifteen (15) days of receipt of the Contractor's Test certificate by the Engineer/Inspector. Failure of the Employer/Inspector to issue such a certificate shall not prevent the Contractor from proceeding with the Works. The completion of these tests or the issue of the certificate shall not bind the Employer to accept the equipment should, it, on further tests after erection, be found not to comply with the Contract. The equipment shall be dispatched to site only after approval of test reports and issuance of dispatch instruction by the Employer.
- 2.5.8. In all cases where the Contract provides for tests whether at the premises or at the works of the Contractor or of any Sub-Contractor, the Contractor except where otherwise specified shall provide free of charge such items as labour, materials, electricity, fuel, water, stores, apparatus and instruments as may be reasonably

demand by the Employer/Inspector or his authorized representative to carry out effectively such tests of the equipment in accordance with the Contract and shall give facilities to the Employer/Inspector or to his authorized representative to accomplish testing.

2.5.9. The inspection by Employer and issue of Inspection Certificate thereon shall in no way limit the liabilities and responsibilities of the Contractor in respect of the agreed quality assurance programme forming a part of the Contract.

2.5.10. The Employer will have the right of having at his own expenses any other test(s) of reasonable nature carried out at Contractor's premises or at site or in any other place in addition of aforesaid type and routine tests, to satisfy that the material comply with the specification.

2.5.11. The Employer reserves the right for getting any field tests not specified in respective sections of the technical specification conducted on the completely assembled equipment at site. The testing equipment for these tests shall be provided by the Employer.

2.5.12. The Employer intends that type tests and additional type tests are conducted on Power/Distribution Transformers, Pin & Disc Insulators, 33 kV/11 kV LT AB cables, Conductors, 66 kV / 33 kV & 11 kV Vacuum circuit breaker, Battery Charger and energy meter. The price of conducting type tests and additional type tests shall be included in Bid price.

2.5.13. In case the contractor opts to procure these items from more than one manufacturer, the type test shall be conducted in respect of all the manufactures. No type test / repeat type test charges shall be paid by owner.

2.5.14. Purchaser reserves the right to witness any or all the type tests.

2.6. PRE-COMMISSIONING TESTS

On completion of erection of the equipment and before charging, each item of the equipment shall be thoroughly cleaned and then inspected jointly by the Employer and the contractor for correctness and completeness of installation and acceptability for charging, leading to initial pre-commissioning tests at Site. The list of pre-commissioning tests to be performed is given in respective chapters or as included in the Contractor's quality assurance programme.

2.7. COMMISSIONING TESTS

All required instrumentation and control equipment will be used during such tests and the contractor will use all such measuring equipment and devices duly calibrated as far as practicable. However, the Contractor, for the requirement of these tests, shall take immeasurable parameters into account in a reasonable manner. The tests will be conducted at the specified load points and as near the specified cycle condition as practicable. The contractor will apply proper corrections in calculation, to take into account conditions, which do not correspond to the specified conditions.

2.7.1. Any special equipment, tools and tackles required for the successful completion of the Commissioning tests shall be provided by the contractor, free of cost.

2.8. The specific tests to be conducted on equipment have been brought out in the respective chapters of the technical specification. However where the pre-commissioning tests have not been specified specifically they shall be as per relevant IS code of practice or as mutually agreed.

2.9. The Contractor shall be responsible for obtaining statutory clearances from the concerned authorities for commissioning and operation of the equipment including the Electrical Inspector. Necessary fee to perform these works shall be paid by Employer.

3. Documentation

3.1. GENERAL

- 3.1.1. To ensure that the proposed systems conform to the specific provisions and general intent of the Specification, the Contractor shall submit documentation describing the systems to employer for review and approval. The contractor shall obtain approval of employer for the relevant document at each stage before proceeding for manufacturing, system development, factory testing, site testing, training etc. The schedule for submission/approval of each document shall be finalised during the discussions before placement of the contract, this schedule shall be in line to overall project schedule.
- 3.1.2. Each document shall be identified by a Contractor document number, the employer document number, and the employer purchase order number. Where a document is revised for any reason, each revision shall be indicated by a number, date, and description in a revision block along with an indication of official approval by the Contractor's project manager. Each revision of a document shall highlight all changes made since the previous revision.
- 3.1.3. All technical description, specifications, literature, correspondence, prints, drawings, instruction manuals, test reports(both factory and at site), progress photographs, booklets, schedules and all supplementary data or documents furnished in compliance with the requirements of the Contract, shall become the property of the Employer and the costs shall be considered as included in the Contract price.
- 3.1.4. The Contractor shall be responsible for any time delay, misinterpretation, error and conflict during design, manufacturing, testing and erection of the Works resulting from non-compliance with the requirements of this Specification.
- 3.1.5. The Employer shall have the right to make copies of any documents, data, reports, information etc. supplied by the Contractor in connection with the Works. The Employer shall not impart the information of these documents to any other manufacturer or competitor but he shall be free to use these for preparation of technical papers, reports etc.
- 3.1.6. All documentation shall be in English language.

3.2. REQUIREMENTS FOR SUBMISSION OF DOCUMENTS, INFORMATION AND DATA BY THE CONTRACTOR

- 3.2.1. The Contractor shall submit to the Employer all documents in accordance with an approved schedule of submissions and shall submit any further information (in the form of drawings, documents, manuals, literature, reports etc.) when asked by the Employer while commenting/approving any drawings/documents etc.
- 3.2.2. The documents which are subject to the approval of the Employer shall be identified by the Contractor with the stamp "FOR APPROVAL". All other documents shall be submitted to the Employer for information and shall be identified by the Contractor with the stamp "FOR INFORMATION".
- 3.2.3. The sequence of submission of the documents shall be subject to the approval of the Employer. The sequence of submissions of all documents shall be such that the necessary information is available to enable the Employer to approve or comment the document.
- 3.2.4. The Contractor shall supply 4 hard copies of all drawings and documents.
- 3.2.5. In case a "SUBSEQUENT" revision of any document is made due to any reason whatsoever, a revision of the same, highlighting the changes shall be resubmitted for the Employer's specific approval/information.

3.3. DOCUMENTS FOR APPROVAL

- 3.3.1. The Employer shall be allowed fifteen (15) calendar days to approve the Contractor's submissions. The submissions for approval, shall be returned to the Contractor marked in one of the following ways :

Category I:	Approved
Category II:	Approved with Comments.
Category III:	Returned for correction.
Category IV :	For information

- 3.3.2. The first notations "I" or "II" shall be deemed to permit the Contractor to proceed with the work shown on the document, except in the case of notation "II" the work shall be done subject to the corrections indicated thereon and/or described in the letter of transmittal. The Contractor shall bear the full responsibility for proceeding with the Works prior to receipt of the release in notation "I" from the Employer.
- 3.3.3. In case of notation "II", the Contractor shall include the alterations required & resubmit the document within fifteen (15) days from date of Employer's letter of transmittal.
- 3.3.4. In case of notation "III", the Contractor shall include the alterations required and resubmit the document to the Employer, within fifteen (15) days, from date of letter of transmittal, so that such document can be returned with the notation "I" or "II".
- 3.3.5. It may also be noted that the approval/commenting by the Employer does not relieve the Contractor of any of his contractual obligations and his responsibilities for correctness of dimensions, materials, weights quantities or any other information contained therein, as well as the conformity of designs with Indian Statutory Laws and the Technical Specifications as may be applicable. The approval also does not limit the Employer's rights under the Contract.
- 3.3.6. The approved documents shall be considered as the working documents. However the Technical Specification and connected documents shall prevail over these documents in case a decision is required on interpretation.

3.4. DOCUMENTS FOR INFORMATION

The Contractor shall not delay the Works pending the receipt by the Contractor of the comments on documents submitted to the Employer for information. However, the Employer shall have the right to comment on all the documents submitted by the Contractor, when, in the opinion of the Employer the document does not comply with the Contract or otherwise. The Contractor shall satisfactorily demonstrate that the information contained in the aforesaid document does meet the requirements of the Contract or revise the document in order that the information shall comply with the requirements of the Contract.

3.5. BASICREFERENCE DRAWINGS

- 3.5.1. The reference drawings are enclosed with the bid document, which forms a part of the specification. The contractor shall develop a new layout in line with the specification and take the approval of the EMPLOYER. The contractor shall maintain the overall dimensions of the substation, buildings, bay length, bay width, phase to earth clearance, phase to phase clearance and sectional clearances, clearances between buses, bus heights but may alter the locations of equipment to obtain the statutory electrical clearances as required for the substation.
- 3.5.2. All drawings submitted by the Contractor including those submitted at the time of bid shall be in sufficient detail to indicate the type, size, arrangement, material description, Bill of Materials, weight of each component, break-up for packing and shipment, dimensions, internal & the external

connections, fixing arrangement required and any other information specifically requested in the specifications.

- 3.5.3. Each drawing submitted by the Contractor shall be clearly marked with the name of the Employer, the unit designation, the specifications title, the specification number and the name of the Project. If standard catalogue pages are submitted, the applicable items shall be indicated therein. All titles, noting, markings and writings on the drawing shall be in English. All the dimensions should be in metric units.
- 3.5.4. Further work by the Contractor shall be in strict accordance with these drawings and no deviation shall be permitted without the written approval of the Employer, if so required.
- 3.5.5. The review of these data by the Employer will cover only general conformance of the data to the specifications and documents interfaces with the equipment provided under the specifications. This review by the Employer may not indicate a thorough review of all dimensions, quantities and details of the equipment, materials, any devices or items indicated or the accuracy of the information submitted. This review and/or approval by the Employer shall not be considered by the Contractor, as limiting any of his responsibilities and liabilities for mistakes and deviations from the requirements, specified under these specifications and documents.
- 3.5.6. All manufacturing and fabrication work in connection with the equipment prior to the approval of the drawings shall be at the Contractor's risk. The Contractor may make any changes in the design which are necessary to make the equipment conform to the provisions and intent of the Contract and such changes will again be subject to approval by the Employer. Approval of Contractor's drawing or work by the Employer shall not relieve the contractor of any of his responsibilities and liabilities under the Contract.
- 3.5.7. All engineering data submitted by the Contractor after final process including review and approval by the Employer shall form part of the Contract Document and the entire works performed under these specifications shall be performed in strict conformity, unless otherwise expressly requested by the Employer in Writing.

3.6. PRE-DISPATCH INSPECTION:

Pre-dispatch inspection shall be performed on various materials at manufacturer's work place for which contractor shall be required to raise requisition giving at least 10-day time. Depending on requirement, inspection shall be witnessed by representatives of Employer, TPIA and/or REC/PFC/MoP.

The contractor shall ensure receipt of material at site within 21 days from date of receipt of dispatch instructions. In case materials are not received within 21 days from date of issue of dispatch instruction, the dispatch instruction shall stand cancelled. In the event of delay in receipt of materials beyond 21 days due to reasons not attributed to turnkey contractor/supplier, suitable time extension may be permitted by the Employer. All expenditure incurred by Employer in performance of dispatch instruction shall be recovered from turnkey contractor.

The turnkey contractor shall ensure that pre-dispatch inspection for materials are intimated only when the material is completely ready for inspection. On due date of inspection, if it is found that materials are not ready in required quantities or the inspection could not be carried out due to non-availability of requisite calibrated certificate of instruments with manufacturer, closing of works on scheduled date of inspection, non-availability of sufficient testing/material handling staff at manufacturer works etc, all expenditures incurred on deployment of various inspecting officials along with a fine of Rs 50,000/- shall be recovered from the bills of the agency and re-inspection shall be carried out on expense of contractor. 2nd such situation at same manufacturer/supplier shall result in rejection of name of manufacturer from list of approved vendors/sub-vendors. In case sub-standard materials (old component, re-cycled materials, re-used core material, re-used transformer coil material

etc) offered for inspection and are noticed during the inspection, materials shall be rejected and approval of sub-vendor shall also be cancelled for all PMDP/IPDS/DDUGJY projects.

4. **Project Management Agency (PMA)**

Employer shall appoint a Project Management Agency (PMA) to assist them in Project Planning and Implementation of the project as under:

4.1. Project Planning and Implementation:

- 4.1.1. Assisting Employer in preparation of detailed work implementation schedule in association with turnkey contractor.
- 4.1.2. Coordination & monitoring of project implementation activities.
- 4.1.3. To monitor DPR wise monthly physical & financial progress of the scheme, prepare a consolidated report & submit to utility for onward submission to Nodal Agency.
- 4.1.4. Identification of anticipated bottlenecks in project implementation & preparation of remedial action plan in consultation with Employer&Contractor.
- 4.1.5. To assist Employer in addition of the created assets to their asset register.
- 4.1.6. Recommend the claim of utility for fund release from Nodal Agency. The recommendation is to be supported by a report on expenditure, progress and constraints if any for timely completion of project.
- 4.1.7. Submit a report to Nodal Agency, regarding Project Completion and expenditure incurred along with recommendation in accordance with the guidelines.
- 4.1.8. To assist utility in supervision of flow of funds in dedicated bank account of projects.

4.2. Quality Monitoring:

- 4.2.1. To prepare a Quality Assurance (QA) Plan
- 4.2.2. To carry out field quality inspection of ongoing/ completed works
- 4.2.3. Joint inspection of material at site on sample basis i.e. 10% of major materials (Poles, Conductor, Meters, Transformers, Cable etc).

Annexure-A

Checklist for Quality Assurance

Distribution Transformer Substation

S. No	Description	Status (Yes/No)	Observations	Location	Picture No.
1	Record capacity of DTR transformer used				
2	Record S. No., make and year of manufacturing of DTR transformer				
3	Safe and adequate access to distribution transformer (DTR) substation				
4	Availability of approved survey report				
5	Proper load survey is performed of the locality for perspective consumers while deciding capacity and location of DTR				
6	Expected loading of transformer using 5 years growth is performed in survey report				
7	Proper alignment of substation structure with 11 KV line				
8	Record type of poles/support used for DTR substation				
9	Record type of foundation used				
10	Proper muffing is provided on steel supports of DTR substation				
11	If DTR substation is in water logging area, its foundation is grouted in cement concrete				
12	Proper verticality of substation supports				
13	Proper pole to pole distance of substation supports.				
14	Proper erection of jumpers and connection to DTR transformers without any bent				
15	Proper binding of insulators				
16	Stay plates are properly grouted in cement concrete mixture to support DTR substation structure (if erected)				
17	Proper tensioning is there on stay set				
18	Proper alignment of stay wire with overhead conductor				
19	Proper erection of stay clamp using 12 mm dia nuts and bolts				
20	Proper galvanization of stay wire				
21	Thimble is provided on turn buckle of stay set				
22	Stay set installation is provided with guy insulator				
23	Proper phase to phase and phase to ground clearances maintained on the substation jumpers				
24	Steel overhead structure is properly earthed using 8 SWG wire/G.I. flat?				

S. No.	Description	Status (Y/N)	Observations	Location	Picture
25	Each 11 kV overhead equipment including transformer are individually earthed using 8 SWG Earth wire/ GI flat				
26	Danger plate is installed at appropriate height using proper size clamp. Record type and size of clamp				
27	Proper anti-climbing device (barbed wire/spike) installed at appropriate height on individual support. Record quality of wrapping of barbed wire				
28	Substation is numbered				
29	Individual substation pole is imposed/painted with the name of scheme				
30	Surface of the PCC poles is finished and there are no steel wire visible				
31	No physical damages appeared on PCC pole surface				
32	GI flat to GI flat connection using at least 2 sets of GI nut bolts and washers				
33	8 SWG GI wire/GI Flat is properly dressed with support				
34	GI wire to GI wire jointing is provided using 12 SWG GI nut bolts and washers				
35	GI wire connection to earth pit is using GI nut bolt and washer				
36	GI earth pipe is properly inserted inside earth without hammering				
37	Number of earth pit used for substation earthing.				
38	Pit to pit distance in meters. Is it adequate?				
39	Masonry enclosure is provided over individual earth pits				
40	Funnel is provided over earth pit				
41	Proper jumpering using binding practices/PG clamp				
42	Proper clearances to avoid bird fault on conductors of substation supports				
43	Type and size of overhead conductors used in the substation				
44	Cement-concrete grouting foundation of substation supports				
45	Measure quantum of cement concreting in any one sample support				
46	Measure cement concreting foundation in any one sample of stay set pit				
47	Proper painting/galvanizing done on steel structure				
48	Any sign of rusting found on substation structure/hardware				
49	Any broken insulator found in the substation				
50	Disc Insulators installed precariously (loose bolts/ missing cotter pins)				

S. No.	Description	Status (Yes/No)	Observations	Location	Picture
51	Separate individual earth connection using GI wire/GI flat is used for neutral earthing with separate pit				
52	Dedicated transformer body earthing using GI wire/GI flat				
53	Bimetallic clamps are provided on 11 kV bushing				
54	No gap between busing seat and bimetallic clamp on LT as well as HT bushing while connecting conductor/cable				
55	Proper lugs are provided on termination of cables				
56	Oil is filled in cup of silica gel breather				
57	Silica gel is blue in colour				
58	Oil control valves are open between transformer tank and breather (wherever used)				
59	Oil leakage from the body/gasket of transformer and from conservator tank				
60	Record level of oil in conservator tank				
61	Transformer installed precariously (Nut / bolts / side bracing missing)				
62	Transformer is fitted with 12 mm dia nut bolts on its base channel				
63	Transformer belting is provided				
64	Dimension of transformer base channel				
65	Individual lightening arrestor are earthed with dedicated separate earth pit				
66	LA jumper connections is missing/ not proper				
67	LA is charged/ installed but not meggared				
68	Isolators/AB switch are properly aligned and its operation is smooth				
69	Operating handle (not missing eye bolt) of isolator/AB switch is earthed using flexible cable				
70	No joint in between entire length of operating pipe of isolator/AB switch				
71	Guiding hook is provided for isolator pipe movement				
72	Alignment of male and female contacts of isolators/AB switch and no spark during normal use				
73	Proper fuse wire is used in DO fuse/HG fuse				
74	Arching Horn is missing/ not aligned / not proper				
75	Proper size of LT cable are used between transformer and LTDB				
76	lockability and proper closing of door of LTDB				
77	Gland plate and glands are used for cable entry in LTDB				
76	No unused holes on gland plates				
77	Availability of LTDB equipment as per approved drawing and scope of work like isolator, fuse, switch, bus bar, MCCB, MCB etc.				

S. No.	Description	Status (Yes/No)	Observations	Location	Picture No.
78	Installation of DTR as per BIS specification				
79	LTDB earthing at different points using 8 SWG GI wire				
80	Proper painting and No physical damages on LTDB				
81	Suitable loop length of cables in LTDB				
82	3 Nos earthing pit and earth mat /risers using 50X6mm GI Flat are used as under:				
a	a) Earth Pit – 1 for Transformer Neutral,				
b	b) Earth pit - 2 for Lightning Arrester,				
c	c) Earth pit – 3 for Equipment body earthing				
83	Metering of DTR substation				
84	Type of meters used and its healthiness				
85	Quality of painting/galvanizing on substation structure				
86	DTR is newly supplied				
87	PG Clamps are used (wherever needed as per drwg- Jumper etc)				
88	Energy meters (@ 11 kV feeder , DT , BPL consumer) at installed at appropriate height				
89	Earthing Electrodes short/missing				
90	Commissioning Defect: DT charged/installed but not merged				
91	Fasterers (Nuts/ Bolt/ Clamps /Connector) size not as per drawing /specification				
92	Fasteners (Nuts / bolts/ Clamps / connectors) in precarious state				
93	Poles not erected properly (inadequate or missing brick bat/ foundation)				
94	Stay installation is not proper : guy insulator missing ;inadequate depth				
95	Earthing wire diameter undersize				
96	Danger plate missing/improper				
97	Earthing wire not secured / not dressed				
98	Barbed wire missing/improper				
99	DTR ground electrodes far too close				
100	Earth pit to earth pit clearance not maintained				
101	HT Fuse not provided				
102	HT fuse unit jumpering not connected properly				
103	MCCB of lower rating than specified in LOA				
104	MCCB not installed				
105	Inferior quality of Distribution Board used (makeshift, locally fabricated DBs)				
LT Line					
S. No	Description	Status (Yes/No)	Observations	Location	Picture No.
1	Availability of approved survey report with Single line diagram				
2	Correct alignment of LT line				

S. No.	Description	Status	Observations	Location	Picture
3	Type of poles used as per scope of the work				
4	Type of foundation used as per scope of work				
5	If line is passing through water logging area and its foundation is grouted in cement concrete				
6	Proper verticality of poles				
7	Any deflecting tension on LT pin insulator				
8	Proper tensioning of overhead conductor/LT cable/ABC Cable				
9	Any knot/wrapping of overhead conductor /LT cable /ABC Cable is there during erection				
10	Proper binding of insulators cable both / tension work is done				
11	Stay plates are properly grouted in cement concrete mixture				
12	Proper tensioning is there on stay set				
13	Proper alignment of Stay wire and stay set with overhead conductor is there to nullify tension				
14	Proper erection of stay clamp using 12 mm dia nuts and bolts and 50x6 mm (or more) size clamp				
15	If every 6th pole in a section of line is provided with stay sets to avoid line deflection				
16	Proper galvanization of stay wire/stay set				
17	Thimble is provided on turn buckle of stay set				
18	Proper phase to phase clearances are maintained on the line				
19	Steel overhead structure is properly earthed using 8 SWG wire				
20	Each LT pole individually earthed using 8 SWG Earth wire and separate Earth pit/Earthing coil/Earth spike				
21	Quality and size of danger plates is as per scope of work				
22	Danger plate is installed at appropriate height using proper clamp as per scope of work				
23	Anti-climbing device (barbed wire/spike) are installed at appropriate height on individual support				
24	Individual pole is numbered				
25	Individual pole is imposed/painted with the name of scheme				
26	Surface of the PCC poles is finished and there are no steel wire visible				
27	No physical damages appeared on PCC pole surface				
28	Cradle guard earthing is provided on each road crossing or on each LT line crossing				
29	Proper tensioning of the cradle guard wires				
30	Separate earthing on both the sides of road/line for cradle guarding are there				

S. No.	Description	Status (Yes/No)	Observations	Location	Picture No.
31	8 SWG G.I. wire is properly dressed with support for V-Cross arm/Channel/Top clamp earthing				
32	GI wire to GI wire jointing is provided using 12 SWG GI nut bolts and washers				
33	GI wire connection to earth pit is using 12 mm GI nut bolt and washer				
34	Earth pipe is properly inserted inside earth without pipe hammering				
35	Masonry enclosure is provided over individual pipe earth pits				
36	Funnel is provided over pipe earth pit				
37	Jumpering using best binding practices/PG clamp				
38	Proper conductor clearances to ground is there to avoid bird fault on end sectionizer support where disc insulator are used				
39	Average pole to pole span length in the line. It should not be less than 50 m.				
40	If Pole to pole span is less than 50 m, record the reason with pole numbers				
41	Number of poles used per kilometre of the line				
42	Type and size of overhead conductors/ABC cable used in the line				
43	Shuttering is used during casting of cement concrete foundation				
44	Cement-concrete grouting foundation of end supports				
45	Quantum of cement concreting in any one sample support				
46	Cement concreting foundation in any one sample of stay set pit				
47	Proper painting is done on steel structure				
48	Any broken insulator found in the line				
49	Surface finish of painting on Steel tubular pole/RSJ/H Pole/Rail pole about 2 m from bottom and above 2 m				
50	Possible damage on ABC cable surface				
51	Piercing connections are used to take-off connection from ABC cable				
52	Muffing is used in steel steel tubular poles, rail pole, RS joint/H beam Supports				
53	Adequate tree cutting on either side of line done				
54	Pole to pole schedule enclosed with profarma				

11 KV Line

S. No	Description	Status (Yes/No)	Observations	Location	Picture No.
1	Availability of approved survey report with single line diagram				
2	Correct alignment of 11 kV line				
3	Type of poles used as per scope of the work				

S. No.	Description	Status	Observations	Location	Picture
4	Type of foundation used as per scope of work				
5	Record whether line is passing through water logging area and its foundation is grouted in cement concrete				
6	Proper verticality of poles				
7	Cross-bracing on Double poles are provided				
8	Conductors are passing through the top groove of the insulator (creepage distance compromised)				
9	More than one joint in one span				
10	Any deflecting tension on 11 KV pin insulator				
11	Proper tensioning of overhead conductor				
12	Any knot/wrapping of overhead conductor is there during erection				
13	Proper binding of insulators is done				
14	Stay plates are properly grouted in cement concrete mixture				
15	Proper tensioning is there on stay set				
16	Proper alignment of Stay wire with overhead conductor is there to nullify tension				
17	Guy insulator, anchor plate/ thimble/ hardware are provided with stay set				
18	Proper erection of stay clamp using 12 mm dia nuts and bolts and 50x6 mm (or more) size clamp				
19	If every 6th pole in a section of line is provided with stay sets to avoid line deflection				
20	Proper galvanization of stay wire and stay set				
21	Thimble is provided on turn buckle of stay set				
22	Proper phase to phase clearances are maintained on the line				
23	Steel overhead structure is properly earthed using 8 SWG wire				
24	Each 11 kV pole individually earthed using 8 SWG Earth wire and separate Earth pit/Earthing coil/Earth spike				
25	Quality and size of danger plates is as per scope of work				
26	Danger plate is installed at appropriate height using proper clamp as per scope of work				
27	Anti-climbing device (barbed wire/spike) are installed at appropriate height on individual support				
28	Individual pole is numbered				
29	Individual pole is imposed/painted with the name of scheme				
30	Surface of the PCC poles is finished and there are no steel wire visible				
31	No physical damages appeared on PCC pole surface				

S. No.	Description	Status	Observations	Location	Picture
32	Cradle guard earthing is provided on each road crossing or on each LT line crossing				
33	Proper tensioning of the cradle guard wires				
34	Proper Guard wires are provided in case of Road crossing as per drawing specification				
35	8 SWG G.I. wire is properly dressed with support for V-Cross arm/Channel/Top clamp earthing				
36	GI wire to GI wire jointing is provided using 12 SWG GI nut bolts and washers				
37	GI wire connection to earth pit is using 12 mm GI nut bolt and washer				
38	Earth pipe is properly inserted inside earth without pipe hammering				
39	Masonry enclosure is provided over individual pipe earth pits				
40	Funnel is provided over pipe earth pit				
41	Proper jumpering using binding practices/PG clamp				
42	If under sized conductor used				
43	Proper conductor clearances to ground is there to avoid bird fault on end sectionizer support where disc insulator are used				
44	Proper pole to pole span length in the line. It should not be less than 50 m.				
45	If Pole to pole span is less than 50 m, record the reason with pole numbers				
46	Number of poles used per kilometre of the line				
47	Record type and size of overhead conductors used in the line				
48	Shuttering is used during casting of cement concrete foundation				
49	Cement-concrete grouting foundation of end supports				
50	Measure quantum of cement concreting in any one sample support				
51	Measure cement concreting foundation in any one sample of stay set pit				
52	Proper painting is done on steel structure				
53	Disc Insulators are installed precariously (loose bolts/ missing cotter pins)				
54	D -shaped loop for jumpers are maintained				
55	Any broken insulator found in the line				
56	Surface finish and painting on Steel tubular pole/RSJ/H Pole/Rail pole				
57	Adequate tree cutting on either side of line done				
58	Pole to pole schedule enclosed with proforma				

S. No.	Description	Status (Yes/No)	Observations	Location	Picture No.
59	Pole numbering with "PMDP" inscription not done (properly)				
60	Engraving of poles (Name of Manufacturer, SL Nos etc.) not done				
61	Line Spacers not used				
62	Guy insulator not used in stay wire				
63	Inadequate length of barbed wire				

LT Domestic Service connection to BPL

S. No	Description	Status (Yes/No)	Observations	Location	Picture No.
1	Approximate length of service line taken from nearby LT pole/Distribution Board/Distribution box				
2	Following materials are provided in the premises of consumer:				
A	Energy meter				
B	Metal meter box				
C	Double pole miniature circuit breaker				
D	Meter board				
E	Earthing point				
F	LED lamp				
3	The consumer meter has been tested at distribution licensee's test laboratory,				
4	The size of service cable is 2.5 mm ² twin core (unarmoured) PVC insulated cables with aluminium conductors				
5	Service cable is free of joints				
6	The size of the bearer wire is 3.15 mm (10 SWG) GI wire (55-95 kg. quality)				
7	Suitable meter board has been installed as per specification				
8	Suitable Switch Board has been installed (as per specification)				
9	Single phase Energy meter is installed as per specification with acrylic cover				
10	Type and size of PVC pipe/GI pipe support as per specification				
11	Proper ground clearance of service line as per the guidelines				
12	GI pipe/MS angle (35mmx35mmx5mm) clamped firmly using 40x3mm MS flat clamps at at-least two locations				
13	Use of GI Medium Class pipe as per specification				
14	Use of double pole miniature circuit breaker as per specification				
15	Meter box for single phase meter made provided for meter protection of the specified dimensions				

S. No.	Description	Status	Observations	Location	Picture
16	Reel Insulator are provided as per requirements				
17	Egg Insulator as per requirements				
18	Protection and Earthing as per specification and CEA regulations has been provided at consumer premises				
19	Each BPL Household has been provided with internal house wiring and accessories between switch board and Angle Holder as per specifications				
20	All the construction activities related to power supply in the households have been performed as per REC construction standards.				
21	Wattage of LED lamp provided at consumer premises				
22	Type of holder used for LED lamp				
23	Following ISI marked internal electrification material in consumer premises:				
a	5A socket				
b	5A 3 pin piano type switch				
c	5A pendant holders				
24	Type and size of following boards:				
a	Switch board				
b	Meter board				
25	Height of switch board in consumer premises				
26	Protection from direct sunlight and rain water to meter box at consumer premises				
27	Proper tensioning of service cable at consumer premises				

Checklist for inspection of REDB (Substation)

S.N.	Description	Status (Yes/No)	Observation	Picture No.	Location as per SLD
1	Major Materials (CT/PT/CB/X'mer/Battery/ Panels /Structures/Conductor) as per specifications				
2	Record S. No., make and year of manufacturing of Power transformer				
3	Major Materials dispatched without inspection				
4	Construction as per Approved Drawing				
5	Civil works FQP documentation maintained during construction				
6	Equipment (name it) provided in the BOQ/ drawing but not installed				
7	Verification of pre-commissioning and commissioning testes of substation equipment i.e. Circuit Breaker, CT, PT, transformer, Charger, Battery, Relays, Control Panels, Switchgear, 11 KV cable etc				
8	Present condition of main equipment				
9	Functional Status of Transformer: WTI, OTI etc, Relays, Battery Charger, Battery, CB, CT, PT, Energy Meter, Control & Relay panel				
10	Transformer oil tested				
11	Transformer Relays, CT, PT , CB , Switchgears, battery sets, etc charged after test				
12	Equipment charged after commissioning test				
13	Gravel size proper				
14	Earthing of main equipment, fence etc done properly				
15	Sub Station fencing provided				
16	Cable trench made with cable trays – or cables lying on trench floor				
17	Whether Cable trenches have suitable slope to ensure automatic draining of rainwater				
18	Proper storage of equipment				
19	Cables tied on cable trays				
20	Glands, lugs used (wherever need - at cable entries)				
21	Dead end marking for cables is done				
22	Earth mat provided				
23	Undersized conductor/ cables used				
24	Correct size of earthing conductor - flats, GI wires etc used				
25	Acid proof floor used in battery room				
26	Fasteners (nut, bolts, clamps connectors, hardwaresetc) as per specification				
27	Switchgear rubber mats, chequer plates not provided				
28	FQP for material receipt and storage maintained by PIA				
29	Name of Feeder on Control Panel.				
30	Name of Feeder on Outgoing DP structure				
31	Working platform on 33 KV and 11 KV outdoor VCB				
32	Name of Substation board on the entrances				

33	Painting of control room, water supply position in Substation				
34	General sanitation arrangement in the control room building				
35	Internal Lighting in the substation control room				
36	Closed fencing of the substation yard				
37	Approach road to Power Transformer foundation				
38	Water logging/ Earth filling in the yard trench				
39	Partition wall between two Power Transformers				
40	Availability of Earthing Rod in the substation				
41	Availability of Permit & Work Book				
42	Tracing of Earth connection of Power/ Distribution Transformer up to Earth Pit				
43	Connection at Earth Pit				
44	Jointing & Clamping of Earth Conductors				
45	All Terminal Blocks at CTs/PTs/Breaker/Panels/Junction Box				
46	Earthing& Fencing is as per specification				
47	Cable trench cover inside the control room and in the yard.				
48	Exhaust Fan in the Battery Room				
49	Inter Battery connections				
50	Battery Charger connection				
51	Earthing of Control Panel				
52	Termination of power cables at 11 KV sides/LT sides of Power and Station Transformer.				
53	Inside pic of distribution board of station transformer				
54	Take Overall picture of station transformer				
55	Connection of Lightning arrestor				
56	Approximate clearance of live part in the substation				
57	Oil leakage in Power/Station Transformer				
58	Area lighting in the substation				
59	Material diagram of substation in the control room				
60	List of authorized operational personnel in the substation				
61	Connection at the bus-bar jumpers				
62	Loop cables LT/HT/Control				
63	Tagging on cable terminals				
64	Work clearance on control panels and sufficient lightening on the control panel				

VOLUME-II: Section-II

Bid Forms (Bid Envelope)

BID Forms (Bid Envelope)

Bid Proposal Ref. No.:.....

Date:

To:

XXXXXXXX (Name of Employer)

XXXXXXXX (Address of Employer)

Name of Contract: SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(Specification No.:XXXXXXXXXXXXXXXXXXXXXX).

Dear Sir/ or Madam,

1.0 Having examined the Bidding Documents, including Amendment Nos. (*Insert Numbers*) dated the receipt of which is hereby acknowledged, we the undersigned, offer to design, manufacture, test, deliver, install and commission (including carrying out Trial operation, Performance & Guarantee Test as per the provision of Technical Specification) the Facilities under the above-named Project in full conformity with the said Bidding Documents. In accordance with ITB Clause 9.1 of the Bidding Documents, as per which the bid shall be submitted by the bidder under "Single Stage - Bid Envelope" procedure of bidding. Accordingly, we hereby submit our Bid, in Bid envelope i.e. Techno – Commercial Part. Price Part i.e. Price is uploaded. We have submitted and uploaded on-line price bid through e-mode to be opened subsequently.

2.0 Attachments to the Bid Form (Bid Envelope)

In line with the requirement of the Bidding Documents, we enclose herewith the following Attachments:

(a) Attachment 1: Bid Security, in a separate envelope, in the form of Bank Draft/Pay Order/Banks certified Cheque/Bank Guarantee* for a sum of (*name of currency and amount in words and figures*) initially valid for a period of seven (07) months from the date set for opening of bids.

* delete whichever is not applicable.

- (b) Attachment 2: A power of attorney duly authorized by a Notary Public indicating that the person(s) signing the bid have the authority to sign the bid and thus that the bid is binding upon us during the full period of its validity in accordance with the ITB Clause 14.
- (c) Attachment 3: The documentary evidence that we are eligible to bid in accordance with ITB Clause 2. Further, in terms of ITB Clause 9.3 (c) & (e), the qualification data has been furnished as per your format enclosed with the bidding documents [Attachment-3(QR)]. * Further, the required Joint Venture Agreement signed by us and our Partners has also been furnished as per your format [Attachment-3(JV)].
 * Delete if not applicable
- (d) Attachment 4: The documentary evidence establishing in accordance with ITB Clause 3, Vol.-I of the Bidding Documents that the facilities offered by us are eligible facilities and conform to the Bidding Documents has been furnished as Attachment 4. A list of Special Tools & Tackles to be used by us for erection, testing & Commissioning and to be handed over to Employer, the cost of which is included in our Bid Price, is also enclosed as per your format as Attachment 4A. A list of Special Tools & Tackles to be brought by the contractor for erection, testing & Commissioning and to be taken back after completion of work, whose cost is not included in our bid price, is enclosed as per your format as Attachment 4B.
- (e) Attachment 5: The details of all major items of services or supply which we propose subletting in case of award, giving details of the name and nationality of the proposed subcontractor/sub-vendor for each item.
- (f) Attachment 6: The variation and deviations from the requirements of the Conditions of Contract, Technical Specification and Drawings (excluding critical provisions as mentioned at clause 6.0 below) in your format enclosed with the Bidding Documents, including, inter alia, the cost of withdrawal of the variations and deviations indicated therein.
- (g) Attachment 7: ~~The details of Alternative Bids made by us indicating the complete Technical Specifications and the deviation to contractual and commercial conditions.~~ **[Not Applicable]**
- (h) Attachment 8: Manufacturer's Authorisation Forms - registered/notarized
- (i) Attachment 9: Work Completion Schedule.

- (j) Attachment 10: Guarantee Declaration.
- (k) Attachment 11: Information regarding ex-employees of Employer in our firm.
- (l) Attachment 12: Filled up information regarding Price Adjustment Data as per the format enclosed in the bidding documents
- (m) Attachment 13: ~~Declaration regarding Social Accountability~~
- (n) Attachment 14: Integrity Pact, in a separate envelope, duly signed on each page by the person signing the bid.
- (o) Attachment 15: Option for Interest bearing Initial Advance payment and Information for E-payment, PF details and declaration regarding Micro/Small & Medium Enterprises
- (p) Attachment 16: Additional Information
- (q) Attachment 17: Declaration for tax exemptions, reductions, allowances or benefits
- (r) Attachment 18: Declaration
- (s) Attachment 19: Bank Guarantee verification checklist
- 3.0 We are aware that, in line with Clause No. 27.1 (ITB), our online price bid is liable to be rejected in case the same contains any deviation/omission from the contractual and commercial conditions and technical Specifications other than those identified in this Bid Envelope.
- 3.1 We are aware that the Price Schedules do not generally give a full description of the Work to be performed under each item and we shall be deemed to have read the technical specifications, scope of works and other sections of the Bidding Documents and Drawings to ascertain the full scope of Work included in each item while filling-in the rates and prices in price schedule quoted and uploaded in e-procurement web-portal.
- 3.2 We declare that as specified in Clause 11.5, Section –II:ITB, Vol.-I of the Bidding Documents, prices quoted by us in the Price Schedules shall be fixed and firm during the execution of Contract except for the permitted items for which Price Adjustment is applicable, as mentioned in Appendix-2 (Price Adjustment) to the Contract Agreement of Volume-I : Section-VI (Sample Forms and Procedures).
- 4.0 We confirm that except as otherwise specifically provided our Bid Prices quoted and uploaded in e-procurement web portal include all taxes, duties, levies and charges as may be assessed on us, our

Sub-Contractor/Sub-Vendor or their employees by all municipal, state or national government authorities in connection with the Facilities, in and outside of India.

- 4.1 100% of applicable Taxes and Duties(*for direct transaction between Employer and us*), which are payable by the Employer under the Contract, shall be reimbursed by the Employer after dispatch of equipment on production of satisfactory documentary evidence by the Contractor in accordance with the provisions of the Bidding Documents.
- 4.2 We further understand that notwithstanding 4.0 above, in case of award on us, you shall also bear and pay/reimburse to us, Excise Duty, Sales Tax/VAT (but not the surcharge in lieu of Sales Tax/VAT), local tax and other levies in respect of direct transaction between you and us, imposed on the Plant & Equipment including Mandatory Spare Parts specified in Schedule No. 1 of our Price Schedule quoted and uploaded on e-procurement web portal, to be incorporated into the Facilities; by the Indian Laws.
- 4.3 We also understand that, in case of award on us, you shall reimburse to us octroi/entry tax as applicable for destination site/state on all items of supply including bought-out finished items, which shall be dispatched directly from the sub-vendor's works to the Employer's site (sale-in-transit). Further, Service Tax, if applicable, for the services to be rendered by us, the same is included in our bid price quoted and uploaded on e-procurement web portal.
- 4.4 We confirm that we shall also get registered with the concerned Sales Tax Authorities, in all the states where the project is located.
- 4.5 We confirm that no Sales Tax/VAT in any form shall be payable by you for the bought out items which shall be dispatched directly by us under the First Contract (as referred in para 5.1 below) to the project site. However, you will issue requisite Sales Tax declaration/Vatable forms in respect of such bought out items, on production of documentary evidence of registration with the concerned Sales Tax Authorities.

5.0 **Construction of the Contract**

- 5.1 We declare that we have studied Clause GCC 2.1 relating to mode of contracting for Domestic Bidders and we are making this proposal with a stipulation that you shall award us two separate Contracts viz 'First Contract' for supply of all equipment and materials including mandatory spares and 'Second Contract' for providing all the services i.e. inland transportation for delivery at site, insurance, unloading, storage, handling at site, installation, testing and commissioning including Trial operation in respect of all the equipment supplied under the 'First Contract' and other services specified in the Contract Documents. We declare that the award of two contracts, will not, in any way, dilute our responsibility for successful operation of plant/equipment and fulfillment of all obligations as per Bidding Documents and that both the Contracts will have a cross-fall breach clause i.e. a breach in one Contract will automatically be classified as a breach of the other contract which will confer on you the right to terminate the other contract at our risk and cost.

6.0 We have read the provisions of following clauses and confirm that the specified stipulations of these clauses are acceptable to us:

(a)	ITB 13	Bid Security
(b)	GCC 2.14	Governing Law
(c)	GCC 8	Terms of Payment
(d)	GCC 9.3	Performance Security
(e)	GCC 10	Taxes and Duties
(f)	GCC 21.2	Completion Time Guarantee
(g)	GCC 22	Defect Liability
(h)	GCC 23	Functional Guarantee
(i)	GCC 25	Patent Indemnity
(j)	GCC 26	Limitation of Liability
(k)	GCC 38	Settlement of Disputes
(l)	GCC 39	Arbitration
(m)	Appendix 2 to Form of Contract Agreement	Price Adjustment

Further we understand that deviation taken in any of the above clauses by us may make our bid non-responsive as per provision of bidding documents and be rejected by you.

7.0 We undertake, if our bid is accepted, to commence the work immediately upon your Notification of Award to us, and to achieve the delivery of goods and related services within the time stated in the Bidding Documents.

8.0 If our bid is accepted, we undertake to provide a Performance Security(ies) in the form and amounts, and within the times specified in the Bidding Documents.

9.0 We agree to abide by this bid for a period of six (06) months from the date fixed for opening of bids as stipulated in the Bidding Documents, and it shall remain binding upon us and may be accepted by you at any time before the expiration of that period.

10.0 Until a formal Contract is prepared and executed between us, this bid, together with your written acceptance thereof in the form of your Notification of Award shall constitute a binding contract between us.

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

*12.0 **(For Joint Venture only)** We, the partners of Joint Venture submitting this bid, do agree and confirm that in case of Award of Contract on the Joint Venture, we shall be jointly and severally liable and responsible for the execution of the Contract in accordance with Contract terms and conditions.

- 13.0 We, hereby, declare that only the persons or firms interested in this proposal as principals are named here and that no other persons or firms other than those mentioned herein have any interest in this proposal or in the Contract to be entered into, if the award is made on us, that this proposal is made without any connection with any other person, firm or party likewise submitting a proposal is in all respects for and in good faith, without collusion or fraud.

Dated this ____ day of _____ 20__

Thanking you, we remain,

Yours Sincerely,

For and on behalf of the [*Name of the Bidder#*]

(Signature).....

(Printed Name).....

(Designation).....

(Common Seal).....

Date:

Place:

Business Address:

Country of Incorporation:

(State or Province to be indicated)

Name of the Principal Officer:

Address of the Principal Officer:

*Applicable in case of a bid from Joint Venture of firms.

#In case the bid is submitted by a Joint Venture, the name of the Joint Venture should be indicated

Note: Bidders may note that no prescribed proforma has been enclosed for:

(a) Attachment 2: Power of Attorney.

(For Attachments 2 Bidders may use their own proforma for furnishing the required information with the bid).

No. RECPDCL/TECH/JKPDD/e-Tender/2017-18/1763 Dated: 21.08.2017

List of Attachments

Attachment-3(JV)	9
Attachment-3 (QR)	10
Attachment-4	16
Attachment-4A	17
Attachment-4B	18
Attachment-5	19
Attachment-6	20
Attachment-8	21
Attachment-9	23
Attachment-10	25
Attachment-11	26
Attachment-12	28
Attachment-14	29
Attachment-15	36
Attachment-16	39
Attachment- 17	43
Attachment-18	44
Attachment-19	45

Attachment-3(JV)

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(Joint Venture Agreement and Power of Attorney for Joint Venture*)

Bidder's Name and Address:

To: <Name and Address of Employer>

Dear Sir,

The Joint Venture Agreement (as per the proforma attached at no. 15 in Section-VI, Sample Forms and Procedures, Conditions of Contract, Vol.-I of the Bidding Documents) and Power of Attorney for Joint Venture (as per the proforma attached at no. 14 in Section-VI, Sample Forms and Procedures, Conditions of Contract, Vol.-I of the Bidding Documents) are enclosed herewith.

