



Ref. Enquiry No.: PE/PG/RTC/E-6285/2019

Dated: 08.08.2019

TENDER ENQUIRY THROUGH E-PROCUREMENT

DUE DATE
21.08.2019
BY 14:00PM

SUBJECT: TENDER ENQUIRY FOR RATE CONTRACT OF LT XLPE POWER CABLES AS PER TECHNICAL SPECIFICATION NO. PE-RC-999-507-E002, REV 01

OUR REF: TENDER ENQUIRY NO: PE/PG/RTC/E-6285/2019, DTD-08.08.2019

Dear Sir/ Ma'am,

We are pleased to invite your offer for subject package in two parts strictly as per Clause-2.0 of the enclosed "Instructions to Bidders". Please upload your best quotation/ offer on <https://bhel.abcpocure.com> for the requirement strictly as per schedule of price format before above mentioned due date & time. The details of the tender enquiry are as mentioned below:

Sl. No	Description for which Rate Contract is desired	Tentative Quantity	Delivery required
1	LT XLPE POWER CABLES - Refer Technical specification no PE-RC-999-507-E002, REV 01 for detailed description.	As per BOQ cum price schedule in Annexure-I) cumulative for the Prospective Projects as per Annexure-IV	"Four (04) months from drgs. /docs. approval in CAT-I issued by BHEL. Successful bidder to make 1st submission & re-submission of drawing/docs as mentioned in clause no-4.2 of Section I of Volume II of Technical Specification PE-RC-999-507-E002 within time period mentioned thereof. Vendor to re-submit Drawing/documents within 7 days, after incorporating BHEL comments. In case there are delays in drawing/docs submission and resubmission, that much delay would be reduced from delivery period.

Your best quotation/offer for the above requirement, in line with our terms and conditions, should be submitted online via e-procurement system. It shall be the responsibility of the bidder to ensure that the Tender is submitted on or before the due date by 2 p.m. Part-I bids shall be opened at 3 p.m. on the due date in the presence of authorized representatives of the bidders, who may like to be present.

Note: -

- 1. Please note that Part Supplies offered for tender BOQ shall disqualify the bidder's offer.**
- 2. Documents and Credential as per Technical & Financial PQR, Techno Commercial Bids and Price Bids should be uploaded on the e-procurement portal.**

Please refer GCC Rev-06 which is available on www.bhelpem.com. You are requested to kindly download the same & please find enclosed here with Corrigenda to GCC Rev 06.

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1. Rate contract, on PVC basis, shall be done for 2 years from placement of Rate Contract PO date with a provision for further extension after review on mutual consent.

Rate contract shall be done with 2 vendors in ratio of 70:30 value wise at L1 FOR site price for this package. Splitting of RC among 2 vendors may be changed during project ordering process if any vendor in RC is not approved by customer (i.e. BHEL may place order on any of the vendor in RC up to total applicable RC value in case of non-availability of customer approval for other vendor in RC). However, order for a project shall not be split and the same shall be informed to bidders through NIT.

2. Rate Contract will be finalized on total lump sum basis.

L1 Rates shall be counter offered to all bidders who participated in Price Bid Opening/RA for 30% value and in case acceptance of counter offer received from more than one vendor then **acceptance shall be considered as per FINAL Price Bid Opening / Reverse Auction Ranking (as applicable)**. If none accepts L1 rates, RC shall be done with L1 vendor for 100% value.

3. PVC shall be applicable for the subject package. **Base date for initial prices for this tender shall be first July' 2019.**

All bidders to quote as per the Price Variation Formulae for Cables uploaded on BHEL PEM website on the link <https://www.bhelpem.com/Documents/GCC/Price%20Variation%20Formulae%20for%20Cables.pdf>

Also refer Annexure A to NIT for PVC formulae

4. As per cl. no. 3 (b) of make in India Circular ref: No. P-45021/2/2017-PP (BE-II) dtd 28/05/18 issued by Ministry of Commerce and Industry, Govt. of India, If L 1 bid is not from a local supplier, 50% of the order quantity shall be awarded to L 1. Thereafter, the lowest bidder among the local suppliers, will be invited to match the L 1 price for the remaining 50% quantity subject to the local supplier's quoted price falling within the margin of purchase preference, and contract for that quantity shall be awarded to such local supplier subject to matching the L 1 price. In case such lowest eligible local supplier fails to match the L 1 price or accepts less than the offered quantity, the next higher local supplier within the margin of purchase preference shall be invited to match the L 1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case some quantity is still left uncovered on local suppliers, then such balance quantity may also be ordered on the L 1 bidder.

In such case further counter-offering for 70:30 as mentioned at point no. 4 shall not be applicable. However, if L1 bid is from local supplier or local supplier is not in the range of margin of purchase preference then further counter-offering for 70:30 shall be applicable as mentioned at point no. 1 & 2.

5. As per circular ref: No. P-45021/2/2017-PP (BE-II) dtd 28/05/18, the Margin of Purchase Preference shall be 20%.
6. For LT XLPE Power Cable package, the Local content shall be minimum 100%.
7. Bidders will be informed the following: -

- i. Evaluation will be on Ex Works + Freight basis.

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- ii. Bidder to give single % of freight charges considering anywhere in India in the freight column. Bidders have to give same % of freight for each line item.
- iii. Bidders to mention applicable GST rate on (total Ex. works + freight) in the specified cells of price schedule on price form at e-procurement portal. However, may please note that GST shall not be considered in evaluation.
- iv. Though evaluation is on Ex Works + Freight, but there is % allocation weightage against BOQ quantity of each item which shall be used for arriving at price break up. Bidders need to give only their total ex works price for given BOQ at the specific cells that has been kept opened in the price schedule available in the e-procurement portal (Grand Total ex works price). Price mentioned anywhere else in BOQ or price uploaded anywhere else in the e-procurement portal shall not be taken in cognizance.
- v. Rest of the prices shall be derived by BHEL in line with allocation fixed for each item. There is formula applied in price schedule form available in e-procurement portal. As soon as bidder fills the cells for Total Ex works, freight percentage and GST percentage, rest values for e.g. unit ex works – item wise, total ex works – item wise, FOR site price – item wise will filled automatically. Bidders can also validate and cross check the same by using Check Formula button.
- vi. For better clarity to the bidders where value is to be filled is kept open in price form at e-procurement portal and for other columns it will be locked which denotes shall be derived by BHEL as per allocation fixed against each item.
- vii. HSN Code has been mentioned in Price Schedule.
- viii. Incomplete offer shall be summarily rejected.
- ix. Pre-Qualifying Requirements (PQR): All the bidders (registered/ non-registered) will be asked to submit documents fulfilling PQR (technical & financial) requirements along with the bid & their further evaluation shall be done accordingly.
- x. Bidders to note that their bid shall be conditional subject to qualify PQR (technical & financial) by registered vendors & non-registered vendors have to qualify PQR (technical & financial) & get registered with PEM for the package.
- xi. Additional overhead charges shall be 5% instead of 30% as mentioned in clause no 26.2 of GCC Rev 06
- xii. Quantity variation shall be +30%. Project list is indicative only, BHEL may ask for delivery anywhere in India for any of the project added in the prospective project/ existing projects during RC period. No minimum quantity is guaranteed by BHEL.
- xiii. CIF allocation is not applicable for this tender. Bidder to quote accordingly.
- xiv. **Integrity pact is applicable for this tender**

IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors are handled in a fair, transparent and corruption free manner. Following Independent External Monitors (IEMs) have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHEL.

S. No.	IEM	Address	
1	Shri D. R. S. Chaudhary IAS (Retd)	E-1/164, Arera Colony, Bhopal 462016 (M. P.)	Dilip.chaudhary@icloud. com
2	Mrs. Pravin Tripathi IA & AS (Retd.)	D-243, Anupam Gardens, Lane IB, Neb Sarai, Sainik Farms, New Delhi- 110068	Pravin.tripathi@gmail.co m

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The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/three part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this pact would be a preliminary qualification. (Refer Annexure-IX for Integrity pact).

Please refer Section-8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to the any of the IEMs mentioned in the NIT. All correspondence with the IEMs shall be done through email only.

"No routine correspondence shall be addressed to the IEM (phone/ post/ email) regarding the clarifications, time extensions or any other administrative queries, etc. on the tender issued. All such clarification/ issues shall be addressed directly to the tender issuing (procurement) department officials whose contact details are provided above in NIT".

- xv. Bidders to note Model Conciliation Clause under BHEL Conciliation Scheme, 2018 as per Annexure VI
- xvi. "For this procurement, Public Procurement (Preference to Make in India), Order 2017 dated 15.06.2017, 28.05.2018 & 29.05.2019 and subsequent Orders issued by the respective Nodal Ministry shall be applicable even if issued after issue of the NIT but before finalization of contract/ PO/WO against the NIT. In the event of any Nodal Ministry prescribing higher or lower percentage of purchase preference and / or local content in respect of this procurement, same shall be applicable". Vendors are requested to go through the above mentioned orders and confirm the following-

The local supplier at the time of tender, bidding or solicitation shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) that the item offered meets the minimum local content as per above mentioned orders and shall give details of the location(s) at which the local value addition is made.

- xvii. MSME/ Start up vendors to submit applicable documents along with their offer for availing the benefits as per GOI guidelines.
- xviii. PEM is already registered with RXIL (TreDS) platform. MSME Bidders are requested to get registered with RXIL (TreDS) platform to avail the facility as per GOI guidelines, if desires so.

TERMS AND CONDITIONS

1. Procurement of the subject package shall be done through e-procurement
2. Enquiry No., due date etc. must be legibly super scribed on the offers as per clause no. 2.0 of "Instructions to Bidders".
3. Offers should be uploaded in two parts online at <https://bhel.abcpurchase.com> in as follows:

Handwritten signature and date 8/8/19



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- a) Part-I Bid: - Documents and Credential as per Technical & Financial PQR and Techno-Commercial offer (along with un-priced copy of un-priced bid and un-priced schedule of Technical-Commercial Deviation, Annexure I & II)
- b) Part II Bid: - Price Bid and Priced schedule of Technical-Commercial Deviation
4. Terms and conditions: -
- a) Part I bid will be opened on date & time mentioned in the NIT or subsequent corrigenda/amendments, if any.
- b) **Techno-commercial offer of only those bidders shall be evaluated who will meet the Technical pre-qualifying requirement of the tender.**
5. Bidders shall submit their offers meeting the requirements of the following tender documents and other Terms and Conditions included in this Enquiry Letter:
- **ANNEXURE-I of GCC Rev. 06:** Letter to be furnished by the Bidders.
 - **DEFINITION OF TERMS.**
 - **Volume-I:** Comprising i) **Part-A:** Instructions to Bidders, ii) **Part-B:** General Commercial Terms & Conditions and iii) Special Conditions of Contract, if applicable.
 - **Volume-II:** Comprising i) **Part-A:** General Technical Conditions and, ii) **Part-B:** Technical Specification.
 - **Volume-III:** Schedules and Data Sheets.
- All the above Tender Documents shall automatically become a part of the Order/Contract after its finalisation.
6. Vendors shall quote in accordance with the requirements mentioned in the tender documents. In case of deviations (Technical/ Commercial), the same shall be highlighted separately giving Clause references along with the Cost of withdrawal of Deviations as per **Annexure-II to GCC Rev 06 of "DEVIATION SHEET (COST OF WITHDRAWAL)"** along with reasons for taking such deviations
- Bidder to note all the points mentioned in "Notes" of Annexure-II to GCC Rev 06**
7. **Please note the following:**
- a. **Price format is enclosed for compliance.**
- b. **SCC enclosed for compliance.**
- GCC enclosed for compliance. GCC Rev-06 is available on www.bhelpem.com. You are requested to kindly download the same. GST related corrigenda to GCC Rev.06 is enclosed. Bidders are requested for furnishing compliance of these documents.**
8. Tenders shall be submitted strictly in accordance with the requirements of the above tender documents.
9. Standard pre-printed terms & conditions of the tenderers shall not be considered valid.
10. Validity of offer shall be as per **Clause No. 7.0, "Instructions to Bidders" of GCC Rev 06.**
11. Unsolicited fresh/revised Price Bids shall not be entertained.
12. Purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept or reject any/all tender(s) in part or full without assigning any reason whatsoever.
13. Late tenders will be rejected.
14. Tenders and all correspondence thereof, shall be addressed to the undersigned by name & designation and sent at the following address:

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Mr. I P SINGH, DGM, CMM M/s Bharat Heavy Electricals Ltd., Project Engineering Management, Power Project Engineering Institute, HRD & ESI Complex, Plot No 25, Sector-16 A, Noida-201301 Kind Attn: I P SINGH/ CMM E-MAIL: indra.pal.singh@bhel.in Ph. No. 0120-4218749 ,09818989654	Mr. SUMEET SAHAY, DY MGR, CMM M/s Bharat Heavy Electricals Ltd., Project Engineering Management, Power Project Engineering Institute, HRD & ESI Complex, Plot No 25, Sector-16 A, Noida-201301 Kind Attn: SUMEET SAHAY/ CMM E-MAIL: sumeetsahay@bhel.in Ph. No. 0120-4213532 ,09999498202
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15. Definition of Terms is also enclosed. These definitions will apply to all the tender documents including this Enquiry Letter.
16. **Delivery:**
"Four (04) months from drgs. /docs. approval in CAT-I issued by BHEL. Successful bidder to make 1st submission & re-submission of drawing/docs as mentioned in clause no-4.2 of Section I of Volume II of Technical Specification PE-RC-999-507-E002 within time period mentioned thereof. Vendor to re-submit Drawing/documents within 7 days, after incorporating BHEL comments. In case there are delays in drawing/docs submission and resubmission, that much delay would be reduced from delivery period."
17. **PRE-QUALIFICATION REQUIREMENT:-**
Bidders is requested to fill up the details in "TECHNICAL & FINANCIAL PRE-QUALIFYING REQUIREMENT" as per the conditions mentioned in the PQR (both technical & financial) and also to submit the credentials.
Bids of only those bidders shall be evaluated who meet the Technical & Financial pre-qualifying requirements (if applicable).
18. Bidders to note that their bid shall be conditional subject to qualify PQR (both technical & financial) by registered vendors & non-registered vendors have to qualify PQR (both technical & financial) & get registered with PEM for the package.
For registration in PEM "Bidders needs to apply & get registered for subject package with PEM before P-2 (price bid opening) & hence you need to apply online for registration on PEM web portal & have to enclose acknowledgement with this effect with the bid documents else your bid may not be considered for evaluation"
19. Bidder has to submit "NO DEVIATION CERTIFICATE FOR COMMERCIAL TERMS AND CONDITIONS AS PER GCC (06), SCC AND NIT". In case of deviations, bidder to clearly mention the same with their techno-commercial offer.
20. All the above Tender Documents shall automatically become a part of the Order/Contract after its finalization.
21. **The offers of the bidders who are on the banned list as also the offer of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL website www.bhel.com.**
22. "The Bidder along with its associate/ collaborators/ sub-contractors/ sub-vendors/ consultants/ service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice."

