

NOTICE INVITING TENDER (NIT)

FOR

RATE CONTRACT FOR SUPPLY & INSTALLATION

OF

**CABLE END TERMINATION & STRAIGHT THROUGH
JOINTING KITS FOR VARIOUS SIZES OF CABLES OF
VOLTAGE RATINGS UPTO 11KV**

NIT NO: CMC/BY/22-23/RS/SkS/SV/67

Due Date for Submission: 23.03.2023, 14:00 HRS

**BSES YAMUNA POWER LIMITED (BYPL)
CONTRACTS & MATERIALS DEPT.,
SHAKTI KIRAN BUILDING, KARKARDOOMA,
DELHI-110032
CIN: U40109DL2001PLC111525
WEBSITE: www.bsesdelhi.com**

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VOLUME – I: INFORMATION TO BIDDER (ITB)

BIDDERS

SECTION – I: REQUEST FOR QUOTATION

1.00 EVENT INFORMATION

- 1.01 BSES Yamuna Power Ltd (hereinafter referred to as "BYPL") invites sealed tenders in two envelopes for establishing a Rate Contract from a reputed manufacturer valid for a period of two years.

	Tender Description	Estimated Cost (₹)	Cost of EMD (₹)	Delivery at
1	RATE CONTRACT FOR SUPPLY & INSTALLATION OF CABLE END TERMINATION & STRAIGHT THROUGH JOINTING KITS FOR VARIOUS SIZES OF CABLES OF VOLTAGE RATINGS UPTO 11KV	13.50 Crore (Supply – 7.00 Cr, Service – 6.50 Cr)	13.50 Lakh	Delhi Store(s)/ Site(s)

Note: The estimated cost mentioned above is for 01 years.

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

All envelopes shall be duly superscribed "**BID FOR RATE CONTRACT FOR SUPPLY & INSTALLATION OF CABLE END TERMINATION & STRAIGHT THROUGH JOINTING KITS FOR VARIOUS SIZES OF CABLES OF VOLTAGE RATINGS UPTO 11KV**" "NIT NO: **CMC/BY/22-23/RS/SkS/SV/67 DUE ON 23.03.2023, 14:00 Hr.**"

The Bid shall be submitted in two (02) parts. Details of the part are as follows

Part A – Techno Commercial Bid

Part B – Price Bid

- 1.1. The tender document can be obtained from the address given below against submission of a non-refundable demand draft of ₹ **1,180/-** drawn in favour of BSES Yamuna Power Ltd, payable at Delhi or Online transfer of the requisite amount through IMPS/ NEFT/ RTGS. The tender document is also available for download from the website www.bsesdelhi.com --> **BSES YAMUNA POWER LTD --> Tender --> Open Tenders**

In case the tender is downloaded from the above website, then the bidder has to enclose a demand draft or online transfer of the requisite amount through IMPS/ NEFT/ RTGS covering the cost of bid documents.

- 1.2. Bids will be received up to **23.03.2023, 14:00 Hr.** at the address given below.
Part A of the Bid shall be opened on **23.03.2023, 15:00 Hr.**

Part B of the Bid will be opened in case of Techno-Commercially Qualified Bidders and the date of opening of same shall be intimated in due course. It is the sole responsibility of the bidder to ensure that the bid documents reach this office on or before the last date.

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

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

- a) Tender is received after the due date and time.
- b) Tender fee of requisite value is not submitted.
- c) Earnest Money Deposit (EMD) of requisite value & validity is not submitted in the shape of a Bank Guarantee drawn in favour of BSES Yamuna Power Ltd, payable at Delhi or Online transfer of requisite amount through IMPS/NEFT/RTGS.
- d) Price Bid as per the Price Schedule mentioned in Annexure-I.
- e) Incomplete Bids.
- f) Necessary documents against compliance to Qualification Requirements mentioned in Section 1 Clause 2.0 of this Tender Document.
- g) Complete Technical details are not enclosed as per the Technical Bid Submission Checklist.
- h) Filled in Schedule of Deviations as per Annexure.

2.00 QUALIFICATION CRITERIA

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

2.01 Technical Criteria:

SI No.	Criteria	Documents to be submitted by the bidder
1	The bidder must be a manufacturer of Cable Jointing & Termination Kits of upto & including 11 kV voltage grade.	Manufacturing and factory incorporation certificate / Undertaking The details of manufacturing units, locations and works from where supply against this tender shall be proposed to be furnished.
2	The bidder should have the infrastructure in India for providing supply, service & spare support to BYPL. The relevant documents including details of manufacturing units, locations and works from where supply, spares & service against this tender shall be proposed to be furnished.	Relevant Details/certificates/Undertaking (Details of the set-up available shall be brought out in the offer. the bidder shall also submit an undertaking along with the bid confirming the infrastructure details submitted)
3	The bidder should have more than 7 years of experience in the field of cable jointing and fault repairs for upto & including 11 kV voltage grade in India.	Relevant Work Order Copy
4	The bidder should have minimum 2 years of experience in running O&M call centre and maintenance/ rectifications of underground cables by establishing 24x7 call centre anywhere in India with utilities/SEB's.	Relevant Work Order Copy
5	The bidder should have adequate experienced jointers for voltage rating up to & including 11KV.	Manpower Detailed List

requirements. The QC parameters against which the bidder can submit the credential of their global parent company are as mentioned below:

SI No.	Criteria	Documents to be submitted by the bidder						
1	The bidder should have more than 7 years of experience in the field of cable jointing and fault repairs for upto & including 11 kV voltage grade in India.	Relevant Work Order Copy						
2	The bidder should have minimum 2 years of experience in running O&M call centre and maintenance/ rectifications of underground cables by establishing 24x7 call centre anywhere in India with utilities/SEB's.	Relevant Work Order Copy						
3	<p>The bidder should have supplied & installed minimum numbers of joints and terminations mentioned below in any one of the financial years during the last 5 years in a voltage class category being offered against the present tender:</p> <table border="1"> <thead> <tr> <th>Voltage class</th> <th>Numbers</th> </tr> </thead> <tbody> <tr> <td>1.1KV</td> <td>3000</td> </tr> <tr> <td>11KV</td> <td>1500</td> </tr> </tbody> </table>	Voltage class	Numbers	1.1KV	3000	11KV	1500	<p>i. Summary list of executed Purchase orders ii. Purchase order copies iii. Material delivery clearance certificate copy or Delivery completion certificates or Invoice Copies</p>
Voltage class	Numbers							
1.1KV	3000							
11KV	1500							

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

3.00 BIDDING AND AWARD PROCESS

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

3.01 BID SUBMISSION

Please mention our NIT Number: - on the Tender and drop the same in our Tender Box placed at:

BSES Yamuna Power Ltd, Reception, Ground Floor, Shaktikiran Building, Karkardooma, Delhi 110032

The bids and the outer envelope shall be addressed to:

Head of Department

Contracts & Materials Deptt.

BSES Yamuna Power Ltd, Shaktikiran Building, Karkardooma, Delhi 110032

Kindly Note:

- Bidder will inform BYPL through e-mail immediately after their bid submission or before the due date & time of submission to TPC & Buyer:
 1. Mr Rakesh Sharma, E-mail: Rakesh.Ku.Sharma@relianceada.com,
 2. Mr Sumit Verma, E-mail: sumit.ra.verma@relianceada.com,
- Tender documents shall be submitted at the main gate in the tender box.

- Authorized person of TPC will collect the documents from the tender box after the scheduled time of tender submission and verify the bid documents with emails received. A confirmation of receipt shall be sent to the bidder through e-mail by TPC on the same day.
- Bidder has to ensure that tender copy is dropped in the correct box designated for tender submission only.
- BYPL shall not be responsible for any wrong placement of tender documents by the bidder.

PART A :: **TECHNICAL BID** comprising (01 no Original + 01 no Duplicate soft copy) of the following:

Sr. No	Descriptions	Type of Documents
Commercial :		
1	Tender Fee - Demand Draft (Rs.1180/-) (Incl GST)	Non-refundable demand draft for Rs 1180/- in case the forms are downloaded from the website
2	EMD	In the prescribed stamp paper & format
3	Power-of-Attorney	In the prescribed stamp paper & format
4	PQR Compliances	Documentary evidence in support of qualifying criteria like: 1. Details of the constitution of the company (Proprietary/Limited/etc along with the details), Memorandum of Association of the company 2. Bidders shall submit the certified annual Balance sheets for the last completed three (3) financial years 3. Supportive document on Positive Net worth. Credit rating/solvency certificate from the competent authority, wherever required. 4. Copies of Orders, Execution /Performance Certificates & Other Documents to support qualification Criteria.
5	Signed Tender document	Original Tender documents duly stamped & signed on each page as a token of acceptance
6	Black listing undertaking	Bidder should submit a Self-undertaking signed by its Authorized Signatories that the Bidder or any of their sub-contractor has not been blacklisted/barred by any Govt. Organization or Regulatory Agencies in India or abroad.
7	Commercial Terms and Conditions	Acceptance on Commercial Terms and Conditions viz Delivery schedule/period, Payment terms, PBG etc.
8	Acceptance on Reverse Auction	Duly signed Acceptance Form For Participation In Reverse Auction Event as per attached format
9	Bid Form (Unpriced) Duly Signed	Duly Signed Bid Form as per attached format
10	Un price Bid Duly Signed	Duly Signed Un price Bid as per attached format
Technical:		
11	Technical Details/ Filled in GTP/Drawings	Bidder shall submit duly filled GTP with all Technical documents and Drawings.

Sr. No	Descriptions	Type of Documents
12	Type Test Reports	Bidders shall submit a copy of type test reports in their technical bids in support of technical specifications
13	Testing Facilities	Bidder shall submit the details of testing facilities available at their works/factory.
14	Organization Chart & Manpower Details.	Bidder shall submit the details of Organization & Manpower with qualification and experience.

- PART B :: FINANCIAL BID** comprising of (01 no original only)
- Price strictly in the Format enclosed indicating Break up of basic price, taxes & duties, etc.

3.02 TIME SCHEDULE

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

S. No.	Events	Due date & Time
1	Date of sale/ availability of tender documents from BYPL Website	Up to 23.03.2023, 14:00 Hours
2	Date & Time of Pre-Bid Meeting Pre-Bid Meeting will be done online, Register in advance for this meeting via, the Zoom Meeting link: https://zoom.us/meeting/register/tJMpd-usqDMsHt0G5e-0Ob2iuPY7uKXM0XzW After registering, you will receive a confirmation email containing information about joining the meeting.	10.03.2023, 14:00 Hours
3	Last Date of receipt of pre-bid queries, if any (Queries to be submitted via e-mail)	12.03.2023 up to 17:00 Hours
4	Last Date of replies to all the pre-bid queries as received	15.03.2023 up to 18:00 Hours
5	Last date and time of receipt of Complete Bids (Tender Fees, EMD, Part A & Part B)	23.03.2023, 14:00HRS
6	Date & Time of Opening of PART A – EMD and Technical Bid	23.03.2023, 15:00HRS
7	Date & Time of opening of Price/RA of qualified bids	Will be notified to the qualified bidders through our website or e-mail

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

This is a two-part bid process. Bidders are to submit the bids in 2(Two) parts Both these parts should be furnished in separate sealed covers super scribing NIT no. DUE DATE OF SUBMISSION, with particulars as **PART-A TECHNICAL BID & COMMERCIAL TERMS & CONDITIONS** and **Part-B FINANCIAL BID** and these sealed envelopes, should again be placed in another sealed cover which shall be submitted before the due date & time specified.

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

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

The Bidder has to submit the item-wise price bifurcation in the bid. An unpriced copy must be attached with the Part A (Technical Bid). Reverse Auction will be carried out on individual item-wise rates.

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

Notwithstanding anything stated above, the Purchaser reserves the right to assess the bidder's capability to perform the contract, should the circumstances warrant such assessment in the overall interest of the purchaser. In this regard the decision of the purchaser is final. Bidder is to submit their acceptance as per the format attached ANNEXURE-C.

The bids will be evaluated commercially on the overall all-inclusive lowest cost for the complete tender BOQ as calculated in PRICE BID FORMAT – SUPPLY & INSTALLATION [VOLUME – II]. The RA may be carried out either Item-wise or Package-wise.

BIDS RECEIVED AFTER THE DUE DATE AND TIME MAY BE LIABLE FOR REJECTION

4.00 AWARD DECISION

- 4.01 Purchaser intends to award the business on the lowest bid basis, so suppliers are encouraged to submit the bid competitively. The decision to place a purchase order/LOI solely depends on the purchaser on the cost competitiveness across multiple lots, quality, delivery and bidder's capacity, in addition to other factors that Purchaser may deem relevant.
- 4.02 In the event of your bid being selected by the purchaser (and/or its affiliates) and you subsequent DEFAULT on your bid; you will be required to pay the purchaser (and/or its affiliates) an amount equal to the difference in your bid and the next lowest bid on the quantity declared in NIT/RFQ.
- 4.03 In case any supplier is found unsatisfactory during the delivery process, the award may be cancelled and BYPL reserves the right to award other suppliers who are found fit.
- 4.04 **Rate Contract:** The rate contract shall have a validity period of 24 months from the date of LOI/RC issued to the responsive, techno-commercially acceptable and evaluated to be the lowest bidder. The quantity indicated in Section V is for 12 months (approx.). Framework Purchase Order (FO) shall be placed as per the requirement of BYPL. The Rate shall remain FIRM till the validity of the Rate Contract. **In the event of an order to a new vendor, the party shall establish a Call Centre (24x7) immediately in the nominated district/circle/area of BYPL.**
- 4.05 Rate shall remain FIRM till the validity of the Contract.
- 4.06 Quantity Variation: The purchaser reserves the right to vary the tender quantity during the execution of the Purchase Order.
- 4.07 The purchaser reserves all the rights to award the contract to one or more bidders in the nominated district/circle/area of BYPL or nullify the award decision without citing any reason.

5.00 MARKET INTEGRITY

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

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

6.00 SUPPLIER CONFIDENTIALITY

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

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

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

7.00 CONTACT INFORMATION

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

Address	Name/ Designation	E-mail Address
Technical		
CES Dept. 3 rd Floor, B-Block, BSES Yamuna Power Ltd Shaktikiran Building, Karkardooma, Delhi 110032	Abhishek Vashistha DGM (CES)	abhishek.vashistha@relianceada.com
	Puneet Duggal GM (CES)	puneet.duggal@relianceada.com
	Gaurav Sharma Addl. VP (HOD-CES)	gaurav.a.sharma@relianceada.com
Commercial		
C&M Dept. 3 rd Floor, A-Block, BSES Yamuna Power Ltd Shaktikiran Building, Karkardooma, Delhi 110032	Sumit Verma GM (C&M)	sumit.ra.verma@relianceada.com
	Santosh Singh Addl. VP (Head-Procurement)	santosh.kum.singh@relianceada.com
	Robin Sebastian VP (HOD-C&M)	robin.sebastian@relianceada.com

SECTION – II: INSTRUCTION TO BIDDERS

A. GENERAL

1.00 BSES Yamuna Power Ltd, hereinafter referred to as “The Purchaser” is desirous of implementing the various Systems Improvement/Repair & Maintenance works at their respective licensed area in Delhi The Purchaser has now floated this tender for procurement of material notified earlier in this bid document.

2.00 SCOPE OF WORK

The scope shall include Design, Manufacture, testing at works conforming to the Technical Specifications/IS along with Packing, Forwarding, Transportation and Unloading and proper stacking at Purchaser’s stores/site and services as per the Scope of work.

3.0 DISCLAIMER

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

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

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

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

4 COST OF BIDDING

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

B. BIDDING DOCUMENTS

5.01 The Scope of Work, Bidding Procedures and Contract Terms are described in the Bidding Documents. In addition to the covering letter accompanying Bidding Documents, the Bidding Documents include:

- (a) Request for Quotation (RFQ)
- (b) Instructions to Bidders
- (c) General Terms & Conditions of Contract (T&C)
- (d) Delivery Schedule
- (e) Price Formats & Summary T&C
- (f) Bid Form

INFORMATION TO BIDDER (ITB) NIT NO: CMC/BY/22-23/RS/SkS/SV/67	Page 10 of 17	Bidders seal & Signature
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- (g) Acceptance Format – RA
- (h) EMD BG Format
- (i) Vendor code of conduct
- (j) Appendix
- (k) Technical Specifications (TS)

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

6.0 AMENDMENT OF BIDDING DOCUMENTS

6.01 At any time before the deadline for submission of Bids, the Purchaser may for any reason, whether at its initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding Documents by Amendment.

6.02 The Amendment shall be part of the Bidding Documents, pursuant to Clause 5.01, and it will be notified on web site www.bsedelhi.com and the same will be binding on them.

6.03 To afford prospective Bidders reasonable time in which to take the Amendment into account in preparing their Bids, the Purchaser may, at its discretion, extend the deadline for the submission of Bids. The same shall be published as a corrigendum on the website www.bsedelhi.com

6.04 Purchaser shall reserve the rights to the following:

- a) extend the due date of submission,
- b) modify the tender document in part/whole,
- c) cancel the entire tender

6.05 **Bidders are requested to visit the website regularly for any modification/clarification/corrigendum/addendum of the bid documents.**

C. PREPARATION OF BIDS

7.0 LANGUAGE OF BID

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

8.0 DOCUMENTS COMPRISING THE BID

The Bid prepared and submitted by the Bidder shall comprise the following components:

- (a) Bid Form, Price & other Schedules (STRICTLY AS PER FORMAT) and Technical Data Sheets completed in accordance with Technical Specification.
- (b) All the Bids must be accompanied by the required EMD as mentioned in Section-I against each tender.
- (c) Tender documents duly stamped and signed on each page by an authorized signatory.

9.0 **BID FORM**

9.01 The Bidder shall submit Bid Form and the appropriate Price Schedules and Technical Data Sheets duly filled in as per the attached specification enclosed with the Bidding Documents.

Unpriced "Copy" of the Bid Form and the appropriate Un Price Schedules duly filled in as per the attached format enclosed with the Bidding Documents with TECHNICAL BID Part A.

9.02 **EMD**

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

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

- (a) Bank Guarantee drawn in favour of BSES Yamuna Power Ltd, payable at Delhi or
- (b) Online transfer of requisite amount through IMPS/NEFT/RTGS to BYPL account mentioned herein in Appendix II - **BYPL BANK DETAIL WITH IFSC CODE.**

EMD shall be valid for One Hundred Fifty (150) days after the due date of submission drawn in favour of BSES Yamuna Power Ltd.

The EMD may be forfeited in the case of:

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

10.0 **BID PRICES**

10.01 Bidders shall quote for the entire Scope of Supply/Work with a break-up of prices for individual items. The total Bid Price shall also cover all the Supplier's obligations mentioned in or reasonably to be inferred from the Bidding Documents in respect of Design, Supply, and Transportation to the site, all in accordance with the requirement of the Bidding Documents. The Bidder shall complete the appropriate Price Schedules included herein, stating the Unit Price for each item & total Price.

10.02 The prices offered shall be inclusive of all costs as well as Duties, Taxes and Levies paid or payable during the execution of the supply work, a breakup of price constituents, should be there.

10.03 Prices quoted by the Bidder shall be "**Firm**" and not subject to any price adjustment during the performance of the Contract. **A Bid submitted with an adjustable price/ Price Variation Clause will be treated as non -responsive and rejected.**

10.04 The qty break-up shown elsewhere in Price Schedule is tentative. The bidder shall ascertain himself regarding the material required for the completeness of the entire work. Any item not

indicated but required to complete the job, shall be deemed included in the prices quoted.

11.0 BID CURRENCIES

11.01 Prices shall be quoted in Indian Rupees Only.

12.0 PERIOD OF VALIDITY OF BIDS

12.01 Bids shall remain valid for 150 days from the due date of submission of the Bid.

12.02 Notwithstanding Clause 12.01 above, the Purchaser may solicit the Bidder's consent to an extension of the Period of Bid Validity. The request and the responses thereto shall be made in writing and sent by post/courier.

13.0 ALTERNATIVE BIDS

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

14.0 FORMAT AND SIGNING OF BID

14.01 The original Bid Form and accompanying documents (as specified in Clause 5.0), clearly marked "Original Bid" plus Duplicate Soft copy in a USB flash drive must be received by the Purchaser at the date, time and place specified pursuant to Clauses 15.0 and 16.0. In the event of any discrepancy between the original and the copies, the original shall govern.

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

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

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

D. SUBMISSION OF BIDS

15.0 SEALING AND MARKING OF BIDS

15.01 Bid submission: One original (hard copy) & One Duplicate Soft copy in a USB flash drive of all the Bid Documents shall be sealed and submitted to the Purchaser before the closing time for submission of the bid.

15.02 The Technical Documents and the EMD shall be enclosed in a sealed envelope and the said envelope shall be superscribed with — “Technical Bid & EMD”. The price bid shall be inside another sealed envelope with superscribed “Financial Bid”. Both these envelopes shall be sealed inside another big envelope. All the envelopes should bear the Name and Address of the Bidder and marking for the Original. The envelopes should be superscribed with — “Tender Notice No. & Due date of opening”.

15.03 The Bidder has the option of sending the Bids in person. Bids submitted by Email/Telex/Telegram /Fax will be rejected. No request from any Bidder to the Purchaser to collect the proposals from Courier/Airlines/Cargo Agents etc. shall be entertained by the Purchaser.

16.0 **DEADLINE FOR SUBMISSION OF BIDS**

16.01 The original Bid, together with the required copies, must be received by the Purchaser at the address on or before the due date & time of submission.

16.02 The Purchaser may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Documents in accordance with Clause 6.0, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

17.0 **ONE BID PER BIDDER**

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

18.0 **LATE BIDS**

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

19.0 **MODIFICATIONS AND WITHDRAWAL OF BIDS**

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

E. EVALUATION OF BID

20.0 **PROCESS TO BE CONFIDENTIAL**

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

21.0 **CLARIFICATION OF BIDS**

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

22.0 **PRELIMINARY EXAMINATION OF BIDS / RESPONSIVENESS**

- 22.01 Purchaser will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the Bids are generally in order. Purchaser may ask for submission of original documents to verify the documents submitted in support of qualification criteria.
- 22.02 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price per item that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price per item will be corrected. If there is a discrepancy between the Total Amount and the sum of the total price per item, the sum of the total price per item shall prevail and the Total Amount will be corrected.
- 22.03 Prior to the detailed evaluation, Purchaser will determine the substantial responsiveness of each Bid to the Bidding Documents including production capability and acceptable quality of the Goods offered. A substantially responsive Bid is one, which conforms to all the terms and conditions of the Bidding Documents without material deviation.
- 22.04 Bid determined as not substantially responsive will be rejected by the Purchaser and/or the Purchaser and may not subsequently be made responsive by the Bidder by correction of the non - conformity.

23.0 EVALUATION AND COMPARISON OF BIDS

- 23.01 The evaluation of Bids shall be done based on the delivered cost competitiveness basis.
- 23.02 The evaluation of the Bids shall be a stage-wise procedure. The following stages are identified for evaluation purposes: In the first stage, the Bids would be subjected to a responsiveness check. The Technical & qualifying Proposals and the Conditional ties of the Bidders would be evaluated.

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

- 23.03 The Purchaser's evaluation of a Bid will take into account, in addition to the Bid price, the following factors, in the manner and to the extent indicated in this Clause:
- (a) Delivery Schedule
 - (b) Conformance to Qualifying Criteria
 - (c) Deviations from Bidding Documents

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

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

- 23.04 Any price adjustments, which result from the above procedures, shall be added for the purposes of comparative evaluation only to arrive at an "Evaluated Bid Price". Bid Prices quoted by Bidders shall remain unaltered.

F. AWARD OF CONTRACT

24.0 CONTACTING THE PURCHASER

INFORMATION TO BIDDER (ITB) NIT NO: CMC/BY/22-23/RS/SkS/SV/67	Page 15 of 17	Bidders seal & Signature
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24.01 If any Bidder wishes to contact the Purchaser on any matter related to the Bid, from the time of Bid opening to the time of contract award, the same shall be done in writing only.

24.02 Any effort by a Bidder to influence the Purchaser and/or in the Purchaser's decisions in respect of Bid evaluation, Bid comparison or Contract Award, will result in the rejection of the Bidder's Bid.

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

Submission of bids shall not automatically construe qualification for evaluation. The Purchaser reserves the right to accept or reject any Bid and to annul the Bidding process and reject all Bids at anytime prior to the award of the Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Purchaser's action.

26.0 AWARD OF CONTRACT

The Purchaser will award the Contract to the successful Bidder whose Bid has been Determined to be the lowest-evaluated responsive Bid, provided further that the Bidder has been determined to be qualified to satisfactorily perform the Contract. Purchaser reserves the right to award order to other bidders in the tender, provided it is required for timely execution of the project & provided he agrees to come to the lowest rate. Purchaser reserves the right to distribute the entire tender quantity at its own discretion without citing any reasons thereof.

Though the contract is for Turnkey in nature, the Purchaser intends to issue 2(two) separate Orders viz.

- a) Order for Supply Portion.
- b) Order for Services.

All individual contracts will contain cross fall breach clause (i.e., a breach of one will constitute breach of the others)

27.0 THE PURCHASER'S RIGHT TO VARY QUANTITIES

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

28.0 LETTER OF INTENT/ NOTIFICATION OF AWARD

The letter of intent/ Notification of Award shall be issued to the successful Bidder whose bids have been considered responsive, techno-commercially acceptable and evaluated to be the lowest (L1). The successful Bidder shall be required to furnish a letter of acceptance within 7 days of the issue of the letter of intent /Notification of Award by Purchaser.

29.0 PERFORMANCE BANK GUARANTEE (PBG)

To be submitted within twenty-eight (28) days from the date of issuance of the Letter of Intent/Award/RC. Bidder shall initially submit the performance bank guarantee (PBG) equivalent to 1% of RC Value (including GST) valid till RC validity period plus three months claim period. Upon receipt of the PBG by BYPL against RC, the EMD shall be released. Thereafter bidder shall submit PBG on Purchase Order (PO) basis equivalent to 10% of the PO value (including GST) valid for a period of 24 months from the date of Commissioning or 30 months from the date of the last receipts at the site/stores, whichever is earlier plus 3 months claim period.

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30.0 **CORRUPT OR FRAUDULENT PRACTICES**

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

- (a) Defines, for the purposes of this provision, the terms set forth below as follows:
 - (i) "Corrupt practice" means behaviour on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving, or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and
 - (ii) "Fraudulent practice" means a misrepresentation of facts in order to influence a procure t process or the execution of a contract to the detriment of the Purchaser, and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non -competitive levels and to deprive the Purchaser of the benefits of free and open competition.
- (b) Will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;
- (c) Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a contract.

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

31.0 **STATUTORY GUIDELINES & REGULATIONS**

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

32.0 **PRIORITY OF CONTRACT DOCUMENTS**

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

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

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

APPENDIX I

(FORMAT FOR EMD BANK GUARANTEE)

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

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

KNOW ALL PEOPLE by these presents that WE [*name of bank*] at [*Branch Name and address*], having our registered office at [*address of the registered office of the bank*] (herein after called the "Bank"), are bound unto BSES Yamuna Power Ltd., with its Corporate Office at Shaktikiran Building, Karkardooma, Delhi - 110032, (herein after called —the "Purchaser") in the sum of Rs..... (Rupees..... only) for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors, and assigns by these presents.

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

The conditions of this obligation are:

- 1 If the Bidder withdraws its Bid during the period of bid validity specified by the Bidder on the Bid Form; or
2. If the Bidder, having been notified of the acceptance of its Bid by the Purchaser during the period of bid validity:
 - (a) fails or refuses to execute the Contract Form, if required; or
 - (b) fails or refuses to furnish the performance security, In accordance with the Instructions to Bidders/ Terms and Conditions;

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

This guarantee will remain in force up to and including One Hundred Fifty (150) days after the due date of submission bid, and any demand in respect thereof should reach the Bank not later than the above date.

(Stamp & signature of the bank)

Signature of the witness

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BID FORM

To

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

Sir,

1 We understand that BYPL is desirous of procuring..... for it's licensed distribution network area in Delhi

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

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

4 If our Bid is accepted, we will furnish a performance bank guarantee for due performance of the Contract in accordance with the Terms and Conditions.

5 We agree to abide by this Bid for a period of 150 days from the due date of bid submission and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

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

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

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

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

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

Signature..... In the capacity of

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

(IN BLOCK CAPITALS)

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ACCEPTANCE FORM FOR PARTICIPATION IN REVERSE AUCTION EVENT

(To be signed and stamped by the bidder)

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

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

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

Signature & seal of the Bidder

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

Date:
Tender No.:

To

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

Sir,

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

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

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

Yours Sincerely,
For

Authorized Signatory

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ANNEXURE - SCHEDULE OF DEVIATIONS

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

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

Technical Deviations:-

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

Commercial Deviations:-

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

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

Seal of the Bidder:

Signature:

Name:

Technical Bid Submission Check List

Submission of this duly filled checklist along with the bid is mandatory. The order of documents shall be as per this technical bid submission checklist.

Bids with incomplete/ wrong information are liable for rejection.

S. No.	Description	BYPL Requirement	Bidder's Compliance (Yes/No/ Not Applicable)
1	Tender No.	Required	
2	Tender Fee, EMD & Signed Bid Form as mentioned in the tender, if applicable	Required	
3	Bidder Details		
3.1	Name of the Bidder	Required	
3.2	Company Profile/Organogram	Required	
3.3	Name of duly Authorized contact person (along with Authorizations to submit the Bid)	Required	
3.4	Contact No. of duly Authorized contact person	Required	
3.5	E-mail Id of duly Authorized contact person	Required	
4	Documents Submission Format		
4.1	Documents shall be submitted in Box file/spiral binding in offline tenders and Original pdf for online mode. Any other format is not acceptable	Required	
4.2	Index of documents with page numbers for each document	Required	
4.3	Separator with document description shall be provided before each document	Required	
5	Signed Copy of tender as an unconditional acceptance	Required	
6	Qualification Criteria Requirement Compliance, If applicable		
6.1	Summary of compliance of qualifying criteria in tabular form along with details of documentary proof provided	Required	
6.2	Detailed Documents supporting compliance of qualifying criteria	Required	
7	Technical Specification reference number	Required	
8	Drawings/ Documents as per Technical Specification		
8.1	Signed copy of technical specification	Required	
8.2	Type Test reports of offered model/ type/ rating	Required	
8.3	Guaranteed Technical particulars (GTP)	Required	
8.4	Deviation Sheet – Technical (along with soft editable copy)	Required	
8.5	Detailed Drawings	Required	
8.6	Manufacturer's quality assurance plan	Required	
8.7	Other drawings/ documents mentioned in technical specification	Required	
9	Deviation Sheet – commercial (along with soft editable copy)	Required	
10	Soft copy of complete technical bid in pen drive	Required	
11	Samples as per technical specification	Required	

VENDOR CODE OF CONDUCT

Purchaser is committed to conducting its business in an ethical, legal and socially responsible manner. To encourage compliance with all legal requirements and ethical business practices, Purchaser has established this Vendor Code of Conduct (the "Code") for Purchaser's Vendors. For the purposes of this document, "Vendor" means any company, corporation or other entity that sells, or seeks to sell goods or services, to Purchaser, including the Vendor's employees, agents and other representatives.

Fundamental to adopting the Code is the understanding that a business, in all of its activities, must operate in full compliance with the laws, rules and regulations of the countries in which it operates. This Code encourages Vendors to go beyond legal compliance, drawing upon internationally recognized standards, in order to advance social and environmental responsibility.

I. Labour and Human Rights

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

- Fair Treatment - Vendors must be committed to a workplace free of harassment. Vendors shall not threaten workers with or subject them to harsh or inhumane treatment, including sexual harassment, sexual abuse, corporal punishment, mental coercion, physical coercion, verbal abuse or unreasonable restrictions on entering or exiting company provided facilities.

- Antidiscrimination - Vendors shall not discriminate against any worker based on race, colour, age, gender, sexual orientation, ethnicity, disability, religion, political affiliation, union membership, national origin, or marital status in hiring and employment practices such as applications for employment, promotions, rewards, access to training, job assignments, wages, benefits, discipline, and termination. Vendors shall not require a pregnancy test or discriminate against pregnant workers except where required by applicable laws or regulations or prudent for workplace safety. In addition, Vendors shall not require workers or potential workers to undergo medical tests that could be used in a discriminatory way except where required by applicable law or regulation or prudent for workplace safety.

- Freely Chosen Employment - Forced, bonded or indentured labour or involuntary prison labour is not to be used. All work will be voluntary, and workers should be free to leave upon reasonable notice. Workers shall not be required to hand over government-issued identification, passports or work permits as a condition of employment.

- Prevention of Under Age Labor - Child labor is strictly prohibited. Vendors shall not employ children. The minimum age for employment or work shall be 15 years of age, the minimum age for employment in that country, or the age for completing compulsory education in that country, whichever is higher. This Code does not prohibit participation in legitimate workplace apprenticeship programs that are consistent with Article 6 of ILO Minimum Age Convention No. 138 or light work consistent with Article 7 of ILO Minimum Age Convention No. 138.

- Juvenile Labor - Vendors may employ juveniles who are older than the applicable legal minimum age for employment but are younger than 18 years of age, provided they do not perform work likely to jeopardize their health, safety, or morals, consistent with ILO Minimum Age Convention No. 138.

- Minimum Wages - Compensation paid to workers shall comply with all applicable wage laws, including those relating to minimum wages, overtime hours and legally mandated benefits. Any Disciplinary wage deductions are to conform to local law. The basis on which workers are being paid is to be clearly conveyed to them in a timely manner.