* Applicable for Joint Venture.

Date:.....

(Signature).....

Place:.....

(Printed Name).....

(Designation).....

(Common Seal).....

Attachment-3 (QR)

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(Qualifying Requirement Data)

Bidders Name & Address:

To

<Name and Address of the Employer>

Dear Ladies and/or Gentlemen,

In support of the Qualification Requirements (QR) for bidders, stipulated in Annexure-A (BDS) of the Section - III (BDS), Volume-I & additional information required as per **ITB clause 9.3(c)** of the Bidding Documents, we furnish herewith our QR data/details/documents etc., alongwith other information, as follows (The QR stipulations have been reproduced in italics for ready reference, however, in case of any discrepancy the QR as given in BDS shall prevail).

* We have submitted bid as individual firm.

* We have submitted bid as joint venture of following firms:

(i)

(ii)

(iii)

(* ***Strike-off whichever is not applicable***)

[For details regarding Qualification Requirements of a Joint Venture, please refer para 4.0 below.]

We are furnishing the following details/document in support of Qualifying requirement for the subject project.

A. Attached copies of original documents defining:

- a) The constitution or legal status;
- b) The principal place of business;

- c) The place of incorporation (for bidders who are corporations); or the place of registration and the nationality of the Owners (for applicants who are partnerships or individually-owned firms).

B. Attached original & copies of the following documents.

a) Written power of attorney of the signatory of the Bid to commit the bidder.

b)** Joint Venture Agreement

[** To be submitted only in case of Joint Ventures. Strike off in case of individual firms.]

1.0 Pre-qualification criteria – Part A:

1.01 Technical:

The detailed criteria is mentioned at 1.01 of Annexure-A to BDS at Volume-I : Section-III.

Format A: Format for the Bidder (Single Firm / Partner(s) in case of Joint Venture) for technical experience in compliance to para 1.01 (i) or (ii) or (iii)} of Annexure-A to BDS (Volume-I : Section-III) [In case of Joint Venture bidder, the QR data of each of the partner (in support of meeting the requirement of para 1.01 (iv) of Annexure-A to BDS (Volume-I : Section-III)] is also is to furnished, as applicable, using this format. The bidder (Single Firm / Partner(s) in case of Joint Venture) who is willing to qualify in compliance to para 1.01 (i) {(ii) or (iii)} of para 1.01 (I) (iv) of Annexure-A to BDS (Volume-I : Section-III) shall fill below format for two or all three contracts.

A1.	Name of Bidder/Lead Partner of JV/other partner(s) of JV	
A2.	Name of Contract (executed during the last 7 years as on the originally scheduled date of bid opening):	
A3.	Contract Reference No. & Date of Award	
A4	Name and Address of the Employer/Utility by whom the Contract was awarded	
	e-mail ID	_____
	Telephone No.	_____
	Fax No.	_____
A5	<p>i) Name of electrical works of successfully erected, tested and commissioned</p> <p>ii) Quantity of Energy Meters installed under the above work</p> <p>iii) % of Energy Meters installed w.r.t. Energy Meters proposed in</p>	<p>_____</p> <p>_____</p>

	bid (in %)	_____
A6(i)	Date of successful execution of the Contract/Date of commissioning	_____
(ii)	No. of years the above referred electrical works is in successful operation as on the date of bid opening	_____ years
A7.	Capacity in which the Contract was undertaken (Check One)	<input type="checkbox"/> Prime Contractor <input type="checkbox"/> Partner of JV <input type="checkbox"/> Subcontractor <i>(Tick whichever is applicable)</i>
A8.	Details/documentary evidence submitted in support of stated experience/Contract	

(Documentary evidence, such as copies of utility certificates etc., in support of its experience shall be attached with the filled-up format for each experience/Contract)

1.01.1 The bidder should possess "A" Class license issued by the Electrical inspectorate of Govt of (...) ¹ /Central Inspectorial organization of Govt. of India/ other state Govt. In case bid submitted joint venture firm, any of partner should possess "A" class electrical license as stated above.

1.02 Commercial

The detailed criteria is mentioned at 1.02 of Annexure-A to BDS at Volume-I : Section-III.

Format C: Format for the Bidder (Single Firm / Partner(s) in case of Joint Venture) for commercial experience in compliance to para 1.02.1 (i) of Annexure-A to BDS at Volume-I : Section-III [In case of Joint Venture bidder, the QR data of each of the partner (in support of meeting the requirement of para 1.02.5 of Annexure-A to BDS at Volume-I : Section-III] is also is to furnished, as applicable, using this format. The bidder (Single Firm / Partner(s) in case of Joint Venture) who is willing to qualify in compliance to para 1.02.1 {(ii) or (iii)} of Annexure-A to BDS at Volume-I : Section-III shall fill below format for two or all three contracts.

¹ Name of state where work is to be executed.

A1.	Name of Bidder/Lead Partner of JV/other partner(s) of JV	
A2.	Name of Contract (executed during the last 5 years up to date of opening of bid):	
A3.	Contract Reference No. & Date of Award	
A4	Name and Address of the Employer/Utility by whom the Contract was awarded <div style="text-align: right;">e-mail ID _____ Telephone No. _____ Fax No. _____</div>	
A5(i)	Name of completed work of project execution in electrical Transmission or sub-transmission & distribution sector Cost of the project	_____ _____
(ii)	% of cost w.r.t. estimated cost of this bid (in %)	_____
(iii)		
A6(i)	Date of successful execution of the Contract/Date of commissioning	_____
A7.	Capacity in which the Contract was undertaken (Check One)	<input type="checkbox"/> Prime Contractor <input type="checkbox"/> Partner of JV <input type="checkbox"/> Subcontractor (Tick whichever is applicable)
A8.	Details/documentary evidence submitted in support of stated experience/Contract	

(Documentary evidence, such as copies of utility certificates etc., in support of its experience shall be attached with the filled-up format for each experience/Contract)

Format D: Format for the Bidder (Single Firm / Partner(s) in case of Joint Venture) for commercial experience in compliance to para 1.02.2, 1.02.3 & 1.02.4 of Annexure-A to BDS at Volume-I : Section-III [In case of Joint Venture bidder, the QR data of each of the partner (in support of meeting the requirement of para 1.02.5 of Annexure-A to BDS at Volume-I : Section-III) is also to furnished, as applicable, using this format.

A1.	Name of Bidder/Lead Partner of JV/other partner(s) of JV	
A2.	Net-worth in last three years 1. Financial Year 2012-13 2. Financial Year 2013-14	: Rs. ----- lakhs : Rs. ----- lakhs

	3. Financial Year 2014-15	: Rs. ----- lakhs
A3.	<p>Minimum Average Annual Turnover (MAAT)</p> <p>1. Financial Year 2010-11 : Rs. ----- lakhs</p> <p>2. Financial Year 2011-12 : Rs. ----- lakhs</p> <p>3. Financial Year 2012-13 : Rs. ----- lakhs</p> <p>4. Financial Year 2013-14 : Rs. ----- lakhs</p> <p>5. Financial Year 2014-15 : Rs. ----- lakhs</p>	
A4	liquid assets (LA) and/ or evidence of access to or availability of credit facilities	: Rs. ----- lakhs
A4.	Details/documentary evidence submitted in support of stated experience/Contract	

(Documentary evidence, such as copies of utility certificates etc., in support of its experience shall be attached with the filled-up format for each experience/Contract)

1.02.1 Failure to comply with this requirement will result in rejection of the joint venture's bid. Sub contractors' experience and resources shall not be taken into account in determining the bidder's compliance with qualifying criteria.

1.02.2 One of the partners shall be nominated as lead partner, and the lead partner shall be authorized to incur liabilities and receive instruction for and on behalf of any and all partners of the joint venture and the entire execution of the contract including receipt of payment shall be done exclusively through the lead partner. This authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the partners as per proforma in section "Annexure" of Special Conditions of Contract-Vol.-IA.

1.02.3 All partner of the joint venture shall be liable jointly and severally for the execution of the contract in accordance with the contract terms and a copy of the agreement entered into by the joint venture partners having such a provision shall be submitted with the bid.

2.0 Pre-qualification criteria – Part B:

The Bidder shall also furnish following documents/details with its bid:

2.01.1 A certificate from banker (as per format) indicating various fund based/non fund based limits sanctioned to the bidder and the extent of utilization as on date Such certificate should have been issued not earlier than three months prior to the date of bid opening. Wherever necessary Employer may make queries with the Bidders' bankers.

2.01.2 The complete annual reports together with Audited statement of accounts of the company for last five years of its own (separate) immediately preceding the date of submission of bid.

2.01.3 Note:

2.01.3.1 In the event the bidder is not able to furnish the information of its own (i.e. separate), being a subsidiary company and its accounts are being consolidated with its group/holding/parent company, the bidder should submit the audited balance sheets, income statements, other information pertaining to it only (not of its group/Holding/Parent Company) duly certified by any one of the authority [(i) Statutory Auditor of the bidder /(ii) Company Secretary of the bidder or (iii) A certified Public Accountant] certifying that such information/documents are based on the audited accounts as the case may be.

2.01.3.2 Similarly, if the bidder happens to be a Group/Holding/Parent Company, the bidder should submit the above documents/information of its own (i.e. exclusive of its subsidiaries) duly certified by any one of the authority mentioned in Note - 2.01.3.1 above certifying that these information/ documents are based on the audited accounts, as the case may be.

2.01.4 Litigation History:

2.01.4.1 The bidder should provide detailed information on any litigation or arbitration arising out of contracts completed or under execution by it over the last five years. A consistent history of awards involving litigation against the Bidder or any partner of JV may result in rejection of Bid.

2.01.4.2 Notwithstanding anything stated hereinabove, the Employer reserves the right to assess the capacity and capability of the bidder, should the circumstances warrant such assessment in an overall interest of the Employer. The Employer reserves the right to waive minor deviations if they do not materially affect the capability of the Bidder to perform the contract.

Attachment-4

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(Form of Certificate of Origin and Eligibility)

Bidder's Name and Address:

To: XXXXX *(Name and Address of Employer)*

We hereby certify that equipment and materials to be supplied are produced in, an eligible source country.

We hereby certify that our company is incorporated and registered in, an eligible source country.

Date:..... (Signature).....

Place:..... (Printed Name).....

(Designation).....

(Common Seal).....

Attachment-4A

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(List of Special Maintenance Tools & Tackles)

Bidder's Name and Address:

To: XXXXX (*Name and Address of Employer*)

Dear Sir,

We are furnishing below the list of special maintenance tools & tackles for various equipment under the subject project. The prices for these tools & tackles are included in our lumpsum bid price. We further confirm that the list of special maintenance tools & tackles includes all the items specifically identified in your bidding documents as brought out below:

S.No.	For Equipment	Item Description	Unit	Quantity
-------	---------------	------------------	------	----------

Notwithstanding what is stated above, we further confirm that any additional special maintenance tools and tackles, required for the equipment under this project shall be furnished by us at no extra cost to the employer.

Date:.....

(Signature).....

Place:.....

(Printed Name).....

(Designation).....

(Common Seal).....

Attachment-4B

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(List of Special Maintenance Tools & Tackles)

Bidder's Name and Address:

To: XXXXX (*Name and Address of Employer*)

Dear Sir,

We are furnishing below the list of special maintenance tools & tackles for various equipment under the subject Project. The prices for these tools & tackles which are to be taken back after the completion of the work by us are not included in our lumpsum bid price. We further confirm that the list of special maintenance tools & tackles includes all the items specifically identified in your bidding documents as brought out below:

(a)

(b)

Date:.....

Place:.....

(Signature).....

(Printed Name).....

(Designation).....

(Common Seal).....

Attachment-5

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(Bought-out & Sub-contracted Items)

Bidder's Name and Address:

To: XXXXX (Name and Address of Employer)

Dear Sir,

1.0 We hereby furnish the details of the items/ sub-assemblies, we propose to buy for the purpose of furnishing and installation of the subject Project:

Sl. No.	Item Description	Quantity proposed to be bought/sub-contracted	Details of the proposed sub-contractor/sub-vendor	
			Name	Nationality
1.				
2.				
3.				
4.				
5.				
6.				

2.0 We ***hereby declare that, we would not subcontract the erection portion of the contract without the prior approval of Employer.***

Date:.....

(Signature).....

Place:.....

(Printed Name).....

(Designation).....

(Common Seal).....

Attachment-6

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(Alternative, Deviations and Exceptions to the Provisions)

Bidder's Name and Address:

To: XXXXX (Name and Address of Employer)

Dear Sir,

The bidder shall itemize any deviation from the Specifications included in his bid. Each item shall be listed (separate sheets may be used and enclosed with this Attachment) with the following information:

Sl. No.	Reference clause in the Specifications	Deviation	Cost of withdrawal of the deviation

The above deviations and variations are exhaustive. We confirm that we shall withdraw the deviations proposed by us at the cost of withdrawal indicated in this attachment, failing which our bid may be rejected and Bid Security forfeited.

Except for the above deviations and variations, the entire work shall be performed as per your specifications and documents. Further, we agree that any deviations, conditionality or reservation introduced in this Attachment-6 and/or in the Bid form, Price schedules & Technical Data Sheets and covering letter, or in any other part of the bid will be reviewed to conduct a determination of the substantial responsiveness of the bid.

Date:.....

(Signature).....

Place:.....

(Printed Name).....

(Designation).....

(Common Seal).....

Attachment-8

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(Manufacturer's Authorization Form)

(On Manufacturer's Letterhead, see Clause 9.3(c) of the ITB)

To: [Insert: name of Employer]

Dear Ladies and/or Gentlemen,

WE *[insert: name of Manufacturer]* who are established and reputable manufacturers of *[insert: name and/or description of the plant & equipment]* having production facilities at *[insert: address of factory]* do hereby authorize *[insert: name & address of Bidder]* (hereinafter, the "Bidder") to submit a bid, and subsequently negotiate and sign the Contract with you against IFB *[insert: title and reference number of Invitation for Bids]* including the above plant & equipment or other goods produced by us.

We hereby extend our full guarantee and warranty for the above specified plant & equipment materials or other goods offered supporting the supply, installation and achieving of Operational Acceptance of the plant by the Bidder against these Bidding Documents, and duly authorize said Bidder to act on our behalf in fulfilling these guarantee and warranty obligations. We also hereby declare that we and, *[insert: name of the Bidder]* have entered into a formal relationship in which, during the duration of the Contract (including warranty / defects liability) we, the Manufacturer or Producer, will make our technical and engineering staff fully available to the technical and engineering staff of the successful Bidder to assist that Bidder, on a reasonable and best effort basis, in the performance of all its obligations to the Purchaser under the Contract.

For and on behalf of the Manufacturer

Signed: _____

Date: _____

In the capacity of *[insert: title of position or other appropriate designation]* and this should be signed by a person having the power of attorney to legal bind the manufacturer.

Date:.....

Place:..... (Signature).....

(Printed Name).....

(Designation).....

(Common Seal).....

- Note 1. The letter of Undertaking should be on the letterhead of the Manufacturer and should be signed by a person competent and having Power of Attorney to legally bind the Manufacturer. It shall be included by the bidder in its bid.*
- 2. Above undertaking shall be registered or notarized so as to be legally enforceable.*

Attachment-9

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(Work Completion Schedule)

Bidder's Name and Address:

To: XXXXX (Name and Address of Employer)

Dear Sir,

We hereby declare that the following Work Completion Schedule shall be followed by us in furnishing and installation of the subject Project for the period commencing from the effective date of Contract to us:

Sl. No.	Description of Work	Period in months from the effective date of Contract
1.	Detailed Engineering and drawing submission a) commencement b) completion	
2.	Procurement of equipment/ components & assembly a) commencement b) completion	
3.	Type Tests a) commencement b) completion	
4.	Manufacturing a) commencement b) completion	
5.	Shipments & Delivery a) commencement b) completion	
6.	Establishment of site office	

Sl. No.	Description of Work	Period in months from the effective date of Contract
7.	Installation at Site a) commencement b) completion	
8.	Testing & Pre-commissioning a) commencement b) completion	
9.	Trial Operation a) commencement b) completion	

Date:..... (Signature).....
Place:..... (Printed Name).....
(Designation).....
(Common Seal).....

Note: Bidders to enclose a detailed network covering all the activities to be undertaken for completion of the project indicating key dates for various milestones for each phase constituent-wise.

Attachment-10

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(Guarantee Declaration)

Bidder's Name and Address:

To: XXXXX *(Name and Address of Employer)*

Dear Sir,

We hereby declare that this Attachment of "Guarantee Declaration" is furnished by us in Packet-I of Inner Envelope-2 of bid envelope.

Date:.....

Place:.....

(Signature).....

(Printed Name).....

(Designation).....

(Common Seal).....

Attachment-11

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(Information regarding Ex-employees of XXXXX (*Name of Employer*) in our Organisation)

Bidder's Name and Address:

To: XXXXX (*Name and Address of Employer*)

Dear Sir,

We hereby furnish the details of ex-employees of **XXXXX (*Name of Employer*)** who had retired/ resigned at the level of **XXXXXX (*Define suitable post*)** from **XXXXX (*Name of Employer*)** and subsequently have been employed by us:

Sl. No.	Name of the person with designation in XXXXX (<i>Name of Employer</i>)	Date of Retirement/ resignation from XXXXX (<i>Name of Employer</i>)	Date of joining and designation in our Organisation
1.
2.
3.
4.
5.

Date:.....

(Signature).....

Place:.....

(Printed Name).....

(Designation).....

(Common Seal).....

Note: The information in similar format should be furnished for each partner of joint venture in case of joint venture bid.

Attachment-12

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(Price Adjustment Data as per Appendix-2 of section-VI : Sample forms and procedures)

Bidder's Name and Address:

To: XXXXX (Name and Address of Employer)

Dear Sir,

We hereby furnish the details of Price Adjustments:

Name of Material	Price as on 30 days prior to date of bid opening*	Price as on 60 days prior to date of shipment*	Variation*
ACSR conductor			
Power / Station / Distribution Transformer (Copper / Aluminium wound)			
Cables			

*Detailed calculations as per appendix-2 of section-VI : sample forms and procedures to be enclosed

Date:.....

(Signature).....

Place:.....

(Printed Name).....

(Designation).....

(Common Seal).....

Attachment-14

(PRECONTRACT INTEGRITY PACT)

General

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on day of the month of 2010, between, on one hand, the (Name of Owner) acting through Shri..... (Name and designation of Project Manager) (hereinafter called the "BUYER", which expression shall mean and include, unless *the* context otherwise requires, his successors in office and assigns) of the First Part and M/s..... (Name of Bidder) represented by Shri_____, Chief Executive Officer (hereinafter called the "BIDDER/Seller" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the BUYER proposes to procure (Name of the Stores/Equipment/Item) and the BIDDER/Seller is willing to offer/has offered the stores and

WHEREAS the BIDDER is a private company/public company/Government undertaking/partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is a PSU/Utility/Department of State Govt. performing its functions on behalf of the (Name of owner).

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to :-

Enabling the BUYER to obtain the desired said stores/equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

Commitments of the BUYER

- 1.1 The BUYER undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe,

No. RECPDCL/TECH/JKPDD/e-Tender/2017-18/1763 Dated: 21.08.2017

consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organisation or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.

1.2 The BUYER will, during the pre-contract stage, treat all BIDDERS alike and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS.

1.3 All the officials of the BUYER will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach

2.0 In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the BUYER with full and verifiable facts and the same is prima facie found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the BUYER the proceedings under the contract would not be stalled.

Commitments of BIDDERS

3.0 The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:-

3.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organisation or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

3.2 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or for bearing to show favour or disfavour to any person in relation to the contract or any other contract with Government.

3.3 BIDDERS shall disclose the name and address of agents and representatives and Indian BIDDERS shall disclose their foreign principals or associates.

- 3.4 BIDDERS shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.
- 3.5 The BIDDER further confirms and declares to the BUYER that the BIDDER is the original manufacturer/integrator/authorised government sponsored export entity of the defence stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially 'or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.
- 3.6 The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.
- 3.7 The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.
- 3.8 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 3.9 The BIDDER shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the BUYER as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.
- 3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
- 3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.
- 3.12 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the BUYER, or alternatively, if any relative of an officer of the BUYER has financial interest/stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filing of tender.

The term 'relative' for this purpose would be as defined in Section 6 of the Companies Act 1956.

- 3.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

4. Previous Transgression

- 4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.
- 4.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

5. Earnest Money (Security Deposit)

- 5.1 While submitting commercial bid, the BIDDER shall deposit an amount..... (to be specified in RFP) as Earnest Money/Security Deposit, with the BUYER through any of the following instruments:
- (i) Bank Draft or a Pay Order in favour of
 - (ii) A confirmed guarantee by an Indian Nationalised Bank, promising payment of the guaranteed sum to the BUYER on demand within three working days without any demur whatsoever and without seeking any reasons whatsoever. The demand for payment by the BUYER shall be treated as conclusive proof of payment.
 - (iii) Any other mode or through any other instrument (to be specified in the RFP).
- 5.2 The Earnest Money/Security Deposit shall be valid upto a period of years or the complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and the BUYER, including warranty period, whichever is later.
- 5.3 In case of the successful BIDDER a clause would also be incorporated in the Article pertaining to Performance Bond in the Purchase Contract that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.
- 5.4 No interest shall be payable by the BUYER to the BIDDER on Earnest Money/Security Deposit for the period of its currency.

6. Sanctions for Violations

- 6.1 Any breach of the aforesaid provisions by the BIDDER or anyone employed by it or acting on its

behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following actions, wherever required:-

- (i) To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.
- (ii) The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason therefore.
- (iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.
- (iv) To recover all sums already paid by the BUYER, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% higher than the UBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.
- (v) To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by the BUYER, along with interest.
- (vi) To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss 'or damage to the BUYER resulting from such cancellation/rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER
- (vii) To debar the BIDDER from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the BUYER.
- (viii) To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.
- (ix) In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened.
- (X) Forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

6.2 The BUYER will be entitled to take all or any of the actions mentioned at para 6.1(i) to (x) of this Pact also on the Commission by the BIDDER or anyone employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal code,

1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of the BUYER to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Independent Monitor(s) appointed for the purposes of this Pact.

7. Fall Clause

7.1 The BIDDER undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or sub systems was supplied by the BIDDER to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract has already been concluded.

8. Independent Monitors

8.1 The BUYER has appointed Independent Monitors (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance to as Monitors) for this Pact in consultation with the Central Vigilance Commission (Names and Addresses of the Monitors to be given).

8.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

8.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

8.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings.

8.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER.

8.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.

8.7 The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.

8.8 The Monitor will submit a written report to the designated Authority of BUYER/Secretary in the Department/ within 8 to 10 weeks from the date of reference or intimation to him by the BUYER / BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

9. Facilitation of Investigation

In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

10. Law and Place of Jurisdiction

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.

11. Other Legal Actions

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings

12. Validity

12.1 The validity of this Integrity Pact shall be from date of its signing and extend upto 5 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller, including warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

12.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

13. The parties hereby sign this Integrity Pact aton.....

BUYER
 Name of the Officer
 Designation
 Deptt./PSU

BIDDER
 CHIEF EXECUTIVE OFFICER

Witness
 1.....
 2.....

Witness
 2.....
 3.....

* Provisions of these clauses would need to be amended/ deleted in line with the policy of the BUYER in regard

to involvement of Indian agents of foreign suppliers

Attachment-15

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(Option for Initial Advance (either Interest Bearing Initial Advance or No Initial Advance) and Information for E-payment, PF details and declaration regarding Micro/Small & Medium Enterprises)

Bidder's Name and Address:

To: XXXXX (Name and Address of Employer)

Dear Sir,

I. We have read the provisions in the Bidding Documents regarding furnishing the option for advance payment. Accordingly, as per ITB Clause 9.3 as provided in Section BDS, Section III, Vol.-I of the Bidding Documents, we hereby confirm to opt the following:

Interest Bearing Initial Advance

Supply Portion : Yes* [] No* []

Installation Portion : Yes^ [] No^ []

(*^ tick ONLY ONE of the selected options)

II. We are furnishing the following details of Statutory Registration Numbers and details of Bank for electronic payment.

1.	Name of the Supplier/ Contractor in whose favour payment is to be made	
2.	Address with PIN Code and State	Registered Office: Branch Office: Correspondence Address:

3.	Status – Company/others [Declaration of Micro/ Small/ Medium Enterprise under Micro/ Small & Medium Enterprises Development Act 2006, if applicable]	
4.	Permanent Account (PAN) No.	
5.	Central Sales Tax (CST) No.	
6.	State Sales Tax No.	
7.	Work Contract Tax No.	
8.	Service Tax Registration No.	
9.	PF Registration No. of the Company	
10.	PF Regional Office covered (with Address)	
11.	Name of Contact Person	
12.	Telephone No(s). Email	Landline(s): Mobile(s): Email ID :
13.	Bank Details for Electronic Payment	Name of the Bank: Address of Branch: Account No.: Type of Account: [] Saving [] Current
14.	9 digit MICR code printed at bottom in middle, next to cheque no.	

15.	IFSC (for RTGS)/NEFT Code (<i>to be obtained from the Bank</i>) <i>Sample Cancelled Cheque to be enclosed</i>	

We hereby declare that the above information is true and correct and we agree that the payment on account of this Contract, in the event of award, be made in the above account maintained in the above mentioned Bank.

Date:.....

(Signature).....

Place:.....

(Printed Name).....

(Designation).....

(Common Seal).....

Attachment-16

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(Additional Information)

Bidder's Name and Address:

To: XXXXX (Name and Address of Employer)

Dear Sir,

In support of the additional information required as per ITB Sub-Clause 9.3 (p) of the Bidding Documents, we furnish herewith our data/details/documents etc., along with other information, as follows (the stipulations have been reproduced in italics for ready reference):

1.0 *The Bidder shall furnish*

A certificate from their Banker(s) (as per prescribed formats in Form 16, Volume-I:Section-VI: Sample Forms and Procedures) indicating various fund based/non fund based limits sanctioned to the Bidder and the extent of utilization as on date. Such certificate should have been issued not earlier than three months prior to the date of bid opening. Wherever necessary the Employer may make queries with the Bidders' Bankers.[Reference ITB clause 9.3(p)(i)]

- 1.1 In accordance with 1.0, certificate(s) from banker as per requisite format, indicating various fund based/non fund based limits sanctioned to the bidder or each member of the joint venture and the extent of utilization as on date is/are enclosed, as per the following details:

Name of the Bidder/partner of Joint Venture	
Name of the Banker by whom certificate issued	
Date of certificate (should not be earlier than 3 months prior to date of bid opening)	
Whether fund based/non fund based limits are indicated in the certificate	
Whether extent of utilization is indicated in the certificate	

- 1.2 *The Bidder should accordingly also provide the following information/documents (**In case of JV bidders, information should be provided separately for all the Partners of JV in the given format**):*

- (i) Details of Banker:

Name of Banker	
Address of Banker	_____ _____ _____
Telephone No.	_____
Contact Name and Title	_____
Fax No.	_____
E-mail ID	_____

- (ii) As per para 1.0, Authorization Letter(s) from the bidder (in case of JV bidder, from all the partners) addressed to the Banker(s), authorizing **XXXXX (Name of Employer)** to seek queries about the bidder with the Banker(s) and advising the Banker(s) to reply the same promptly, is/are enclosed as per following details:

Sl. No.	Letter Ref.	Date	Addressed to (name of the Bank)

2.0 **Litigation History**

The bidder should provide detailed information on any litigation or arbitration arising out of contracts completed or under execution by it over the last five years. A consistent history of awards involving litigation against the Bidder or any partner of JV may result in rejection of Bid. [Reference ITB clause 9.3(p)(ii)]

- 2.1 Details of litigation history resulting from Contracts completed or under execution by the bidder over the last five years

Year	Name of client, cause of litigation/arbitration and matter in dispute	Details of Contract and date	Award for or against the bidder	Disputed amount

--	--	--	--	--

3.0 OTHER INFORMATION

3.1 Current Contract Commitments of works in progress

Bidders (individual firms or each partners of JV) should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Details of Contract	Value of outstanding work (Rs.)	Estimated completion date

3.2 Financial Data :

(In Rs. Millions)

	Actual (previous five years)					Projection for next five years				
1. Total Assets										
2. Current Assets										
3. Total Liability										
4. Current Liability										
5. Profit before taxes										
6. Profit after taxes										

- The information/documentation in support of Bidder's design infrastructure and erection facilities and capacity and procedures including quality control related to the work, are enclosed at _____ herewith.
- The CV and experience details of a project manager with 15 years experience in executing such contract of comparable nature including not less than five years as manager and the CVs of other employees to be deputed for the subject work, are enclosed at ____ herewith.

Date:.....

(Signature)

Place:.....

(Printed Name)

(Designation)

(Common Seal)

Attachment- 17

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(Declaration for tax exemptions, reductions, allowances or benefits)

Bidder's Name and Address:

To: XXXXX (Name and Address of Employer)

Dear Sirs,

1. We confirm that we are solely responsible for obtaining following tax exemptions, reductions, allowances or benefits in respect of supplies under the subject Project, in case of award. We further confirm that we have considered the same in our bid thereby passing on the benefit to **XXXXX (Name of Employer)** while quoting our prices. In case of our failure to receive such benefits, partly or fully, for any reason whatsoever, the Employer will not compensate us.
2. We are furnishing the following information required by the Employer for issue of requisite certificate if and as permitted in terms of the applicable Govt. of India policies/procedures(in case of award):

Applicable Notification and Clause Ref. No.	Act, No. and	Sl. No.	Description of item on which applicable	Country of origin	Remarks, if any

(The requirements listed above are as per current Notification of Govt. of India indicated above. These may be modified, if necessary, in terms of the Notifications.)

Date:.....

Signature).....

Place:.....

(Printed Name).....

(Designation).....

(Common Seal).....

Attachment-18

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(Declaration)

Bidder's Name and Address:

To: XXXXX (*Name and Address of Employer*)

Dear Sir,

We confirm that Bid Form have been filled up by us as per the provisions of the Instruction to Bidders. We have also uploaded price bid electronically as per the provisions of the Instruction to Bidders. Further, we have noted that the same shall be evaluated as per the provisions of the Bidding Documents.

Further, we hereby confirm that except as mentioned in the Attachment – 6 (Alternative, Deviations and Exceptions to the Provisions) hereof and/or the Covering Letter, forming part of our Bid Envelope:

- (i) there are no discrepancies/inconsistencies and deviations/omissions/ reservations to the Bidding Documents, in the price bid;
- (ii) the description of items and the unit thereof in the price schedules are in conformity with those indicated in the price schedule of the Bidding Documents without any deviation to the specified scope of work.

We also confirm that in case any discrepancies/ inconsistencies and deviations/ omissions/ reservations, as referred to in para (i) and (ii) above, is observed in the online price bid, the same shall be deemed as withdrawn/rectified without any financial implication, whatsoever to **XXXXX (*Name of Employer*)**. However, in case of any arithmetical errors, the same shall be governed as per the provision of ITB Sub-Clause 27.2 read in conjunction with BDS.

Date:.....

(Signature).....

Place:.....

(Printed Name).....

(Designation).....

(Common Seal).....

Attachment-19

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

(Bank Guarantee verification Check list)

Bidder's Name and Address:

To: XXXXX (Name and Address of Employer)

S. No.	Checklist	Yes	No
1	Does the bank guarantee compare verbatim with standard proforma for BG?		
2(a)	Has the executing Officer of BG indicated his name designation & Power of Attorney No. / Signing power Number etc. on BG?		
2(b)	Is each page of BG duly Signed/ initialed by the executants and last page is signed with full particulars as required in the standard proforma of BG and under the seal of the bank?		
2(c)	Does the last page of the BG carry the signatures of two witnesses alongside the signature of the executing Bank Manager?		
3(a)	Is the BG on non-judicial stamp paper of appropriate value?		
3(b)	Is the date of sale of non-judicial stamp paper shown on the BG and the stamp paper is issued not more than Six months prior to the date of execution of BG?		
4(a)	Are the factual details such as Bid specification No., LOA No. contract price, etc, correct?		
4(b)	Whether Overwriting /cutting, if any on the BG, authenticated under signature & seal of executants?		
5	Is the amount and validity of BG is inline with contract provisions?		
6	Whether the BG has been issued by a Nationalized bank / Non-Nationalized Bank acceptable to Buyer /Scheduled Bank in India (the applicability of the bank should be in line with the provisions of bidding documents)?		

Date:.....

(Signature).....

Place:.....

(Printed Name).....

(Designation).....

(Common Seal).....

STANDARD BIDDING DOCUMENT

(TURNKEY CONTRACT)

FOR

SUPPLY AND INSTALLATION/REPLACEMENT OF SINGLE PHASE TWO WIRE (10-60 AMP) & THREE PHASE 4 WIRE (20-100 AMP) ELECTRICAL ENERGY METERS ALONG WITH ALL ASSOCIATED ACCESSORIES ON TURNKEY BASIS INCLUDING O&M SERVICES OF METERING INFRASTRUCTURE FOR A PERIOD OF FIVE YEARS AT LEH & KAGIL OF THE STATE JAMMU & KASHMIR UNDER IPDS, PMDP-URBAN & DDUGJY

VOLUME-III

(TECHNICAL SPECIFICATONS & DRAWINGS)

Section-I : Technical Specifications

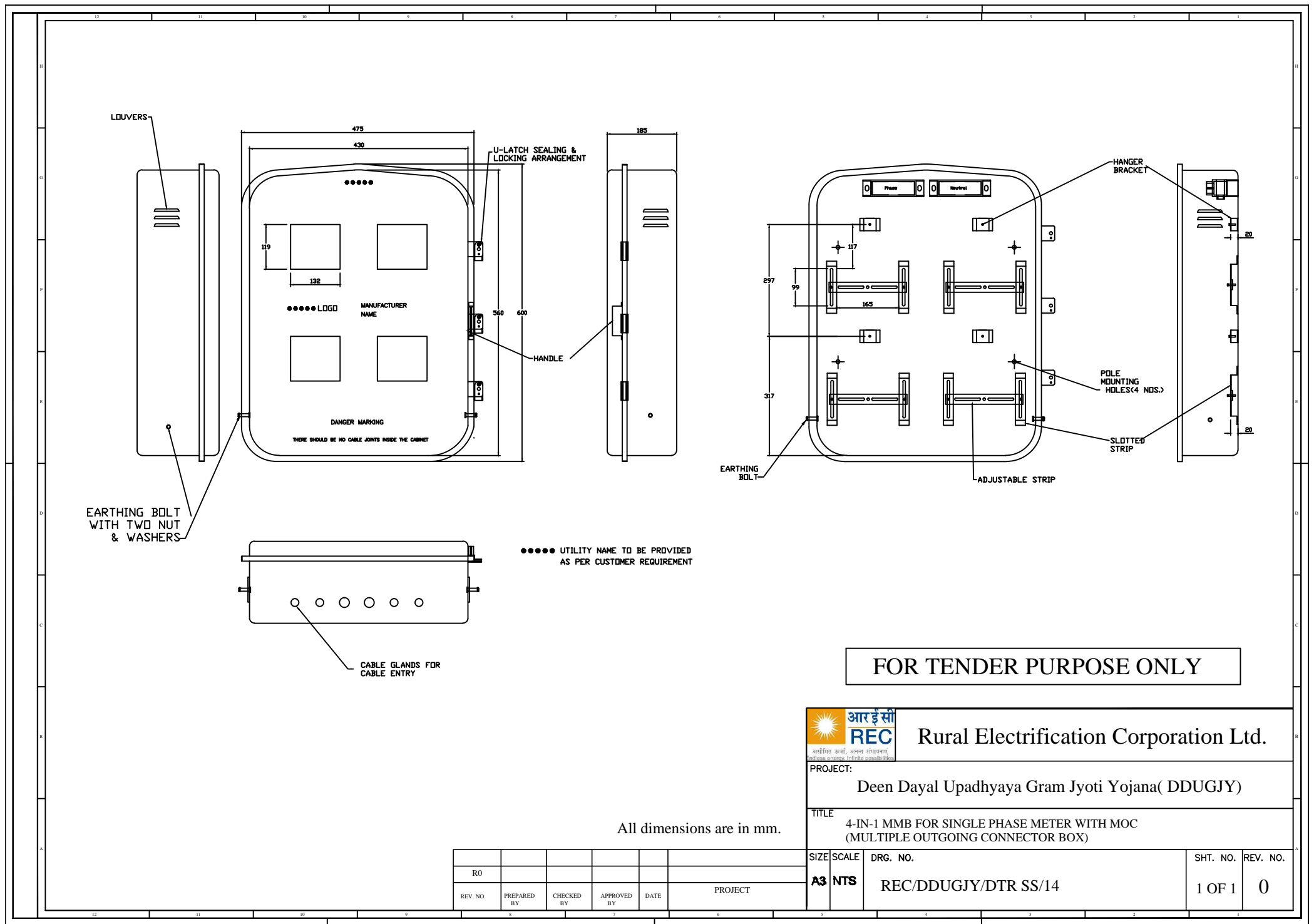
Section-II : Drawings

Tender Specification No.: No. RECPDCL/TECH/JKPDD/e-Tender/2017-18/1763 Dated:

21.08.2017

VOLUME-III : SECTION – II

TENDER DRAWINGS



FOR TENDER PURPOSE ONLY



Rural Electrification Corporation Ltd.

PROJECT:

Deen Dayal Upadhyaya Gram Jyoti Yojana(DDUGJY)

TITLE

4-IN-1 MMB FOR SINGLE PHASE METER WITH MOC
(MULTIPLE OUTGOING CONNECTOR BOX)

SIZE SCALE
A3 NTS

DRG. NO.

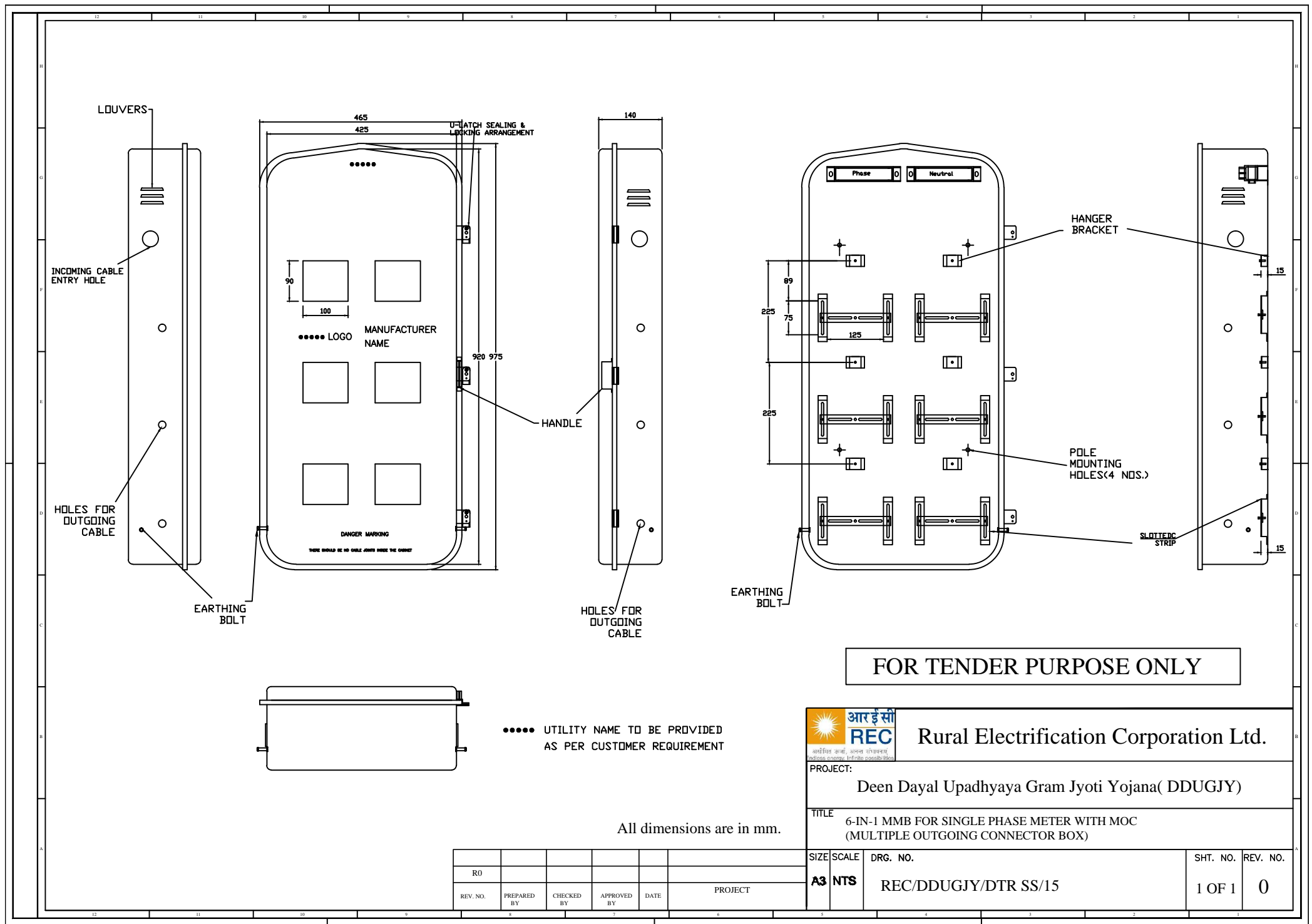
REC/DDUGJY/DTR SS/14

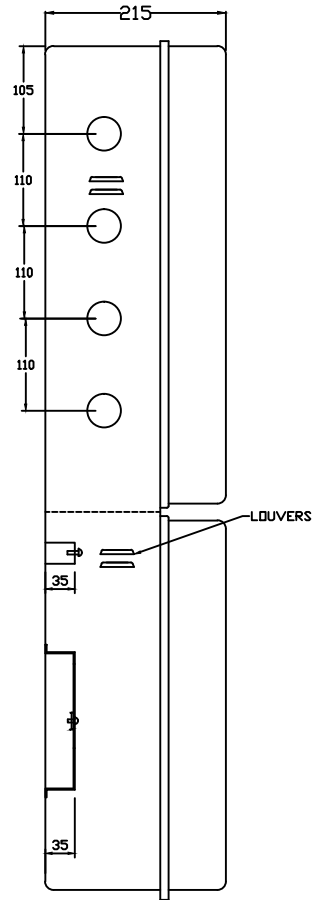
SHT. NO. REV. NO.

1 OF 1 0

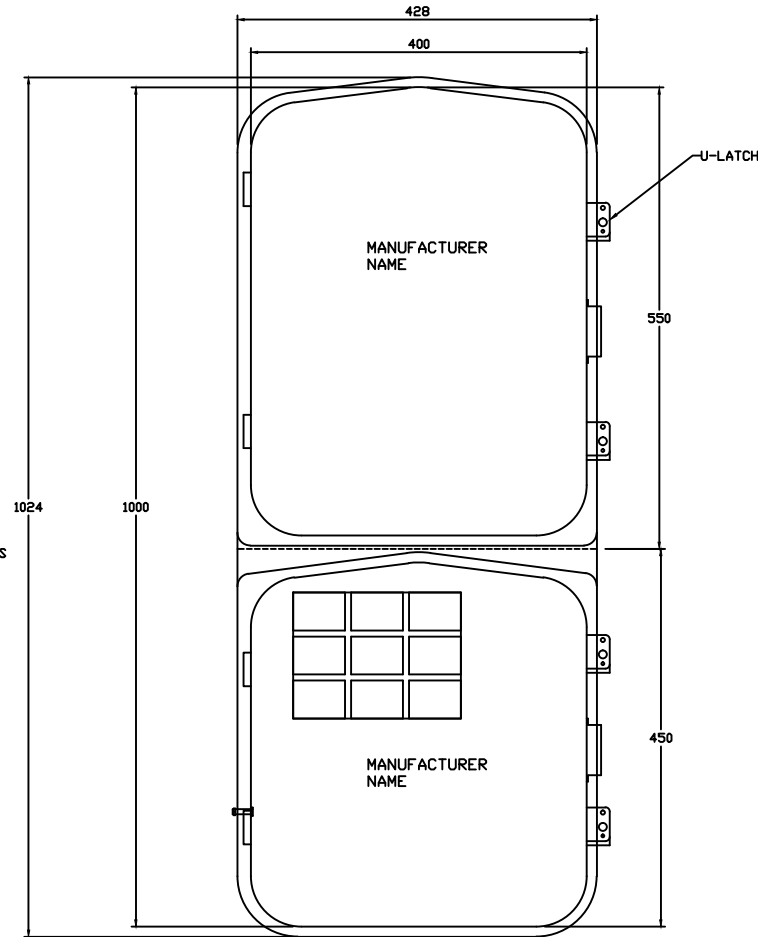
All dimensions are in mm.