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- BHEL Fraud prevention policy is also uploaded in vendor's section on www.bhelpem.com.**
23. Bidders are requested to visit constantly our website to update them self for any technical or commercial change in the NIT.
24. All corrigenda, addenda, amendments, time extensions, clarifications etc. to the tender will be hosted on BHEL websites only (www.bhelpem.com, www.bhel.com & <https://bhel.abcprocure.com> under subject tender reference. Bidders are requested to visit our websites from time to time to keep themselves updated. **Bidders may go through the Sellers' manual & Help documents provided on E-Procurement Portal website & obtain required Digital Signature Certificate for participating in the subject Tender.**
25. Bidders to submit their offers strictly in line with the enclosed price format.
26. Inspection shall be done by BHEL/ END CUSTOMER/Third party Agency (finalized by BHEL).
27. Any other taxes & duties applicable on the date of bid but not quoted by the bidders shall be to bidder account.
28. Delivery terms for dispatches shall be FOR Dispatch Station.
29. This enquiry is subject to Conditions/ limits if any imposed in PMD / Vendor registration.
30. Foreign & indigenous bidders participating through open/limited tender will necessarily have to but class II DSCs issued by the certifying authorities in India. Basic procedure/ checklist is uploaded on www.bhel.com.
31. Non- registered bidder to submit the credentials required for Registration in BHEL PEM: -
"Online Registration Portal is operational in BHEL. Non-registered Vendors, who wish to apply for registration with BHEL-PEM, have to apply through Online Registration Portal available at www.bhelpem.com - vendor section - Online Supplier Registration. All credentials and/or documents duly signed and stamped related to registration has to be uploaded on the website and submit the application for registration. One set of hard copy of the filled-up SRF downloaded from Online Registration Portal duly signed and stamped has to be submitted."
32. Purchaser reserves the right to split up the scope of the tender enquiry and place the orders for different scope/ items with different bidders and also increase or decrease the quantity.
33. In case of RA, revised RA guidelines AA:SSP:RA:03 issued on 26.09.2016 (uploaded on http://www.bhel.com/vender_registration/pdf/Guidelines%20for%20Reverse%20Auction-2016.pdf) shall be applicable.
34. BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on www.bhel.com) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.
Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the designated service provider) as well as 'Online sealed bid' in the Reverse Auction. Non-submission of 'Process compliance form' or 'Online sealed bid' by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).

The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer. The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price



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& envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates.

If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com)."

As a reminder to the bidders, system will flash following message (in RED Color) during the course of 'online sealed bid':

"Bidders to submit online sealed bid less than or equal to their envelope sealed bid already submitted to BHEL"

Detailed guidelines of reverse auction 2016 are available in "information section" of www.bhelpem.com, same are applicable for subject tender.

IMPORTANT INSTRUCTION TO BIDDERS IN CASE OF REVERSE AUCTION

"The Bidders has to quote the Single Price (i.e. Total Cost to BHEL) in Reverse Auction. Price are to be inclusive of Packing & Forwarding charges, all the routine & type tests as per tender scope, Freight as applicable, including loading (if any). De-loading (if any) shall be done in line with NIT terms.

35. If any bidder has mentioned the term Not Applicable / Not required / Not Quoted in BHEL price format. The bidder needs to substantiate the same. If the same item will be required in future for the system same will be supplied free of cost.
36. Foreign Suppliers & Indian agents of foreign suppliers: Please refer our website <http://www.bhelpem.com/Tenders.aspx> for details.
37. L1 bidder will have to submit Bank Guarantee for each POs (irrespective of value) which will be placed under the Rate Contract finalised through this tender considering RC as original contract as per format mentioned in Annexure V to NIT instead of format mentioned in GCC Rev 06
38. All other terms and conditions shall be as per GCC Rev 06 and Special Conditions of Rate Contract as per attached Annexure-II. In the event of any contradiction in the terms and conditions mentioned, the order of preference shall be NIT and Annexures/Technical Specification/ corrigenda related to GCC Rev.06/ Rate contract SCC / GCC Rev. 06

Note: Tenderer must submit UN-PRICED Price format duly filled mentioning the word "QUOTED" in place of actual price given in sealed price bid.

Thanking you,
Yours faithfully,
For and on behalf of BHEL


(Signature of official with Name & Designation)

सुमीत सहाय / SUMIT SAHAYA
उप प्रबंधक (सी. एम. एम.) / Dy. Manager (CMM)
भारत भारी इलेक्ट्रिकल्स लिमिटेड / Bharat Heavy Electricals Ltd.
पावर सेक्टर-परियोजना इंजीनियरिंग प्रबंधन
Power Sector-Project Engineering Management
पिएईआईई बिल्डिंग, एचआरडी एंड ईएसआई कॉम्प्लेक्स
PPEI Bldg. HRD & ESI Complex.
फ्लॉट नं. 25, सेक्टर 18 ए, नोएडा - 201301
Plot No. 25, Sec. 18 A, Noida - 201301



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Enclosure:

1. Enquiry Terms & Conditions
2. Price Format (Prices should be quoted in this format only) – Annexure I
3. Techno-Commercial Deviation Sheet (Annexure-II to GCC Rev 06) – Annexure II
4. BOQ & Technical Specifications
5. Technical PQR
6. Financial PQR
7. SCC – ANNEXURE III
8. Prospective Project List – Annexure IV
9. Corrigenda to GCC Rev 06
10. Annexure V - BG Format
11. Annexure VI - Model Conciliation Clause under BHEL Conciliation Scheme, 2018
12. Integrity Pact
13. Annexure A PVC formulae

[Handwritten Signature]
5/8/19
SUMIT SAHAY
उप प्रबंधक (सी. एम. एम.) / Dy. Manager (CMM)
भारत भारी इलेक्ट्रिकल्स लिमिटेड, Bharat Heavy Electricals Ltd.
पावर सेक्टर-परियोजना इंजीनियरिंग प्रबंधन
Power Sector-Project Engineering Management
पीपीईआई भवन, एच.आर.डी एंड ई.एस.आई कॉम्प्लेक्स
PPEI Bldg. HRD & ESI Complex.
प्लॉट नं. 25, सेक्टर 18 ए. नोएडा - 201301
Plot No. 25, Sec. 18 A, Noida - 201301

**ANNEXURE A TO NIT REF NO - PE/PG/RTC/E-6285/2019,
DTD-08.08.2019
RATE CONTRACT - LT XLPE POWER CABLES**

Ref: PW/PE/CMM-PVC Cables Packages (Rev-02)

Dated:19/02/2019

Note: Applicable for cable tenders released on or after 14/01/2019.

Price Variation Formulae for cables -Annexure-I

1. Prices shall be variable as per price variation formulae given below (basis IEEMA).
The price variation shall be limited to + 20% of total ex-works price actually supplied (cable size wise) and -ve price variation shall be unlimited. Rates for working out price variation shall be as per rates published by IEEMA for the factors given in Annexure-II

2. Base date for prices:

Initial Price (As per IEEMA) for-Alo, Cuo, CCo, PVCCo & Feo:

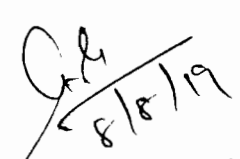
Base Date shall be- 1st working day of the previous month to the date of issue of tender enquiry.

Final Price (as per IEEMA) for- Al, Cu, Cc, PVCC & Fe:

1st working day of month, one month prior to the date on which cable is notified as being ready for inspection i.e TPIA inspection call raise date on web portal.

3. Variation factor value for ALF, CuF, CCFAL, CCFCu, XLFAL, XLFCu, FeF & FeW as applicable shall be as per Technical Specification.

4. PVC shall be payable within contractual delivery period (including any extension thereto).


8/8/19
सुमीत साहाय / SUMIT SAHAY
उप प्रबंधक (सी. एम. एम.) / Dy Manager (CMM)
भारत हेवी इलेक्ट्रिकल्स लिमिटेड / Bharat Heavy Electricals Ltd.
पावर सेक्टर-परियोजना इंजीनियरिंग प्रबंधन
Power Sector-Project Engineering Management
पीपीईआई भवन, एचआरडी एण्ड ईएसआई कॉम्प्लेक्स
PPEI Bldg. HRD & ESI Complex
प्लॉट नं. 25, सेक्टर 16 ए, नोएडा - 201301
Plot No. 25, Sec. 16 A, Noida - 201301

IEEMA table for Price variation cause for various type of cable

1. Aluminium conductor cable

S.No	Cable Type	AIF (Single core unarmoured & Multi core armoured)	AIF (Single core armoured)	CCFAI	XLFAL (Single core)	XLFAL (Multi core)	FeF	FeW	IEEMA Formula
1.	HT XLPE Power cable	ALP	H1	H2	XL3	XL4	H3	H5	$P = P_o + AIF(AL - Alo) + XLFAL(CC - CC_o) + CCFAI(PVCC - PVCC_o) + FeF(Fe - Fe_o)$
2.	LT XLPE Power Cable	ALP	P1	L2	XL1	XL1	P3	P3 (Additional)	$P = P_o + AIF(AL - Alo) + XLFAL(CC - CC_o) + CCFAI(PVCC - PVCC_o) + FeF(Fe - Fe_o)$
3.	LT PVC Power Cable	ALP	P1	P2	-	-	P3	P3 (Additional)	$P = P_o + AIF(AL - Alo) + CCFAI(PVCC - PVCC_o) + FeF(Fe - Fe_o)$
4.	LT HRPVC Power Cable	ALP	P1	P2	-	-	P3	P3 (Additional)	$P = P_o + AIF(AL - Alo) + CCFAI(PVCC - PVCC_o) + FeF(Fe - Fe_o)$

2. Copper conductor cable

S.no.	Cable type	CuF	AIF (single core armoured)	CCFCu	XLFCU (Single core)	XLFCU (Multi core)	FeF	FeW	IEEMA Formula
1	HT XLPE Power cable	CUP	H4	H2	XL3	XL4	H3	H5	$P = P_o + CuF(Cu - Cu_o) + XLFCU(CC - CC_o) + CCFCu(PVCC - PVCC_o) + FeF(Fe - Fe_o) + AIF(AL - Alo)$
2	LT XLPE Power Cable	CUP	P4	L2	XL1	XL1	P3	P3 (Additional)	$P = P_o + CuF(Cu - Cu_o) + XLFCU(CC - CC_o) + CCFCu(PVCC - PVCC_o) + FeF(Fe - Fe_o) + AIF(AL - Alo)$

18/11/19

ANNEXURE I TO NIT REF NO-PE/PG/RTC/E-6285/2019, DTD-08.08.2019

PRICE SCHEDULE FOR LT XLPE POWER CABLES

RATE CONTRACT

NAME OF VENDOR - (Please fill vendor's name)

NO.	ITEM CODE	ITEM DESCRIPTION	UOM	QUANTITY (IN METER)	DRUM LENGTH (IN METER)	HSN CODE	UNIT EX- WORKS PRICE (DULY PACKED) OF TOTAL EX-WORKS PRICE (INR)	UNIT EX- WORKS PRICE (DULY PACKED) (INR)	FORMULA FOR TOTAL EX- WORKS PRICE (DULY PACKED) (INR)	TOTAL EX- WORKS PRICE (DULY PACKED) (INR)	FREIGHT CHARGES WITHOUT GST @ % OF TOTAL EX WORKS (INR)	APPLICABLE GST RATE % ON (TOTAL EX WORKS + FREIGHT) (INR)	TOTAL FOR SITE PRICE (INR)	REMARKS
1	507-28011-A	2C - 10- AL ARMoured	METER	21,000	500	8544	(0.00236 * X) / 21000	Derived	0.00236 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
2	507-28124-A	2C - 16- AL ARMoured	METER	15,000	500	8544	(0.00173 * X) / 15000	Derived	0.00173 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
3	507-28017-A	2C - 25- AL ARMoured	METER	15,000	500	8544	(0.00190 * X) / 15000	Derived	0.00190 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
4	507-28021-A	2C - 50- AL ARMoured	METER	10,000	500	8544	(0.00187 * X) / 10000	Derived	0.00187 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
5	507-28027-A	2C - 95- AL ARMoured	METER	10,000	500	8544	(0.00301 * X) / 10000	Derived	0.00301 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
6	507-28013-A	2C - 185- AL ARMoured	METER	12,000	500	8544	(0.00629 * X) / 12000	Derived	0.00629 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
7	507-28039-A	3C - 10- AL ARMoured	METER	76,000	500	8544	(0.00958 * X) / 76000	Derived	0.00958 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
8	507-28125-A	3C - 16- AL ARMoured	METER	45,000	500	8544	(0.00601 * X) / 45000	Derived	0.00601 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
9	507-28047-A	3C - 25- AL ARMoured	METER	79,000	500	8544	(0.01295 * X) / 79000	Derived	0.01295 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
0	507-28049-A	3C - 50- AL ARMoured	METER	32,000	500	8544	(0.00789 * X) / 32000	Derived	0.00789 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
1	507-28051-A	3C - 95- AL ARMoured	METER	37,000	500	8544	(0.01535 * X) / 37000	Derived	0.01535 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
2	507-28041-A	3C - 150- AL ARMoured	METER	10,000	500	8544	(0.00623 * X) / 10000	Derived	0.00623 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
3	507-28138-A	3C - 185- AL ARMoured	METER	10,000	500	8544	(0.00786 * X) / 10000	Derived	0.00786 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
4	507-28045-A	3C - 240- AL ARMoured	METER	22,000	500	8544	(0.02244 * X) / 22000	Derived	0.02244 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
5	507-28161-A	3C - 300- AL ARMoured	METER	10,000	500	8544	(0.01274 * X) / 10000	Derived	0.01274 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
5	507-28031-A	3.5C - 25- AL ARMoured	METER	75,000	500	8544	(0.01399 * X) / 75000	Derived	0.01399 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
7	507-28035-A	3.5C - 50- AL ARMoured	METER	1,00,000	500	8544	(0.02853 * X) / 100000	Derived	0.02853 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
3	507-28037-A	3.5C - 95- AL ARMoured	METER	20,000	500	8544	(0.00958 * X) / 20000	Derived	0.00958 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived
9	507-28029-A	3.5C - 185- AL ARMoured	METER	16,000	500	8544	(0.01540 * X) / 16000	Derived	0.01540 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	Derived