- Working Hours - Studies of good manufacturing practices clearly link worker strain to reduced productivity, increased turnover and increased injury and illness. Work weeks are not to exceed maximum set by local law. Further, a work week should not be more than 60 hours per week, including overtime, except in emergency or unusual situations. Workers should be allowed at least one day off per seven-day week.

. Freedom of Association - Open communication and direct engagement between workers and management are the most effective ways to resolve workplace and compensation issues. Vendors are to respect the rights of workers to associate freely and to communicate openly with management regarding working conditions without fear of reprisal, intimidation or harassment. Workers' rights to join labour unions seek representation and or join worker's councils in accordance with local laws should be acknowledged.

II. Health and Safety

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

The health and safety standards are:

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

III. Environmental

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

The environmental standards are:

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

IV. Ethics

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

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

V. Management System

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

The management system should contain the following elements:

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

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

**GENERAL CONDITIONS OF CONTRACT
(GCC-SUPPLY)**

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GENERAL CONDITIONS OF CONTRACT (GCC)-SUPPLY

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

1.0 General Instructions

- 1.01** All the Bids shall be prepared and submitted in accordance with these instructions.
- 1.02** Bidder shall bear all costs associated with the preparation and delivery of its Bid, and the Purchaser will in no case be responsible or liable for these costs.
- 1.03** The Bid should be submitted by the Bidder in whose name the bid document has been issued and under no circumstances it shall be transferred/sold to the other party.
- 1.04** The Purchaser reserves the right to request any additional information and also reserves the right to reject the proposal of any Bidder, if in the opinion of the Purchaser, the data in support of RFQ requirement is incomplete.
- 1.05** The Bidder is expected to examine all instructions, forms, terms & conditions and specifications in the Bid Documents. Failure to furnish all information required in the Bid Documents or submission of a Bid not substantially responsive to the Bid Documents in every respect may result in rejection of the Bid. However, the Purchaser's decision in regard to the responsiveness and rejection of bids shall be final and binding without any obligation, financial or otherwise, on the Purchaser.

2.0 Definition of Terms

- 2.01** "Purchaser" shall mean BSES Yamuna Power Limited, on whose behalf this bid enquiry is issued by its authorized representative / officers.
- 2.02** "Bidder" shall mean the firm who quotes against this bid enquiry issued by the Purchaser. "Supplier" or "Supplier" shall mean the successful Bidder and/or Bidders whose bid has been accepted by the Purchaser and on whom the "Letter of Acceptance" is placed by the Purchaser and shall include his heirs, legal representatives, successors and permitted assigns wherever the context so admits.
- 2.03** "Supply" shall mean the Scope of Contract as described.
- 2.04** "Specification" shall mean collectively all the terms and stipulations contained in those portions of this bid document known as RFQ, Commercial Terms & Conditions, Instructions to Bidders, Technical Specifications and the Amendments, Revisions, Deletions or Additions, as may be made by the Purchaser from time to time.
- 2.05** "Letter of Acceptance" shall mean the official notice issued by the Purchaser notifying the Supplier that his proposal has been accepted and it shall include amendments thereto, if any, issued by the Purchaser. The "Letter of Acceptance" issued by the Purchaser shall be binding on the "Supplier" The date of Letter of Acceptance shall be taken as the effective date of the commencement of contract.
- 2.06** "Month" shall mean the calendar month and "Day" shall mean the calendar day.

- 2.07** "Codes and Standards" shall mean all the applicable codes and standards as indicated in the Specification.
- 2.08** "Offer Sheet" shall mean Bidder's firm offer submitted to BYPL in accordance with the specification.
- 2.09** "Contract" shall mean the "Letter of Acceptance/Purchase Order" issued by the Purchaser.
- 2.10** "Contract Price" shall mean the price referred to in the "Letter of Acceptance/Purchase Order".
- 2.11** "Contract Period" shall mean the period during which the "Contract" shall be executed as agreed between the Supplier and the Purchaser in the Contract inclusive of extended contract period for reason beyond the control of the Supplier and/or Purchaser due to force majeure.
- 2.12** "Acceptance" shall mean and deemed to include one or more of the following as will be stipulated in the specification:
- a) The written acceptance of material by the inspector at suppliers works to ship the materials.
 - b) Acceptance of material at Purchaser site stores after its receipt and due inspection/ testing and release of material acceptance voucher.
 - c) Where the scope of the contract includes supply, acceptance shall mean issue of necessary equipment / material takeover receipt after installation & commissioning and final acceptance.

3.0 Contract Documents & Priority

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

4.0 Scope of Supply -General

- 4.01** The "Scope of Supply" shall be on the basis of Bidder's responsibility, completely covering the obligations, responsibility and supplies provided in this Bid enquiry whether implicit or explicit.
- 4.02** Bidder shall have to quote for the Bill of quantities as listed in Section – IV of this RFQ.
- 4.03** Quantity variation and additional requirements if any shall be communicated to successful bidder during project execution.
- 4.04** All relevant drawings, data and instruction manuals.

5.0 Quality Assurance and Inspection

- 5.01** Immediately on award of contract, the bidder shall prepare detailed quality assurance plan / test procedure identifying the various stages of manufacture, quality checks performed at each stage, raw material inspection and the Customer hold points. The document shall also furnish details of method of checking, inspection and acceptance standards / values and get the approval of Purchaser before proceeding with manufacturing. However, Purchaser shall have right to review the inspection reports, quality checks and results of suppliers in house inspection department which are not Customer hold points and the supplier shall comply with the remarks made by purchaser or his representative on such reviews with regards to further testing, rectification or rejection, etc.

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- 5.02** Witness and Hold points are critical steps in manufacturing, inspection and testing where the supplier is obliged to notify the Purchaser in advance so that it may be witnessed by the Purchaser. Final inspection is a mandatory hold point. The supplier to proceed with the work past a hold point only after clearance by purchaser or a witness waiver letter from BYPL.
- 5.03** The performance of waiver of QA activity by Purchaser at any stage of manufacturing does not relieve the supplier of any obligation to perform in accordance with and meet all the requirements of the procurement documents and also all the codes & reference documents mentioned in the procurement document nor shall it preclude subsequent rejection by the purchaser.
- 5.04** On completion of manufacturing the items can only be dispatched after receipt of dispatch Instructions issued by the Purchaser.
- 5.05** All in-house testing and inspection shall be done with out any extra cost. The in-house inspection shall be carried out in presence of BSES/BSES authorized third party inspection agency. Cost of Futile/abortive visit(s) shall be debited from the invoices.
- 5.06** Purchaser reserves the right to send any material being supplied to any recognized laboratory for testing, wherever necessary and the cost of testing shall be borne by the Bidder. In case the material is found not in order with the technical requirement / specification, the charges along with any other penalty which may be levied is to be borne by the bidder. To avoid any complaint the supplier is advised to send his representative to the stores to see that the material sent for testing is being sealed in the presence of bidder's representative.

6.0 Inspection & Test Charges

- 6.01 GOODS shall be inspected by BUYER and/or third party inspection agency nominated by BUYER. Inspection shall carry out stage wise/final inspection as per agreed QA /QC procedure. In addition, inspection of GOODS shall be carried out at our Site/stores. SELLER shall, however, repair/replace the damaged/rejected GOODS to the satisfaction of BUYER at no extra cost.
- 6.02 Inspection charges are included in total order value, however BUYER will bear third party inspection charges. In case of futile/abortive visit of BUYER's inspector at SELLER'S works, the cost towards the same shall be debited from the SELLER's invoices.
- 6.03 GOODS covered by this PURCHASE ORDER shall not be dispatched in whole or in part until SELLER has received a written Release for Shipment Notice from BUYER or their designated representative.
- 6.04 Inspection call shall be raised minimum 15(fifteen) days in advance from delivery schedule mentioned in PO and duly filled Format issued by BYPL

7.0 Handling and Storage

- 7.01 Material Safety Data Sheet (MSDS), detail handling & storage instruction sheet/manual, wherever applicable, to be furnished before commencement of supply and one copy is to be submitted in store/site with First Lot.

8.0 Packing, Packing List & Marking

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8.01 **Packing:** Supplier shall pack or shall cause to be packed all Commodities in crates/boxes/drums/containers/cartons and otherwise in such a manner as shall be reasonably suitable for shipment by road or rail to BYPL, Delhi/New Delhi stores/site without undue risk of damage in transit. All the packaging materials as prescribed shall be supplied preferably with bio-degradable packing- materials.

8.02 **Packing List:** The contents of each package shall be itemized on a detailed list showing the exact weight, extreme outside dimensions (length, width & weight) of each container/box/drum/carton, Item SAP Code, PO No & date. One copy of the packing list shall be enclosed in each package delivered.

9.0 Prices/Rates/Taxes

9.01 Price basis for supply of materials

a) Bidder to quote their prices on Landed Cost Basis and separate price for each item for supply to BYPL Delhi/New Delhi stores inclusive of packing, forwarding, loading at manufacturer's premises, payment of GST, Freight, and any other local charges. **Octroi is presently not applicable in Delhi and however if applicable shall be reimbursed at actuals.**

b) The above supply prices shall also include unloading at BYPL Delhi/New Delhi stores/sites.

c) Transit insurance will be arranged by Bidder

10.0 Taxes & Duties

10.01 Prices for Goods are on Ex- Works basis. For the Goods covered under the GST laws, all taxes that are applicable under CGST, SGST, UGST, IGST and GST Compensation Cess shall be payable extra.

10.02 For the Goods not covered in the GST laws, the applicable ED, VAT / CST shall be payable extra at applicable rates.

10.03 GSTIN of BSES YAMUNA POWER LTD - 07AABCC8569N1Z0
CST No of BSES YAMUNA POWER LTD -07740254593
TIN NO of BSES YAMUNA POWER LTD - 07740254593
PAN NO of BSES YAMUNA POWER LTD - AABCC8569N

10.04 At the end of each month, the SELLER must submit their detail of invoices and amount thereof to the concerned officer in charge, within 07 days after the close of the respective month to which supply relates. Non submission of the said request would be treated as good as that the SELLER has no requirement of reconciliation.

11.0 Invoicing Instructions

11.01 Invoices in triplicate [1) Original for recipient, 2) Duplicate for Transporter, 3) Triplicate for supplier] shall be made out and delivered to the following address: BSES YAMUNA POWER LIMITED, SHAKTI KIRAN BUILDING, KARKARDOOMA, DELHI-110032.

MDCC will be released separately for Capex & Opex. Invoice will be submitted by supplier as per the MDCC.

11.02 Vendor shall obtain GST registration in the State from where the supply will be carried out. Vendors supplying Goods to the Purchaser shall have a valid GST registration number and shall submit GST Tax Invoice and other documents as per SGST Act, CGST Act, IGST Act, UTGST Act, GST

Compensation Cess Act and Rules made there under. Failure to submit GST Tax Invoice shall be liable for withholding SGST, CGST, IGST, UTGST, GST Compensation Cess amount charged by the vendor while releasing the payment.

- 11.03 Invoice will be in the name of BSES YAMUNA POWER LIMITED & address of the store/site mentioned in the MDCC. Invoice should contain all information as required under GST Invoice, Debit Note and Credit Rules. The government has notified rules of invoicing under GST along with a template of invoice(GST INV-01) covering the elements such as supplier's details, GSTIN No, HSN Codes, item details, GST tax rates, etc that need to be presented by the supplier.
- 11.04 Vendor to carefully examine and charge relevant CGST / SGST, UGST, IGST and GST compensation cess as applicable to the transactions.
- 11.05 Timely provision of invoices / Debit Notes / Credit Notes:
- 11.05.1 Vendor to timely provide invoice / Debit note / Credit note to enable Purchaser to claim tax benefit on or before stipulated time period. All necessary adjustment entries (Credit Note, Purchase Returns, Debit Notes) shall be made within the time lines prescribed under the GST Laws.
- 11.05.2 In case of receipt of advance, the Vendor undertakes to raise the tax invoice. Purchaser, upon payment of advance, shall issue payment voucher as per applicable GST laws and rules. Four copies of the invoices need to be provided by suppliers and wherever the law requires, an Electronic Reference Number for each invoice.
Documents and devices to be carried by a person-in-charge of a conveyance under.
- 11.06 E Way Bills / transit documents for movement of Goods:
Wherever applicable, the Vendor shall be responsible to issue required transit documents / E Way Bills for movement of Goods and the logistic partner / transporter shall not be liable for any loss arising due to confiscation of goods by government agencies on account of lack of proper documents or any mis-declaration. The Supplier is responsible to comply with rules applicable for E-way bill. Any violation in provision of E-way Bill will attract penalty and seizure of Transit Material. Any Penalty and Pre-Deposit due to violation of rules/provision shall be paid and borne by Supplier. Also, Supplier is responsible for releasing of goods from Authority whether CGST/SGST. Delay in supply from the contractual date due to seizure of goods shall also attract liquidated damages.

12.0 Terms of payment and billing

- 12.01 For Supply of Equipment's:
100% payment shall be made within 45 days from the date of receipt & acceptance of material at store/site against submission of the following documents against dispatch of each consignment at our Vendor Support Cell (VSC):
- Signed copy of accepted Rate Contract / Purchase Order (for first payment)
 - LR / RR / BL as applicable
 - Challan as applicable
 - Two (02) copies of Supplier's detailed Recipient Invoice showing Commodity description, quantity, unit price, total price and basis of delivery, and being 100% of the value of the consignment claimed.
 - Two (02) copies of Supplier's transporter invoice duly receipted by BYPL Store & Original certificate issued by BYPL confirming receipt of the subject material at Store/Site and acceptance of the same as per the provisions of the contract.
 - Two (02) copies Packing List / Detailed Packing List

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- g) Approved Test certificates / Quality certificates, if applicable
- h) Certificate of Origin, if applicable
- i) Material Dispatch Clearance Certificate (MDCC)
- j) Insurance Policy / Certificate, if applicable
- k) Warranty / Guarantee Certificate, if applicable
- l) Check list for bill submission.

- 12.02 Purchaser has the right to recover tax loss, interest and penalty suffered due to any non-compliance of tax laws by the Vendor. In the event, Purchaser is not able to avail any tax credit due to any short coming on the part of the Vendor (which otherwise should have been available to Purchaser in the normal course), then the Vendor at his own cost and effort will get the short coming rectified. If for any reason the same is not possible, then the Vendor will make 'good' the loss suffered by Purchaser due to the tax credit it lost . In such event, any amount paid to the Vendors shall be first attributable to the tax (GST) charged in the invoice and the balance shall be considered towards the 'value' of supply of goods/ services.
- 12.03 Purchaser shall deduct "Tax Deducted at Source" wherever applicable and at the rate prescribed under the GST Laws or any other Indian law and remit the same to the Government. Necessary TDS certificates as per law shall be issued by the purchase to the vendor.
- 12.04 Any liability arising out of dispute on the tax rate, classification under HSN, calculation and payment of tax to the Government will be to the Vendor's account.
- 12.05 Where the supply of Goods are liable to GST under reverse charge mechanism, then the supplier should clearly mention the category under which it has been registered and also that "the liability of payment of GST is on the Recipient of Supply".

13.0 Tax Indemnity Clause

- 13.01 Vendor (along with its affiliates in India or overseas including any agent/ third party contractor or any other person appointed by such affiliates for the purpose of this agreement) agrees that it will be solely responsible for performing all compliances and making payments of all taxes (direct tax or indirect tax including but not limited to income-tax, transfer pricing, value added tax, SGST, CGST, IGST, UTGST, GST Compensation Cess custom duty, excise duty, Research and Development Cess, etc.), cesses, interest, penalties or any other tax/ duty/ amount/ charge/ liability arising either out of laws/ regulations applicable in India and overseas or because of a demand/ recovery initiated by any revenue authority under laws/ regulations applicable in India or overseas.
- 13.02 In case any tax liability (including but not limited to income-tax, transfer pricing, value added tax, SGST, CGST, IGST, UTGST, GST Compensation Cess custom duty, excise duty, Research and Development Cess, etc.), cesses, interest, penalties or any other tax/ duty/ amount/ charge/ liability becomes payable by Purchaser due to failure of the Vendor, or any of its affiliates in India or overseas including any agent/ third party contractor or any other person appointed by such affiliates for the purpose of this agreement, to comply with the relevant laws/ regulations applicable in India or overseas, Vendor undertakes to indemnify Purchaser for an amount equal to amount payable by Purchaser.
- 13.03 Further, Vendor undertakes to keep Purchaser indemnified at all times against and from all other actions, proceedings, claims, loss, damage, costs and expenses which may be brought against Purchaser or suffered or incurred by Purchaser and which shall have arisen either directly or

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indirectly out of or in connection with failure of The Vendor, or any of its affiliates in India or overseas including any agent/ third party contractor or any other person appointed by such affiliates for the purpose of this agreement, to comply with relevant obligations/ compliance under any law/ regulations applicable in India and overseas.

13.04 The parties agree to follow the following process in case any communication of demand, arising out non-compliance by Vendor (along with its affiliates in India or overseas including any agent/ third party contractor or any other person appointed by such affiliates for the purpose of this agreement), is received by Purchaser:

13.04.1 On Purchaser receiving any communication from a competent authority demanding tax liability (including but not limited to income-tax, transfer pricing, value added tax, SGST, CGST, IGST, UTGST, GST Compensation Cess custom duty, excise duty, Research and Development Cess, etc.), cesses, interest, penalties or any other tax/ duty/ amount/ charge/ liability, Purchaser shall, within 5 common working days from the date of receipt of such communication (save where the period to respond to the relevant authority is less than five days, in which case, as soon as reasonably possible) inform Vendor in writing of such communication.

13.04.2 Pursuant to receiving communication from Purchaser, Vendor shall suggest to accept the communication and pay the demand amount to the competent authority. In such an event, Vendor shall reimburse such amount paid to Purchaser within 5 working days from the date of payment by Purchaser to the competent authority.

13.04.3 If Vendor advises in writing and Purchaser agrees to dispute the demand, then Purchaser shall dispute the matter with competent authority as per due process prescribed under the regulations and Purchaser shall not pay the Tax Demand. In such scenario, cost of litigation including but not limited to Counsel cost, filing fees, other related charges, should be reimbursed by Vendor to Purchaser. Additionally, If any coercive steps of recovery are initiated by the department, then Purchaser would pay such amount (including by way of adjustment of refunds due to it) and the same would be reimbursed by Vendor within 5 working days from date of such recovery from Purchaser. Purchaser will take all necessary steps to avoid such recovery measures.

13.04.4 On determination of the demand through an Order issued by a Tribunal or any other similar Authority, by whatever name called, under any law applicable in India or overseas, if the demand or any part thereof becomes payable and is paid by Purchaser, then Vendor undertakes to reimburse such amount to Purchaser within 10 days from the date of payment. Alternatively, if on determination of the demand through an Order, no amount is payable by Purchaser then any refund arising to Purchaser due to such an Order shall be passed on to Vendor within 10 days from the date of receipt of refund.

14.0 The Micro, Small and Medium Enterprises (MSME)

14.01 If the SELLERS establishment is covered under the purview of The Micro, Small and Medium Enterprises Development Act, 2006 and its amendments, he shall declare so within the bid of its status failing which it will be presumed that it is a non-MSME unit. Also submit a copy of Udyog Aadhaar (UA) & Udyam Registration Number.

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15.0 Price Validity

15.01 All bids submitted shall remain valid, firm and subject to unconditional acceptance by BYPL Delhi for 150 days from the due date of submission. For awarded suppliers, the prices shall remain valid and firm till contract completion.

16.0 Performance Guarantee

16.01 To be submitted within twenty-eight (28) days from the date of issuance of the Letter of Intent/Award/RC. Supplier shall initially submit the PBG equivalent to 1% of RC Value (including GST) valid till RC validity period plus three months claim period. Upon receipt of the PBG by BYPL against RC, the EMD shall be released. Thereafter Supplier shall submit PBG on Purchase Order (PO) basis equivalent to 10% of the PO value (including GST) valid for a period of 24 months from the date of Commissioning or 30 months from the date of receipt, whichever is earlier plus 3 months claim period.

16.02 Bank guarantee shall be drawn in favour of BSES Yamuna Power Ltd as applicable. The performance Bank guarantee shall be in the format as specified by BYPL.

17.0 Forfeiture

17.01 Each Performance Bond established under Clause 10.0 shall contain a statement that it shall be automatically and unconditionally forfeited without recourse and payable against the presentation by BYPL of this Performance Bond, to the relevant bank referred to above, together with a simple statement that supplier has failed to comply with any term or condition set forth in the Contract.

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

18.0 Release

18.01 All Performance Bonds will be released without interest within seven (7) days from the last date up to which the Performance Bond has to be kept valid (as defined in Clause 16.0) except for the case set forth in Clause 22.0.

19.0 Defects Liability Period/Guarantee/Warranty

19.01 The bidder to Guarantee the materials / items supplied against any defect or failure, which arises due to faulty materials, workmanship or design for the entire defects liability period. The Defect liability period shall be 66 months from the date of receipt of each unit at store(s)/site(s).

19.02 If during the Defects Liability Period any GOODS are found to be defective, they shall be promptly replaced or rectified by BIDDER at its own cost (including the cost of dismantling and (reinstallation) on the instructions of BUYER and if removed from SITE for such purpose, shall be removed and re-delivered to SITE by BIDDER at its own cost.

20.0 Return, Replacement or Substitution

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20.01 BYPL shall give Supplier notice of any defective Commodity promptly after becoming aware thereof. BYPL may at its discretion elect to return defective Commodities to Supplier for replacement, free of charge to BYPL, or may reject such Commodities and purchase the same or similar Commodities from any third party. In the latter case BYPL shall furnish proof to Supplier of the cost of such substitute purchase. In either case, all costs of any replacement, substitution, shipping, labour and other related expenses incurred in connection with the return and replacement or for the substitute purchase of a Commodity hereunder should be for the account of Supplier. BYPL may set off such costs against any amounts payable by BYPL to Supplier. Supplier shall reimburse BYPL for the amount, if any, by which the price of a substitute Commodity exceeds the price for such Commodity as quoted in the Bid. BUYER at its sole discretion shall have the opinion to dispose the material or GOODS so rejected and not taken back within forty-five days from the date of intimation of rejection.

21.0 Effective Date of Commencement of Contract

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

22.0 Time – The Essence Of Contract

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

23.0 The Laws and Jurisdiction of Contract:

23.01 The laws applicable to this Contract shall be the Laws in force in India.

23.02 All disputes arising in connection with the present Contract shall be settled amicably by mutual consultation failing which shall be finally settled as per the rules of Arbitration and Conciliation Act, 1996 at the discretion of Purchaser. The venue of arbitration shall be at Delhi in India

24.0 Events of Default

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

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

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25.0 Consequences of Default.

- (a) If an Event of Default shall occur and be continuing, BYPL may forthwith terminate the Contract by written notice.
- (b) In the event of an Event of Default, BYPL may, without prejudice to any other right granted to it by law, or the Contract, take any or all of the following actions;
 - (i) present for payment to the relevant bank the Performance Bond;
 - (ii) purchase the same or similar Commodities from any third party; and/or
 - (iii) recover any losses and/or additional expenses BYPL may incur as a result of Supplier's default.

26.0 Penalty for Delay

- 26.01 If supply of items / equipments is delayed beyond the supply schedule as stipulated in purchase order then the Supplier shall be liable to pay to the Purchaser as penalty for delay, a sum of 1% (one percent) of the basic (ex-works) price for every week delay of undelivered units or part thereof for individual milestone deliveries.
- 26.02 The total amount of penalty for delay under the contract will be subject to a maximum of ten percent (10%) of the basic (ex-works) price of total undelivered units.
- 26.03 The Purchaser may, without prejudice to any method of recovery, deduct the amount for such damages from any amount due or which may become due to the Supplier or from the Performance Bond or file a claim against the supplier.
- 26.4 If Penalty is levied as per the Order terms & conditions; BYPL will raise Invoice of the penalty amount along with applicable GST rates. Accordingly, after setting off the penalty Invoice amount, net payment shall be made.

27.0 Variation in Taxes, Duties & Levies

- 27.1 The total order value shall be adjusted on account of any variations in Statutory Levies imposed by Competent Authorities by way of fresh notification(s) within the stipulated delivery period only. In case of reduction in taxes, duties and levies, the benefits of the same shall be passed on to BUYER.
- 27.2 No other Taxes, Duties & Levies other than those specified above will be payable by BUYER except in case of new Levies, Taxes & Duties imposed by the Competent Authorities by way of fresh notification(s) subsequent to the issue of PURCHASE ORDER but within the stipulated delivery period.
- 27.3 Notwithstanding what has been stated above, changes in Taxes, Duties & Levies shall apply only to that portion of PURCHASE ORDER not executed on the date of notification by Competent Authority. Further, changes in Taxes, Duties & Levies after due date of Delivery shall not affect PURCHASE ORDER Terms and Value.

27.4 PURCHASE ORDER value shall not be subject to any variation on account of variation in Exchange rate(s).

28.0 Taxes & Duties on raw materials & bought out components

28.01 Taxes & Duties on raw materials & bought out components are included in Order Value and are not subject to any escalation or variation for any reason whatsoever.

28.02 Taxes & Duties on raw materials & bought out components procured indigenously are included in Order Value and are not subject to any escalation or variation for any reason whatsoever.

29.0 Force Majeure

29.01 General

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

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

29.02 Specific Events of Force Majeure subject to the provisions of above clause, Events of Force Majeure shall include only the following to the extent that they or their consequences satisfy the above requirements :

- (i) The following events and circumstances :
 - a) Effect of any natural element or other acts of God, including but not limited to storm, flood, earthquake, lightning, cyclone, landslides or other natural disasters.
 - b) Explosions or fires
- (ii) War declared by the Government of India.
- (iii) Dangers of navigation, perils of the sea.

Note: Causes like power breakdown/strikes, accidents etc do not fall under Force Majeure.

29.03 Notice of Events of Force Majeure If a force majeure event prevents a party from performing any obligations under the Contract in part or in full, that party shall:

- i) Immediately notify the other party in writing of the force majeure events within 7(seven) working days of the occurrence of the force majeure event
- ii) Be entitled to suspend performance of the obligation under the Contract which is affected by force majeure event for the duration of the force majeure event.
- iii) Use all reasonable efforts to resume full performance of the obligation as soon as practicable
- iv) Keep the other party informed of all such efforts to resume full performance of the obligation on a regular basis.

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

29.04 Mitigation of Events of Force Majeure Each Party shall:

- (i) Make all reasonable efforts to prevent and reduce to a minimum and mitigate the effect of any delay occasioned by an Event of Force Majeure including recourse to alternate methods of satisfying its obligations under the Contract;
- (ii) Use its best efforts to ensure resumption of normal performance after the termination of any Event of Force Majeure and shall perform its obligations to the maximum extent practicable as agreed between the Parties; and
- (iii) Keep the other Party informed at regular intervals of the circumstances concerning the event of Force Majeure, with best estimates as to its likely continuation and what measures or contingency planning it is taking to mitigate and or terminate the Event of Force Majeure.

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

29.06 Termination for Certain Events of Force Majeure. If any obligation of any Party under the Contract is or is reasonably expected to be delayed or prevented by a Force Majeure event for a continuous period of more than 3 months, the Parties shall promptly discuss in good faith how to proceed with a view to reaching a solution on mutually agreed basis. If a solution on mutually agreed basis cannot be arrived at within a period of 30 days after the expiry of the period of three months, the Contract shall be terminated after the said period of 30 days and neither Party shall be liable to the other for any consequences arising on account of such termination.

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

- i. Bidder fails to complete execution of works within the approved schedule of works, terms and conditions.
- ii. In case the Bidder commits any Act of Insolvency, or adjudged insolvent
- iii. Has abandoned the contract
- iv. Has failed to commence work or has suspended the progress of works
- v. Has failed to proceed the works with due diligence and failed to make such due progress

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

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

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

29.10 Severability

If any provision of this Agreement is or becomes invalid or unenforceable by the courts of any jurisdiction to which it is subject, such invalidity or unenforceability shall not prejudice the remaining provisions of this Agreement, which shall continue in full force and effect.

30.0 Transfer and Sub-Letting

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

31.0 Recoveries

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

32.0 Waiver

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

33.0 Indemnification

33.01 Notwithstanding contrary to anything contained in this RFQ, Supplier shall at his costs and risks make good any loss or damage to the property of the Purchaser and/or the other Supplier engaged by the Purchaser and/or the employees of the Purchaser and/or employees of the other Supplier engaged by the Purchaser whatsoever arising out of the negligence of the Supplier while performing the obligations under this contract.

34.00 Termination for convenience of Purchaser

34.1 Purchaser at its sole discretion may terminate the contract by giving 30 days prior notice in writing or through email to the Supplier. Purchaser shall pay the Supplier for all the supplies/ services rendered till the actual date of contract termination against submission of invoice by the Supplier to that effect.

34.2 Payment of such compensation is the sole and exclusive remedy of the supplier for termination of this Agreement by Purchaser hereunder and the supplier shall not be entitled to, and hereby waives, claims for lost profits and all other damages and expenses.

34.3 Supplier hereby agrees that substantiation for settlement of any claims submitted by supplier shall be complete and in sufficient detail to allow Purchaser's evaluation. Terminate all sub contracts except those have been/ to be assigned to the Purchaser all rights, titles and benefits of the Suppliers/Vendor as the case may be.

35.00 Documentation

35.01 The Bidder shall procure all equipment from BYPL approved sources as per attached specifications. The Bidders shall submit copies of Material/Type Test Certificates, O&M Manuals, and Approved &

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As-built drawings, related to various equipment. The Bidder's shall ensure the strict compliance with the specifications and Field Quality Procedures issued by BYPL.

36.0 Transit Insurance

36.01 Transit Insurance shall be arranged by the Bidder.

36.02 DAMAGE / LOSS OF CARGO IN TRANSIT: Vendor shall be solely responsible for coordinating with the concerned insurance company for procuring insurance for material and/or Goods, processing claim lodgment and settlement. Notwithstanding the insurance cover, in case of loss / damage to material and/or Goods, in any manner and for any cause whatsoever, Vendor shall cause the damaged cargo to be replaced and delivered to the Purchaser with new material and/or Goods within 30 days of such loss / damage. The Vendor shall be solely responsible for all expenses in relation to the replacement and delivery in such circumstances.

37.0 Limitation of Liability

37.01 Except for willful misconduct or gross negligence, neither Party shall be liable to the other Party for loss of use of any Works, loss of profit, loss of any contract or any other indirect or consequential loss or damage which may be suffered by the other Party in connection with the Contract. The total liability of the Supplier to the Purchaser under the Contract shall not exceed the Contract Value. Except that this Clause shall not limit the liability of the Supplier:

- (a) In cases of fraud, willful misconduct or illegal or unlawful acts, or
- (b) In cases of acts or omissions of the Supplier which are contrary to the most elementary rules of diligence which a conscientious Supplier would have followed in similar circumstances.

38.0 Liability of Suppliers

38.1 Subject to the due discharge of its obligations under the Contract and except in case of gross negligence or willful misconduct on the part of the Supplier or on the part of any person acting on behalf of the Supplier, with respect to any loss or damage caused by the Supplier to the Purchaser's property or the Site, the Supplier shall not be liable to the Purchaser for the following:

- (a) For any indirect or consequential loss or damage; and
- (b) For any direct loss or damage that exceeds:
 - (i) The total payments made and expected to be made to the Supplier under the Contract including reimbursements, if any; or
 - (ii) The insurance claim proceeds which the Supplier may be entitled to receive from any insurance purchased by the Supplier to cover such a liability, whichever is higher.

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

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

38.4 Notwithstanding anything contained in the Contract, including but not limited to approval by the Purchaser of any drawings, documents, vendor list, supply of information or data or the participation of the Purchaser in any meeting and/or discussion or otherwise, shall not absolve the Supplier from

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any of its liabilities or responsibilities arising in relation to or under the Contract.

39.0 Intellectual Property Rights and Royalties

- 39.1 The Supplier shall indemnify the Purchaser and the Purchaser's Representative from and against all claims and proceedings on account of infringement (or alleged infringement) of any patent rights, registered designs, copyright, design, trademark, trade name, know-how or other intellectual property rights (hereinafter collectively referred to as "**Intellectual Property Rights**") in respect of the Works, Supplier's Equipment, machines, Works method, Plant, Materials, or anything whatsoever required for the execution of the Works and from and against all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto. In the event of infringement of any Intellectual Property Rights of any third party as a result of the execution of the Works (or any part thereof) by the Supplier, the Supplier shall rectify, modify or replace, at its own cost, the Works, Plant or Materials or anything whatsoever required for the Works so that infringement ceases to exist or, in the alternative, the Supplier shall procure necessary rights/ licenses from the affected third party so that there is no infringement of Intellectual Property Rights.
- 39.2 The Supplier shall be promptly notified of any claim made against the Purchaser. The Supplier shall, at its cost, conduct negotiations for the settlement of such claim, and any litigation or arbitration that may arise from it. The Purchaser or the Purchaser's Representative shall not make any admission which might be prejudicial to the Supplier, unless the Supplier has failed to take over the conduct of the negotiations, litigation or arbitration within a reasonable time after having been so requested. In the event of Supplier failing to act at the Purchaser's Representative's notice, the Purchaser shall be at full liberty to deduct any such amount of pending claim from any amount due to the Supplier under the Contract or any other contract and the balance portion of claim shall be treated as debt due from the Supplier.
- 39.3 All Intellectual Property Rights in respect of any Plant, Materials, Drawings and Designs, plans, documents, specifications, data, materials, know how, charts, information, etc., provided to the Supplier by the Purchaser pursuant to this Contract for the execution of the Works, belongs to and shall continue to belong to the Purchaser and the Supplier shall not have any rights in the same other than the limited right for its use for the purpose of execution of the Works.
- 39.4 Intellectual Property Rights in respect of any Plant, Materials, Drawings and Designs, plans, calculations, drawings, documents, know-how and information relating to the Works which are proprietary to the Supplier and/ or its third party licensors ("**Supplier's IPR**") shall continue to vest with the Supplier and/ or its third party licensors and the Supplier shall grant and/ or procure from its third party licensors, at its own cost, a worldwide, perpetual, royalty free, non-exclusive license (along with the right to sub-license) to use and reproduce such Supplier's IPR for the use, operation, maintenance and repair of the Works.
- 39.5 If any patent, trademark, trade name, registered design or software is developed by the Supplier or its SubSupplier specifically for the execution of the Works, then all Intellectual Property Rights in respect of such design, trademark, trade name or software shall be the absolute property of the Purchaser and shall not be utilized or retained by the Supplier (or its SubSuppliers) for any purpose other than with the prior written consent of the Purchaser.
- 39.6 If the Supplier uses proprietary software (whether customized or off the shelf) for the purpose of storing or utilizing records in relation to the Works, the Supplier shall obtain at its own expense, the grant of a worldwide, royalty-free, perpetual licence or sublicense (including the right to sublicense) to use such software, in favour of the Purchaser provided that the use of such software under the licence or the sublicense may be restricted to use any such software only for the design, construction,

reconstruction, manufacture, installation, completion, reinstatement, extension, repair and operation of the Works or any part thereof.