REV. NO.	PREPARED BY	CHECKED BY	APPROVED BY	DATE	PROJECT
R0					

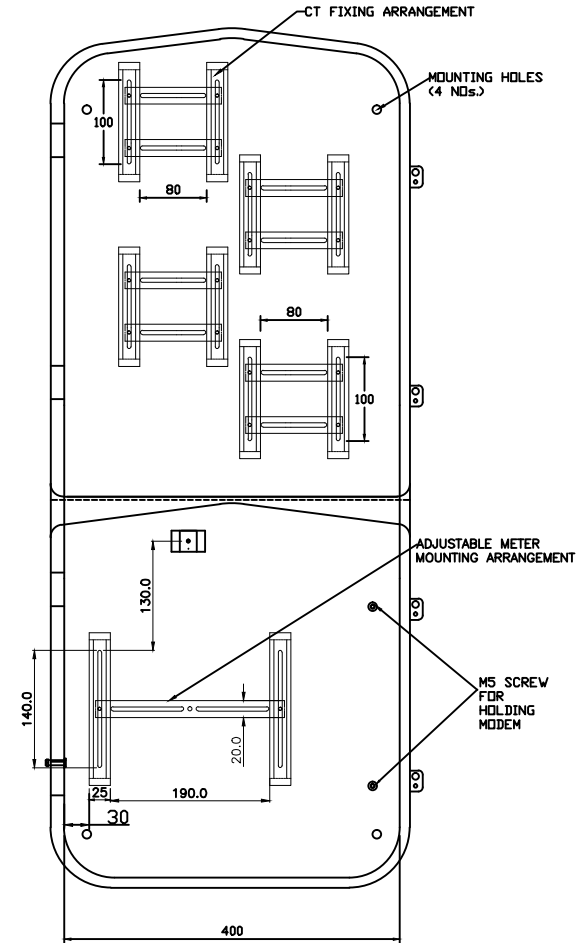




SIDE VIEW



FRONT VIEW
WITH COVER



FRONT VIEW
WITHOUT COVER

All dimensions are in mm.

FOR TENDER PURPOSE ONLY

REV. NO.	PREPARED BY	CHECKED BY	APPROVED BY	DATE	PROJECT
R0					



Rural Electrification Corporation Ltd.

PROJECT:

Deen Dayal Upadhyaya Gram Jyoti Yojana(DDUGJY)

TITLE

TAMPER PROOF DEEP DRAWN METAL METER BOX FOR HOUSING
THREE PHASE METER WITH CTs & MODEM

SIZE SCALE

DRG. NO.

A3 NTS

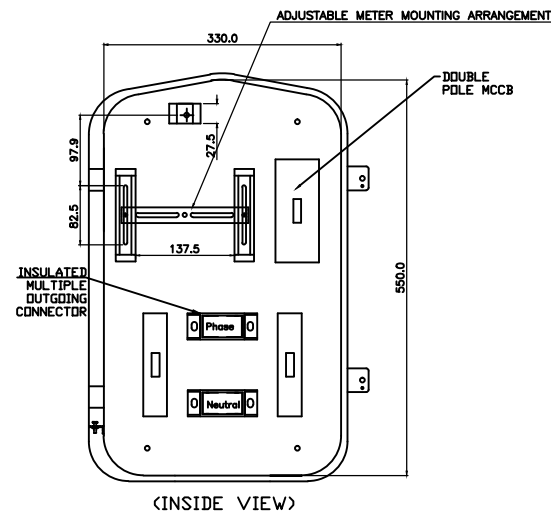
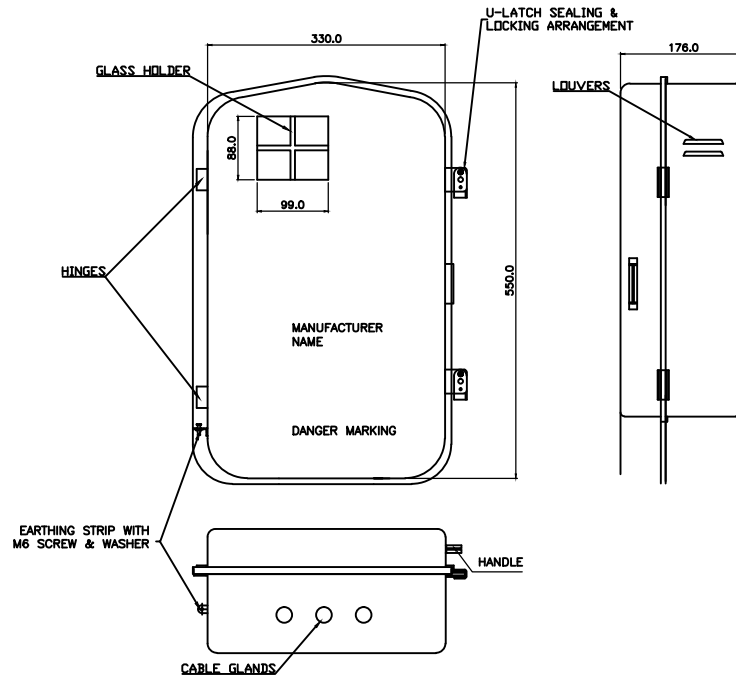
REC/DDUGJY/DTR SS/16

SHT. NO.

1 OF 1

REV. NO.

0



All dimensions are in mm.

FOR TENDER PURPOSE ONLY



Rural Electrification Corporation Ltd.

PROJECT:

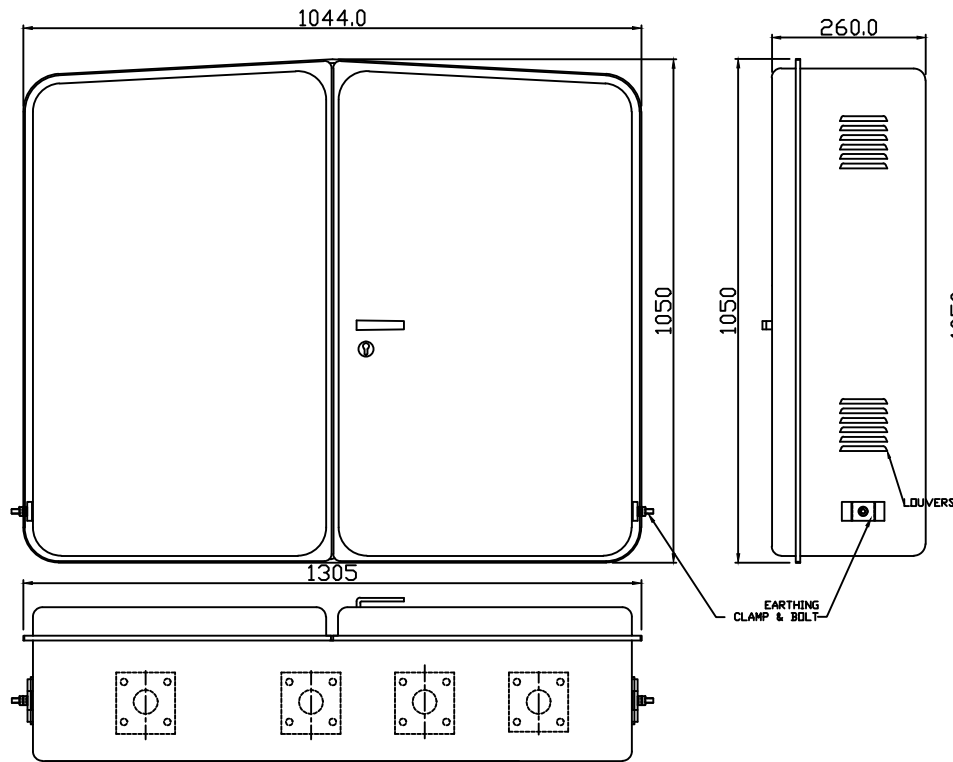
Deen Dayal Upadhyaya Gram Jyoti Yojana(DDUGJY)

TITLE

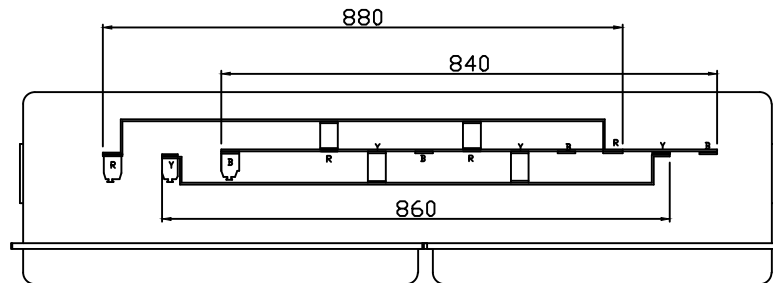
10 KVA & 16 KVA L.T. DISTRIBUTION BOX WITH MCCBs (DEEP DRAWN TYPE)

RO					
REV. NO.	PREPARED BY	CHECKED BY	APPROVED BY	DATE	PROJECT

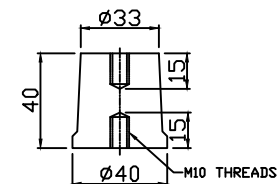
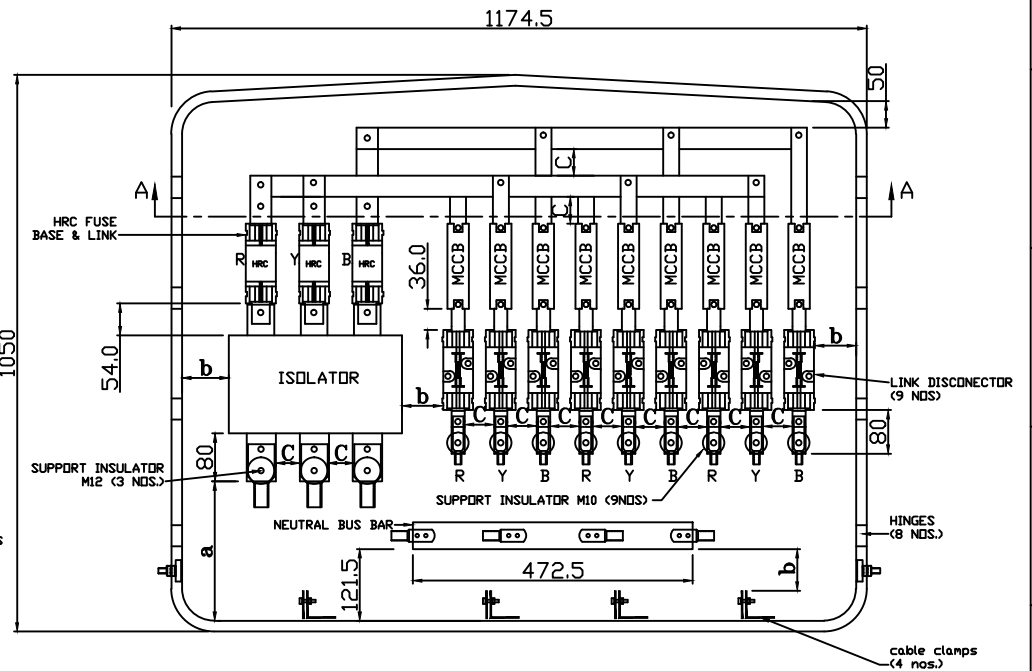
SIZE	SCALE	DRG. NO.	SHT. NO.	REV. NO.
A3	NTS	REC/DDUGJY/DTR SS/20	1 OF 1	0



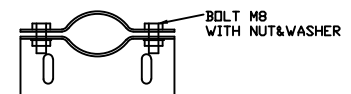
VIEW OF ENCLOSURE WITH CLOSED DOOR.



SECTION 'A-A' WITH BUS BAR ASSEMBLY DETAILS.



DETAILS OF SUPPORT INSULATOR FOR NEUTRAL BUS BAR (2 Nos.)



DETAILS OF CABLE CLAMPS

L.T. DISTRIBUTION BOX WITH ASSY. DETAILS



Rural Electrification Corporation Ltd.

PROJECT:

Deen Dayal Upadhyaya Gram Jyoti Yojana(DDUGJY)

TITLE

L.T. DISTRIBUTION BOX FOR 200 KVA

SIZE SCALE

DRG. NO.

A3 NTS

REC/DDUGJY/DTR SS/21

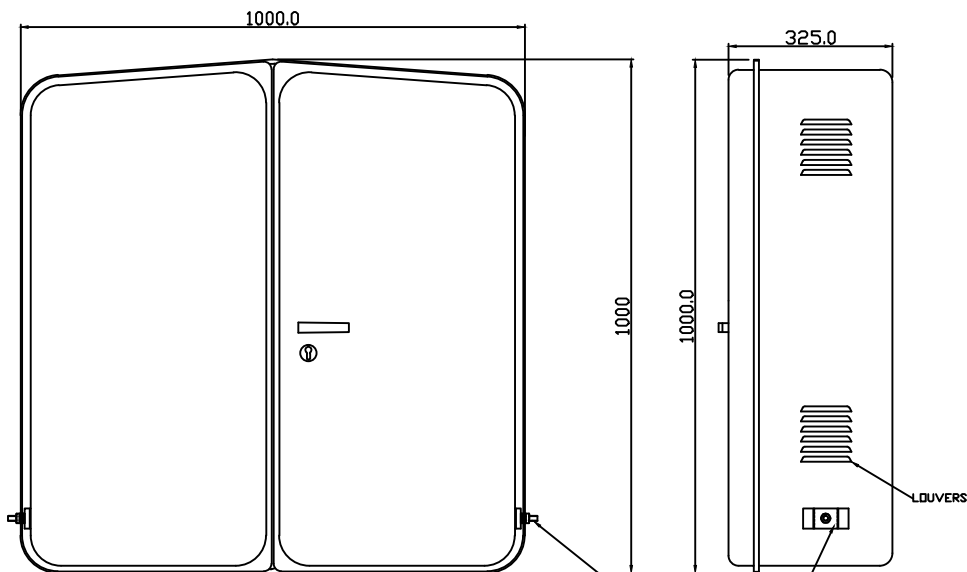
SHT. NO. REV. NO.

1 OF 1 0

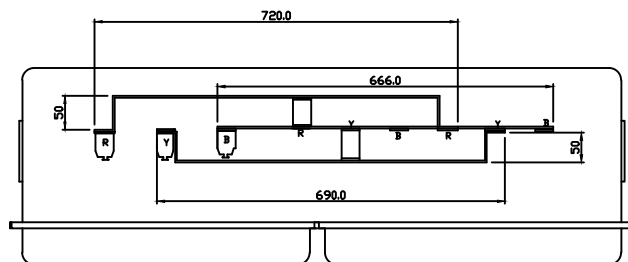
All dimensions are in mm.

FOR TENDER PURPOSE ONLY

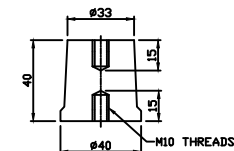
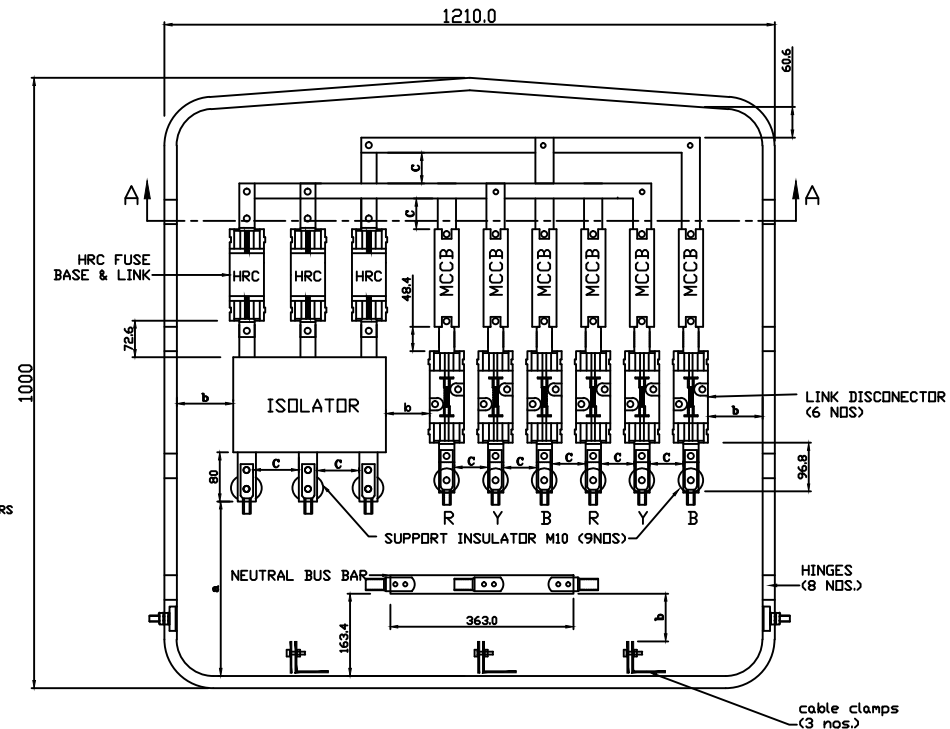
REV. NO.	PREPARED BY	CHECKED BY	APPROVED BY	DATE	PROJECT
R0					



VIEW OF ENCLOSURE WITH CLOSED DOOR.



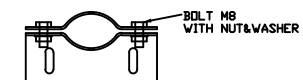
SECTION 'A-A' WITH BUS BAR ASSEMBLY DETAILS.



DETAILS OF SUPPORT INSULATOR FOR NEUTRAL BUS BAR (2 Nos.)

MINIMUM CLEARANCE

- a = 250
- b = 75
- c = 50




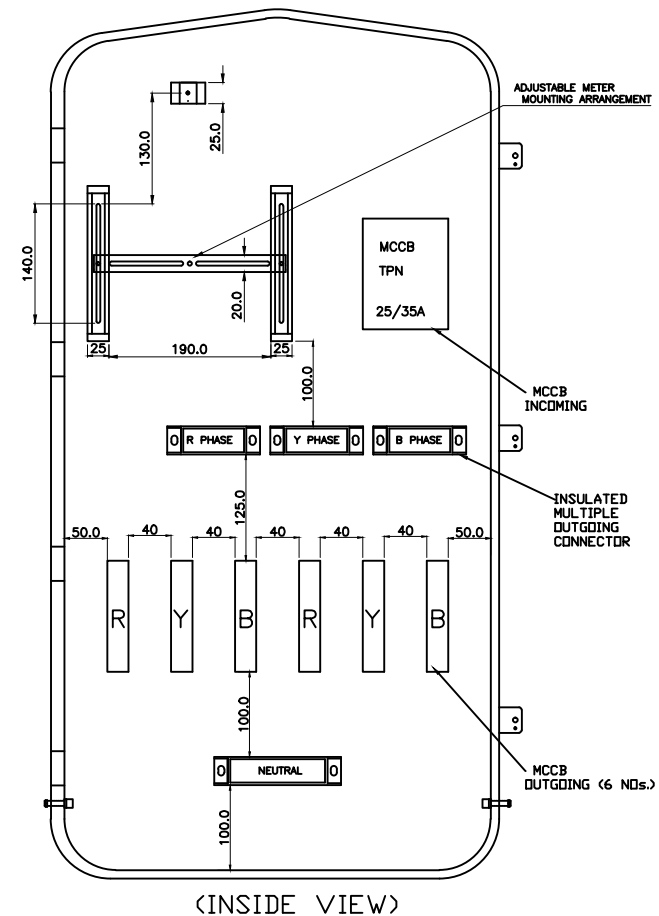
DETAILS OF CABLE CLAMPS

All dimensions are in mm.

FOR TENDER PURPOSE ONLY

REV. NO.	PREPARED BY	CHECKED BY	APPROVED BY	DATE	PROJECT
R0					

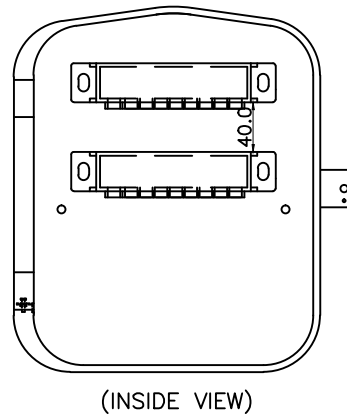
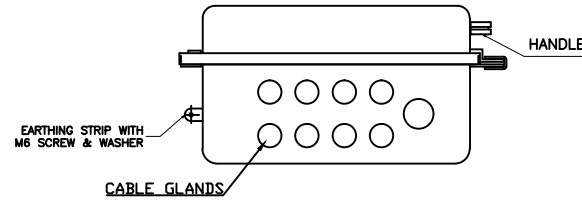
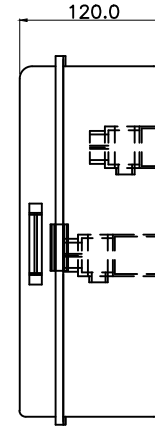
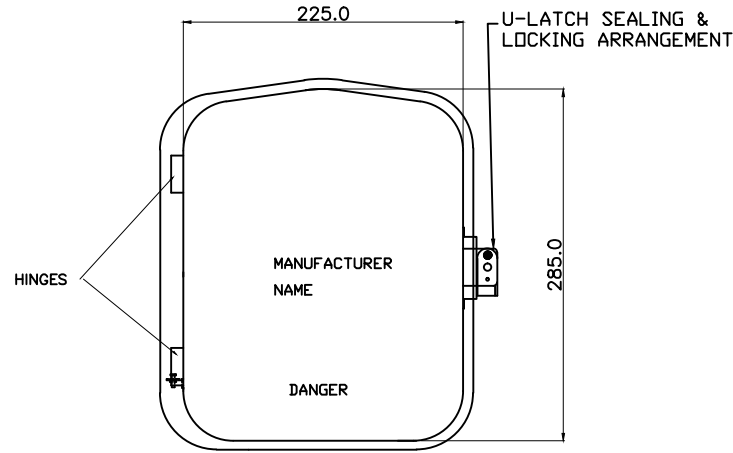
 <div>आर ई सी REC अननित ऊर्जा, अनन्त संभावनाएं Endless energy, Infinite possibilities</div>		Rural Electrification Corporation Ltd.		
PROJECT: Deen Dayal Upadhyaya Gram Jyoti Yojana(DDUGJY)				
TITLE L.T. DISTRIBUTION BOX WITH ASSY. DETAILS FOR 63/100 KVA				
SIZE	SCALE	DRG. NO.	SHT. NO.	REV. NO.
A3	NTS	REC/DDUGJY/DTR SS/23	1 OF 1	0



1 OF 1	0
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FOR TENDER PURPOSE ONLY

R0					
REV. NO.	PREPARED BY	CHECKED BY	APPROVED BY	DATE	PROJECT



All dimensions are in mm.

FOR TENDER PURPOSE ONLY



Rural Electrification Corporation Ltd.

PROJECT:

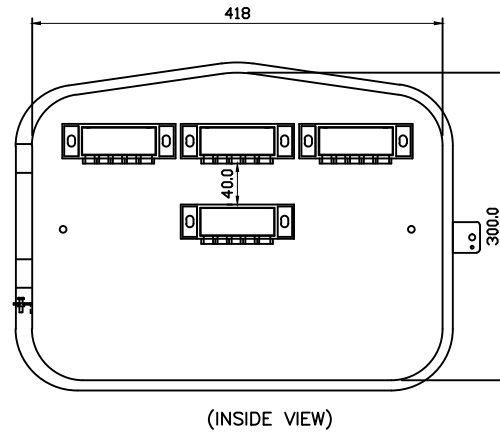
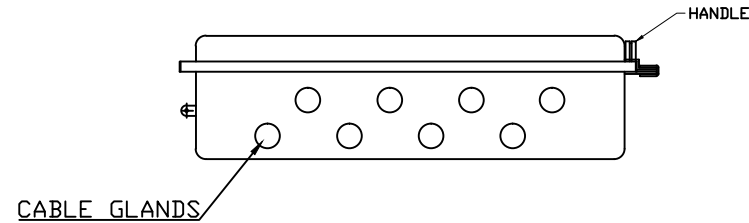
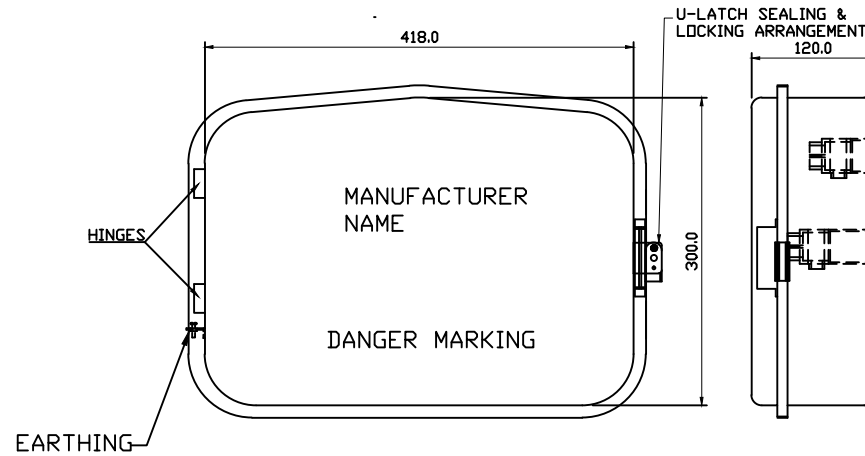
Deen Dayal Upadhyaya Gram Jyoti Yojana(DDUGJY)

TITLE

LT DISTRIBUTION BOX FOR SINGLE PHASE ABC

REV. NO.	PREPARED BY	CHECKED BY	APPROVED BY	DATE	PROJECT
R0					

SIZE	SCALE	DRG. NO.	SHT. NO.	REV. NO.
A3	NTS	REC/DDUGJY/DTR SS/26	1 OF 1	0



All dimensions are in mm.

FOR TENDER PURPOSE ONLY



Rural Electrification Corporation Ltd.

PROJECT:

Deen Dayal Upadhyaya Gram Jyoti Yojana(DDUGJY)

TITLE

DEEP DRAWN TYPE 3 PHASE L.T. DISTRIBUTION BOX FOR AB CABLE

SIZE SCALE
A3 NTS

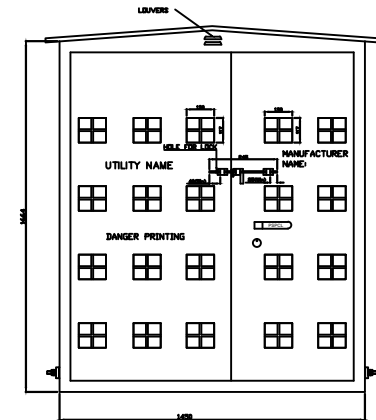
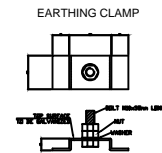
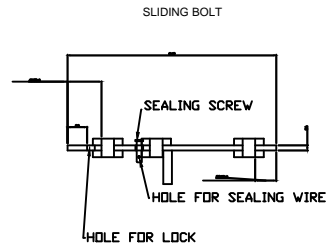
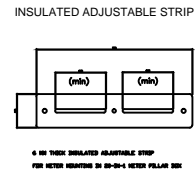
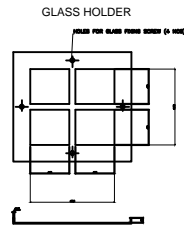
DRG. NO.

REC/DDUGJY/DTR SS/27

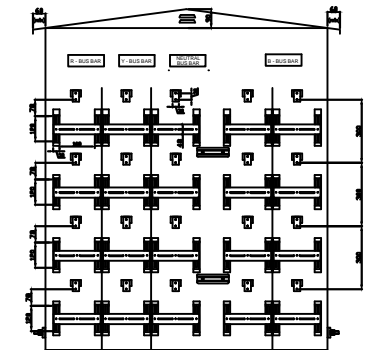
SHT. NO. REV. NO.

1 OF 1 0

REV. NO.	PREPARED BY	CHECKED BY	APPROVED BY	DATE	PROJECT
RO					



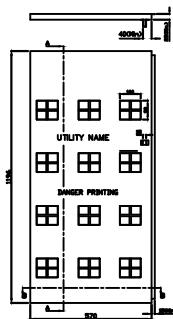
METER PILLAR BOX



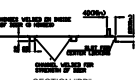
FRONT VIEW

Bus bar arrangement shown is indicative only. Arrangement can be modified as per the bidder design. However, the minimum clearances as well as sequence of insulated bus bars shall be maintained as per drawings / specification.

ANNEXURE-2



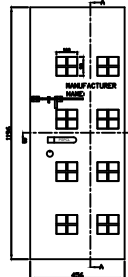
SECTION "AA"



SECTION "BB"

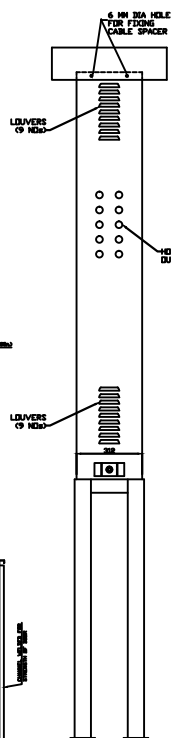
DOOR (LEFT)

ANNEXURE-3

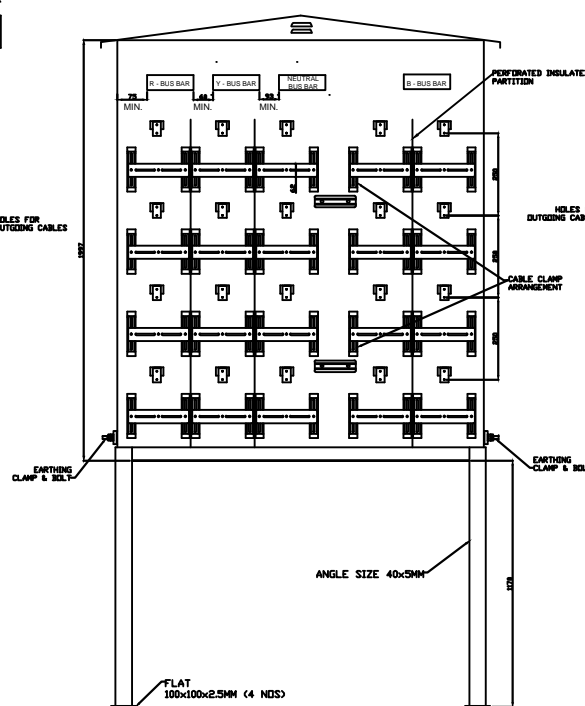


SECTION "BB"

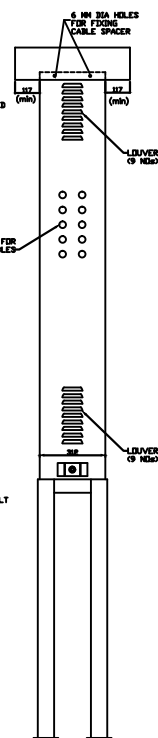
DOOR (RIGHT)



SIDE VIEW (L)



FRONT VIEW



SIDE VIEW (R)

Bus bar arrangement shown is indicative only. Arrangement can be modified as per the bidder design. However, the minimum clearances as well as sequence of insulated bus bars shall be maintained as per drawings / specification.

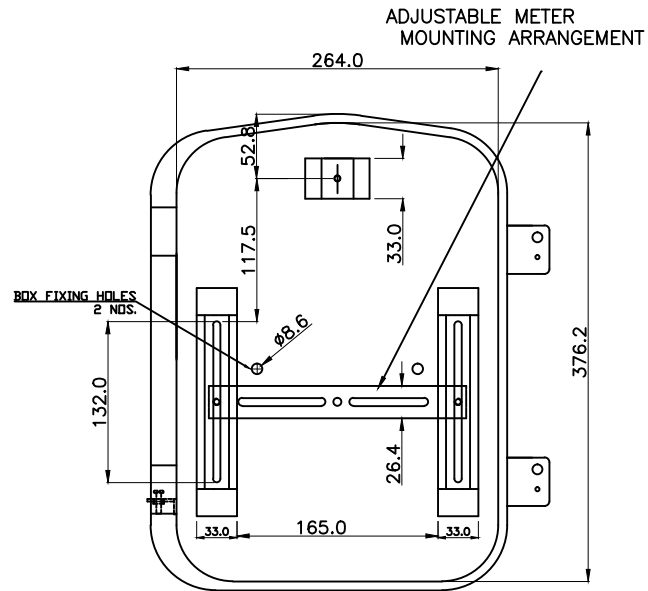
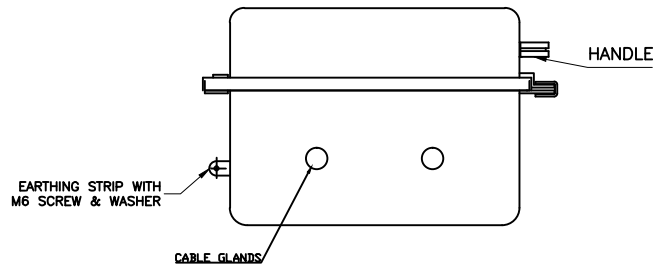
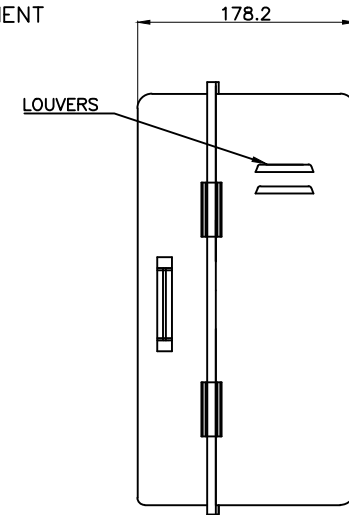
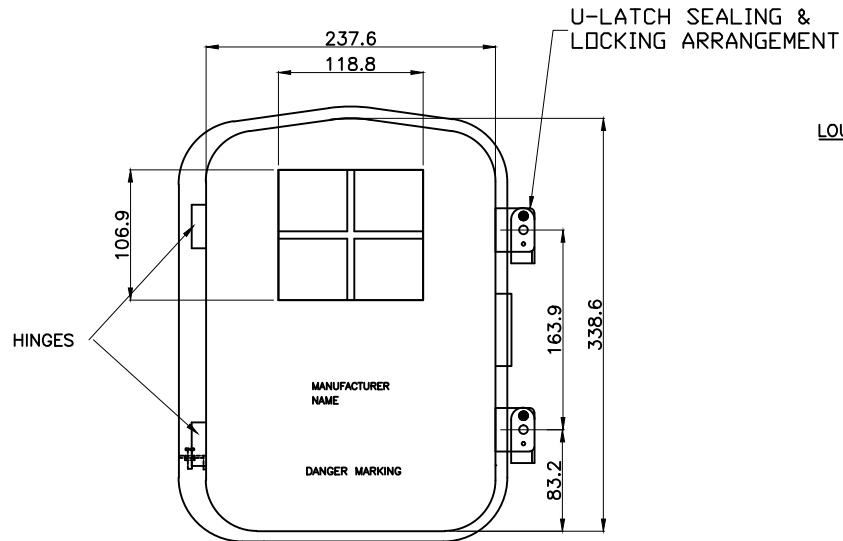
All dimensions are in mm.

FOR TENDER PURPOSE ONLY



Rural Electrification Corporation Ltd.

PROJECT:		Deen Dayal Upadhyaya Gram Jyoti Yojana(DDUGJY)	
TITLE		PILLAR BOX WITH INSIDE DETAILS OF METER MOUNTING ARRANGEMENT	
SIZE	SCALE	DRG. NO.	SHT. NO. REV. NO.
A3	NTS	REC/DDUGJY/DTR SS/28	1 OF 1 0



All dimensions are in mm.

FOR TENDER PURPOSE ONLY



Rural Electrification Corporation Ltd.

PROJECT:

Deen Dayal Upadhyaya Gram Jyoti Yojana(DDUGJY)

TITLE

METAL METER BOX FOR SINGLE PHASE METER (DEEP DRAWN METHOD)

SIZE SCALE

DRG. NO.

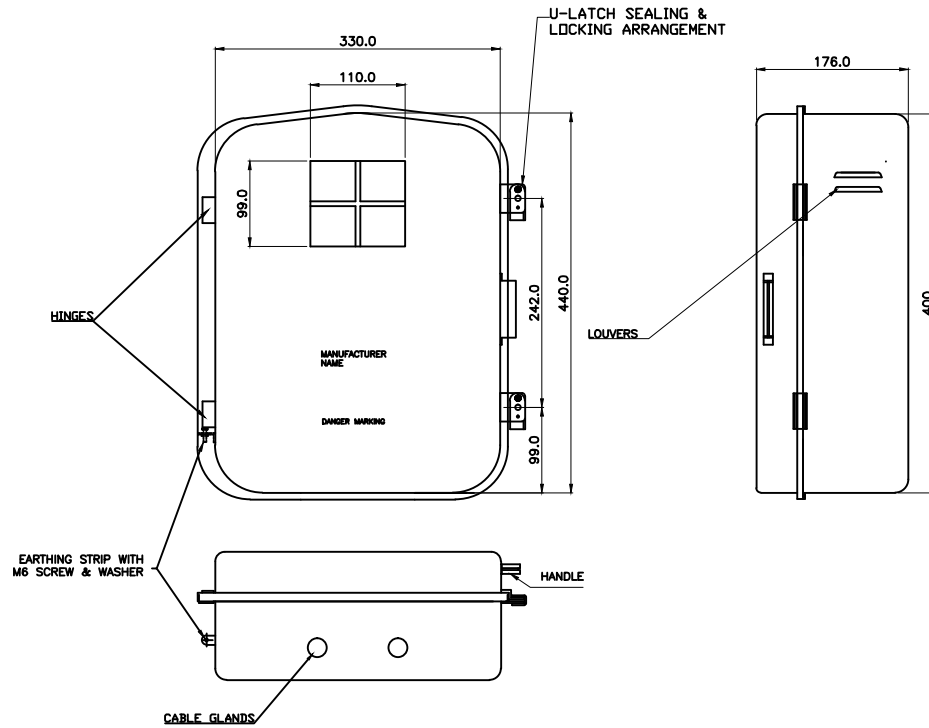
A3 NTS

REC/DDUGJY/DTR SS/29

SHT. NO. REV. NO.

1 OF 1 0

REV. NO.	PREPARED BY	CHECKED BY	APPROVED BY	DATE	PROJECT
R0					



All dimensions are in MM.

FOR TENDER PURPOSE ONLY



Rural Electrification Corporation Ltd.

PROJECT:

Deen Dayal Upadhyaya Gram Jyoti Yojana(DDUGJY)

TITLE

METAL METER BOX FOR THREE PHASE METER (DEEP DRAWN METHOD)

SIZE

SCALE

DRG. NO.

SHT. NO.

REV. NO.

A3 NTS

REC/DDUGJY/DTR SS/30

1 OF 1

0

REV. NO.	PREPARED BY	CHECKED BY	APPROVED BY	DATE	PROJECT
R0					

STRAP: -

*MANUFACTURER

xx.xx

YEAR AND MONTH OF
MANUFACTURING

052 250

*MANUFACTURER

150

250

11
=
= S'-S' &

NOTE :-

Hk = 7? B9GG '1 'S" + ' - S"S)

TENSILE STRENGTH = 7.5KN Minimum

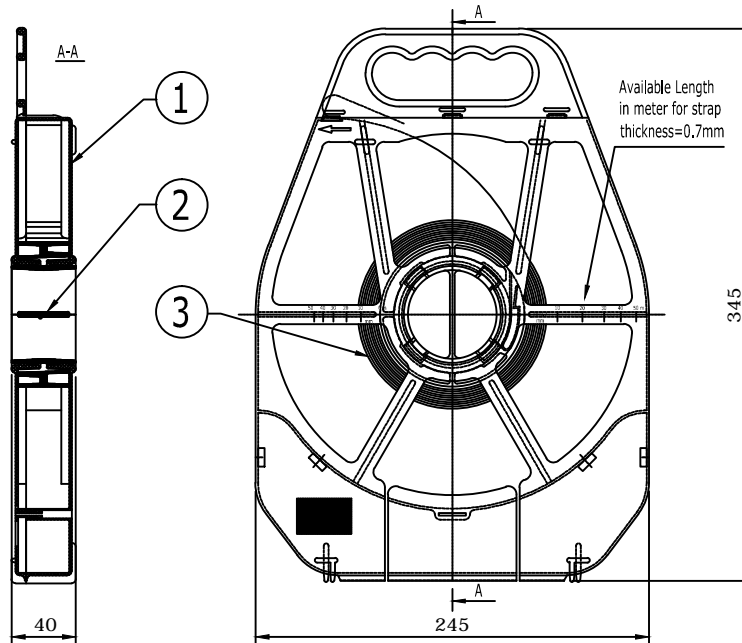
ELONGATION = 30%Min; FINISH = 2B

MATERIAL = SS 202

WEIGHT PER METER = 0.110 Kg (Min)

RAW MATERIAL (COMPOSITION) TOLERANCE = AS PER ASTM "A 480"

STANDARD CASING: -



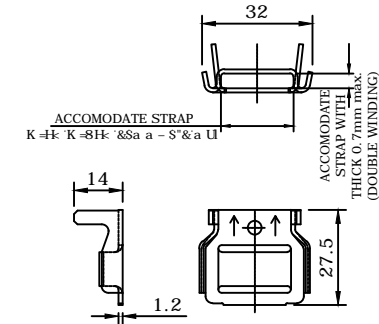
1	S.S STRAP CASING	1	Polypropylene
2	S.S STRAP BOBIN	1	Polypropylene
3	S.S STRAP	50 M	SS 202
Sl.No	Description	Qty	Material

NOTE :-

GROSS WEIGHT PER CASING = 5.7 Kg (Approx.)

QUANTITY PER STANDARD CARTON BOX = 5 nos.

BUCKLE: -



NOTE :-

MATERIAL = SS 304; WEIGHT PER PIECE=8 Grams.

RAW MATERIAL TOLERANCE = AS PER ASTM "A 480"

QUANTITY PER STANDARD BOX = 100 nos.

FOR TENDER PURPOSE ONLY



Rural Electrification Corporation Ltd.

PROJECT:

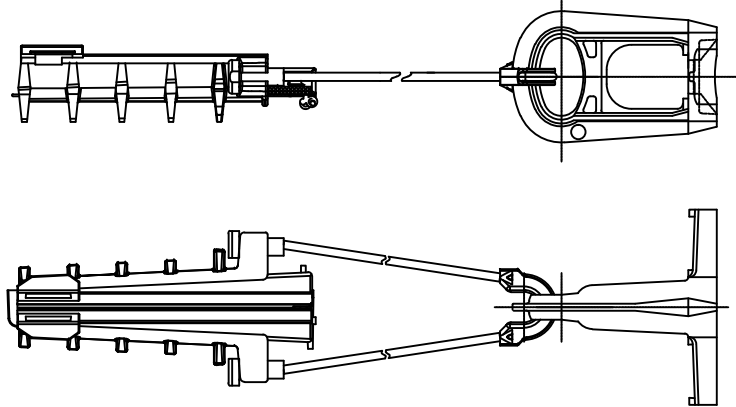
Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

TITLE

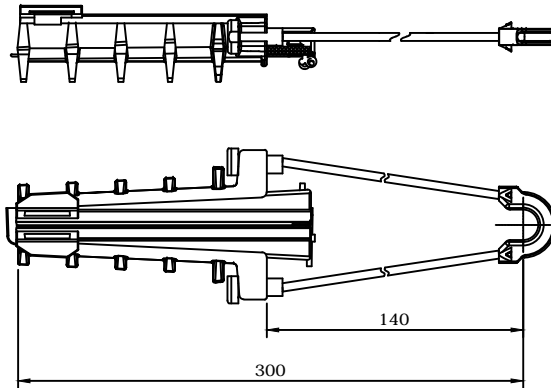
STAINLESS STEEL STRAP (20 x 0.7) & BUCKLES

SIZE	SCALE	DRG. NO.	SHT. NO.	REV. NO.
A4	1:100	REC/DDUGJY/LT-ACC-ABC/01	1 OF 1	0

ANCHORING ASSEMBLY :-



ANCHORING (DEAD-END) CLAMP :-



SPECIFICATION :- AS PER NF C33-041

Messenger Type	Cable Range (mm ²)		Minimum Breaking Load (KN)
	Min	Max	
INSULATED/BARE	25	50	10

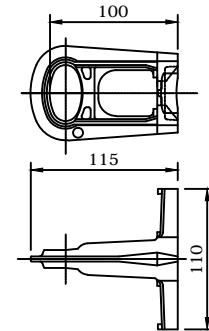
BRACKET :-

NOTE :-

MATERIAL: ALUMINIUM ALLOY

SPECIFICATION :- AS PER NF C33-041

Minimum Breaking Load (KN)
15



FOR TENDER PURPOSE ONLY



Rural Electrification Corporation Ltd.