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ANNEXURE I TO NIT REF NO-PE/PG/RTC/E-6285/2019, DTD-08.08.2019

PRICE SCHEDULE FOR LT XLPE POWER CABLES

RATE CONTRACT

NAME OF VENDOR - (Please fill vendor's name)

ITEM NO.	ITEM CODE	ITEM DESCRIPTION	UOM	QUANTITY (IN METER)	DRUM LENGTH (IN METER)	HSN CODE	UNIT EX- WORKS PRICE (DULY PACKED) OF TOTAL EX-WORKS PRICE (INR)	UNIT EX- WORKS PRICE (DULY PACKED) (INR)	FORMULA FOR TOTAL EX- WORKS PRICE (DULY PACKED) (INR)	TOTAL EX- WORKS PRICE (DULY PACKED) (INR)	FREIGHT CHARGES WITHOUT GST @ % OF TOTAL EX WORKS (INR)	APPLICABLE GST RATE % ON (TOTAL EX WORKS + FREIGHT) (INR)	TOTAL FOR SITE PRICE (INR)	REMARKS
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
20	507-28033-A	3.5C - 300- AL ARMoured	METER	5,000	500	8544	(0.00725 * X)/ 5000	Derived	0.00725 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
21	507-28053-A	4C - 10- AL ARMoured	METER	19,000	500	8544	(0.00271 * X)/ 19000	Derived	0.00271 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
22	507-28126-A	4C - 16- AL ARMoured	METER	10,000	500	8544	(0.00159 * X)/ 10000	Derived	0.00159 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
3	-	1.1KV, Al conductor, XLPE insulated, Galvanised Steel Round Wire Armoured for multi-core cables (Non Magnetic Hard drawn Aluminium Round Wire Armoured conforming to H4 grade for single core cables), INNER SHEATH: Extruded HRPVC compound conforming to type ST2 of IS: 5831 for multicore cable & no inner sheath for single core cables, OVERALL SHEATH: Extruded FRLS HRPVC compound conforming to type ST2 of IS: 5831 & black in colour.												
1	507-28154-A	1C - 35- AL ARMoured	METER	80,000	500	8544	(0.00892 * X)/ 80000	Derived	0.00892 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
2	507-28157-A	1C - 120- AL ARMoured	METER	36,000	500	8544	(0.00873 * X)/ 36000	Derived	0.00873 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
3	507-28005-A	1C - 400- AL ARMoured	METER	98,000	500	8544	(0.05995 * X)/ 98000	Derived	0.05995 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
4	507-28007-A	1C - 630- AL ARMoured	METER	2,63,000	500	8544	(0.24331 * X)/ 263000	Derived	0.24331 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
5	507-28181-A	2C - 16- AL ARMoured	METER	12,000	500	8544	(0.00160 * X)/ 12000	Derived	0.00160 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
6	507-28182-A	2C - 25- AL ARMoured	METER	45,000	500	8544	(0.00720 * X)/ 45000	Derived	0.00720 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
7	507-28183-A	2C - 50- AL ARMoured	METER	10,000	500	8544	(0.00225 * X)/ 10000	Derived	0.00225 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
8	507-28184-A	2C - 95- AL ARMoured	METER	10,000	500	8544	(0.00350 * X)/ 10000	Derived	0.00350 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
9	507-28185-A	2C - 185- AL ARMoured	METER	11,000	500	8544	(0.00687 * X)/ 11000	Derived	0.00687 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
0	507-28186-A	3C - 16- AL ARMoured	METER	1,00,000	500	8544	(0.01611 * X)/ 100000	Derived	0.01611 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
1	507-28187-A	3C - 25- AL ARMoured	METER	62,000	500	8544	(0.01220 * X)/ 62000	Derived	0.01220 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
2	507-28188-A	3C - 50- AL ARMoured	METER	30,000	500	8544	(0.00875 * X)/ 30000	Derived	0.00875 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
3	507-28189-A	3C - 95- AL ARMoured	METER	22,000	500	8544	(0.01119 * X)/ 22000	Derived	0.01119 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
4	507-28190-A	3C - 150- AL ARMoured	METER	10,000	500	8544	(0.00765 * X)/ 10000	Derived	0.00765 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
5	507-28191-A	3C - 240- AL ARMoured	METER	25,000	500	8544	(0.03142 * X)/ 25000	Derived	0.03142 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	

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ANNEXURE I TO NIT REF NO-PE/PG/RTC/E-6285/2019, DTD-08.08.2019

PRICE SCHEDULE FOR LT XLPE POWER CABLES

RATE CONTRACT

NAME OF VENDOR - (Please fill vendor's name)

ITEM NO.	ITEM CODE	ITEM DESCRIPTION	UOM	QUANTITY (IN METER)	DRUM LENGTH (IN METER)	HSN CODE	UNIT EX- WORKS PRICE (DULY PACKED) OF TOTAL EX-WORKS PRICE (INR)	UNIT EX- WORKS PRICE (DULY PACKED) (INR)	FORMULA FOR TOTAL EX- WORKS PRICE (DULY PACKED) (INR)	TOTAL EX- WORKS PRICE (DULY PACKED) (INR)	FREIGHT CHARGES WITHOUT GST @ % OF TOTAL EX WORKS (INR)	APPLICABLE GST RATE % ON TOTAL EX WORKS + FREIGHT (INR)	TOTAL FOR SITE PRICE (INR)	REMARKS
2	507-28192-A	3C - 300- AL ARMoured	METER	5	6	7	8	9	10	11	12	13	14	15
6	507-28192-A	3C - 300- AL ARMoured	METER	10,000	500	8544	(0.01542 * X) / 10000	Derived	0.01542 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
7	507-28193-A	3.5C - 25- AL ARMoured	METER	26,000	500	8544	(0.00610 * X) / 26000	Derived	0.00610 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
8	507-28194-A	3.5C - 50- AL ARMoured	METER	24,000	500	8544	(0.00851 * X) / 24000	Derived	0.00851 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
9	507-28195-A	3.5C - 95- AL ARMoured	METER	11,000	500	8544	(0.00669 * X) / 11000	Derived	0.00669 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
10	507-28196-A	3.5C - 185- AL ARMoured	METER	10,000	500	8544	(0.01179 * X) / 10000	Derived	0.01179 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
11	507-28197-A	3.5C - 300- AL ARMoured	METER	5,000	500	8544	(0.00889 * X) / 5000	Derived	0.00889 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
12	507-28198-A	4C - 16- AL ARMoured	METER	10,000	500	8544	(0.00192 * X) / 10000	Derived	0.00192 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
1.1KV, Cu conductor, XLPE insulated, Galvanised Steel Round Wire Armoured for multi-core cables (Non Magnetic Hard drawn Aluminium Round Wire Armoured conforming to H4 grade for single core cables), INNER SHEATH: Extruded HRPVC compound conforming to type ST2 of IS: 5831 for multicore cable & no inner sheath for single core cables, OVERALL SHEATH: Extruded FRLS HRPVC compound conforming to type ST2 of IS: 5831 & black in colour.														
1	507-28001-A	1C - 16- CU ARMoured	METER	55,000	500	8544	(0.00920 * X) / 55000	Derived	0.00920 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
2	507-28130-A	1C - 35- CU ARMoured	METER	52,000	500	8544	(0.02088 * X) / 52000	Derived	0.02088 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
3	507-28162-A	1C - 70- CU ARMoured	METER	24,000	500	8544	(0.01804 * X) / 24000	Derived	0.01804 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
4	507-28009-A	1C - 630- CU ARMoured	METER	5,000	500	8544	(0.03350 * X) / 5000	Derived	0.03350 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
5	507-28015-A	2C - 2.5- CU ARMoured	METER	7,40,000	1000	8544	(0.08027 * X) / 740000	Derived	0.08027 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
6	507-28043-A	3C - 2.5- CU ARMoured	METER	10,50,000	1000	8544	(0.13912 * X) / 1050000	Derived	0.13912 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
7	507-28055-A	4C - 2.5- CU ARMoured	METER	30,000	1000	8544	(0.00462 * X) / 30000	Derived	0.00462 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
8	507-28065-A	2C - 6- CU ARMoured	METER	45,000	1000	8544	(0.00814 * X) / 45000	Derived	0.00814 * X	Derived	% TO BE QUOTED	% TO BE QUOTED	Derived	
GRAND TOTAL (A.1 TO C.8)										X= TO BE QUOTED (IN FIGURES)	Derived = Rs Y	Derived	Derived	

X= TO BE QUOTED (IN WORDS)

उप प्रस्तावक (बी.एस.एस.) - By Manager (CMM)
 शहर सक्टर-गोमतीगंज, भादवरी भारती साहया
 Power Sector-Project Enam, गोमतीगंज
 प्लॉट नं. 25, सक्टर 16 वी, नोएडा
 PPEI Bldg. HRD & ES Complex,
 Plot No 25, Sec 16 A, Noida - 201301

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ANNEXURE I TO NIT REF NO-PE/PG/RTC/E-6285/2019, DTD-08.08.2019

PRICE SCHEDULE FOR LT XLPE POWER CABLES

RATE CONTRACT

NAME OF VENDOR - (Please fill vendor's name)														
NO.	ITEM CODE	ITEM DESCRIPTION	UOM	QUANTITY (IN METER)	DRUM LENGTH (IN METER)	HSN CODE	UNIT EX- WORKS PRICE (DULY PACKED) OF TOTAL EX-WORKS PRICE (INR)	UNIT EX- WORKS PRICE (DULY PACKED) (INR)	FORMULA FOR TOTAL EX- WORKS PRICE (DULY PACKED) (INR)	TOTAL EX- WORKS PRICE (DULY PACKED) (INR)	FREIGHT CHARGES WITHOUT GST @ % OF TOTAL EX WORKS (INR)	APPLICABLE GST RATE % ON (TOTAL EX WORKS + FREIGHT) (INR)	TOTAL FOR SITE PRICE (INR)	REMARKS
	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Bidder to note that evaluation shall be on Total Ex works price + Freight. Bidder to quote grand total Ex works value of the complete package only as per the BOQ above. The item wise break up of Ex works prices (unit as well as total) for all the items in the BOQ shall be derived as per the formulae indicated above by BHEL. Bidder also need to indicate Freight and GST rate in percentage in the respective column. Freight percentage to be quoted in percentage of Ex works value considering delivery anywhere in India.

The standard drum length shall be 500/1000 meters as indicated above. Tolerance on individual drum length shall be $\pm 5\%$.
Overall tolerance on total dispatched quantity of each size shall be $(-) 2\%$ and $(+) 0\%$ except where the total ordered quantity is one single drum length of 500/1000m, in which case it shall be -5% to 0% . Cables consumed for testing and inspection shall be to bidder's account.

For each individual cable size, one short length of not less than 200m may be accepted only in the final drum length to complete the supply (except where the total ordered quantity is one single drum length of 500/1000m). The overall tolerance limits stipulated shall continue to apply (in case short lengths are accepted).

Price of cables quoted by bidder shall be inclusive of type test charges. No separate charges shall be payable for type tests.
For Projects having additional requirement of FRLS inner sheath, additional price implication over basic unit price shall be as per Annexure-I A to 'BOQ-cum Price Schedule'.

Value is to be filled only where "to be quoted" is mentioned and for other columns where "derived" is mentioned same shall be derived by BHEL as per % allocation fixed against each item.
Where any clarification please refer Technical Specification No--PE-RC-999-507-E002 REV 01

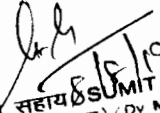
In case of Reverse Auction, vendor has to quote their Ex Works price+ Freight
Overall Quantity variation shall be $\pm 30\%$ of contract value.