- 39.7 If any software is used by the Supplier for the execution of the Works over which the Supplier or a third party holds pre-existing title or other rights, the Supplier shall obtain for the Purchaser, a worldwide, royalty free, perpetual license for the right to use and apply that software (together with any modifications, improvements and developments thereof).

40.0 Acceptance

- 40.01 Vendor confirms to have gone through the Policy of BYPL on legal and ethical code required to be followed by vendors encapsulated in the "Vendor Code of Conduct" displayed on the official website of BYPL (www.bsesdelhi.com) also, which shall be treated as a part of the contract/PO/WO. Vendor undertakes that he shall adhere to the Vendor code of Conduct and also agrees that any violation of the Vendor Code of Conduct shall be treated as breach of the contract/PO/WO. In event of any such breach, irrespective of whether it causes any loss/damage, Purchaser (BYPL) shall have the right to recover loss/damage from Vendor. The Contractor/Vendor hereby indemnifies and agrees to keep indemnified the Purchaser (BYPL) against any claim/litigation arising out of any violation of Vendor Code of Conduct by the Contractor/Vendor or its officers, agents & representatives etc.
- 40.02 Acceptance of the CONTRACT implies and includes acceptance of all terms and conditions enumerated in the CONTRACT in the technical specification and drawings made available to Contractor consisting of general conditions, detailed scope of work, detailed technical specification, detailed equipment drawing and complete scope of work.
- 40.03 Contractor and Company contractual obligation are strictly limited to the terms set out in the CONTRACT. No amendments to the concluded CONTRACT shall be binding unless agreed to in writing for such amendment by both the parties.
- 40.04 We expect your services and supplies are aligned to our Vision, Mission and Values. Please refer to the following link to know about our Vision, Mission and Values; <https://www.bsesdelhi.com/web/bypl/about-bses>.

**GENERAL CONDITIONS OF CONTRACT
(GCC- INSTALLATION)**

BIDDERS

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GENERAL CONDITIONS OF CONTRACT (GCC)- INSTALLATION WORKS

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

This agreement is entered into between BSES YAMUNA POWER LIMITED, having its registered office at Shakti Kiran Building, Karkardooma, New Delhi 110032, Website: www.bsesdelhi.com and, to be hereinafter termed as "BYPL" which term shall, unless excluded by or repugnant to the context, include its successors and permitted assigns, on the first part and selected bidder to be hereinafter called as "CONTRACTOR", which term shall, unless excluded by or repugnant to the context include its successors and permitted assigns, on the second part.

WHEREAS:

BYPL is a company engaged in distribution and supply of Electricity and Energy and operates and maintains electrical distribution network in East & Central Circles of Delhi.

BYPL is desirous of appointing a service provider for setting up a complaint centre, to cater to the demands of BYPL in respect of repair and installation of 1.1 & 11 KV Cable Joints and Termination in BYPL area.

AND WHEREAS CONTRACTOR has agreed to be appointed as Service Provider, to set up and operate a Complaint Centre for this purpose. NOW it is hereby agreed between the parties as under:-

1. DEFINITIONS and INTERPRETATION:

The following terms shall have the following meanings:

1.1 "Company": means BSES Yamuna Power Ltd, a company incorporated under the Companies Act 1956 and having its office at BSES Yamuna Power Limited having its office at Shaktikiran Building, Karkardooma, Delhi -110032, which expression shall include its authorized representatives, agents, successors and assigns.

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

1.3 "Rate": The unit rates for the work to be carried out at site shall be as per finalized unit rates through tender. The finalized rates shall be firm for the entire duration of work to be carried out by the Contractor under the rate contract and are not subject to escalation for any reason whatsoever. The Invoice of the Contractor will be processed as per the actual work done and the quantities of each items performed by the Contractor as per the site requirement to be certified by Engineer In-charge.

1.4. CONTRACT SPECIFICATION: The terms "CONTRACT Specification" shall mean the Technical specification of the work as agreed by you and description of work as detailed in Annexure-I enclosed herewith and all such particulars mentioned directly/referred to or implied as such in the contract.

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

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

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1.7 PRIORITY OF CONTRACT DOCUMENTS:

The several documents forming the Contract are to be taken as mutually explanatory of one another, but in case of ambiguities or discrepancies, the same shall be explained and adjusted by the Employer, who shall thereupon issue to the Contractor, instructions thereon. In such event, unless otherwise provided in the Contract, the priority of the documents forming the Contract shall be as follows:

- 1.1. SAP Work Order duly acknowledged by Contractor
- 1.2. Price Schedule
- 1.3. Special Condition of Contract
- 1.4. Technical specification and Tender Drawing
- 1.5. Erection Conditions of Contract
- 1.6. General Conditions to the Contract

2. EXAMINATION OF SITE AND LOCAL CONDITIONS:

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

3. LANGUAGE AND MEASUREMENT:

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

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

4. SCOPE OF WORK:

The scope of work of the contractor shall be "setting up a Complaint Centre to cater to the demands of BYPL, in respect of repair and installation of 1.1KV and 11KV Cables Joints and Termination.

The detailed scope of work shall be as under:

4.1. The contractor shall provide services for establishing a 24x7 Call Centre for attending to complaint calls, guiding BYPL in detection of cable fault and repairing the cable. The complaint will be registered 24 hours a day. Work for the complaint registered between 12 O'clock at night and up to 8 AM in the morning shall commence at 8 AM on the same day. However, in case of emergency and on specific request from BYPL, work shall be carried out in the night as well, and the CONTRACTOR shall endeavour on best effort basis to attend to the fault forthwith.

4.2. For the above the contractor shall establish a 24x7 Call Centre. The location of the Call Centre shall be in BYPL area. Telephone Nos. of the Call centres shall be made available by the contractor to BYPL. Telephone Nos. of all concerned officers pertaining to each zone of BYPL shall be made available by BYPL to the contractor. CONTRACTOR shall establish the Call Centre with Telephone connection, 2 Nos. computers with LAN/WAN, with multi function printer, accessories and stationery. Also, CONTRACTOR shall arrange call logging and Data entry operators.

CONTRACTOR shall depute minimum one supervisor, and adequate numbers of LV and HV Jointers per circle. The Contractor must at all times maintain an adequate workforce for the uninterrupted performance of all tasks defined within this contract. The contractor shall provide all personnel, equipment, supplies, facilities, transportation, tools, materials, supervision, and other items necessary to perform tasks at site defined within this contract for 24 hour uninterrupted service.

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All the field testing and Jointing Equipment(s) and devices shall be calibrated from NABL approved Lab. Valid Calibration Certificate Original/Copy is to be provided on yearly basis and one copy of calibration certificates is to be submitted to the O/o Head O&M.

4.3. Call shall be made at the call centre of CONTRACTOR by authorized Assistant Manager (AM) / Engineer In charge (E-I-C) of BYPL, informing about the occurrence of cable fault. All further coordination related to the reported fault shall be made with the concerned AM/E-I-C of the area concerned. A list of the authorized AM's/E-I-C's shall be provided by BYPL to CONTRACTOR.

4.4. BYPL will ensure that the feeder/cable on which the fault has been reported is isolated and safeguarded for fault location. The cable so isolated and safeguarded shall be discharged by the AM/E-I-C in the presence of CONTRACTOR representative and handed over to CONTRACTOR representative along with PTW (Permit to work). All equipments in the sub-station, other than the one taken over shall be treated as live.

4.5. After location of the fault is known, and BYPL has taken due permissions from the Municipal Corporation of Delhi (MCD) and/or Public Works Department (PWD) and/or Traffic and/or Local police and /or such other agencies, as may be necessary in this regard, CONTRACTOR shall commence the work for excavation at the site.

4.6. Identification of cable for spiking shall be done by BYPL but cable spiking/puncturing shall be done by contractor as per the direction and in presence of BYPL E-I-C.

4.7. If for any reason, CONTRACTOR can not do jointing on the same day as the cable is cut, then the ends of cable shall be sealed by CONTRACTOR to prevent entry of moisture. Heat shrinkable Cable end caps shall be provided by BYPL for sealing the cable. Contractor may also take any other suitable measures to cover the cable end in the event of non-availability of cable end caps with BYPL.

4.8. After isolation of the fault by CONTRACTOR, the insulation resistance of the cable shall be measured to verify its healthiness as per the specification given in ANNEXURE- B. The test shall be done using 2.5/5KV Insulation Resistance (IR) tester for HV cable and 500V Insulation Resistance (IR) tester for LT cable. Moisture test shall be done by CONTRACTOR for HT cable to check the presence of moisture. If the result of the Insulation Resistance (IR) test is unsatisfactory then an HV test shall be carried out on the cable. Equipments and materials for HV tests, Insulation Resistance (IR) tester and moisture checking shall be arranged by CONTRACTOR. CONTRACTOR shall install cable accessories on healthy cables as per the specification in ANNEXURE-B. However, if in an emergency situation, BYPL would like CONTRACTOR to carry out the jointing/termination on cables with presence of moisture or having poor IR result, BYPL will not invoke the Guarantee clause or levy damages or take any consequential action for failure, if any. However, the reasons shall be duly recorded on the Job Card.

4.9. CONTRACTOR shall carry out the jointing of cables only after obtaining written clearance from BYPL Engineers. BYPL shall issue free of cost all the required materials to CONTRACTOR, including but not limited to cable pieces, cable jointing /terminating kits, Heat shrinkable end caps, mechanical connectors, special Kits for jointing dissimilar size metal cables, clamps, cleats, jumpers, parallel groove(PG) clamps, pipes and any other materials required to carry out the job. Any other incidental work including hand tools, Hydraulic crimping machine required for carrying out the jointing work shall be arranged by CONTRACTOR.

The material issued to the Contractor shall be in the custody of the Contractor who shall be fully responsible for the same. After completion of the works, the Contractor will reconcile the material. Any cost of material that is short or damaged/lost will be deducted from Associate bills/ deposits.

Individual joints/ terminations shall be properly tagged by contractor as per Tag provided in the kit clearly mentioning Breakdown ID/Scheme No/Shutdown Id, date of jointing/ termination on the tag and Jinter name for traceability. SOP for tagging of cable joints is attached as Annexure E.

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4.10. Installation of all joints and termination shall be carried out as per instruction manual. Non-standard kits or methods shall not be adopted by CONTRACTOR for any such work without prior written permission. Crimping of lugs and ferrules shall be carried out using Hydraulic crimping tools. CONTRACTOR shall deploy only trained and skilled jointers with the requisite knowledge of the job.

4.11. CONTRACTOR must authorize jointers and issue identity cards to its personnel deployed for execution of the assigned work in the various zones.

4.12. A record of all the faults attended shall be maintained in a computerized database format, approved by BYPL and shall be forwarded weekly/monthly basis as per annexure-I

4.13. Contractor should provide team within 2 hours from the call logged by E-I-C at call centre. Work for Digging/Excavation call should commence within 2 Hrs of call received

4.14. CONTRACTOR shall ensure that adequate resources of men and materials are deployed for each job and the work is completed within the target time as defined below. CONTRACTOR will adhere to the target period for different types of faults as detailed below:

11KV faults : 20 hours
LT faults : 17 hours

Timeline target will be calculated for cable restoration work as

T1: Time at which call is received from E-I-C at call centre.

T2: Time at which Back-filling/Removal of Debris is completed after jointing work

Timeline Target = T2-T1 Hrs.

However, if due to site conditions or factors beyond the control of BYPL and/or CONTRACTOR, the job is delayed, then the target date will be revised jointly by BYPL and CONTRACTOR.

The delay may, inter alia, be for any of the following reasons:

- a) Moisture in the cable due to which the excavation has to be extended.
- b) Cable/Excavation is very deep.
- c) Job is suspended due to external interference like Traffic Police, PWD, MCD or general public.
- d) Non- receipt of required material from BYPL.
- e) Any of the consents/ approvals not being granted or delayed by the relevant authorities upon application having been made or granted but ceasing to be in full force for the required period to carry out the job.
- f) Trench-less cable laying is done.
- g) Digging involved is in excess of 10 meters.

4.15. Identification of cable for spiking shall be done by BYPL but cable spiking/puncturing shall be done by contractor as per the direction and in presence of BYPL E-I-C, drawing & transportation of materials from the District stores, testing of cables before and after jointing, lying of cable piece for jointing, fixing of RCC Cable covers and plates, backfilling and other allied works include lighting, dewatering (dewatering pump to be provided by contractor wherever required), providing tents and related civil works. All labour for cable handling, pulling, laying and related works shall be in scope of CONTRACTOR.

ETC of RFID Ball (Active/Passive) for all kinds of straight through joints is included in jointing scope including Issuing, transportation from store to site.

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Smartphones to be given to jointer by bidder for taking photographs & uploading in "BSES Faulty mobile application".

4.17. DIGGING & EXCAVATION

CONTRACTOR scope of work will be:

- a) Carrying out the necessary excavation to uncover the faulty cable portion /accessory and also uncover the required cable length for the jointing /termination installation.
- b) Removing the faulty section.
- c) Testing the installation involving the cable and accessories, if necessary and applicable.
- d) Transportation of the faulty section back to the Divisional Stores with Tag clearly mentioning the Breakdown ID/FLC ID, Date of Fault & Cable Section.
- e) Transporting the required material(s) and equipment(s) for repairing the faulty cable at the site.
- f) Carrying out the installation of cable, Hume/GI/HDPE pipe, Joint markers, providing Lighting (where necessary), provide for the removal of the subsoil water, providing tents etc. for the safe installation of the kits. Dewatering pump to take out the water stored in joint pit due to seepage from any pipe or nala or rain in the contractor's scope.
- g) Hi- potential testing / Insulation Resistance (IR) testing of both the cable section under cable fault before start of cable jointing work.
- h) Burying the cable and accessories that were excavated after providing the cable covers and sand filling, bricks etc.
- i) Submitting a report to BYPL of the work done and fault location at periodic intervals, as may be mutually agreed with BYPL.
- j) Location of fault upon receiving intimation from BYPL as per para 4 above.
- k) Cable laying more than 6 meters and up to 30 meters shall be approved by concerned Circle Head. In special cases where cable laying is in excess of 30 meters, the same will not be covered under the scope of this rate contract. Such cases of cable laying including jointing will be carried out by agency under separate scheme which will be prepared by concerned manager.
- l) Use of JCB/ Pneumatic Hammer shall be done only after prior approval of respective Circle Head.
- m) Rates for cable laying include overhead cable laying as well.
- n) Removal & disposal of surplus malba is also under contractor's scope.
- o) The contractor shall provide petty material such as old cloths, waste cotton, gas cylinder, hexa blade, kerosene oil, amry papers, brick and sand to cover the joints & Cable.
- p) Contractor has to provide pit dimension and total excavated area in square meter to E-I-C.

4.18. CONTRACTOR shall make necessary arrangements for all facilities such as temporary lighting, sanitary installation, fire protection, disposal of waste, etc. Necessary warning lights shall be arranged by CONTRACTOR on trenches, which have to be kept open overnight. The barricading of the sites shall be done by CONTRACTOR as required at site. BYPL will not take any responsibility if any accident occurred in open trench where proper barricading & safety zone were not provided by contractor. The entire trench along the length shall be barricaded with corrugated sheets printed with red and white strips as per specification. The electricity for lighting can be taken from any of the installations of BYPL if possible.

Contractor must provide BYPL approved PPE's (Personal Protective Equipment-Helmet/Shoes/Reflective Apron/Ladder) to its staff during execution of digging/back filling and related scope of work.

17. BYPL's Responsibilities will include:

- a) BYPL will assist CONTRACTOR in identifying the cable routes to the extent possible, in the areas allotted to CONTRACTOR.
- b) Inform CONTRACTOR about the fault occurrence.
- c) Isolate and safeguard the cable and hand over the same to CONTRACTOR along with the PTW.
- d) Issuing a "Cable Fault Repair Report" in the format as issued hereto within 24 hours of the completion of each job.
- e) BYPL will issue all the required materials, for making a satisfactory completion of all jointing jobs based on the requisition made by the CONTRACTOR. Contractor's scope is to draw the material from the District Stores of BYPL. However, if required, materials can be drawn in advance from the zonal/Main Stores to meet exigencies.
- (g) BYPL shall, if required, allocate storage space at various locations to store materials required for carrying out the cable repair work.
- (h) Any work which is not covered under the scope of this agreement shall be carried out only based on the specific written request of BYPL and on the payment terms to be mutually agreed between the Parties.

4.19. REPAIR WORK:

- (a) Identification of cable for spiking shall be done by BYPL but cable spiking/puncturing shall be done by contractor as per the direction and in presence of BYPL E-I-C. Contractor will provide all assistance for spiking the cable.
- (b) Further BYPL reserves the right of engaging any other agency or resorting to any other suitable means to carry out these jobs in the event of workmen of CONTRACTOR refusing to work, going on strike or for any other reason likely to delay the fault repair inordinately. Differential of repair expenses, if any, will be deducted from Contractor's bill to the extent not exceeding the amount which CONTRACTOR would have billed for the said work on the basis of the rates and other terms & conditions of this Agreement. Prior to doing so, BYPL will call upon CONTRACTOR by giving a notice in writing to carry out the job within half the time set.

4.20. RECORD KEEPING:

CONTRACTOR will maintain the following computerized records:

- (a) Details of the complaints received. (Annexure-I)
- (b) Monthly utilization statement & detailed job cards for the repairs undertaken as per ANNEXURE I & II
- (c) Job card for each joint/end termination with details like Breakdown ID/Shutdown Id/Scheme No, date of joint, jointer name, feeder name, substation name, and geographical coordinates derived from GIS handheld device shall be filled. The Job card shall be signed off by respective Supervisor/jointer, Engineer In Charge, Circle head-FLC & Circle head-O&M of BYPL. Copy of the same shall be attached to invoice and one copy shall be sent by O&M to BYPL GIS team for plotting on network drawing. GIS handheld devices shall be arranged by contractor.

4.21. HUMAN RESOURCES:

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i) CONTRACTOR personnel will meet their own expenses when deputed for the execution of work. At no point of time during the currency of contract, CONTRACTOR employees shall press upon BYPL for employment, wages and allowances or any other related matter, payments etc.

ii) CONTRACTOR shall bear all expenses / costs to be incurred towards salary, allowance, perks travelling allowances, advances, insurance, safety measures, security, transport and all other misc. expenses etc. of their employee / workmen during the currency of this Agreement. Also CONTRACTOR shall be solely responsible for making payment for hospitalization, compensation thereof in case of any accident of its own personnel subject to the Liabilities clause.

iii) The CONTRACTOR will ensure that none of their people is engaged in any unlawful activities subversive of the COMPANY's interest failing which suitable action may be taken against the CONTRACTOR as per the terms and conditions of this tender.

4.22. GEOGRAPHICAL COVERAGE:

CONTRACTOR will independently establish one Complaint Centre for each circle (one for East circle & one for Central circle) or any division/area as allocated by BYPL.

4.23. Special Conditions of Contract:

a) Photograph of each joint to be uploaded in 5 Stages for 11 KV & above cables as per the SOP. If photos can't be uploaded from site due to any reason, then contractor has to submit the photographs of that site without fail.

5. RATES:

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

Rate for all the extra items shall be mutually negotiated and fixed on the basis of cost of materials, consumables, labour and T&P expenses plus overhead expenses and profit upto a maximum of 10%.

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

6. TAXES AND DUTIES:

All taxes, duties, turnover tax, labour cess etc. (except GST) leviable by State or Central Governments or local bodies shall be to Contractor's account. Any taxes and duties as may be levied by the government in future during the currency of this Agreement shall be borne by BYPL. Income tax / WCT will be deducted at source from the invoices of CONTRACTOR as applicable. CONTRACTOR shall furnish their GST number.

GST on actual shall be paid on submission of GST Registration and self declaration on your letter head stating that you have deposited/or will deposit the Tax as per the applicable tax laws.

The total Order Value shall be adjusted on account of any variations in Statutory Levies imposed by Competent Authorities by way of fresh notification (s) within the stipulated delivery period only. However, in case of reduction in taxes, duties and levies, the benefits of the same shall be passed on to BUYER.

7. EFFECTIVE DATE AND VALIDITY:

This Agreement shall become effective for all purposes and intents for a period of 2 years from the date of LOI/RC. After expiry of the validity period of this Agreement, it may be extended/ renewed/ replaced for

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such further period on such terms and conditions as may be mutually agreed to between BYPL and CONTRACTOR. If no agreement is reached between the parties before the expiry of this Agreement, the said Agreement shall automatically lapse after the expiry date.

IN WITNESS WHEREOF the parties through their authorized signatories have caused this Agreement to be executed on the day, month and year first above written.

8.0 DOCUMENTATION:

CONTRACTOR shall submit the following documents to the O/o Head Distribution, within a week of commencement of the agreement:

- i.) Copy of the document showing legal status of the firm along with names and addresses of the Senior Management personnel
- ii.) Copy of the document showing allotment of PF code number by RPFC office.
- iii.) Copy of insurance policy obtained to comply with the provision of the Workman compensation Act, 1923.
- iv.) Nothing contained herein shall limit the nature of documents that BYPL may require CONTRACTOR to submit to BYPL.

9. CONTRACT PERFORMANCE BANK GUARANTEE:

CONTRACTOR shall submit Performance Bank Guarantee for an amount of Rs. 10,00,000/- (Rupees Ten Lakhs only) valid up to 24 months from the effective date of this agreement plus 3 (three) months towards claim period.

The Bank guarantee shall be submitted as per Company's format (Appendix I) and from any scheduled Bank approved by Company.

10. TERMS OF PAYMENT:

CONTRACTOR will raise invoices on a monthly basis for the work executed which will be verified by the respective area Manager. All certified bills should be sent to respective Circle Heads (O&M) for system verification before submitting to finance department.

100% payment will be released to contractor on monthly basis immediately after submission and verification of duly certified invoices at VSC, BYPL, Karkardooma Office along with the work completion certificates, and monthly MIS. The work completion certificate (Job Card) should be issued by concerned AM/E-I-C by certifying that the work has been completed in full satisfaction of all relevant clauses applicable under the work order and all the documents in support of the certification shall be enclosed. The concerned AM/E-I-C of BYPL shall sign the new job card within 24 hours of the work completion which consists following:

Filling of all the following fields in the Job cards for cable joints is must for each job performed by the agency in BYPL.

1. The new Job Card has provision for recording cross-reference of Fault ID/Breakdown ID/Shutdown ID (generated by IOMS), which is mandatory.

Exceptions where Fault ID/ Shutdown ID is not generated, approval of Head (O&M) is required.

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2. Cross reference of Job Card No is to be recorded on the corresponding cable fault screen in OMS.
3. Progressive certification is required by the B/D Maintenance Engineer during close of his shift.
4. In addition to certification by the Maintenance Engineer, the Job Card has to be certified by the Shift-in-Charge in which the job is completed.
5. Geographical coordinates derived from GIS handheld device shall be filled in the Job Card. The Job card shall be signed off by respective jointer/Supervisor, Engineer In Charge & Divisional Head of BYPL. Copy of the same shall be attached to invoice and one copy shall be sent by O&M to BYPL GIS team for plotting on network drawing.
6. Duration for usage of JCB/Jack Hammer/Pneumatic Hammer along with supporting photographs at site if used for cable restoration shall also be part of Job Card.

11. GUARANTEES:

All CONTRACTOR installations done by CONTRACTOR jointers or CONTRACTOR authorized representatives during the currency of this agreement shall be guaranteed for good performance for a period of 5 years for HT 11 KV Joints or Terminations and 2 years for LT Joints and Terminations from the date of installation. Individual Joints/Terminations shall be properly tagged by Contractor clearly mentioning date of Jointing/Termination on the Tag.

In the event of any failure of the joints or terminations due to poor workmanship or design or manufacturing defects, then CONTRACTOR shall replace such joints and termination and make the joint and terminations including excavation and restoration to BYPL free of cost.

Failure within guarantee period (GP) will result in following deduction(s):-

- I. Deduction of all expenses incurred for excavation work carried for fault restoration.
- II. Reimbursement of cable accessories failed in GP to Main Stores, BYPL within 30 days after same is informed to contractor. If contractor fails to reimburse within stipulated time, financial deduction for Cable accessories cost shall be deducted by BYPL.

Monthly joints failure analysis has to be carried out the by contractor after collecting the failed joints and analysing the same in the presence of BYPL Executives. Report on the same has to be signed and submitted. Report of the previous month is to be submitted with the subsequent month bills baring which the joints would be deemed to have failed in the guarantee period.

12. LIQUIDATED DAMAGES:

The jointing work shall be completed within the stipulated time as defined. If the work is not completed within the stipulated period of the Agreement, CONTRACTOR shall liable to pay the liquidated damages for any delay beyond the time mentioned. BYPL shall recover liquidated damages @ 0.5% per hour per job, subject to a maximum of 5 % per job amount involved (basic order value of each job on each job card basis).

13. SUB-CONTRACTING / SUBLETTING:

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

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

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

14. BILL SUBMISSION PROCEDURE:

All bills shall be submitted to the Engineer In charge / Package Engineer for certification. Bills shall be complete in all respect including ESI / HR compliance, Quality compliance, HSE compliance, Store compliance, Finance compliance, etc. An established procedure is followed at site. Incomplete bills / invoices will not be considered for processing payments.

15. POWER TO WITHHOLD PAYMENT BY EMPLOYER:

Employer shall have power to withhold payment of RA Bill in full or in parts for the reason of non compliance of major contract terms and conditions such as quality of work, progress of work etc as per the discretion of Engineer In Charge.

Such withholding of payment neither relieves the contractor to execute the work with due diligence and speed, nor entitle contractor to claim any interest, loss of anticipated profit, etc there on. All the compliances are to be done by the Contractor before next RA bill and hold amount to be released. In case contractor is not able to do the compliance before next RA bill such hold amount shall be released as and when such compliances are fulfilled to the satisfaction of Employer.

If the work is not performed in strict accordance with the contract ,or if the work of any other contract between the contractor herein and the Employer is not performed in strict accordance with its terms ,or if the Employer has a claim against the contractor herein for any other reason whatsoever ,or if any claim ,just or unjust (including claims for wrongful death and for injuries to person property), which arises out of the performance of work is made against the Employer, the Employer shall have the right to withhold out of any payment, final or otherwise, such sums as the Employer may deem ample to protect it against delays or loss or to assure the payment of such claims.

Deduction of Defective Work as Alternative to Requiring Corrections: If the Employer deems it inexpedient to require the Contractor to Correct Work damaged or not done in accordance with the Contract, an equitable deduction from the Contract Price shall be made by agreement between the Contractor and Employer. In the event of failure of said parties to reach an agreement, the amount to be so deducted shall be settled in accordance with the procedure hereinafter provided for the settlement of disputes. Until such settlement, the Employer may withhold such sum as it deems just and reasonable from monies, if any, due the Contractor.

16. CLEANLINESS:

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

17. ADDITIONAL PENALTIES OF CONTRACT:

I. Penalty for Non Submission of Bills with documents: Contractor will raise invoice once a month & Maximum of 20 days from the end of month will be given for submission of invoices to Vendor Support Cell (VSC). (15 days to contractor+5 days for invoice verifications). A penalty of 2% invoice value will be imposed for delay every week up to a maximum deduction of 10% for delay attributable to the contractor.

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II. Tag with each Kit for traceability shall be installed having required data like jointing date & jointer name. Failing to comply shall have penalty of Rs 10,000/- per case to be levied by the Engineer In Charge.

III. Quarterly MIS & RCA of all the failed joints be submitted within 15 days of the quarter closing. Failing to comply; all the payments shall be put on Hold till submission.

IV. Penalty: A penalty of 2.5% of bill amount shall be levied in each case of non-compliance of safety practices and site cleanliness.

V. Penalty Clause for joints & terminations failed under warranty - (due to poor workmanship or due to any manufacturing defect). Penalty process chart is attached in appendix. This penalty will be in addition to the replacement of faulty joint with two single joints or termination as per site requirement along with digging and service charges per instance.

Penalty for Joints & Terminations which are being failed under warranty period is as below:

Sr No	Failures per Month	Penalty
1	11 KV Joints & Terminations	-5,000 INR per failure on all joint failed

18. SAFETY CODE:

CONTRACTOR shall ensure adequate safe conditions and ensure safety precautions at Site as required under applicable laws and shall be solely and entirely responsible for the complete safety of its workmen as well as other workers at site and premises during execution of contract.

CONTRACTOR shall also obtain accident liability insurance at its own cost for its employees and pay compensation on account of injury, fatal or otherwise due to accident during service and shall indemnify BYPL against any such claim.

BYPL shall ground and lock the feeder on which the joint/termination work is carried out and hand over the PTW and Keys to CONTRACTOR. BYPL shall ensure that the feeder is not charged till the time PTW and Keys are returned to BYPL.

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

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

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

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

19. STATUTORY OBLIGATIONS:

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The Contractor shall take all steps as may be necessary to comply with various Acts, Rules, including but not limited to The Child Labour (Prohibition & Regulation) Act, 1986, The Contract Labour (Regulation & Abolition) Act, 1970. The Employees Pension scheme , The Employees Provident Funds and miscellaneous provisions Act, 1952 ,The Employees state Insurance Act,1948,The Equal Remuneration Act, The Industrial Dispute Act,1947, The Maternity Benefit Act , 1961, The Minimum Wages Act, 1948, The payment of Bonus Act ,1965, The Payment of Gratuity Act,1972, The Payment of wages Act, 1936, The Shops & Establishment Act, The Workmen's Compensation Act , 1923, Building and Other Construction Workers (Employment and Regulations) Act 1996, Building and Other Construction Workers (Cess) Act 1996, The Employers Liability Act,1938, Indian Electricity Act, 2003 and Indian Electricity Rules, VAT and Service tax etc., and all other applicable laws as amended and rules framed there under including any statutory approval required from the Central/State Govt. Ministry of Labour. Broadly, the compliance shall be as detailed below, but not limited to:

- a) An Electrical license.
- b) PF Code No. and all employees to have PF A/c No. under PF every Act, 1952.
- c) All employees to have a temporary or permanent ESI Card as per ESI Act.
- d) ESI Registration No.
- e) GST registration number, if applicable.
- f) PAN No.
- g) Work Contract Tax Registration Number/ VAT Registration.
- h) Labour License under Contract Labour Act (R & A) Act 1970.
- i) Delhi Building and other Construction Worker (Regulation of Employment and Conditions of Services) Rules, 2002(B.O.C.W.)

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

The Contractor must follow:

- a) Third party Insurance Policy before start of work.
- b) To follow Minimum Wages Act prevailing in the state.
- c) The Salary/wages to all deployed manpower is to be distributed through ECS only into the bank accounts of all individuals and not later than 7th of succeeding month. In case of unavoidable circumstances the payment may be made through crossed cheques in the name of the individual and information of all such cases need to be submitted to HR(CMC).
- d) To maintain Wage- cum - Attendance Register.
- e) To maintain First Aid Box at Site.
- f) Latest P.F. and E.S.I. challans pertaining to the period in which work was undertaken along with a certificate mentioning that P.F. and E.S.I. applicable to all the employees has been deducted and deposited with the Authorities within the time limits specified under the respective Acts.
- g) Workman Compensation Policy. {If applicable}.
- h) Labour license before start of work. {If applicable}.

Before commencing the work it would be mandatory for the Contractor to furnish the Company the permanent PF code no and ESI of the employees.

20. WORKMAN COMPENSATION:

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

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

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

21. STAFF AND WORKMAN:

(I) It shall be responsibility of contractor:

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

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

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

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

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

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

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

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

22. LIABILITIES:

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Before commencing the execution of the work the Bidder shall take third party insurance policy to insure against any damage or loss or injury which may occur to any property / public property or to any person or any employee or representative of any outside Agency/ the company engaged or not engaged for the work of the company, by or arising out of the execution of the work or temporary work or in carrying out of this Agreement. BYPL shall, however, be responsible for any act of omission or commission, which may cause any accident, damage, injury including to Contractor's personnel.

For third party insurance policies, the Bidder shall be responsible for settlement of claims with the underwriters without any liability on the purchaser / owner and will arrange replacements / rectification expeditiously without a waiting settlement by insurance claim at Bidder's own cost.

Since CONTRACTOR has no privity with the ultimate customer of BYPL, BYPL will indemnify and keep indemnified CONTRACTOR against any loss, damages, claims, etc. BYPL will bear and pay all costs and expenses of CONTRACTOR in the event of CONTRACTOR being dragged to Court or any judicial or quasi-judicial body, or any other authority.