PROJECT:

Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

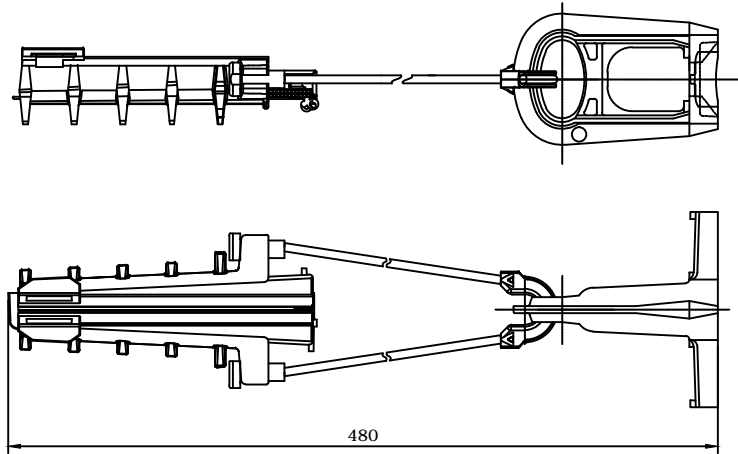
TITLE

ANCHORING ASSEMBLY (Cable Range-25-50 sq. mm)

SIZE	SCALE	DRG. NO.	SHT. NO.	REV. NO.
A4	1:100	REC/DDUGJY/LT-ACC-ABC/03A	1 OF 1	0

REV. NO.	PREPARED	CHECKED	APPROVED	DATE	PROJECT
R0					

ANCHORING ASSEMBLY :-



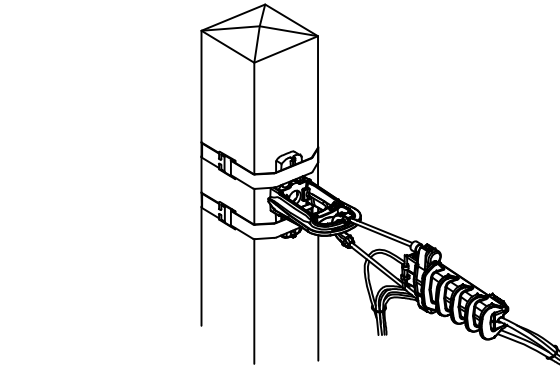
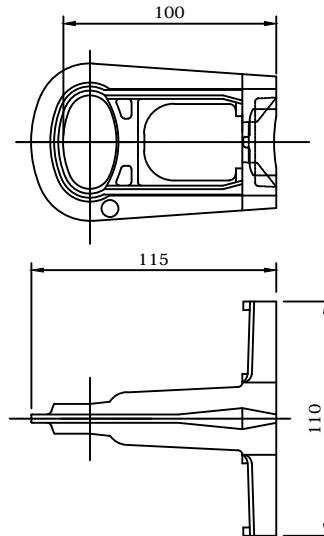
BRACKET :-

NOTE :-

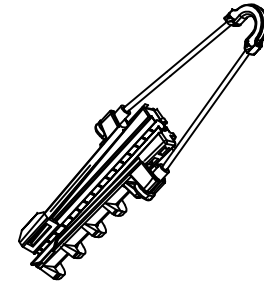
MATERIAL: ALUMINIUM ALLOY

SPECIFICATION :- AS PER NF C33-041

Miniumum Breaking Load (KN)
20



ANCHORING (DEAD-END) CLAMP :-



SPECIFICATION :- AS PER NF C33-041

Messenger Type	Cable Range (mm ²)		Miniumum Breaking Load (KN)
	Min	Max	
INSULATED/BARE	70	95	20

FOR TENDER PURPOSE ONLY



Rural Electrification Corporation Ltd.

PROJECT:

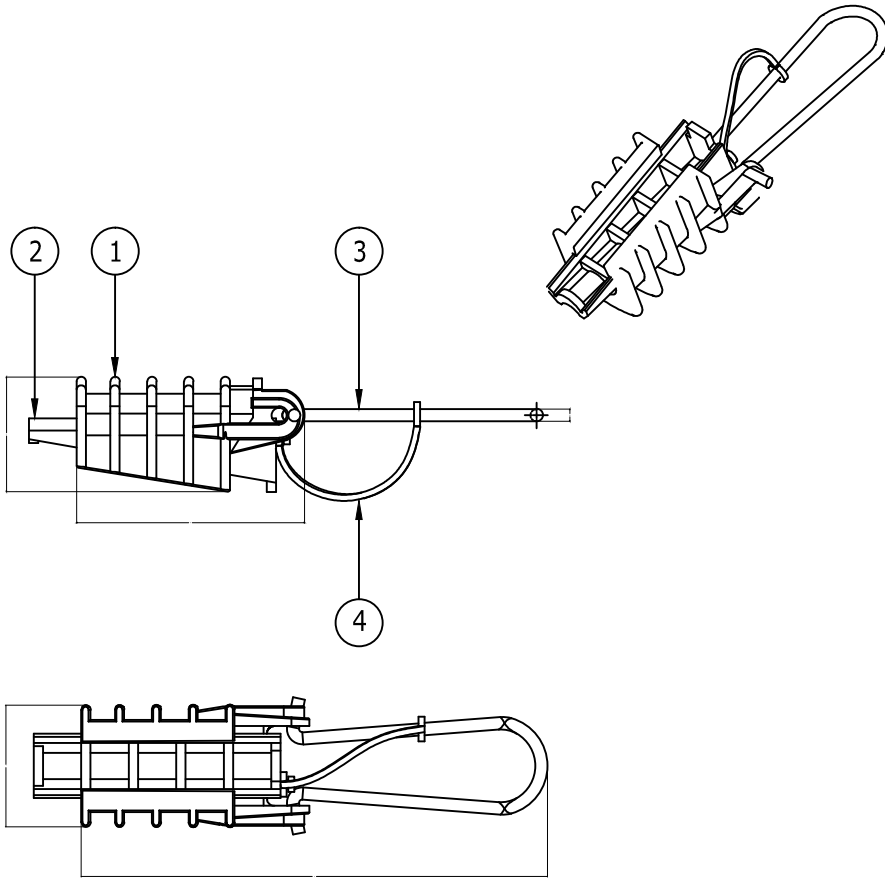
Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

TITLE

ANCHORING ASSEMBLY (Cable Range-70-95 sq. mm)

R0					
REV. NO.	PREPARED	CHECKED	APPROVED	DATE	PROJECT

SIZE	SCALE	DRG. NO.	SHT. NO.	REV. NO.
A4	1:100	REC/DDUGJY/LT-ACC-ABC/03B	1 OF 1	0



4	1	Wedge tie	T.P Elastomer
3	1	Bail	Stainless steel
2	1	Wedge	Thermoplastic
1	1	Body	Thermoplastic
Rep	Qty	Description	Material

FOR TENDER PURPOSE ONLY

Note:- Cable range: Suitable for Ø 3mm - Ø9mm



Rural Electrification Corporation Ltd.

PROJECT:

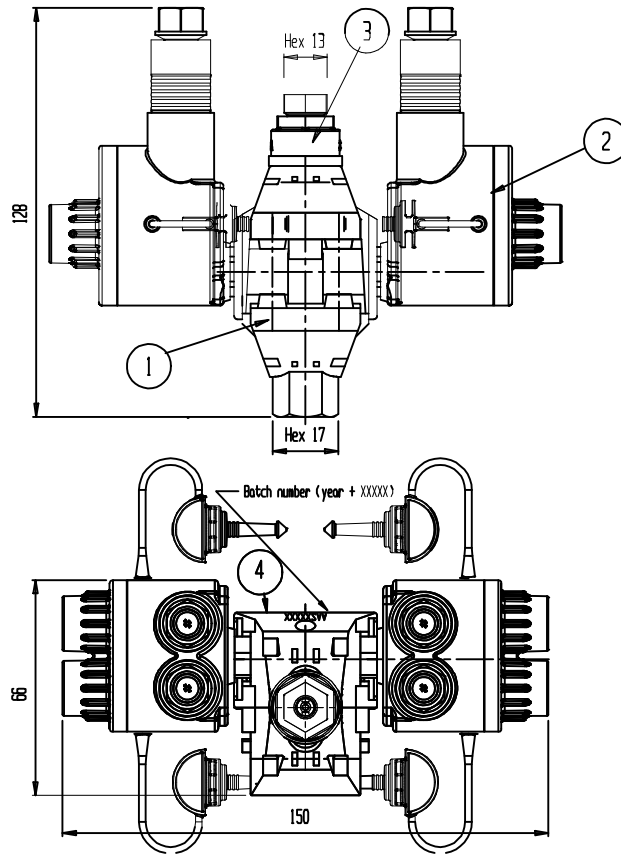
Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

TITLE

SERVICE CLAMP

R0	REV. NO.	PREPARED	CHECKED	APPROVED	DATE	PROJECT
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SIZE	SCALE	DRG. NO.	SHT. NO.	REV. NO.
A4	1:100	REC/DDUGJY/LT-ACC-ABC/04	1 OF 1	0



Rep	Qty.	Description	Material
1	1	Central part	Assembly Drawing
2	1	Plug	Assembly Drawing
3	1	Shearhead	Ploycarbonate GF- natural
4	1	Making	Colour White

FOR TENDER PURPOSE ONLY



Rural Electrification Corporation Ltd.

PROJECT:

Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

TITLE

MUTIPORT INSULATION PIERCING CONNECTOR
STRIPPING / PIERCING

SIZE

A4

SCALE

1:100

DRG. NO.

REC/DDUGJY/LT-ACC-ABC/05A

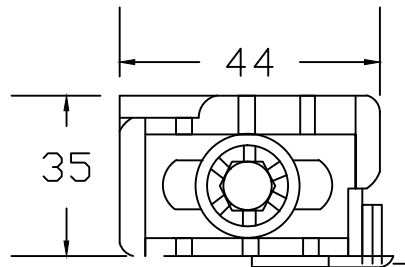
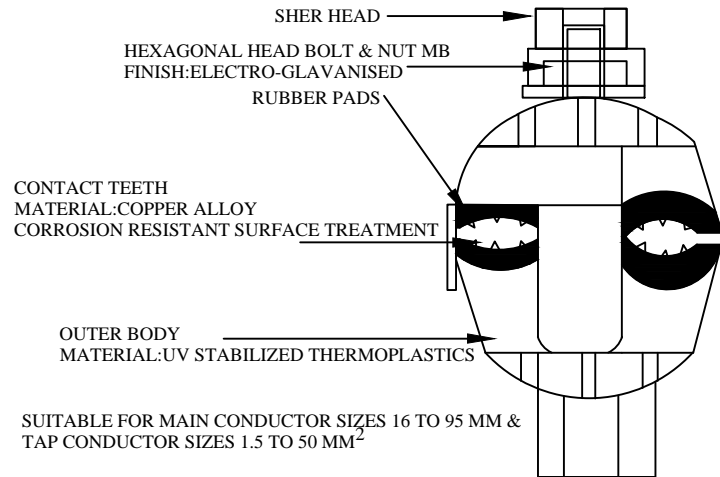
SHT. NO.

1 OF 1

REV. NO.

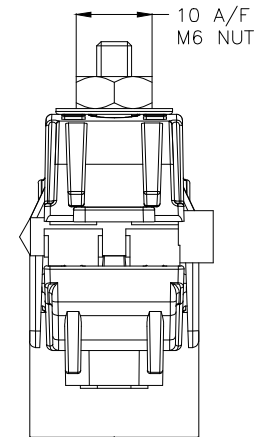
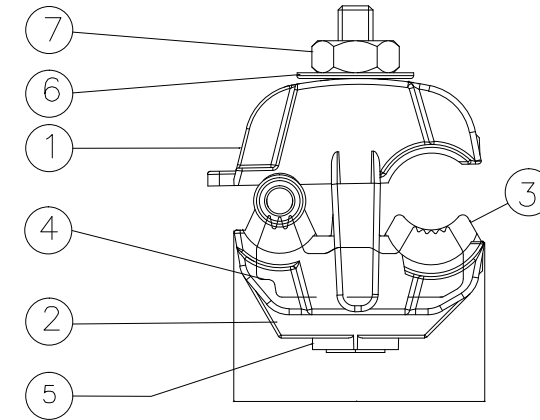
0

R0	REV. NO.	PREPARED	CHECKED	APPROVED	DATE	PROJECT



CABLE RANGE:
 SUITABLE FOR 10 TO 95 SQ.MM MAIN (Bare/Insulated)
 & 1.5 TO 10 SQ.MM TAP (Bare/Insulated)
 WEIGHT: "W" Grams (Approx)
 RATED TIGHTENING TORQUE: "X" Nm

7	1	NUT M6	STEEL
6	1	WASHER	STEEL
5	1	SCREW	STEEL
4	2	BLADE	AL ALLOY
3	1	SEAL	T.P.ELASTOMER
2	1	LOWER BODY	THERMO PLASTIC - BLACK
1	1	UPPER BODY	THERMO PLASTIC - BLACK
REP	QTY	DESCRIPTION	MATERIAL



All dimensions are in mm.

FOR TENDER PURPOSE ONLY

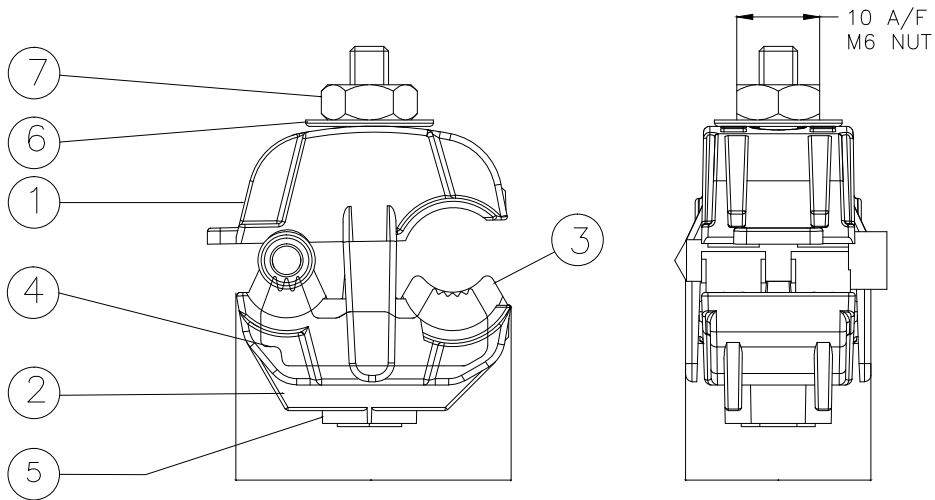


Rural Electrification Corporation Ltd.

PROJECT: Deen Dayal Upadhyaya Gram Jyoti Yojana(DDUGJY)

TITLE: INSULATION PIERCING CONNECTOR

REV. NO.	PREPARED BY	CHECKED BY	APPROVED BY	DATE	PROJECT	SIZE	SCALE	DRG. NO.	SHT. NO.	REV. NO.
R0						A3	NTS	REC/DDUGJY/LT-ACC-ABC/05B	1 OF 1	0



CABLE RANGE:

SUITABLE FOR 10 TO 95 SQ.MM MAIN (Bare/Insulated) & 1.5 TO 10 SQ.MM TAP (Bare/Insulated)

WEIGHT: "W" Grams (Approx)

RATED TIGHTENING TORQUE: "X" Nm

7	1	NUT M6	STEEL
6	1	WASHER	STEEL
5	1	SCREW	STEEL
4	2	BLADE	AL ALLOY
3	1	SEAL	T.P.ELASTOMER
2	1	LOWER BODY	THERMO PLASTIC - BLACK
1	1	UPPER BODY	THERMO PLASTIC - BLACK
REP	QTY	DESCRIPTION	MATERIAL

FOR TENDER PURPOSE ONLY



Rural Electrification Corporation Ltd.

PROJECT:

Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

TITLE

EARTHING CONNECTOR

SIZE

A4

SCALE

1:100

DRG. NO.

REC/DDUGJY/LT-ACC-ABC/06A

SHT. NO.

1 OF 1

REV. NO.

0

R0

REV. NO.

PREPARED

CHECKED

APPROVED

DATE

PROJECT

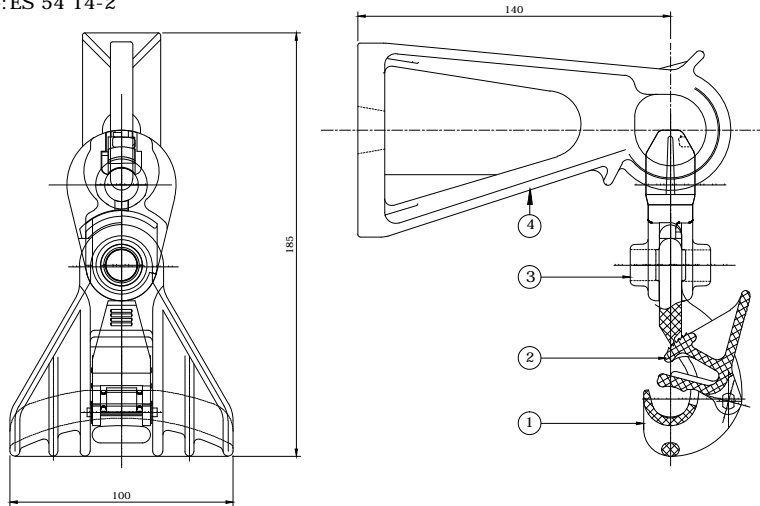
SUSPENSION ASSEMBLY :-

NOTE :-

MATERIAL: SEE TABLE

WEIGHT: 380 GRAMS(Approx)

MARKING: ES 54 14-2



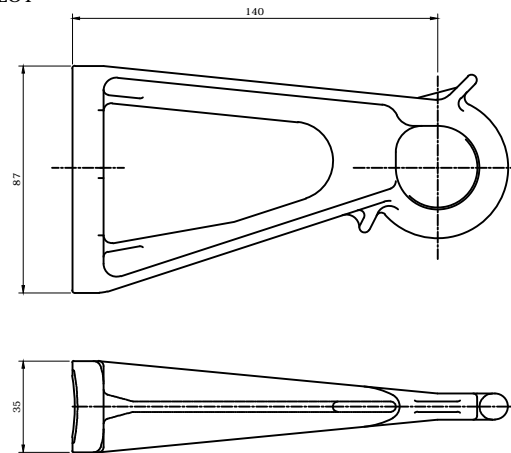
BRACKET :- CS 14

NOTE :-

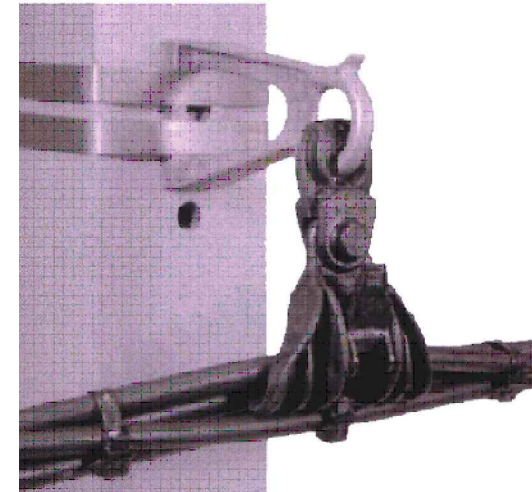
MATERIAL: HEAT TREATED ALUMINIUM ALLOY

MARKING: CS 14

SPECIFICATION :- AS PER NFC33040



R0					
REV. NO.	PREPARED	CHECKED	APPROVED	DATE	PROJECT



SUSPENSION ASSEMBLY :-

SPECIFICATION :- AS PER NF C33-040

Product Reference	Messenger Type	Cable Range (mm ²)		Dia (mm)	
		Min	Max	Min	Max
ES 54 14-2	INSULATED	25	70	6	14

FOR TENDER PURPOSE ONLY



Rural Electrification Corporation Ltd.

PROJECT: Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

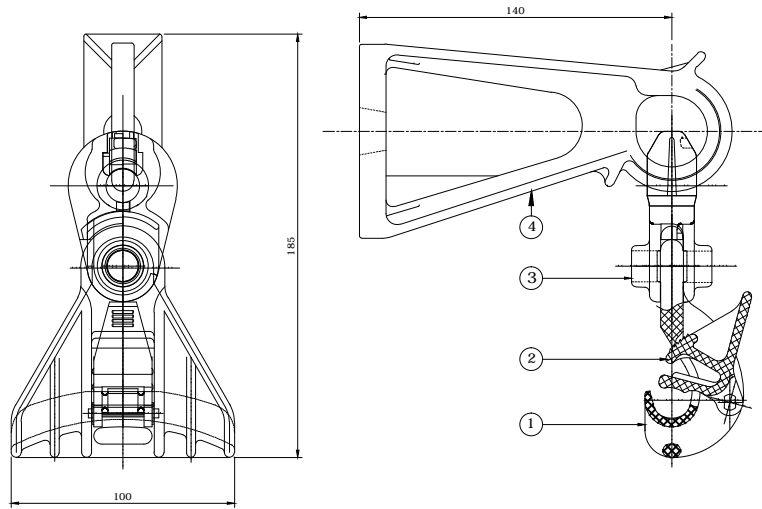
TITLE: SUSPENSION ASSEMBLY
(Cable Range 25-70 sq. mm)

SIZE	SCALE	DRG. NO.	SHT. NO.	REV. NO.
A4	1:100	REC/DDUGJY/LT-ACC-ABC/07A	1 OF 1	0

SUSPENSION ASSEMBLY :-

NOTE :-

MATERIAL: SEE TABLE

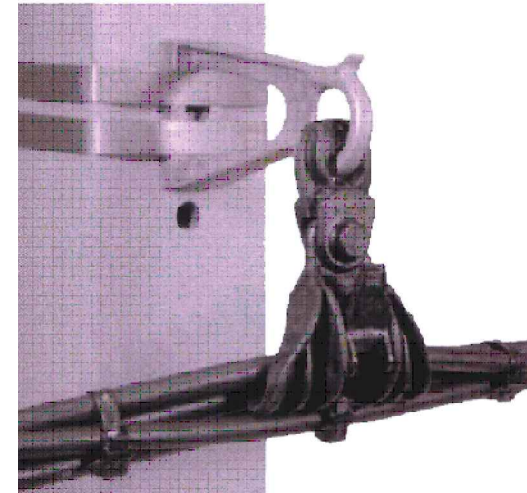
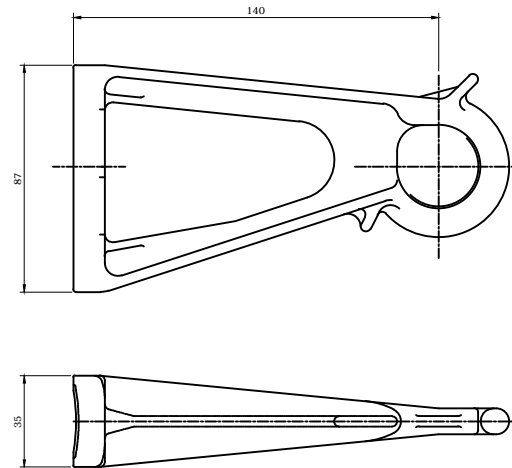


BRACKET :-

NOTE :-

MATERIAL: HEAT TREATED ALUMINIUM ALLOY

SPECIFICATION :- AS PER NFC33040



SUSPENSION ASSEMBLY :-

SPECIFICATION :- AS PER NF C33-040

Messenger Type	Cable Range (mm ²)		Load KN
	Min	Max	
INSULATED/BARE	25	50	12

4	1	MOUNTING BRACKET	HEAT TREATED ALUMINIUM ALLOY	NA
3	2	MOVABLE LINK	THERMO PLASTIC	BLACK
2	1	LEVER	THERMO PLASTIC	BLACK
1	1	BODY	THERMO PLASTIC	BLACK
REP	QTY	DESCRIPTION	MATERIAL	COLOUR

FOR TENDER PURPOSE ONLY



Rural Electrification Corporation Ltd.

PROJECT:

Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

TITLE

SUSPENSION ASSEMBLY
(Cable Range 25-50 sq. mm)

R0					
REV. NO.	PREPARED	CHECKED	APPROVED	DATE	PROJECT

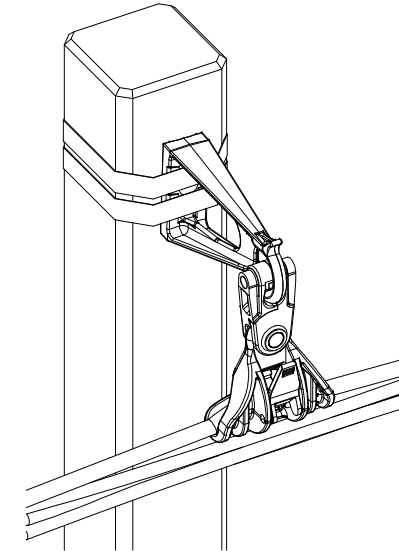
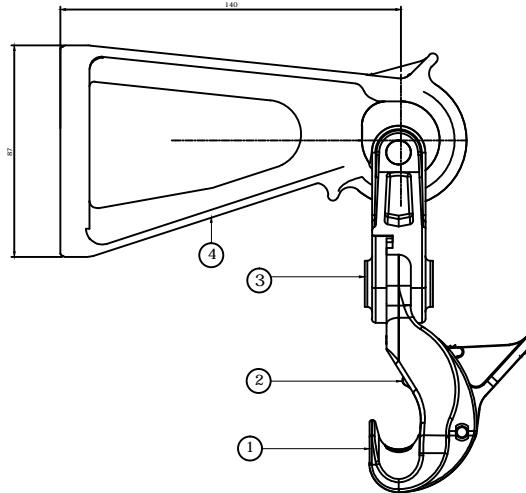
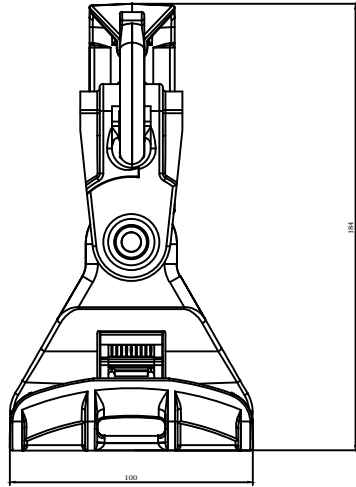
SIZE	SCALE	DRG. NO.	SHT. NO.	REV. NO.
A4	1:100	REC/DDUGJY/LT-ACC-ABC/07B	1 OF 1	0

SUSPENSION ASSEMBLY :-

NOTE :-

MATERIAL: SEE TABLE

4	1	MOUNTING BRACKET	HEAT TREATED ALUMINIUM ALLOY	NA
3	2	MOVABLE LINK	THERMO PLASTIC	BLACK
2	1	LEVER PS	THERMO PLASTIC	BLACK
1	1	BODY	THERMO PLASTIC	BLACK
REP	QTY	DESCRIPTION	MATERIAL	COLOUR

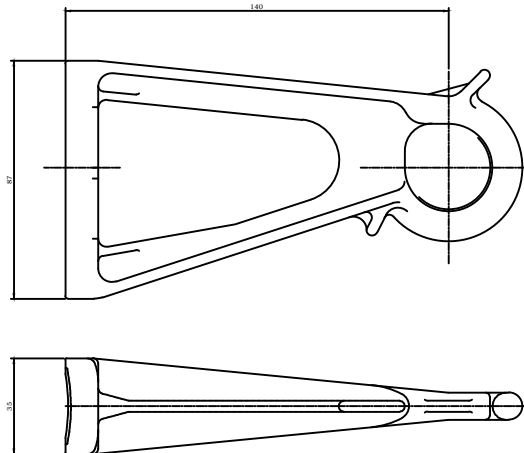


BRACKET :-

NOTE :-

MATERIAL: HEAT TREATED ALUMINIUM ALLOY

SPECIFICATION :- AS PER NFC33040



SUSPENSION ASSEMBLY :-

SPECIFICATION :- AS PER NF C33-040

Messenger Type	Cable Range (mm) ²		Load KN
	Min	Max	
INSULATED/BARE	70	95	15

FOR TENDER PURPOSE ONLY

Rural Electrification Corporation Ltd.



PROJECT:

Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

TITLE

SUSPENSION ASSEMBLY
(Cable Range 70-95 sq. mm)

SIZE	SCALE	DRG. NO.	SHT. NO.	REV. NO.
A4	1:100	REC/DDUGJY/LT-ACC-ABC/07C	1 OF 1	0

GENERAL TOLERANCE ON DIMENSIONS: -) 1

Type & Size of Service Cable

Type	Connected Load	Size
Twin Core Thermoplastic Insulated W.P. Cables As PER IS 3035 (Part-I) IS 3035 (Part-III)	Upto 2 KW	2.5 mm ²
	Above 2 KW to 4 KW	4.0 mm ²

Minimum Ground Clearance

Dimension	Across the Road	Along the Road	Else Where
A	5800	5500	4000

Notes:

1. The Maximum Span to be limited to 35 Meters.
2. Before wire 3.15mm size (10SWG) will be of Hard Quality as per IS: 280-1962
3. 5% of 01 (00) R.R. g'420'y kn'dg'qh'O gf kwo 'En:uu'cu't gt 'KU< 1161-1968.
4. Clamps to be made from 40x3 M.S. Flat

FOR TENDER PURPOSE ONLY



Rural Electrification Corporation Ltd.

PROJECT:

Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

TITLE

LT Service Connection Single Phase

SIZE SCALE

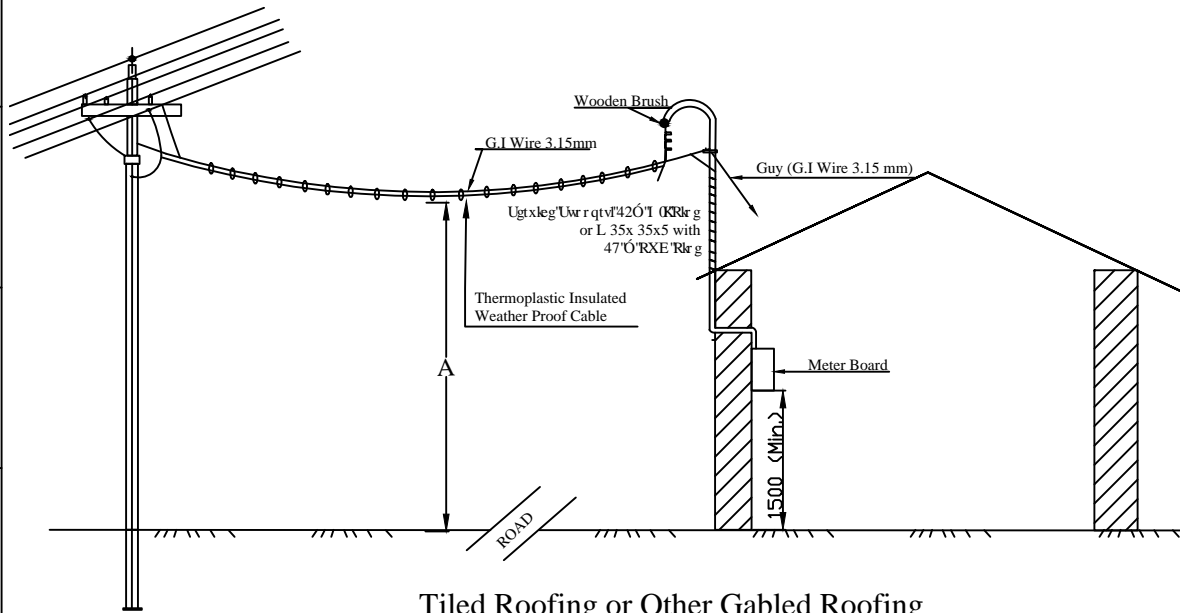
A3 NTS

DRG. NO.

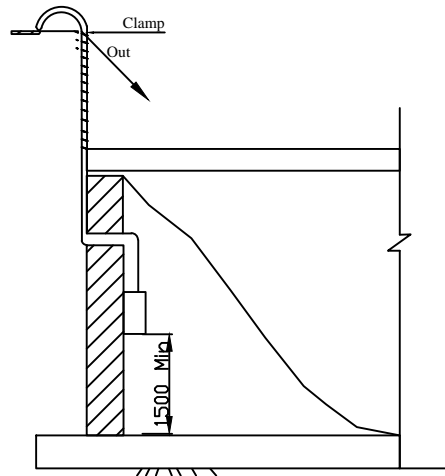
REC/DDUGJY/GEN/06

SHT. NO. REV. NO.

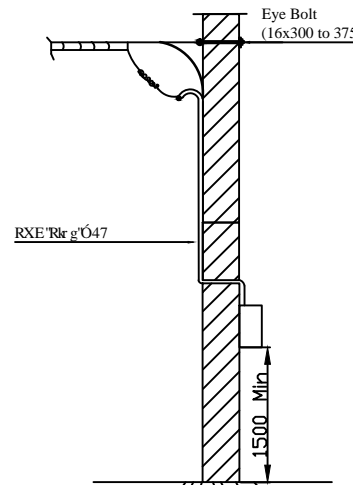
1 OF 1 0



Tiled Roofing or Other Gabled Roofing

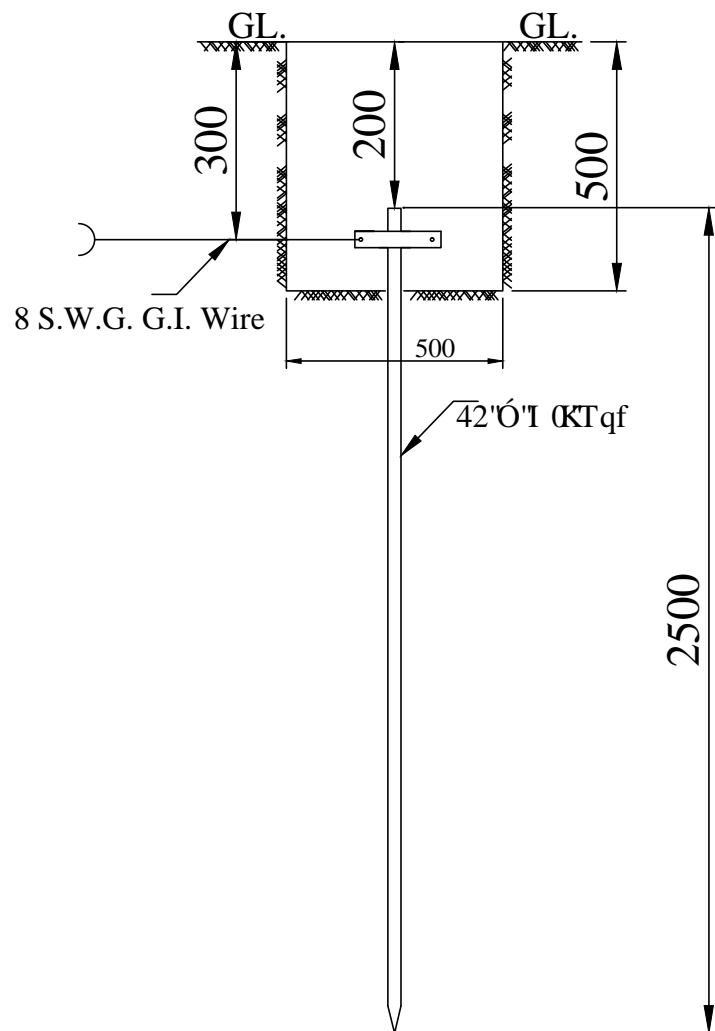


Single Storey-Flat/R.C.C Roofing

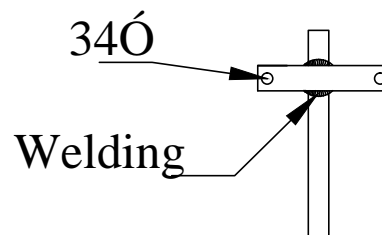


Multi Storey or Single Storey Building with High Roofing

REV. NO.	PREPARED BY	CHECKED BY	APPROVED BY	DATE	PROJECT
R0					



BILL OF MATERIALS						
ERE. CODE.	DESCRIPTION	SECTION	LENGTH (in mm.)	QTY. (in Nos.)	Wt./Mtr. Kg./Mtr.	Total Wt. (in Kg.)
1	Earth Spike Rod	Dia. 20	2500	1	2.500	6.250
2	Clamp for Earth Spike	40x3	190	1	0.900	0.171
3	Bolt & Nuts	M12	30	1	0.058	0.058
4	Spring Washers (3.5 THK.)	M12		1	0.004	0.004
TOTAL						6.483



NOTES:-

- ALL DIMENSIONS ARE IN MM.
- EARTH TERMINAL SHOULD BE MADE OF G.I
UVT R'62z5"Y KJ "3P Q0340"UVWF 0
- MANUFACTURING TOLERANCE.
WRVQ'72o o "Ø7'
73"VQ'322o o "Ø6'
323"VQ'522o o "Ø5'
CDQXG'522o o "Ø4'
- CLAMP IS TO BE WELDED TO SPIKE.
- THE WHOLE ASSEMBLY IS TO BE HOT DIP GALVANISED (IS:2629&4759)
- ALL MS PARTS SHALL CONFIRM TO IS :2062
- WEIGHT MENTIONED IS FOR PACKING AND FORWARDING PURPOSE ONLY.

FOR TENDER PURPOSE ONLY



Rural Electrification Corporation Ltd.

PROJECT:

Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

TITLE

SPIKE TYPE EARTHING FOR NORMAL SOIL

SIZE SCALE

DRG. NO.

A3 NTS

REC/DDUGJY/GEN/07

SHT. NO. REV. NO.

1 OF 1 0

REV. NO.	PREPARED BY	CHECKED BY	APPROVED BY	DATE	PROJECT
R0					



रुरल इलेक्ट्रीफिकेशन कारपोरेशन लिमिटेड
RURAL ELECTRIFICATION CORPORATION LIMITED
(भारत सरकार का उद्यम/ A Government of India Enterprise)
क्षेत्रीय कार्यालय: 157-A, गाँधी नगर जम्मू (जेएण्डके)-180004.
Regional Office: 157-A, Gandhi Nagar, Jammu (J&K)-180004
फ़ोन Phone: 0191-2450800, फ़ैक्स Fax: 0191-2450868
CIN L40101DL1969GOI005095 E-mail: pojammu@recl.nic.in



REC/PO/JK/DDUGJY/17-18/232

Dated: 18.07.2017

The Development Commissioner (Power),
Government of Jammu and Kashmir,
Power Development Department,
Exhibition ground, Srinagar-190001.

Subject: Procurement of Energy Meters under DDUGJY- Communication capability.

Dear Sir,

This has reference to Standard Bidding Documents circulated for DDUGJY & IPDS schemes. As per technical specifications of SBD (Volume-III : Section- I), all Energy Meters required for HT feeder, 3- Phase & 1-Phase Distribution Transformers and 1- phase whole current meter are to be provided with a galvanically isolated optical communication port and communication capability as per IS-15959; so that it can be easily connected to CMRI for data transfer. It is also mentioned that all the meters should have BIS certification mark and necessary software for downloading data through CMRI and uploading to computer shall be provided by manufacturer.


We seek your confirmation on compliance of above specifications and requirement in all Energy Meters for Distribution Transformers & Feeders being procured under DDUGJY scheme.

Kindly arrange to send the confirmation in this regard by 24.07.2017.

This may be treated as most urgent please.

With regards,

Yours faithfully,


Ajay Kumar Gupta
(Chief Program Manager)

Copy to:

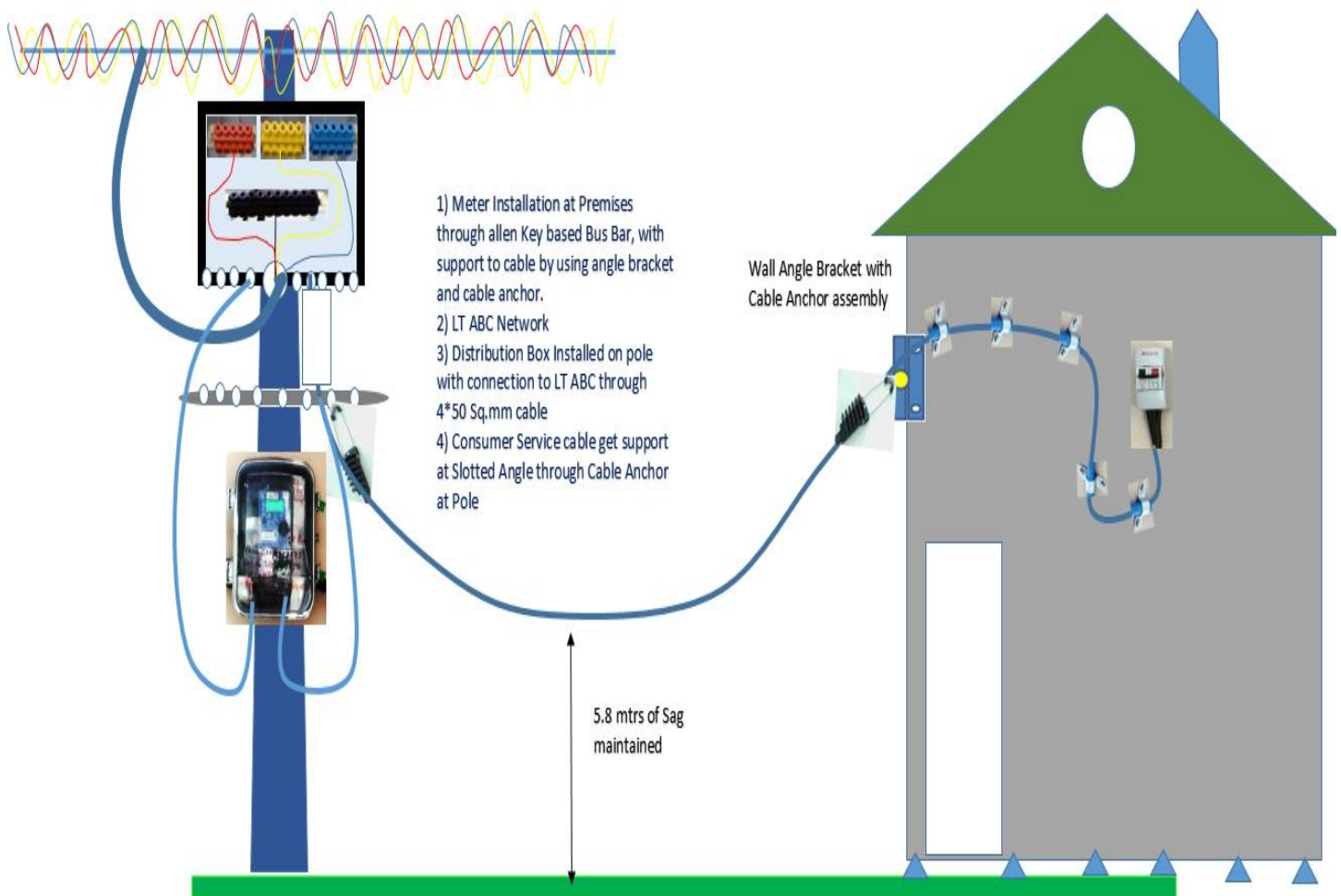
1. PS to Commissioner cum Secretary (Power), Government of Jammu and Kashmir, for kind information please.
2. The Chief Engineer, EM&RE Wing, JKPDD Jammu/ Kashmir/Leh, for information and necessary action please.
3. The Chief Engineer, Project Wing, Jammu/Kashmir for needful action.