 SUMIT SAHAYA
 Dy. Manager (CMM) / Dy. Manager (CMM)
 Bharat Heavy Electricals Ltd.
 Power Sector-Project Engineering Management
 PPEI Bldg. HRD & EST Complex,
 Plot No. 25, Sector 16 E, Noida - 201301

ANNEXURE-I A TO NIT REF NO-PE/PG/RTC/E-6285/2019, DTD-
08.08.2019

RATE CONTRACT OF LT XLPE POWER CABLE

Sl. No.	Description	%age Implication of Basic Price
1	Inner sheath FRLS in place of Non-FRLS.	(+) 2.5 %


SUMIT SAHAYA
Dy Manager (CMM)
उप प्रबंधक (सी एम एम) / Bharat Heavy Electricals Ltd.
भारत हेवी इलेक्ट्रिकल्स लिमिटेड / भारती नैयूरिंग प्रबंधन
पावर सेक्टर-परियोजना इंजीनियरिंग प्रबंधन
Power Sector-Project Engineering Management
पीपीईआई प्रबन्ध, एपआरडी एण्ड ईएसआई कॉम्प्लेक्स
PPEI Bldg. HRD & ESI Complex,
प्लॉट नं. 25, सेक्टर 16 ए, नोएडा - 201301
Plot No 25, Sec 16 A, Noida - 201301

ANNEXURE-II: DEVIATION SHEET (COST OF WITHDRAWAL)
PACKAGE:- LT XLPE POWER CABLES

TENDER ENQUIRY REF NO.-PE/PG/RTC/E-6285/2019, DTD-08.08.2019
 NAME OF VENDOR:-

SL NO	VOLUME/ SECTION	PAGE NO.	CLAUSE NO.	TECHNICAL SPECIFICATION/ TENDER DOCUMENT	COMPLETE DESCRIPTION OF DEVIATION	COST OF WITHDRAWL OF DEVIATION	REFERENCE OF PRICE SCHEDULE ON WHICH COST OF WITHDRAWL OF DEVIATION IS APPLICABLE	NATURE OF COST OF WITHDRAWL OF DEVIATION (POSITIVE/ NEGATIVE)	REASONS FOR QUOTING DEVIATION
TECHNICAL DEVIATIONS									
COMMERCIAL DEVIATIONS									
PARTICULARS OF BIDDERS/ AUTHORISED REPRESENTATIVE									
NAME				DESIGNATIONS			SIGN & DATE		

- NOTES:**
- For self manufactured items of bidder, cost of withdrawal of deviation will be applicable on the basic price (i.e. excluding taxes, duties & freight) only.
 - For directly dispatchable items, cost of withdrawal of deviation will be applicable on the basic price including taxes, duties & freight.
 - All the bidders have to list out all their Technical & Commercial Deviations (if any) in detail in the above format.
 - Any deviation not mentioned above and shown separately or found hidden in offer, will not be taken cognizance of.
 - Bidder shall submit duly filled unpriced copy of above format indicating "quoted" in "cost of withdrawal of deviation" column of the schedule above along with their Techno-commercial offer.
 - Bidder shall furnish price copy of above format along with price bid.
 - The final decision of acceptance/ rejection of the deviations quoted by the bidder shall be at discretion of the Purchaser.
 - Bidders to note that any deviation (technical/commercial) not listed in above and asked after Part-I opening shall not be considered
 - For deviations w.r.t. Payment terms, Liquidated damages, Firm prices and submission of E1/ E2 forms before claiming 10% payment, if a bidder chooses not to give any cost of withdrawal of deviation loading as per Annexure-VIII of GCC, Rev-06 will apply. For any other deviation mentioned in un-priced copy of this format submitted with Part-I bid but not mentioned in priced copy of this format submitted with Priced bid, the cost of withdrawal of deviation shall be taken as NIL.
 - Any deviation mentioned in priced copy of this format, but not mentioned in the un-priced copy, shall not be accepted.
 - All techno-commercial terms and conditions of NIT shall be deemed to have been accepted by the bidder, other than those listed in unpriced copy of this format.
 - Cost of withdrawal is to be given separately for each deviation. In no event bidder should club cost of withdrawal of more than one deviation else cost of withdrawal of such deviations which have been clubbed together shall be considered as NIL.
 - In case nature of cost of withdrawal (positive/negative) is not specified it shall be assumed as positive.
 - In case of discrepancy in the nature of impact (positive/ negative), positive will be considered for evaluation and negative for ordering.


 Dy. Manager (C&M)
 Power-Sector-Procurement Engineering Management
 Bldg. HPD & E&T Annex,
 Plot No. 21, Soc. 16 A, Noida - 201301



PRE - QUALIFYING REQUIREMENTS

ENQUIRY NO:

PROJECT :

RATE CONTRACT

PACKAGE:

LT XLPE POWER CABLE

CRITERIA FOR EVALUATION - FINANCIAL :

Amount (in Rs.)

Average annual financial turnover during the last Three Financial Years should not be less than

Rs.17,22,00,000.00

Rupees Seventeen Crore Twenty Two Lakh(s) Only

Notes:-

a) The bidder has to submit financial accounts (audited, if applicable comprising of Audit report, Balance Sheet, Profit & Loss A/c Statement and Notes/Schedules pertaining to Turnover/Sales/Revenue), for last three years (or from the date of incorporation, whichever is less) as on tender due date to review the above criteria. In case the incorporation of vendor is less than 3 years, average annual financial turnover shall be calculated based on available information as below:-

i) If the accounts are available for ≤ 1 Financial Year, the Average Annual Turnover shall be calculated based on available information divided by 1 (One).

ii) If the accounts are available for >1 but ≤ 2 Financial Years, the Average Annual Turnover shall be calculated based on available information divided by 2 (Two).

iii) If the accounts are available for >2 but ≤ 3 Financial Years, the Average Annual Turnover shall be calculated based on available information divided by 3 (Three).

b) Foreign bidder is to submit a latest report from reputed third party business rating agency like Dun & Bradstreet, Credit reform etc. in addition to the documents mentioned at point (a) above for review of above criteria.

c) Other Income shall not be considered for arriving at Annual Turnover/Sales. For evaluation purpose, Turnover figure excluding taxes shall be considered.

d) For evaluation of foreign bidder, exchange rate (TT selling rate of SBI) as on scheduled date of tender opening (Part-I bid in case of two part bid) shall be considered.

सुमीत सहाय / SUMIT SAHAYA
उप प्रबंधक (सी. एवं एम.) Dy Manager (CMM)
भारत भारी विद्युत लिमिटेड Bharat Heavy Electricals Ltd
पावर सेक्टर-परियोजना इंजीनियरिंग प्रबंधन
Power Sector-Project Engineering Management
प्लॉट नं. १, एच.आर.डी. एण्ड ईएसआई कॉम्प्लेक्स
प्लॉट नं. १, एच.आर.डी. एण्ड ईएसआई कॉम्प्लेक्स

GST related Corrigendum to GCC Rev 06

GST related Corrigendum to GCC Rev 06

Clause Ref:	Existing Clause as:	Replaced/ New Clause as:
Clause No.4 of GTC (General commercial terms and conditions)	TAXES AND DUTIES 4.1 EXCISE DUTY 4.1.1 Seller/ Contractor is required to ensure that excise duty including cess, if any, is quoted as per the existing tariff on the date of the offer and all benefits as per existing rules have been considered. 4.1.2 Excise duty actually incurred by Seller/ Contractor on self-manufactured items alone shall be reimbursed against documentary evidence. Excise duty paid by Purchaser on inputs, bought out items, raw materials and components consigned directly to site from sources other than Seller/ Contractor's factory/ works shall be included by the bidder in the quoted basic price. 4.1.3 If excise duty is paid under protest or dispute, it shall not be reimbursed till the dispute is settled. If the Seller/ Contractor claims/ obtains any refund of the excise duty paid, the same shall be refunded to the Purchaser immediately. 4.1.4 Invoice cum Excise duty gate pass (Excise Invoice) should contain the name of the ultimate consignee as per Order/ Contract/ Special Conditions of Contract. 4.1.5 If required by Purchaser, the Seller / Contractor will provide a certificate stating that CENVAT benefit has been availed of on the inputs and the same has been passed on to the Purchaser. 4.1.6 Excise duty shall be paid at actuals against documentary evidence but restricted to the amount and percentage indicated in the Order/ Contract. 4.2 SALES TAX / VALUE ADDED TAX (VAT) 4.2.1 Central Sales Tax / Value Added Tax shall be reimbursed only if the same is paid by the Seller / Contractor to the respective Govt. authorities on direct sales by the Seller/ Contractor to the Purchaser, meeting all statutory requirements and availing all exemptions/ concessions under the respective Central Sales Tax / Value Added Tax Acts. The offer should clearly indicate CST/ VAT percentage and the total	TAXES AND DUTIES 4.1 CGST/SGST/UTGST/IGST 4.1.1 Seller/ Contractor is required to ensure that CGST/SGST/UTGST/IGST (whichever is applicable) is quoted as per the existing tariff on the date of the offer and all benefits as per existing laws have been considered. 4.1.2 It is the responsibility of the seller/contractor to issue the Tax Invoice strictly as per the format prescribed under the relevant applicable GST law (CGST Act/SGST Act/UTGST Act/IGST Act). Vendor to indicate the proper GSTN Registration/ HSN code in their tax invoice. 4.1.3 The purchaser is registered in the State of Uttar Pradesh vide following GST registration number: 09AAACB4146P22C 4.1.4 Seller/contractor is required to mention the above registration number in their tax invoice unless stated otherwise in NIT/SCC. 4.1.5 CGST/SGST/UTGST/IGST shall be paid at actuals against Tax Invoice but restricted to the amount and percentage in the order/contract

amount along with concessional form(s), if any. 4.2.2 Purchaser is registered in NOIDA, U.P. vide following Registration Numbers: Central Sales Tax Registration No.: ND - 5341151 w.e.f. 01-07-2006 UP Trade Tax Registration No.: ND - 0345307 w.e.f. 01-07-2006 UP TIN No.: 09765702874 4.2.3 Central Sales Tax/ Value Added Tax shall be reimbursed, as per tariff applicable, but restricted to the percentage and amount shown in the Order/ Contract. If it is shown as included in the quoted price/ not applicable, it will not be reimbursed by the Purchaser. 4.2.4 Purchaser proposes to make sale-in-transit under section 6 (2) (b) of Central Sales Tax Act where goods movement is inter-state. Form C shall be issued and exchanged against Form-E1/E2 based on quarterly transactions. Seller/Contractor is required to submit his request in the format enclosed at Annexure-VI within 30 days from end of the Quarter, giving State-wise invoice details. 4.2.5 VAT invoices, in format prescribed by the respective State Sales Tax Act, have to be submitted in the name of Nodal Agency specified in Special Conditions of Contract. 4.3 SERVICE TAX 4.3.1 Service Tax paid by the Service Provider/contractor to the Government authorities directly shall only be reimbursed at actuals against documentary evidence, but restricted to the rate and amount mentioned in the order/contract. The offer should clearly indicate the percentage and the total amount of service tax. 4.3.2 Service provider/Contractor to ensure their registration for "Intended Service" to be provided, before claiming Service tax under the "intended category". Decision of BHEL shall be final w.r.t. the "intended category" in which the service will be falling. 4.3.3 If required by the Purchaser, the Service Provider/Contractor will provide a certificate stating that "CENVAT Benefit has been availed of on the input and the	4.2 OTHER TAXES & LEVIES 4.2.1 All taxes/duties/Cess other than CGST/SGST/UTGST/IGST shall be deemed to be included in the Ex-Works prices unless specified otherwise by the bidder in the price bid. No variation in other taxes and duties shall be payable by Purchaser. 4.3 CUSTOMS DUTY
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GST related Corrigendum to GCC Rev 06

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same has been passed on to the purchaser" or "CENVAT Benefit has not been availed of on the inputs". 4.4 OTHER TAXES & LEVIES All taxes and duties other than Excise Duty, Sales Tax/ VAT, Service Tax shall be deemed to be included in the Ex-Works prices unless specified otherwise by the bidder in the price bid. No variation in other taxes and duties shall be payable by Purchaser. However, statutory variation in Octroi will be payable extra against documentary evidence. 4.5 CUSTOMS DUTY 4.5.1 Customs Duty element for imported items as per Special Conditions of Contract shall be included in the Ex-Works prices. No variation in customs duty and exchange rate for imported items shall be payable by Purchaser. 4.5.2 Seller/ Contractor shall arrange for his own import license, if required, since Purchaser will not provide any import license. Therefore, Seller/ Contractor alone shall be responsible for any delay in getting import license or non-availability of the same or completion of other related formalities. Purchaser shall not be responsible for any financial liability, whatsoever, on this account. 4.5.3 Essentiality Certificate or Project Authority Certificate (PAC) as per Import Policy, if required to avail concessional customs duty, shall be clearly specified in the offer. Import content (CIF value in rupees) with list of items, quantity, foreign currency, country of origin etc., shall be submitted by the bidder as part of Price bid 4.6 DIRECT TAX 4.6.1 Purchaser shall not be liable towards income tax of whatever nature including variations thereof, arising out of this Order/ Contract, as well as tax liability of the Seller/ Contractor and his personnel.	4.3.1 Customs Duty/IGST/Goods and Services compensation cess under Goods and Services Tax (Compensation to States) Act, 2017 element for imported items as per Special Conditions of Contract shall be included in the Ex-Works prices. 4.3.2 Seller/ Contractor shall arrange for his own import license, if required, since Purchaser will not provide any import license. Therefore, Seller/ Contractor alone shall be responsible for any delay in getting import license or non-availability of the same or completion of other related formalities. Purchaser shall not be responsible for any financial liability, whatsoever, on this account. 4.3.3 Essentiality Certificate or Project Authority Certificate (PAC) as per Import Policy, if required to avail concessional customs duty, shall be clearly specified in the offer. Import content (CIF value in rupees) with list of items, quantity, foreign currency, Country of origin etc., shall be submitted by the bidder as part of Price bid 4.4 DIRECT TAXES 4.4.1 Purchaser shall not be liable towards income tax of whatever nature including variations thereof, arising out of this Order/ Contract, as well as tax liability of the Seller/ Contractor and his personnel. 4.4.2 Deductions of Tax at source at the prevailing rates shall be effected by the Purchaser before release of payment, as a statutory obligation, if applicable. TDS certificate will be issued by the Purchaser as per statutory provisions
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4.6.2 Deductions of Tax at source at the prevailing rates shall be effected by the Purchaser before release of payment, as a statutory obligation, if applicable. TDS certificate will be issued by the Purchaser as per statutory provisions. 5.0 STATUTORY VARIATION 5.1 If the rates for taxes and duties in respect of the quoted materials and/ or services assumed by the Seller/ Contractor are less than the tariff prevailing at the time of tendering, Seller/ Contractor will be responsible for such under quotations. However, if the rates assumed are higher than the correct rates prevailing at the time of tendering, the difference will be to the credit of the Purchaser. 5.2 Statutory Variations in Excise Duty, Service Tax and Central Sales Tax/ Value Added Tax only on self-manufactured items/ services rendered by vendor himself on the rates prevailing at the time of delivery/ completion in comparison to the date of offer, will be to the account of the Purchaser. No other variations such as on customs duty, exchange rate, minimum wages, prices of controlled commodities, any other input etc. shall be payable by the Purchaser. 5.3 Notwithstanding the above, where the actual completion of the supply occurs beyond the period stipulated in the Order/ Contract or any extension thereof, variations referred to above, will be limited to the rates prevailing on the dates of such agreed completion periods only. For variations after the agreed completion periods, the Seller/ Contractor alone shall bear the impact for the upward revisions and for downward revisions; purchaser shall be given the benefit of reduction in taxes/ duties. This will be without prejudice to the levy of penalty for delay in delivery/ completion schedule 5.4 Any new tax structure (like Goods & Services Tax) as and when implemented by the Government shall become applicable in addition to or in lieu of existing tax structure.	5.0 STATUTORY VARIATION 5.1 Statutory variation for CGST/SGST/UTGST/IGST is available provided the actual completion of supply does not occur beyond the period stipulated in the order/contract or any extension (without levy of penalty) 5.2 For variation after the agreed completion periods, the seller/contractor alone shall bear the impact for the upwards revisions and adjust the price in their basic price in such a manner that total price with tax matches with the ex-works with taxes of Purchase Order/Contract. For downward revisions, purchaser shall be given the benefit of reduction in CGST/SGST/UTGST/IGST. This will be without prejudice to the levy of penalty for delay in delivery/completion schedule. 5.4 No other variations such as on Custom Duty, exchange rate, minimum wages, prices of controlled commodities, any other input etc. shall be payable by the purchaser
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Handwritten signature and date: 15/11/19