23. INSURANCE:

Before commencing the execution of the work the Contractor shall take at his own cost Transit Insurance policy, Third party insurance and suitable insurance policy for his own men and material. Please note that these insurance policies shall be taken in consultation with the Employer, where Employer is to be named as Co-insured and a copy of the insurance policy shall have to be furnished to Employer within 30 days of the date of order. For all the insurance policies (whether taken by the Employer or Contractor), the Contractor shall be responsible for settlement of claims with the underwriters without any liability on the Employer / Employer and will arrange replacements / rectification expeditiously without waiting for settlement of insurance claim, at contractor's own cost and this shall arrange the comprehensive Insurance policy for workmen's compensation, General liability Insurance, Automobile insurance, Third party insurance for damage of any movable and immovable properties and lives. This shall not entitle the Contractor for any extension of time.

Third Party Risk and Public Liability Insurance –

The Contractor, at his own cost, shall take necessary insurance to indemnify third party risk arising out of the work to be done by him. The contractor shall also take out the following Public Liability and Property Damage Liability Insurance Cover for the entire period of contract as given below.

A Public Liability and Property Damage Liability Insurance Covering All Operations the contract Limits for bodily injury or death up to and including Rs. 10,00,000/- for one person and Rs. 20,00,000/- for each accident.

Limits for property damage up to and including Rs. 500000/- for each accident.

B Automobile Liability Insurance

On all self –propelled vehicles used in connection with this contract, whether owned, non-owned or hired by the contractor, limits of insurance shall be as follows:

For Public Liability up to and including Rs. Rs. 10,00,000/- for one person and Rs. 20,00,000/- for each accident.

For property damage up to and including Rs. 2,00,000/- for each accident.

Insurance for contractor's personnel

The contractor shall effect and maintain insurance against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the contractor or any other of the Contractor's personnel.

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COMPENSATION FOR CONTRACTOR'S PERSONNEL

In the event of any untoward incident/ accident, the Contractor shall ensure prompt medical assistance such as treatment, sickness benefit, etc. is provided to the victim(s) as per the Employees' Compensation Act, 1923 or Employees' State Insurance Act, 1948, as applicable. Also, the contractor will be required to take adequate measures for compensating the victim(s) or his/her/their kin as follows:

I. For Death or Permanent / Total Disablement

The contractor shall take an insurance coverage of at least Rs. 10 lakhs for each engaged employee, to cover any incidence of Death or Permanent / Total Disablement (Permanent/Total Disability shall be considered as defined under Employees' Compensation Act, 1923). In the event of any such unfortunate incident, the contractor would ensure that adequate compensation is paid immediately to the family of the victim(s) from his own resources. This compensation shall be covered under the insurance policy subscribed by the contractor mentioned earlier and the arrangement should be such that it would get reimbursed to the contractor by the insurance agency subsequently.

II. For Permanent Partial Disablement and Temporary Total Disablement

The compensation in this case will be as per provisions of the Employees' Compensation Act, 1923 or Employees' State Insurance Act, 1948, as applicable.

Accordingly, the contractor shall obtain a suitable Insurance Policy on award of Contract and submit documentary evidence of the policy to the HR CMC Cell before commencement of work. The contractor shall ensure that the Insurance policy is active at all times and all employees are covered in all respects till the conclusion of contract period or till working with BYPL. The contractor shall submit a copy of the policy after periodic renewals to the HR CMC Cell.

However, on occurrence of such unfortunate incident, if it is found that the victim(s) is/are not covered under any insurance policy, the contractor shall be liable to pay the entire sum of Rs. 10 lakhs from his own resources.

Further, in case of an accident resulting in Death or Permanent / Total Disablement while on duty, the appointed Contractor Nodal Officer will ensure that the contractor complies with all statutory provisions and benefits i.e. PF, Compensation, Gratuity etc., and that all these are made available to the employees' nominee(s) as per the stipulated timelines.

24. ENVIRONMENTAL, HEALTH & SAFETY PLAN:

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

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

g) Ensure that a responsible person accompanies any of their visitors to site.

All contractor's staff are accountable for the following:

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

Detailed manual is attached as Annexure

25. GOVERNING LAW AND ARBITRATION:

25.1 Governing Law.

This agreement shall be governed by the laws of India and each party submits to the exclusive jurisdiction of the courts in New Delhi.

25.2 Dispute Resolution Mechanism.

All disputes and differences arising out of or in connection with this Agreement shall in the first instance be resolved amicably by mutual discussions of the CEOs of BYPL and CONTRACTOR. If the dispute cannot be resolved by mutual discussions and agreement the parties will take such dispute to an arbitration panel comprising three arbitrators. The parties shall be entitled to appoint one arbitrator each and the two arbitrators so appointed shall appoint the third arbitrator who shall act as presiding arbitrator. The party seeking to invoke arbitration shall appoint its arbitrator in its notice of arbitration. The other party shall appoint its arbitrator and intimate the same within thirty days of the receipt of the notice of arbitration. In the event that such party fails to appoint its arbitrator within the specified period the arbitrator named in the notice for arbitration shall decide the dispute as the sole arbitrator. The arbitration shall be conducted in New Delhi in accordance with the provisions of the Arbitration and Conciliation Act 1996. The award of the arbitral panel shall be final and binding on all parties. The arbitration proceedings shall be conducted in English. The costs of arbitration shall be borne equally by CONTRACTOR and BYPL.

26. REPRESENTATION, WARRANTIES AND GUARANTEES:

CONTRACTOR hereby represents warrants and guarantees that:

- (i) It is a legally registered entity under the laws of India;
- (ii) The agreement contains valid and binding obligations and is enforceable in accordance with the terms hereof;

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- (iii) It has studied the technical feasibility, Site conditions and other prevailing conditions and all other operational details and based on these studies carried out, has agreed to provide to BYPL the services as contemplated in this agreement;
- (iv) It has appraised itself of all applicable rules and regulations, and shall at all times comply with such rules and regulations;
- (v) It shall procure/hire vehicles and manpower suitable for the purposes of this agreement to render services as contemplated in this agreement;
- (vi) The Services would be conducted in a safe and efficient manner at the Site and at all times in compliance with Good Industry Practices and requirements of BYPL;
- (vii) It shall duly pay the duties, taxes and levies as are set out in this agreement. which are to be paid by CONTRACTOR;
- (viii) There is no action, suit or proceeding, at law or in equity, or to the best of its knowledge, any official investigation before or by any governmental authority, arbitration tribunal or other body pending or, to the best of its knowledge, threatened against or affecting it or any of its property, rights or assets, which could reasonably be expected to result in a material adverse effect on its ability to perform its obligations under this agreement or on the validity or enforceability of this agreement;

27. INDEMNITY:

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

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

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

28. EVENTS OF DEFAULTS:

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

- a) Failing to complete execution of work within the terms specified in this work order.
- b) Failing to complete works in accordance with the approved schedule of works.

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

In the event COMPANY terminates this work order, in whole or in part, on the occurrence of any event of default, COMPANY reserves the right to engage any other subcontractor or agency to complete the work or any part thereof, and in addition to any other right COMPANY may have under this work order or in law including without limitation the right to penalize for delay under clause 15.0 of this work order, the contractor shall be liable to COMPANY for any additional costs that may be incurred by COMPANY for the execution of the Work.

29. RISK & COST:

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

30. ARBITRATION:

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

31. FORCE MAJEURE:

31.1 General:

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

- (i) Such event or circumstance, despite the exercise of reasonable diligence, could not have been prevented, avoided or reasonably foreseen by such Party;
- (ii) Such event or circumstance materially and adversely affects the ability of the affected Party to perform its obligations under this Contract, and the affected Party has taken all reasonable precautions, due care and reasonable alternative measures in order to prevent or avoid the effect of such event on the affected parties ability to perform its obligations under this Contract and to mitigate the consequences thereof. For the avoidance of doubt, if such event or circumstance would not have materially and adversely affected the performance of the affected party had such affected party followed good industry practice, such event or circumstance shall not constitute force majeure.
- (iii) Such event is not the direct or indirect result of the failure of such Party to perform any of its obligations under this Contract; and

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

31.2 Specific Events of Force Majeure:

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

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

(ii) Explosions or fires

(iii) Declaration of the Site as war zone

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

31.3 Notice of Events of Force Majeure:

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

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

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

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

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

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

31.4 Mitigation of events of force majeure:

The Contractor shall:

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

(ii) Use its best efforts to ensure resumption of normal performance after the termination of any Event of Force Majeure and shall perform its obligations to the maximum extent practicable as agreed between the Parties; and

(iii) Keep the Company informed at regular intervals of the circumstances concerning the event of Force Majeure, with best estimates as to its likely continuation and what measures or contingency planning it is taking to mitigate and or terminate the Event of Force Majeure.

31.5 Burden of proof:

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

31.6 Terminations for certain events of force majeure:

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

32. SECRECY CLAUSE:

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

The technical information and other related documents shall be returned by either party to each other with all approved copies and duplicates including all details as prepared during the execution of this agreement, if any, immediately after they have been used for agreed purposes.

In the event of any breach of this provision, either party shall indemnify each other against any loss, costs or damages or claims by either party in respect of such breach.

Both the parties agree not to use their names in any manner either for credit arrangement or otherwise and it is agreed that either party shall not in any way be responsible for the debts, liabilities or obligations of the other and/or its employees.

Both parties to the Agreement hereby covenant that neither party shall be responsible for theft if any committed by its staff and they shall indemnify each other from and against all claims, demands, actions, suits and proceedings, whatsoever that may be brought or made against the other by or on behalf of any person, body, authority whatsoever and whomsoever and all duties, penalties, levies, taxes, losses, damages, costs, charges and expenses and all other liabilities of whatsoever nature which each party may be liable to pay, incur or sustain by virtue of or as a result of the performance or non-performance or observance or non-observance of any of the terms and conditions of this contract.

33. NON-EXCLUSIVITY:

The award of the work order/agreement to the Contractor shall not preclude the Company from awarding the same order for similar work at the same rates, or on any terms and conditions to other party or parties. The Company at its discretion may place the order on any other party.

34. SEVERABILITY:

If any provision of this Agreement is or becomes invalid or unenforceable by the courts of any jurisdiction to which it is subject, such invalidity or unenforceability shall not prejudice the remaining provisions of this Agreement, which shall continue in full force and effect.

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34. TERMINATION:

The agreement can be terminated by either party before the expiry of its term by giving 30 day notice under the following conditions:

- i) Either party fails to perform as per the terms of this agreement.
- ii) It is found by either party that the other has intentionally manipulated or corrupted the data, or disclosed any of the contents of the details to any third party.
- iii) Either party repudiates this order or otherwise evidences intention not to be bound by this agreement;
- iv) Either party assigns, mortgages, or charges or purports to assign, mortgage, or charge any of its obligations or rights in contravention to the provisions of this order; or, transfers or novates any of its obligations in contravention to the provisions of this agreement.
- v) Breach of the Secrecy Clause.
- vi) If at any stage during the tenure of the agreement , either party is found to be involved or indulging or even attempting illegal, unlawful action or activities or some fraudulent or even trying to give bribe official/staff or misuse or abuse any data of the other.

Prior to giving the termination notice, both parties will exhaust the remedy of :-

(a) the aggrieved party will call upon the other party to rectify the grievance/ issue within a period of 45 days;

failing which

(b) a committee comprising two representatives, each of CONTRACTOR and BYPL resolving the issue;

failing which

(c) the CEOs of BYPL and CONTRACTOR resolving the issue;

failing which

It is agreed and understood that only on the failure of the above three options, will the party contemplating termination give the Notice of Termination

35. QUALITY:

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

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

36. PERSONNEL:

CONTRACTOR shall maintain supervisory and other personnel round the clock for efficient operation of the system.

The personnel shall have adequate qualification and experience for performing the job.

If any of Contractor's personnel is, in the opinion of BYPL, guilty of any misconduct or incompetence or negligence, then, if so directed by BYPL, CONTRACTOR shall at once remove such employee and replace it by a qualified and competent substitute within a mutually agreed time frame.

CONTRACTOR shall issue identity cards to its employees deployed for execution of the assigned work in the Circle.

37. ENTIRE AGREEMENT:

This Agreement hereto contains the complete understanding between BYPL and CONTRACTOR with respect to the matters contained herein and supersedes all other agreements, whether written or oral with respect to the matters contained herein.

38. AMENDMENT:

Any modification, amendment or other change to this Agreement shall be affected only by a written instrument signed by the authorized representatives of both BYPL and CONTRACTOR.

39. ACCEPTANCE:

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

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

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

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ANNEXURE-A

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

- a) An Electrical license.
- b) PF Code No. and all employees to have PF A/c No. under PF every Act, 1952.
- c) All employees to have a temporary or permanent ESI Card as per ESI Act.
- d) ESI Registration No.
- e) Sales Tax registration number, if applicable.
- f) PAN No.
- g) Work Contract Tax Registration Number/ VAT Registration.
- h) Labour License under Contract Labour Act (R & A) Act 1970.
- i) Delhi Building and other Construction Worker (Regulation of Employment and Conditions of Services) Rules, 2002(B.O.C.W.)

The Contractor must follow:

- a) Third party Insurance Policy before start of work.
- b) To follow Minimum Wages Act prevailing in the state.
- c) The Salary/wages to all deployed manpower is to be distributed through ECS only into the bank accounts of all individuals and not later than 7th of succeeding month. In case of unavoidable circumstances the payment may be made through crossed cheques in the name of the individual and information of all such cases need to be submitted to HR(CMC).
- d) To maintain Wage- cum - Attendance Register.
- e) To maintain First Aid Box at Site.
- f) Latest P.F. and E.S.I. challans pertaining to the period in which work was undertaken along with a certificate mentioning that P.F. and E.S.I. applicable to all the employees has been deducted and deposited with the Authorities within the time limits specified under the respective Acts.
- g) Workman Compensation Policy. {If applicable}.
- h) Labour license before start of work. {If applicable}.

Before commencing the work it would be mandatory for the Contractor to furnish the Company the permanent PF code no and ESI of the employees.)

ANNEXURE B

Guidelines for Excavation and Cable Laying

- (1) Once the fault is pinpointed and the location of fault is known, CONTRACTOR shall deploy his crew for excavation. Meanwhile 'an Intimation letter with all the relevant details and duly signed by the AM/E-I-C shall be submitted at the office of the MCD/PWD or any other road owing agencies as per site requirements.
- 2) Use of crow bars shall be restricted for removal of the hard upper crust of the earth. Thereafter, excavation shall be carried out with pick axes.
- 3) If during the progress of excavation warning covers of our cables or of other utilities are exposed, earth around these covers shall be scooped carefully with Phawra, fencing pins or tip of a pick axe. After loosening the covers they shall be removed and stacked for reuse. Every care shall be taken not to damage any of the utilities during the course of work.

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- 4) The entire trench along the length shall be barricaded with corrugated sheets painted with red and white strips.
 - 5) Warning lights shall be provided over the trench in the night.
 - 6) Wherever crossing of lanes is involved, cable shall be laid in hume/GI/HDPE pipes.
 - 7) The excavated material should be stacked on both sides of the trench to avoid inconvenience to public and traffic.
 - 8) In case the depth of the trench is more than 1.5mtrs, appropriate shoring of walls shall be done to prevent collapse of the excavated trench,
 - 9) Wherever possible, the depth of the cable that shall be laid for repair will be as given below:
 - LT cable (1.1 KV) - 0.6m
 - HV cable (11 KV) - 0.9m
 - 10) The Standard Pit Dimension (Two Straight/Transition Joints), as to give enough working space for the jointer.
Digging Length of the pit shall be:
 - LT cable (1.1kv) – 6 m
 - HV cable (11kv) – 6 m
- The pit dimensions may vary as per the site requirements/constraints.
- 11) In case the HT cable that is cut, is to be kept open in the trench for more than 2 days then the ends of the cable shall be sealed. Sealing can be done by plumbing for PILC cables and by sealing caps for XLPE cables.
 - 12) If digging or jointing is to be done in the evening or night then arrangements for lighting for sufficient illumination shall be made by CONTRACTOR. Night jointing is to be avoided and if done then necessary permission from E-I-C to be taken in writing.
 - 13) The jointing pit shall be covered with tarpaulin or plastic sheet before the jointing work is started.
 - 14) After jointing work is over, soft soil (available at site) sand shall be used for backfilling.
 - 15) While backfilling, care should be taken to consolidate the earth below the joints and cables to avoid subsequent subsidence.
 - 16) While backfilling, the crown of the earth left shall be between 50mm to 100mm above road surface and shall be free from sharp stones and boulders. The backfilled earth shall be rammed to level the surface and removal of surplus malba as far as possible.
 - 17) After completion of the entire job and the cable is put into load service, Letter for Road Restoration with the relevant details and signed by the JE/ AM shall be submitted to the MCD/PWD or any other road owing agencies as per site requirements.

Electrical Test on Cables

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1) Insulation Resistance (IR) test shall be carried out on HT cable before and after Jointing. The acceptable value for the Test is minimum 50M OHMS. By and large the Insulation Resistance (IR) test values for all the phases should be equal. If the values are unequal then HV Test shall be conducted on the cable.

2) High Voltage shall be carried out after jointing .Test shall be carried out by applying the rated voltage on one core and grounding the other two phases. The voltage shall be increased gradually .The leakage current should be steady during the test. The voltage and time duration for the test is as given below.

Rating of the cable Test Voltage Test Time Acceptable Leakage current.

11kv 6.5kv 5min Less than 0.5mA

18. Cover & Plate Installation Criteria for 11KV Cable as per the site condition:

I. If trench depth > 1.5 Feet - Put up to 6 Nos plates below the joint in a horizontal manner & after filling it with sand put up to 6 Nos of Joint cover on plates covering the whole joint.

II. If trench depth < 1.5 Feet - Put 300*420 mm plates above the joint after covering the joint with sand from all sides.

In case of bends or any site constraint put 150*420 mm plates instead of 300*420 mm, after written permission mentioning the problems from concerned FLC In charge and submit it with Bill.

III. Other Reasons - When there is a practical difficulty in putting plates and cover then contractor has to take written permission mentioning the problems from concerned FLC In charge in Job card and submit it with Bill.

ANNEXURE C - Job Card for cable jointing work

Job card for each joint/end termination with details like Breakdown ID/Shutdown Id/Scheme No, date of joint, jointer name, feeder name, substation name, geographical coordinates derived from GIS hand held device etc. the job card shall be signed off by respective jointer , Engineer-In-Charge & Divisional Head of BYPL. Copy of the same shall be attached to invoice and one copy shall be sent by O&M to BYPL GIS team for plotting on network drawing. GIS handheld devices shall be arranged by bidder as per requirement.

ANNEXURE D - Root Cause Analysis & Failed Joint/Termination Format Attached)

Each failed Joint/termination is inspected by joint team of OET/CES, O&M and CONTRACTOR. CONTRACTOR should provide jointer & helper for Di-section as per requirement of BYPL.

RCA investigation by specialized engineer in event of failure of any end termination/Joint failure and investigation report to be submitted to OET/CES within 5 days. A quarterly MIS shall also be submitted to OET/CES, O&M & C&M.

ANNEXURE E - SOP for Tagging of Cable Joints

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Process of tagging cable Joints has been envisaged to track the cable joint failure cases which have failed under guarantee period.

1. "Supplier" will supply tag along with Jointing Kit to BYPL of the following nomenclature i.e XXYZZZZZ where
 - a. XX - "Supplier" initials
 - b. YY - Year of manufacture of Cable Jointing Kit
 - c. ZZZZZ - Five digit number (starting from 00001)
 - d. The paper tag will be provided along with water sealed aluminium foil pouch.
2. During preparation of joint, tag will be attached at either side of the cable through a tie at the nearest distance of about 50cm from the newly installed joint.
3. A sticker of same nomenclature i.e XXYZZZZZ will be provided by "Supplier Name" along with Jointing Kit. This sticker will be pasted on the Job card while entering details of cable fault.
4. The Tag Id (XXYZZZZZ) and Job card no. are to be strictly entered in the OMS while closing the Cable fault in OMS.
5. A Copy of Job card will be kept in the office of DGM (O&M) along with the register where details of cable fault will be entered in supervision of DGM(O&M).The format of the same is attached below:

- SL.No. : _____
- Cable: From _____ to _____
- Date of Cable Fault: _____
- Type of FAult: _____
- Breakdown ID/Shutdown ID/Scheme No: _____
- Job Card No. : _____
- Nomenclature of Tag: _____
- Remark : _____

6. The (X, Y) co-ordinates of the joint should also be recorded on the back side of the Job card for capturing the same in GIS.
7. Monthly MIS of the Cable Joint failure to be sent by respective Circle Head/Divisional Chief to head (O&M)/ Head (NWO)/Head(Finance) clearly specifying the total no. of Joints utilized for restoring the cable fault and levy of penalties towards failure.

ANNEXURE F - SOP for Photograph of each joint in 5 Stages for 11 KV & above cables


To ensure proper Quality of joint, different stage wise photos are to be taken and submitted in System. Stages are:

1. Crimping with visual semicon cut
 2. Shrink Tubes and Tied Joint Tag
 3. Completed Joint with Breakdown ID written on Outer jacket with white marker
 4. Joint Cover
 5. After Cleaning of malba and final site closure
- . Complaints registered during odd hours (i.,e, midnight) should be rechecked and a site photograph is uploaded.

ANNEXURE G - Standard Operating Procedure (SOP) to be followed while verifying the Cable jointing bills:-

1. Job Card to be prepared against Fault ID/Shutdown Id only which is shown in OMS.
2. A clear photograph of joints in faulty conductor and joints prepared with revival of cable must be attached with the Job card.

3. Separate MRS is to be generated for each and every job card. In case of HT AB Cable separate MRS to be generated for joints/Cable used by vendors and the division AMC. MRS no shall be mentioned on the the job card.
4. If any material adjustment is needed for the material drawn against the Job Card then return of the material adjustment is to be done in the same MRS as work gets completed and then only Order/notification is to be closed.
5. TAG Id which is symbol of date when joint is installed must be inserted with cable tie adjacent to the new joint.
6. MRS is to be closed within three days after completion of work and adjustment of material.
7. Before signing the bill of Vendor, it must be ensured that is accounted properly and material shown in the Job Card is matching with the MRS including MRS number.
8. BYPL E-I-C to ensure the issue of completed job cards by 7th day of every month to vendors for preparation of their bills.
9. The Vendor has to submit the bill for verification to the division within next 7 days i.e. by 15th day of every month.
10. Divisions & Vendor to ensure that the bills after verification and signing are processed for final submission to finance by 20th of the month.
11. Any scarp i.e. cable, cable joint box etc obtained in the work should be returned through SDF.
12. New Joints should be marked in GIS with GPS coordinates.
13. Punching of MRS (for material issued and its reversal) in SAP should be in the same month of services done with reference to the concerned division and month.
14. Excavation charges should be reviewed and decided in advance.
15. Details of old material removed from the site and return docket should also be provided along with the invoice submitted.
16. Reason for JCB/Jack Hammer/Pneumatic Hammer/Crane/Trenchless shall be recorded on Job Card.

 BSES <small>BSES Yamuna Power Limited</small>		Failure Analysis Report of ST TH Joint	
Rated Voltage		Division :	
Breakdown ID		FLC ID	
Section :		Nature of Fault (Actual) :	

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		Date of Failure :	
Date of Analysis :		Vendor Jointer :	
Vendor Supervisor :		BSES representative from division :	
Sr No	Item	Details	
1	Type of Joint/Cable	ST TH	
2	Size of cable	3*300 sq mm	
3	No. of Cable faults in cable section in 12 month		
7	Load before fault on the feeder		
8	Joint/Termination Installation Date		
9	Joint/Cable Manufacturing Month & Year		
10	Joint/cable damaging Agency Name :		
11	Make of joint	Densons	
12	Make of Cable		
11	Observation		
	Joint Design	<input type="radio"/> New	<input type="radio"/> Old
	Is Joint in straight position ?	<input type="radio"/> Yes	<input type="radio"/> No
	Cannister Installed ?	<input type="radio"/> Yes	<input type="radio"/> No
	Support Ring Installed ?	<input type="radio"/> Yes	<input type="radio"/> No
	No. of Installed Copper Braid for Earthing	<input type="radio"/> 2	<input type="radio"/> 1
	Joint Tag Installed ?	<input type="radio"/> Yes	<input type="radio"/> No
	Copper Mesh Wrapping	<input type="radio"/> Individual on Core	<input type="radio"/> Combined on Core

	Copper mesh bonding with copper tape (soldering)	<input type="radio"/>	Yes	<input type="radio"/>	No
	Water Barrier Tube Installed?	<input type="radio"/>	Yes	<input type="radio"/>	No
	Water Barrier Tube Shrinked Properly?	<input type="radio"/>	Yes	<input type="radio"/>	No
	Is joint free from Moisture ingress?	<input type="radio"/>	Yes	<input type="radio"/>	No
	All Tubes placed & Installed properly?	<input type="radio"/>	Yes	<input type="radio"/>	No
	Post shrink proper cooling period given?	<input type="radio"/>	Yes	<input type="radio"/>	No
	Semicon Properly Cut?	<input type="radio"/>	Yes	<input type="radio"/>	No
	Abrade the insulation to a smooth finish with AL. oxide cloth(Emery Paper)?	<input type="radio"/>	Yes	<input type="radio"/>	No
	Silicon Gel applied on Insulation?	<input type="radio"/>	Yes	<input type="radio"/>	No
	XLPE Insulation Properly Cut?	<input type="radio"/>	Yes	<input type="radio"/>	No
	Is joint free from external damage marks?	<input type="radio"/>	Yes	<input type="radio"/>	No
	Is insulation of joint/cable intact?	<input type="radio"/>	Yes	<input type="radio"/>	No
	Type of Crimpping	<input type="radio"/>	Hydraulic	<input type="radio"/>	Manual
	Crimpping of Ferrule Proper?	<input type="radio"/>	Yes	<input type="radio"/>	No
	Crimpping Sequence Proper?	<input type="radio"/>	Yes	<input type="radio"/>	No
	Other : Under Warranty- Claimable-				
12	Root Cause Investigation				
	Remarks	<input type="radio"/>	Tracking over Insulation	<input type="radio"/>	Improper Insulation Cut
	-	<input type="radio"/>	Improper Crimpping	<input type="radio"/>	Aeging effect
		<input type="radio"/>	Improper Semicon Cut	<input type="radio"/>	Manufacturing Defect
		<input type="radio"/>	Impurities of Insulation not Removed	<input type="radio"/>	Improper Jointing Kit Installed

		<input type="radio"/> Moisture Ingress	<input type="radio"/> Joint not Faulty.
		<input type="radio"/> External damage	<input type="radio"/> External Agency Damage
			<input type="radio"/> Other
13	Representative from Vendor	Representative from Division	OET Representative
	Name & Signature	Name & Signature	Name & Signature

ANNEXURE-I

1	Company	
2	District	
3	Period	
4	Voltage	
5	S. No.	
6	BSES Job No.	
7	MRS No.	
8	Breakdown ID/Fault ID/Shutdown ID	
9	Excavation Date & Time	
10	Completion Date & Time	
11	Total Hours	
12	Total Minutes	
13	Feeder Location	
14	Reason for delay	
15	Type of Cable	
16	Excavation & Backfilling joint pit in Soft Soil (Manual)	
17	Excavation & Backfilling of joint pit in Rocky/Dense Carpet (Manual)	
18	Excavation & Backfilling of joint pit in with JCB/ Jack Hammer/ Pneumatic Hammer up to 6 Hrs up to 6 Mtrs	
19	Extra excavation in soft >06 Mtrs	
20	Extra excavation in rocky/dense >06 Mtrs	
21	JCB/ Jack Hammer/ Pneumatic Hammer uses for more than 06 Hrs	
22	Jointing Chrg. for St.Th. (3-PH) HS	
23	Jointing Chrg. for St.Th. (3-PH) HYBRID	
24	Jointing Chrg. for St.Th. (1-PH)	
25	Jointing Chrg. for Termination	
26	Jointers BSES / Vendor	

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Weekly Report (Format Attached)

Sr No	Fault ID	Creation Date	Description (Section Name)	No. of Joints	Length of Joint	Joint Type	Latitude	Longitude	Engg. Name
1									
2									

ANNEXURE-II

JOB CARD FOR CABLE JOINTING WORK

<i>JOB CARD NO</i>	<input type="text"/>	Date	<input type="text"/>	Fault IID	<input type="text"/>
<i>DIVISION</i>	<input type="text"/>	Purpose	<input type="text"/>	Project/Scheme	<input type="text"/>
Contractor		<input type="text"/>			
Voltage Grade	11 KV	33 KV	66 KV		
No. of Cores	1	3	3.5		
Cable size:	1000/ 800/ 630/ 500/ 400/ 300/ 240/ 225/ 185/ 150/ 120/ 95/ 70/ 50 sqmm				
<i>Jointing Details</i>	Type of Joints		No. of Joints		Docate no.
			Single	Double	IR Ref
	XLPE/XLPE(or PVC/PVC) Straight through Joint				
	XLPE/PILC Transition Joint				
	PILC/PILC Straight through Joint				
	XLPE Indoor Termination				
	XLPE Outdoor Termination				
	PILC Indoor Termination				
	PILC Outdoor Termination				
Feeder details	From	<input type="text"/>	To	<input type="text"/>	
Location	From	<input type="text"/>	To	<input type="text"/>	
Landmark:	<input type="text"/>				

Falut Occurance

Date: _____

Job allocated by: _____

PTW Ref: _____

	Date	Time
Date & Time of Spiking:	<input type="text"/>	<input type="text"/>

	Date	Time
Work Completed on:	<input type="text"/>	<input type="text"/>

Digging Details (in mtr):	Length	<input type="text"/>	Width	<input type="text"/>	Depth	<input type="text"/>
	h					

Details of Cable Laid:	Size	<input type="text"/>	Length	<input type="text"/>	Docate Ref:	<input type="text"/>

Contractor supervisor:	_____	Signature :	_____	Date:	_____
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Stage Verification: Digging/jointing etc.	Stage/ work Verified	Name & Signature	Date & time
	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>

Remark if any: _____

Job Certified by:	<input type="text"/>	<input type="text"/>	<input type="text"/>
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Shift Incharge	Name	Signature	Date
	<input type="text"/>	<input type="text"/>	<input type="text"/>

QUANTITY AND DELIVERY REQUIREMENTS

Sl. No.	Item Description	Specification	Total Qty. (Nos)	Tentative Delivery Schedule	Destination
1	RATE CONTRACT FOR SUPPLY & INSTALLATION OF CABLE END TERMINATION & STRAIGHT THROUGH JOINTING KITS FOR VARIOUS SIZES OF CABLES OF VOLTAGE RATINGS UPTO 11KV	BSES-TS-47-LTCJ-R0 BSES-TS-44-STTH-R0 BSES-TS-45-TERM-R0	As per Section V	Within 1.5 Month from the PO at BYPL Stores (Receipt at BYPL Delhi stores) or as per the schedule	BYPL Stores/Sites Delhi

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

Scope Demarcation for Installation of Jointing and Termination Kits				
Sl no	Descriptions	Responsibility		Remark
		Bidder	BSES	
1	FLC and feeder shutdown	x	√	
2	Preparation of Material Reservation Slip (MRS) to issue the material	x	√	
3	RCP approval	x	√	
4	Issuing and Transportation of Termination, Jointing Kits, required cable, coffin, RFID Ball from BSES store to site	√	x	RFID Ball shall be provided by BSES
5	Vehicle arrangement for Manpower & Material movement	√	x	
6	Barricading including lightening, dewatering, providing tents etc.	√	x	
7	Safety Tools, jointing tools, Safety PPE	√	x	
8	Digging for Termination including back filling if any	√	x	
9	Installation of Termination kits on cable	√	x	
10	Connecting of cable to equipments after installation of termination kits on cable	x	√	
11	Digging for Straight through joints including backfillig	√	x	
12	Jointing and Encasing of joint in presence of supervisor	√	x	
13	Handling of cable i.e- laying of cable, dressing of cable etc.	√	x	
14	All kinds of back filling after jointing and termination kits	√	x	
15	Filling and submission of job card including GPS location marking within 48 hours	√	√	
16	Return of scrap (Faulty Joint/Cable pieces) shall be deposited to SDO office/division store after completion of jointing and termination	√	x	
17	Road restoration after completion of work	x	√	
18	After completion of Jointing work, it should be properly covered with Coffins/RCC Joint Covers from all sides for 66/33/11kV of cable along with sand filling. Transportation of	√	x	Coffin/RCC Joint Covers shall be provided by BSES

	coffin from BSES store to site location			
19	After completion of Jointing work, it should be properly covered with bricks from all sides for 1.1kV cable including supply of bricks, sand, etc.	√	x	
20	Joints shall be done by Hydraulic crimping tool Gap between two crimps shall not be more than 15mm and shall cover the complete length of ferrule / lugs barrel	√	x	
21	Max. time required to reach the site for Joints with or without RCP permission shall not be more than 120min	√	x	
22	Cable Joints will be having Tab/Smart phones for instant punching of clear photograph/video of joints in faulty condition and joints prepared with revival of cable	√	x	
23	After completion of Joint preparation, updated status of No. of Joints and length of cable used should be updated in IOMS module through Tab by jointer in the I-OMS fault id with the name of Jointer.	√	x	
24	Vendors if could not submit the Bill by the timeline, then 10 % of the invoice value shall be imposed on vendor as a penalty and bill can be considered for non-payment in case of extreme condition	√	x	There shall be no penalty if delay is from BSES side in providing requisite information for bill preparation
25	If during audit any discrepancy is found in the reconciliation, penalty of up to 10% of total PO value shall be imposed on vendor	√	x	
26	Jointing should be preferred during day other than in night after approval from Engineer in charge	√	x	
27	Skilled worker is being utilized (Authorisation letter need to be provided) for all kind of Jointing work.	√	x	
28	Earthing Strip and Mess wire / Copper braid wire are to be	√	x	

	connected at the end of the cable while preparing end termination. Photo of the same after proper connection should be uploaded into the IOMS			
29	For Nallah/Road Crossing GI Pipe to be utilized while preparing joint including transport from BSES store to site	√	x	GI Pipe shall be provided by BSES
30	Cut faulty section and Pre-test (Hi Pot) of cable for multiple faults	√	x	BSES shall support in cable testing from Grid or its S/STN
31	Removal of surplus malba	√	x	
32	JCB and Pneumatic hammer provided for digging	√	x	
33	Replacement of HTAB cable for HTAB cable jointing and termination	x	√	
34	ETC of RFID Ball (Active/Passive) for all kind of straight through joint of 11kV, 33kV and 66kV including Issuing, transportation from store to site	√	x	RFID Ball shall be provided by BSES
35	Joint failure/LT/HT analysis – Support shall be provided for dissection of joint. Analysis shall be done jointly by OEM and BSES representatives within a month.	√	x	
36	Supervision of jointing ,quality, safety @ site	√	√	Engineer In charge to ensure at site
37	Quality manual in which detailed jointing process & quality of the job along with QAP to be provided	√	x	
38	Cable spiking post identification and location of fault under the supervision of BSES Engineer In Charge	√	x	Cable identification for spiking shall be done by BSES
39	HTAB Cable span or HT/LT Cable piece dismantling and reinstallation from pole for making end termination or Cable Joints	x	√	

ENVIRONMENT, HEALTH & SAFETY CONDITIONS FOR SITE WORK PERTAINING TO CABLE LAYING/JOINTING

1. General Requirements

- 1.1 The contractor shall ensure that safety of all the workers, materials, Installation and equipments belonging to him or to others and working at the site is ensured through effective and practicable safety management systems.
- 1.2 The contractor shall be responsible for compliance to provisions of all safety requirements under various notices, acts, rules and relevant applicable legislations.
- 1.3 The contractors shall comply with all health & safety requirements as deemed necessary by BYPL from time to time.
- 1.4 Works shall be carried out by the contractor after taking necessary "Permit to work". Also the work shall not be carried out without use of Protective equipments like shoes, boots, reflective jackets, helmets etc. adhering to safety compliance.
- 1.5 All the equipments being used shall be timely calibrated.