पंजीकृत कार्यालय: कोर-4, स्कोप काम्प्लेक्स, 7, लोधी रोड, नई दिल्ली-110003. दूरभाष - 011-24365161, फ़ैक्स 24360644

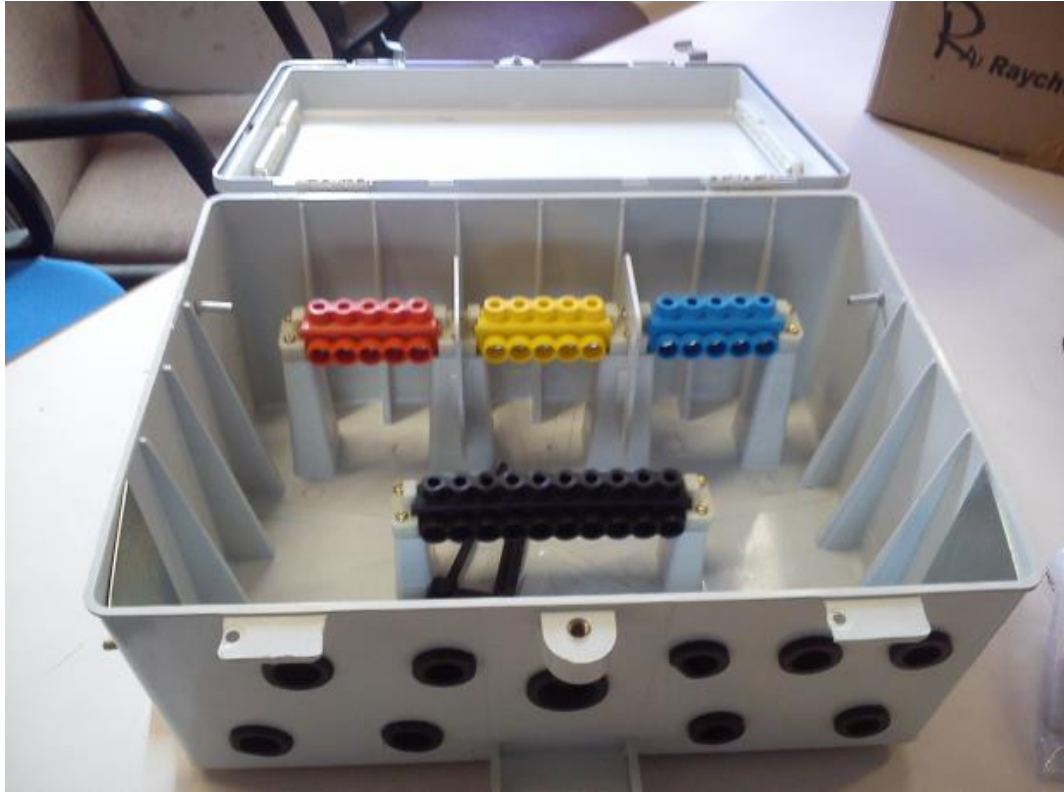
ई-मेल- reccorp@recl.nic.in, कारपोरेट पहचान सं. L40101DL1969GO1005095, वेबसाइट - www.recindia.com

METER INSTALLATION PRACTICES

LT Service Connection from Pole to Premises



3 Phase 10 Way Allen Key based Distribution Box



Group Metering PANEL (15, 30, 40 Meters board)



'Individual meter installation on Pole' with Iron body meter box and D-clamp setup

- Polycarbonate Meter Box to be Replace with Iron Body fully cover meter box arrangement



Deep Drawn Metal Meter Box (MMB) for Single Phase Energy Meter.

1. SCOPE

This specification covers the design, manufacture, testing at manufacturer's place, pre-dispatch inspection and supply of MS sheet, Deep Drawn Metal Meter Box (MMBs). MMBs shall be used for housing Single phase energy meter for electric connections.

CONSTRUCTIONAL AND TECHNICAL PARTICULARS

- 2.1 The Deep Drawn Metal Meter Box (MMBs) shall conform to drawings attached. It shall be for housing Single Phase energy meter of any make. The internal dimensions of MMB shall be 285mmx200mmx150mm (i.e. height x width x depth).
- 2.2 The MMB shall be made from 20 SWG MS sheet by Deep Drawn Method. The base and cover of the MMB shall be individually in one piece without any welding except for fixing of the accessories like hinges, clamps, handle etc. which shall be spot-welded. The cover of MMB shall be fixed on two-tamper proof inside hinges not visible from outside. The hinge pin diameter should be 3mm. Hinges shall be made from 1.6mm MS sheet. The pin of hinges shall have head on top so that it does not fall down after wear & tear. The door of MMB shall open from right to left by minimum 90°. The collar of the door (cover) in closed position shall rest on the collar of body (Base) of MMB. The collar of the door shall overlap the collar of the body of MMB by minimum 8mm. The collar of the body shall be provided with good quality rubber gasket lining of min. 3mm thickness. Thickness of rubber lining shall be such that it provides proper sealing between the cover & base of MMB to avoid penetration of dust & ingress of water. Rubber lining should be fixed with the best quality adhesive so that the same does not get removed by itself on opening of the door. Two numbers 'U' shaped latch arrangement shall be provided to Seal the cover with base as shown in the drawing. 2.5mm & 8mm diameter hole shall be provided in U-shaped latch for sealing wires & padlock. U-latch shall be joined with stainless steel rivet. Holes provided for sealing & padlock should be aligned when latch is in closed position. 'U' shaped latch arrangement shall be made from 1.6 mm thick MS sheet and shall be welded from inner side of the box.
- 2.3 A viewing window opening of the size 90mmx100mm as indicated in the drawing shall be provided about 40mm below top edge of MMB to facilitate taking of meter readings. Viewing window shall be provided with toughened glass of 5mm thickness. This glass shall be fixed from inside of the cover of MMB, with powder coated single piece drawn metal frame (Glass Holder) made of 20 SWG MS sheet fixed with min. four welded studs & nuts. Glass holder studs & nuts shall be inside the cover so that it can not be opened from outside. Glass holder shall have rectangular cuttings as per details shown in drawing. The size of toughened glass shall be 110mmx120mm. This glass has to be filled with a wrap around single piece rubber ring without joint having minimum depth of 8mm made from good quality rubber so that it can with stand weather effect.
- 2.4 A handle of minimum 70mm length and 10mm width and 20 SWG sheet thicknesses should be provided for opening and closing of the cover at the place as shown in the drawing.
- 2.5 The mounting arrangement of the meter shall be as shown in the drawing. It should be raised from the base of MMB body by 15mm (minimum). Zinc Plated adjustable strip shall be provided on meter mounting arrangement for fixing of the meter. The supplier shall supply three mounting MS screws, one for upper (M4 threads x length 12mm) & two (M4 threads x 25mm length) in moving slotted strip.

- 2.6 Two Nos. fixing holes of 6.5mm diameter at the back of surface of MMB shall be provided to fix the MMB at flat wall. For fixing of MMB on wall, 2 Nos. Plastic fixing plugs of 50mm length and 2 Nos. 5mm diameter 40mm long pan head self tapping screws and washers shall be provided with every MMB.
 - 2.7 2 Nos. holes with superior quality rubber cable glands shall be provided at the bottom of MMB. Glands shall be properly fixed such that the same does not get removed from the box. Internal diameter for incoming/outgoing gland shall be suitable for 2Cx10mm² Aluminum conductor PVC cable. Glands shall be made such that internal diameter of glands provided for cables should be closed with the film of minimum 1mm thickness. Cable will go through the glands by piercing the film of the glands. Overlapping of glands from outer side should be approximately 5mm, such that the gland is not removed when cable is inserted inside the box.
 - 2.8 Louvers for ventilation shall be provided on the sidewalls of the box as shown in drawing. 20SWG perforated sheet shall be welded from inside of the louvers.
 - 2.9 MMB shall be adequately protected against rust, dust, water and corrosion both from inside and outside. The MMB shall have Light Admiralty Grey shade (IS-5:1993 Colour No. 697) on outside & inside. The MMB shall be powder coated. The surface of the MMB shall be properly pre-treated and cleaned in 7 tank process and shall be applied with a powder coating of about 40 micron thickness on outer side and inside. The facility for 7-Tank Phosphating & powder coating shall be in house of the tenderer / MMB manufacturer to ensure proper quality.
 - 2.10 Earthing screw of diameter M6 threads with washer shall be provided in the threads of L-shape clamp welded to main body on left side. There should be no powder coating on earthing screws. Earth marking shall be duly embossed near the earth clamp.
 - 2.11 All the screws, studs and washers shall be properly Zinc Plated. The tolerance permissible on the overall dimensions shall be (±) 3%. Danger marking shall be provided on the box in red color. Utility and Manufacturer name shall be provided on the door of meter box. Each box shall be supplied with proper packing in 3ply-corrugated box.
2. The box shall comply with the requirement of IP-33. The box shall be fully type tested along with dimensional drawing as per requirement of IS 13947 (Part-1):1993 and latest amendment, from the govt.-approved laboratories. Government approved laboratories should be accredited by the National Board of Testing & Calibration Laboratories (NABL) of Govt. of India. Test certificate (not older than 5 years) shall be submitted.

3. ACCEPTANCE TESTS:

Following acceptance tests shall be carried out at manufacturer's premises during the inspection of material before dispatch:

a) Visual Examination:

The MMB will be inspected visually, externally and internally for proper Powder Coating layer, fitting of all the components in accordance with technical Specification.

b) Verification of dimensions:

Verification of dimensions, external / internal clearances will be carried out as per technical specifications.

c) Verification of fittings:

Components like Glass, 'U' shaped latch arrangement, glands, clamps, hinges etc will be verified as per technical specification and usage requirement.

d) Painting:

Deep Drawn, 7-Tank Phosphating & Powder coating facilities shall be verified at the place of inspection.

Deep Drawn Metal Meter Box (MMB) for Three Phase Energy Meter

1. SCOPE

This specification covers the design, manufacture, testing at manufacturer's place, pre-dispatch inspection by Employer and supply of MS sheet, Deep Drawn Metal Meter Box (MMBs). MMBs shall be used for housing Three phase energy meter for electric connections of General category i.e. Domestic & Commercial connections.

2. CONSTRUCTIONAL AND TECHNICAL PARTICULARS

The Deep Drawn Metal Meter Box (MMBs) shall conform to drawings attached. It shall be for housing Three Phase energy meter of any make. The internal dimensions of MMB shall be 400mmx300mmx160mm (i.e. height x width x depth).

- 2.1 The MMB shall be made from 20 SWG MS sheet by Deep Drawn Method. The base and cover of the MMB shall be individually in one piece without any welding except for fixing of the accessories like hinges, clamps, handle etc. which shall be spot-welded. The cover of MMB shall be fixed on two-tamper proof inside hinges not visible from outside. The hinge pin diameter should be 3mm. Hinges shall be made from 1.6mm MS sheet. The pin of hinges shall have head on top so that it does not fall down after wear & tear. The door of MMB shall open from right to left by minimum 90°. The collar of the door (cover) in closed position shall rest on the collar of body (Base) of MMB. The collar of the door shall overlap the collar of the body of MMB by minimum 8mm. The collar of the body shall be provided with good quality rubber gasket lining of min. 3mm thickness. Thickness of rubber lining shall be such that it provides proper sealing between the cover & base of MMB to avoid penetration of dust & ingress of water. Rubber lining should be fixed with the best quality adhesive so that the same does not get removed by itself on opening of the door. Two numbers U shaped latch arrangement shall be provided to Seal the cover with base as shown in the drawing. 2.5mm & 8mm diameter hole shall be provided in U-shaped latch for sealing wires & padlock. U-latch shall be joined with stainless steel rivet. Holes provided for sealing & padlock should be aligned when latch is in closed position. U shaped latch arrangement shall be made from 1.6 mm thick MS sheet and shall be welded from inner side of the box.
- 2.2 A viewing window opening of the size 90mmx100mm as indicated in the drawing shall be provided about 50mm below top edge of MMB to facilitate taking of meter readings. Viewing window shall be provided with toughened glass of 5mm thickness. This glass shall be fixed from inside of the cover of MMB, with powder coated single piece drawn metal frame (Glass Holder) made of 20 SWG MS sheet fixed with min. four welded studs & nuts. Glass holder studs & nuts shall be inside the cover so that it cannot be opened from outside. Glass holder shall have rectangular cuttings as per details shown in drawing. The size of toughened glass shall be 110mmx120mm. This glass has to be filled with a wraparound single piece rubber ring without joint having minimum depth of 8mm made from good quality rubber so that it can withstand weather effect.
- 2.3 A handle of minimum 70mm length and 10mm width and 20 SWG sheet thicknesses should be provided for opening and closing of the cover at the place as shown in the drawing.
- 2.4 The mounting arrangement of the meter shall be as shown in the drawing. It should be raised from the base of MMB body by 15mm (minimum). Zinc Plated adjustable strip

shall be provided on meter mounting arrangement for fixing of the meter. The supplier shall supply three mounting MS screws, one for upper (M4 threads x length 12mm) & two (M4 threads x 35mm length) in moving slotted strip.

- 2.5 Four Nos. fixing holes of 6.5mm diameter at the back of surface of MMB shall be provided to fix the MMB at flat wall. For fixing of MMB on wall, 4 Nos. Plastic fixing plugs of 50mm length and 4 Nos. 5mm diameter 40mm long pan head self-taping screws and washers shall be provided with every MMB.
- 2.6 2 Nos. holes with superior quality rubber cable glands shall be provided at the bottom of MMB. Glands shall be properly fixed such that the same does not get removed from the box. Internal diameter for incoming/outgoing gland shall be suitable for 4Cx25mm² Aluminum conductor PVC cable. Glands shall be made such that internal diameter of glands provided for cables should be closed with the film of minimum 1mm thickness. Cable will go through the glands by piercing the film of the glands. Overlapping of glands from outer side should be approximately 5mm, such that the gland is not removed when cable is inserted inside the box.
- 2.7 Louvers for ventilation shall be provided on the sidewalls of the box as shown in drawing. 20SWG perforated sheet shall be welded from inside of the louvers.
- 2.8 MMB shall be adequately protected against rust, dust, water and corrosion both from inside and outside.
The MMB shall have Light Admiralty Grey shade (IS-5:1993 Colour No. 697) on outside & inside. The MMB shall be powder coated. The surface of the MMB shall be properly pre-treated and cleaned in 7- tank process and shall be applied with a powder coating of about 40 micron thickness on outer side and inside. The facility for 7-Tank Phosphating & powder coating shall be in house of the tenderer / MMB manufacturer to ensure proper quality.
- 2.9 Earthing screw of diameter M6 threads with washer shall be provided in the threads of L shape clamp welded to main body on left side. There should be no powder coating on earthing screws. Earth marking shall be duly embossed near the earth clamp.
- 2.10 All the screws, studs and washers shall be properly Zinc Plated. The tolerance permissible on the overall dimensions shall be (±) 3%. Danger marking shall be provided on the box in red color. Utility name shall be provided on the door of meter box.
- 2.11 Each box shall be supplied with proper packing in 3ply- corrugated box.
3. The box shall comply with the requirement of IP-33. The box shall be fully type tested along with dimensional drawing as per requirement of IS 13947 (Part-1):1993 with latest amendment, from the govt.-approved laboratories. Government approved laboratories should be accredited by the National Board of Testing & Calibration Laboratories (NABL) of Govt. of India.
4. ACCEPTANCE TESTS:
Following acceptance tests shall be carried out at manufacturer's premises during the inspection of material before dispatch:
 - a) Visual Examination:
The MMB will be inspected visually, externally and internally for proper Powder Coating

layer, fitting of all the components in accordance with technical Specification.

b) **Verification of dimensions:**

Verification of dimensions, external / internal clearances will be carried out as per technical specifications.

c) **Verification of fittings:**

Components like Glass, U shaped latch arrangement, glands, clamps, hinges etc will be verified as per technical specification and usage requirement.

d) **Verification of Deep Drawn Facility, 7-Tank Phosphating, Powder Coating Process:**

Deep Drawn, 7-Tank Phosphating & Powder coating facilities shall be verified at the place of inspection.

TECHNICAL SPECIFICATION FOR COMMON METER READING INSTRUMENT (CMRI)

This specification covers supply and delivery of Common Meter Reading Instrument (CMRI) for reading (uploading) the data of different make of meters and to have a capability to dump (download) the same to the base computer system. The CMRI shall have memory / space to reside software of reading at least 3 different makes of electronic meters as specified by Employer.

A. Portable Common Meter Reading Instrument (CMRI)

These shall be tailor-made for tapping all data stored in the memory of electronic meters of type, three phase 4wire, three phase 4 wire HT/LT Tri-vector meters, whole current meters, single phase meter, and faithfully transferring it to the local PC in the BCS. Each device shall be supplied complete with

- i) a lead with optical head for coupling it to the meter,
- ii) a lead for plugging it to a personal computer;
- iii) an internal battery for powering the devices;
- iv) a case for safely carrying it about
- v) a battery charger

The total arrangement shall be such that one (1) operator can carry out the whole operation himself, in about five (5) minutes per meter.

B. The CMRI shall have a key for starting the data tapping from the coupled meter's memory, a key to start data transfer to the PC, and a lamp, which would light up on completion of data collection, remain 'on' while the data is held in the device and would go 'off' when all data has been transferred to the PC. Data tapping operation shall not erase the data from the meter's memory, or effect the meter operation in any way. The memory of the CMRI shall get automatically cleared when the data has been transferred to the PC only then the CMRI shall accept data from another meter. CMRIs shall also have the necessary provision for meter clock correction. CMRIs should have adequate memory, to host application software, for enabling downloading of meter data of 3 makes of meters.

C. The Contractor shall provide the necessary software which would enable a local ~~IBM~~-Compatible PC to (i) accept the data from the CMRI and store it in its memory, (ii) display the collected data on PC's screen, with forward/backward rolling, (iii) print out the data collected from one or more meters, starting from a certain date and time, as per operator's instructions, (iv) transmit the collected data through an appropriate communication link to the central computer, starting from a certain date and time, as per operator's instructions, and (v) store the collected data on a DVD/USB

D. The above software shall further ensure that absolutely no tampering (except total erasures) of the collected metering data is possible during its handling by the PC. The software shall be suitable for the commonly available PCs, and shall be supplied to SEB in a compatible form to enable its easy loading into the PCs available (or to be installed by the SEB) at the various substations/ locations in the circle.

E CMRI should be compatible with Low Power Radio module to be provided by the bidder for receiving the data from the meter to the CMRI/Hand Held UNIT and ultimately transferring to BCS &vice versa for loading required instructions to the meters.

- F.** CMRI should conform to CBIP Technical Report No. 111 with latest amendments with Level (2) IP 67 protection and following climatic condition & standards

1.0 Standards

The CMRI shall conform in all respects to the following standards.

- i)** CBIP Technical Report no. 111 – Specification for common Meter reading Instrument.
- ii)** IEC – 529 – Degree of Protection provided by enclosures
- iii)** IS : 12063 : 1987 – Classification of Degree of Protection provided by enclosures of electrical items
- iv)** IS 9000: 1979 – Basic environmental testing procedure for electronic & electronic items.
- v)** IEC – 1000 – Electromagnetic compatibility
- vi)** IEC – 1000-4-2 : 1995 – Electrostatic discharge immunity test
- vii)** IEC – 1000-4-3 : 195 – Radiated, radio – frequency electromagnetic field immunity test, Magnetic immunity test
- viii)** CISPAR 22 – Limits and method of measurement of radio disturbance characteristics of information technology equipment.

2.0 Climatic Conditions:

The service conditions shall be as follows	
Maximum altitude above sea level	5000m
Maximum ambient air temperature	50° C
Maximum daily average ambient air temperature	40° C
minimum ambient air temperature	-30° C
maximum temperature attainable by an object exposed to the sun	60 ° C
maximum yearly weighted average ambient temperature	32° C
maximum relative humidity	100%
average number of thunderstorm days per annum (isokeraunic level)	70
average number of rainy days per annum	120
average annual rainfall	1500 mm
maximum wind pressure	260Kg/m ²

3.0 Principal Parameter

For downloading data from electronic meters of type, single phase, 230 V, whole current, three phase 415 V Whole current, three phase 415 V, CT operated, 33kV, 11kV, HT Trivector CT, PT operated meters. The offered meter reading device should be portable, compact and battery powered. It's memory shall be adequate to enabling transfer of data from reputed makes of meters equipped with suitable communication port and

transferring them on to a base computer system such as an IBM compatible PC or an external peripheral & vice-versa.

The offered CMRI should have capacity compatible to read minimum 20 meters for billing & tamper data but without load survey and minimum 10 meters for billing and tamper data with load survey.

CMRI shall be able to display phase / vector diagram of phase current, phase voltage with respective phase angles and phase sequence of voltage at SITE when these data are read from the meter.

4.0 GENERAL TECHNICAL REQUIREMENT:

Physical Characteristics:

i. Size:

CMRI should be handy, lightweight and small in size for ease of portability.

ii. Enclosure:

CMRI casing shall be of electrical insulating material of high thermal stability and mechanical strength. Its degree of protection confirms to IP 67 LEVEL (2) as per IS 12063 / IEC-529. The enclosure should be solvent resistant and shall be provided with a suitable holding Strap for proper gripping.

iii. Ruggedness: CMRI is able to withstand harsh field environment without physical damage or loss of data.

iv. Display: The display of CMRI is having the following characteristics.

- a)** Easy readability in varying ambient light conditions.
- b)** 4 lines and 20 characters per line on the screen
- c)** The size of the character shall be 4 mm
- d)** The contrast and intensity control to get a clear display in varying ambient light.

v. Key Board: The keyboard of the CMRI is having the following attributes.

- a)** Long operation life i.e. minimum 100000 operations (typical).
- b)** Feedback for key press acknowledgement to user.
- c)** Legible and non-fading keypad imprints for all alphanumeric characters/symbols.
- d)** Each English alphabet shall have a separate key.

vi. Input / Output ports (I/O Ports) :

The CMRI shall be having two serial input/output Ports, one port shall be serial port RS 232C compatible. Another optional port can be used for convenience of connecting peripherals such as bar-code reader, printer, battery charger, loader charger etc.

The offered CMRI shall be able to provide power supply for optical sensor used for meter reading applications.

1.0 Physical interface:

zInterface between meter and CMRI:

The interface between a meter and CMRI shall consist of 2 parts.

- a) Meter optical sensor terminating in to a 9 pin D type male connector with a cable of 500 mm +/- 10 mm. Length.
- b) The interface between a meter and the offered CMRI shall be with a flexible shielded cable of length 1500mm +/-10mm having 9 pin D-type female connector with electrical circuit. This cable shall be supplied along with CMRI. The two ends of the cable is stress relieved.

Interface between CMRI and Base computer station:

Suitable flexible shielded cable of sufficient length for communication between CMRI and base computer station shall be provided. This communication shall be serial RS232C. On the base computer station end of the cable a 9 pin D-type female connector shall be provided. The two ends of the cable are stress relieved.

This cable shall also be supplied along with the CMRI.

6.0 Hardware and Software requirement:

i. Operating system :

To facilitate use of various meters, specific MRI programs in one CMRI, MS DOS version 5.0 or higher system shall be used. The facility to upgrade the BIOS/OS by a CMRI manufacturer shall be available without exposing the hardware of the CMRI.

The additional program necessary to transfer application programs with serial port shall be provided.

ii. Memory:

- a) The CMRI shall be having a minimum memory capacity of **128 MB Static RAM** (SRAM) with battery backup and upgradeable.
- b) BIOS/OS on FLASH memory / EEPROM MEMORY

iii. Communication:

The CMRI shall be able to communicate for-

- a) Down loading / up loading data from / to the meter
- b) Uploading / downloading data to / from the Base computer station

- c) CMRI shall be capable to read bar code information using a bar code scanner from barcodes of ac static \ electromechanical electricity meters by using appropriate scanner and bar code soft ware.
- d) CMRI shall support flexible baud rate ranging from 300 Baud to 19200 (or higher) Baud rates to cater communication needs stated above.

iv. Real time clock :

A real time clock is provided in the CMRI, which have the following features:

Power requirement: The clock shall have a minimum of 15 days battery backup.

Calendar: The clock shall have 20 years calendar.

Time drift: The time drift shall be negligible and shall not exceed 20 seconds per day.

v. Time Setting Facility:

The CMRI shall have the facility to get its time set from Base computer station. Proper security for this is ensured using password

vi. Power supply (Battery) for CMRI:

The CMRI shall have the following features for its power requirements:

- a) The CMRI shall be powered by rechargeable battery housed within its enclosure.
- b) The average capacity of charged battery shall be sufficient to communicate with meters and base computer station for at least :
 - i) 6 hours while communicating through optical interface of meters and
 - ii) 8 hours without powering Input / Output ports for optical interface.
- c) To reduce the equipment down time and inventories, there shall be provision to charge the CMRI battery without being removed from the equipment. A suitable battery charger for charging of CMRI battery shall be provided.
- d) There would be a provision for AUTO POWER SAVE, which force the instrument in the power saving mode in case of no activity within 5 minutes.
- e) The battery used for data retention in SRAM would have a minimum of 3 years backup capacity.
- f) The CMRI would have battery low indication and automatic cutoff to avoid further drain of the battery.

7.0 Communication Protocol and Software

Software:

- a) The following software shall be provided in the offered CMRI.

- i) Operating system compatible to MS DOS 5.0 or (latest version ver 7.0).
 - ii) Necessary software for loading application programs via a serial port for uploading and down loading between CMRI and Base computer Station (BCS)
- b) i. Provision for loading the software into the CMRI of the specific makes of the meters, for the purpose of reading and programming of the specific make(s) of static meters, such Software shall be provided by respective meter manufacturers.
- ii. BCS software accepting data from CMRI, processing generating reports and downloading instruction from BCS to CMRI.
- c) Special Requirement:
- The offered CMRI shall have provision for storing the third party software and can also be loaded for special applications such as manual meter reading, data entry through keyboard of CMRI, printing, display of balance memory etc.
- d) The CMRI shall have facility to draw/display vector diagram of the electrical conditions existing at site to check the healthiness of the connections.
- e) The CMRI shall have provision to read the energy registers so that accuracy testing can be done at site with standards calibrating equipment.
- f) The CMRI shall have the provision to read the various instantaneous electrical parameters at site like voltages, current, PF, phase angles, power (kW, KVA, and KVA) frequency etc.
- g) The CMRI shall have facility to estimate the memory space available before reading the meter.

8.0 DATA SECURITY

The meter manufacturers are responsible for maintaining the security of the data extracted from the meters using manufacturer specific algorithm in the software up to down loading to BCS.

- 9.0** CMRI shall be type tested as per clause 5 of CBIP Technical Report No. 111.

10.0 Acceptance Tests for CMRI and PC Software

All CMRI after final assembly and before dispatch from Bidder's/Manufacturer's works shall be duly tested to verify that they are suitable for supply to the Employer. In particular, each and every CMRI shall be subjected to the following acceptance test:

- (i) Functional Checks
- (ii) Downloading Meter Data from the Meter(s)
- (iii) Compatibility with PC software
- (iv) Downloading the meter data on PC
- (v) Functioning of advance and retard time commands

- (vi) Per meter downloading time verification
- (vii) Capacity of CMRI for data storage

**TECHNICAL SPECIFICATION
FOR
FOUR CORE AND TWO CORE XLPE CABLES of
Various SIZES 16mm², 10mm²**

**INSULATED & XLPE SHEATHED ARMORED LT
CABLES**

TECHINICAL SPECIFICATION FOR FOUR CORE AND TWO CORE XLPE INSULATED & XLPE SHEATHED ARMORED CABLES.

1. SCOPE

This section provides for manufacture, testing before dispatch, supply and delivery F.O.R. destination of Four Core & Twin Core size 16mm², 10mm² XLPE insulated and XLPE Sheathed Armored

circular LT cables with aluminum conductor suitable for working voltage up to & including 1100 Volts ISI Marked & Conforming to IS 7098 (Pt-I)/1988 with latest amendments.

2. STANDARDS

Unless otherwise stipulated in this specification the following standards with latest amendments shall be applicable.

- | | | |
|-----|---------------------|--|
| 2.1 | IS: 7098(Pt-I)/1988 | XLPE Insulated (Heavy Duty) Electric cable for Voltages up to and including 1100 Volts working |
| 2.2 | IS: 8130/1984 | Conductors for insulated cables. |
| 2.3 | IS: 5831/1984 | XLPE insulation and sheath of electric cables. |
| 2.4 | IS: 10810/1984 | Method of test for cables. |
| 2.5 | IS: 3975/1979 | Galvanized Steel Wire/Strips. |
| 2.6 | IS: 10418/1982 | Drums for electric cables. |

3. CLIMATIC CONDITIONS:

The service conditions shall be as follows	
Maximum altitude above sea level	5000m
Maximum ambient air temperature	50° C
Maximum daily average ambient air temperature	40° C
minimum ambient air temperature	-30° C
maximum temperature attainable by an object exposed to the sun	60 ° C
maximum yearly weighted average ambient temperature	32° C
maximum relative humidity	100%
average number of thunderstorm days per annum (isokeraunic level)	70
average number of rainy days per annum	120
average annual rainfall	1500 mm
maximum wind pressure	260Kg/m ²

Note: The atmosphere is generally laden with mild acid and dust in suspension during the dry months and is subjected to fog in cold months. The design of equipment and accessories shall be suitable to withstand seismic forces

corresponding to an acceleration of 0.3 g.

4. GENERAL REQUIREMENT:

- 4.1** The ISI marked XLPE Insulated Armored cables shall conform to IS: 7098(Pt-I)/1988 with latest amendment and bear BIS certification mark. The material used for construction of the cables shall be of best quality complying with the requirement of IS: 7098(Pt-I)/1988 and other relevant standards. The cables shall be suitable for outdoor/indoor installation free in air and shall be capable of withstanding the normal stresses associated with transportation, erection, reeling and unreeling operations without getting deformed.
- 4.2** The cable shall be suitable for use where combination of ambient temperature and temperature rise due to load results in a conductor temperature not exceeding 90 degree C under normal operation and 250 degree C under short circuit condition.
- 4.3** The XLPE Insulated Armored LT Cable shall be ISI marked. The tenderer (MANUFACTURER) must furnish valid ISI certificate along with offer.

5. MATERIAL:

5.1 CONDUCTOR

The conductor shall be composed of aluminum wire complying with IS: 8130/1984 with latest amendments.

5.2 INSULATION

Insulation shall be cross linked Polyethylene (XLPE) conforming to the requirements Table-I of IS: 7098/1984 with latest amendments.

5.3 FILLERS

- 5.3.1** The central hole/void, if any, of the cable shall be invariably filled with suitable filler material so that there is no gap in the center.
- 5.3.2** The filler shall be of vulcanized rubber, un-vulcanized rubber or Thermoplastic material and shall be provided to fill the gaps between cores.
- 5.3.3** The filler material shall be so chosen so as to be compatible with temperature of the cable and shall have no deleterious effect on other components of the cable. These shall not be harder than XLPE and PVC used for insulation and outer sheath respectively.

5.4. ARMOURING

Armoring shall be galvanized steel strips for cable sizes above 6 Sq. mm.

5.5 OUTER SHEATH

The outer sheath shall consist of type ST-2 XLPE Compound conforming to the requirements of IS: 5831/1984.

6. CONSTRUCTION:

6.1 CONDUCTOR

The construction of the conductor shall be stranded for cable size 10 Sq. mm and above, as per Clause No. 8.1 of IS:7098(Pt-I)/1988 & relevant clause of IS:8130/1984.

A protective barrier may be applied between the conductor and insulation. Such barriers when used shall be compatible with insulating material and suitable for the operating temperature of the cable.

6.2 INSULATION :

The conductor (with protective barrier, wherever applied) shall be provided with Cross-Linked Polyethylene (XLPE) insulation applied by extrusion. The insulation shall be so applied that it fits closely on the conductor and it shall be possible to remove it without damage to the conductor. The thickness and tolerance on thickness of insulation shall be as per clause No. 9.2 of IS: 7098 (Pt- I)/1988.

6.3 CORE IDENTIFICATION:

The core shall be identified by different coloring of XLPE insulation as per Clause No. 10.1 of IS: 7098 (Pt-I)/ 1988.

6.4 LAYING UP OF CORES :

The cores shall be laid up together with the suitable right hand lay. The interstices shall be filled with non-hygroscopic material.

6.5 INNER SHEATH (COMMON COVERING):

6.5.1 The laid up cores shall be provided with an inner sheath applied either by extrusion or by wrapping. It shall be ensured that it is as circular as possible. The thickness of inner sheath shall be as given in Table-5 of IS: 7098(Pt-I)/1988.

6.5.2 The inner sheath shall be so applied that it fits closely on the laid up cores and it shall be possible to remove it without damage to the insulation.

6.6 ARMORING:

6.6.1 Application:

Armoring shall be applied over the inner sheath. The armor wires/strips shall be applied as closely as possible.

The direction of lay of armor shall be left hand. A Binder Tape may be provided on the armor.

6.6.2 Type of Armor & Dimension:

The armor shall be galvanized steel strips for cable size 10 Sq. mm & above with the dimensions as specified in Table- 6 of IS:7098(Pt-I)/1988.

6.6.3 Joints:

The joints in the armor wire / strips shall be made by brazing or welding and the surface irregularities shall be removed. A joint in any wire / strips shall be at least 300 mm from the nearest joint in any other armor / wire in the completed cable.

6.7 OUTER SHEATH

6.7.1. The outer sheath shall be applied over the armouring.

6.7.2. The color of the outer sheath shall be black.

6.7.3. The minimum thickness of XLPE outer sheath shall not fall below the thickness specified in Table -8 of IS: 7098 (Pt-I) /1988.

7. TESTS AND TEST CERTIFICATS:

7.1 The cable should meet the requirement of all tests including optional tests as specified at Clause No. 15.4 of IS: 7098 (Pt. I) / 1988.

7.1.1 The following shall constitute routine tests:

7.1.1.1 Conductor resistance test.

7.1.1.2 High Voltage test.

7.1.2 The following shall constitute Acceptance Tests:

7.1.2.1 Tensile test (for Aluminum).

7.1.2.2 Wrapping test (for Aluminum).

7.1.2.3 Conductor resistance test.

7.1.2.4 Test for thickness of Insulation & Sheath.

7.1.2.5 Tensile strength & elongation at break of Insulation & sheath.

7.1.2.6 Insulation resistance (Volume Resistivity) test.

7.1.2.7 High Voltage test.

7.1.2.8 Hot Set Test for Insulation.

7.1.2.9 Cold Bend Test for outer sheath.

7.1.2.10 Cold Impact Test for outer sheath.

7.1.3 The following shall constitute Type Tests:

7.1.3.1 Tests of Conductor

7.1.3.1.1 Tensile test (for aluminum)

7.1.3.1.2 Wrapping test (for aluminum)

7.1.3.1.3 Conductor resistance test.

7.1.3.2 Test for Armoring Wires/ Strips

7.1.3.3 Test for thickness of insulation and sheath

7.1.4 Physical tests for insulation:

7.1.4.1 Tensile strength and elongation at

7.1.4.2 Ageing in air oven.

7.1.4.3 Hot Set test.

7.1.4.4 Shrinkage Test.

7.1.4.5 Water Absorption (Gravimetric).

7.1.5 Physical tests for Outer Sheath:

7.1.5.1 Tensile strength and elongation at break.

7.1.5.2 Ageing in air oven.

7.1.5.3 Loss of mass in air oven.

7.1.5.4 Shrinkage Test.

7.1.5.5 Hot Deformation Test.

7.1.5.6 Heat shock Test.

7.1.5.7 Thermal Stability.

7.1.6 Insulation resistance (Volume Resistivity Test)

7.1.7 High voltage test.

7.1.8 Flammability test.

7.2 The tenderer shall furnish latest complete type tests and optional test certificates as specified in Clause No. 15.4 of IS: 7098(Pt-I)/1988 (not older than three years as on the date of tender opening) for all sizes of offered LT XLPE ARMORED CABLES from NABL accredited testing laboratory with the tender offer otherwise their offer is likely to be ignored.

7.3 The tenderer must also clearly indicate various testing facilities available at their works for testing the material as per relevant standards. In case of otherwise, particulars of the place where such testing is proposed to be conducted during the course of inspection, shall be indicated with the offer.

8 INSPECTION:

- 8.1** The inspection may be carried out by the purchaser at any stage of manufacture. The successful tenderer shall grant free access to the purchaser's representatives at a reasonable time when the work is in progress. Inspection and acceptance of any equipment / material under this specification by the purchaser shall not relieve the supplier of his obligation of furnishing equipment in accordance with the specification and shall not prevent subsequent rejection if the equipment/material is found to be defective.
- 8.2** The supplier shall keep the purchaser informed in advance about the manufacturing program so that arrangement can be made for inspection.
- 8.3** The acceptance tests as per IS: 7098(Pt-I)/1988 shall also be conducted by the manufacturer before dispatch in the presence of purchaser's Representative / Inspecting Officer as per relevant clause of "General Conditions of Contract" along with verification of lengths & weight and checking the manufacturing defects, if any of samples coils. The mass of aluminum, XLPE, PVC & Filler in sample coils shall also be verified by the Inspecting Officer(s).

Cold bend/ cold impact test (IS: 5831/ 1984) shall constitute the optional tests and shall be conducted on each offered lot of the cables of each size as per Clause No. 15.4 of IS: 7098(Pt- I)/1988.

8.4 TYPE TESTS:

The first lot offered shall not be less than 10% of ordered quantity of each size of LT XLPE ARMORED CABLE.

One sample from the 1st Lot of LT XLPE ARMORED Cable of each size as received in purchaser's store shall be selected and sealed by the inspecting officer nominated by purchaser's for getting it type tested at any NABL accredited testing laboratory. The charges incurred towards type test of the material received in our stores shall be borne by Supplier.

In case sample from first lot fails then:

- 8.4.1** Supplier shall have to replace the full quantity of the respective inspected lot supplied to various stores and lying unused at stores.
- 8.4.2** For the quantity already utilized against the order in field a deduction @ **15% (Fifteen Percent) of F.O.R. Destination prices of the material** supplied shall be made.

- 8.4.3** Sample from next lot shall be selected again for type test. All test charges incurred towards type test of the material for second time shall be borne by the Supplier. In case sample again fails in the type test then further supplies shall not be accepted.
- 8.5** The purchaser reserves the right to insist for witnessing the acceptance /routine tests of the bought out items.
- 8.6** At least 5% of total numbers of drums subject to minimum of 2 in each lot put up for inspection shall be selected at random to ascertain the length/workmanship of cable by the following method:
At the work of the manufacture, the cable shall be transferred from one drum to another for checking any manufacturing defects in the cable drum selected for conducting acceptance tests, at the same time measuring its length with the help of pulley & cyclometer graduated in presence of inspector. The difference in the measured length thus obtained from the declared length by the supplier in the packing list shall be applied to all the drums if the cable is found short during checking the sample lot (s).
- 8.7** The supplier shall present the latest Calibration Certificate(s) of testing instruments/equipments to be used for the testing of the material covered in the Purchase Order to the authorized inspecting officer /inspecting agency of the purchaser. The testing instruments / meters /apparatus etc. should be got calibrated by the supplier from time to time from an independent testing laboratory / house having valid accreditation from National Accreditation Board for testing and calibrating laboratories for the testing equipment or from original manufacturers having trace ability to NABL /NPL. The calibration certificate(s) should not in any case be older than one year at the time of presenting the same to the inspecting officer / inspecting agency of the purchaser. The testing instruments / equipment should be duly sealed by the Calibrating Agency and mention thereof shall be indicated in the calibration certificate(s).
- 8.8 TEST CHECKING OF MATERIAL AT STORES:**
- 8.8.1 SAMPLING:**
- 8.8.1.1** One number out of each lot / sub-lot of 25 Nos. drums or part thereof for cables of size 10 Sq. mm. and above.

8.8.2 TESTS:

The following tests shall be carried out:

8.8.2.1 Measurement of Resistance of conductor.

8.8.2.2 Tensile & Elongation test for insulation.

8.8.2.3 Thickness of Insulation.

8.8.3 CRITERIA FOR ACCEPTANCE:

8.8.3.1 If the measured conductor resistance of the sample(s) exceeds beyond 2% as per the resistance specified in the contract, the material shall be rejected and the same shall have to be replaced by the supplier.

8.8.3.2 If the measured conductor resistance of the sample(s) exceeds the value specified in the contract but does not exceed by more than 2% of the resistance value specified in the contract, the material pertaining to the relevant lot/ sub-lot to shall be accepted with a deduction @ 1.5% of the cost of cable for increase in resistance for every 1% or part thereof.

8.8.3.3 If the sample(s) fails in any other test, the material contained in the pertinent lot/sub-lot shall be rejected and shall have to be replaced by the supplier.

8.9 TEST CHARGES:

All test charges incurred towards test checking of the material received in our stores shall be borne by the PURCHASER.

8.10 The manufacturer shall be responsible to pay penalty of **Rs 20,000/-** for each occasion at which the fake inspection call has been made or the material is rejected during testing/inspection by the authorized agency/representative of the Purchaser. This penalty would be in addition to the expenses incurred by the Purchaser in deputing the Inspecting Officer, carrying out such inspection.

9. IDENTIFICATION:

9.1 The manufacture shall be identified through-out the length of cables as per Clause No. 17.1 of IS: 7098(Pt-1)/1988.

9.2 In order to distinguish these electric cables from telephone cables, the word ELECTRIC shall be indicated, printed or embossed throughout the length of the cable on outer sheath.

- 9.3 The cable code shall be provided as per Clause No. 17.3 of IS: 7098 (Pt-I)/1988.
- 9.4 The cable shall also be required to be embossed with the word Name of Manufacture or trade name, Cable code, Voltage Grade, JKPDD, size of cable, year of manufacture and ISI certification mark at every meter length for which no extra charges shall be paid.

10 PACKING AND MARKING:

- 10.1 The cables shall be wound on non-returnable wooden drums conforming to IS: 10418/1982 of suitable size and packed. The ends of the cable shall be sealed by means of non-hygroscopic sealing material. Only one cable length shall be supplied on a drum.
- 10.2 The cable shall carry the following information stenciled /painted on the drum:
- 10.2.1 Manufacturer's name, Brand name or trade mark.
 - 10.2.2 Type of cable and voltage grade.
 - 10.2.3 Number of Cores.
 - 10.2.4 Nominal Cross-sectional area of the conductor.
 - 10.2.5 Cable Code.
 - 10.2.6 Length of cable on the drum.
 - 10.2.7 Approximate gross weight.
 - 10.2.8 Year of manufacture.
 - 10.2.9 BIS Certification marks.
 - 10.2.10 Name of the Consignee and full destination.
 - 10.2.11 Tender number/Purchase Order No.
 - 10.2.12 The word SUITABLE FOR OUTDOOR USE & LOW TEMPERATURE CONDITIONS.

11. STANDARD LENGTH:

- 11.1 The cables shall be supplied in the standard length of 500 Meter for, 4CX16 Sq. mm², and 1000 Meter for size 4CX10Sq. mm², 2CX16Sq. mm² 2CX10 Sq. mm².
- 11.2 A tolerance (+/-) 5 % shall be allowed in standard length.
- 11.3 Only one cable length shall be acceptable by non-standard length measuring not less than 50% of standard length to complete the ordered quantity in each size.

12 QUANTITY:

The quantities as mentioned in the Schedule of requirement are tentative & these may increase/decrease as per the requirement of the Purchaser.

13 QUANTITY TOLERANCE:

The quantity tolerance of (+/-)2% shall be allowed in each size for completion of supply.

14. GUARANTEED TECHNICAL PARTICULARS:

The tenderer shall furnish guaranteed technical particulars in the relevant schedule.(Annexure– I & II)

15. CONSTRUCTIONAL DRAWINGS:

The tenderer is required to furnish the detailed constructional drawing of the cable clearly showing shape of core, type and size of fillers/ interstices along with center filler etc. In absence of this the tender is likely to be ignored.

16. Challenge Clause:-

The material offered/received after the inspection by the authorized inspecting officer may again be subjected to the test for or any parameter from any testing house/in-house technique of the Purchaser & the results if found deviating un-acceptable or not complying to approved GTPs the bidder shall arrange to supply the replacement within thirty (30) days of such detection at his cost including to & fro transportation. In addition , penalty @10% of cost of the inspected lot of material shall be imposed.

17. Warranty Period:-

The supplier shall be responsible to replace, free of cost, with no transportation or insurance cost to the purchaser, up to destination, the whole or any part to the material which in normal and proper use proves the defective in quality or workmanship, subject to the condition that the defect is noticed within 18 months from the date of receipt of material in stores or 12 months from the date of commissioning whichever period may expire earlier. The consignee or nay other officer of Purchaser actually using the material will give prompt notice of each such defect to the supplier. The replacement shall be effected by the supplier within a reasonable time, but not, in any case, exceeding 45 days/ The supplier shall, also, arrange to remove the defective within a reasonable period, but not exceeding 45 days from the date of issue of notice in respect thereof, failing which, the purchaser reserve the right to dispose of defective material in any manner considered fit by him (purchaser), at the sole risk and cost of the supplier. Any sale proceeds of the defective material after meeting the expenses incurred on its custody, disposal handling etc., shall however be credited to the supplier's account and set off against any outstanding dues of the purchaser against the supplier. The warranty for 12/18 months shall be one time.

ANNEXURE-III
GUARANTEED TECHNICAL AND OTHER PARTICULARS FOR THE SUPPLY OF 4
CORE LT XLPE ARMOURD CABLES.