GST related Corrigendum to GCC Rev 06

Clause 8	8.0 TRANSPORTATION & FREIGHT CHARGES 8.1 All dispatches shall be through road carriers approved by Purchaser/ Bank, on freight pre-paid basis. 8.2 Road permit/ entry permit, if required as per law of the State, shall be arranged by Purchaser. 8.3 Freight charges (including Service Tax) shall be payable after delivery of the goods at the project site, on receipt of MRC or receipted LR on pro-rata basis.	8.0 TRANSPORTATION & FREIGHT CHARGES 8.1 All dispatches shall be through road carriers approved by Purchaser/ Bank, on freight pre-paid basis. 8.2 Road Permit/E-way bill, if required, will be arranged by Supplier.
	9.0 TERMS OF PAYMENT 9.1 SUPPLY PACKAGES 9.1.1 Ninety percent (90%) of basic price of materials supplied, as per PO, along with 100% taxes and duties (as applicable), shall be paid against receipt of material at site on pro-rata basis. 9.1.2 Ten percent (10%) of basic price of materials supplied will be released on pro-rata basis after receipt of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser, on submission of all final documents for the packages as detailed below, duly certified by Engg. Deptt. of purchaser, and submission of Form E1/ E2 against Form-C, if applicable. List of packages with required final documents is as per Annexure-X. 9.2 SUPPLY PACKAGES WITH PERFORMANCE GUARANTEE / DEMONSTRATION TEST AT SITE IN VENDOR'S SCOPE 9.2.1 Eighty Five percent (85%) of basic price of materials supplied, as per PO / approved billing schedule, along with 100% taxes and duties (as applicable), shall be paid against receipt of material at site on pro-rata basis. 9.2.2 Ten percent (10%) of basic price of materials supplied will be released on pro-rata basis after receipt of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser and submission of Form E1/ E2 against Form-C, if applicable. 9.2.3 Five percent (5%) of the total basic price of materials and PG/ Demonstration test charges shall be released after submission of all final documents as per Technical Specifications and successful completion of the Performance Guarantee/ Demonstration Test at site.	9.0 TERMS OF PAYMENT 9.1 SUPPLY PACKAGES Payment of basic price of materials supplied alongwith freight and taxes and duties (as applicable), shall be paid against receipt of material at site on pro-rata basis. 10% of basic price of materials supplied will be retained as security deposit which will be released on pro-rata basis after receipt of Material Receipt Certificate (MRC) from project site engineer of owner/purchaser on submission of all the final documents for the packages as detailed below, duly certified by engineering department of purchaser. List of packages with required final documents is as per Annexure-X. 9.2 Supply packages with performance guarantee/demonstration test at site in vendor's scope Payment of basic price of materials supplied, as per PO/ as per approved billing schedule, along with freight and taxes and duties (as applicable), shall be paid against receipt of material at site on pro-rata basis. 15% of basic price of materials supplied will be retained as security deposit which will be released on pro-rata basis as details below: a) 10% will be released after receipt of Material Receipt Certificate (MRC) from project site engineer of owner/purchaser.

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Specifications and successful completion of the Performance Guarantee (PG)/ Demonstration Test at site. Note: If the Performance Guarantee/ Demonstration Test is not conducted up to 24 months from supply completion for reasons not attributable to the vendor, then last 5% payment will be released against Bank Guarantee of an equivalent amount, valid for 12 months. This bank guarantee will be in addition to Contract Performance Bank Guarantee for 10% of the contract value (excluding taxes, duties and freight). 9.3 SUPPLY PAYMENT FOR TURNKEY PACKAGES (E&C IN VENDOR'S SCOPE) 9.3.1 Eighty Five percent (85%) of basic price of materials supplied, as per approved billing schedule, along with 100% taxes and duties (as applicable), shall be paid against receipt of material at site on pro-rata basis. OR i) Five Percent (5%) lump sum payment of total basic price (excluding taxes, duties & freight) against approval of design documents and quality plan as certified by Engineering, Design documents and quality plan shall be as defined in the Technical Specifications. ii) Eighty percent (80%) of basic price of materials supplied, as per approved billing schedule, along with 100% taxes and duties (as applicable), shall be paid against receipt of material at site on pro-rata basis. 9.3.2 Five percent (5%) of basic price of materials supplied along with freight, if applicable, will be released on pro-rata basis after submission of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser and submission of Form E1/ E2 against Form-C, if applicable. Collection of Material Receipt Certificate from Site/ Owner and its submission for claiming the payment shall be the responsibility of the Seller/ Contractor. 9.3.3 Ten percent (10%) of the total basic price shall be released after i) submission of all final documents as per Technical Specifications and ii) successful completion of	b) 5% will be released after submission of final documents as per technical specification and successful completion of the performance guarantee (PG)/ Demonstration test at site. Note: If the Performance Guarantee/ Demonstration Test is not conducted up to 24 months from supply completion for reasons not attributable to the vendor, then 5% security deposit will be released against Bank Guarantee of an equivalent amount, valid for 12 months. This bank guarantee will be in addition to Contract Performance Bank Guarantee for 10% of the contract value (excluding taxes, duties and freight). 9.3 SUPPLY PAYMENT FOR TURNKEY PACKAGES (E&C IN VENDOR'S SCOPE) 9.3.1 Payment of basic price of materials supplied, as per approved billing schedule, along with freight, taxes and duties (as applicable), shall be paid against receipt of material at site on pro-rata basis. 15% of basic price of materials supplied will be retained as security deposit which will be released on pro-rata basis as details below: a) 5% will be released on pro-rata basis after submission of Material Receipt Certificate (MRC) from project site engineer of owner/purchaser. Collection of Material Receipt Certificate from site/owner and its submission for claiming the payment shall be the responsibility of the Seller/Contractor. b) 10% will be released after i) submission of all final documents as per Technical Specifications and ii) successful completion of Performance Guarantee (PG)/ Demonstration Test and handing over of the system/ package, if applicable, as per Order/ Contract
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Performance Guarantee (PG)/ Demonstration Test and handing over of the system/ package, if applicable, as per Order/ Contract. 9.4 ERECTION & COMMISSIONING PAYMENT FOR TURNKEY PACKAGES 9.4.1 Eighty percent (80%) payment on pro-rata basis for the work completed, as per approved billing schedule, shall be released by Site authorities/ Region on submission of protocols, duly signed by BHEL Site/ Owner. 9.4.2 Ten percent (10%) of the total value shall be released by Site authorities/ Region on successful commissioning of the complete system/ package. 9.4.3 Ten percent (10%) of the total value shall be released by Site authorities/ Region on successful completion of PG/ Demonstration test(s) and handing over system/ package to the Owner, as applicable. 9.5 PG TEST, INSTALLATION CHECK, SUPERVISION OF ERECTION / COMMISSIONING CHARGES 100% payment shall be released after successful completion of the activity, on Site certification. 9.6 Vendors shall submit documents for payment directly to BHEL. Payment will be released within 60 days after receipt of complete documents as per order/ contract (45 days for vendors qualified and registered as Micro or Small as per MSMED Act). To be eligible for payment as Micro and Small category, vendors shall submit annual certification for validation from designated authority under MSMED Act or Chartered Accountant within first quarter of every financial year. Note: 1) For indigenous suppliers, if the documents are routed through Bank, then all bank charges will be to vendor's account. 2) Foreign bidders cannot for payment (less agency commission, if applicable) through irrevocable and unconfirmed letter of credit. In that case for	9.4 ERECTION & COMMISSIONING PAYMENT FOR TURNKEY PACKAGES 9.4.1 Eighty percent (80%) payment on pro-rata basis for the work completed, as per approved billing schedule, shall be released by Site authorities/ Region on submission of protocols, duly signed by BHEL Site/ Owner. 9.4.2 Ten percent (10%) of the total value shall be released by Site authorities/ Region on successful commissioning of the complete system/ package. 9.4.3 Ten percent (10%) of the total value shall be released by Site authorities/ Region on successful completion of PG/ Demonstration test(s) and handing over system/ package to the Owner, as applicable. 9.5 PG TEST, INSTALLATION CHECK, SUPERVISION OF ERECTION / COMMISSIONING CHARGES 100% payment shall be released after successful completion of the activity, on Site certification. 9.6 Vendors shall submit documents for payment directly to BHEL. Payment will be released within 60 days after receipt of complete documents as per order/ contract (45 days for vendors qualified and registered as Micro or Small as per MSMED Act). Note: 1) Vendors are required to issue Tax Invoice inclusive of PVC value (if applicable) wherever indices are available. 2) For indigenous suppliers, if the documents are routed through Bank,
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GST related Corrigendum to GCC Rev 06

evaluation purpose, prices of foreign bidders will be loaded on account of payment through LC, equal to loading specified against 'Payment through Bank' in Annexure-VIII. No loading will be done if foreign vendors agree for 90 days usance LC or submit the documents on collection basis for payment within 90 days of submission of complete documents. 3) LC opening/ negotiation/ confirmation charges will be to vendor's account. 4) Form C/ E1/E2 are not applicable for foreign bidders. 5) In extreme case of vendors not agreeing to link 10% payment with submission of Form E1/ E2 against Form-C as above, their prices will be loaded as per Annexure-VIII. 6) Any negative PVC, if not adjusted in earlier payments, will be adjusted at the time of MRC payment. 7) Payment terms for mandatory spares shall be as per clause 9.1.	then all bank charges will be to vendor's account. 3) Foreign bidders can opt for payment (less agency commission, if applicable) through irrevocable and unconfirmed letter of credit. In that case for evaluation purpose, prices of foreign bidders will be loaded on account of payment through LC, equal to loading specified against 'Payment through Bank' in Annexure-VIII. No loading will be done if foreign vendors agree for 90 days usance LC or submit the documents on collection basis for payment within 90 days of submission of complete documents. 4) LC opening/ negotiation/ confirmation charges will be to vendor's account. 5) Payment terms for mandatory spares shall be as per clause 9.1. 9.7 The applicable TDS under CGST/SGST/IGST/GST/ Goods and Services (Compensation to States) Act will be deducted from the payments. 9.8 Other clauses 1. Vendor/Supplier will intimate & upload the Tax invoice along with LR/RR(as applicable) on web portal & intimate BHEL immediately on removal of goods from vendor/supplier works. In case of Services, Vendor is required to upload the Tax invoice on Web Portal immediately after raising the invoice. BHEL will issue the delivery order/instruction to dispatch the material to the customer as indicated in SCC. 2. All payments against Tax Invoice to vendors/contractors shall be released only after:
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GST related Corrigendum to GCC Rev 06

		a) Vendor/contractor declaring such invoice in GSTR-1 within the prescribed timeline as per the relevant Act. b) The tax component charged by the vendor in the invoice should be matched with the details uploaded by vendor in GSTR-1. c) Confirmation of payment of GST thereon by vendor on GSTN portal 3. In case, any GST credit is delayed/denied to BHEL due to non/delayed receipt of goods and/or tax invoice or expiry to timeline prescribed in the relevant Act for availing such ITC, or any other reasons not attributable to BHEL, tax amount shall be recoverable from the vendor/contractor along with interest levied/leviable on BHEL. 4. Wherein GST liability arises on BHEL under reverse charge, any interest levied/leviable due to any reasons not attributable to BHEL shall be recovered from the vendor/contractor.
Clause 9	9.7 DOCUMENTS TO BE SUBMITTED BY VENDOR 9.7.1 For Recognition of Dispatch Copy of the following documents by e-mail/ fax immediately on despatch: a. Invoice b. LR along with Delivery Order c. Packing List d. Insurance Intimation e. Dispatch Clearance 9.7.2 For Claiming Payments (under clause 9.1.1, 9.2.1, 9.3.1): a. Invoice – original+1 copy b. Receipted LR (signed & stamped)/ confirmation from site regarding receipt of packages/ Boxes original/ copy	9.7 All same a. to be replaced with "GST compliant invoice" in 9.7.1, 9.7.2, 9.7.3 Modification in the clause Duty drawback documents "As per applicable law" (original+1 copy.)