2. QEHS Policy

The contractor as per requirement of CEA Measures Relating to Safety and Electric Supply Regulations, 2010 shall follow the Quality, Environment, Health & Safety Policy of BYPL. The contractor shall implement quality, health & safety management systems in accordance to BYPL EHS policy and ensure that intentions of such policy are met.

3. Health & Safety Plan

- 3.1 The contractor shall document a detailed and comprehensive Contract specific health & safety plan incorporating HIRA (Hazard Identification & Risk Analysis) to BYPL. This plan shall necessarily include detailed policies, procedures, method statement for each activity to be performed and regulations which, when implemented, will ensure compliance of the contract provisions stated herewith.
- 3.2 The contractor shall provide health & safety plan for such activities required to be carried out under the awarded contract as deemed necessary by BYPL.

4. EHS Organization & Responsibility

- 4.1 The contractor supervisor will play the role of safety supervisor. The safety supervisor shall hold a diploma degree from a recognized institute or university as per CEA Regulations, 2010. Also simultaneously contractor has to ensure their competency in safety or EHS with 40 hours training from reputed agency (like RLI/Allied Boston/ National Safety Council) or trainer, which should be verified earlier by BYPL safety department accordingly.
- 4.2 The training certificate should not be more than one year old.
- 4.3 Apart from above, as an owner of the company the contractor & their other key persons are also responsible for safety compliance and related issues.

5. First Day at Work –Induction Training and Issuance of ID-Card

- 5.1 The contractor shall ensure that all his workers have under gone the safety induction and have been issued with a valid ID card prior to start work at BYPL site.
- 5.2 All contractor workers shall undergo above as per the BYPL site specific procedure issued from time to time.
- 5.3 The contractor shall ensure that no worker is in any O&M activities until the valid ID card is issued and the same is available by each worker at site including that of sub contractor(s).
- 5.4 In case any worker lost the ID card issued to him, the contractor shall ensure that such incidences are promptly reported to BYPL and duplicate or new ID card is issued immediately after completing formalities as deemed necessary by BYPL.

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6. Provision of Safe Working Conditions

6.1 Proper barricading shall be created during height work, excavation/civil work, cable laying work, working on pole, etc. During civil/excavation work usage of safety net shall be ensured. Dimensions of barricading while cable laying work- Height- 2 mtr, Length- 1.5 mtr. There shall not be any gap in between two barricades. LED Bacon light shall be placed at 1st and every 4th barricade. In narrow lanes, where proper barricading as per rules is not possible, use barricading as per the approval of respective safety circle head in writing and copy forwarded to safety and uploading in QMS.

6.2 PPE' REQUIREMENT

6.2.1 The contractor shall ensure all the required PPEs given in clause 6.2 and shall allow their workers to start work at site only after proper verification of adequacy of safety gears/PPE required for the specific job at site by the Safety personnel/Site Engineer of BYPL. Any other PPE apart from the list mentioned as deemed necessary as per the work shall also be provided.

Contractor has to ensure the quantity and quality of PPEs during procurement and continuous usage of following PPE's by his staff.

S.NO.	NAME OF THE PPEs	Digging labour	Jointer	SUPERVISOR
1	SAFETY HELMET	✓	✓	✓
2	GUM BOOTS	✓	Y	X
4	SAFETY SHOES	✓	✓	✓
5	SAFETY GOGGLES	x	✓	✓
6	REFLECTIVE JACKET	✓	✓	✓

6.2.2 Contractor has to ensure for proper procurement and distribution of required PPE's among their workers with receiving which will be verified by the safety department during inspection.

6.2.3 If any of the contractor staff found without PPEs, the said PPE's will be issued to them from BYPL store with immediate effect. And the 20% extra amount with procurement cost will be recovered from their next monthly bill cycle.

Note: PPEs shall strictly be as per the brand mentioned in clause 6.2.4

6.2.4 Technical Specification of the PPEs

6.2.4.1. Safety Shoes – With Composite / Fiber toes (CE approved / IS 15298) – Mandatory for all personnel working at BYPL O&M. The safety shoes shall meet the following features:

1. Electric Shock Resistant Sole
2. Impact Resistant
3. Scrap/Heat Resistant
4. Slip Resistant
5. Oil and Acid Resistant
6. Rubber PU Sole
7. Anti puncture

Lead MAKE: BATA/HONEYWELL/KARAM

6.2.4.2 Safety Helmets: (IS 2925 - 1984 or DGMS) with chin strap – Mandatory for all personnel working at BYPL O&M. The specification of safety helmet shall be as given below:

V-GARD HDPE Yellow With 4 Point Fas Trac Ratchet Suspension

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Shell Material	UV stabilized HDPE, Non vented
Suspension	<ul style="list-style-type: none"> • With 4 Point Fas Trac Ratchet Suspension sewn headband • Textile straps made from polyester Suspension • point fixing: good positioning, ...stability, better air circulation due to ...limited contact areas with the head • Easy clean sweatband
Size	52-62 cm
Accessory slot	Standard 30 mm with removable HDPE dead plugs suitable to leak proof fitting
Approvals	ANSI/ IEC Z89.1 Class E (electrical)
Additional	Low temperature -10°C (acc. to GB2811), High temperature +50°C
Colours	Yellow
weight	360 g

Lead MAKE: 3M / KARAM

6.2.4.3 Flex Chem Full View Safety Goggles – Shall be used to protect workers eyes from foreign materials and flying particles. Mandatory for all personnel working at BYPL O&M. Safety goggles shall meet the following feature:

1. Acetate lens for special applications requiring superior chemical resistance.
2. Industrial version of tough and popular first responder goggles.
3. SoftFlex low profile frosted frame for increased comfort.
4. Comfortable headband with length adjustment.
5. Indirect venting for comfortable, long lasting wear can be worn with safety helmets and over prescription spectacles.
6. Sightgard + premium anti-fog coating (EN 166 "N") with good anti- scratch properties.

Technical Specification:

Weight	95g.
Lens thickness	1.0mm
Overall width	173mm
Overall length	90mm
Bridge	47.6mm
Lens base	5.5 curve
Lens size	86.1mm verticle, 174mm diagonal
Headband	Adjustable length at max.440mm(long enough to fit together with helmets)
Material & colors	
Lens	Acetate clear, coating, Sightgard + anti-fog according to EN 166 "N" & anti scratch.
Body	PVC smoke
Headband holder	Nylon

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Headband	Adjustable grey elastic fixed on frame side parts
Marking / Approvals	
Standard number	EN 166
Frame marking	MSA EN 166 34-FT CE
Lens marking	2C-1.2 MSA 1 FT N CE
Filter class	2C (Ultra violet radiation with enhanced color recognition)
Scale number	1.2: luminous transmittance-89%
Optical class	1 (best class, for permanent wear)
Mechanical resistance	F (low energy impact 45m/s) T (at extreme temperature -5 to +55° C)
Resistance to	N(distorted vision due to lens fogging)
UV filter	99.9%
Ordering information	10145578-FlexiChem Sightgard + clear , 6x

Lead MAKE: MSA / UVEX/ UFS/3M/KARAM

6.2.4.4 Certificates required for all PPEs:

1. Manufacturer Certificate
2. Test Certificate
3. Authorization of Dealership/Distribution ship

7. Integrated Management System & Audits

7.1 The Contractor shall work in the framework of Integrated Management System (IMS) and shall maintain documentation as prescribed in the IMS Manual of BYPL. IMS Manual can be obtained directly from site engineer/Division Head/Respective Head.

7.2 All contractors during their currency of contract shall strive to continuously improve and demonstrate strict compliance to ISO 9001, 14001 & 45001 standards of BYPL.

7.3 To verify compliance and to continually improve the management system, all contractors shall be subjected to both internal & external audits.

8. Medical Examination

8.1 The contractor shall arrange a medical examination of all his employees including his sub-contractor employees like lineman, ALM, supervisor, Fitter, welders, gas cutters, drivers and all the workers supposed to work at height (and any other trade specified deemed necessary by BYPL at the time of deployment then annually) before employing, after illness or injury, if it appears that the illness or injury might have affected his fitness and, thereafter, once in every year as per the provisions of applicable laws or as prescribed by BYPL with proper record.

8.2 Records of medical examination as described above shall be maintained at the contractor premises

8.3 No person about whom the Contractor knows or has reason to believe that he is a deaf or he has a defective vision or he has a tendency to giddiness shall be required or allowed to work in any O&M operation or other construction work which is likely to involve a risk of any accident either to the worker himself or to any other person.

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9. Working at Height

Not applicable

10. Reporting of Near Miss/ Incidents / Dangerous Occurrences

10.1 In case of any incident/ accident occurs during the O&M activities undertaken by the Contractor thereby causing a dangerous occurrence or near miss or any minor or major or fatal injury to his employees due to any reason, whatsoever, it shall be sole responsibility of the Contractor to promptly inform the same to Department Head in prescribed form and also to all authorities envisaged under the applicable laws.

11. Suspension of Work

11.1 BYPL shall have the right at its sole discretion to suspend the work till compliance of safety norms, if in its 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 equipments.

11.2 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 all shortcomings promptly. Decision of BYPL shall be conclusive and binding on the Contractor in such aspects.

11.3 The contractor shall not be entitled to damages / compensation for suspending of work due to safety reasons and the period of such stoppage of work will not be taken as an extension of time for completion of the facilities as per the work order and will not be the ground for wavier of levy of liquidated damages.

11.4 The contractor shall follow and comply with all safety Rules of BYPL, 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 reservation. In case of any nonconformity between statutory requirement and safety rules of the BYPL referred above, the latter shall be binding on the contractor unless the statutory provisions are more stringent.

12. OHS Appreciation Policy

12.1 If the contractor observes all the safety rules and codes, statutory laws and rules during the period of the contract awarded by the BYPL and no accident occurs then BYPL may consider the performance of the contractor and safety score card will be prepared. The best contractor will be appreciated by suitable "SAFETY AWARD" as per scheme as may be announced separately from time to time.

13 Guidelines for Penalty Policy Implementation

13.1 Total penalty shall be calculated by multiplying the number of safety violations and the penalty amount specified for such violations in Appendix - 1. (Example – If at first offence persons are found working without safety helmet at 3 locations, the penalty would be $3 \times 2000 = \text{Rs.}6000/-$)

13.2 The amount of penalty can be increased or decreased based upon the seriousness of safety violations. The decision of Head Safety shall be final one.

13.3 Recommending authority shall send his factual observations to Department Head and Safety Head who in turn shall either reject or approve it. If approved, he shall send it to Finance & Accounts for execution. Finance Accounts shall execute the penalty and confirm the same & shall send it back to Department Head and Safety Head.

13.4 Recommending Authority means the Department Head, HODs, Site Safety officer / Supervisor, representatives from OHS and other personnel authorized jointly by O&M.

13.5 Penalties will be imposed for non-documentation and non-compliance of EHS related requirements/documents mentioned in the contract. The contractor shall maintain all the mentioned documentation at his premises.

13.5 Safety Head may impose penalty for serious violations directly.

13.6 All penalties shall be imposed directly on the concerned contractors. No penalty shall be imposed on individuals.

13.7 Penalty for No I-Card/authority letter:

A penalty of Rs. 500/- shall be levied on contractor for every incident whenever employees found without I-card. / Loss of I-card.

Appendix – 1

Penalty Policy on Safety Violation

Class	Type of Offense	Penalty Detail	Execution Channel
A	Not Wearing Safety Helmets Safety shoes/ gum boots Safety Goggles / Electrical insulating hand gloves/ reflective jacket/Not using (electrically) safe tools and equipments. (Poor quality or damaged item means noncompliance)	# First Offence - Warning Note & Rs.2000/- # Second Offence - Warning Note & Fine of Rs.5000/- # Third Offence- Action for termination of contract & Fine of Rs.15000/-	Recommendation by OHS-Representative/Department Head Approval by Safety Head Deduction by Finance & Account
B	Not using Safety Net to arrest falling objects and personnel. Not using barricading cone and tape. Not using green net/violation of environment norms. Supervisor not available/incompetent (Poor quality or damaged item means noncompliance)	# First Offence -Warning Note & Fine of Rs.5000/- # Second Offence - Warning Note for dismissal and a Fine of Rs.10000/- # Third Offense - -Action for termination of contract and a fine of Rs.25000/-	Recommendation by OHS-Representative/Department Head Approval by Safety Head Deduction by Finance & Account
C	Any other unsafe work practices or condition which is considered having potential for fatality or injury.	# First Offence - Warning Note & Fine of Rs.10000/- # Second Offence - Action for termination of contract and fine of Rs.20000/-.	Recommendation by OHS-Representative/Department Head Approval by Safety Head Deduction by Finance & Account

Notes:

If there are 03 violations by an individual employee, his services will be terminated.

If there are 03 violations in one quarter under any category, will be recommended for termination of contract order.

APPENDIX II

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

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

1. WHEREAS M/s BSES Yamuna Power Limited, a Company incorporated under the provisions of Companies Act, 1956 having its Registered Office at Shaktikiran Building, Karkardooma, Delhi 110032, India hereinafter referred to as the " Owner ", (which expression shall unless repugnant to the context or meaning thereof include its successors, administrators, executors and assigns).
2. AND WHEREAS the Owner has entered into a contract for _____ (Please specify the nature of contract here) vide Contract No. _____ dated _____ (hereinafter referred to as the "Contract") with M/s. _____, (hereinafter referred to as "the Supplier", which expression shall unless repugnant to the context or meaning thereof be deemed to mean and include each of their respective successors and assigns) for providing services on the terms and conditions as more particularly detailed therein.
3. AND WHEREAS as per clause _____ of conditions of Contract, the Suppliers are obliged to provide to the Owners an unconditional bank guarantee for an amount equivalent to ten percent (10%) of the total Contract Value for the timely completion and faithful and successful execution of the Contract from [_____] *pl. specify the name of Bank*) having its head/registered office at [_____] through its branch in _____ (*pl. specify the name of Branch through which B.G is issued*) hereinafter referred to as "the Bank", (which expression shall unless it be repugnant to the context or meaning thereof be deemed to include its successors and permitted assigns).
4. NOW THEREFORE, in consideration inter alia of the Owner granting the Suppliers the Contract, the Bank hereby unconditionally and irrevocably guarantees and undertakes, on a written demand, to immediately pay to the Owner any amount so demanded (by way of one or more claims) not exceeding in the aggregate [Rs.].....(*in words*) without any demur, reservation, contest or protest and/or without reference to the Supplier and without the Owner needing to provide or show to the Bank ,grounds or reasons or give any justification for such demand for the sum/s demanded.

5. The decision of the Owner to invoke this Guarantee and as to whether the Supplier has not performed its obligations under the Contract shall be binding on the Bank. The Bank acknowledges that any such demand by the Owner of the amounts payable by the Bank to the Owner shall be final, binding and conclusive evidence in respect of the amounts payable by the Supplier to the Owner. Any such demand made by the Owner on the Bank shall be conclusive and binding, notwithstanding any difference between the Owner and the Supplier or any dispute raised, invoked, threatened or pending before any court, tribunal, arbitrator or any other authority.
6. The Bank also agrees that the Owner at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor without proceeding against the Suppliers notwithstanding any other security or other guarantee that the Owner may have in relation to the Supplier's liabilities.
7. The Bank hereby waives the necessity for the Owner first demanding the aforesaid amounts or any part thereof from the Suppliers before making payment to the Owner and further also waives any right the Bank may have of first requiring the Owner to use its legal remedies against the Suppliers, before presenting any written demand to the Bank for payment under this Guarantee.
8. The Bank's obligations under this Guarantee shall not be reduced by reason of any partial performance of the Contract. The Bank's obligations shall not be reduced by any failure by the Owner to timely pay or perform any of its obligations under the Contract.
9. The Bank further unconditionally and unequivocally agrees with the Owner that the Owner shall be at liberty, without the Bank's consent and without affecting in any manner its rights and the Bank's obligation under this Guarantee, from time to time, to:
 - (i) vary and/or modify any of the terms and conditions of the Contract;
 - (ii) Forebear or enforce any of the rights exercisable by the Owner against the Suppliers under the terms and conditions of the Contract; or
 - (iii) Extend and/or postpone the time for performance of the obligations of the Suppliers under the Contract;

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

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

Dated this day of 20XX at

(Signature)

.....

(Name)

.....

(Designation with Bank Stamp)

Attorney as per

Power of Attorney No.....

Date.....

BYPL BANK DETAIL WITH IFSC CODE:

1. Name of the Bank: Axis Bank Limited
2. Branch Name & Full Address: C-58, Basement & Ground Floor, Preet Vihar, Main Vikas Marg,
New Delhi 110092
3. Branch Code: 055
4. Bank Account No: 911030003596085
5. IFSC Code: UTIB0000055
6. Swift Code: AXISINBB055

BSEES

FORMAT OF WARRANTY/GUARANTEE CERTIFICATE

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

Ref. Purchase Order No. :

Dear Sir,

We hereby confirm that the.....dispatched to BSES YAMUNA POWER LTD vide invoice no.....
DT.....is exactly of the same nature and description as per above mentioned Purchase Order.

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

Vendors Name & Signature

UNDERTAKING GST

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

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

APPENDIX II NIT NO: CMC/BY/22-23/RS/SkS/SV/67	Page 5 of 7	Bidders seal & Signature
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SUMMARY OF COMMERCIAL TERMS AND CONDITIONS - SUPPLY

Sl No	Item Description	AS PER BYPL	BIDDER'S CONFIRMATION
1	Validity	150 days from the date of submission of bid	
2	Price basis	a) "Firm" , FOR Delhi store basis. Prices shall be inclusive of all taxes & duties, freight upto Delhi stores/sites. b) Unloading at stores/sites shall be in vendor's scope c) Transit insurance in Bidders scope	
3	Payment terms	100% payment shall be paid within 45 days from the date of receipt and acceptance of GOODS at store/site against submission of documents.	
4	Delivery Schedule	Transmittal Approval Documents (GTP/Drawings/QAP/etc) are to be submitted within 15 days to the concerned official in BYPL for approval. BYPL shall approve/provide comments on the submitted drawings within 7 days of first submission. In case resubmission is required, it shall be completed by the supplier within next 5 days. The timelines for approval by BYPL shall be 5 days in case of every resubmission. However, repetitive submissions are not desirable. Delivery shall be completed within 1.5 Months from the PO date or completion as per the schedule.	
5	Defect Liability period	66 months from the date of receipt of each unit at store(s)/site(s), whichever is earlier	
6	Penalty for delay	1% (One) of the basic value (ex-works value) of undelivered units per week of delay or part thereof, subject to maximum of 10% (Ten) of the total basic value (ex-works value) of undelivered units.	
7	Performance Bank Guarantee	To be submitted within twenty-eight (28) days from the date of issuance of the Letter of Intent/Award/RC. Supplier shall initially submit the PBG equivalent to 1% of RC Value (including GST) valid till RC validity period plus three months claim period. Upon receipt of the PBG by BYPL against RC, the EMD shall be released. Thereafter Supplier shall submit PBG on Purchase Order (PO) basis equivalent to 10% of the PO value (including GST) valid for 24 months after commissioning or 30 months from the last date of receipt, whichever is earlier plus 3 months towards claim period.	

**SUMMARY OF COMMERCIAL TERMS AND CONDITIONS SUMMARY -
INSTALLATION**

Sl No	Item Description	AS PER BYPL	BIDDER'S CONFIRMATION
1	Validity	150 days from the due date of submission	
2	Price basis	a) Firm, basis. Prices shall be inclusive of all taxes & duties b) GST shall be paid extra at actual	
3	Payment terms	100% payment will be released to contractor on monthly basis immediately after submission and verification of duly certified invoices at VSC, BYPL, Karkardooma Office along with the work completion certificates, and monthly MIS.	
4	Penalty for delay	0.5% per hour per job, subject to a maximum of 5 % per job amount involved (basic order value of each job on each job card basis)	



VOLUME – II

PRICE BID FORMAT

PRICE BID FORMAT NIT NO: CMC/BY/22-23/RS/Sks/SV/67	Page 1 of 11	Bidders seal & Signature
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GRAND SUMMARY

ALL PRICES IN INR (₹)

Package Name	Supply Prices- Landed (A)	Installation Prices- Landed (B)	Total Package Cost (C=A+B)
RATE CONTRACT FOR SUPPLY & INSTALLATION OF CABLE END TERMINATION & STRAIGHT THROUGH JOINTING KITS FOR VARIOUS SIZES OF CABLES OF VOLTAGE RATINGS UPTO 11KV			

NOTE: Cost of all tests as per technical specification is to be included. No separate/extra charges will be paid.

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

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

Date:

Bidders Name:

Place:

Bidders Address:

Signature:

Designation:

Printed Name:

Common Seal:

Note:

- 1) All prices for the packages quoted are inclusive of taxes and duties, GST and freight etc. Bidder shall include & indicate any others taxes under the applicable law(s) for supply and services to be performed in the purchaser's country.
- 2) Bidder shall include & indicate any others taxes under the applicable law(s) for supply and services to be performed in the purchaser's country.
- 3) The bidder shall, on its own, handle all imported equipment's and handle all formalities for custom clearances, port charges, etc if any

- 4) All prices for the packages quoted are against the scope of work under the contract shall be executed strictly as per the NIT conditions and the technical specification.
- 5) Quoted prices shall be as per the Bill of quantities (BOQ) as attached. However Any items/material/machinery, not specifically mentioned In BOQ as well as in the technical specifications but required for successful completeness, Erection, Testing and Commissioning of the package awarded shall be deemed to be in the scope of the bidder.
- 6) Insurance as per the clause defined in SCC and other contract conditions, is included in the quoted prices.

BIDDERS

PRICE BID FORMAT NIT NO: CMC/BY/22-23/RS/SKS/SV/67	Page 3 of 11	Bidders seal & Signature
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PRICE FORMAT – SUPPLY (A)

ALL PRICES IN INR (₹)

S. No.	DESCRIPTION OF GOODS	HSN	UoM	QTY (A)	UNIT BASIC PRICE (₹) (B)	UNIT GST & CESS AS APPLICABLE (₹)	UNIT GST & CESS AS APPLICABLE (₹) (C)	UNIT LANDED COST (₹) (D = B+C)	TOTAL LANDED COST (₹) (E = DXA)
						%	AMT		
A	1.1KV STRAIGHT THROUGH JOINTING KITS (SERVICE CABLES)								
1	- 2X10 SQMM XLPE		EA	20					
2	- 2X25 SQMM XLPE		EA	20					
3	- 4X25 SQMM XLPE		EA	350					
4	- 4X50 SQMM XLPE		EA	1300					
B	1.1KV STRAIGHT THROUGH JOINTING KITS								
1	- 4X95 SQMM XLPE		EA	1800					
2	- 4X150 SQMM XLPE		EA	5000					
3	- 4X300 SQMM XLPE		EA	2800					
4	- 4X400 SQMM XLPE		EA	10					
C	1.1KV END TERMINATION KITS - OUTDOOR								
1	- 4X150 SQMM XLPE		EA	1400					
2	- 4X300 SQMM XLPE		EA	5500					
3	- 4X400 SQMM XLPE		EA	50					
D	11KV STRAIGHT THROUGH JOINTING KITS								
1	- 3X150 SQMM XLPE		EA	75					
2	- 3X300 SQMM XLPE		EA	3500					
3	- 3X400 SQMM XLPE		EA	50					
	- 3x400 SQMM XLPE OFC EMBEDDED		EA	1					
4	- 1X1000 SQMM XLPE		EA	1					
5	SINGLE CORE REPAIR JOINT FOR 11KV 3CX300 SQMM		EA	80					
6	SINGLE CORE REPAIR JOINT FOR 11KV 3CX400 SQMM		EA	10					
E	11KV TRANSITION JOINTING KITS								
1	- 150/240/300 PILCA - 150/300/400 XLPE		EA	25					
2	- 240/300 XLPE TO 300/400 XLPE		EA	150					
F	11KV END TERMINATION KITS - INDOOR								
1	- 3X150 SQMM XLPE		EA	425					
2	- 3X300 SQMM XLPE		EA	1000					
3	- 3X400 SQMM XLPE		EA	10					
	- 3x400 SQMM XLPE OFC EMBEDDED		EA	1					
4	- 1X1000 SQMM XLPE		EA	50					
G	11KV END TERMINATION KITS - OUTDOOR								
1	- 3X150 SQMM XLPE		EA	225					
2	- 3X300 SQMM XLPE		EA	100					
3	- 3X400 SQMM XLPE		EA	11					
	- 3x400 SQMM XLPE OFC EMBEDDED		EA	1					
4	- 1X1000 SQMM XLPE		EA	50					
H	11KV AB CABLE ST THROUGH JOINTING KITS								
1	- 1X95 SQMM XLPE		EA	10					

2	- 1X150 SQMM XLPE		EA	10					
I 11KV AB CABLE END TERMINATION KITS									
1	- 1X95 SQMM XLPE CABLE HAVING COPPER TAPE		EA	2000					
2	- 1X150 SQMM XLPE CABLE HAVING COPPER TAPE		EA	900					
3	- 1X95 SQMM XLPE CABLE HAVING AL ARMOUR		EA	2000					
4	- 1X150 SQMM XLPE HAVING AL ARMOUR		EA	900					
J 11KV CABLE HYBRID JOINT (RESIN ENCAPSULATED HS)									
1	- 3X300 SQMM XLPE		EA	500					
2	- 3X400 SQMM XLPE		EA	10					
3	- TRANSITION 240/300 PILCA TO 300/400 XLPE		EA	5					
4	SINGLE CORE REPAIR JOINT FOR 11KV 3CX300 SQMM		EA	20					
5	SINGLE CORE REPAIR JOINT FOR 11KV 3CX400 SQMM		EA	1					
H 11KV CABLE END TERMINATION REPAIR KIT									
1	ANTI TRACKING & INSULATING SLEEVE FOR 11KV CABLE SIZE 3CX150 SQMM		M	250					
2	ANTI TRACKING & INSULATING SLEEVE FOR 11KV CABLE SIZE 3CX300 SQMM		M	500					
3	EARTHING BRAID SIZE 25 SQMM TINNED COPPER LENGTH 750MM, 70 SQ MM COPPER LUG CRIMPED AT ONE END		EA	500					
4	CLAMP JUBILEE, SS, 90-50MM;ADJ SCRW.		EA	250					
I 11KV CABLE JOINT REPAIR ACC									
1	REDUCER TYPE FERRULE SIZE : 150 - 300 SQMM WITH SEPERATOR		EA	1					
2	REDUCER TYPE FERRULE SIZE : 240 - 300 SQMM WITH SEPERATOR		EA	1					
J INSULATING SLEEVES									
1	ANTI TRACKING & INSULATING SLEEVE DIAMETER:50MM LENGTH:5 M (FOR LT		ROL	200					

	CABLE SIZE 4CX300 SQMM)								
2	ANTI TRACKING & INSULATING SLEEVE DIAMETER:100MM LENGTH:2 M (For Power Transformer 11 KV Busbar)		ROL	100					
K	RFID Ball								
1	Active		EA	1					
2	Passive		EA	1					
GRAND TOTAL LANDED COST (₹)									
In words									
Note: All quantities mentioned above are estimated quantities. Actual quantities may vary as per actual requirements.									

BSEES

PRICE FORMAT – SERVICES (B)

ALL PRICES IN INR (₹)

S. No.	DESCRIPTION OF SERVICES	SA C	UoM	QTY (A)	UNIT BASIC PRICE (₹) (B)	UNIT GST & CESS AS APPLICABLE (₹)	UNIT GST & CESS AS APPLICABLE (₹) (C)	UNIT LANDED COST (₹) (D = B+C)	TOTAL LANDED COST (₹) (E = DXA)
						%	AMT		
A Excavation & Backfilling - 1.1KV (SERVICE CABLES)									
1	Excavation & Backfilling of 1.1 kV straight through joint in Soft Soil (Manual)		Mtr.	450					
2	Excavation & Backfilling of 1.1 kV straight through joint in Rocky/Dense Carpet (Manual)		Mtr.	450					
B INSTALLATION - 1.1KV STRAIGHT THROUGH JOINTING KITS (SERVICE CABLES)									
1	- 2X10 SQMM XLPE		EA	20					
2	- 2X25 SQMM XLPE		EA	20					
3	- 4X25 SQMM XLPE		EA	350					
4	- 4X50 SQMM XLPE		EA	1300					
C Excavation & Backfilling - 1.1KV									
1	Excavation & Backfilling of 1.1 kV straight through joint pit in Soft Soil (Manual) up to 6 meters		EA	600					
2	Excavation & Backfilling of 1.1 kV straight through joint pit in Rocky/Dense Carpet (Manual) up to 6 meters		EA	800					
3	Excavation & Backfilling of 1.1 kV straight through joint pit in Soft/Rocky/Dense Carpet up to 6 meters with JCB/ Jack Hammer/ Pneumatic Hammer up to 6 Hrs		EA	550					
4	Excavation & Backfilling of 1.1 kV straight through joint in Soft Soil >6meters		Mtr.	450					
5	Excavation & Backfilling of 1.1 kV straight through joint in Rocky/Dense Carpet >6meters		Mtr.	800					
D INSTALLATION - 1.1KV STRAIGHT THROUGH JOINTING KITS									
1	- 4X95 SQMM XLPE		EA	1800					
2	- 4X150 SQMM XLPE		EA	5000					
3	- 4X300 SQMM XLPE		EA	2800					
4	- 4X400 SQMM XLPE		EA	10					
E INSTALLATION - 1.1KV END TERMINATION KITS									
1	- 4X150 SQMM XLPE		EA	1400					

2	- 4X300 SQMM XLPE		EA	5500					
3	- 4X400 SQMM XLPE		EA	50					
F Excavation & Backfilling - 11KV									
1	Excavation & Backfilling of 11 kV straight through joint pit in Soft Soil (Manual) up to 6 meters		EA	300					
2	Excavation & Backfilling of 11 kV straight through joint pit in Rocky/Dense Carpet (Manual) up to 6 meters		EA	700					
3	Excavation & Backfilling of 11 kV straight through joint pit in Soft/Rocky/Dense Carpet up to 6 meters with JCB/ Jack Hammer/ Pneumatic Hammer up to 6 Hrs		EA	450					
4	Excavation & Backfilling of 11 kV straight through joint in Soft Soil >6meters		Mtr.	540					
5	Excavation & Backfilling of 11 kV straight through joint in Rocky/Dense Carpet >6meters		Mtr.	200					
G INSTALLATION - 11KV STRAIGHT THROUGH JOINTING KITS									
1	- 3X150 SQMM XLPE		EA	75					
2	- 3X300 SQMM XLPE		EA	3500					
3	- 3X400 SQMM XLPE		EA	50					
4	- 1X1000 SQMM XLPE		EA	1					
5	SINGLE CORE REPAIR JOINT FOR 11KV 3CX300 SQMM		EA	80					
6	SINGLE CORE REPAIR JOINT FOR 11KV 3CX400 SQMM		EA	10					
H 11KV TRANSITION JOINTING KITS									
1	- 150/240/300 PILCA - 150/300/400 XLPE		EA	25					
2	- 240/300 XLPE TO 300/400 XLPE		EA	150					
I INSTALLATION - 11KV END TERMINATION KITS - INDOOR									
1	- 3X150 SQMM XLPE		EA	425					
2	- 3X300 SQMM XLPE		EA	1000					
3	- 3X400 SQMM XLPE		EA	10					
4	- 1X1000 SQMM XLPE		EA	50					
J INSTALLATION - 11KV END TERMINATION KITS - OUTDOOR									
1	- 3X150 SQMM XLPE		EA	225					
2	- 3X300 SQMM XLPE		EA	100					
3	- 3X400 SQMM XLPE		EA	11					
4	- 1X1000 SQMM XLPE		EA	50					
K INSTALLATION - 11KV AB CABLE ST THROUGH JOINTING KITS									
1	- 1X95 SQMM XLPE		EA	10					
2	- 1X150 SQMM XLPE		EA	10					

L INSTALLATION - 11KV AB CABLE END TERMINATION KITS								
1	- 1X95 SQMM XLPE CABLE HAVING COPPER TAPE		EA	2000				
2	- 1X150 SQMM XLPE CABLE HAVING COPPER TAPE		EA	900				
3	- 1X95 SQMM XLPE CABLE HAVING AL ARMOUR		EA	2000				
4	- 1X150 SQMM XLPE HAVING AL ARMOUR		EA	900				
M INSTALLATION - 11KV CABLE HYBRID JOINT (RESIN ENCAPSULATED HS)								
1	- 3X300 SQMM XLPE		EA	500				
2	- 3X400 SQMM XLPE		EA	10				
3	- TRANSITION 240/300 PILCA TO 300/400 XLPE		EA	5				
4	SINGLE CORE REPAIR JOINT FOR 11KV 3CX300 SQMM		EA	20				
5	SINGLE CORE REPAIR JOINT FOR 11KV 3CX400 SQMM		EA	1				
N INSTALLATION - 11KV CABLE REPAIR KIT								
1	Repair of 11 KV End Termination		EA	500				
O INSTALLATION - INSULATING SLEEVES								
1	ANTI TRACKING & INSULATING SLEEVE DIAMETER:50MM LENGTH:5 M (FOR LT CABLE SIZE 4CX300 SQMM)		ROL	200				
2	ANTI TRACKING & INSULATING SLEEVE DIAMETER:100MM LENGTH:2 M (For Power Transformer 11 KV Busbar)		ROL	100				
P HDPE PIPES, CABLE ROUTE/JOINT MARKERS, TRENCHLESS								
1	Supply of 110 MM HDPE Pipe (as per IS 4894, PN6 Class PE80)		M	10				
2	Supply of 160 MM HDPE Pipe (as per IS 4894, PN6 Class PE80)		M	10				
3	Supply of Cable Route/Joint Marker as per approved drawing For 11 KV cables		EA	100				
4	Trenchless Cable lying using HDD Machine including laying of 110 MM HDPE Pipe (as per IS 4894, PN6 Class PE80)		M	10				

5	Trenchless Cable lying using HDD Machine including laying of 160 MM HDPE Pipe (as per IS 4894, PN6 Class PE80)		M	10					
6	Trenchless Cable lying manually including laying of 110 MM HDPE Pipe (as per IS 4894, PN6 Class PE80)		M	10					
7	Trenchless Cable lying manually including laying of 160 MM HDPE Pipe (as per IS 4894, PN6 Class PE80)		M	75					
8	Fixing of Cable Route/Joint Marker as per approved drawing For 11 KV cables		EA	100					
Q	JCB/ JACK HAMMER/ PNEUMATIC HAMMER/ CRANE								
1	Use of JCB/ Jack Hammer/ Pneumatic Hammer – beyond 6 Hr		Per Hr	100					
2	Hiring Crane (Capacity 2 MT, Max. dimension of the material to be lifted circular (1.5 meter Dia) and square (1.2 X 1.2 mm2)) for 6 Hr		EA	5					
3	Hiring Crane (Capacity 2 MT, Max. dimension of the material to be lifted circular (1.5 meter Dia) and square (1.2 X 1.2 mm2)) – beyond 6 Hr		Per Hr	5					

GRAND TOTAL LANDED COST (₹)

In words

Note: All quantities mentioned above are estimated quantities. Actual quantities may vary as per actual requirements.