S. No	PARTICULARS		4 CORE XLPE ARMOURD CABLES IN				
			4CX16	4CX10			
1	Manufacturer's name and works address.						
2	Standard specification to which the material shall						
3	VOLTAGE GRADE.						
4	NO. OF CORES.						
5	CONDUCTOR DETAILS:						
	A	Normal cross section area of :					
	1	Phase Conductor (Sq.mm)					
	2	Neutral Conductor (Sq.mm)					
	B	No. and size of strands (in mm)of:					
	1	Phase Conductor (Sq.mm)					
	2	Neutral Conductor(Sq.mm)					
	C	SHAPE OF CONDUCTOR					
	D	Whether compacted or non-compacted					
	E	Resistance at 27 °c					
	1	Phase Conductor ohm/km					
	2	Neutral Conductor ohm/km					
6	INSULATION						
	1	Type					
	2	Colour					
	3	Thickness					
	A	Phase Conductor (sq.mm)					
	1	Nominal (mm)					
	2	Minimum (mm)					
	B	Neutral Conductor (Sq.mm)					
	1	Nominal (mm)					
	2	Minimum (mm)					
7	Type of inner sheathing and Colour						
8	Whether Binder Tape provided						
9	Armoring						
	A	Type					
	B	Dimension (mm)					
10	Outer Sheath						
	A	Material					
	B	Thickness					
	1	Nominal (mm)					
	2	Minimum (mm)					
	C	Standard to which it Confirm					
11	A	Type and size of filler used					
	B	MIN. WT. OF FILLER IN KG./KM					
12	MAX. OVERALL DIAMETER OF THE CABLE IN MM.						
13	Nature of Packing.						
14	DRUM						
	A	TARE WEIGHT OF DRUM					
	B	WHETHER DRUM IS WHELL					
	C	STANDARD SPECIFICATION TO WHICH					
	D	DRUM DETAILS & DIMENSIONS					
	E	Whether 2-Full Ply Flange Construction or 2-Full Ply plus 1 Segmental layer Flange Construction.					
	1	Drum size					

	A	Flange Diameter (d1) (mm)						
	B	Barrel Diameter (d2) (mm)						
	C	Centre hole Diameter (d3) (mm)						
	D	Overall with (L1) (mm)						
	F	Travers (L2) (mm)						

	G	Thickness of Flange						
	H	Barrel End (Supporting disc or						
	1	Diameter (mm)						
	2	Thickness (mm)						
	I	Stretchers (core carrier Planks)						
	1	Number (Min)						
	2	Thickness x width (mm)						
	J	Barrel Battens thickness (core						
	K	Barrel Middle Supports (Middle						
	L	Thickness of External Lagging.						
	2	DETAILS OF METAL						
	A	Clamping Studs with						
	1	Numbers						
	2	Diameter (mm)						
	B	Square or Round Washers						
	1	Numbers						
	2	Diameter (mm)						
	C	M.S. Bushes						
	1	Numbers						
	2	Thickness of Sleeve (mm)						
	3	Dimension of Sleeve (mm)						
	4	Number of Bolts						
	5	Diameters of Bolts						
	D	M.S. /C.I. Centre Plate						
	1	Numbers						
	2	Diameter of Bolts (mm)						
	3	Centre Plate Bolts.						
	A	Numbers						
	B	Diameter of Bolts (mm)						
	E	Centre Hole Diameter (mm)						
	F	Minimum Weight in kg/km						
	1	Aluminum						
	2	XLPE						
	3	PVC						
	G	Standard Length of cable in metre & its Tolerance						
	H	Whether material bears BIS Certification						
	I	BIS License no. & validity.						
	J	Embossing.						
	K	Any other particulars.						

ANNEXURE-III

GURANTEED TECHNICAL AND OTHER PRITICALARS FOR THE SUPPLY OF 2 CORE LT XLPE ARMOURD CABLES.

S. No	PARTICULARS		2CORE XLPE ARMOURND CABLES		
			2Cx16 mm ²	2Cx10 mm ²	
1	Manufacture's name and works address				
2	Standard specification to which the material shall confirm.				
3	VOLTAGE GRADE				
4	NO. OF CORES				
5	CONDUCTOR DETAILS:				
	A	Nominal cross section area of :			
		1 Phase Conductor (Sq.mm)			
		2 Neutral Conductor (Sq.mm)			
	B	No. and size of strands (in mm)of:			
		1 Phase Conductor (sq.mm)			
		2 Neutral Conductor (Sq.mm)			
	C	SHAPE OF CONDUCTOR			
	D	Whether compacted or non-compacted			
	E	Resistance at 27 °C			
		1 Phase Conductor ohm/km			
		2 Neutral Conductor ohm/km			
6	INSULATION				
	A	Type			
	B	Colour			
	C	Thickness			
	1	Phase Conductor (sq.mm)			
		1.1 Nominal (mm)			
		1.2 Minimum (mm)			
		2 Neutral Conductor (sq.mm)			
		2.1 Nominal (mm)			
		2.2 Minimum (mm)			
7	Type of inner sheathing and Colour				
8	Whether Binder Tape provided				
9	Armoring				
	A	Type			
	B	Dimension (mm)			
10	Outer Sheath				
	A	Material			
	B	Thickness			
		1 Nominal (mm)			
		2 Minimum (mm)			
	C	Standard to which it Confirm			
11	A	Type and size or filler used			
	B	MIN. WT. OF FILLER IN KG./KM.			
12	MAX. OVERALL DIAMETER OF THE CABLE IN MM.				
13	Nature of Packing				
14	DRUM				
	A	TARE WEIGHT OF DRUM			

	B	WHETHER DRUM IS WHEEL MOUNTED.				
	C	STANDARD SPECIFICATION TO WHICH DRUM				
	D	DRUM DETAILS 8 DIMENSIONS				
	E	Whether 2-Full Ply Flange Construction or 2-Full Ply plus 1 Segmental layer Flange Construction.				
	1	Drum size				
	A	Flange Diameter (d1) (mm)				
	B	Barrel Diameter (d2) (mm)				
	C	Centre hole Diameter (d3) (mm)				
	D	Overall with (L1) (mm)				
	E	Travers (L2) (mm)				
	F	Thickness of Flange				
	G	Barrel End (Supporting disc or core segment)				
		1	Diameter (mm)			
		2	Thickness (mm)			
	H	Stretchers (core carrier Planks)				
		1	Number (Min)			
		2	Thickness X width (mm)			
	I	Barrel Battens thickness (core filler Planks)				
	J	Barrel Middle Supports (Middle core discs)				
	K	Thickness of External Lagging. (mm)				
	2	DETAILS OF METAL COMPONENTS :				
	A	Clamping Studs with Hexagonal Nuts				
		1	Numbers			
		2	Diameter (mm)			
	B	Square or Round Washers				
		1	Numbers			
		2	Diameter (mm)			
	C	M.S. Bushes				
		1	Numbers			
		2	Thickness of Sleeve (mm)			
		3	Dimension of Sleeve (mm)			
		4	Number of Bolts			
		5	Diameters of Bolts			
	D	M.S. /C.I. Centre Plate				
		1	Numbers			
		2	Dimensions of Square /Triangular equal sides			
		3	Centre Plate Bolts.			
		3.1	Numbers			
		3.2	Diameter of Bolts (mm)			
	E	Centre Hole Diameter (mm)				
	F	Minimum Weight in Kg. /Km				
		1	Aluminum			
		2	XLPE			
		3	PVC			
	G	Standard Length of cable in meters & its				
	H	Whether material bears BIS Certification				
	I	BIS License no. & validity				
	J	Embossing				
	K	Any other particulars				

LT Cable up to (1100 V) XLPE Insulated

1.0 SCOPE:

- 1.1 The scope of this specification covers the design, manufacture inspection and testing the finished ISI marked LT (1100 volts, 31/2 x25 Sq.mm to 400 Sq.mm stranded, compact aluminum conductor, with XLPE insulated, PVC inner sheathed, galvanized steel strip armored/unarmoured and overall PVC sheathed Black colour cable conforming to IS:7098 /88 with latest amendments and as per specification detailed.

2.0 RATED VOLTAGE:

- 2.1 The rated voltage of the cable shall be 1100 Volts AC with the highest system voltage of 1100 Volts between phases of the effectively earthed three-phase transmission system.
- 2.2 The cables shall be capable of operating continuously under the system frequency variation of ± 3 Hz, voltage variation of $\pm 10\%$ and a combined frequency – voltage variation of $\pm 10\%$.

3.0 APPLICABLE STANDARDS:

- i) Unless otherwise stipulated in the specifications, the latest version of the following Standards shall be applicable:
 IS 7098 (Part 2)-Cross-linked Polyethylene insulation for Cables.
 IS 8130-Conductors for insulated electrical cables and flexible cords.
 IS 10810(series)-Methods of tests for cables.
 IS 10418-Drums for electric cables.
 IS 3975-Specification for mild steel wires, strips and tapes for armouring of cables.
 IS 5831-Specification for PVC insulation sheath for electric cables.
 IS 10462-Fictitious calculation method for determination of dimensions of protective coverings of cables Part 1 - Elastomeric and thermoplastic insulated cables.
- ii) The cables manufactured to any other International Standards like BSS, IEC or equivalent standards not less stringent than Indian Standards are also acceptable. In such cases the Manufacturer shall enclose a copy of the equivalent international standard, in English language.

4.0 CONSTRUCTION:

- 4.1 **Conductor:** - The cable conductor shall be made from stranded aluminum to form compact sector shaped conductor having resistance within the limits specified in IS:8130/1984 and any amendment thereof. The wires shall be laid up together with a suitable right hand lay. Stranded Class 2 – as per the IS:8 130 / IEC 60228/ BS 6360 standards.
- 4.2 **Insulation:** - The insulation shall be cross linked polyethylene applied by extrusion and shall be steam (wet) cured as per IS:7098(1)1988 and curing in hot water tank/bath is not accepted.:

Sl.No.	Properties	Requirements
1.	Tensile Strength	12.5N/mm ² , Min.
2.	Elongation to break	200 percent, Min

3.	Aging in air oven: a) Treatment: Temperature: Duration: b) Tensile Strength variation: c) Elongation variation:	135±3°C 7 days ±25 percent, Max ±25 percent, Max
4.	Hot set: a) Treatment: Temperature: Time under load Mechanical stress b) Elongation under load c) Permanent elongation (set) after cooling	200±3°C 15 min 20N/cm ² 175 percent, Max 15 percent, Max
5.	Shrinkage: a) Treatment: Temperature Duration b) Shrinkage	130±3°C 1 hour 4 percent, Max
6.	Water absorption (Gravimetric): a) Treatment: Temperature: Duration b) Water absorbed	85±2°C 14 days 1 mg/cm ² , Max
7.	Volume Resistivity a) at 27°C b) at 70°C	1x10 ¹⁴ ohm-cm, Min 1x10 ¹³ ohm-cm, Min
8	Thermal Resistivity	350 degrees C cm/W
9	Power factor at maximum conductor temperature	0.008
10	Dielectric strength	22 kV/mm

4.3.1 The XLPE insulation should be suitable for specified 1.1 KV system voltage.

4.3.2 The manufacturing process shall ensure that insulations shall be free from voids.

4.3.3 The insulation shall withstand mechanical and thermal stresses under steady state and transient operating conditions.

4.3.4 The insulation of the cable shall be high stranded quality, specified in IS:7098 (Part-II/1985). Withstand continuous conductor temperature of 90 deg C, which means higher continuous rated current carrying capacity.

4.3.5 The cables can operate even at conductor temperature of 130 deg C continuously and 250 deg C during a Short Circuit condition

4.4 SHEATH :

The sheath shall be suitable to withstand the site conditions and the desired temperature. It should be of adequate thickness, consistent quality and free from all defects. The PVC sheath shall be extruded as per IS:7098 (Part – I/1988). IEC:60502 Part– I, BS:6622, LSOH to BS:7835.

4.5 ARMOUR :

Armoring shall be applied over the inner sheath with single galvanized steel complying with the requirements of IS:3975/1979. The dimensions of the galvanized strip shall be as specified in table 4 of the IS:7098/Part-I/1988. The armour wire shall be applied as closely as practicable. The direction of the lay of the armour shall be left hand. The joints in armour wire shall be made by brazing or welding and the surface irregularities shall be removed. A joint in any wire shall be atleast 300mm from the nearest joint in any other armour wire in the

complete cable and shall be as per IS:7098 Part 1, IS: 3975.

The cable without armouring shall also be accepted of type detailed in price schedule.

4.6 OUTER SHEATH : Extruded PVC ST2, outer sheath as per IS:5831/1984, IS:7098

Part 1, IEC:60502 Part – 1, BS:6622, LSOH to BS:78 35. shall be applied over armoring with suitable additives to prevent attack by rodents and termites. Outer sheathing shall be designed to offer high degree of mechanical protection and shall also be heat, oils, chemicals, abrasion and weather resistant. Common acids, alkalis, saline solutions etc., shall not have adverse effects on the PVC sheathing material used.

4.7 The cables should be suitable for use in solidly earthed system.

4.8 The power cables shall be manufactured to the highest quality, best workmanship with scientific material management and quality control. The Manufacturer shall furnish the quality plan, giving in detail the quality control procedure / management system.

4.9 The cable shall be suitable for laying in covered trenches and/or buried underground to meet the outdoor application purposes.

4.10 **The parameters of the LT power cables to be supplied shall be as specified below**

Nom. cross sectional area (Sq.mm)	Nom. Thickness of XLPE Insulation mm main core	Armoured			Max.DC Conductor Resistance at 20°C (ohm/km)	AC current rating	
		Nom. Steel Armour size (mm)	Approx. Overall dia. (mm)	Approx., Weight (kg/km)		In air (amps)	In Ground (amps)
25	0.90	4 X 0.8	22.8	821.0	1.200	95	97
35	0.90	4 X 0.8	24.9	961.0	0.868	117	116
50	1.00	4 X 0.8	28.1	1195.0	0.641	140	134
70	1.10	4 X 0.8	33.0	1569.0	0.443	176	167
95	1.10	4 X 0.8	35.8	1903.0	0.320	221	199
120	1.20	4 X 0.8	39.0	2303.0	0.253	258	227
150	1.40	4 X 0.8	42.9	2720.0	0.206	294	255
185	1.60	4 X 0.8	47.5	3276.0	0.164	339	287
240	1.70	4 X 0.8	52.7	4048.0	0.125	402	333
300	1.80	4 X 0.8	58.4	4872.0	0.100	461	375
400	2.00	4 X 0.8	65.6	6101.0	0.0778	542	426

4.11 The short circuit current of the LT cable to be as specified below

Sq.mm of LT Cable	Short Circuit Current(KA)
25	2.420
35	3.370

50	4.790
70	6.680
95	9.030
120	11.400
150	14.200
185	17.500
240	22.600
300	28.200
400	37.600

5.0 **SYSTEM DETAILS:**

General Technical particulars

Nominal system voltage (rms) (U)	0.44KV
Highest system voltage (rms) (U _m)	1.1 KV
Number of Phase	3
Frequency	50Hz
Variation in Frequency	+/- 3%
Type of Earthing	Solidly Earthed
Total relay & circuit breaker Operating time	15 – 20 cycles

6.0 **CLIMATIC CONDITIONS:**

The Climate conditions shall be as follows	
Maximum altitude above sea level	5000m
Maximum ambient air temperature	50° C
Maximum daily average ambient air temperature	40° C
minimum ambient air temperature	-30° C
maximum temperature attainable by an object exposed to the sun	60 ° C
maximum yearly weighted average ambient temperature	32° C
maximum relative humidity	100%
average number of thunderstorm days per annum (isokeraunic level)	70
average number of rainy days per annum	120
average annual rainfall	1500 mm
maximum wind pressure	260Kg/m ²

7.0 **DESIGN CRITERIA:**

- The cables that are covered in these specifications are intended for use outdoor , under the climatic conditions and installation conditions described in the technical specification.

- ii. For continuous operation of the cables, at specified rating, the maximum conductor temperature shall be limited to the permissible value as per the relevant standard, generally not exceeding 90°C under normal operation and 250°C under short – circuit conditions.
- iii. The cables in service will be subject to daily load cycles, of two peaks during a day; morning peak and evening peak, with around 25% to 50% loading during the nights.
- iv. The materials used for outer sheaths shall be resistant to oils, acids and alkalis.
- v. The cables shall have the mechanical strength required, during handling and laying.
- vi. The cables shall be designed to withstand the thermo-mechanical forces and electrical stresses during normal operation and transient conditions.
- vii. The cables shall be designed to have a minimum useful life span of Thirty-five years.
- viii. The detailed design drawings shall be submitted along with Purchase order.

8.0 MANUFACTURE PROCESS:

Cross-linking of the insulation materials (pre compounded polyethylene) shall be conforming to IS: 7098 (Part – II) and the proof of purchase of the above insulating material shall be submitted and is to be offered for stage inspection..

9.0 MATERIALS:

- 9.1 **Conductor:** -The conductor shall be of stranded construction. The material for conductor shall consist of the plain aluminum of H2 or H4 grade as per clause – 3 of IS 8130/ 1984.
- 9.2 The minimum number of wires shall be 53 for circular compacted 400 sq. mm aluminum conductor as per table – 2 of IS 8130/ 1984.

10.0 CORE IDENTIFICATION:

- 10.1. The core identification for 31/2 core cables shall be provided, by suitable means, like, by application of individual colour or colored stripes, or by numerals or by printing on the cores as per clause 13 of IS: 7098 - Part 2
- 10.2. For identification of different coloring of XLPE Insulation, or by using colored strips, red, yellow and blue colors respectively shall be used to identify the phase conductors.

11.0 LAYING UP OF CORES:

The cores shall be laid together with a suitable right hand lay. The interstices at the center shall be filled with a non- hygroscopic material.

12.0 INNER SHEATH (COMMON COVERING):

- 12.1 The laid up cores shall be provided with inner sheath applied either by extrusion. It shall be ensured that the shape is as circular as possible. The inner sheath shall be so applied that it fits closely on the laid up cores and it shall be possible to remove it without damage to the insulation.
- 12.2 The thickness of the inner sheath (common covering) shall be given as follows:

CALCULATED DIAMETER IN MM OVER LAID UP CORES [REF IS 10462 (PART 1)]		THICKNESS OF INNER SHEATH (Min) mm
Over	Up to and including	
—	25	0.3
25	35	0.4
35	45	0.5
45	55	0.6
55	—	0.7

- 12.3 When one or more layers of binder tapes are applied over the laid up cores, the thickness of such tapes shall not be construed as a part of inner sheath.

13.0 **ARMOURING:**

- 13.1 Armouring shall be single strip steel wire applied over the inner sheath as closely as practicable. The direction of the lay of the armour shall be left hand.
- 13.2 The armour shall consist of galvanized strip steel The dimensions of the galvanized steel wires shall be 4 X 0.8 mm (Nominal)
- 13.3 The joints in the armour strip shall be made by brazing or welding and the surface irregularities shall be removed. A joint in the wire shall be at least 300-mm from the nearest joint in any other wire in the complete cable.
- 13.4 Manufacturers shall furnish the calculation / data sheet for the short circuit carrying capability of the Armour.

14.0 **OUTER SHEATH:**

- 14.1 The outer sheath shall be applied by extrusion. It shall be applied over the armouring shall consist of poly-vinyl chloride (PVC) compound, conforming to the requirements of type ST-2 of IS 5831. Suitable additives shall be added to give anti termite protection.
- 14.2 The minimum thickness of the PVC outer sheath shall be as per IS:10462 and as detailed.

Calculated diameter under the outer sheath [IS 10462 Part 1] – mm		Nominal thickness of the outer sheath (ts) - mm
Over	Up to and including	
—	15	1.24
15	25	1.40
25	35	1.56
35	40	1.72
40	45	1.88
45	50	2.04
50	55	2.20
55	60	2.36
60	65	2.52
65	70	2.68
70	75	2.84
75	—	3.0

14.3 IDENTIFICATION:

The outer sheath shall have the following information embossed or indented on it; ISI marking, the manufacturer's name or trade mark, the voltage grade, the year of manufacture and the letters "DDUGJY, Name of Employer" The identification shall repeat every 300/350mm along the length of the cable. Outer sheath of cable shall be black in permanent colour.

15.0 INSPECTION AND QUALITY CONTROL:

The Manufacturer shall furnish a complete and detailed quality plan for the manufacturing process of the cable. All raw materials shall conform to relevant applicable standards and tested for compliance to quality and requirement. During the manufacturing process, at all stages, inspections shall be made to check the physical and dimensional parameters, for verification to compliance to the standards. The Manufacturer shall arrange, for inspection by the purchaser, during manufacture with one month advance notice for verifying the various stage inspections as specified in the quality assurance plan enclosed to verify the quality control process of the Manufacturer.

16.0 TYPE TESTS:

Type test certificates from Accredited NABL Testing Laboratories for 1.1 kV XLPE, shall be submitted along with Purchase order. The Type Tests should have been conducted not later than 5 years as on the date of supply.

- 16.1 Stage wise Inspection: The Manufacturer shall offer the stage wise inspection as detailed in the in the quality assurance plan
- 16.2 All acceptance tests shall be conducted in the presence of the Employer's representative.
- 16.3 The supplier shall give 10 days advance notice for inspections, and witnessing of tests by the Employer representative.
- 16.4 The following type tests shall be conducted on the cable.

Sl. No.	Test	Requirement	Test method Ref Part no of IS: 10810
a)	Tests on conductor		
	i) Tensile test	IS:8130	2
	ii) Wrapping test	IS:8130	3
	iii) Resistance test	IS:8130	4
b)	Tests for armoured wires and strips	Clause 15.2 & IS:3975	36 to 42
c)	Test for thickness of insulation and sheath	Clause 4.3, 14.2 & 16.2	6
d)	Physical tests for insulation:	Clause 4.2	
	i) Tensile strength and elongation at break		7
	ii) Aging in air oven		11
	iii) Hot test		30
	iv) Shrinkage test		12
	v) Water absorption (gravimetric)		33
e)	Physical tests for outer sheath	IS: 5831	
	i) Tensile strength and elongation at		7

	break		
	ii) Aging in air oven		11
	iii) Shrinkage test		12
	iv) Hot deformation		15
f)	High voltage test	Clause 22.7	45
g)	Flammability test	Clause 22.8	53

17.0 ACCEPTANCE TEST:

17.1 The sampling plan for acceptance test shall be as per IS 7098 part -II, Appendix 'A'.

17.2 The following shall constitute the acceptance test.

- a. Tensile test for aluminum.
- b. Wrapping test for aluminum.
- c. Conductor resistance test.
- d. Test for thickness of insulation.
- (i) Test for thickness of inner and outer sheath.
- (ii) Hot-set test for insulation.
- (iii) Tensile strength and elongation at break test for insulation and outer sheath.
- (iv) High voltage test.
- (v) Insulation resistance (volume resistivity) test.

18.0 ROUTINE TEST:

The following shall constitute routine tests:

- o Conductor resistance test.
- o High voltage test.

19.0 DETAILS OF TESTS:

19.1 Unless otherwise mentioned in this specification, the tests shall be carried out in accordance with appropriate part of IS: 10810.

19.2 High Voltage Test at room temperature:
The cables shall withstand a voltage of 3KV AC (rms) at a frequency of 40 to 60 Hz or an AC voltage of 7.2kV , between conductors and between conductors and ECC (if any) for a period of 5 minutes each test connection.

19.3 Flammability test: Period of burning after removal of the flame shall not exceed 60 seconds and the unaffected (uncharred) portion from the lower edge of the top clamp shall be at least 50-mm.

Employer reserves the right to select a random sample of 1.1 kV UG cable from the Manufacturer's end which are ready to dispatch and also ongoing cable laying works and the same samples will be sent to any testing laboratory as desired by Employer. If the testing results are found to be not satisfactory Employer reserves the right to reject the entire batch of cable received and insists for replacement of material free of cost. The decision of Employer in this regard is final.

20.0 PACKING:

20.1 The cables, as per specified delivery lengths, shall be securely wound /packed in non-returnable wooden drums, capable of withstanding rough handling during transport by Rail, Road, etc. The packing should withstand storage conditions in open yards. The cable drums shall conform to IS 10418-1982 or equivalent standard. The dimensional drawings of wooden drums shall be furnished with the Purchase order. The drum shall be provided with circumferential lagging of strong wooden planks. The end of the cable shall be sealed

with good quality heat shrink sealing caps. The sufficiently required additional sealing caps shall be supplied for use of testing during laying and jointing at site and to seal spare lengths of cable. The packing should be able to withstand the rigorous of transport. The following information in bold letters in English shall be painted on the flanges.

- a. Name & Address of the manufacturer, Trade name/Trade mark/Brand
- b. ISI Marking
- c. Size of cable (Cross section) rated voltage, standard, insulation, cable code, drum No., and year of manufacture.
- d. Length of cables (Meters)
- e. Direction of rolling
- i) Net weight (in Kg)
- ii) Gross weight (in Kg)
- iii) Owners purchase order reference.

21.0 SEALING OF CABLE ENDS ON DRUMS:

- 21.1 The cable ends shall be sealed properly so that ingress of moisture is completely prevented. The individual core endings shall be sealed effectively with water resistant compound applied over the core and provided with a heat shrinkable or push-on or Tapex or cold shrinkable type cap of sufficient length with adequate cushion space so that the conductor does not puncture the cap in case of movement of the core during unwinding or laying. Before sealing, the semi conducting layer on the cores may be removed for about 2 mm at each end, to facilitate checking the insulation resistance from one end, without removing the sealing cap at the other end.
- 21.2 The three cores should have an overall heat shrinkable or push-on or Tapex or cold shrinkable type cap with adequate end clearance, and sufficient cushioning to prevent puncturing of the overall sealing cap due to stretching of the cores. The sealing cap shall have sufficient mechanical strength and shall prevent ingress of moisture into the cable. The ends of single core cables shall also be sealed on the same lines to prevent entry of moisture.

22.0 CABLE LENGTHS:

The cables shall be supplied in continuous lengths of 500 m or more with 5% tolerance and cable shall on the wooden drums only.

23.0 QUANTITY TOLERANCE:

A +3% tolerance shall be allowed on the ordered quantity including 300-m cable as spare.

24.0 MARKING:

- 24.1 The packed cable drum shall carry the following information, clearly painted or stenciled.
 - a. The letters 'DDUGJY, Name of Employer'
 - b. Reference to Standard and ISI mark.
 - c. Manufacturer's Name or trade mark.
 - d. Type of cable & voltage grade.
 - e. Number of cores.
 - f. Nominal cross- sectional area of conductor.
 - g. Cable code.
 - h. Length of cable on the drum.
 - i. Direction of rotation.
 - j. Gross weight.
 - k. Country of Manufacture.
 - l. Year of Manufacture.
 - m. Purchase order and date.
 - n. Address of consignee.

25.0 GUARANTEED TECHNICAL PARTICULARS:

The manufacturer, shall furnish the guaranteed technical particulars of the cable offered in the GTP format provided.

26.0 DRAWING & LITERATURE:

- (i) The following shall be furnished along with the tender
 Cross sectional drawings of the cables, giving dimensional details.
 An illustrated literature on the cable, giving technical information, on current ratings, cable constants, short circuit ratings, de rating factors for different types of installation, packing date, weights and other relevant information.

27.0 GUARANTEE: The cable manufactured shall be guaranteed for the period of 18 months from the date of receipt at stores.

28.0 The Manufacturer shall furnish a copy of valid BIS licence for ISI marking without which the cable shall not be accepted.

GUARANTEED TECHNICAL PARTICULARS FOR 1.1 KV

	Manufacturer's Name		
	Class of Power Cable		
1	Name of the Manufacturer and country of origin		
2	Country of Manufacture		
3	Type of cable / cable code		
4	Applicable standard		
	Voltage		
5	a. Rated Nominal voltage		
	b) Rated Maximum voltage		
6	Suitability for :		
	a. Earthed system		
	Conductor		
	a) Nominal cross section (sq.mm)		
	b) Material		
7	c) Shape		
	d) Diameter of conductor (mm)		
	e) Number of wires per conductor (Nos.)		
	f) Nominal diameter of wire in conductor (mm)		
	Insulation XLPE		
	a) Curing process (furnish details separately)		
8	b) Material/Composition		
	c) Dia over insulation		

	i. Nominal (mm)		
	ii. Average (mm)		
	iii. Minimum (mm)		
9	Inner sheath		
	a) Type / composition		
	b) Material		
	d) Tolerance on thickness		
	e) Diameter of cable over sheath (mm)		
10	Armouring		
	a) Material		
	b) Dia of wire		
	Nom. (mm)		
	Min. (mm)		
11	Outer sheath		
	a) Type / composition		
	b) Material		
	c) Nominal thickness		
	d) Tolerance on thickness		
	e) Diameter of cable over sheath (mm)		
12	Anti-thermite treatment to outer sheath		
	a) Material		
	External overall dia of cable		
	Short circuit rating of conductor 90 deg. C operating temperature for 1 Sec.		
13	Minimum cable bending radius (in terms of cable diameter)		
14	Permissible maximum tension		
15	Continuous current rating under specified insulation conditions at conductor temperature of 65 deg. C and 90 deg. C.		
16	Ground Temperature 30 deg. C		
17	Thermal resistivity of soil 150 deg. C CM/W		
18	Depth of laying 200 mm		
19	Ambient Air temperature 40 deg. C		
20	No. of circuits 1 OR 2		
21	Spacing between two circuits		
22	Formation		
23	Maximum permissible conductor temperature for continuous operation under specified installation conditions (deg. C)		

24	Conductor temperature at rated current (deg. C)		
25	Basic impulse level at conductor temperature of 90 deg. C (KV)		
26	Impulse wave shape		
27	Power frequency with stand voltage (KV)		
28	Tan Delta at 50 Hz (at U.KV and 90 (-5/+10) deg. C		
29	Sheath voltage at max. load		
30	Withstand voltage of sheath on spark test		
31	Permissible short circuit current ratings of conductor		
	i) 0.1 Sec KA		
	ii) 0.2 Sec KA		
	iii) 0.5 Sec KA		
	iv) 1.0 Sec KA		
32	Conductor resistance DC & AC		
	a) at 20 deg. C (d.c)/A.C. ohm/KM		
	b) at 90 deg. C (d.c)/A.C. ohm/KM		
	c) at 105 deg. C (d.c)/A.C. ohm/KM over load temp) a.c. (ohm)		
33	Equivalent star resistance at 50 Hz of 3 phase current		
	a) at 20 deg. C (d.c)/A.C. ohm/KM		
	b) at 90 deg. C (d.c)/A.C. ohm/KM		
	c) at 10% continuous overload temperature (ohm/KM)		
34	Star reactance at 50 hz (ohm/KM)		
	Approximate impedance at 50 hz per KM		
	a. at 20 deg. C ohm/KM		
	b. at 90 deg. C ohm/KM		
	c. at 10% continuous overload temperature (ohm/KM)		
35	Self-electrostatic capacitance per phase (Micro farad/KM)		
36	Maximum power factor at charging KVA of cables when laid direct in ground at normal voltage & frequency		
	a) at ambient Temperature		
	b) at Maximum conductor Temperature		

37	Impedance		
	a) Positive and negative sequence impedance 37 (ohm/KM)		
	b) Zero sequence impedance (ohm/KM)		
	c) Zero sequence data		
38	Series reactance / Resistance		
	a) Series resistance (ohm/KM)		
	Series reactance (ohm/KM)		
	Shunt capacitive reactance (ohm/KM)		
39	Sheath resistance at 20 deg. C ohm/KM		
40	Surge impedance of cable (ohm/KM)		
41	IR value at ambient temperature per KM		
	Maximum magnitude of partial discharge at 1.5 U.o		
	At Ambient Temperature (Po)		
	At High Temperature (Po)		
	Losses per Km.		
	NOTE : (i) Cable Conductor size 400 sq. mm		
	a) Total 3 phase dielectric loss		
	i. One circuit alive Kw/KM		
	ii. Both circuits alive KW/KM on each circuit		
	b) Total 3 phase resistive loss		
	i. One circuit alive Kw/KM		
	ii. Both circuits alive KW/KM on each circuit		
	c) Total 3 phase sheath / screen loss		
	i. One circuit alive Kw/KM		
	ii. Both circuits alive load KW/KM on each circuit		
42	d) Other losses due to reinforcement		
43	One circuit alive KW/KM		
44	Both circuits alive KW/KM on each circuit		
	Total losses		
	i. One circuit alive KW/KM		
	ii. Both circuits alive KW/KM		
	Charging current at rated voltage per Km (Amps)		

45	Short circuit capacity of conductor for one second at 90 deg. C prior to short circuit and 250 deg. C during short circuit (KA)		
46	Screening factor of cable for calculating interference on control and communication cables :		
	Approximate value of attenuation of carrier current signals operating over a frequency range		
	i. 50 KC/s- dB/KM		
	ii. 100 KC/s- dB/KM		
	iii. 150 KC/s- dB/KM		
	iv. 200 KC/s- dB/KM		
47	Shipping weight and size of cable drum		
	a) Size of Drum		
	i. Dia of Drum (M)		
	ii. Width of Drum (M)		
	iii. Gross Weight (Kgs)		
	iv. Length of cable per Drum(M)		
	v. Weight of Cable (Kg/M)		

Current Rating Factor

Particulars	Single Point Bonded		Both End Bonded	
	65 deg. C Amps	90 deg C Amps.	65 deg. C Amps	90 deg. C Amps
Current Rating conductor size 400 Sq. mm				
a) In Ground				
i. Of each circuits (when both the circuits alive)				
b) In Duct				
i. Of each circuits (when both the circuits alive)				
ii. Of one circuits (when other circuit is isolated)				
c) In pipe, one cable per pipe.				
i. Of each circuits (when both the circuits alive)				
ii. Of one circuits (when other circuit is isolated)				
d) In Air				
i. Of each circuits (when both the circuits alive)				
ii. Of one circuits (when other circuit is isolated)				

Derating Factors

1. VARIATION IN GROUND TEMPERATURE :							
Ground Temperature (deg. C) :	15	20	25	30	35	40	45
Rating Factor							
2. VARIATION IN DEPTH OF LAYING :							
Depth of Laying (Meters):	0.7	0.9	1.0	1.2	1.3	1.5	
Rating Factor							
3. VARIATION IN THERMAL RESISTIVITY OF SOIL							
Thermal Resistivity of Soil : (deg. C cm/watt)	100	120	150.0	200	250		
Rating Factor							
4. VARIATION IN AIR TEMPERATURE :							
Air Temperature (deg. C) :	25	30	35	40	45	50	55
Rating Factor							
5. VARIATION DISTANCE (MM) :							
Axial Distance (mm) Between circuits :	100	200	300.0	400	600	800	
Rating Factor							

SPECIFICATION OF POLY CARBONATE SEALS REQUIRED FOR SEALING OF SINGLE / POLY PHASE METERS

CONTENTS

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

1	SCOPE	<p>The specification covers the design, manufacture, testing at manufacturers works, supply and delivery at destination stores of tamper evident poly-carbonate security seals (Anchor type) heat resistant for sealing of Meter body and terminal covers of energy meters, Meter Box, CT-PT Units etc. with non-corrosive, non-magnetic stainless steel sealing wire.</p> <p>It is not the intent to specify completely herein all the details of technical design and construction of material. However, the material shall conform in all respects to high standards of engineering, design and workmanship and shall be capable of performing in continuous commercial operation in manner acceptable to the purchaser, who will interpret the meanings of drawings and specification and shall have the power to reject any work or material which, in his judgment is not in accordance therewith. The offered material shall be complete with all components necessary for their effective and trouble free operation. Such components shall be deemed to be within the scope of Bidder's supply irrespective of whether those are specifically brought out in this specification and/or the commercial order or not.</p>																																	
2	APPLICABLE STANDARDS	<p>The equipment covered by this specification shall conform to the requirements stated in latest editions & amendments of relevant Indian/ IEC Standards and shall conform to the regulations of local statutory authorities.</p> <table border="1"> <tr> <td>a</td><td>IS 9000</td><td>Basic Environmental testing procedure for electrical and electronic items.</td></tr> <tr> <td>b</td><td>IS 15707 : 2006</td><td>Testing, evaluation, installation and Maintenance of ac electricity meters — Code of practice</td></tr> <tr> <td>c</td><td>ASTM F 997</td><td>Standard Specification for Polycarbonate Resin</td></tr> <tr> <td>d</td><td>ASTM D792-08</td><td>Specific Gravity</td></tr> <tr> <td>e</td><td>ASTM G154</td><td>Exposure to UV radiations</td></tr> <tr> <td>f</td><td>ASTM B 117 -09</td><td>Salt Spray Test</td></tr> <tr> <td>g</td><td>IS 15707 : 2006</td><td>Testing Evaluation installation and maintenance of AC Electricity Meters- Code of practice.</td></tr> <tr> <td>h</td><td>IEC 60068</td><td>Environmental testing.</td></tr> <tr> <td>i</td><td>CBIP—TR No.325</td><td>Specification for A.C. Static Electrical Energy Meters (latest amendment)</td></tr> <tr> <td>j</td><td>CEA Regulation : 2006</td><td>Installation and operation of meters Dtd: 17/03/2006 or latest amendment</td></tr> <tr> <td>k</td><td>Supply code</td><td>Delhi Supply Code 2006</td></tr> </table>	a	IS 9000	Basic Environmental testing procedure for electrical and electronic items.	b	IS 15707 : 2006	Testing, evaluation, installation and Maintenance of ac electricity meters — Code of practice	c	ASTM F 997	Standard Specification for Polycarbonate Resin	d	ASTM D792-08	Specific Gravity	e	ASTM G154	Exposure to UV radiations	f	ASTM B 117 -09	Salt Spray Test	g	IS 15707 : 2006	Testing Evaluation installation and maintenance of AC Electricity Meters- Code of practice.	h	IEC 60068	Environmental testing.	i	CBIP—TR No.325	Specification for A.C. Static Electrical Energy Meters (latest amendment)	j	CEA Regulation : 2006	Installation and operation of meters Dtd: 17/03/2006 or latest amendment	k	Supply code	Delhi Supply Code 2006
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		4.8	Company MONOGRAM	JKPDD Monogram to be embossed as specified.
		4.9	Embossing quality	Embossing should have superior quality with good smooth finish.
		4.10	Seal design	Seal should be constructed/moulded with one piece twisted sealed wire & polycarbonate male & female part such way that no extra seal wire is required.
		4.11	Surface finish	The surface should be free from any burr or casting voids etc.
		4.12	Colour shade	The colour shades of all seals of specific color should be same. The color code will be provided by JKPDD.
5	GENERAL CONSTRUCTIONS	<p>5.0.1 The seal shall be capable to withstand temperature upto 147 deg. C without any damage / deformation.</p> <p>5.0.2 The seal shall be designed for a single use only and if tampered with the help of plier, knife or any other sharp instruments, the seal shall be damaged and due to its transparent property, the sign of internal tampering shall be easily detected. Also once opened, it cannot be re-used.</p> <p>5.0.3 The seal shall be made in such a way that, it can be easily locked with the help of finger and thumb pressing no tools shall be required to close the seal in the laboratory or at site.</p> <p>5.0.4 Both the parts shall be designed in such a way that they cannot be separated and the attachment shall be flexible and shall not break. After inserting the seal wire through female part, the cap of the male part shall be fitted in the female part in such a way that it should not leave any space to avoid insertion of any sharp tools for opening of seal body of the female part in hot or cold condition.</p> <p>5.0.5 The seal shall have also the following features:-</p> <ol style="list-style-type: none"> Tamper resistance and reliable. Environmentally safe as it does not contain any lead. Withstand long-term exposure to direct sunlight. Required no tools for installation. Transparent. Heat resistance. 		
5.1	Design	<p>5.1.1 The seal shall be anchor (Push Fit) type tamper evident with double locking.</p> <p>5.1.2 There shall not be any change in size, shape or design of the seal than the approved tender samples. If the seal is found different than the approved design / shape / size, the same shall be out rightly rejected.</p>		

		<p>5.1.3 The double anchor should not be so soft that it can be easily pressed before sealing, so that after pressing the seal cannot be opened.</p> <p>5.1.4 The double anchor should be very hard such that it should not require plier to press fit. Should be easily press fit with hand/ thumb pressure.</p> <p>5.1.5 The wall thickness of seal should be minimum one mm (1mm).</p> <p>5.1.6 Seal shall be made of unbreakable, high grade, fire retardant reinforced Insulating material with FVO Fire Retardant, self -extinguishing, UV stabilize, recyclable and Anti oxidation properties.</p> <p>5.1.7 Non repeat seven digits Sr. No. With Code No. shall be laser etched / embossed during moulding (it shall not be screen printed) in contrast color on one side of capsule body (female).</p> <p>5.1.8 The Sr. No. shall also be laser etched / embossed during moulding (it shall not be screen printed) in contrast color on top of the male part.</p> <p>5.1.9 The laser etched printing shall be through complete thickness of the polycarbonate.</p> <p>5.1.10 Hole for inserting sealing wire of diameter of 1mm only with ± 0.1mm tolerance.</p>												
5.2	Color of Seal	<p>5.2.1 The female portion of the Polycarbonate Seal(s) shall be available in Clear color and should be transparent (see through) type, which shall give complete visualization of its fixing mechanism and shall show clear indication if tampered.</p> <p>5.2.2 Male part Anchor type body may be in colors of Red / Yellow/ Green/ Violet/ Orange. The color of seal should not fade with UV radiations of sunlight.</p> <p>5.2.3 The color should be such that any two seals should not show any visual color shade difference.</p> <p>5.2.4 The required shade of color shall be given/mentioned in the PO.</p>												
5.3	Marking/ Monogram	The seal shall have laser etched printing of monogram of JKPDD on front side and month and year embossed of manufacture in figure on the backside. The laser etched printing should be through complete thickness of polycarbonate.												
5.4	Seal material	<p>The raw material used for polycarbonate plastic seals shall be M/s GE plastic, (Grade 143R or 943 AA), any other equivalent manufacturer having similar material properties as under:</p> <table border="1"> <tr> <th>Sr. No</th><th>Item</th><th>Polycarbonate</th></tr> <tr> <td>1</td><td>Melting Temperature</td><td>2800 C to 2950 C</td></tr> <tr> <td>2</td><td>USE</td><td>Engineering</td></tr> <tr> <td>3</td><td>Softness</td><td>Hard</td></tr> </table>	Sr. No	Item	Polycarbonate	1	Melting Temperature	2800 C to 2950 C	2	USE	Engineering	3	Softness	Hard
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5.5	Seal Wire	<p>The non-corrosive, non-magnetic stainless steel twisted wire (26 guage) confirming to</p> <p>IS : 280 shall be used . The seal wire shall not have effect of magnet i.e. it should not attract to magnet. The length of the sealing wire should be minimum 6” twisted two strand pull resistant stainless steel wire fixed to the seal. The diameter of each individual stand should be of 0.46mm (26 gauge) to 0.5 mm. dia and overall diameter of the seal wire shall be 0.92 to 1.0 mm (± 0.05). The No. of turns shall be minimum 20 per inch. The seal wire should be inserted at the female and male part during the process of moulding itself and with a visible projected and continuously length of the wire. The wire shall be intact such that it cannot be pulled out after sealing.</p> <p>The seal wire insert hole should be just sufficient for passing the seal wire and hole of larger dia. is discouraged.</p>						
5.6	Tolerance	Any dimension Tolerance shall be max. 0.5mm or below.						
5.9	Special feature	A secret code shall be given in each seal by bidder on whom the RECPDCL places the order. The name of the bidder embossed/laser printed on the seals along with JKPDD logo, Sr. No., Month and Year of manufacture or any other symbol given by the JKPDD shall be embossed/ laser printed. Before commencing mass manufacturing & supply Six Nos. of sample seals of each color shall have to be approved from the purchaser.						
5.10	Patent	Seals should be patented or design is registered with patent office. Copy of patent certificate /lease & patent drawing/design should be submitted for verification along with the offer. This should comply to the latest CEA guidelines & its Bidders responsibility to provide genuine documents complying to statutory guidelines.						
6.0	NAME PLATE AND MARKING	<p>Seals shall have embossed marking clearly visible and effectively secured against removal. Following marking to be done on seals.</p> <ul style="list-style-type: none"> i. Manufacturer’s name on female part side below date & month ii. Serial number – unique seven digit no (Seal serial number shall be laser printed on top of the male part & bottom of the female part). iii. JKPDD monogram with logo on high-rise moulding in 8mm dia. On side of female part iv. Month and Year of manufacture in MM/YY format on other side of the female part in high-rise moulding in 8mm dia. 						
7.0	ESTS	All routine, acceptance & type tests shall be carried out on the seals separately in accordance with the relevant IS/IEC. All routine/acceptance tests shall be witnessed by the purchaser/his						

		authorized representative. All the components shall also be type tested as per the relevant standards. Following tests shall be necessarily conducted
7.1	TYPE TEST	As per acceptance tests.
7.2	ROUTINE TEST	<ol style="list-style-type: none"> 1. Dimension check – Dimensions as per approved GTP & within min. tolerances in specs. 2. Surface finish- Male & female part – The surface should be free from any burr or casting voids etc. 3. Embossing quality- embossing should have superior quality & good finish. 4. Colour shade- the colour shades of all seals of specific color should be same. 5. The steel seal wire shall be properly placed in insulating material.
7.3	ACCEPTANCE TEST	<p>The seals shall be inspected / tested as a acceptance test at the manufacture's works before dispatch in presence of authorized representative of purchaser for the following tests:</p> <p>i) Physical Dimensional Check-up : The seals shall be subjected to visual check-up for verification of workmanship and other features as mentioned above including shape / design / dimensions as per approved drawing /Samples & dimensions should be within min. tolerances mentioned in specs./drawings.</p> <p>ii) Boiling Water Test: The seal when immersed in the boiling water for two hours there shall not be any effect on the seal and it shall remain intact condition i.e. the seal should not become soft, but instead should turn out to trail and easily break thus showing easily the tampering signs if it eventually happens. Even, with the help of any sharp instrument, pulling with plier i.e. by applying mechanical force, the male portion shall not come out from the female part (body seal). In case, it comes out, the same shall damage the seal, so that it cannot be re-used.</p> <p>iii) Pull Out Test: After locking the seal, if the male part / insert is pulled with mechanical force with the help of plier or any other instrument, sharp instrument etc. at normal condition, the seal should not get unlocked without any damage and when such condition occurs, it should leave traces of tampering.</p> <p>iv) Seal Wire : In case, if someone tries to pull the seal wire and in any of the tests as mentioned above at (ii) & (iii) in that case the male / female portion of the seal should be damaged and the same can be seen visually being a transparent one.</p> <p>v) Chemical Test: The seal be kept in the concentrated acid for minimum one hour. The same shall remain in tact condition and if try to unlock the seal, the same shall be damaged.</p> <p>vi) Temperature withstand test: The seal should be capable to withstand temperature up to 147 deg. C without damage/deformation.</p> <p>vii) Effect of oil, chemical & sunlight : The seal shall be so designed made that there shall not be any effect of temperature, chemicals, oil and sunlight etc. on the performance of the seal.</p>