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	c. Delivery order- 2 copies d. Packing List - clearly showing number of packages, gross weight and net weight. – original+1 copy e. MDCC from BHEL/ Customer – as per SCC – 2 copies f. Guarantee Certificate – Original + 1 copy g. Insurance Intimation - 2 copies h. CQIR / Inspection Reports – Original+1 copy i. PVC Calculation and copy of all applicable indices, if PVC applicable. – 2 copies j. Duty drawback documents (original excise invoice, original disclaimer certificate, original certificate from excise authority for payment of excise duty), if applicable. – original + 1 copy 9.7.3 For Claiming Freight Payment a. Invoice – Original + 1 copy b. Receipted LR (signed & stamped)/ confirmation from site regarding receipt of packages/ Boxes original/ copy c. Transporter's document indicating the freight amount. Original money receipt to be submitted if required as per SCC. 9.7.4 For Claiming MRC Payment a. Invoice – Original + 1 copy b. Copy of MRC 9.7.5 For Claiming Payment for Services involving Service Tax a. Invoice as per rule 4A of Service Tax Act – Original + 1 copy b. Copy of Service Tax registration certificate c. Copy of challan for Service Tax payment	
Clause 3.0 Instruction to bidders	Total erection & commissioning charges including service tax should be minimum 20% (or as specified in NIT) of the total quoted package price (excluding mandatory spares but including all taxes and freight), failing which the break-up of prices shall be adjusted accordingly for ordering.	Total erection & commissioning charges including applicable tax but excluding freight along with GST should be minimum 20% (or as specified in NIT) of the total quoted package price (excluding mandatory spares but including all taxes and freight), failing which the break-up of prices shall be adjusted accordingly for ordering.

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Clause 16.0 Instruction to bidder	For deviations w.r.t. Payment terms, Liquidated damages, Firm prices and submission of E1/ E2 forms before claiming 10% payment, if a bidder chooses not to give any cost of withdrawal of deviation loading as per Annexure-VIII will apply.	For deviations w.r.t. Payment terms, Liquidated damages, Firm prices before claiming 10% payment, if a bidder chooses not to give any cost of withdrawal of deviation loading as per Annexure-VIII will apply.
Clause 16.0 of GTC	Purchaser reserves the right to recover from the Seller/ Contractor, as agreed liquidated damages and not by way of penalty, a sum equivalent to half (½) percent of the total contract price per week or part thereof, subject to a maximum of ten (10) percent of the total contract price excluding elements of taxes, duties and freight, if the Seller/ Contractor fails to deliver any part of the ordered stores within the period stipulated in the Order/ Contract. For Turnkey packages (Supply and E&C in vendor's scope), Liquidated Damages shall be levied on the total contract value of both Supply and E&C orders (excluding taxes, duties and freight) if E&C completion of the package is delayed beyond the contractual completion date or extension thereof. Liquidated Damages will not be withheld from supply payment. LR/ GR/ RR date for indigenous supplies and AWB/ BL date for FOB contracts shall be treated as the date of dispatch for levying LD as per Clause 16. However, for indigenous supply if receipted LR date is beyond three months from the date of LR, such excess period shall also be considered for LD purpose 2. In case of any amendment/ revision, LD shall be linked to the amended/ revised contract value and delivery date(s)	Purchaser reserves the right to recover from the Seller/ Contractor, as agreed liquidated damages and not by way of penalty, a sum equivalent to half (½) percent plus applicable GST of the total contract price per week or part thereof, subject to a maximum of ten (10) percent of the total contract price excluding elements of taxes, duties and freight, if the Seller/ Contractor fails to deliver any part of the ordered stores within the period stipulated in the Order/ Contract. For Turnkey packages (Supply and E&C in vendor's scope), Liquidated Damages shall be levied on the total contract value of both Supply and E&C orders (excluding taxes, duties and freight) if E&C completion of the package is delayed beyond the contractual completion date or extension thereof. Liquidated Damages will not be withheld from supply payment. LR/ GR/ RR/ away bill date for indigenous supplies and AWB/ BL date for C&F contracts shall be treated as the date of dispatch for levying LD as per Clause 16. However, for indigenous supply if receipted LR/away bill date is beyond three months from the date of LR/away bill, such excess period shall also be considered for LD purpose 2. In case of any amendment/ revision, LD shall be linked to the amended/ revised contract value and delivery date(s)

GST related Corrigendum to GCC Rev 06

Deviation sheet- Cost of Withdrawal	Point no-9 For deviations w.r.t. Payment terms, Liquidated damages, Firm prices and submission of E1/ E2 forms before claiming 10% payment, if a bidder chooses not to give any cost of withdrawal of deviation loading as per Annexure-VIII of GCC, Rev-06 will apply. For any other deviation mentioned in un-priced copy of this format submitted with Part-I bid but not mentioned in priced copy of this format submitted with Priced bid, the cost of withdrawal of deviation shall be taken as NIL.	For deviations w.r.t. Payment terms, Liquidated damages, Firm prices before claiming 10% payment, if a bidder chooses not to give any cost of withdrawal of deviation loading as per Annexure-VIII of GCC, Rev-06 will apply. For any other deviation mentioned in un-priced copy of this format submitted with Part-I bid but not mentioned in priced copy of this format submitted with Priced bid, the cost of withdrawal of deviation shall be taken as NIL.
Annexure-VI		Deleted
Annexure-VIII		Following changes in annexure-8, (remaining portion of annex-8 is same): C) LIQUIDATED DAMAGES If maximum limit asked for is 10% or 5% of Undelivered Portion – 10% value of the total quoted price including GST & freight. If maximum limit asked is less than 10 % of contract value loading shall be to the extent to which not agreed by bidder (at offered value). E1-DEVIATION TO SUBMISSION OF FORM E1/ E2 BEFORE CLAIMING 10% PAYMENT -10% of Ex-Works supply value.
New clauses:		
a) In case of discrepancy in CGST/SGST/UTGST/IGST rate corresponding to HSN code and quotes rates, the evaluation shall be done on quoted price and correct CGST/SGST/UTGST/IGST rate shall be considered for ordering (limited to quoted FOR Site Price) b) The bidder should have been registered with the appropriate authority under relevant GST laws c) The bidder to specify in their offer (part 1 bid) the category of registration under GST i.e. registered dealer and composite dealer d) No CGST/SGST/UTGST/IGST will be reimbursed to composite dealer. In the event of any GST quoted by composite dealer, the same shall be considered for evaluation purpose. However, the ordering will be done without considering the tax. e) In the event of any change in the status of vendor from composite to regular dealer after the submission of the bid but before the supply, no reimbursement of CGST/SGST/UTGST/IGST will be made. However, the vendor has to raise the invoice strictly, as per the law, by adjusting their ex-works price.		

Handwritten signature and date 18/11/17



BHEL / PEM / CMM
SPECIAL CONDITIONS OF RATE CONTRACT

ANNEXURE II TO NIT REF NO - PE/PG/RTC/E-6285/2019, DTD-08.08.2019
SPECIAL CONDITION OF RATE CONTRACT FOR LT XLPE POWER CABLES

1. BHEL/PEM intends to enter into Rate Contract for supply of the tendered items for a period of two years. The Rate Contract shall come into force from the date of issue of Purchase order for Rate Contract. Validity for ordering shall be two years from the purchase order for Rate Contract.
2. Details of consignee and project site information for dispatch of material shall be intimated at the time of placement of PO for specific project after finalization of RC
3. Transit Insurance is in BHEL scope
4. The items will be required against respective projects. Exact quantities and Project information shall be intimated while placing order for a specific project based on the Rate Contract.
5. The prices shall be on PVC basis during the period of two years with a provision for further extension after review on mutual consent.
6. Inspection of materials shall be carried out by BHEL/CQA and or by Customer or by an authorized agency at manufacture's works before dispatch, if required. Dispatch of material to be done, only after receipt of BHEL/Customer MDCC. It is responsibility of vendor to for obtain Material Dispatch Clearance Certificate (MDCC) from BHEL or Customer as required before dispatch of material.

Vendor shall give inspection call on BHEL-CQS web site to applicable inspection agency with a copy of inspection call to BHEL-PEM for arranging Customer participation (if applicable) in inspection / Joint inspection on the proposed date with an advance notice of 15 working days. Inspection charges shall be paid by BHEL-PEM.

Items have to be manufactured as per specification and supplied strictly in accordance with the approved BHEL / Customer's Drawings & Quality Plan. The items/ test certificate of items, which for any reason are not acceptable to BHEL / Customer, shall be required to be retested. No extra charge shall be payable on those account by BHEL.

7. Mode of dispatch shall be by road through Schedule Bank/BHEL (PEM) approved transporters.
8. Other terms and conditions shall be as per Standard Technical specification no, GCC Rev 06 & Corrigenda to GCC Rev 06, Enquiry letter.
9. This enquiry is subject to Conditions/ limits if any imposed in PMD/ Vendor registration.
10. Tentative quantity is given in enquiry.
11. Ordering under this RC shall be subject to customer approval.
12. Bidders to submit offer for RC of said items ONLINE via e-Procurement System only. Bidder to upload tender documents complete in all respects duly signed & stamped on each and every page by the authorized signatory of the bidder as a token of acceptance of all the terms and conditions of tender.
13. The Bidder along with its associate/ collaborators/ sub-contractors/ sub-vendor/ consultants/ service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL web site <http://www.bhel.com> and shall immediately bring to the notice of BHEL Management about any fraud as soon as it comes to their notice.
14. All bidders to quote as per the Price Variation Formulae for Cables uploaded on BHEL PEM website on the link given below.
[https://www.bhelpem.com/Documents/GCC/Price%20Variation%20Formulae%20for%20Cables.p
df](https://www.bhelpem.com/Documents/GCC/Price%20Variation%20Formulae%20for%20Cables.pdf)

ANNX IV TO NIT REF NO-PE/PG/RTC/E-6285/2019, DTD-08.08.2019

LIST OF PROJECTS FOR LT XLPE POWER CABLES
(RATE CONTRACT)

S.no	TITLE	
1	2 x 800 MW Uppur STPP	
2	2X660 MW UDANGUDI	
3	2 x 660 MW Ennore STPP	
4	1X660 MW PANKI	
5	1X660 MW SAGARDIGHI	
6	1X660 MW BHUSAWAL	

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8/8/19

सुमीत सहाय / SUMIT SAHAYA
उप प्रबन्धक (सी. एम. एम.) / Dy. Manager (CMM)
भारत हेवी इलेक्ट्रिकल्स लिमिटेड / Bharat Heavy Electricals Ltd
पावर सेक्टर-परियोजना इंजीनियरिंग प्रबंधन
Power Sector-Project Engineering Management
पीपीईआई भवन, एचआरडी एंड ईएसआई कॉम्प्लेक्स
PPEI Bldg. HRD & ESI Complex.
प्लॉट नं. 25, सेक्टर 16 ए, नोएडा - 201301
Plot No. 25, Sec. 16 A Noida - 201301

BANK GUARANTEE FOR PERFORMANCE SECURITY

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

In consideration of the Bharat Heavy Electricals Limited ¹ (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Companies Act, 1956 and having its registered office at _____ through its Unit at.....(name of the Unit) having awarded to (Name of the Vendor / Contractor / Supplier) having its registered office at _____ ² hereinafter referred to as the 'Contractor/Supplier', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No.....dated³ valued at Rs.....⁴ (Rupees -----)/FC.....(in words.....) for⁵ (hereinafter called the 'Contract') and the Contractor having agreed to provide a Contract Performance Guarantee, equivalent to% (.... Percent) of the said value of the Contract to the Employer for the faithful performance of the Contract,

we,, (hereinafter referred to as the Bank), having registered/Head office at and inter alia a branch at being the Guarantor under this Guarantee, hereby, irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer a maximum amount Rs ----- (Rupees -----) without any demur, immediately on a demand from the Employer, . Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____.

We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Contractor/ Supplier in any suit or proceeding pending before any Court or Tribunal relating thereto our liability under this present being absolute and unequivocal.

The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment thereunder and the contractors/supplier shall have no claim against us for making such payment.

Handwritten signature and date: 8/8/19

We thebank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Contract and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said Contract have been fully paid and its claims satisfied or discharged.

We BANK further agree with the Employer that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract or to extend time of performance by the said Contractor/Supplier from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said Contractor/Supplier and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor/Supplier or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Contractor/Supplier or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

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

This Guarantee shall remain in force upto and including.....⁶ and shall be extended from time to time for such period as may be desired by Employer.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Contractor/Supplier but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms thereof.

Unless a demand or claim under this guarantee is made on us in writing on or before the⁷we shall be discharged from all liabilities under this guarantee thereafter.

We, BANK lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

Notwithstanding anything to the contrary contained hereinabove:

- a) The liability of the Bank under this Guarantee shall not exceed.....⁸
- b) This Guarantee shall be valid up to⁹
- c) Unless the Bank is served a written claim or demand on or before¹⁰ all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

[Handwritten signature]
5/8/19

We, _____ Bank, have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

For and on behalf of
(Name of the Bank)

Dated.....

Place of Issue.....

¹ NAME AND ADDRESS OF EMPLOYER I.e Bharat Heavy Electricals Limited

² NAME AND ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER.

³ DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

⁴ PROJECT/SUPPLY DETAILS

⁵ BG AMOUNT IN FIGURES AND WORDS

⁶ VALIDITY DATE

⁷ DATE OF EXPIRY OF CLAIM PERIOD

⁸ BG AMOUNT IN FIGURES AND WORDS.

⁹ VALIDITY DATE

¹⁰ DATE OF EXPIRY OF CLAIM PERIOD

Note:

1. Units are advised that expiry of claim period may be kept 2/3 months after validity date.

2. In Case of Bank Guarantees submitted by Foreign Vendors-

- a. **From Nationalized/Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India)** can be accepted subject to the condition that the Bank Guarantee should be enforceable in the town/city or at nearest branch where the Unit is located i.e. Demand can be presented at the Branch located in the town/city or at nearest branch where the Unit is located.
- b. **From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)**
 - b.1 In such cases, in the Tender Enquiry/ Contract itself, it may be clearly specified that Bank Guarantee issued by **any of the Consortium Banks only** will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter- Guarantee by Foreign Bank in favour of the Indian Bank (BHEL's Consortium Bank). It is advisable that all charges for issuance of Bank Guarantee/ counter- Guarantee should be borne by the Foreign Vendor. The tender stipulation should clearly specify these requirements.
 - b.2 In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at sl.no. b.1 will required to be followed.
 - b.3 The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time). In case, of Foreign Vendors, the BG Format provided to them should clearly specify the same.
 - b.4 The BG should clearly specify that the demand or other document can be presented in electronic form.