Note:

S. No.	Activity	Details	Remark
1	Excavation & Backfilling of straight through joint pit in Soft Soil (Manual) up to 6 meters	01 quantity shall be considered for each cable fault involving digging up to 06 Meters. For more than 06 meter digging rate for extra digging shall be considered as per soil condition.	Soft soils should be considered as surfaces with a single layer of RCC/footpath/soft soil/tiles/gravel and excavation in residential societies.
2	Excavation & Backfilling of straight through joint pit in Rocky/Dense Carpet (Manual) up to 6 meters		-
3	Excavation & Backfilling of straight through joint pit in Soft/Rocky/Dense Carpet up to 6 meters with JCB/ Jack Hammer/ Pneumatic Hammer up to 6 Hrs	01 quantity shall be considered for each cable fault involving digging up to 06 Meters. For more than 06 meter digging rate for extra digging shall be considered as per soil condition. For more than 06 Hrs of use, per hour rate for JCB/Jack hammer shall be considered.	Either JCB or Jack/Pneumatic Hammer shall be used for excavation. The cost of complete Excavation & Backfilling is included under this code. Prior approval from competent authority is a must for engaging JCB/Jack Hammer.
4	INSTALLATION - END TERMINATION KITS - INDOOR/OUTDOOR	No Charges are required for Excavation & Backfilling in normal conditions	Charges for Excavation & Backfilling if required shall be covered under extra digging depending on the surface condition.



VOLUME – III

TECHNICAL SPECIFICATIONS



Technical Specification
For LT Cable Joints and Terminations

Specification no – BSES-TS-47-LTCJ-R0

Revision	0	
No. of Pages	15	
Date:	15 July 2022	
Prepared by	Abhishek Vashistha	
	Gautam Deka/Pronab Bairagi	
Reviewed by	Puneet Duggal	
	Amit Tomar	
Approved by	Gaurav Sharma	
	Gopal Nariya	

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Technical Specification For LT Cable Joints and Terminations**1.0.0 Scope of supply**

Design, manufacture, testing of LT jointing and termination kits (1.1 KV) at manufacturers works before dispatch, packing, delivery of material and submission of documents to purchaser.

2.0.0 Codes & standards

S No.	Title	Indian Standard
2.1	Cable accessories for extruded power cable	IS 13573 (Part 1):2011
2.2	Cross-linked Polyethylene (XLPE) Insulated PVC sheathed cables : Part 1 : For working voltages from up to and including 1.1 kV	IS – 7098 Part 1
2.3	Methods of test for cables	IS - 10810: 1984
2.4	Ferrule	IS:8308, IS:5082
2.5	Electricity Association - Technical Specification -09-13 Material component for use in Electric Power Cable Termination & Joints for System voltage above 1000 V up to 36 kV	EA TS - 09 – 13
2.6	Test method for electric cables	IEC 885 Part 1 -3
2.7	Power cables with extruded Insulation and their accessories for rated voltages from 1kV up to 30kV.	IEC 60502-2009
2.8	Standards Methods for Liquid, Inclined -Plane Tracking and Erosion of Insulation Material.	ASTM D 2303
2.9	Specification, for 1.1 kV Cable joint & Terminations kit.	EN 50393

3.0.0 Distribution System Data

3.1	Supply	a. Single Phase 2 wire (AC) b. 3 Phase 4 Wire (AC)
3.2	Voltage	240 V \pm 6% (415V Phase to phase)
3.3	Frequency	50 Hz \pm 5%
3.4	System Neutral	Solidly Earthed

4.0.0 Environmental Condition Delhi

4.1	Average grade atmospheric Condition	Heavily Polluted, Dry
4.2	Maximum altitude above sea level	1000 M
4.3	Ambient Air temperature	Highest 50 Deg C, Average 40 Deg C
4.4	Minimum ambient air temperature	0 Deg C
4.5	Relative Humidity	100 % Max
4.6	Thermal Resistivity of Soil	150 Deg C cm/W
4.7	Seismic Zone	4
4.8	Rainfall	750 mm concentrated in four months

Technical Specification For LT Cable Joints and Terminations**5.0.0 Cable Construction:**

5.1	Size of the cables	<ol style="list-style-type: none">1. 2C X 10 Sq mm2. 2C X 25 Sq mm3. 4C X 25 Sq mm4. 4C X 50 Sq mm5. 4C X 95 Sq mm6. 4C X 150 Sq mm7. 4C X 300 Sq mm8. 4C X 400 Sq mm
5.2	Conductor	<ol style="list-style-type: none">a. Electrolytic Grade stranded Aluminum Conductorb. Grade: H2/ H4 as per IS: 8130/84 (For Al)c. Shape: compacted sector shaped strandedd. Class 2
5.3	Insulation	Extruded XLPE
5.4	Inner sheath	Extruded Inner Sheath of Black PVC type ST-2.
5.5	Armour	Galvanized steel flat strip armour GI Wire
5.6	Outdoor Sheath	Extruded outer sheath of PVC (ST-2)
5.7	Maximum Conductor Temperature	Continuous- 90 Deg C, Short Circuit- 250 Deg C

6.0.0 Cable Jointing Kits

6.1	Type	Heat Shrinkable straight through joint Kits.
6.2	Size	Suitable for cable sizes mentioned in clause no. 5.1 and Purchaser's Requisition.
6.3	Conductor Connection	<ol style="list-style-type: none">a. By long barrel AL Ferrule (Please refer drawing mentioned in annexure.b. Corrosive inhibition paste inside the ferrule with plastic end caps.c. Ferrule shall be marked for size of the cable for which it is suitable.d. Crimping mark shall be provided on ferrule.e. Inner edge of ferrules should be chamfered for easy insertion of cable core.
6.4	Insulation	<ol style="list-style-type: none">a. Heat shrinkable Insulating tubing for providing insulation over ferrule.b. The reinstated insulation of each core over conductor connector (Ferrule) shall have a single length of heat shrinkable tubing, recovered over the connector with a final minimum overlap of 30 mm on each core. The minimum recovered thickness of insulation shall be 1.5 mm.
6.4.1	Core spacers	Shall be provided.
6.5	Armour Continuity	A flexible tinned cooper conductor of braided construction shall

Technical Specification For LT Cable Joints and Terminations

		provide electrical continuity of steel wire armour. The conductor shall be bonded to the armour wires by a combination of a galvanized steel ring inserted under the wires and stainless steel horse clips (steel grade SS 304). The arrangement shall ensure that temperature rise at bonding point is limited to 160 °C.
6.5.1	Conductor Size	Tinned Copper braid
6.5.2	25 Sqmm	16 sq.mm
6.5.3	50 Sqmm	30 sq.mm
6.5.4	95, 150, 300 and 400 Sqmm	50 sq.mm
6.6	Mechanical Protection:	The joint shall incorporate a steel screen surrounding the insulated core for full length of the joint. The metallic screen shall be in electrical contact with steel wire armour, but shall not be considered as forming part of armour continuity bond. The steel screen in combination with external heat shrinkable tube shall provide protection to the insulated cores from damages by impacts.
6.7	Covering over the Joints:	The Joint shall be protected from corrosion by heat shrinkable tubes internally coated with mastic or heat activated sealant to provide an environmental seal to the joint. One or two tubes shall be provided. Length of the outer sealing sleeve shall be 500 mm upto 25 sq.mm & 1000 mm for 50 sqmm upto 400 sqmm.
6.8	Identification	Heat shrinkable tubing shall be printed with batch no./Date/Shrinkage ratio/size etc.

7.0.0 Cable Termination Kits

7.1	Type	Heat Shrinkable outdoor termination Kits.
7.2	Size	Suitable for cable sizes mentioned in clause no. 5.1 and Purchaser's Requisition.
7.3	Conductor Connection	<ol style="list-style-type: none"> By long barrel AL Lug (Please refer drawing mentioned in annexure. Corrosive inhibition paste (M/s Jainson or equivalent) inside the ferrule with plastic end caps. Lug shall be marked for size of the cable for which it is suitable. Crimping mark shall be provided on ferrule. Inner edge of Lug should be chamfered for easy insertion of cable core.
7.4	Insulation	<ol style="list-style-type: none"> The minimum length of outer sleeve shall be shall be 1000mm. It shall also have UV rating to protect from direct sun light exposure. Each Phase and neutral tube shall have different colour for easy identification. Preferably, Red, Yellow, Blue colour to be used for Phases and Black for neutral. If the same is not possible then at least, Red colour to be used

Technical Specification For LT Cable Joints and Terminations

		for Phases and Black for neutral. d. Lug seal with HMA to be provided for lug sealing.
7.4.1	Core spacers	Shall be provided.
7.5	Armour Continuity	<p>A flexible tinned copper braid Insulated with Heat shrink tube shall provide electrical continuity of steel wire armour.</p> <p>The fault current capacity of copper braid should withstand the cable fault current capacity based upon different size of cable as defined in IS: 13234.</p> <p>The conductor shall be bonded to the armour wires by a combination of galvanized steel ring inserted under the wires and stainless steel horse clips (steel grade SS 304).</p> <p>The arrangement shall ensure that temperature rise at bonding points shall be limited to permissible temperature of cable.</p> <p>Earthing braid should be provided with length sufficient to take one complete turn on armour and then continue to the other end of the armour with one turn around.</p> <p>This one turn will ensure the firm contact with the armour to tighten this braid worm drive clips two per side to be provided with back up ring the remaining 70 % of braid will be insulated with heat shrink tubes to ensure the Insulated earth at Heat shrink breakout region.</p> <p>Braid terminal lug shall be suitable to accommodate M12 bolts for connection with earthing.</p>

8.0.0 Properties of Heat shrinkable components:

8.1	Heat Shrinkable Components General properties	<p>Components shall be capable of being stored without deterioration within temperature range of 10 Deg C to 45 Deg. C and shall have unlimited shelf life.</p> <p>Sealant activated by heat shall be used in conjunction with heat shrinkable components to provide an environmental seal to the completed joint.</p>
8.2	Electric Strength	≥ 8 kV/mm
8.3	Heat shock 250 °C for 15 Min.	No splitting, dripping or flowing.
8.4	Tensile Strength	≥ 12 Mpa (120 kg/sq.mm)
8.5	Elongation	$\geq 200\%$
8.6	After Thermal Ageing at 120°C for 500Hrs.	
8.7	Tensile Strength	≥ 10 Mpa (100 kg/sq.mm)
8.8	Elongation	$\geq 100\%$

Technical Specification For LT Cable Joints and Terminations**9.0.0 Quality Assurance, Inspection & Testing**

9.1	Vendor Quality Plan	To be submitted for purchaser's approval.
9.2	Sampling methods	Sampling Method for quality checks shall be as per relevant IS/ IEC/ EA TS-09-13 guidelines and Purchaser's prior approval shall be taken for the same.
9.3	Inspection Hold-Points	To be mutually identified, agreed and approved in Quality Plan.
9.4	Type test	<ol style="list-style-type: none">Joints and terminations shall be type tested from CPRI / ERDA as per IS 13573 -Part1.Randomly selected sample shall also be type tested without any commercial implication from the offered lot in the event of order.Loose components shall be tested as per EA TS -09-1 3.
9.5	Routine tests	As per relevant IS and EA TS -09-13
9.6	Acceptance test	<ol style="list-style-type: none">Visual Inspection- The offered kits shall be free from any visible defects,Physical verification of contents - all the contents shall be checked as per kit contents list enclosed by the bidder,Electric Strength test for Insulation tubing.Elongation tests for all types of tubing.Wall thickness ratioLongitudinal change after full recovery.Tracking and corrosion resistance test.Tensile strength.
9.7	Inspection	<ol style="list-style-type: none">Purchaser reserves the right to inspect /witness all tests on the meters at Seller's works at any time, prior to dispatch, to verify compliance with the specification/ standards.Manufacturer should have all the facilities/ equipments to conduct all the acceptance tests as per clause 14.3 relevant standards and tampers logics as per approved GTP. All the equipments including tamper logs kits/ jigs should be calibrated.In-process and / or final inspection call intimation shall be given in advance to purchaser.
9.8	Guaranteed Life	Joint shall be guaranteed for a period of 66 months against defective design & material & shall be replaced free of cost to BSES if failed due to design / material defect.

Technical Specification For LT Cable Joints and Terminations**10.0.0 Packing and Marking Shipping, Handling and Storage**

10.1	Packing	a. In 7 Ply corrugated box made out of 150 GSM Virgin Kraft Paper. b. Protection against shocks & vibration
10.2	Packing identification labels	Manufacturer Name, Number of items, Month & Year of manufacturing, Shelf life of Kit, Property of BSES
10.3	Corrugated Box contents	Kit components in proper packing with label indicating component name, quantity & shelf life. Bill of material sheet Instruction sheet for step by step jointing in English & Hindi

11.0.0 Deviations

Sr No.	Clause No.	Deviation	Advantage to BSES

Technical Specification For LT Cable Joints and Terminations**12.0.0 Document Submission Matrix:**

Document/Drawing submission shall be as per the matrix given below:

- a. All documents/drawings shall be provided in soft copy only in returnable Pen drives
- b. Language of the documents shall be English only.
- c. Incomplete submission shall be liable for rejection.
- d. Document check sheet compliance shall be the first sheet for each submission stage i.e. Technical bid, Drawing Approval, Pre Dispatch, Pre closure
- e. No submission is acceptable without check list compliance.
- f. Deficient/ improper document/ drawing submission shall be liable for rejection.
- g. Order of documents shall be strictly as per the check list.
- h. Any document not included in the below table but necessary for detailed engineering shall be deemed to be included in bidder's scope

S.No.	Detail of Document	For Tender	For Approval/Review	Final Submission
1	Guaranteed Technical Particulars (GTP)	Required	Required	Required
2	Deviation Sheet, if any	Required	Required	Required
3	Detailed layout & cross sectional drawing of joint	Required	Required	Required
4	Installation Instructions		Required	Required
5	Detailed Kit Content	Required	Required	Required
6	Manufacturer's Quality Assurance Plan	Required	Required	Required
7	Type test reports of offered joints and components	Required	Required	Required
8	BIS certificate	Required		
9	Make of Raw Materials	Required	Required	Required
10	Inspection and test reports, carried out in manufacturer's works			Required
11	Routine Test Certificates			Required
12	Test certificates of all the raw materials			Required

Technical Specification For LT Cable Joints and Terminations**Annexure – A: Guaranteed Technical Particulars: Cable Joint & Termination Kit**

The Seller is deemed to have examined all parts of the Specification documents and to have been fully informed, as to the nature of work and the conditions related to its performance.

S. No.	Description	Units	Vendor's data
1	Manufacturer's name		
2	Purchase Order no. & date		
3	Guarantee Period (minimum)	60 Months (from date of commissioning) / 66 Months (from date of receipt at Purchaser's store), whichever is earlier	
4	Applicable IS /IEC Standard followed by Vendor (incl. type test standard)		
5	Voltage Grade	kV	
6	A.C. withstand voltage Dry (Ph./ground)	kV	
6.1	Time duration	Minutes	
7	A.C. withstand voltage wet (Ph./ground) immersed in water	kV	
8	Impulse Withstand Voltages	kV	
9	Load Cycle Test a) Each Cycle – Heating Duration b) Temperature c) Cooling Duration d) Number of Cycles		
10	Heat Cycle test in water on outer sheath		
11.	Leak Tightness		

Technical Specification For LT Cable Joints and Terminations

S. No.	Description	Units	Vendor's data
12.	Insulation Resistance in Air	500volt 50 Mega ohm	
13.	Insulation Resistance immersed in water	500volt 50 Mega ohm	
14.	Dielectric Strength of Insulating Material		
15.	DC Voltage Withstand test	kV/Min	
16.	Accelerated ageing test		
17	KIT PARTICULARS		
17.1	Material of the tubing /moulded parts		
17.2	Method of environmental seal		
17.3	Allowable Kit Storage Temperature	Deg. C	
17.4	Shelf life of H.S. components		
17.5	Cable Termination Installation Instructions manual	Yes/No	
17.6	Method of earth bond a) Size and no. of braids b) Size of armour support c) No. of hose clips		
17.7	Method of mechanical protection		
17.8	Method of protection against corrosion (type & coating thickness of protective layer on steel mat)		
18	Description of items in the Kit, which are imported /sourced From Principal /Sub-suppliers		
19	Names of items in the Kit and their respective shelf life (months/years)		
20	Kit Content Table (KCT) enclosed?	Yes / No	

Annexure – B: Routine and Acceptance Test**A. Visual Examination**

Condition of selected items / components, as per sampling method, shall be recorded. Some of the normal check-points can be as follows:

1. Every component shall be verified in quantity and description as per KCT.
2. All items shall be free from any defects, pin holes, cracks, etc.
3. Metallic components to be free from sharp edges.

B. Measurements of Dimensions

(Required / observed dimension — length, diameter, etc.)

1. Supplied dimensions
2. Recovered dimensions

C. Destructive Testing

On various heat-shrinkable /moulded components of ready Kits (Items 3 and 4 are applicable only for heat-shrinkable components)

1. Tensile Strength
2. Wall Thickness Ratio
3. Heat Shock
4. Longitudinal Change, after full recovery
5. Ultimate Elongation
6. Low Temperature Flexibility
7. Dielectric Strength
8. Volume Resistivity

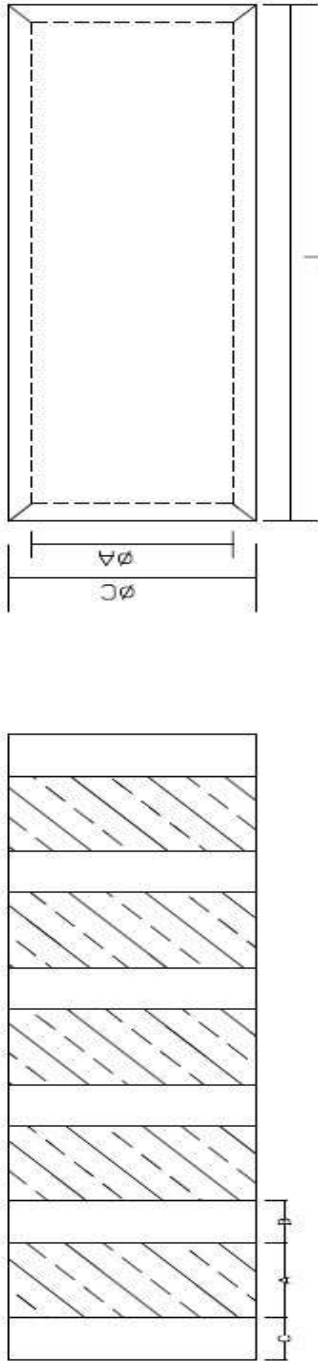
D. Routine Test Reports (RTR)

(Typical)

Each RTR shall clearly indicate P.O. no. & date and also BSES's SAP code no. RTR shall record the serial numbers of the kits selected, as per vendor's sampling method. Following details, besides vendor's/manufacturers standard check-points, shall appear in every RTR.

Annexure C: Drawing of Al Crimping Ferrule for Straight Through Joint

COMPRESSION TYPE ALUMINIUM TUBULAR IN-LINE CONNECTORS FOR NON TENSION CONNECTORS OF ALUMINIUM CONDUCTORS



CRIMPING SEQUENCE MARKED ON FERRULE			
SIZE	A	B	C
25	5	5	3-Ø
50	9	5	3-Ø
95	9	5	3-Ø
150	9	5	3-Ø
300	9	5	3-Ø
400	9	5	3-Ø

FERRULE DIMENSION (MM)			
SIZE	ØA	ØC	J
25	6.8-7.1	12.0-12.5	65-75
50	9.3-9.6	16-16.5	80-90
95	13.2-13.6	22-22.5	100-110
150	16.2-16.6	21.4-21.6	120-130
300	23.4-25	30.9-32	140-150
400	26.0-29	35.5-37.5	140-150

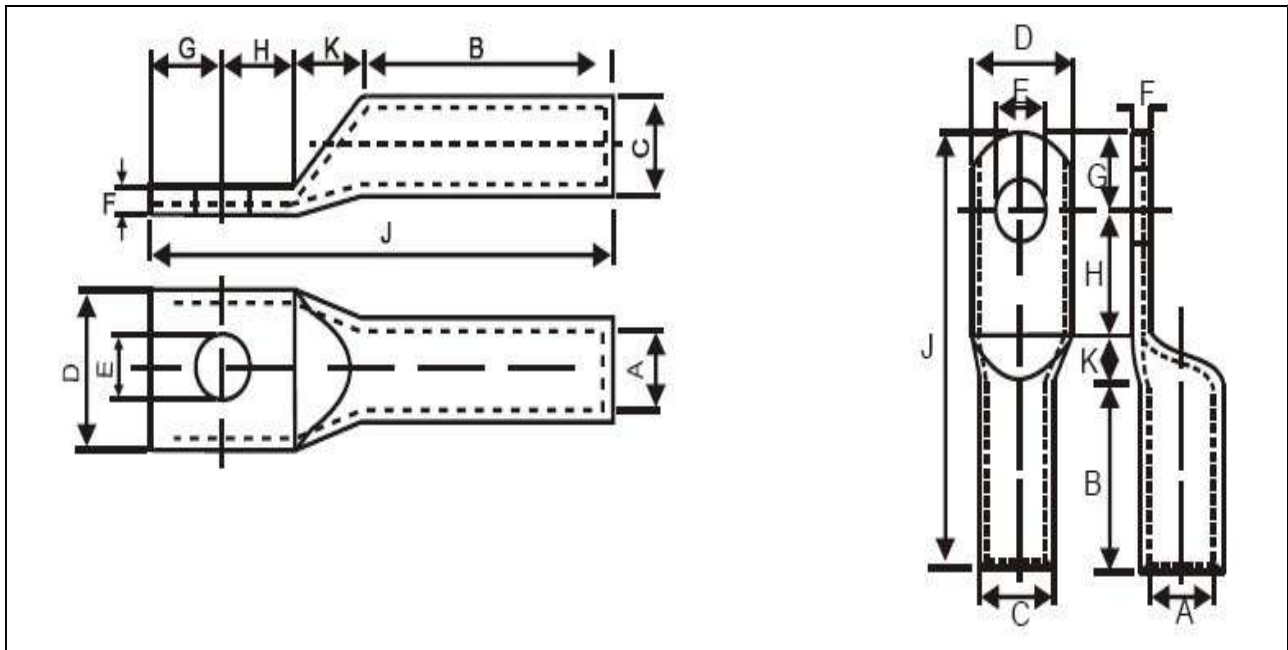
NOTES:-

1. ALL THE DIMENSIONS ARE IN MM
2. REFERENCE : SPECIFICATION AS PER TABLE 2 OF IS-8308
3. MATERIAL : ELECTROLYTIC GRADE ALUMINIUM AS PER IS: 5082
4. FINISH : NATURAL

Technical Specification For LT Cable Joints and Terminations

Annexure D: Drawing of Aluminium Lug for Cable Termination kits

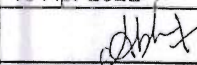
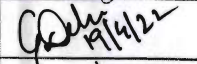
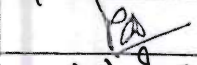
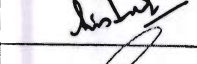


Cable details	Conductor shape	E	A	C	D	F	B	K	H	G	J
CABLE ARM XLPE 1.1KV 4C 150MM ² AL	SECTOR SHAPE	13	16.2 – 16.6	21.4- 21.6	30.6- 31.2	4.7- 5.3	83	11	17	17	128
CABLE ARM XLPE 1.1KV 4C 300MM ² AL	SECTOR SHAPE	17	23.4 - 25	30.5- 32.0	44.2- 45.2	7 - 7.5	89	14	27	27	157
CABLE ARM XLPE 1.1KV 4C 400MM ² AL	SECTOR SHAPE	17	27 - 28	35-36	48.5- 49.5	8 – 8.5	89	14	27	27	157



BSES

Technical Specification
For Heat Shrinkable & Cold Shrinkable
Straight Through Jointing Kit
(11 KV, 33 KV, 66 KV XLPE Insulated Cables)

Specification no – BSES-TS-44-STTH-R0

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Prepared by	Abhishek Vashistha	
	Gautam Deka/Pronab Bairagi	
Reviewed by	Puneet Duggal	
	Amit Tomar	
Approved by	Gaurav Sharma	
	Gopal Nariya	

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Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)**1.0.0 Scope of work**

- A. Heat Shrinkable / Cold shrinkable Straight Joint Kits (hereinafter briefly referred to as “STJ Kits”), suitable for 11 kV, 33 & 66kV XLPE cables, shall be designed, manufactured, tested, packed and delivered by the Vendor, as per Purchaser’s requirements.
- B. Supervision, during installation of joints at site if mentioned in the order.
- C. During post-installation period, if a joint fail at site, the vendor shall depute a technical team to site for a root-cause analysis of the failure of the joint, in the presence of BSES officials. An Analysis Report shall then be submitted for BSES’s review and approval. If this report concludes the cause of failure as due to a design/manufacturing defect in a component, then vendor shall replace all such components in the entire stock available with BSES.

2.0.0 Codes & standards

2.1.0 National Standards:

S No.	Standard Number	Title
2.1.1	IS- 13573: 2011	Joints & Terminations of Polymeric Cables for working voltages from 6.6 kV up to and including 33 kV Performance Requirements and Type Tests
2.1.2	IS- 7098: Part 2:1985	Cross-linked Polyethylene (XLPE) Insulated PVC sheathed cables: Part 2 - For working voltages from 3.3 kV up to and including 33 kV
	IS- 7098: Part 3:1993	Cross-linked polyethylene insulated thermoplastic sheathed Cables specification: Part 3 - For working voltages from 66 kV up to and including 220 KV
2.1.3	IS- 10810: 1984	Methods of test for cables

2.1.1 International Standards:

S No.	Standard Number	Title
2.2.1	EA TS - 09-13	Electricity Association - Technical Specification – 09 – 13 Material component for use in Electric Power Cable Termination & Joints for System voltage above 1kV up to 36 kV
2.2.2	IEC - 60183	Guide to the selection of high voltage cables
2.2.3	IEC - 885 Part 1 to 3	Electric test methods for electric cables
2.2.4	IEC - 60502 - 4	Power Cable Accessories for XLPE Cables above 3kV & up to 30 kV Test methods
2.2.5	IEC - 60840	Power cable with extruded insulation and their accessories for rated voltage above 30 kV (Um=36 kV) up to 150 kV (Um=170 kV) - test methods and requirements.

Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)

3.0.0 Cable Construction

Normal sizes of XLPE cables used in BSES system, construction features and corresponding joint requirements of cables are indicated below:

- a. 11kV, 3-core x 150 sq mm AL
- b. 11kV, 3-core x 300 sq mm AL
- c. 11kV, 3-core x 400 sq mm AL(Conventional)
- d. 11kV, 3-core x 300/400 sq mm AL (Single and three core long barrel Repairing Joint)
- e. 11kV, 3-core x 400 sq mm AL (OFC embedded)
- f. 11kV, 1-core x 1000 sq mm AL
- g. 11kV, 1-core x 150 sq mm AL HTAB
- h. 11kV, 1-core x 95 sq mm AL HTAB
- i. 33kV, 3-core x 400 sq mm AL
- j. 33kV, 3-core x 400 sq mm AL (OFC embedded)
- k. 33kV, 3-core x 400 sq mm AL (Single and three core long barrel Repairing Joint)
- l. 66kV, 1-core x 630 sq mm AL
- m. 66kV, 1 core x 1000 sq mm AL
- n. 66kV, 1 core x 1000 sq mm AL (For Single core long barrel Repairing Joint)
- o. 66kV, 3-core x 300 sq mm AL
- p. 66kV, 3-core x 300 sq mm AL (OFC Embedded)

3.1.0	Conductor	a) Electrolytic Grade Stranded Aluminum Conductor b) Grade: H2 / H4 as per IS: 8130 / 1984 (For Al) c) Stranded, compacted and circular in shape d) Class 2 e) Longitudinal "Water-Blocking Arrangement" (or water-tight construction or water barrier protection)
3.1.1	Conductor Screen	Extruded Semi Conducting material
3.1.2	Insulation	Extruded XLPE Insulation for 11 kV and Extruded TR-XLPE Insulation for 33 kV and 66 kV
3.1.3	Insulation Screen	Freely strippable Semi Conducting (without application of heat) for 66kV firmly bonded.
3.1.4	Water Swell able Tape	Semi-conducting Water Swell-able Tape under the copper tape on each core.
3.1.5	Copper Tape	Copper Tape applied helically over the layer formed by application of insulation screen, water swell able tape and identification strip
3.1.6	Filler	All interstices, including center interstices filled by PP filler. In case of OFC embedded cable.48 no OFC (36 single mode and 12 no multi mode) as a filler in 11kV 3CX400 sqmm cable, 33kV 3CX400 and 66 kV 3CX300 sqmm cable
3.1.7	Over all three cores	Binder tape
3.1.8	Inner Sheath	Extruded Inner Sheath of Black PVC type ST-2.

Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)

3.1.9	Armour	a) For 11 kV 3-core Cables : Galvanized Steel flat strip armour b) For 1-core Cables : Non-Magnetic, Hard drawn Aluminium wire (flat/round) c) Corrugated aluminium or lead sheathed for 1core 66kV Cable d) For 33kV and 66 kV 3-core cable- Galvanized Steel Round wire
3.1.10	Binder Tape	Rubberized cotton tape
3.1.11	Outer Sheath	Extruded outer sheath of PVC (ST-2) for 11 kV and 33 kV cable. For 66 kV cable, HDPE ST 7 with termite- repellent and anti-rodent properties with extruded semicon/graphite layer over HDPE ST7.
3.1.12	HTAB Cable (1CX150 and 1CX95)	AB cable- conductor-conductor semicon screen- TR XPLE- insulation screen-- Water Swallowable tape -Round wire armour (in the place of copper tape), Water Swallowable tape-outer sheath+massenger wire
3.1.13	OFC	For OFC embedded cable of sizes 11kV 3CX400 sqmm cable, 33kV 3CX400 and 66 kV 3CX300 sqmm cable - Single Mode-36 Nos. Multi Mode- 12 nos. All the OFC cable is placed as filler inside the cable.