		<p>Other checks -</p> <ol style="list-style-type: none"> 1. Surface finish- Male & female part – The surface should be free from any burr or casting voids etc. 2. Embossing quality- embossing should have superior quality & good finish. 3. Colour shade- the colour shades of all seals of specific color should be same. 4. Marking & embossing - The LOGO embossing shall be as per JKPDD standard logo & making as mentioned in specs. The steel seal wire shall be properly placed in insulating material. <p>In short, if the seal is tested for any of the above tests, in no condition the male and female part shall be separated out without affecting / damaging the seal. In case, if they are separated, the seal shall have sufficient tamper evident. Also, if seal wire is pulled out from the seal in any of the above tests, it shall not come out from the seal without damaging seal.</p>
7.4	Sampling Plan	For carrying out above acceptance tests at manufacturer's works shall be Selected at the rate of 0.2% of the offered quantity with minimum 5 samples selected at random from the each lot offered as per IS4905. The seals used in testing shall be destroyed in the presence of JKPDD Inspecting Officer.
8.0	TYPE TEST CERTIFICATE	The bidder shall furnish the type test certificates of the meter for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at CPRI or ERDA or UL or accredited laboratory as per the relevant standards. Testing from any national approved laboratory or international acclaimed lab or equivalent will also suffice at the discretion of RECPDCL. Type test should have been conducted in certified Test Laboratories during the period not exceeding 5 years from the date of opening the bid. In the event of any discrepancy in the test reports i.e. any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be carried out without any cost implication to RECPDCL.
9.0	PRE-DESPATCH INSPECTION	<p>The successful bidder shall submit Six samples of each color seal (non-returnable) mentioned in tender/ PO for further testing and compliance as per specifications and getting approval before mass manufacturing. Out of Six samples, five samples to be submitted in Meter testing lab and one in RECPDCL.</p> <p>Inspection may be made at any stage of manufacture at the discretion of the purchaser and if found unsatisfactory as to workmanship or material, the same is liable to rejection. Equipment shall be subject to inspection by a duly authorized representative of the Purchaser. Bidder shall grant free access to the places of manufacture to RECPDCL's representatives at all times when the work is in progress. Inspection by the RECPDCL or its authorized representatives shall not relieve the bidder of his obligation of furnishing equipment in accordance with the specifications. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by RECPDCL.</p> <p>Following documents shall be sent along with material</p> <ol style="list-style-type: none"> a) Test reports b) MDCC issued by RECPDCL c) Invoice in duplicate

		<p>d) Packing list e) Drawings & catalogue f) Guarantee / Warrantee card g) Delivery Challan h) Other Documents (as applicable)</p> <p>Stage Inspection: If desired by RECPDCL, RECPDCL will arrange stage inspection for the material used for manufacturing of seal and also during the process of manufacturing. If desired, during the surprise checking RECPDCL shall take sample of raw material and will check for the material properties. In case, the same is not found as per the specification, the entire lot under process shall be rejected.</p>
10.0	INSPECTION AFTER RECEIPT AT STORE	The material received at Purchaser's store shall be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection or approved GTP & drawings and one copy of the report shall be sent to RECPDCL.
11.0	GUARANTEE	Bidder shall stand guarantee towards design, materials, workmanship & quality of process / manufacturing of items under this contract for due and intended performance of the same, as an integrated product delivered under this contract. In the event any defect is found by the purchaser up to a period of at least 24 months from the date of commissioning or 30 months from the date of last supplies made under the contract whichever is earlier, Bidder shall be liable to undertake to replace/rectify such defects at its own costs, within mutually agreed time frame, and to the entire satisfaction of the Company, failing which the purchaser will be at liberty to get it replaced/rectified at bidder's risks and costs and recover all such expenses plus the Company's own charges (@ 20% of expenses incurred), from the bidder or from the " Security cum Performance Deposit" as the case may be.
12.0	PACKING	The bidder shall be responsible for suitable packing of seals, colour wise. The bidder shall have to supply each 100 seals in chronological order i.e. arranging in serially, tied with the steel wire forming a loop and same shall be packed in polythene bag with labels furnishing serial no., colour etc. & further packed in cardboard boxes for safety in transit.
13.0	TENDER SAMPLE	<p>Bidders are required to manufacture 05 sample seals of each colour as per the RECPDCL specification and submit (non-returnable) the sample along with bid for approval. These samples to be submitted in Meter Testing Lab & intimated to RECPDCL.</p> <p>The tender sample seals shall be provided with trademark and logo of firm on front side & month and year of manufacturing on back side of the female part of the seal. The offer without samples shall be outrightly rejected and the offer shall not be considered. The sample seals shall be tested as per the specifications, either in RECPDCL's laboratory or at third party govt approved laboratory, as per the discretion of RECPDCL. The tender sample seals not conforming to the specifications shall be straight away rejected and accordingly, their offer will not be considered for further evaluation.</p>

14.0	QUALITY CONTROL	<p>The bidder shall submit with the offer Quality assurance plan indicating the various stages of internal factory inspections, tests and checks which will be carried out on the material of construction, components during manufacture and bought out items and after finishing final product.</p> <p>Quality should be ensured at the following stages:</p> <ul style="list-style-type: none"> • Inwards raw material • At Female part moulding along with seal wire • At male part moulding with seal wire • On finished product • Prior to packing <p>The RECPDCL's engineer or its nominated representative shall have free access to the bidder's/manufacturer's works to carry out inspections of QAP.</p>
14.1	IDENTIFICATION OF DUPLICATES	<p>Supplier shall ensure that process cannot be duplicated to prevent duplicate seals.</p> <p>However, in case RECPDCL finds any doubtful seal at site, manufacturer shall visit the site for certifying whether the seals are genuine or duplicate.</p> <p>Manufacturer shall give a letter stating reason's for duplicate and technical report needs to be provided along with conclusions. A copy of the report should be sent to Plant Egg. Department.</p>
15.0	MINIMUM TESTING FACILITIES	<p>Bidder shall have adequate in house testing facilities for carrying out all routine tests & acceptance tests as per relevant International / Indian standards/RECPDCL specification. The bidder shall have good/digital/calibrated instruments to check minute difference in dimensions & logo etc.</p>
16.0	MANUFACTURING ACTIVITIES	<p>The successful bidder will have to submit the bar chart for various manufacturing activities clearly elaborating each stage, with quantity. This bar chart shall be in line with the Quality assurance plan submitted with the offer. This bar chart will have to be submitted within 15 days from the release of the order.</p>
17.0	SPARES, ACCESSORIES AND TOOLS	<p>Not Applicable</p>
18.	SEAL WITH TRACKING & RECORDING SOFTWARE	<p>Seals shall be provided with tracking & recording software. The software shall have following features</p> <ul style="list-style-type: none"> • Software should have facility of defining the system controller • Facility to enter serial number of seals with the help of bar code scanner. • Receiving of seal in the system and with authentication like signature. • Facility to identify the concern who is responsible for receiving of seals and nominated by system supervisor. • Provision to define different type of seals for various uses. • Software should have facility of report generation for inventory & issue records.

		<ul style="list-style-type: none">Facility to track for relevant data for individual seal entered in the system.																																			
19.0	DRAWINGS AND DOCUMENTS	<p>Following drawings & Documents shall be prepared based on RECPDCL specifications and statutory requirements and shall be submitted with the bid:</p> <p>a) Completely filled-in Technical Parameters. b) General arrangement drawing of the meter c) Terminal Block dimensional drawing d) Mounting arrangement drawings. e) General description of the equipment and all components with makes and technical requirement f) Type Test Certificates g) Experience List h) Manufacturing schedule and test schedule</p> <p>After the award of the contract, soft copies or hard copies of following drawings, drawn to scale, describing the equipment in detail shall be forwarded for approval:</p> <table><tr><th>S. No.</th><th>Description</th><th>For Approval</th><th>For Review Information</th><th>Final Submission</th></tr><tr><td>1</td><td>Technical Parameters</td><td>√</td><td></td><td>√</td></tr><tr><td>2</td><td>General Arrangement drawings</td><td>√</td><td></td><td>√</td></tr><tr><td>3</td><td>Manual/Catalogues</td><td></td><td>√</td><td></td></tr><tr><td>4</td><td>Transport/ Shipping dimension drawing</td><td></td><td>√</td><td>√</td></tr><tr><td>5</td><td>QA & QC Plan</td><td>√</td><td>√</td><td>√</td></tr><tr><td>6</td><td>Routine, Acceptance and Type Test Certificates</td><td>√</td><td>√</td><td>√</td></tr></table> <p>All the documents & drawings shall be in English language.</p> <p>Instruction Manuals (If applicable) : Bidder shall furnish softcopies and one hard copies of nicely bound manuals (In English language) covering instructions for use & application and all relevant information and drawings pertaining to the main equipment as well as auxiliary devices if any.</p>	S. No.	Description	For Approval	For Review Information	Final Submission	1	Technical Parameters	√		√	2	General Arrangement drawings	√		√	3	Manual/Catalogues		√		4	Transport/ Shipping dimension drawing		√	√	5	QA & QC Plan	√	√	√	6	Routine, Acceptance and Type Test Certificates	√	√	√
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20.0	GUARANTEED TECHNICAL PARTICULARS			
		Sr. No.	PARTICULARS	TO BE FURNISHED BY BIDDER
		1	Name & address of manufacturer	
		2	Work's address	
		3	Raw material of polycarbonate seals	
		4	UV resistance properties	
			Seal shall not be affect by boiling water & acid	
		5	Seal should have 6 inch long 26 gauges, twisted strand stainless steel wire non corrosive & non magnetic	
		6	Max. Withstand temperature (upto 147deg.c.)	
		7	Thickness of seal	
		8	Serial number should be laser printed on male & female part & should be separately visible after closing of seal	
		9	Embossing of monogram is as Per specification	
		10	Colour of the seals	
		11	Seal should be constructed/moulded with one piece twisted sealed wire & polycarbonate male & female part such way that no extra seal wire is required.	
		12	Seal design should be such that once seal is closed, the two parts should not be separated.	
		13	Seal should permanently secure steel wire inside seal after closing of male & female part.	
		14	Seal should have positive locking & locking should be easy & should be possible with pressure of thumb.	
		15	1. Surface finish- Male & female part – The surface should be free from any burr or casting voids etc.	

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21.0	SCHEDULE OF DEVIATIONS	<p align="center"><u>(TO BE ENCLOSED WITH THE BID)</u></p> <p>All deviations from this specification shall be set out by the Bidders, clause by Clause in this schedule. Unless specifically mentioned in this Schedule, the tender shall be deemed to confirm the purchaser's specifications:</p> <table border="1"> <thead> <tr> <th>S.No.</th><th>Clause No.</th><th>Details of deviation with justifications</th></tr> </thead> <tbody> <tr> <td> </td><td> </td><td> </td></tr> </tbody> </table>	S.No.	Clause No.	Details of deviation with justifications																		
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		<p>We confirm that there are no deviations apart from those detailed above.</p> <p>Seal of the Company:</p> <p>Signature</p> <p>Designation</p>
22	AUTHORISED SUPPLY UNDERTAKING	<p><u>(TO BE ENCLOSED WITH THE BID)</u></p> <p>On award of contract the bidder should not sell or offer the seals with JKPDD logo to any unauthorized person outside RECPDCL in any circumstances.</p> <p>We confirm that we or any our company representative shall not offer to sell the JKPDD logo seals to any unauthorized person outside RECPDCL.</p> <p>Seal of the Company:</p> <p>Signature</p> <p>Designation</p>

5.0 SINGLE PHASE WHOLE CURRENT STATIC ENERGY METER OF CLASS 1.0 FOR CONSUMER

5.1 SCOPE

The static whole current meter shall offer current range of 10-60A (first digit indicates the Basic Current & second digit indicates the Maximum Current of the respective meters) for tariff purposes, as per requirement given in this specification.

5.2 Running at no load

When voltage at 115% of V_{ref} is applied and no current flows in the current circuit, the test output of the meter shall not produce more than one pulse.

GENERAL & CONSTRUCTIONAL REQUIREMENTS

5.2.1 Meter Shall bear BIS mark

5.2.2 Meters shall be designed and constructed in such a way so as to avoid causing any danger during use and under normal conditions. However, the following should be ensured:-

- a) Personal safety against electric shock
- b) Personal safety against effects of excessive temperature
- c) Protection against spread of fire
- d) Protection against penetration of solid objects, dust & water
- e) Protection against fraudulence
- f) Protection against pilferage
- g) Meter base and meter cover break open type

The accuracy of the meter shall not be affected with the application of abnormal voltage / frequency generating device such as spark discharge of minimum 35 kV. The meter shall be tested by feeding the output of the device to meter in any of the following manner for 10 minutes.

1. On any of the phase or neutral terminals.
2. On any connecting wires of the meter (Voltage discharge with 0-10 mm spark gap).
3. At any place in load circuit.

The accuracy of the meter shall be checked before and after the application of above device.

5.2.3 The meter shall be designed with latest technology and shall be manufactured using SMT (Surface Mount Technology) components. Power supply and voltage divider circuits may be of PTH Technology. The meter shall be housed in a safe, high grade engineering plastic/polycarbonate meter block casing and which is of projection mounting type and is dust/moisture proof, conforming to IP-51.

5.2.4 All insulating material used in the construction of meters shall be on-hygroscopic, non-ageing and of tested quality. All parts that are likely to develop corrosion shall be effectively protected against corrosion throughout during operating life by providing suitable protective coating.

5.2.5 The meter shall have an operation indication device such as a blinking LED. The operation indicator shall be visible from the front window and capable of being monitored conveniently with suitable testing equipment.

- 5.2.6** The meter shall conform to the degree of protection IP 51 as per IS:12063 for protection against ingress of dust, moisture and vermins.
- 5.2.7** The meter shall be supplied with a terminal block cover. The meter terminal block and terminal cover shall be made of high grade, fire resistant, reinforced, non-flammable, polycarbonate or equivalent high grade and good quality engineering plastic.
- 5.2.8** The meter terminal block and terminal block cover shall ensure safety against the spread of fire. They should not be ignited by thermic overload of live parts in contact with them.
- 5.2.9** The meter block shall be of transparent, high grade engineering plastic for easy reading of all the displayed values/parameters, name plate details and observation of operation indicator. The transparency of the box shall remain un-influenced with the environmental conditions.
- 5.2.10** The terminal block shall be made of high grade non-hygroscopic, fire retardant, low tracking, fire resistant, reinforced poly-carbonate (not bakelite) or equivalent high grade engineering plastic which should form an extension of the meter case and have terminal holes and shall be of sufficient size to accommodate the insulation of the conductors, meeting the requirement of IS 13779: 1999.
- 5.2.11** The terminals shall have suitable construction with barriers to provide firm and safe connection of current and voltage leads of stranded copper conductors or copper reducer type terminal ends (thimbles).
- 5.2.12** The manner of fixing the conductors to the terminal block shall ensure adequate and durable contact such that there is no risk of loosening or undue heating. Screw connections transmitting contact force and screw fixing which may be loosened and tightened several times during the life of the meter shall be such that the risk of corrosion resulting from contact with any other metal part is minimized. Electrical connections shall be so designed that contact pressure is not transmitted through insulating material. The internal diameter of the terminal holes shall be 5.5 mm for 5-30A and 8.5mm for 10-60A meter. The clearance and creepage distance shall conform to relevant clause of IS 13779:1999.
- 5.2.13** The meter shall be compact in design. The meter block unit shall be capable of withstanding stresses likely to occur in actual service and rough handling during transportation. The meter shall be convenient to transport and immune to shock and vibration during transportation and handling.
- 5.2.14** The meter shall have minimum two fixing holes. The top hole shall be provided at the back of the meter so that holding screw is not accessible to the consumer after fixing the meters. The lower fixing screws shall be provided under the sealed terminal cover. The requisite fixing screws shall be supplied with each meter.
- 5.2.15** The meter shall be provided with adequate protection against damage by high current/short circuit current.
- 5.2.16** The meter shall work satisfactory as per IS 13779 under presence of various influencing conditions like external Magnetic Field, Electromagnetic Field, Radio Frequency Interference, Vibrations, harmonic Distortion, Voltage/Frequency Fluctuations, electromagnetic High Frequency Fields etc. The meter shall be capable of recording even in case of application by fraudulent means any of the tempering methods. The Meter shall have following anti-tamper features :
- i.** The meter shall be capable of recording energy correctly even if input and output terminals are interchanged. Also the meter shall record correctly even if phase and neutral are interchanged.
 - ii.** The meter shall register energy correctly even when the load is not terminated back to the meter and instead current is drawn through a local earth under the conditions:-

- a) When phase and neutral are connected correctly.
 - b) When phase and neutral wires are interchanged at the input terminals.
- iii. The registration must occur whether input phase/neutral wires are connected properly or they are interchanged at the input terminals.
 - iv. Performance of the meter should not be affected under influence of external DC/AC magnetic field of high intensity as mentioned in IS 13779/CBIP report 325.
 - v. The meter shall be factory calibrated and shall be sealed suitably before dispatch.
 - vi. The meter shall withstand phase-to-phase voltage between phase and neutral terminals for at least 30 minutes.
 - vii. The Meter shall record even when the Neutral is removed or opened from both ends (source & load) and when phase and Neutral are interchanged. When neutral is removed meter should start recording energy for current of 1 amp and above.
 - viii. The meter shall be able to log in the memory in case the meter cover is opened.

The meter shall be capable of recording the following tamper events in memory (minimum 5 each) with date and time stamp along with snapshots of V, I, PF and Kwh as per IS 15959.

- Neutral Missing
- Magnet Tamper (if applicable)
- Cover open tamper (occurrence only)

5.3 SEALING OF METER

All meter shall be sealed by the manufacturer at its works. In addition to the seal provided by the manufacturer at its works, reliable sealing arrangement should be provided to make the meter tamper evidence and avoid fiddling or tampering by unauthorized persons by way of providing adequate no. of seals on meter, meter terminal cover, wherever necessary. The meter cover shall be sealable to the meter base with at least 2 nos. seals. Also terminal cover shall have provision for sealing with at least one seal. All the seals shall be provided in front side only. Rear side sealing arrangement will not be acceptable. Please refer Annexure- for specification for sealing system.

5.4 DISPLAY

- 5.4.1 The measured value(s) shall be displayed on a Liquid Crystal display (LCD) register. The height of the digit shall be minimum 7 mm. The KWh energy registration shall take place with 6 complete digits. The display shall have backlit capability for easy reading.
- 5.4.2 The data should be stored in non-volatile memory (NVM). The non-volatile memory should retain data for a period of not less than 10 years under un-powered condition. Battery back-up memory will not be considered as NVM.
- 5.4.3 The register shall be able to record and display starting from zero, for a minimum of 1500 hours, the energy corresponding to rated maximum current at reference voltage and unity power factor. The register should not roll over in between this duration.

- 5.4.4** In addition to providing serial number of the meter on the display plate, the meter serial number shall also be programmed into meter memory for identification through communication port for CMRI/meter reading print out.

5.5 DISPLAY SEQUENCE

The meter shall display the required parameters in two different modes as follows:

Apart from this in case of cover open the same shall be displayed on the meter.

A) Auto Display Mode:

The following parameters hereinafter referred to as "Billing Parameters" (B.P) shall be displayed in an auto-cycle mode, in the following sequence:-

1. LCD Test
2. Real Time
3. Date
4. Cumulative Active energy (forwarded) reading (kWh)
5. Last Bill Active Forwarded energy
6. Instantaneous Load (KW)
7. Last Bill Maximum demand (kW)

Each parameter shall be on meter display for 10 seconds.

B) Push Button Mode:-

In addition to the auto display mode parameters, the following parameters shall be displayed on pressing the push button

1. LCD Test
2. Real Time
3. Date
4. Instantaneous voltage, current
5. Maximum demand kW for Current month
6. Supply Frequency
7. Instantaneous PF

The meter shall also be capable of offering a high resolution display which shall enable conducting of dial testing by the user in the shortest possible time and as a minimum, the meter shall be capable of offering a resolution of 4 digits after decimal (and 2 digits before decimal) for the high resolution KWh display.

5.6 MAXIMUM DEMAND REGISTRATION & RESET

Meter shall continuously monitor & calculate the average maximum demand for each demand interval time of 30 minutes and maximum of these in a calendar month shall be stored along with date and time when it occurred. The maximum demand shall automatically reset at 24:00 hrs. of the last date of each calendar month for which minimum 30 years calendar shall be programmed by the manufacturer.

The integration period by default shall be set as 30 minutes and programmable as per IS 15959.

The billing purpose parameters (active forwarded energy, maximum demand in kW) shall be registered and shall be available for a minimum period of atleast 6 month.

5.7 LOAD PROFILE RECORDING

The meter shall be capable of monitoring and recording load profile information for KW demand for every 30 minutes interval for at least 35 days duration. The load profile shall be configurable as per IS 15959.

5.8 SELF DIAGNOSTIC FEATURE

The meter shall be capable of performing complete self-diagnostic check to monitor integrity of data memory location at all time. The meter shall have indication for unsatisfactory /nonfunctioning /malfunctioning of the following:

- a) Time and date on meter display
- b) All display segments on meter display
- c) Real Time Clock (RTC) status in meter reading prints out at BCS end

5.9 CMRI/BCS REQUIREMENTS

The communication protocol of the meter shall be as per IS 15959 with latest amendment. The Common Meter Reading Instrument (CMRI) should be capable of being loaded with user friendly software (MS-DOS 5.0 or higher version compatible) for reading/downloading meter data. Windows based Base Computer Software (BCS) shall be provided for receiving data from CMRI and downloading instructions from base computer software to CMRI.

This BCS should have, amongst other requirements, features and facilities described later in this specification, the facility to convert meter reading data into user definable xml file format so that it may be possible for the user to integrate the same with the user's billing data and process the selected data in desired manner. All the data available in the meter including energy, MD, and history data should be convertible to user defined xml file format for integration with third party software. The vendor shall supply necessary base computer software for reading / viewing of meter data and converting to user defined xml files formats. The user shall have the flexibility to select the parameters to be converted into xml file. The vendor shall also supply the necessary CMRI software.

5.10 DISPLAY POWER UP IN ABSENCE OF MAINS SUPPLY

The meter shall have the provision of providing the display of billing parameters in absence of main supply through internal battery..

5.11 CONNECTION DIAGRAM & TERMINAL MARKINGS

The connection diagram of the meter shall be clearly shown on the meter. The meter terminals shall also be marked and this marking should appear in the above diagram.

5.12 ELECTRO-MAGNETIC COMPATIBILITY AND INTERFERENCE

The meter shall remain un-influenced with EMI/EMC interference. The meter shall withstand impulse voltage test of 6 kV as per IS 13779-1999.

5.13 TESTS

Unless specifically waived off all acceptance tests shall be witnessed by the Employer.

5.13.1 Type Tests

Energy Meters offered shall be fully type tested as per IS 13779& IS 15959 with latest amendments at any of the NABL accredited test laboratories.

Type test certificate shall not be older than 3 years from the date of bid submission. Bid shall not be accepted without valid type test certificate.

5.13.2 Acceptance Test

Acceptance test shall be carried out as per IS 13779.

5.13.3 Routine Tests

All routine tests as per IS 13779 shall be carried out.

TECHNICAL SPECIFICATION FOR STATIC ELECTRICAL THREE PHASE WHOLE CURRENT METER

CONTENTS

- 1.0 SCOPE**
- 2.0 APPLICABLE STANDARDS**
- 3.0 CLIMATIC CONDITIONS OF THE INSTALLATION**
- 4.0 GENERAL TECHNICAL REQUIREMENTS**
- 5.0 GENERAL CONSTRUCTIONS**
- 6.0 NAME PLATE AND MARKING**
- 7.0 TESTS**
- 8.0 TYPE TEST CERTIFICATES**
- 9.0 PRE-DESPATCH INSPECTION**
- 10.0 INSPECTION AFTER RECEIPT AT STORE**
- 11.0 GUARANTEE**
- 12.0 PACKING**
- 13.0 TENDER SAMPLE**
- 14.0 QUALITY CONTROL**
- 15.0 MINIMUM TESTING FACILITIES**
- 16.0 MANUFACTURING ACTIVITIES**
- 17.0 SPARES,ACCESSORIES AND TOOLS**
- 18.0 DRAWING AND DOCUMENTS**
- 19.0 GURANTEED TECHNICAL PARTICULARS**
- 20.0 SCHEDULE OF DEVIATIONS**

1	SCOPE	<p>This specification covers the technical requirements of design, manufacturing, testing at meter manufacturer's works ,packing, forwarding, supply and unloading at store/site of three phase four Wire, 3x230 voltage, 20-100A, whole current static meters of accuracy class 1.0 (here after referred as meters) complete with all accessories for efficient and trouble free operation.</p> <p>It is not the intent to specify completely herein all the details of tech design and construction of material. However, the material shall conform in all respects to high standards of engineering, design and workmanship and shall be capable of performing in continuous commercial operation in manner acceptable to RECPDCL, who will interpret the meanings of drawings and specification and shall have the power to reject any work or material which, in his judgment is not in accordance therewith. The offered material shall be complete with all components necessary for their effective and trouble free operation. Such components shall be deemed to be within the scope of Bidder's supply irrespective of whether those are specifically brought out in this specification and/or the commercial order or not.</p>																																				
2	APPLICABLE STANDARDS	<p>The equipment covered by this specification shall conform to the requirements stated in latest editions & amendments of relevant Indian/ IEC Standards and shall conform to the regulations of local statutory authorities.</p> <table border="1"> <tr> <td>a</td><td>IS 13779 : 1999</td><td>A.C. Static Watt hour meter class 1.0 and 2.0</td></tr> <tr> <td>b</td><td>IS 15959 Part 1 : 2011</td><td>Data exchange for electricity meter reading, tariff and load control</td></tr> <tr> <td>c</td><td>IS 15959 Part 2 : 2016</td><td>Data exchange for electricity meter reading , tariff and load control</td></tr> <tr> <td>d</td><td>IEEE 802.15.4 : 2003</td><td>Standard for local and metropolitan area networks</td></tr> <tr> <td>e</td><td>IS 9000</td><td>Basic Environmental testing procedure for electrical and electronic items.</td></tr> <tr> <td>f</td><td>IEC62052-11 2003</td><td>Electricity metering equipment (AC) - General requirements , tests and test conditions – metering equipment</td></tr> <tr> <td>g</td><td>IEC 62053-21 : 2003</td><td>Electricity metering equipment (a.c.) – Particular requirements – Static meters for active energy Class 1 and 2</td></tr> <tr> <td>h</td><td>IS 15707 : 2006</td><td>Testing Evaluation installation and maintenance of AC Electricity Meters- Code of practice.</td></tr> <tr> <td>I</td><td>IEC 60068</td><td>Environmental testing.</td></tr> <tr> <td>J</td><td>CBIP–TR No.325</td><td>Specification for A.C. Static Electrical Energy Meters (latest amendment)</td></tr> <tr> <td>K</td><td>CEA Regulation (2006)</td><td>Installation and operation of meters Dtd: 17/03/2006.</td></tr> <tr> <td>I</td><td>IS 12346:1999</td><td>Testing Equipment For Ac Electrical Energy Meters</td></tr> </table>	a	IS 13779 : 1999	A.C. Static Watt hour meter class 1.0 and 2.0	b	IS 15959 Part 1 : 2011	Data exchange for electricity meter reading, tariff and load control	c	IS 15959 Part 2 : 2016	Data exchange for electricity meter reading , tariff and load control	d	IEEE 802.15.4 : 2003	Standard for local and metropolitan area networks	e	IS 9000	Basic Environmental testing procedure for electrical and electronic items.	f	IEC62052-11 2003	Electricity metering equipment (AC) - General requirements , tests and test conditions – metering equipment	g	IEC 62053-21 : 2003	Electricity metering equipment (a.c.) – Particular requirements – Static meters for active energy Class 1 and 2	h	IS 15707 : 2006	Testing Evaluation installation and maintenance of AC Electricity Meters- Code of practice.	I	IEC 60068	Environmental testing.	J	CBIP–TR No.325	Specification for A.C. Static Electrical Energy Meters (latest amendment)	K	CEA Regulation (2006)	Installation and operation of meters Dtd: 17/03/2006.	I	IS 12346:1999	Testing Equipment For Ac Electrical Energy Meters
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		n	IS 60529	Degree of protection provided by enclosure																									
3	CLIMATE CONDITIONS OF THE INSTALLATION	<table><tr><td colspan="2">The Climate conditions shall be as follows</td></tr><tr><td>Maximum altitude above sea level</td><td>5000m</td></tr><tr><td>Maximum ambient air temperature</td><td>50° C</td></tr><tr><td>Maximum daily average ambient air temperature</td><td>40° C</td></tr><tr><td>minimum ambient air temperature</td><td>-30° C</td></tr><tr><td>maximum temperature attainable by an object exposed to the sun</td><td>60 ° C</td></tr><tr><td>maximum yearly weighted average ambient temperature</td><td>32° C</td></tr><tr><td>maximum relative humidity</td><td>100%</td></tr><tr><td>average number of thunderstorm days per annum (isokeraunic level)</td><td>70</td></tr><tr><td>average number of rainy days per annum</td><td>120</td></tr><tr><td>average annual rainfall</td><td>1500 mm</td></tr><tr><td>maximum wind pressure</td><td>260Kg/m²</td></tr></table> <p>The atmosphere is generally laden with mild acid and dust in suspension during the dry months and is subjected to fog in cold months. The design of equipment and accessories shall be suitable to withstand seismic forces corresponding to an acceleration of 0.3 g.</p>				The Climate conditions shall be as follows		Maximum altitude above sea level	5000m	Maximum ambient air temperature	50° C	Maximum daily average ambient air temperature	40° C	minimum ambient air temperature	-30° C	maximum temperature attainable by an object exposed to the sun	60 ° C	maximum yearly weighted average ambient temperature	32° C	maximum relative humidity	100%	average number of thunderstorm days per annum (isokeraunic level)	70	average number of rainy days per annum	120	average annual rainfall	1500 mm	maximum wind pressure	260Kg/m²
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4	GENERAL TECHNICAL REQUIREMNTS	S. No.	DESCRIPTION	REQUIREMENT																									
		4.01	Type of the meter	Three phase four wire, static watt-hour direct connected type energy meter without application of any multiplication constant. It consisting of measuring elements(s), time of use of register(s), display.																									
		4.02	Accuracy Class of the meter	1.0																									
		4.03	Basic Current (Ib) & rated Maximum current (Imax)	Ib= 20A; Imax= 100 Amps (Meter shall be able to continuously carry 120% of Imax Meeting the accuracy requirements)																									
		4.04	Reference Conditions for testing the performance of the meter	Vref = 230 V ± 1 % Frequency = 50Hz ± 0.3% Temperature= 27 C± 2 °C																									
		4.05	Operating Voltage	Meter shall be operational with required accuracy from 0.6 Vref to 1.2 Vref. However meter shall withstand the maximum system Voltage of 440V between phase and neutral (for minimum 5 min).																									
		4.06	Operating Frequency	50 Hz± 5%.																									
		4.07	Power Consumption	Voltage circuit: Maximum 1.5 W and 10 VA Current Circuit :Maximum 1VA																									
		4.08	Starting Current	40mA (0.2% of Ib)																									

		4.09	Short time over current	3000 A for 0.01 sec (30I _{max} for one half cycle at Rated frequency)
		4.10	Influence of heating	Temperature rise at any point of the external surface of the meter shall not exceed by more than 20K with an ambient temperature at 50 ⁰ C.
		4.11	Rated Impulse withstand voltage	6KV (shall be applied ten times with one polarity and then repeated with the other polarity and minimum time between each impulse to be 3 sec)
		4.12	AC withstand Voltage for 1 min	4 KV
		4.13	Minimum Insulation resistance at test voltage 500+/- 50 V dc a)Between frame & current ,voltage circuits as well as auxiliary circuits connected together: b)Between each current (or voltage circuit) & each and every other circuit. :	a) 5 M ohm b) 50 M ohm.
		4.14	Mechanical requirements	Meter shall be in compliance with clause 12.3 of IS 13779
		4.15	Resistance to heat and fire	The terminal block and Meter case shall ensure safety against the spread of fire. They shall not be ignited by thermal overload of live parts in contact with them as per clause 6.8 of IS 13779. Fire retardant material shall be used.
		4.16	Protection against penetration of dust and water.	Degree of protection: IP 51 as per IS 12063/60529, but Without suction in the meter. Meter shall comply with clause 6.9 and 12.5 of IS 13779
		4.17	Resistance against Climatic influence.	Meter shall be in compliance with clause 12.6 of IS 13779.
		4.18	Electromagnetic Compatibility (EMC)	Meter shall be in compliance with clause CBIP report 325 and IS
		4.19	Accuracy requirements	Meter shall be in compliance with clause 11 of IS 13779.
		4.20	Power factor range	Zero lag to Zero lead. & meter shall be programed at default 'lag only configuration i.e. Lead to be treated as unity for kVA & KVAh calculations'
		4.21	Energy measurement	Fundamental energy +Energy due to Harmonics

		4.22	Connection Diagram	The connection diagram for the system shall be provided on terminal cover.
		4.23	Self-Diagnostic feature	The meter shall have logging with date and time in memory for un satisfactory / non-functioning of (i) Real Time Clock (ii) RTC battery (iii) Non Volatile Memory
		4.24	Initial start up of meter	Meter shall be fully functional within 5 sec after reference voltage is applied to the meter terminals.
		4.25	Alternate mode of supply to the meters	In case of meter power failure , reading/data should be retrieved with the help of battery or other power source.
		4.26	Sleep Mode	Meter shall not go in sleep mode. Display should not be 'off' at any point of time when power up.
		4.27	Internal diameter of the terminal holes Depth of the terminal holes	9.5mm (minimum) 20 mm (minimum)
		4.28	Clearance between adjacent terminals	10 mm (minimum)
		4.29	Display	Backlit LCD, Scrolling, 10 seconds for each parameter minimum 8 digits LCD display
		4.30	Security feature	Programmable facility to restrict the access to the information recorded at different security level such as read communication, write communication, firmware selection from remote etc.
		4.31	Software and communication compatibility	The bidder shall supply software required for communication through CMRI and BCS software free of cost and necessary training. The meter shall be compatible to communicate with GSM/GPRS/RF modems in DLMS protocol.
		4.32	Calibration	Meters shall be software calibrated at factory and modifications in calibration shall not be possible at site by any means. However parameters like RTC, TOD slot reprogramming, monthly billing reset date, display parameters shall be reconfigure through proper security authentication via MRI and OTA and any software / keys required to reprogram the meter and any other support will be provided without any additional cost to RECPDCL.
		4.33	Usage Application	Indoor and Outdoor
		4.34	Ultrasonic welding	Meter cover and body should be ultrasonically/chemically welded

4.1	Communication capabilities and software feasibilities	4.1.1	The meter shall have facilities for data transfer locally through CMRI, PC, Laptop (through USB port) and remotely by GSM/ CDMA/ GPRS/ RF modems with proper security via an optically isolated communication port through serial communication.			
		4.1.2	It shall be possible to reconfigure the meters for TOD Tariff, DIP, billing date etc through proper authentication process via communication port. The bidder should provide DLMS compliance for Communication with the meter at Optical port and RJ11 port only and no additional RS 232 port is required. The hardware and Communication ports shall not be affected by any type of injection/unauthenticated signals as per IS 13779.			
		4.1.3	The bidder shall supply software required for local (CMRI) & remote (AMI/AMR/RMR) connectivity including required training to use the software free of cost. Bidder shall provide the communication protocol / APIs as per MIOS standards for communication with meter through local (CMRI) / BCS as and when required by RECPDCL free of cost during life time of meter.			
		4.1.4	The meter shall have facilities for data transfer locally through CMRI (Using optical port/GSM/GPRS/RF modems) and remotely by optically isolated ports through serial communication.			
		4.1.5	Meter should have additional RJ11 port to communicate with GSM/GPRS/RF modems.			
		4.1.6	Optical Communication port shall be available for communication. Communication ports shall not be affected by any type of injection /unauthenticated signals and having proper sealing arrangement. The complete data shall be downloaded within 5 minutes over the air.			
		4.1.7	The XML files of downloaded data of the meters will be as per MIOS standards.			
		4.1.8	Bidder should also provide software for changing firmware of meters in mass. Any software / keys required to reprogram the meter and any other support for enabling RECPDCL to execute this option will be provided without any additional cost to RECPDCL.			
		4.1.9	Bidder should also provide base computer software (BCS) for viewing the data downloaded through CMRI/laptop/HHU in separate PC/laptop. Android based or windows based HHU shall be preferred. API required for converting raw file to XML (DLMS) should also be provided if applicable.			
		4.1.10	Communication of the meter at optical port should be as per IS 15959 (Part-2): 2016.			
		4.1.11	Bidders to supply protocol to read the meters supplied against this tender using intelligent RF modem with store and forward feature without any additional cost implication. Bidders to provide API on MIOS standard to convert the meter data in to XML and read API for hosting in Server and Modem RF / GSM based for reading meters from any third party manufactured modems. Bidder to provide necessary support if required during integration of the RF modem with supplied meters against this tender.			
4.2	Immunity against external influencing signals	4.2.1 Magnetic Field:	Meter shall record accurate energy in case of any external influencing signals in line with IS 13779:1999 Cl.11.2 and variation in limits of error (upto 100% I _{max}) shall be as per the table 17 of IS 13779. Meter shall be immune to magnetic field such that it shall not affect the normal overall functionality However, in case of abnormal magnetic field as defined below meter shall perform as per the following actions:			
		a)	Meter shall log the event in its memory as” Magnet” with date and time stamp along with snapshot and the event logging threshold values as per table no. 1 in 4.4			
		b)	The energy recording to shift on I _{max} , V _{ref} . with UPF.			
		Abnormal Magnetic field is defined as below;				

		<div>a) Continuous DC magnetic induction: >0.20 Tesla ± 5% (Value of the magneto motive force to be applied shall be generally >10000 AT.</div> <div>b) AC magnetic induction: >10 milli Tesla (if produced with circular metal core with square cross section as specified in CBIP latest report with 2800 AT)</div> <div>c) Permanent Magnet: Immune up to 0.5T and Event logging >0.5T.</div> <div>4.2.2 Electrostatic Discharge (ESD)<div>Meter shall be immune up to 50 kV and shall record accurate energy as per IS-13779:1999/CBIP-325. Meter shall log the event into memory as ‘ESD’ with date & time stamp for any ESD greater than 50 kV with snap shot, the event logging threshold values as per table no. 1 in 4.70.</div></div> <div>4.2.3 The shielding around the meter shall be such that it does not get affected by high Voltage and high energy or low energy impulse when comes in contact with meter from any side.</div> <div>4.2.4 Meter should immune to high/low frequency jammer devices. Meter shall log the event in its memory as” JAMMER” with date and time stamp along with snapshot, the threshold values as per table no. 1 in 4.4.</div>										
4.3	Neutral Disturbance & other tampers	<div>4.3.1 The meter shall not saturate on passage of direct current, which can cause the meter either to stop recording/ record inaccurately. DC injection shall be tested both in phase and neutral. Measurement by meter shall not get influenced by injection of Chopped signal/ DC signal/ DC pulse upto 330V and for any value beyond this. Meter shall log the event into memory as ‘Neutral Disturbance’ with date & time stamp the thresholds are as per table no. 1 in 4.4</div> <div>4.3.2 The meter should log event with snapshot when all three phase currents are zero and neutral current is present.</div>										
4.4	Abnormal Tamper conditions	<div>The meter shall record forward energy under all abnormal tampering conditions and shall be capable of recording occurrence and restoration of abnormal events listed in table no.1 below along with date & time and snap shots of individual voltages, currents, neutral current, power factors, active energy and apparent energy at the time of occurrence of abnormal event and restoration of normal supply. During abnormal & tamper conditions, the current shall be recorded as active current and line current. Each such event shall be provided with minimum count of as per table no.1 to avoid missing of data amidst usual events (like power failure) due to the limitation of FIFO. Persistence time for occurrence and restoration for the events along with their threshold values shall be as per table given below.</div> <div>Table No.1<table><tr><th>Persistence Time for Occurrences</th><th>Persistence Time for Restoration</th><th>Threshold Value for Occurrence of Events</th><th>Threshold Value for Restoration of Events</th><th>Comparment Size</th></tr><tr><td>ESD/JAMMER = immediate (record only 1 event on first application & only</td><td>ESD/JAMMER = 0 Hr 01 Min 0 sec (ESD)</td><td>Immunity up to 50 KV</td><td>Removal of ESD/JAMMER device</td><td>25</td></tr></table></div>	Persistence Time for Occurrences	Persistence Time for Restoration	Threshold Value for Occurrence of Events	Threshold Value for Restoration of Events	Comparment Size	ESD/JAMMER = immediate (record only 1 event on first application & only	ESD/JAMMER = 0 Hr 01 Min 0 sec (ESD)	Immunity up to 50 KV	Removal of ESD/JAMMER device	25
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			Low Power Factor = 0 Hr 10 Min 0 sec (LPF)	Low Power Factor = 0 Hr 10 Min 0 sec	Power Factor \leq 0.5	Power Factor > 0.7	25
			Neutral Disturbance = 0 Hr 10 Min 0 sec (ND)	Neutral Disturbance = 0 Hr 10 Min 0 sec (ND)	Voltage >145% of Vref Current >10% Ib OR Frequency < 47 Hz OR Frequency > 53 Hz OR DC voltage / signal injection	Voltage <115% of Vref Current > 10% Ib AND Frequency > 47 Hz OR Frequency < 53 Hz	25
			Power On Off = 0 Hr 2 Min 0 sec	Power On Off = immediate	Actual Voltage off	Actual Voltage On	25
			High Voltage = 0 Hr 10 Min 0 sec	High Voltage = 0 Hr 10 Min 0 sec	Voltage > 130% of Vref	Voltage <110% of Vref	25
			High Neutral Current = 0 Hr 10 Min 0 sec (HNC)	High Neutral Current = 0 Hr 10 Min 0 sec	$I_r + I_y + I_b + I_n > 20\%$ of Ibasic AND $I_n > 10\%$ of Ibasic	$I_r + I_y + I_b + I_n < 10\%$ of Ibasic AND $I_n < 5\%$ of Ibasic	25
			Overload current=0hr 30min 0sec (OL)	Overload current=0hr 30min 0sec	$I > 120\%$ I _{max}	$I < 100\%$ I _{max}	25
		4.4.1	Meter shall latch & store cumulative count and cumulative durations all the tamper events which have logged /occurred/stored in memory of meter from the date of energization till life of meter. Total tamper storage should be as per table 1 above.				
		4.4.2	The meter shall record in export registers in case of reversal of all CT terminals. The meters are to be used for registration of energy consumed by the consumer, as such the meters shall be programmed for import mode and in case of reversal of energy direction (reversal of all CT terminals) meter shall register energy separately in export mode i.e. in case of CT reversal, meter shall record scalar (not vector sum) sum of energy.				
		4.4.3	The meter shall register correctly if supply neutral is not available at the meter neutral terminal. The meter shall work in absence of any two incoming wires. It shall keep recording correctly in case of unbalance system voltage also as defined above.				
		4.4.4	The meter shall keep working accurately irrespective of the phase sequence of the supply. The meter shall be functional even if somehow change in the phase sequence takes place. Meter shall sufficiently record this event as reverse sequence.				
		4.4.5	An event to be provided for invalid phase association with name 'Invalid phase association'				