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ANNEXURE-C

BRIEF PROCEDURE FOR CONDUCT OF CONCILIATION PROCEEDINGS

1. The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided herein:
2. The party desirous of resorting to Conciliation shall send an invitation/notice in writing to the other party to conciliate specifying all points of Disputes with details of the amount claimed. The party concerned shall not raise any new issue thereafter. Parties shall also not claim any interest on claims/counter-claims from the date of notice invoking Conciliation till the conclusion of the Conciliation proceedings.
3. The party receiving the invitation/notice for Conciliation shall within 30 days of receipt of the notice of Conciliation intimate its consent for Conciliation along with its counter-claims, if any.
4. The Conciliation in a matter involving claim or counter-claim (whichever is higher) up to Rs 5 crores shall be carried out by sole Conciliator nominated by BHEL while in a matter involving claim or counter-claim (whichever is higher) of more than Rs 5 crores Conciliation shall be carried out by 3 Conciliators nominated by BHEL.
5. The Parties shall be represented by only their duly authorized in-house executives/officers and neither Party shall be represented by a Lawyer.
6. The first meeting of the IEC shall be convened by the IEC by sending appropriate communication/notice to both the parties as soon as possible but not later than 30 days from the date of his/their appointment. The hearings in the Conciliation proceeding shall ordinarily be concluded within two (2) months and, in exceptional cases where parties have expressed willingness to settle the matter or there exists possibility of settlement in the matter, the proceedings may be extended by the IEC by a maximum of further 2 months with the consent of the Parties subject to cogent reasons being recorded in writing.
7. The IEC shall thereafter formulate recommendations for settlement of the Disputes supported by reasons at the earliest but in any case within

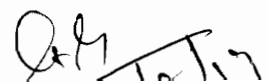
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15 days from the date of conclusion of the last hearing. The recommendations so formulated along with the reasons shall be furnished by the IEC to both the Parties at the earliest but in any case within 1 month from the date of conclusion of the last hearing.

8. Response/modifications/suggestions of the Parties on the recommendations of the IEC are to be submitted to the IEC within time limit stipulated by the IEC but not more than 15 days from the date of receipt of the recommendations from the IEC.
9. In the event, upon consideration, further review of the recommendations is considered necessary, whether by BHEL or by the other Party, then, the matter can be remitted back to the IEC with request to reconsider the same in light of the issues projected by either/both the Parties and to submit its recommendations thereon within the following 15 days from the date of remitting of the case by either of the Parties.
10. Upon the recommendations by the Parties, with or without modifications, as considered necessary, the IEC shall be called upon to draw up the Draft Settlement Agreement in terms of the recommendations.
11. When a consensus can be arrived at between the parties only in regard to any one or some of the issues referred for Conciliation the draft Settlement Agreement shall be accordingly formulated in regard to the said Issue(s), and the said Settlement Agreement, if signed, by the parties, shall be valid only for the said issues. As regards the balance issues not settled, the parties may seek to resolve them further as per terms and conditions provided in the contract.
12. In case no settlement can be reached between the parties, the IEC shall by a written declaration, pronounce that the Conciliation between the parties has failed and is accordingly terminated.
13. Unless the Conciliation proceedings are terminated in terms of para 22 (b), (c) & (d) herein below, the IEC shall forward his/its recommendations as to possible terms of settlement within one (1) month from the date of last hearing. The date of first hearing of Conciliation shall be the starting date for calculating the period of 2 months.


8/8/19

14. In case of 3 members IEC, 2 members of IEC present will constitute a valid quorum for IEC and meeting can take place to proceed in the matter after seeking consent from the member who is not available. If necessary, videoconferencing may be arranged for facilitating participation of the members. However, the IEC recommendations will be signed by all members. Where there is more than one (1) Conciliator, as a general rule they shall act jointly. In the event of differences between the Members of IEC, the decision/recommendations of the majority of the Members of IEC shall prevail and be construed as the recommendation of the IEC.
15. The Draft Settlement Agreement prepared by the IEC in terms of the consensus arrived at during the Conciliation proceedings between the Parties shall be given by the IEC to both the parties for putting up for approval of their respective Competent Authority.
16. Before submitting the draft settlement agreement to BHEL's Competent Authority viz. the Board Level Committee on Alternative Dispute Resolution (BLCADR) for approval, concurrence of the other party's Competent Authority to the draft settlement agreement shall be obtained by the other party and informed to BHEL within 15 days of receipt of the final draft settlement agreement by it. Upon approval by the Competent Authority, the Settlement Agreement would thereafter be signed by the authorized representatives of both the Parties and authenticated by the members of the IEC.
17. In case the Draft Settlement Agreement is rejected by the Competent Authority of BHEL or the other Party, the Conciliation proceedings would stand terminated.
18. A Settlement Agreement shall contain a statement to the effect that each of the person(s) signing thereto (i) is fully authorized by the respective Party(ies) he/she represents, (ii) has fully understood the contents of the same and (iii) is signing on the same out of complete freewill and consent, without any pressure, undue influence.
19. The Settlement Agreement shall thereafter have the same legal status and effect as an arbitration award on agreed terms on the substance of the dispute rendered by an arbitral tribunal passed under section 30 of the Arbitration and Conciliation Act, 1996.
20. Acceptance of the Draft Settlement Agreement/recommendations of the Conciliator and/or signing of the Settlement Agreement by BHEL shall



however, be subject to withdrawal/closure of any arbitral and/or judicial proceedings initiated by the concerned Party in regard to such settled issues.

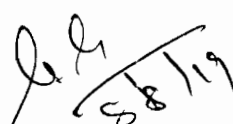
21. Unless otherwise provided for in the agreement, contract or the Memorandum of Understanding, as the case may be, in the event of likelihood of prolonged absence of the Conciliator or any member of IEC, for any reason/incapacity, the Competent Authority/Head of Unit/Division/Region/Business Group of BHEL may substitute the Conciliator or such member at any stage of the proceedings. Upon appointment of the substitute Conciliator(s), such reconstituted IEC may, with the consent of the Parties, proceed with further Conciliation into the matter either de-novo or from the stage already reached by the previous IEC before the substitution.

22. The proceedings of Conciliation under this Scheme may be terminated as follows:

- a. On the date of signing of the Settlement agreement by the Parties; or,
- b. By a written declaration of the IEC, after consultation with the parties, to the effect that further efforts at conciliation are no longer justified, on the date of the declaration; or,
- c. By a written declaration of the Parties addressed to the IEC to the effect that the Conciliation proceedings are terminated, on the date of the declaration; or,
- d. By a written declaration of a Party to the other Party and the IEC, if appointed, to the effect that the Conciliation proceedings are terminated, on the date of the declaration.
- e. On rejection of the Draft Settlement Agreement by the Competent Authority of BHEL or the other Party.

23. The Conciliator(s) shall be entitled to following fees and facilities:

Sl No	Particulars	Amount
1	Sitting fees	Each Member shall be paid a Lump Sum fee of Rs 75,000/- for the whole case payable in terms of paragraph No. 27 herein below.
2	Towards drafting of settlement agreement	In cases involving claim and/or counter-claim of up to Rs 5crores. Rs 50,000/- (Sole Conciliator)



Sl No	Particulars	Amount
		In cases involving claim and/or counter-claim of exceeding Rs 5 crores but less than Rs 10 crores. Rs 75,000 (per Conciliator) In cases involving claim and/or counter-claim of more than Rs 10 crores. Rs 1,00,000/- (per Conciliator) Note: The aforesaid fees for the drafting of the Settlement Agreement shall be paid on Signing of the Settlement Agreement after approval of the Competent Authority or Rejection of the proposed Settlement Agreement by the Competent Authority of BHEL.
3	Secretarial expenses	Rs 10,000/- (one time) for the whole case for Conciliation by a Sole Member IEC. Where Conciliation is by multi member Conciliators -Rs 30,000/- (one time)- to be paid to the IEC
4	Travel and transportation and stay at outstation i) Retired Senior Officials of other Public Sector Undertakings (pay scale wise equivalent to or more than E-8 level of BHEL)	As per entitlement of the equivalent officer (pay scale wise) in BHEL.
	Others	As per the extant entitlement of whole time Functional Directors in BHEL.

Q. H. 15/1/19

Sl No	Particulars	Amount
		Ordinarily, the IEC Member(s) would be entitled to travel by air Economy Class.
5	Venue for meeting	Unless otherwise agreed in the agreement, contract or the Memorandum of Understanding, as the case may be, the venue/seat of proceedings shall be the location of the concerned Unit / Division / Region / Business Group of BHEL. Without prejudice to the seat/venue of the Conciliation being at the location of concerned BHEL Unit / Division / Region / Business Group, the IEC after consulting the Parties may decide to hold the proceedings at any other place/venue to facilitate the proceedings. Unless, Parties agree to conduct Conciliation at BHEL premises, the venue is to be arranged by either Party alternately.

24. The parties will bear their own costs including cost of presenting their cases/evidence/witness(es)/expert(s) on their behalf. The parties agree to rely upon documentary evidence in support of their claims and not to bring any oral evidence in IEC proceedings.
25. If any witness(es) or expert(s) is/are, with the consent of the parties, called upon to appear at the instance of the IEC in connection with the matter, then, the costs towards such witness(es)/expert(s) shall be determined by the IEC with the consent of the Parties and the cost so determined shall be borne equally by the Parties.
26. The other expenditures/costs in connection with the Conciliation proceedings as well as the IEC's fees and expenses shall be shared by the Parties equally.
27. Out of the lump sum fees of Rs 75,000/- for Sitting Fees, 50% shall be payable after the first meeting of the IEC and the remaining 50% of the Sitting Fees shall be payable only after termination of the conciliation proceedings in terms of para 22 hereinabove.

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28. The travelling, transportation and stay at outstation shall be arranged by concerned Unit as per entitlements as per Serial No. 3 of the Table at para 23 above, and in case such arrangements are not made by the BHEL Unit, the same shall be reimbursed to the IEC on actuals limited to their entitlement as per Serial No. 4 of the Table at Para 23 above against supporting documents. The IEC Member(s) shall submit necessary invoice for claiming the fees/reimbursements.
29. The Parties shall keep confidential all matters relating to the conciliation proceedings. Confidentiality shall extend also to the settlement agreement, except where its disclosure is necessary for purposes of its implementation and enforcement or as required by or under a law or as per directions of a Court/Governmental authority/regulatory body, as the case may be.
30. The Parties shall not rely upon or introduce as evidence in any further arbitral or judicial proceedings, whether or not such proceedings relate to the Disputes that is the subject of the Conciliation proceedings:
- a. Views expressed or suggestions made by the other party in respect of a possible settlement of the Disputes;
 - b. admissions made by the other party in the course of the Conciliator proceedings;
 - c. proposals made by the Conciliator;
 - d. The fact that the other Party had indicated his willingness to accept a proposal for settlement made by the Conciliator.
31. The Parties shall not present the Conciliator(s) as witness in any Alternative Dispute Resolution or Judicial proceedings in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.
32. None of the Conciliators shall act as an arbitrator or as a representative or counsel of a Party in any arbitral or judicial proceeding in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.
33. The Parties shall not initiate, during the Conciliation proceedings, any arbitral or judicial proceedings in respect of a Disputes that is the subject matter of the Conciliation proceedings except that a Party may initiate arbitral or judicial proceedings where, in his opinion, such proceedings are necessary for preserving his rights including for preventing expiry of period of limitation. Unless terminated as per the provisions of this Scheme, the Conciliation proceedings shall continue

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notwithstanding the commencement of the arbitral or judicial proceedings and the arbitral or judicial proceedings shall be primarily for the purpose of preserving rights including preventing expiry of period of limitation.

34. The official language of Conciliation proceedings under this Scheme shall be English unless the Parties agree to some other language.

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8/8/19

**FORMAT FOR SEEKING CONSENT FOR REFERRING THE DISPUTES TO
CONCILIATION THROUGH IEC**

To,

M/s. (Stakeholder's name)

Sub: Resolution of the Disputes through conciliation by Independent Expert Committee (IEC).

Ref: Contract No/MoU/Agreement/LOI/LOA& date _____.

Sir,

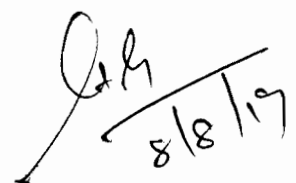
With reference to above referred Contract/MoU/Agreement/LOI/LOA, you have raised certain Disputes/claims. Vide your letter dated_____ you have requested BHEL to refer the Disputes/claims to IEC for Conciliation.

We are enclosing herewith Format (3) for giving consent and the terms and conditions of BHEL Conciliation Scheme, 2018 governing conciliation through IEC. You are requested to give your unconditional consent to the said terms and conditions of the Scheme by returning the same duly sealed and signed on each page. On receipt of your consent, matter will be put to the Competent Authority for consideration and decision.

Please note that BHEL has also certain claims against you (if applicable). BHEL reserves its right to agree or not to agree conciliation of the said disputes through BHEL and this letter is being issued without prejudice to BHEL's rights and contentions available under the contract and law.

Yours faithfully,

Representative of BHEL

A handwritten signature, possibly 'Q. H.', is written over a horizontal line. Below the line, the date '8/8/19' is written.

**FORMAT FOR GIVING CONSENT BY
CONTRACTOR/VENDOR/CUSTOMER/COLLABORATOR/CONSORTIUM PARTNERS FOR REFERRING THE DISPUTES TO CONCILIATION
THROUGH IEC**

To,

BHEL

.....

Sub: Resolution of Disputes through Conciliation by Independent Expert Committee (IEC).

Ref: Contract/MoU/Agreement/LOI/LOA No & date_____

With reference to above referred contract, our following bills/invoices/claims submitted to BHEL are still unpaid giving rise to Disputes:

SL. no.	Claim Description	Bill submitted to BHEL (no. and date)	Amount of the bill/claim	Amount received from BHEL	Outstanding Amount

Accordingly we request you to kindly refer the Disputes in respect of above claims to IEC for Conciliation.