4.0.0 Straight-Through Joints (STJ)

General Technical Requirements for Straight-Through Joints (STJ) for XLPE cables are as follows:

Scope: Design, manufacture, testing and supply of Straight-Through Joint Kits for 11 kV, 33 kV & 66kV Power Cables.

Functional requirements for Heat Shrinkable / Cold Shrinkable STJ joints are given below:

4.1.0 Heat Shrinkable / Cold Shrinkable STJ joints		
4.1.1	Cable preparation	Cable preparation shall be as per installation instruction sheet. Manufacturer shall be provide Installation instruction sheet in every kit
Connector		
4.1.2	Conductor Screen	For 11kV a) Conductors to be jointed by crimping connectors b) Annular CSA (cross-sectional area) of the ferrule shall not be less than CSA of the conductor of the cable. Length of the ferrule shall be sufficient to allow adequate number of crimps, to limit temperature rise at the joint. (Vendor to furnish dimensional drawing for ferrule, indicating crimp marks.) c) For aluminium cable, the crimped ferrule shall be of aluminium d) Refer annexure F for GA drawing of crimping ferrule e) For single core repairing joint- long barrel mechanical connector/ferrule shall be provided (middle part of ferrule/connector shall be solid for better connectivity)

Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)

		<p>For 33kV and 66kV</p> <p>a) Shear bolt type mechanical connector</p> <p>b) Approved make:</p> <ul style="list-style-type: none"> • Tyco Electronics (BSM-185/400-U) • Pfisterer (332617010) • Nexans • Niled • Or equivalent type tested make (Manufacturer shall take prior approval from CES) <p>d) Maintain smooth surface over connector after cut the shear head bolt</p> <p>e) Vendor to furnish drawing for the mechanical connector</p> <p>Note: In all voltage grade- For single core long barrel repairing joint, one long barrel connector/ferrule and for three core long barrel repairing joint, three long barrel connector/ferrule shall be provided along with all kind of accessories.</p>
4.1.3	Void filling and stress relief over crimped connector and cut point of the insulation screen.	By means of High permittivity mastic tapes / Lubricant.
4.1.4	Metal screen continuity	By means of Tinned copper wire mesh, wrap individual core from cu screen with 50 % overlap and continue on other side cu screen. Bind the copper wire mesh on copper screen with copper binding wire/CFS
Armour / Earthing Continuity		
4.1.5	Armour bond	<p>a) By means of a combination of steel (G.I.) support ring (for 3- core Cable) or Aluminium support ring (for 1 - core Cable) and two nos. of stainless steel hose clips.</p> <p>b) GI Support Ring shall be 'zinc-sprayed with central bulge / bump'.</p>
4.1.6	Minimum Armour Fault Current Carrying capacity	<p>11 kV Cable – 11 kA for 1 sec</p> <p>33 kV Cable – 31.5 kA for 1 sec</p> <p>66 kV Cable – 31.5 kA for 1 sec</p>
4.1.7	Provision of Armour continuity	<p>By means of tinned copper braided conductor as per following</p> <p>11 kV cables –</p> <p>11 kV Cable – Three No's of 25 sq mm each</p> <p>33 kV Cable – Four No's of 50 sq mm each</p> <p>66 kV Cable – Four No's of 50 sq mm each</p>

Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)

Accessories		
4.1.8	Suppression of electrical discharges over XLPE insulation	Cleaning solvent /equivalent, for manual application.
4.1.9	Installation Instruction	Shall be provided in English and Hindi and shall be inside every kit.
4.1.10	Sheet paper Tap	Paper tape, required for measurements during jointing, shall be provided inside every kit.
4.1.11	Identification Tag (for traceability)	<p>1. An aluminum pouch with paper tag & sealing arrangement at one end shall be provided. This tag is required to be tied over the cable at one side of the joint. The paper tag shall give following information</p> <ol style="list-style-type: none"> 1) Vendor kit designation 2) Cable section/Division 3) Type of joint 4) Size of Joint 5) Make of joint 6) Voltage class 7) Serial no. of kit 8) Vendor lot & batch no 9) Month & year of manufacturing 10) Date of installation 11) Name of jointer 12) Name of vendor supervisor 13) Name of BSES supervisor 14) Remarks <p>2. In addition to above Stainless Steel Tag shall be provided with following details for straight through joint</p> <ol style="list-style-type: none"> a. Manufacturing month and year (MM/YY format) b. Manufacturer name i.e Comp c. Manufacturer own sl no for future tracing
4.1.12	Printing on each Heat/cold shrinkable or Moulded component	Month and year of manufacturing, batch no. /lot no., size, make, type etc.
4.1.13	GPS Coordination	Vendor to capture GPS coordinates and shall include in job card of each joint at their own cost.
4.1.14	Hydraulic Crimping	Using of Hydraulic crimping tool is mandatory for crimping purpose
4.1.15	Coffin for completed joint and Joint Marker	<p>After successfully completion of joint, Coffin shall be made by bidder for completed joint. Drawing shall be provided by BSES. Excluding drawing, everything shall be in the scope of bidder.</p> <p>After back filling a joint marker shall be fixed by bidder above ground to mark the joint location. Drawing is enclosed with this</p>

Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)

		tech spec.
4.1.15	Electronic Ball Marker for 33kV and 66kV Cable Joint.	Passive and Active ball shall be supplied and placed at each and every joint to mark the joint electronically. Data shall be filled by bidder as per BSES requirement.
4.1.16	OFC	11kV 3CX400, 33kV 3CX400 and 66kV, 3CX300 sqmm cables are OFC embedded. OFC joint shall be supplied along with main cable joint. (36 single mode and 12 nos. multi mode OFC inbuilt inside cable). OFC joint shall be made separately from main cable joint.
4.2.0 Only for Heat Shrinkable STJ joints		
4.2.1	Stress Control System	<p>a) The earthed insulation screen of an XLPE cable is terminated at a suitable distance from the connector (Ferrule).</p> <p>b) The stress control tube is in electrical contact with insulation screen.</p> <p>c) Impedance of the tube shall be constant up to an operating temperature and shall be within the range 1×10^8 ohm-cm to 8×10^8 ohm-cm.</p> <p>d) The physical and electrical properties shall conform to EA TS 09-13.</p> <p>d) For single phase repairing joint-stress control tube shall be suitable for long barrel mechanical connector/ferrule</p>
4.2.1.1	Insulation build-up	<p>a) Maximum three layers of insulation tubes shall be used. Total thickness of the insulation being provided in the joint shall not be less than 1.2 times the insulation of the cable being jointed.</p> <p>b) Outer-most tube shall be screened insulating tube (dual wall tube). This tube shall be manufactured by extrusion process.</p> <p>c) Physical and Electrical properties shall conform to EA TS 09-13.</p> <p>d) For single phase repairing joint-insulation build up shall be suitable for long barrel mechanical connector/ferrule</p>
4.2.2	Sealing end of tube	By means of Core end sealing sleeve with red mastic coating
4.2.3	Mechanical Protection	<p>a) For 3-core cable: By means of a rollable steel mat (with required protective coating against corrosion)</p> <p>b) For 1-core cable:</p> <p>i) Copper wire mesh</p> <p>ii) Adhesive coated medium wall tube</p> <p>iii) One more layer of copper wire mesh</p> <p>iv) Medium wall tube</p>
4.2.4	Corrosion Protection	By means of semi-rigid tubes, internally coated with water blocking sealant. Thick wall Insulating tube

Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)

4.3.0 Only for Cold Shrinkable ST joints

Scope:

The term cold shrink applies to materials, which are capable of shrinking without raising the material above the ambient temperature of its immediate surroundings. The material of the rubber insulator used in the Cold Shrink assembly shall be silicone which is factory expanded and placed on a removable core. The removing of the core causes the cold shrink assembly to shrink. The cold shrink assembly shall maintain a compressive force on the cable continuously throughout the life of the product. This pressure will ensure a complete moisture seal.

4.3.1	Stress Control System	By means of one piece body (splice assembly) providing stress control, insulation and screen continuity.
4.3.2	Mechanical Protection	By application of mastic coated vinyl tape and armor cast structural material. The taped armor cast layer may also be sprayed with water to hasten the curing.

4.4.0	Technical Particulars	Vendor shall submit Guaranteed Technical Particulars (GTP) as per Annexure A.
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4.5.0 Testing & Inspection

4.5.1	Type Tests (CPRI/ERDA)	<p>a) Straight-Through Joint shall be of type-tested quality from CPRI/ERDA. Type Test report shall not be more than 5 years old.</p> <p>b) In addition to this, in case of rate contract, vendor will be required to conduct type-testing on heat/cold -shrinkable and moulded components, stress grading mastic, etc., in line with EA TS 09-13 standard, at third party test laboratory once in 6 months on randomly selected sample of each voltage rating without any commercial implication to BSES. Also special test shall be done as per IS 13573.2.2011, Table-7 without any cost implication to BSES. Cable for type test may be provided by buyer at the cost of bidders.</p> <p>C) If product is not type tested or test report is more than 10 years old from CPRI/ERDA (subject to no change in the relevant IS/IEC.IEEE) , same shall be carried out by seller, sample shall be selected randomly by BSES, test cost to be borne by seller. For new vendor, type test is mandatory from CPRI/ERDA of BSES sample at their own cost.</p>
4.5.2	Routine & acceptance Tests	<p>I) All the routine and acceptance tests shall be carried out as per EA TS 09-13 guidelines, refer Annexure C.</p> <p>II) H.V. Test shall be carried out on a randomly selected and installed Straight-Through Joint, in the presence of Purchaser's representative, at manufacturer's works.</p> <p>III) The joint shall withstand a test of 4Uo voltage for 4 hours.</p>

Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)

4.5.6	Inspection	I) Purchaser reserves the right to inspect /witness all tests on the STJ Kits at Seller's works at any time, prior to dispatch, to verify compliance with the specification. II) In-process and / or final inspection call intimation shall be given in advance to purchaser.
4.5.7	Test Certificates	i) Three sets of complete Test Certificates (Routine & Acceptance tests) shall be submitted along with the delivery of STJ Kits. ii) Bought-out Items: Vendor shall submit Test Certificates, lot/batch number-wise, from their sub- suppliers / principal. TC's should clearly indicate the measured technical parameters, in accordance with sub-supplier's specification. (Also refer Annexure - C)
4.6.0	Documents	"Documents" refer to Documents, Data, Manuals, etc. (Scanned copy of signed documents also shall be part of entire soft file (e-file) or CD.
4.7.0	Along with the Bid	Vendor shall submit signed 3 sets (plus 1 set of soft copy) of following documents a) GTP (duly filled-in) (as per Annexure — A) b) Cross-sectional drawings for components Assembly. c) Type Test Certificates d) Complete Catalogue and Installation Instructions. e) Any other document.
4.8.0	After Award Contract	Vendor shall submit signed 2 sets (plus 1 set of soft copy) of above-mentioned documents within 15 days, for Purchaser's approval.
4.8.0	"As-Built" documents	Final signed "As-built" documents for the equipment in 3 sets (hard copy), 1 no. soft copy and 1 no. CD. These documents shall include signed Routine & Acceptance Test Certificates also.

Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)

4.9.0	Packing, Marking, Shipping, Handling and Storage	<p>a). Every component / kit / box shall be properly sealed/ packed for protection against damage. Stress grading mastic shall be packed in air-tight / air-sealed packing.</p> <p>b). Every kit box shall be wrapped in polythene covers.</p> <p>c). Separate packing (sub-kits) shall be provided, for components (given below) used in crotch area and connector area. These sub-kits, labeled as “CROTCH KIT” and “CONNECTOR KIT”, shall be placed inside every kit box.</p> <p>i) Crotch Kit Components</p> <ul style="list-style-type: none"> --Conductive cable break-out -- Yellow moulded wedge -- Break-out end sealing tube -- Break-out finger sealing tube -- Stress grading mastic <p>ii) Connector Kit : Components</p> <ul style="list-style-type: none"> -- Ferrule (connector) -- Void Filling mastic (yellow)
4.9.1	Identification Label	<p>Markings / Labels shall be on both sides of every packed box.</p> <ol style="list-style-type: none"> 1) Identification number/type designation (as per manufacturer’s standard) 2) Voltage grade, size, description of the Kit (including the voltage grade, size, type of the cables, for which it is to be used) 3) Batch no., lot no., etc. 4) Quantity 5) a) Purchase Order no. & date b) Purchaser’s name c) BSES’s SAP code number 6) Weights (kg) of each Cable Termination Kit and of each box containing kits. 7) Manufacturer’s name 8) Month & Year of Manufacturing 9) Date of packing, shelf life (if applicable)
4.9.2	Transit damage	The seller shall be responsible for any transit damage due to improper packing.

5.0.0 Quality Assurance Plan (QAP)

5.1.0	Vendor’s Quality Assurance Plan (QAP)	To be submitted for Purchaser’s approval.
5.2.0	Sampling Method	Sampling Method for quality checks shall be as per manufacturer’s standard practice / ESI guidelines and Purchaser’s prior approval shall be taken for the same.
5.3.0	Inspection Hold-Points	To be mutually identified, agreed and approved in Quality Plan.

Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)**6.0.0 Deviations**

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

7.1.0	Delivery	<p>Dispatch of Material: Vendor shall dispatch the material, only after the Routine Tests /Final Acceptance Tests (FAT) of the material witnessed/waived by the Purchaser, and after receiving written Material Dispatch Clearance Certificate (MDCC) from the Purchaser.</p>
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8.0.0 Inspection Expenses

NA

9.0.0 Failure Analysis and Penalty

Failure of joint shall be analyzed by BSES and Vendor jointly. Joint failure in regards to poor quality joint, poor work man ship, etc. shall be in the account of vendors. Losses due to failure shall be recovered from vendor in case of warranty.

Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)**Annexure - A: Guaranteed Technical Particulars (GTP)**

The Vendor is deemed to have examined all parts of the Specification documents and to have been fully informed, as to the nature of work and the conditions related to its performance.

S No.	Description	Purchase requirement	Vendor's data
1	Manufacturer's name		
2	Purchase Order no. & date		
3	Guarantee Period (minimum)	60 Months (from date of commissioning) / 66 Months (from date of receipt at Purchaser's store), whichever is earlier	
4	Applicable IS / IEC Standard followed by Vendor (incl. type test standard)		
5	Voltage Grade (kV)		
5.1	Lightning Impulse Voltage Withstand Test		
5.2	4Uo AC voltage withstand test for 4 hours	To be conducted on Installed joint at works	
6	Continuous operating temperature	90 deg. C	
7	Functional Requirements		
7.1	Method of Stress Control and Discharge Suppression		
7.2	Method of Insulation build-up and screening		
7.3	Method of earth bond a) Size and no. of braids b) Size of armour support c) No. of hose clips		
7.4	Method of mechanical protection a) for 3-core Cable b) for 1-core Cable		
7.5	Method of protection against corrosion (type & coating thickness of protective layer on steel mat)		

Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)

7.6	Method of conductor continuity a) For crimping connector b) For mechanical connector		
8	Description of items in the Kit, which are imported /sourced From Principal /Sub-suppliers		
9	Names of items in the Kit and their respective shelf life (months / years)		
10	Kit Content Table (KCT) enclosed? (Refer Annexure — B)	Yes / No	
11	Drawing for connector (ferrule) enclosed	Yes / No (If yes, mention the document reference)	
12	Is Annexure - D (Technical Deviation Sheet) duly filled-in?		
13	Packing (Qty) i) Packing of every Kit h) Group Packing	1 no -- No. of Kits per Box -- No. of Boxes	
14	Installation Procedure enclosed?	Yes / No (If yes, mention the document reference)	
15	Quality Assurance Program (QAP for raw materials, in-process inspection, factory testing) is enclosed?	Yes / No	
16	Whether all heat-shrinkable and moulded components of the kit meet the requirements of and have been tested in accordance with EA TS -09-1 3.(for heat-shrinkable joints)	Yes / No (If yes, details of test report no. /Date /name of test laboratory to be mentioned.)	
17	Type Test Reports (TTR) (Relevant test report no. & date, With type, size, other details of each type of Kit.) a) Prepared Joint: CPRI TTR as per BIS / IEC enclosed? b) Loose Components: CPRI TTR as per EA TS 09-13 enclosed?	Yes/No Yes/No	



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Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)

18	Printing details on each of the Heat- shrinkable and Moulded components	(Mention the text, presently printed on each of the component)	
19	OFC kit (for OFC Embedded cable only of sizes 11kV 3CX400, 33kV 3CX400 and 66kV, 3CX300 sqmm cable)	Yes/no	

Annexure - B: Kit Content Table (KCT)

Vendor shall submit KCT as a consolidated table, consisting of all data, such as:

A. Heading

1. Voltage grade, size, description of the Kit
(Including the voltage grade, size, type of the cables, for which it is to be used)
2. Type designation (as per manufacturer's standard)

B. Details / Parameters (For each component/item of the KCT)

1. Lot no. /Batch no., etc.
2. Item number (manufacturer's standard)
3. Description
 - a) Material, type, make and grade
 - b) Dimensions cross sectional area
 - c) Colour,
 - d) Other description, if any
4. Function of the item
5. Quantity
6. Make/Name/Location of manufacturer/sub-vendor
 - a) Minimum supplied (or in expanded form) diameter
 - b) Maximum freely recovered diameter
7.
 - a) Minimum supplied (or in expanded form) thickness
 - b) Maximum freely recovered thickness

C. Notes on the KCT

Markings, printings and other details for individual/group of components is to be mentioned on KCT. For example:

- a) Printing of item code, size, batch no., etc.
- b) Printing on components
- c) Other embossing or engraving, if any.

(Note: Vendor may attach an Annexure, for any additional information, if required.)

Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)**Annexure - C: Routine and Acceptance Test****A. Visual Examination**

Condition of selected items / components, as per sampling method, shall be recorded. Some of the normal check-points can be as follows:

1. Every component shall be verified in quantity and description as per KCT.
2. All items shall be free from any defects, pin holes, cracks, etc.
3. Metallic components to be free from sharp edges.

B. Measurements of Dimensions

(Required / observed dimension — length, diameter, etc.)

1. Supplied dimensions
2. Recovered dimensions

C. Destructive Testing

On various heat-shrinkable / moulded components of ready Kits (items 3 and 4 are applicable only for heat-shrinkable components)

1. Tensile Strength
2. Wall Thickness Ratio
3. Heat Shock
4. Longitudinal Change, after full recovery
5. Ultimate Elongation
6. Low Temperature Flexibility
7. Dielectric Strength
8. Volume Resistivity

Routine Test Reports (RTR) (Typical)

Each RTR shall clearly indicate P.O. no. & date and also BSES's SAP code no. RTR shall record the serial numbers of the kits selected, as per vendor's sampling method. Following details, besides vendor's/manufacturers standard check-points, shall appear in every RTR.

Annexure - D: Deviation Sheet

Sr No.	Clause No.	Deviation

Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)**Annexure - E: Service Conditions**

(Atmospheric conditions in Delhi)

a)	Average grade Soil Condition	
b)	Maximum altitude above sea level	1000 M
c)	Ambient Air temperature	Highest 50 Deg C, Average 40 Deg C
d)	Minimum ambient air temperature	0 Deg C
e)	Relative Humidity	100 % Max
f)	Thermal Resistivity of Soil	150 Deg C cm/W
g)	Seismic Zone	4
h)	Rainfall	750 mm concentrated in four months

Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)

Annexure – G: Strip type GI canister (V.B. Can) for joint protection only for Heat Shrink Joint

SIDE-B

SIDE-B

NOTE-4-WHICH IS WITH TWO SMALL ALUMINUM FOIL STRIPS, IT SHOULD BE INSTALLED UPWARD.
 SIDE-3-WITH ALMOST COMPLETE ALUMINUM FOIL, IT SHALL BE RESTING OVER THE JOINT.

NOTE-ALL DIMENSIONS ARE IN mm

1) MATERIAL-STEEL STRIPS
 WITH DIMENSION AS PER
 ANT-CORROSIVE
 CAP BETWEEN STEEL STRIPS-1mm MINIMUM & 5mm MAXIMUM

2) INERTIVE TYPE-3 PVC LAMINATE INSIDE ALUMINUM FOIL WITH POLYESTER FILM

DIMENSIONS FOR STRIP TYPE GI CANISTER

SERIAL NO.	VOLTAGE	JOINT SIZE	NO. OF STRIPS	LENGTH	WIDTH (MM)
1	11KV	1E0P1L-C-1E0P1L-C	40	1450	400
2	11KV	240P1L-C-240P1L-C	46	1550	460
3	11KV	1E0P1L-C-150XLPE	40	1450	400
4	11KV	240P1L-C-300XLPE	46	1550	460
5	11KV	1E0P1L-C-300XLPE	46	1550	460
6	11KV	70P1L-C-300XLPE	46	1550	460
7	11KV	150XLPE-150XLPE	34	1260	340
8	11KV	300XLPE-300XLPE	36	1360	360
9	11KV	150XLPE-300XLPE	36	1360	360
10	33KV	300P1L-C-300P1L-C	50	1850	500
11	33KV	300P1L-C-400P1L-C	50	1850	500

DESIGN	PAKESH	TITLE
CHECKED	MSHSH	STRIP TYPE GI CANISTER (V.B)
DATE	11/24/13	(CAN) FOR JOINT PROTECTION
SCALE	NBS	(GENERAL ARRANGEMENT)

DWG. NO.	CSS/R07/T/048
REV.	0



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Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)

Annexure – H : Job card Details

BSES Annexure-H

Job Card For Cable Jointing Work

Job Card No: Date: Fault ID:

Division: Purpose: Project / Scheme: D&M:

Contractor:

Voltage Grade: 11kv 33kv 66kv 1.1 KV/LT

No. of core: 1 3 3.5/4

Cable Size: 1000 / 800 / 680 / 500 / 400 / 300 / 240 / 225 / 185 / 120 / 95 / 70 / 50/25 sqmm

Type of Joints	No. of Joints		Docate No.	IR Ref.
	Single	Double		
XLPE/XLPE (or PVC/PVC) Straight Through Joints				
XLPE/PILCA Transition Joint				
PILCA/PILCA Straight Through Joints				
XLPE Indoor Termination				
XLPE Outdoor Termination				
PILC Indoor Termination				
PILC Outdoor Termination				

Feeder Details: From To

Location: From To

GPS Co-ordinate: Landmark: GIS Uploading: Yes No

Fault Occurance Date:

Job Allocated By: PWT Ref:

Date and Time of Spiking: Date Time Work Completed On: Date Time

Digging Details (In Meter): Length Width Depth

Details of cable laid: Size Length (In Meter) Docate Ref.:

Contractor Supervisor: Signature: Date:

Jointer Details:

Stage/Work Verification	Name & Signature	Date & Time
ie: Digging / Jointing etc.		

Scrap Details including Qty:

New Kit Details:

Old Kit Details:

Type of Fault:

Remark If any:

Job Certified By:

Shift Incharge: Name: Signature: Date:

1* COPY - BILLING COPY

Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)
Annexure – I : SOP for jointing work

SOP FOR REPAIRING OF CABLE FAULT (Shall be part of PO)		
Sl. No.	Activity	Responsibility
Initiation		
1	Identify and isolate fault and inform GNIIT in case of cable fault	Break down team
2	Updation of the details in OMS against respective feeder tripping event.	GNIIT
Fault Location		
1	Information sent to FLC team and SDO.	GNIIT
2	Mobilize FLC team and cable jointing contractor.	SDO
3	Identification of fault location	FLC Team
Preparation for Jointing		
1	Seeking permission from road owning agency	SDO
2	Payment of RR charges to Road owning agency	Finance
3	Digging	Cable jointing contractor
4	Cut faulty section and Pre-test (HV test) cable for multiple fault	Cable jointing contractor
5	BOQ estimation for jointing work (type, size and length of cable, type of jointing kit)	Cable jointing contractor
6	Filling material reservation slip (MRS) in SAP	SDO
7	Issuing and transporting material from store.	Cable jointing contractor
Jointing		
1	Cable preparation (overlap length of cable, slide of armour, build up with inner sheath etc)	Cable jointing contractor (for jointing details refer to manufacturer instruction manual)
2	Copper tape shields	
3	Core preparation	
4	Location of parts in completed joints	
5	Earthing of connection	
6	Completion of joints	
7	Take Photographs before, during and after jointing and send to CES	SDO
8	Supervision during jointing	SDO
9	Sending failed joint to Division store	Cable jointing contractor
Completion and reporting		
1	Intimate to breakdown team about joint completion.	Cable jointing contractor
2	Conduct HV test	Break down team
3	Restore of Supply through jointed cable	Break down team



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Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)

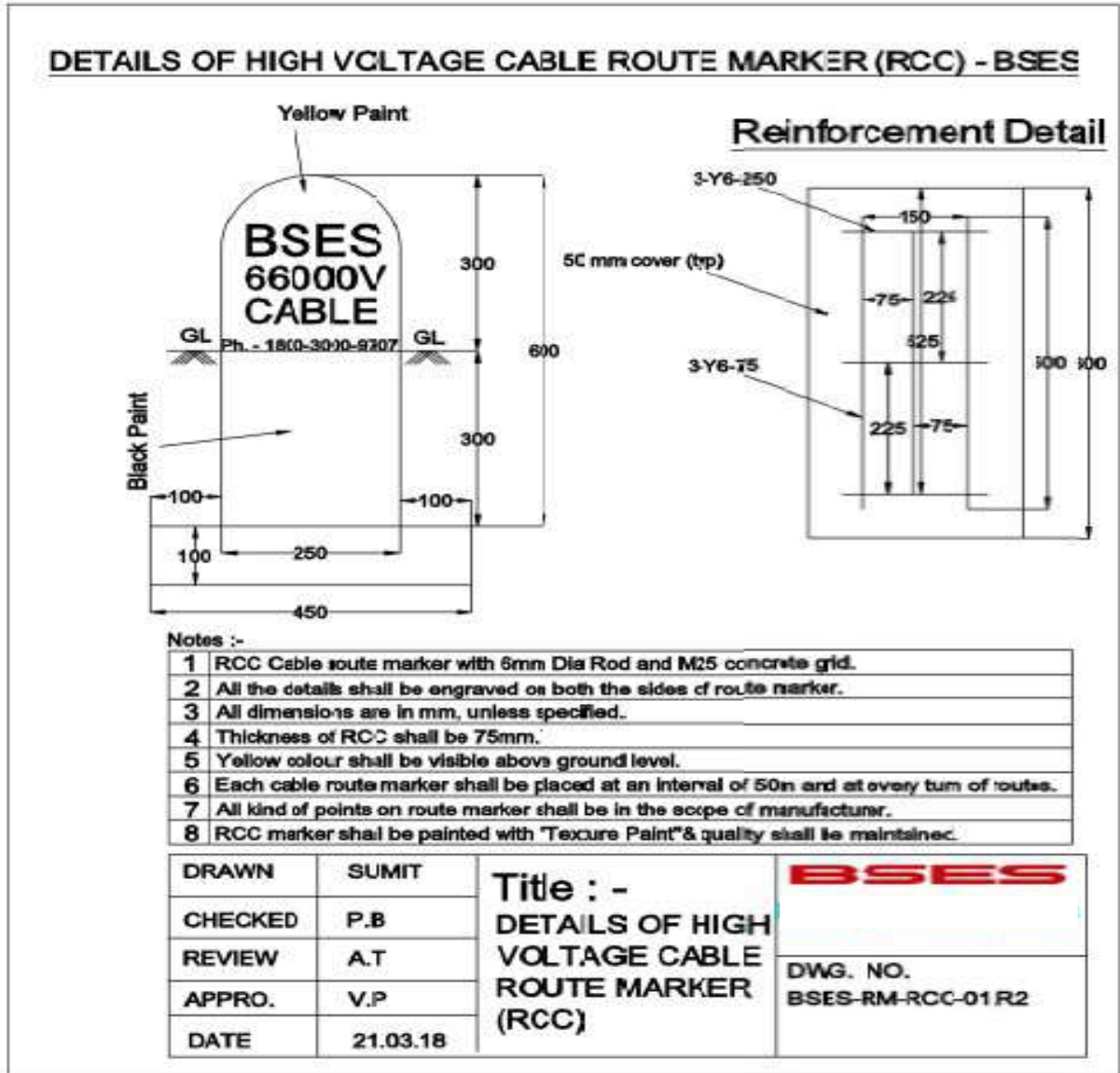
4	Backfilling, compaction of excavated soil and removing of excess earth from the site	Cable jointing contractor
5	Completion information in Job Card (Details of work done, material consumption, location, feeder name and joint tag no., date, supervisor name, jointer name) sent to SDO	Cable jointing contractor
6	Above information sent to GNIIT	SDO
7	Send information about GPS location of Cable fault to GIS	SDO
8	Daily report of cable jointing to CES	Division Head
9	Updating of information in OMS including supervisor name, jointer name, feeder name	GNIIT
10	Information to include GPS location of cable fault.	GNIIT

Special Note-

- 1) Joints to be done preferably during day. In case of constraints, DGM (O&M) to authorize for night time jointing with supervisor
- 2) Daily joint report to be shared with CES
- 3) Bi-monthly analysis of faulty joint for ensuring warranty compliance to be organized at circle level by contractor in presence of DGM (O&M) and CES
- 4) Certification of job card for payment by DGM (O&M) subject to OMS compliance CES to check any gaps.
- 5) After completion of jointing (33kV and 66kV), all the joints shall be covered with RCC coffin. Coffin shall be filled with white sand complete from the hole provided at the top of the coffin.

Technical Specification For Heat Shrinkable And Cold Shrinkable Straight Through Jointing Kit (11 kV, 33 kV, 66 kV XLPE Insulated Cables)

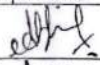
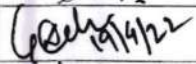

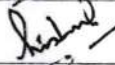


Annexure – J Joint Marker





**Technical Specification
For Heat Shrinkable &
GIS Cable Termination Kit
(11 kV, 33 kV, 66 kV XLPE Insulated Cables)**

Specification no – BSES-TS-45-TERM-R0

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Prepared by	Abhishek Vashistha	
	Gautam Deka/Pronab Bairagi	
Reviewed by	Puneet Duggal	
	Amit Tomar	
Approved by	Gaurav Sharma	
	Gopal Nariya	

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BSES-TS-45-TERM-R0

Technical Specification For Heat Shrinkable And GIS Cable Termination Kit (11 kV, 33 kV, 66 kV Cables)

Record of Revision

Item/Clause No.	Change in Specification	Approved By	Rev

Technical Specification For Heat Shrinkable And GIS Cable Termination Kit (11 kV, 33 kV, 66 kV Cables)**1.0.0 Scope of work**

Heat Shrinkable & GIS Termination Kits, suitable for 11 kV & 33 kV, 66 kV XLPE / PILC cables, shall be designed, manufactured, tested, packed and delivered by the Vendor, as per Purchaser's requirements.

2.0.0 Codes & standards

2.1.0 National Standards:

SL	Standard Number	Title
2.1.1	IS – 13573: 2011	Joints & Terminations of Polymeric Cables for working voltages from 6.6 kV up to and including 33 kV Performance Requirements and Type Tests
2.1.2	IS – 7098 Part 2 : 2011	Cross-linked Polyethylene (XLPE) Insulated PVC sheathed cables : Part 2 : For working voltages from 3.3 kV up to and including 33 kV
2.1.3	IS – 692: 1994	Paper insulated lead-sheathed cables (PILC) for rated voltages up to and including 33 kV specification
2.1.3	IS – 10810: 1984	Methods of test for cables
2.1.4	IS – 7098 Part 3 : 2019	Cross-linked polyethylene insulated thermoplastic sheathed Cables specification: Part 3 - For working voltages from 66 kV up to and including 220 KV

2.1.1 International Standards:

S No.	Standard Number	Title
2.2.1	EA TS – 09 – 13	Electricity Association – Technical Specification -09-13 Material component for use in Electric Power Cable Termination & Joints for System voltage above 1000 V up to 36 kV
2.2.2	IEEE – 48	Standards Test Procedures and requirements for high voltage alternating current cable termination
2.2.3	IEC – 60183	Guide to the selection of high voltage cables
2.2.4	IEC – 885 Part 1-3	Electric test methods for electric cables
2.2.5	IEC – 60840	Power cable with extruded insulation and their accessories for rated voltage above 30 Kv ($U_m=36$ kV) up to 150 KV ($U_m=170$ kV) – test methods and requirements.