		4.4.6 The Meter Shall be able to differentiate between actual CT reversal and condition arising out of unbalanced / unhealthy capacitor bank. The logics for the same to be provided in tender samples also.																
5	GENERAL CONSTRUCTIONS	<p>The Meter shall be designed and constructed in such a way as to avoid introducing any danger in normal use and under normal conditions, so as to ensure especially personal safety against electric shock, safety against effect of excessive temperature, protection against spread of fire, protection against penetration of solid objects, dust and water.</p> <p>All parts, which are subject to corrosion under normal working conditions, shall be protected effectively. Any protective coating shall not be liable to damage by ordinary handling or damage due to exposure to air, under normal working conditions.</p> <p>The meters shall be designed and manufactured using SMT (Surface Mount Technology) components</p> <p>All the material and electronic power components used in the manufacture of the meter shall be of highest quality and reputed make to ensure higher reliability, longer life and sustained accuracy as given below or any other equivalent make with the strict approval of RECPDCL:</p> <table><tr><th>S No</th><th>Component Function</th><th>Requirement</th><th>Makes and Origin</th></tr><tr><td>1.</td><td>Measurement/ computing chips</td><td>The Measurement/ computing chips used in the meter should be with the Surface mount type along with the ASICs</td><td><u>USA:</u> Anolog Devices, Cyrus Logic, Atmel, Phillips, Free scale semiconductor <u>South Africa:</u> SAMES <u>Japan:</u> NEC</td></tr><tr><td>2.</td><td>Memory chips</td><td>The memory chips should not be affected by the external parameters like sparking, high voltage spikes or electrostatic discharges.</td><td><u>USA:</u> Atmel, National Semiconductors, Texas Instruments, Phillips, Microchip <u>Japan:</u>Hitachi or Oki <u>Swiss:</u> STMicro</td></tr><tr><td>3.</td><td>Display modules</td><td>The display modules should be well protected from the xternal UV radiations . The display visibility should be sufficient to read the meter mounted between height of 0.5m and 2m. The design of the modules should be such that the displayed quantity should not be disturbed with the life of display. (Pin Type) It should be trans-reflective STN type industrial grade with extended temperature range.</td><td><u>Taiwan:</u> Holtek <u>Singapore:</u> Bonafied Technologies <u>Korea:</u> Advantek <u>China:</u> Xiamen, Truly semiconductor</td></tr></table>	S No	Component Function	Requirement	Makes and Origin	1.	Measurement/ computing chips	The Measurement/ computing chips used in the meter should be with the Surface mount type along with the ASICs	<u>USA:</u> Anolog Devices, Cyrus Logic, Atmel, Phillips, Free scale semiconductor <u>South Africa:</u> SAMES <u>Japan:</u> NEC	2.	Memory chips	The memory chips should not be affected by the external parameters like sparking, high voltage spikes or electrostatic discharges.	<u>USA:</u> Atmel, National Semiconductors, Texas Instruments, Phillips, Microchip <u>Japan:</u> Hitachi or Oki <u>Swiss:</u> STMicro	3.	Display modules	The display modules should be well protected from the xternal UV radiations . The display visibility should be sufficient to read the meter mounted between height of 0.5m and 2m. The design of the modules should be such that the displayed quantity should not be disturbed with the life of display. (Pin Type) It should be trans-reflective STN type industrial grade with extended temperature range.	<u>Taiwan:</u> Holtek <u>Singapore:</u> Bonafied Technologies <u>Korea:</u> Advantek <u>China:</u> Xiamen, Truly semiconductor
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		4.	Optical port	Optical port should be used to transfer the meter data to meter reading instrument. The mechanical construction of the port should be such to facilitate the data transfer easily.	<u>USA</u> : National Semiconductors <u>Holland / Korea</u> : Phillips <u>Taiwan</u> : MAXIM, Everlight <u>Japan</u> : Hitachi
		5	P.C.B.	Glass Epoxy, fire resistance grade FR4, with minimum thickness 1.6 mm	<u>A class consumer</u>
		6.	Electronic components	The active & passive components should be of the surface mount type & are to be handled & soldered by the state of art assembly processes.	<u>USA</u> : National Semiconductors, Atmel, Phillips, Texas Instruments, Vishay <u>Japan</u> : Hitachi, Oki, AVX or Ricoh <u>Korea</u> : Samsung
		7.	Battery	Lithium with guaranteed life of 15 years	Varta / Tedirun / Vitzrocell / Sanyo or equivalent.
		8.	Micro controller and RTC	The microcontroller should be of superior quality from reputed make. The accuracy of RTC shall be as per relevant IEC / IS standards	<u>USA</u> : Philips , Dallas, Atmel, Motorola <u>Japan</u> : NEC or Oki
5.1	Meter Body	5.1.1	Meter body shall be made of unbreakable, high grade, fire retardant reinforced Insulating material (protective Class II) with FV0 Fire Retardant, self -extinguishing, UV stabilize, recyclable and Anti oxidation properties.		
		5.1.2	The minimum thickness of the meter enclosure shall be 2mm.		
		5.1.3	Meter base shall be opaque with polycarbonate LEXAN 500R or equivalent on prior approval from the RECPDCL. (If different material offered the bidders should submit material data sheet in technical bid)		
		5.1.4	Meter cover shall be transparent with polycarbonate LEXAN 143R/943A or equivalent on prior approval from the RECPDCL. (If different material offered the bidders should submit material data sheet in technical bid)		
		5.1.5	Meter cover & base shall be provided with continuous and seamless Ultrasonic welding such that it is not opened without breaking the enclosure. Front cover & base shall be such that it is not possible to cut & open the meter without certainly damaging the meter body and by no means shall an attempt to reassemble would not leave physical evidence.		
		5.1.6	The meter body shall be sealed in such a way that opening of meter base and cover is possible only after breaking the seal(s).		
		5.1.7	During meter manufacturing the meter seal fixing should be tightened such that the seal body should be close to meter body.		
		5.1.8	Unidirectional screws to be used on meter covers where ever required.		
5.2	Terminals, Terminal Block	5.2.1	Terminal block should be in single mould with meter body base. (Not separate)		
		5.2.2	After any attempts the terminal block should not be able to disengaged, opened or loosen from any side.		

		<p>5.2.3 Terminals may be grouped in terminal block having adequate insulating properties and mechanical strength. In order to satisfy such requirements when choosing insulating materials for the terminal block adequate testing of materials shall be taken into account.</p> <p>5.2.4 Terminal block and terminal cover shall be of a material which complies with the requirements of IS11731 (part 1) method FH1. The material of which the terminal block is made shall be capable of passing the Heat Deflection temperature test given in ISO 75 for temperature of 135°C and pressure of 1.8 MPa as mentioned in IS 13779. Tested as per ISO 75-2/A or ASTM D648.</p> <p>5.2.5 The terminal block shall be of opaque with polycarbonate LEXAN500R or equivalent on prior approval from the RECPDCL. (If different material offered the bidders should submit material data sheet in technical bid)</p> <p>5.2.6 The terminals and connections shall be suitable to carry up to 120 % of I_{max} continuously (I_{max} 100 A). The size, design & material of Busbar /Shunt/Terminal shall be with suitable cross sectional area so that temperature rise will not be more than 20 °C above ambient temperature of 45°C at 120% of I_{max} loading for 06 hrs continuous. This test of temp. rise shall be done on tender samples & will also be done on any samples from any supplied lot.</p> <p>5.2.7 To get the desired temp rise & avoid hot spots the design of the each terminal screw, the preferred terminal screw shall be an Allen screw head & shall be operated with allen key only. Size of the allen screw is 8mm dia.</p> <p>5.2.8 The terminal block, the terminal cover and the meter case shall ensure reasonable safety against the spread of fire. They shall not be ignited by thermal overload of live parts in contact with them.</p> <p>5.2.9 The manner of fixing the conductors to the terminals shall ensure adequate and durable contact such that there is no risk of loosening or undue heating. Terminals shall be preferably with Allen screw with at least 8 mm dia for better contact area. Terminal & screw should not be damaged during regular opening and tightening.</p> <p>5.2.10 Internal diameter of the terminal holes shall be minimum 9.5 mm; minimum clearance between adjacent terminals shall be 10 mm. Minimum Depth of the terminal holes shall be of 20 mm.</p> <p>5.2.11 Minimum two number of terminal screws to be provided per terminal wire.</p> <p>5.2.12 Terminal block shall be such that the risk of corrosion resulting from contact with any other metal part is minimized. Electrical connections shall be so designed that contact pressure is not transmitted through insulating material.</p>
5.3	Terminal Cover	<p>5.3.1 Terminal cover shall be short type and shall be transparent with polycarbonate LEXAN 143R/943A or equivalent on prior approval from the RECPDCL.</p> <p>5.3.2 The terminal cover shall be 45 to 55mm from terminal block in line with meter base. Terminal cover should have slit for cable entry in such way that it should cover up to center of the terminal holes for easy installation of cover after incoming and outgoing cable connections. Slitting shall be around 35-40 mm distance from terminal block.</p>

		<p>5.3.3 Appropriate space shall be available for incoming /out going cables without damaging/stressing terminal cover (terminal cover design shall be as per the RECPDCL approval). After sealing the cover, terminals shall not be accessible without breaking the seals.</p> <p>5.3.4 The terminal cover design should be such that the sealing screw locking provision on cover should have min dimension of 3mmx3mm. (Excluding seal lock hole)</p>																					
5.4	Sealing of meter	<p>5.4.1 Reliable sealing arrangement shall be provided to make the meter tamper evident and to avoid fiddling or tampering by unauthorized persons.</p> <p>5.4.2 For this, one no. Polycarbonate seal and three no. Hologram seal (on Left, Right & Top side) shall be provided by the bidder.</p> <p>5.4.3. One no polycarbonate seal shall be provided by the RECPDCL. This seal shall be fix on right hand side of meter.</p> <p>5.4.4. All the seals shall be fixed on meter body by the bidder at his works before calling for inspection.</p> <p>5.4.5 Two sealing provision shall be provided at meter terminal cover, such that terminal shall not be accessible without breaking the seals. All the seals shall be provided on front side only and as per the RECPDCL specification. Rear side sealing arrangement shall not be accepted. Bidder shall provide seals be as per CEA regulation (2006). Only patented seals to be used as per CEA requirements.</p> <p>5.4.7 The bidder shall provide RECPDCL the soft record of seal serial number used against each meter serial number.</p>																					
5.5	TOD Feature	<p>The meter shall be capable of measuring Cumulative Energy (kWh & kVAh), and MD (kW & kVA) with time of day (TOD) registers having 8 zones & 02 seasons (no. of zones & time slot shall be programmable by CMRI with adequate security level and in one to one /broadcast mode over the air). Current TOD (during tender) to be given is as below,</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Slots</th><th>Time Slot</th><th>Jan-Dec</th></tr> </thead> <tbody> <tr> <td>Normal</td><td>0000-0300</td><td>Register 2</td></tr> <tr> <td>Off-Peak</td><td>0300-0900</td><td>Register 1</td></tr> <tr> <td>Normal</td><td>0900-1300</td><td>Register 2</td></tr> <tr> <td>Peak</td><td>1300-1700</td><td>Register 3</td></tr> <tr> <td>Normal</td><td>1700-2100</td><td>Register 2</td></tr> <tr> <td>Peak</td><td>2100-2400</td><td>Register 3</td></tr> </tbody> </table> <p># The bidder to ask RECPDCL for latest TOD timing slots before manufacturing of every lot.</p>	Slots	Time Slot	Jan-Dec	Normal	0000-0300	Register 2	Off-Peak	0300-0900	Register 1	Normal	0900-1300	Register 2	Peak	1300-1700	Register 3	Normal	1700-2100	Register 2	Peak	2100-2400	Register 3
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5.6	MD Integration	The MD integration period shall be 30 minutes (integration period-programmable by CMRI at site and also thru AMR with adequate security level). The MD resetting shall be automatic at the 1st of the month i.e. 0000 hours of 1 st day of the month. Manual MD reset button shall not be available. Last 12 MD values shall be stored in the memory and one to be displayed in the Auto scroll mode. MD shall be recorded and displayed with minimum three digits before decimal and minimum two digits after decimal points. MD integration shall be of sliding Type at an interval of 10 min.								
5.7	Parameters in BCS	<p>All these parameters shall be downloaded locally or remotely and interpreted in PC/Laptop. All the parameters shall be recorded and memorized in its Non volatile Memory (NVM). The corresponding non volatile memory shall have a minimum retention time of 10 years. Last twelve months history data (kWh & kVAh* (lag only) current & TOD reading and MD(kW & kVA* (lag only) current & TOD) with data and time) and at least last 25 tamper events for each tamper shall be available in the non volatile Memory.</p> <p>Fail to be log in memory in the following conditions only in BCS not in display</p> <ul style="list-style-type: none">a) RTC failb) NVM memory failc) Battery fail <p>*Meter shall be programed at default ‘lag only’ configuration i.e. Leading power factor to be treated as unity for kVA & kVAh calculations, except for instantaneous parameters where values and Vector Diagram should show actual KVAh considering lead and Lag both</p>								
5.7.1	Load survey	<p>The meter shall be capable of recording 30 minutes average of the following parameters for at least last 60 days</p> <ul style="list-style-type: none">a) Voltage for each phaseb) Current of each phasec) Actual Neutral currentd) PF for each phasee) Average kWhf) Average kVAhg) kVArh(Lagging)h) kVArh(Leading) <p>Meter shall be capable of recording daily Energy and Demand 00:00 to 24:00 Hrs kWh/kVAh, kW/kVA in BCS for 60 days. Midnight energy value of cumulative kWh/kVAh and daily consumption kWh/kVAh should be available in meter memory for last 60 days.</p>								
5.7.2	Instantaneous Parameters	<p>Meter shall be capable for following Instantaneous Parameters in Memory and should be available in BCS.</p> <table><tr><td>Meter Sr.No.</td><td></td></tr><tr><td>Meter Type</td><td></td></tr><tr><td>Meter date & Time</td><td>DD MM YYYY HH MM SS</td></tr><tr><td>MRI/PC date & Time</td><td>DD MM YYYY HH MM SS</td></tr></table>	Meter Sr.No.		Meter Type		Meter date & Time	DD MM YYYY HH MM SS	MRI/PC date & Time	DD MM YYYY HH MM SS
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		Dump date & Time	DD MM YYYY HH MM SS
		Voltage -R	000.000V
		Voltage -Y	000.000V
		Voltage -B	000.000V
		Line Current -R	00.000A
		Line Current -Y	00.000A
		Line Current -B	00.000A
		Actual Neutral Current	00.00A
		Active Current –R	00.000A
		Active Current –Y	00.000A
		Active Current –B	00.000A
		Reactive Current-R	00.000A
		Reactive Current-Y	00.000A
		Reactive Current-B	00.000A
		Power factor-R	0.000
		Power factor-Y	0.000
		Power factor-B	0.000
		Average Power factor	0.000
		Instantaneous Frequency	00.000Hz
		Instantaneous Load	Active ,Reactive Lag/Lead, Apparent
		Present Cumulative Energy	Active ,Reactive Lag/Lead, Apparent
		Cumulative Power Off Duration	00000
		Cumulative Power ON Duration	00000
		Cumulative Tamper count	00000
		Cumulative Tamper duration	00000

		<table><tr><td>Cumulative Billing Count</td><td>00000</td></tr><tr><td>Last Billing date</td><td>dd:mm:yy</td></tr><tr><td>No of Power failure</td><td>00000</td></tr><tr><td>Vector/phasor diagram (also showing neutral current)</td><td></td></tr></table>	Cumulative Billing Count	00000	Last Billing date	dd:mm:yy	No of Power failure	00000	Vector/phasor diagram (also showing neutral current)	
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5.7.3	General Information	<p>Meter shall be capable for providing below mentioned general parameters in memory</p> <p>Meter Serial number Software Name Version Manufacture Name Manufacture Date (DD/MM/YY) Meter Type Meter Class Meter Constant Meter Voltage Rating Meter Current Rating TOD profile</p>								
5.7.4	Billing Parameters	<p>1) Cumulative kwh, kVAh (lag only), kVArh lead, lag (all import and export) and TOD1 kWh,TOD2 kWh,TOD3 kWh,TOD1 kVAh (lag only),TOD2 kVAh (lag only),,TOD3 kVAh (lag only), For present and last 12 Resets (reset date for all resets/history, time zone register wise)</p> <p>2) Maximum Demand Absolute Active Load and Absolute Apparent load and TOD1 kW,TOD2 kW,TOD3 kW,TOD1 kVA (lag only),TOD2 kVA (lag only),TOD3 kVA (lag only), for present and last 12 Resets (reset date for all resets/history, time zone register wise) along with date and time stamp.</p> <p>3) Billing Dates (12 History)</p> <p>4) Cumulative Billing count</p> <p>5) TOD details with day time and season wise.</p>								
5.7.5	Transactions	<p>All the changes in software of meter to be logged along with date & time stamp and readings. Meter should do billing if any transaction is done.</p>								
5.7.6	Tamper Events	<p>All events should be logged as per table no-1.</p>								

		The meter should not have any other event logging or any logic other than desired in specs. All other logics not mentioned in specs should be removed or disabled in meter firmware.																																						
5.8	Display units	<p>The display unit shall be Pin type built-in liquid crystal display (Permanently backlit type LCD). The LCD shall be of STN (Super Twisted Nematic) construction suitable for maximum temperature withstands 65°C and minimum temperature withstands 0 °C during normal operating condition. The LCD display shall have a wide viewing angle of 120 degree. When the meter is not energized the electronic display need not be visible. The display shall not be affected by electrical, magnetic disturbances and ESD.</p> <p>The display should be readable in direct sunlight.</p> <p>The kWh & kVAh register shall have minimum 8 digits LCD display and size of the digits shall be minimum 10mmx5mm. Cumulative energy (kWh & kVAh) shall be displayed without decimal in auto scroll mode. (However decimal shall be available in push button mode for high resolution display for testing).</p>																																						
5.8.1	Auto Scroll mode	<p>Persistence time for each parameter shall be 10 second. Values followed by header shall be avoided. (I.e. if MD1 is displayed in Auto scroll mode, Header (MD1) and value (say 5.23 kW) shall be shown simultaneously; it shall not be shown in successive displays. Off time shall not be available in auto scroll mode between each cycle. Auto scroll mode is restored after 10 sec, if push button is not operated.</p> <p>Display should not be stuck for any tamper events.</p> <p>Following shall be continuously displayed in auto scroll and push button mode in the given order;</p> <table><tr><th>Sr. No.</th><th>Auto Scroll Display</th></tr><tr><td>1</td><td>LCD CHECK</td></tr><tr><td>2</td><td>Meter Sr. No.* > Complete Meter Serial no. should be there in single shot.</td></tr><tr><td>3</td><td>dd:mm:yy Date</td></tr><tr><td>4</td><td>hh:mm:ss Time</td></tr><tr><td>5</td><td>C (T1+T2+T3) kWh Current Cumulative kWh</td></tr><tr><td>6</td><td>C (T1+T2+T3) kVAh (lag only) Current Cumulative kVAh</td></tr><tr><td>7</td><td>C kVArh lag Current Cumulative kVArh(lag).</td></tr><tr><td>8</td><td>C kVArh lead Current Cumulative KVArh(lead).</td></tr><tr><td>9</td><td>Individual cumulative kWh for T1,T2, T3</td></tr><tr><td>10</td><td>Individual cumulative kVAh (lag only) for T1,T2, T3</td></tr><tr><td>11</td><td>b 1 kWh kWh reading on 1st of last month at 00.00 hrs.</td></tr><tr><td>12</td><td>b 1 Individual cumulative kWh for T1,T2, T3 for last month</td></tr><tr><td>13</td><td>b 1 MD in kW on 1st of last month at 00.00 hrs.</td></tr><tr><td>14</td><td>b 1 kVAh kVAh (lag only) reading on 1st of last month at 00.00 hrs.</td></tr><tr><td>15</td><td>b 1 Individual cumulative kVAh (lag only) for T1,T2, T3 for last month</td></tr><tr><td>16</td><td>b 1 MD in kVA reading on 1st of last month at 00.00 hrs</td></tr><tr><td>17</td><td>Current MD – kW</td></tr><tr><td>18</td><td>Current MD - kVA</td></tr></table>	Sr. No.	Auto Scroll Display	1	LCD CHECK	2	Meter Sr. No.* > Complete Meter Serial no. should be there in single shot.	3	dd:mm:yy Date	4	hh:mm:ss Time	5	C (T1+T2+T3) kWh Current Cumulative kWh	6	C (T1+T2+T3) kVAh (lag only) Current Cumulative kVAh	7	C kVArh lag Current Cumulative kVArh(lag).	8	C kVArh lead Current Cumulative KVArh(lead).	9	Individual cumulative kWh for T1,T2, T3	10	Individual cumulative kVAh (lag only) for T1,T2, T3	11	b 1 kWh kWh reading on 1st of last month at 00.00 hrs.	12	b 1 Individual cumulative kWh for T1,T2, T3 for last month	13	b 1 MD in kW on 1st of last month at 00.00 hrs.	14	b 1 kVAh kVAh (lag only) reading on 1st of last month at 00.00 hrs.	15	b 1 Individual cumulative kVAh (lag only) for T1,T2, T3 for last month	16	b 1 MD in kVA reading on 1st of last month at 00.00 hrs	17	Current MD – kW	18	Current MD - kVA
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5.8.2	Push Button Scroll mode	<p>Following parameters shall be displayed in Push button mode in the given order.</p> <table><tr><th>Sr. No.</th><th>Push Button Display</th></tr><tr><td>1</td><td>LCD CHECK</td></tr><tr><td>2</td><td>Meter Sr. No.* > Complete Meter Serial no. should be there in single shot.</td></tr><tr><td>3</td><td>dd:mm:yy Date</td></tr><tr><td>4</td><td>hh:mm:ss Time</td></tr><tr><td>5</td><td>C (T1+T2+T3) kWh Current Cumulative kWh</td></tr><tr><td>6</td><td>C (T1+T2+T3) kVAh (Lag only) Current Cumulative kVAh</td></tr><tr><td>7</td><td>C kVArh lag Current Cumulative kVArh(lag).</td></tr><tr><td>8</td><td>C kVArh lead Current Cumulative kVArh(lead).</td></tr><tr><td>9</td><td>Individual cumulative kWh for T1,T2, T3</td></tr><tr><td>10</td><td>Individual cumulative kVAh (Lag only) for T1,T2, T3</td></tr><tr><td>11</td><td>b 1 kWh kWh reading on 1st of last month at 00.00 hrs.</td></tr><tr><td>12</td><td>b 1 Individual cumulative kWh for T1,T2, T3 for last month</td></tr><tr><td>13</td><td>b 1 MD in kW on 1st of last month at 00.00 hrs.</td></tr><tr><td>14</td><td>b 1 kVAh (Lag only) reading on 1st of last month at 00.00 hrs.</td></tr><tr><td>15</td><td>b 1 Individual cumulative kVAh (Lag only) for T1,T2, T3 for last month</td></tr><tr><td>16</td><td>b 1 MD in KVA on 1st of last month at 00.00 hrs</td></tr><tr><td>17</td><td>Current MD – kW</td></tr><tr><td>18</td><td>Current MD - kVA (lag only)</td></tr><tr><td>19</td><td>Cumulative Billing count</td></tr><tr><td>20</td><td>U1 V R Phase Voltage (Instantaneous value).</td></tr><tr><td>21</td><td>U2 V Y Phase Voltage (Instantaneous value).</td></tr><tr><td>22</td><td>U3 V B Phase Voltage (Instantaneous value).</td></tr><tr><td>23</td><td>A1 A R Phase Current (Instantaneous value).</td></tr><tr><td>24</td><td>A2 A Y Phase Current (Instantaneous value).</td></tr><tr><td>25</td><td>A3 A B Phase Current (Instantaneous value).</td></tr><tr><td>26</td><td>Pr PF Instantaneous power factor for individual phases R,Y,B</td></tr></table>	Sr. No.	Push Button Display	1	LCD CHECK	2	Meter Sr. No.* > Complete Meter Serial no. should be there in single shot.	3	dd:mm:yy Date	4	hh:mm:ss Time	5	C (T1+T2+T3) kWh Current Cumulative kWh	6	C (T1+T2+T3) kVAh (Lag only) Current Cumulative kVAh	7	C kVArh lag Current Cumulative kVArh(lag).	8	C kVArh lead Current Cumulative kVArh(lead).	9	Individual cumulative kWh for T1,T2, T3	10	Individual cumulative kVAh (Lag only) for T1,T2, T3	11	b 1 kWh kWh reading on 1st of last month at 00.00 hrs.	12	b 1 Individual cumulative kWh for T1,T2, T3 for last month	13	b 1 MD in kW on 1st of last month at 00.00 hrs.	14	b 1 kVAh (Lag only) reading on 1st of last month at 00.00 hrs.	15	b 1 Individual cumulative kVAh (Lag only) for T1,T2, T3 for last month	16	b 1 MD in KVA on 1st of last month at 00.00 hrs	17	Current MD – kW	18	Current MD - kVA (lag only)	19	Cumulative Billing count	20	U1 V R Phase Voltage (Instantaneous value).	21	U2 V Y Phase Voltage (Instantaneous value).	22	U3 V B Phase Voltage (Instantaneous value).	23	A1 A R Phase Current (Instantaneous value).	24	A2 A Y Phase Current (Instantaneous value).	25	A3 A B Phase Current (Instantaneous value).	26	Pr PF Instantaneous power factor for individual phases R,Y,B
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5.9	Output Device	<p>5.9.1 Pulse Rate: The meters shall have a suitable test output device. 2 nos of Red color blinking LED (marked as imp/kWh and imp/kVarh) shall be provided in the front. This device shall be suitable for using with sensing probe used with test benches or reference standard meters. The test output device shall have constant pulse rate of (preferred value- 400) pulse / kWh & pulse/kVAh. Meter constant shall be indelibly printed on the name plate as imp / kWh & imp/kVAh.</p> <p>5.9.2 Phase indication : Individual phases should be displayed on LCD display of meter</p> <p>5.9.3. Communication – The communication status should be displayed on LCD with suitable icon.</p>																																																			
6.0	NAME PLATE AND MARKING	<p>Meters shall have a name plate clearly visible and effectively secured against removal. The name plate data should be laser printed. The base color of Name plate shall be blue (as of RECPDCL logo) Indelibly and distinctly marked with all essential particulars as per relevant standards along with the following.</p> <ol style="list-style-type: none"> i. Manufacturer's name ii. Type designation iii. Number of phases and wires iv. Serial number (Meter serial number shall be laser printed on name plate instead on sticker). v. Month and Year of manufacture vi. Unit of measurement vii. Reference voltage ,frequency viii. Ref. temperature if different from 27 deg. C ix. Rated basic and maximum Current 																																																			

		<div><div><div><div><div>x.</div><div>Meter constant (imp/kWh)</div></div><div><div>xi.</div><div>'BIS' Mark</div></div><div><div>xii.</div><div>Class index of meter</div></div><div><div>xiii.</div><div>"Property of RECPDCL"</div></div><div><div>xiv.</div><div>Purchase Order No. & date</div></div><div><div>xv.</div><div>Guarantee period.</div></div><div><div>xvi.</div><div>Rated frequency</div></div><div><div>xvii.</div><div>Sign of double square</div></div><div><div>xviii.</div><div>Country of manufacture.</div></div><div><div>xix.</div><div>PCB serial No.</div></div><div><div>xx.</div><div>Firmware version for meter</div></div></div></div><div>However the following shall be printed in bar code on the meter nameplate. (shall be laser printed on name plate instead of any sticker).</div><div><div>1) Manufacturer's code No.(given by RECPDCL)</div><div>2) Meter Sr. No</div><div>3) RECPDCL Property</div><div>4) Month/Year of manufacture.</div></div><div>The PCB Serial number should be printed on PCB instead of sticker.</div></div>												
7.0	ESTS	All routine, acceptance & type tests shall be carried out on the meter and meter body separately in accordance with the relevant IS/IEC. All routine/acceptance tests shall be witnessed by the RECPDCL/his authorized representative. All the components shall also be type tested as per the relevant standards. Following tests shall be necessarily conducted in addition to the tests specified in IS/IEC.												
7.1	TYPE TEST	<div><div>1) All tests as defined in IS 13779:1999/IS 15959(Part-2):2016</div><div>2) Test against abnormal magnetic influence as per CBIP TR 325.</div><div>3) DC immunity test (injection both on phase and neutral terminal)</div><div>4) Test for Material used for Terminal Block and meter body as per relevant standards.</div><div>5) IP test</div></div>												
7.2	ROUTINE TEST	<div><div>1) AC High Voltage test</div><div>2) Insulation test</div><div>3) Test on limits of error</div><div>4) Test of starting current</div><div>5) Test of no load condition</div></div>												
7.3	ACCEPTANCE TEST	<div><div>1) AC High Voltage test</div><div>2) Insulation test</div><div>3) Test on limits of error with following loads</div><div><table><tr><td>120% I max(120A)</td><td>I max (100A)</td><td>Ib(20A)</td><td>0.5 Ib (10A)</td><td>0.1Ib (2A)</td><td>0.05Ib (1A)</td></tr><tr><td>UPF, 0.8 lead and 0.5 lag</td><td>UPF, 0.8 lead and 0.5 lag</td><td>UPF, 0.8 lead and 0.5 lag</td><td>UPF, 0.8 lead and 0.5 lag</td><td>UPF, 0.8 Lead and 0.5 lag</td><td>UPF</td></tr></table></div><div>4) Test of meter constant</div></div>	120% I max(120A)	I max (100A)	Ib(20A)	0.5 Ib (10A)	0.1Ib (2A)	0.05Ib (1A)	UPF, 0.8 lead and 0.5 lag	UPF, 0.8 lead and 0.5 lag	UPF, 0.8 lead and 0.5 lag	UPF, 0.8 lead and 0.5 lag	UPF, 0.8 Lead and 0.5 lag	UPF
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		5) Test of starting current 6) Test of no load condition 7) Test of repeatability of error. 8) Test of power consumption. 9) Test for Immunity against external influencing signal as per the RECPDCL specification 10) Test for Immunity against DC Immunity as per the RECPDCL specification 11) Test for Immunity against Tamper conditions as per the RECPDCL specification 12) Error measurements with all abnormal condition 13) Test to Influence of Harmonics 14) Supply voltage and frequency variation test 15) Testing of self diagnostic features 16) All tamper tests, count increment and logging with date and time. 16) All tests as defined in IS 15959(Part-2):2016
7.4	Special Test	1) The bidder shall demonstrate the communication capability of the meter through communication modes as defined in the specification before conducting acceptance tests. The bidder shall ensure that API (Application protocol interface) is compatible with RECPDCL'S CFW. 2) Temperature rise of terminal block with 120% I _{max} for 6 hours.
8.0	TYPE TEST CERTIFICATE	The bidder shall furnish the type test certificates of the meter for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at CPRI/ ERDA/ UL or equivalent reputed laboratory as per the relevant standards. For communication testing any national approved laboratory or international acclaimed lab or equivalent will also suffice at the discretion of RECPDCL. Type test should have been conducted in certified Test Laboratories during the period not exceeding 5 years from the date of opening the bid. In the event of any discrepancy in the test reports i.e. any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be carried out without any cost implication to RECPDCL.
9.0	PRE-DESPATCH INSPECTION	The successful bidder shall submit four prototype samples (non-returnable) for further testing and compliance as per specifications and getting approval before mass manufacturing. Inspection may be made at any stage of manufacture at the discretion of the RECPDCL of the equipment, if found unsatisfactory as to workmanship or material, the same is liable to rejection. Equipment shall be subject to inspection by a duly authorized representative of the RECPDCL. Bidder shall grant free access to the places of manufacture to RECPDCL's representatives at all times when the work is in progress. Inspection by the RECPDCL or its authorized representatives shall not relieve the bidder of his obligation of furnishing equipment in accordance with the specifications. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by RECPDCL. Following documents shall be sent along with material <ul style="list-style-type: none"> a) Test reports b) MDCC issued by RECPDCL c) Invoice in duplicate d) Packing list e) Drawings & catalogue f) Guarantee / Warranty card g) Delivery Challan h) Other Documents (as applicable) i) One no. leaflet with each meter

		<p>Out of four prototype samples, two samples to be submitted in Meter testing lab, Rohini, one sample at MMG test lab, Keshav Puram and one in Plant Engineering, Rohini. Meter shall be retained with RECPDCL.</p> <p>Note-Photographs of packed lot clearly showing s.no of meters whose inspection call has been requested should be sent along with letter for inspection call.</p>
10.0	INSPECTION AFTER RECEIPT AT STORE	The material received at RECPDCL's store shall be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection and one copy of the report shall be sent to RECPDCL.
11.0	GUARANTEE	<p>Bidder shall stand guarantee towards design, materials, workmanship & quality of process / manufacturing of items under this contract for due and intended performance of the same, as an integrated product delivered under this contract. In the event any defect is found by the RECPDCL up to a period of at least 60 months from the date of commissioning or 66 months from the date of last supplies made under the contract whichever is earlier, Bidder shall be liable to undertake to replace/rectify such defects at its own costs, within mutually agreed time frame, and to the entire satisfaction of the Company, failing which the RECPDCL will be at liberty to get it replaced/rectified at bidder's risks and costs and recover all such expenses plus the Company's own charges (@ 20% of expenses incurred), from the bidder or from the "Security cum Performance Deposit" as the case may be.</p> <p>Bidder shall further be responsible for 'free replacement at site' for another period of THREE years from the end of the guarantee period for any 'Latent Defects' if noticed and reported by the RECPDCL.</p>
12.0	PACKING	<ol style="list-style-type: none"> 1. Bidder shall ensure that all material covered under this specification shall be prepared for rail/road transport (local equipment) and be packed in such a manner as to protect it from damage in transit. The material used for packing shall be environmentally friendly. Packing and transportation shall be as per IS 15707:206 clauses 9.1 and 9.2. 2. Individual meter should be packed in separate box. Routine test report (with manufacturing company logo) of the individual meter shall be kept inside each cardboard carton of the meter. 3. On back side of routine test certificate (RTC) the bidder shall print a picture of the meter with its small details like for consumer to know about meter. 4. The softcopy of the routine test certificate of each meter to be provided with each lot to RECPDCL, MMG stores at Keshav Puram.
13.0	TENDER SAMPLE	Bidders are required to manufacture 03 sample meters as per the RECPDCL specification (sealed, unsealed and openable base and cover to view/test the inner circuits) and submit the sample (non-returnable) along with bid for approval. 02 numbers samples to be submitted in Meter Testing Lab and 01 in Plant Engineering. Following accessories to be submitted along with sample 1) Detailed manual 2) Communication cords 3) Tamper logic sheet 4) Display parameter annunciator 5) BCS and 6) Internal connection diagram.
14.0	QUALITY CONTROL	The bidder shall submit with the offer Quality assurance plan indicating the various stages of inspection, the tests and checks which will be carried out on the material of construction, components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished.

		<p>Quality should be ensured at the following stages:</p> <ul style="list-style-type: none">• At PCB manufacturing stage, each board shall be subjected to computerized bare board testing.• At insertion stage, all components should under go computerized testing for conforming to design parameter and orientation.• Complete assembled and soldered PCB should under go functional testing using Automatic Test Equipment (ATEs).• Prior to final testing and calibration, sample meters shall be subjected to aging test (i.e. meters will be kept in ovens for 24 hours at 55 Deg. C temperature and atmospheric humidity under real-life condition at its full load current. After 24 hours meter should work satisfactorily. <p>RECPDCL's engineer or its nominated representative shall have free access to the bidder's/manufacturer's works to carry out inspections.</p>										
15.0	MINIMUM TESTING FACILITIES	Bidder shall have adequate in house testing facilities for carrying out all routine tests & acceptance tests as per relevant International / Indian standards. The bidder shall have duly calibrated Reference Standard meter of Class 0.1 accuracy or better.										
16.0	MANUFACTURING ACTIVITIES	The successful bidder will have to submit the bar chart for various manufacturing activities clearly elaborating each stage, with quantity. This bar chart shall be in line with the Quality assurance plan submitted with the offer. This bar chart will have to be submitted within 15 days from the release of the order.										
17.0	SPARES, ACCESSORIES AND TOOLS	<ol style="list-style-type: none">1. Bidder to be provide free of cost 02 nos of jig for retrieving data from memory of meter with every new design of meter in which previous jig is supplied cannot be used. Jig should be such that NVM can be push fit on this jig and data can be retrieve from this NVM.2. Five (5) nos. of optical cord against each 100 meter lot for retrieving the data of meter through optical port should be provided, if design of optical port is changed from those of previously supplied meters.										
18.0	DRAWINGS AND DOCUMENTS	<p>Following drawings & Documents shall be prepared based on RECPDCL specifications and statutory requirements and shall be submitted with the bid:</p> <ol style="list-style-type: none">a) Completely filled-in Technical Parameters.b) General arrangement drawing of the meterc) Terminal Block dimensional drawingd) Mounting arrangement drawings.e) General description of the equipment and all components with makes and technical requirementf) Type Test Certificatesg) Experience Listh) Manufacturing schedule and test schedule <p>After the award of the contract, four (4) copies of following drawings, drawn to scale, describing the equipment in detail shall be forwarded for approval:</p> <table><tr><th>S. No.</th><th>Description</th><th>For Approval</th><th>For Review Informat ion</th><th>Final Submission</th></tr><tr><td>1</td><td>Technical Parameters</td><td>√</td><td></td><td>√</td></tr></table>	S. No.	Description	For Approval	For Review Informat ion	Final Submission	1	Technical Parameters	√		√
S. No.	Description	For Approval	For Review Informat ion	Final Submission								
1	Technical Parameters	√		√								

			2	General Arrangement drawings	√		√
			3	Terminal block Dimensional drawings	√		√
			4	Mounting arrangement drawing.	√		√
			5	Manual/Catalogues		√	
			6	Transport/ Shipping dimension drawing		√	√
			7	QA & QC Plan	√	√	√
			8	Routine, Acceptance and Type Test Certificates	√	√	√
			<p>Bidder shall subsequently provide Soft copy of all the drawing, GTP, Test certificates shall be submitted after the final approval of RECPDCL.</p> <p>All the documents & drawings shall be in English language.</p> <p>Instruction Manuals:-Bidder shall furnish two softcopies and four hard copies of nicely bound manuals (In English language) covering installation and maintenance instructions and other relevant information for use and drawings.</p>				
19.0	GUARANTEED TECHNICAL PARTICULARS		S.No	Description	Units	As Furnished by Bidder	
			1	Type of meter			
			2	Accuracy Class of the meter			
			3	Ib & Imax	A		
			4	Operating Voltage for meter	V		
			5	Operating Frequency	Hz		
			6	Power Consumption and Burden			
			7	Starting Current	mA		
			8	Short time over current	A		
			9	Influence of heating			
			10	Rated impulse withstand voltage	KV		
			11	AC withstand Voltage for 1 min	KV		
			12	Insulation resistance	M ohm		

				a) Between frame & Current, voltage circuits connected together: b) Between each current (or voltage circuit) & each and every other circuit.		
			13	Mechanical requirement as per IS 13779		
			14	Resistance to heat and fire (As per specification)		
			15	Degree of protection		
			16	Resistance against climatic influence (as per IS 13779)		
			17	Electromagnetic Compatibility (EMC)		
			18	Accuracy requirements (As per IS 13779)		
			19	Power factor range		
			20	Energy measurement		
			21	Connection Diagram for system on terminal cover	Yes/No	
			22	Self diagnostic feature		
			23	Initial start up of meter (meter shall be fully functional within 5 sec after reference voltage is applied to the meter terminals)		
			24	Terminal block a) Depth of the Terminal holes b) Internal diameter of terminal holes c) Clearance between adjacent terminals	Mm Mm Mm	
			25	Communication capabilities as per clause 4.1		

			26	Immunity against abnormal Magnetic influence, as defined in Cl. 4.2		
			27	Immunity against HV ESD as defined in Cl. 4.2		
			28	DC Immunity as defined in Cl. 4.3		
			29	Abnormal and tamper events and logging with snapshot in all conditions as per table no-1 cl. 4.4	Yes/no	
			30	Grade/Name of material for a) Meter base b) Meter cover c) Terminal block d) Terminal cover		
			31	Tamper counters		
			32	Recording forward energy in all conditions.	Yes/No	
			33	Meter sealing as per clause 5.4	Yes/No	
			34	Non Volatile memory (Retention period)		
			35	Measuring elements used in the meter		
			36	Power supply to circuit in case of supply failure		
			37	Display of measured values (As per specification –clause 5.8)	Yes/No	
			38	LCD display (Type and viewing angle)		
			39	Pulse rate	Imp/kWh,	

					Imp/kVArh	
			40	Name plate marking	Yes/No	
			41	Routine test certificates	Yes/No	
			42	Acceptance test certificates	Yes/No	
			43	Type test certificates	Yes/No	
			44	Guarantee certificates	Yes/No	
			45	Output device(LEDs) As per Cl.5.9	Yes/No	
			46	Terminal Screw dia.		
			47	Allen Screw head size (Terminal Screw)		
			48	Ultrasonic welding of cover and base		
			49	Fire retardant category of the material a. Meter body b. Terminal block		
			50	Supply of Zig for retrieval of the damaged/burnt meter data at MTL, Rohini		
			51	The meter should not have any other event logging than desired in specs. All the other logics should be removed or disabled in firmware.		
			52	Meter shall be programed at default 'lag only' configuration i.e. Leading power factor to be treated as unity for kVA & kVAh calculations, except for instantaneous parameters where values and Vector Diagram should show actual kVAh considering lead and Lag both.		
			53	Dimensions of the meter LxBxH		

B. Electronics parts

S No	Component Function	Requirement	Makes and Origin (To be provided by bidder)
1.	Measurement/ computing chips	The Measurement/ computing chips used in the meter should be with the Surface mount type along with the ASICs	
2.	Memory chips	The memory chips should not be affected by the external parameters like sparking, high voltage spikes or electrostatic discharges.	
3.	Display modules	The display modules should be well protected from the external UV radiations . The display visibility should be sufficient to read the meter mounted between height of 0.5m and 2m. The of the modules should be such that the displayed quantity should not disturbed with the life of display. (Pin Type) It should be trans-reflective STN type industrial grade with extended temperature range.	
4.	Optical port	Optical port should be used to transfer the meter data to meter reading instrument.	

				The mechanical construction of the port should be such to facilitate the data transfer easily.							
		5	P.C.B.	Glass Epoxy, fire resistance grade FR4, with minimum thickness 1.6 mm							
		6.	Electronic components	The active & passive components should be of the surface mount type & are to be handled & soldered by the state of art assembly processes.							
		7.	Battery	Lithium with guaranteed life of 15 years							
		8.	Micro controller and RTC	The microcontroller should be of superior quality from reputed make. The accuracy of RTC shall be as per relevant IEC / IS standards							
20.0	SCHEDULE OF DEVIATIONS	<div>(TO BE ENCLOSED WITH THE BID)</div> <div>All deviations from this specification shall be set out by the Bidders, clause by Clause in this schedule. Unless specifically mentioned in this Schedule, the tender shall be deemed to confirm the RECPDCL's specifications:</div> <table><tr><th>S.No.</th><th>Clause No.</th><th>Details of deviation with justifications</th></tr><tr><td></td><td></td><td></td></tr></table> <div>We confirm that there are no deviation apart from those detailed above.</div> <div>Seal of the Company:</div>				S.No.	Clause No.	Details of deviation with justifications			
S.No.	Clause No.	Details of deviation with justifications									

		<div>Signature</div> <div>Designation</div>
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