Technical Specification For Heat Shrinkable And GIS Cable Termination Kit (11 kV, 33 kV, 66 kV Cables)**3.0.0 Cable Construction**

Normal sizes of XLPE cables used in BSES system and the construction features of these cables are indicated below:

- a. 11 kV, 3-core x 150 sq mm AL
- b. 11 kV, 3-core x 300 sq mm AL
- c. 11 kV, 3-core x 400 sq mm AL
- d. 11 kV, 3-core x 400 sq mm AL(OFC Embedded)
- e. 11 kV, 1-core x 1000 sq mm AL
- f. 11 kV, 1-core x 150 sq mm AL HTAB with copper metallic screen
- g. 11 kV, 1-core x 150 sq mm AL HTAB with Aluminium wire metallic screen
- h. 11 kV, 1-core x 95 sq mm AL HTAB with copper metallic screen
- i. 11 kV, 1-core x 95 sq mm AL HTAB with Aluminium wire metallic screen
- j. 33 kV, 3-core x 400 sq mm AL
- k. 33 kV, 3-core x 400 sq mm AL (OFC Embedded)
- l. 33 kV, 1-core x 1000 sq mm AL
- m. 66 kV, 1-core x 630 sq mm AL
- n. 66 kV, 1 core x 1000 sq mm AL
- o. 66 kV, 3-core x 300 sq mm AL
- p. 66 kV, 3-core x 300 sq mm AL(OFC Embedded)

PILC type Cables:

3-core 240 or 300 sq. Mm. Al

3.1.0	Conductor	For XLPE : a) Electrolytic Grade stranded Aluminium Conductor / Annealed Copper Conductor b) Grade: H2/ H4 as per IS: 8130/84 (For Al) c) Shape: Compacted Circular d) Class 2 For PILC : a) 11 kV : sector-shaped b) 33Kv: oval-shaped
3.2.0	Conductor Screen	For XLPE : Extruded Semi Conducting material For PILC : 11 kV : no conductor screen 33 kV : carbon paper
3.3.0	Insulation	For XLPE: Extruded TR XLPE For PILC: Layers of impregnated papers

Technical Specification For Heat Shrinkable And GIS Cable Termination Kit (11 kV, 33 kV, 66 kV Cables)

3.4.0	Insulation Screen	<p>Non Metallic Screen: For XLPE Insulated cable: a) For 11, 33 U/G cable and HTAB cable - Freely strippable Semi Conducting (without application of heat) b) For 66kV cable - Firmly bonded semi conducting</p> <p>Metallic Screen: a) For For 11, 33 & 66 Kv U/G cable – Copper Tape b) For HTAB – option 1 – Copper Tape (old installations) and option 2 – Aluminium wire (new installations) For PILC : a) 11 kV : absent (Belted) b) 33kV: metallised paper tape</p>
3.5.0	Water Swellable Tape	<p>For XLPE: Semi-conducting Water Swellable Tape shall be provided under the copper tape on each core. For PILC : not applicable</p>
3.6.0	Filler	<p>For XLPE: All interstices, including centre interstices filled by PP filler. Note- In special cases, for 66kV 3CX300 sqmm, 33kV, 3CX400 and 11kV 3CX400 cable are with-36 nos. Single mode and 12 nos. Multi modes OFC are also inbuilt as filler.Requirement of cable joint kit with OFC shall be fulfilled as per tender requirement For PILC : a) 11 kV : Crushed paper filler b) 33kV: Jute twine</p>
3.7.0	Over all three cores	<p>XLPE : Binder tape PILCA : 11 kV : belt paper 33kV: Copper Woven Fabric tape</p>
3.8.0	Inner Sheath	<p>For XLPE: Extruded Inner Sheath of Black PVC type ST-2. For PILC : Lead alloy sheath</p>
3.9.0	Bedding Tape	<p>For XLPE: not applicable For PILC: two layers of paper, followed by compounded (bituminized) cotton tape.</p>
3.10.0	Copper Woven Fabric Tape (CWF tape)	<p>For XLPE : not applicable For PILC : a) 11 kV : absent (Belted cable) b) 33 kV : applicable for screened cable</p>
3.11.0	Armour	<p>For XLPE : a) Galvanised Steel round Wires/ Galvanised steel flat strip armour (For 3 core cables) b) Hard drawn Aluminium Wire (For 1 core cables) c) Aluminium or lead sheathed for 1Core 66kV cables For PILC : a) 11 kV double steel tape armour</p>
3.12.0	Binder Tape	<p>For XLPE: Rubberised cotton tape</p>

Technical Specification For Heat Shrinkable And GIS Cable Termination Kit (11 kV, 33 kV, 66 kV Cables)

3.13.0	Outer Sheath	For XLPE: Extruded outer sheath of PVC (ST-2) for 11 kV/ 33 KV and HDPE for 66kV Cable with termite- repellent. For 66kV Cable- HDPE extruded semicon layer or HDPE with graphite layer. For PILC : compounded (bituminised) Jute/PVC
3.14.0	HTAB Cable (1CX150 and 1CX95) core construction	Aluminium conductor-conductor semicon screen- TR XPLE insulation- insulation semicon screen–Water Swell-able tape –Round wire armour installation) / Copper Tape (old installation)) Water Swell-able tape-outer sheath

4.0.0 Cable Termination Kits

General Technical Requirements for Cable Termination Kits are as follows:

4.1.0	Scope	Design, manufacture, testing and supply of Cable Termination Kits for H. T. Power Cables.																																																						
4.2.0	Functional Requirements																																																							
4.2.1	Conductor Connection	<table border="1"> <thead> <tr> <th data-bbox="621 1050 779 1123">Voltage Grade</th> <th data-bbox="779 1050 917 1123">Cable Size</th> <th data-bbox="917 1050 1096 1123">Application</th> <th data-bbox="1096 1050 1274 1123">Material of Lug</th> <th data-bbox="1274 1050 1461 1123">Connection Method</th> </tr> </thead> <tbody> <tr> <td data-bbox="621 1123 779 1312" rowspan="2">11 kV</td> <td data-bbox="779 1123 917 1312" rowspan="2">3Cx150, 3Cx300 and 3Cx400 sq mm</td> <td data-bbox="917 1123 1096 1155">Indoor</td> <td data-bbox="1096 1123 1274 1155">Bi-Metal</td> <td data-bbox="1274 1123 1461 1155">Crimping</td> </tr> <tr> <td data-bbox="917 1155 1096 1312">Outdoor</td> <td data-bbox="1096 1155 1274 1312">Bi-Metal/ Aluminium as per tender requirement</td> <td data-bbox="1274 1155 1461 1312">Crimping</td> </tr> <tr> <td data-bbox="621 1312 779 1375" rowspan="2">HTAB (indoor not required)</td> <td data-bbox="779 1312 917 1375" rowspan="2">1Cx95</td> <td data-bbox="917 1312 1096 1375">Indoor</td> <td data-bbox="1096 1312 1274 1375">Aluminium</td> <td data-bbox="1274 1312 1461 1375">Crimping</td> </tr> <tr> <td data-bbox="917 1375 1096 1438">Outdoor</td> <td data-bbox="1096 1375 1274 1438">Aluminium</td> <td data-bbox="1274 1375 1461 1438">Crimping</td> </tr> <tr> <td data-bbox="621 1438 779 1638" rowspan="4">33 kV</td> <td data-bbox="779 1438 917 1512" rowspan="2">3Cx400 sq mm</td> <td data-bbox="917 1438 1096 1470">Indoor</td> <td data-bbox="1096 1438 1274 1470">Aluminium</td> <td data-bbox="1274 1438 1461 1470">Crimping</td> </tr> <tr> <td data-bbox="917 1470 1096 1512">Outdoor</td> <td data-bbox="1096 1470 1274 1512">Aluminium</td> <td data-bbox="1274 1470 1461 1512">Crimping</td> </tr> <tr> <td data-bbox="779 1512 917 1585" rowspan="2">1Cx1000 sq mm</td> <td data-bbox="917 1512 1096 1543">Indoor</td> <td data-bbox="1096 1512 1274 1543">Aluminium</td> <td data-bbox="1274 1512 1461 1543">Crimping</td> </tr> <tr> <td data-bbox="917 1543 1096 1585">Outdoor</td> <td data-bbox="1096 1543 1274 1585">Aluminium</td> <td data-bbox="1274 1543 1461 1585">Crimping</td> </tr> <tr> <td data-bbox="621 1638 779 1795" rowspan="4">66 kV</td> <td data-bbox="779 1638 917 1711" rowspan="2">3Cx300</td> <td data-bbox="917 1638 1096 1669">Indoor</td> <td data-bbox="1096 1638 1274 1669">Aluminium</td> <td data-bbox="1274 1638 1461 1669">Crimping</td> </tr> <tr> <td data-bbox="917 1669 1096 1711">Outdoor</td> <td data-bbox="1096 1669 1274 1711">Aluminium</td> <td data-bbox="1274 1669 1461 1711">Crimping</td> </tr> <tr> <td data-bbox="779 1711 917 1795" rowspan="2">1Cx630, 1Cx1000 sq mm</td> <td data-bbox="917 1711 1096 1743">Indoor</td> <td data-bbox="1096 1711 1274 1743">Aluminium</td> <td data-bbox="1274 1711 1461 1743">Crimping</td> </tr> <tr> <td data-bbox="917 1743 1096 1795">Outdoor</td> <td data-bbox="1096 1743 1274 1795">Aluminium</td> <td data-bbox="1274 1743 1461 1795">Crimping</td> </tr> </tbody> </table>	Voltage Grade	Cable Size	Application	Material of Lug	Connection Method	11 kV	3Cx150, 3Cx300 and 3Cx400 sq mm	Indoor	Bi-Metal	Crimping	Outdoor	Bi-Metal/ Aluminium as per tender requirement	Crimping	HTAB (indoor not required)	1Cx95	Indoor	Aluminium	Crimping	Outdoor	Aluminium	Crimping	33 kV	3Cx400 sq mm	Indoor	Aluminium	Crimping	Outdoor	Aluminium	Crimping	1Cx1000 sq mm	Indoor	Aluminium	Crimping	Outdoor	Aluminium	Crimping	66 kV	3Cx300	Indoor	Aluminium	Crimping	Outdoor	Aluminium	Crimping	1Cx630, 1Cx1000 sq mm	Indoor	Aluminium	Crimping	Outdoor	Aluminium	Crimping	* For Bimetallic Lug Copper portion shall be tinned		
Voltage Grade	Cable Size	Application	Material of Lug	Connection Method																																																				
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Technical Specification For Heat Shrinkable And GIS Cable Termination Kit (11 kV, 33 kV, 66 kV Cables)

		<p>a) For GIS cable termination kits: Plug in type, Conductor connection assembly shall be by standard method of split, silver-plated copper cone and pressure-fit contact assembly or as per manufacturer's standard.</p> <p>b) Top corners of all lugs shall be circular shape not rectangular. Refer Annexure F for details.(Except GIS kit)</p>			
4.2.2	Stress Control System	<p>a) The earthed insulation screen of an XLPE cable is terminated at a suitable distance from the conductor.</p> <p>b) The tube is in electrical contact with insulation screen.</p> <p>c) Impedance of the tube shall be constant up to an operating temperature and shall be within the range 1×10^{08} ohm-cm to 8×10^{08} ohm-cm.</p> <p>d) Length of stress control tube for 11 kV and 33 kV shall be 130 mm and 260 mm respectively or according to insulation tube length. For 66kV termination kits, stress control tube shall be as per type tested design.</p> <p>e) The physical and electrical properties shall conform to ESI 09: 13.</p> <p>f) For GIS cable termination kits Stress control shall be by means of a polymeric stress cone. External profile of the cone shall match inner profile of GIS epoxy bushing. Vendor shall specify the material (EPDM / Silicone) of the cone.</p>			
4.2.3	Insulation Protection	<p>a) XLPE insulation shall be protected by means of an outer tube, resistant to tracking and weathering.</p> <p>b) One end of the tube shall be coated internally with red sealant mastic for a length of 50 mm.</p> <p>c) Physical and Electrical properties shall conform to ESI 09: 13.</p> <p>d) Insulation Tube length for termination- shall be 650 mm for both Indoor and Outdoor Termination kits of 11kV, 3CX150, 3CX300 and 3CX400 sqmm cable. All other accessories related to termination shall be according to 650mm insulation tube length.</p>			
4.2.3.1	Outer Anti-tracking Tube	<p>Outer length of the tube shall be controlled by providing creepage Extension Shed having the same material composition as the tube. These lengths are given in the table below: Creepage distance shall be 31mm/kV minimum.</p>			
4.2.3.2	OFC (66kV, 3CX300 sqmm , 33kV, 3Cx400 sqmm and 11kV, 3Cx400 sqmm cable)	<p>Termination kit for OFC (36 single mode and 12 nos. Multi mode) shall be supplied along with termination kit.</p>			
Cable System		Length of tube (mm)		Creepage Extension Shed (No.)	
Voltage	Cores	Indoor	Outdoor	Indoor	Outdoor
11 kV	3 – core	650	650	Nil	2

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	1 – core	340	340	NIL	2
33 kV	3 – core	800	1200	2	5
	1 – core	600	600	2	5

4.2.3.3	Oil Barrier Tube (applicable for PILC cable termination)	<p>a) Transparent tube is used for restoring the insulation provided by belt paper, which is terminated at the crotch.</p> <p>b) 33 kV PILC Termination: The oil barrier tube provides an oil-resistant layer to contain impregnating compound within, thus preventing anti-tracking tube coming in contact with the impregnating compound.</p>
4.2.4	Environmental Sealing System	<p>a) Red Sealant Mastic Tape: This tape, used for sealing at ends, shall be synthetic rubber-based and resistant to tracking and weathering. Sufficient quantity of this tape shall be provided.</p> <p>b) Lug-sealing Sleeve: It shall have the same material composition as outer anti-tracking tube. The sleeve shall be fully coated internally with red sealant mastic tape. Length of the sleeve shall be so as to cover half length of the lug barrel and an equal length of track-resistant tube.</p> <p>c) Conductive Break-out: It shall be provided over the crotch for 3-core cables. The break-out base shall overlap PVC outer sheath by a 50 mm. Minimum.</p> <p>d) For GIS termination kits : Environmental sealing of cores below the switchgear shall be by means of a trifurcation kit, consisting of heat shrinkable conductive break-out and heat-shrinkable conductive tube of total length of 6 metres supplied in one roll.</p>

Technical Specification For Heat Shrinkable And GIS Cable Termination Kit (11 kV, 33 kV, 66 kV Cables)

4.2.5	Earth Bond System	<p>Minimum Armour Fault Current Carrying capacity of cables is as following: 11 kV U/G Cable – 11 kA for 1 sec 33 kV Cable – 31.5 kA for 1 sec 66 kV Cable – 31.5 kA for 1 sec 11 kV HTAB Cable – 11 kA for 1 sec</p> <p>Fault current requirement shall be met by Tinned copper braid as per following: 11 kV U/G cables – Three No's 25 sq mm each 33 kV Cable – Four No's of 50 sq mm each 66 kV Cable – Four No's of 50 sq mm each HTAB Cable with copper tape metallic screen – Three No's of 25 sq mm each</p> <p>Length of the copper braided conductor shall be 750 mm.</p> <p>Each copper braided conductor shall be supplied with copper lug, crimped at one end</p> <p>For HTAB Cable with Aluminium wire metallic screen – Tinned copper braid is not required. 1 No's of Aluminium crimping lug of 120 sq mm cross section area shall be provided instead</p>
4.2.6	Suppression of electrical discharges	<p>Following materials are required for use during cable termination :</p> <p>a) Silicone-based compound Required for filling-in minute services/ surface cracks over XLPE insulation.</p> <p>b) Polymeric mastic Required for application over semicon screen, for, eliminating any air-entrapment at any cut point on the surface. It should have sufficient elongation and electrical properties compatible with stress control tube.</p>
4.2.7	Installation. Instruction Sheet	It shall be in English and Hindi language and shall be provided inside every kit.
4.2.8	Paper Measuring Tap	Required for use during cable preparation / terminations.
4.2.9	Identification Tag (for traceability)	<p>a) An aluminum pouch with paper tag & sealing arrangement at one end shall be provided.</p> <p>b) This tag is required to be tied over the cable at one side of the joint.</p> <p>c) The paper tag shall give following information</p> <ol style="list-style-type: none">1) Vendor kit designation2) Division3) Breakdown ID/Shutdown ID/Scheme No.4) Cable section5) Type of joint6) Size of Joint7) Make of joint8) Voltage class

Technical Specification For Heat Shrinkable And GIS Cable Termination Kit (11 kV, 33 kV, 66 kV Cables)

		<p>9) Serial no. of kit 10) Vendor lot & batch no 11) Month & year of manufacturing 12) Date of installation 13) Name of joiner 14) Name of vendor supervisor 15) Name of BSES supervisor 16) Remarks In addition to above Stainless Steel Tag shall be provided with following details for straight through joint</p> <p>a. Manufacturing month and year (MM/YY format) b. Manufacturer name i.e Comp c. Manufacturer own sl no for future tracing</p>
4.3.0	Technical Particulars	Vendor shall submit Guaranteed Technical Particulars (GTP) as per Annexure A.
4.4.0	Type Tests	<p>i. Termination Kit shall be of type-tested quality from CPRI/ERDA/KEMA/CESI as per the BIS/IEC/IEEE within last 5 years.</p> <p>ii. In case of type test is more than 5 years old but less than 10 years old, bidder has to give undertaking that there is no changes in design.</p> <p>iii. In case of type test report is more than 10 years old, bidder has to conduct type test from CPRI/ERDA/KEMA/CESI as per the BIS/IEC/IEEE without any cost implications to BSES</p>
4.5.0	Testing & Inspection	
	a) Tests	All the routine and acceptance tests shall be carried out as per ESI guidelines. (Also refer Annexure -C)
	b) Inspection	<p>1) Buyer reserves the right to witness all tests specified on individual H. S. components, Moulded components or completed Cable Termination Kit.</p> <p>2) Buyer reserves the right to inspect Cable Termination Kit at the Seller's works at any time, prior to dispatch, to verify compliance with the specification.</p> <p>3) In-process and final inspection call intimation shall be given in 10 days advance to purchaser.</p>
	c) Test Certificates	Three sets of complete Test Certificates (Routine & Acceptance tests) shall be submitted along with the delivery of Cable Termination Kits.
4.6.0	Documents	"Documents" refer to Documents, Data, Manuals, etc. (Scanned copy of signed documents also shall be part of entire soft file (e-file) or CD.)

Technical Specification For Heat Shrinkable And GIS Cable Termination Kit (11 kV, 33 kV, 66 kV Cables)

4.6.1	Along with the Bid	Vendor shall submit signed 3 sets (plus 1 set of soft copy) of following documents: a) GTP (duly filled-in) (as per Annexure - A). b) Cross-sectional drawings for components Assembly c) Type Test Certificates d) Complete Catalogue and Instructions. e) Any other document.
4.6.2	After Award of Contract	Vendor shall submit signed 2 sets (plus 1 set of soft copy) of above mentioned documents within 15 days, for Purchaser's approval.
4.6.3	"As-Built" documents	Final signed "As-built" documents for the equipment in 3 sets (hard copy), 1 no. soft copy and 1 no. CD. These documents shall include signed Routine & Acceptance Test Certificates also.
4.7.0	Packing, Marking, Shipping, Handling and Storage	Every component/kit/box shall be properly sealed/ packed for protection against damage.
a)	Identification Labels:	<p>Markings / Labels shall be on both sides of every packed box.</p> <ol style="list-style-type: none"> 1) Identification number/type designation (as per manufacturer's standard) 2) Voltage grade, size, description of the Kit (including the voltage grade, size, type of the cables, for which it is to be used) 3) Batch no., lot no., etc. 4) Quantity 5) a) Purchase Order no. & date b) Purchaser's name c) BSES's SAP code number 6) Weight (kg) of each Cable Termination Kit and of each box containing kits. 7) Manufacturer's name 8) Month & Year of Manufacturing 9) Date of packing, Shelf life (if applicable) 10) In case, the termination kit is for RMU, following text shall be written in bold letters, with higher font size : "For RMU Application".
b)	Transit damage	The seller shall be responsible for any transit damage due to improper packing.

5.0.0 Quality Assurance (QA)

5.1.0	Vendor's Quality Plan (QP)	To be submitted for Purchaser's approval.
5.2.0	Sampling Method	Sampling Method for quality checks shall be as per manufacturer's standard practice / ESI guidelines and Purchaser's prior approval shall be taken for the same.
5.3.0	Inspection Hold-Points	To be mutually identified, agreed and approved in Quality Plan.

Technical Specification For Heat Shrinkable And GIS Cable Termination Kit (11 kV, 33 kV, 66 kV Cables)**6.0.0 Deviations**

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

7.1.0.	Delivery	Despatch of Material: Vendor shall despatch the material, only after the Routine Tests/Final Acceptance Tests (FAT) of the material witnessed/waived by the Purchaser, and after receiving written Material Despatch Clearance (MDC) from the Purchaser.
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8.0.0 Inspection Expenses

Not Applicable

9.0.0 Penalty

Joint/Termination failure under warranty in regards to poor quality joint, poor work man ship, etc. shall be in the account of vendors. All kind of losses due to Joint/Termination failure shall be recovered from vendor.



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Annexure – A: Guaranteed Technical Particulars (GTP)

The Seller is deemed to have examined all parts of the Specification documents and to have been fully informed, as to the nature of work and the conditions related to its performance.

S No.	Description	Purchase requirement	Vendor's data
1	Manufacturer's name		
2	Purchase Order no. & date		
3	Guarantee Period (minimum)	60 Months (from date of commissioning) / 66 Months (from date of receipt at Purchaser's store), whichever is earlier	
4	Applicable IS / IEC Standard followed by Vendor (incl. type test standard)		
5	Voltage Grade (kV)		
5.1	Lightning Impulse Voltage Withstand Test		
5.2	4Uo AC voltage withstand test for 4 hours	To be conducted on Installed joint at works	
6	Continuous operating temperature	90 deg. C	
7	Functional Requirements		
7.1	Method of Stress Control and Discharge Suppression		
7.2	Method of Insulation build-up and screening		
7.3	Method of earth bond a) Size and no. of braids b) Size of armour support c) No. of hose clips		
7.4	Method of mechanical protection a) for 3-core Cable b) for 1-core Cable		
7.5	Method of protection against corrosion (type & coating thickness of protective layer on steel mat)		
7.6	Method of conductor continuity a) For crimping connector b) For mechanical connector		

Technical Specification For Heat Shrinkable And GIS Cable Termination Kit (11 kV, 33 kV, 66 kV Cables)

18	Printing details on each of the Heat- shrinkable and Moulded components	(Mention the text, presently printed on each of the component)	
19	OFC kit (For OFC embedded cable only 66Kv, 3CX300 sqmm , 33Kv, 3cx400 sqmm and 11kv, 3cx400 sqmm)	Yes/no	

Annexure – B: Kit Content Table (KCT)

Vendor shall submit KCT as a consolidated table, consisting of all data, such as:

A. Heading

1. Voltage grade, size, description of the Kit
(Including the voltage grade, size, type of the cables, for which it is to be used)
2. Type designation (as per manufacturer's standard)

B. Details / Parameters

(For each component/item of the KCT)

1. Lot no. /Batch no., etc.
2. Item number (manufacturer's standard)
3. Description
 - a) Material, type, make and grade
 - b) Dimensions cross sectional area
 - c) Colour,
 - d) Other description, if any
4. Function of the item
5. Quantity
6. Make/Name/Location of manufacturer/sub-vendor
7. a) Minimum supplied (or in expanded form) diameter
b) Maximum freely recovered diameter
8. a) Minimum supplied (or in expanded form) thickness
b) Maximum freely recovered thickness

C. Notes on the KCT

Markings, printings, other details for individual/group of components are to be mentioned on KCT. For example:

- a) Printing of item code, size, batch no., etc.
- b) Printing on components
- c) Other embossing or engraving, if any.

(Note: Vendor may attach an Annexure, for any additional information, if required.)

Annexure – C: Routine and Acceptance Test**A. Visual Examination**

Condition of selected items / components, as per sampling method, shall be recorded. Some of the normal check-points can be as follows:

1. Every component shall be verified in quantity and description as per KCT.
2. All items shall be free from any defects, pin holes, cracks, etc.
3. Metallic components to be free from sharp edges.

B. Measurements of Dimensions

(Required / observed dimension — length, diameter, etc.)

1. Supplied dimensions
2. Recovered dimensions

C. Destructive Testing

On various heat-shrinkable / moulded components of ready Kits

(Items 3 and 4 are applicable only for heat-shrinkable components)

1. Tensile Strength
2. Wall Thickness Ratio
3. Heat Shock
4. Longitudinal Change, after full recovery
5. Ultimate Elongation
6. Low Temperature Flexibility
7. Dielectric Strength
8. Volume Resistivity

D. Routine Test Reports (RTR)

(Typical)

Each RTR shall clearly indicate P.O. no. & date and also BSES's SAP code no. RTR shall record the serial numbers of the kits selected, as per vendor's sampling method. Following details, besides vendor's/manufacturers standard check-points, shall appear in every RTR.

Annexure – D: Technical Deviation Sheet

Sr No.	Clause No.	Deviation

Annexure – E: Service Conditions

(Atmospheric conditions at Site)

1	Delhi	
a)	Average grade Atmospheric Condition:	Heavily Polluted, Dry
b)	Maximum altitude above sea level	1000 M
c)	Ambient Air temperature	Highest 50 deg C, Average 40 deg C
d)	Minimum ambient air temperature	0 deg C
e)	Relative Humidity	90 % Max
f)	Thermal Resistivity of Soil	150 Deg. C cmm
g)	Seismic Zone	4
h)	Rainfall	750 mm concentrated in four months

Technical Specification For Heat Shrinkable And GIS Cable Termination Kit (11 kV, 33 kV, 66 kV Cables)

Annexure – F: Bimetallic Aluminium / Copper Lug

**LUG FOR
240/300 sqmm CABLE**

**LUG FOR
120/150 sqmm CABLE**

CONDUCTIVE MATERIAL

ALUMINIUM BARREL >=99.5%
 COPPER PLAIN >=99.95%
 FINAL METAL STATE FULLY ANNEALED, INCLUDING JOINT
 JOINING METHOD BARREL SHALL BE FRICTION WELDED TO THE PLAIN THUS ACHIEVING THE
 THE BEST POSSIBLE TRANSITION BETWEEN THE COPPER PLAIN AND ALUMINIUM
 BARREL

FINISH BRIGHT

1) ALL TEST SHALL BE CARRIED OUT AS PER ICE-61238-1
 2) BARRELS SHALL BE CAPPED AND FILLED WITH GREASE SD AS TO
 AVOID OXIDATION OF THE ALUMINIUM
 3) LUGS SHALL HAVE MARKING AS MAKE & SIZE EMPRESSED ON LUG.

SIZE	ALUMINIUM						COPPER					
	HA	HC	B	G	H	I	HA	HC	I	F	K	J
120/150	15.3	21.5	6.0	NA	83.0	23.0	17.0	35.0	4.0	7.3	3.0	10.0
240/300	21.9	31.0	7.0	83.0	90.0	20.0	17.0	35.0	4.0	7.3	31.7	117.0

DESIGN	REVISION	TITLE
APPRO.	DATE	ALLUMINIUM/COPPER LUG
SCALE	ISS	

BSES

BI-METALLIC

ALLUMINIUM/COPPER LUG

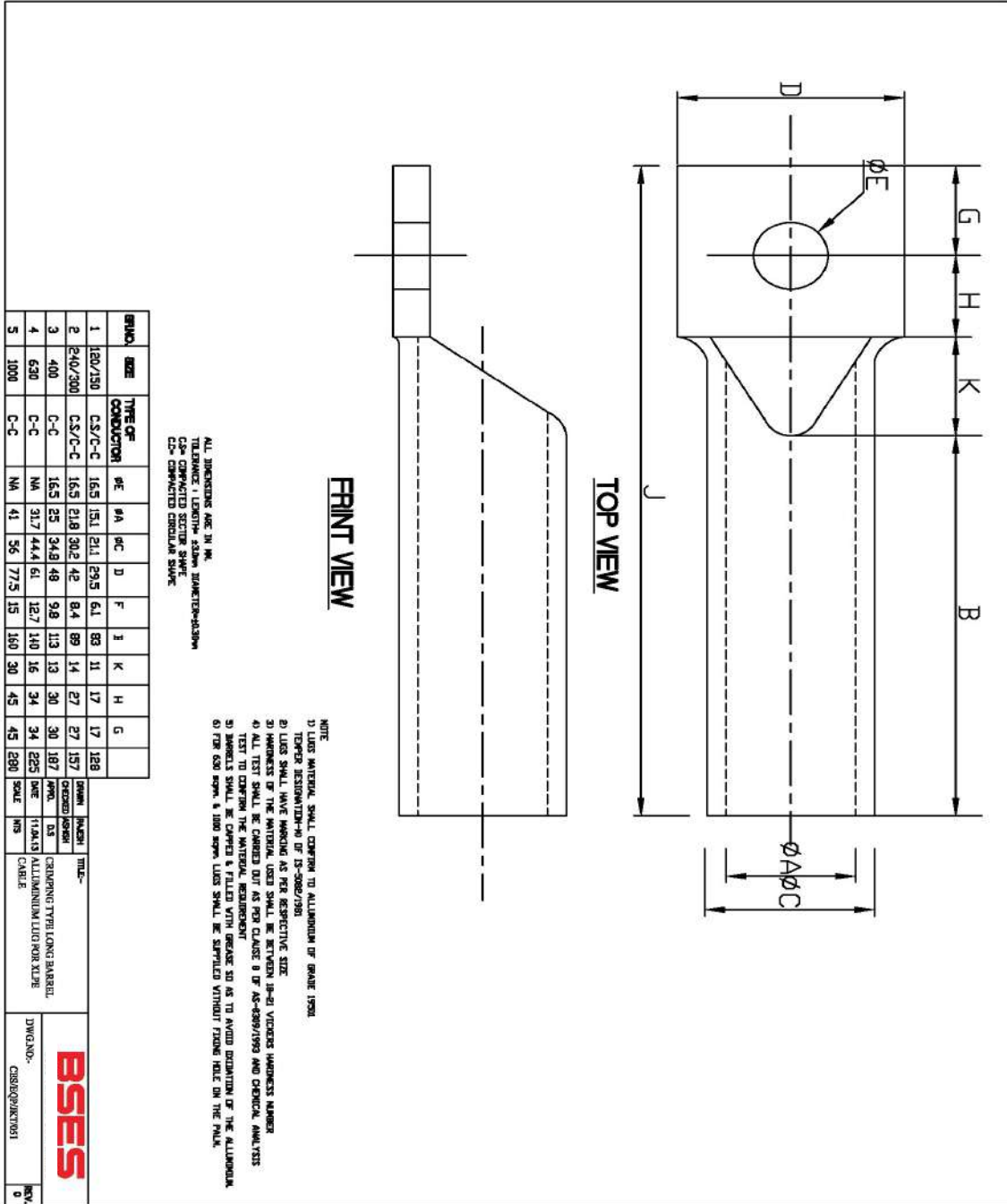
DRWG. NO. - CSB/TER/04

DESIGN	REVISION	TITLE
APPRO.	DATE	ALLUMINIUM/COPPER LUG
SCALE	ISS	

NOTE-ALL DIMENSIONS ARE IN MM.

Technical Specification For Heat Shrinkable And GIS Cable Termination Kit (11 kV, 33 kV, 66 kV Cables)

Annexure – G: Aluminum/Copper Lug For XLPE Cable





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Technical Specification For Heat Shrinkable And GIS Cable Termination Kit (11 kV, 33 kV, 66 kV Cables)

Annexure-H

SOP FOR REPAIRING OF CABLE FAULT (Shall be part of PO)		
Sl. No	Activity	Responsibility
Initiation		
1	Identify and isolate fault and inform GNIIT in case of cable fault	Break down team
2	Updation of the details in OMS against respective feeder tripping event.	GNIIT
Fault Location		
1	Information sent to FLC team and SDO.	GNIIT
2	Mobilize FLC team and cable jointing contractor.	SDO
3	Identification of fault location	FLC Team
Preparation for Jointing		
1	Seeking permission from road owning agency	SDO
2	Payment of RR charges to Road owning agency	Finance
3	Digging	Cable jointing contractor
4	Cut faulty section and Pre-test (HV test) cable for multiple fault	Cable jointing contractor
5	BOQ estimation for jointing work (type, size and length of cable, type of jointing kit)	Cable jointing contractor
6	Filling material reservation slip (MRS) in SAP	SDO
7	Issuing and transporting material from store.	Cable jointing contractor
Jointing		
1	Cable preparation (overlap length of cable, slide of armour, build up with inner sheath etc)	Cable jointing contractor (for jointing details refer to manufacturer instruction manual)
2	Copper tape shields	
3	Core preparation	
4	Location of parts in completed joints	
5	Earthing of connection	
6	Completion of joints	
7	Take Photographs before, during and after jointing and send to CES	SDO
8	Supervision during jointing	SDO
9	Sending failed joint to Division store	Cable jointing contractor
Completion and reporting		
1	Intimate to breakdown team about joint completion.	Cable jointing contractor
2	Conduct HV test	Break down team
3	Restore of Supply through jointed cable	Break down team
4	Backfilling, compaction of excavated soil and removing of excess earth from the site	Cable jointing contractor



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Technical Specification For Heat Shrinkable And GIS Cable Termination Kit (11 kV, 33 kV, 66 kV Cables)

5	Completion information in Job Card (Details of work done, material consumption, location, feeder name and joint tag no., date, supervisor name, jointer name) sent to SDO	Cable jointing contractor
6	Above information sent to GNIIT	SDO
7	Send information about GPS location of Cable fault to GIS	SDO
8	Daily report of cable jointing to CES	Division Head
9	Updating of information in OMS including supervisor name, jointer name, feeder name	GNIIT
10	Information to include GPS location of cable fault.	GNIIT

Special Note-

- 1) Joints to be done preferably during day. In case of constraints, DGM (O&M) to authorize for night time jointing with supervisor
- 2) Daily joint report to be shared with CES
- 3) Bi-monthly analysis of faulty joint for ensuring warranty compliance to be organized at circle level by contractor in presence of DGM (O&M) and CES
- 4) Certification of job card for payment by DGM (O&M) subject to OMS compliance CES to check any gaps.
- 5) After completion of jointing (33kV and 66kV), all the joints shall be covered with RCC coffin. Coffin shall be filled with white sand complete from the hole provided at the top of the coffin.