We hereby agree and give our unconditional consent to the terms and conditions of BHEL Conciliation Scheme, 2018 governing conciliation through IEC. We have signed the same on each page and enclosed it for your consideration.

Yours faithfully,

(Signature with stamp)

**Authorized Representative of Contractor
Name, with designation
Date**

**STATEMENT OF CLAIMS/COUNTER CLAIMS TO BE SUBMITTED TO
THE IEC BY BOTH THE PARTIES**

1. Chronology of the Disputes
2. Brief of the Contract/MoU/Agreement/LOI/LOA
3. Brief history of the Disputes:
4. Issues:
5. Details of Clam(s)/Counter Claim(s):

SI. No.	Description of claim(s)/Counter Claim	Amount (in INR)Or currency applicable in the contract	Relevant contract clause

6. Basis/Ground of claim(s)/counter claim(s) (along with relevant clause of contract)

Note– The Statement of Claims/Counter Claims may ideally be restricted to maximum limit of 20 pages. Relevant documents may be compiled and submitted along with the statement of Claims/Counter Claims. The statement of Claims/Counter Claims is to be submitted to all IEC members and to the other party by post as well as by email.


8/8/19

VOLUME-II

TECHNICAL SPECIFICATION FOR LT XLPE POWER CABLE

SPECIFICATION NO: *PE-RC-999-507-E002*

REVISION: 01



**BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA, UP (INDIA) – 201301**



**TECHNICAL SPECIFICATION FOR
LT XLPE POWER CABLES**

SPECIFICATION NO. PE-RC-999-507-E002

VOLUME II

SECTION

REVISION 01

DATE: 14.06.19

SHEET 1 OF 1

CONTENTS

<u>S. NO.</u>	<u>DESCRIPTION</u>	<u>NO. OF SHEETS</u>
1.	CONTENTS	01
2.	SECTION – I	
	COMPLIANCE CERTIFICATE	01
	SPECIFIC TECHNICAL REQUIREMENTS	01
	DATA SHEET-A	03
	DATA SHEET-C	03
3.	SECTION – II	
	STANDARD TECHNICAL SPECIFICATION	02
	QUALITY PLAN (ALONGWITH ANNEXURE A TO QP)	09
	TOTAL NO. OF SHEETS=	23
	(INCLUDING COVER/ SEPARATOR SHEETS)	



**TECHNICAL SPECIFICATION FOR
LT XLPE POWER CABLES**

SPECIFICATION NO. PE-RC-999-507-E002

VOLUME II

SECTION I

REVISION 1

DATE: 14.06.19

SECTION – I

SPECIFIC TECHNICAL REQUIREMENTS



**TECHNICAL SPECIFICATION FOR
LT XLPE POWER CABLES**

SPECIFICATION NO. PE-RC- 999-507-E002

VOLUME II

SECTION I

REVISION 1

DATE: 14.06.19

SHEET 1 of 1

COMPLIANCE CERTIFICATE

The bidder shall confirm compliance to the following by signing/ stamping this compliance certificate and furnishing same with the offer.

1. The scope of supply, technical details, construction features, design parameters etc. shall be as per technical specification & there are no exclusion/ deviation with regard to same.
2. There is no deviation with respect to specification other than those furnished in the 'schedule of deviations'.
3. Only those technical submittals which are specifically asked for in NIT to be submitted at tender stage shall be considered as part of offer. Any other submission, even if made, shall not be considered as part of offer.
4. Any comments/ clarifications on technical/ inspection requirements furnished as part of bidder's covering letter shall not be considered by BHEL, and bidder's offer shall be construed to be in conformance with the specification.
5. Any changes made by the bidder in the price schedule with respect to the description/ quantities from those given in 'BOQ-Cum-Price schedule' of the specification shall not be considered (i.e., technical description & quantities as per specification shall prevail).

BIDDER'S STAMP & SIGNATURE



TECHNICAL SPECIFICATION FOR LT XLPE POWER CABLES

SPECIFICATION NO. PE-RC-999-507-E002

VOLUME II

SECTION I

REVISION 1

DATE: 14.06.19

SHEET 1 OF 1

1.0 PURPOSE

This specification is intended for finalization of rate contract between BHEL PEM and Bidder. Standard technical detail as indicated in the specification shall be agreed upon between BHEL PEM and bidder. Project specific technical detail shall be made available to the bidder along with project enquiry.

2.0 SCOPE OF ENQUIRY

2.1 Design, Manufacture, Inspection and Testing at Manufacturer's works, proper packing and delivery to site of LT XLPE Power Cable conforming to this specification.

2.2 It is not the intent to specify herein all the details of design & manufacture of material. However, the material shall conform in all respects to high standard of design, engineering & workmanship and shall be capable of performing in continuous commercial operation at site condition.

2.3 Technical requirements of LT XLPE Power Cable are indicated in Data Sheet-A & Section-II.

2.4 The stipulation of Data Sheet-A shall prevail in case of any conflict between the stipulations of Data Sheet-A & Section-II.

3.0 BILL OF QUANTITIES

The bidder to quote for items as per price schedule attached with NIT. **The quantity as mentioned in the BOQ is only for evaluation purpose.** However actual ordered quantity may vary from project to project throughout the contract.

4.0 DRAWINGS & DOCUMENTS TO BE SUBMITTED

4.1 After rate contract; against specific project requirement following information shall be furnished by BHEL: -

a) BOQ (Bill of Quantities)

4.2 Following documents shall be submitted for specific project requirement after placement of order for BHEL & customer's approval: -

Sl. No.	Drawing / Document Description	Drawing / Document no	Document Type	First Submission	Resubmission
1	Technical Data sheet - LT XLPE Power cables	PE-V0-XXX-507-E111	Primary	Within 2 week of award of contract.	Within 1 week of comments
2	Cross-sectional Drgs.- LT XLPE Power Cables	PE-V0-XXX-507-E113	Primary	Within 2 week of award of contract.	Within 1 week of comments
3	Quality Plan - LT XLPE Power Cables	PE-V0-XXX-507-E913	Primary	Within 2 week of award of contract.	Within 1 week of comments

4.3 Drawings/documents shall be submitted through Document Management System (DMS).



DOCUMENT TITLE

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XLPE POWER CABLES**

SPECIFICATION NO. PE-RC- 999-507-E002

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SHEET 1 OF 3

DATA SHEET-A

1.0	Type of Cable	Flame Retardant Low Smoke halogen (FR-LSH)	
2.0	Standard applicable in general(Latest amendment to be referred if any)	IS:7098 (Part-1), IS:8130, IS:5831, IS:10810, IS:3975, ASTM D:2843, ASTM D:2863, IEC-754-1, IEC:60332 (Part-1), IEC:60332-3-23, IEEE:60383	
3.0	Voltage Grade	1.1kV	
4.0	Number of cores, cross sectional area of conductors and quantities	As per BOQ-Cum-Price Schedule	
5.0	FAULT CHARACTERISTICS		
	Fault Level	50kA RMS	
	Fault Clearing Time	1.0 sec – for 630 Sq mm cross section cables 0.5 sec – for 400 Sq mm cross section cables 0.25 sec – for 300 Sq mm cross section cables 0.2 sec – for 240 Sq mm cross section cables	
6.0	CONDUCTOR		
(a)	Material	Aluminium	Copper
	Grade and Class	Stranded, Compacted, H2, Class 2	Stranded, plain annealed high conductivity, Class 2
(b)	Standard Applicable	IS: 8130	
(c)	Shape	Aluminium	Copper
		Circular/ Shaped – as per IS	Circular – for all sizes
(d)	Min. number and diameter of strands for main and neutral conductor [Neutral conductor cross section w.r.t main conductor shall be as per Table-2 of IS: 7098 (Part-1)]	As per Table-2 of IS: 8130	
7.0	INSULATION		
(a)	Material	Cross-Linked Polyethylene(XLPE)	
(b)	Standard Applicable	IS: 7098 (Part-1)	
(c)	Continuous withstand temperature	90°C	
(d)	Short-circuit withstand temperature	250°C	
(e)	Method of application	By extrusion; sleeve extrusion not permitted.	
(f)	Nominal Thickness of insulation	As per IS: 7098 (Part-1)	
8.0	CORE IDENTIFICATION	Colour coding as per IS-7098 (Part-I)	
9.0	INNER SHEATH		
(a)	Material	Extruded HRPVC Type ST-2	
(b)	Standard Applicable	IS: 7098 (Part-1) & IS: 5831	
(c)	Colour	Black	
(d)	Whether FR-LSH	No (Project specific requirement shall be informed later)	
(e)	Inner sheath applicable for single core cable	No	



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(f)	Fillers	Acceptable
(g)	Material of fillers (if permitted)	Same as inner sheath (Material of filler to be compatible with that of inner sheath)
(h)	Method of application	
(1)	Multi-core cables:	
(i)	With fillers	Pressure/ Vacuum extruded
(ii)	Without fillers	Pressure extruded
(2)	Single-core cables:	NOT APPLICABLE
10.0	ARMOUR	
(a)	Applicable	YES
(b)	Material:	
(i)	Single core cables	Non Magnetic Hard drawn Aluminium Round Wire H4 grade to IS: 8130
(ii)	Multi-core cables	Galvanised Steel Round Wire OR Galvanised Steel Formed Wire/Strip, conforming to (i) Type 'a' / 'b' as per Table-6 of IS 7098 part-I and (ii) IS 3975 (as specified in BOQ cum price schedule) (Project specific requirement for Type 'a' or 'b' shall be informed later)
(iii)	Standard Applicable	Dimension as per IS: 7098 (Part-1) Table-6 and tolerance on dimension as per IS:3975
(c)	Minimum Coverage	90%
(d)	Gap between armour wires	Shall not exceed one armour wire space (No cross-over/ over-riding)
(e)	Breaking load of joint	95 % of normal armour
(f)	Paint on joint	Zinc rich paint shall be applied on armour joint surface of G.S. wire / formed wire
11.0	OUTERSHEATH	
(a)	Material	HRPVC Type ST2 as per IS: 5831
(b)	Colour	Black
(c)	Whether FR-LSH	Yes
(d)	Method of application	Extruded
(e)	Thickness of outer sheath	As per Table-8 of IS: 7098 (Part-1)
(f)	Marking	Cable size (cross section area and no. of cores), voltage grade and Reference IS @ 1m (by embossing) Word "XLPE", "FR-LSH" @ 1m (by embossing) Manufacturer's name and/ or trade name, and year of manufacture @ 1m (by embossing) 'BHEL-PEM' and 'CUSTOMER' Name @1m (by embossing) Progressive sequential marking of length of the cable in metres @ 1m (by embossing/ printing) <i>Further customer specific marking requirement (if any) shall be informed later.</i> The embossing shall be progressive, automatic, in line and marking shall be legible and indelible.
12.0	FR-LS CHARACTERISTICS	
(a)	Oxygen index	Min 29 (As per IS 7098-I /ASTMD 2863)/



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		Min 21 (as per NES-715-1) (Project specific requirement shall be informed later)
(b)	Temperature index	Min. 250°C(As per IS 7098-I /ASTMD 2863)
(c)	Acid gas generation	Max. 20% by weight (As per IS 7098-I /IEC-60754-1)
(d)	Smoke density rating	Max. 60% (As per IS 7098-I /ASTM D 2843)
(e)	Flammability Test	
(i)	Flammability test for single cable	YES As per IEC-60332 Part-1
(ii)	Flammability test for bunched cables	YES As per IEC-60332 Part-3-23, CAT-B
(iii)	Flammability test as per IEEE: 60383	YES
(iv)	As per Swedish Chimney test SEN-SS-424-1475-F3	YES
(f)	Special Tests	
I.	Hydrolytic Stability Test	No/ Refer Cl. 3.4 of Sec-II
II.	Ultraviolet Radiation Test	No/ Refer Cl. 3.4 of Sec-II
13.0	Anti-rodent and Termite repulsion Test	YES
14.0	Anti-Fungal Test	No
15.0	TOLERANCE ON OUTER DIAMETER	± 2mm
16.0	MINIMUM BENDING RADIUS	
(a)	Single core cables	15 x O.D.
(b)	Multi core cables	12 x O.D.
17.0	SAFE PULLING FORCE	
(a)	Aluminium conductor cable	30 N/ sq. mm.
(b)	Copper conductor cable	50 N/ sq. mm.
18.0	CABLE DRUMS	
(a)	Type of Drum	Wooden as per IS 10418
(b)	Standard drum length	500m (±) 5% / 1000m (±) 5%. (as specified in BOQ-Cum- Priced Schedule)
(c)	Painting	Entire surface to be painted
(d)	Construction details	Clause no 4.2 of Section-II of this technical specification
(e)	Particular details on Drum	Clause no 4.3 of Section-II of this technical specification. Further customer specific marking requirement (if any) shall be informed later.
19.0	Sea Worthy packing	No

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DATASHEET C

**GUARANTEED TECHNICAL PARTICULARS
(TO BE SUBMITTED BY SUCCESSFUL BIDDER)**

S.No.		Unit	Description
A	GENERAL	-	
1	Name of manufacturer	-	
2	Place of Manufacture	-	
3	Current rating of cables conforms to	-	
4	Short circuit rating conforms to	-	
5	Formula for calculating short circuit current for different duration	-	
6	Permissible conductor temperature		
	(a) Maximum continuous rating	deg. C	
	(b) Short circuit rating	deg. C	
7	(a) Installation Conditions at site		
	i) Ambient air temperature	deg. C	
	ii) Ground temperature	deg. C	
	iii) Depth of laying of cables buried in ground	cm	
8	CHARACTERISTICS OF FRLS SHEATH		
	(a) Oxygen index	%	
	(b) Temperature index	deg. C	
	(c) Acid gas generation	%	
	(d) Smoke density rating	%	
9	CABLE DRUMS		
	(a) Type & construction	-	
	(b) Standard drum length	Mtr	
	(c) Tolerance on drum length	%	
B	INFORMATION TO BE FILLED IN FOR EACH SIZE CABLE IN THE FORM OF TABLE		
1	No. of cores x size	No. x sq.mm	
2	Voltage grade (Uo/U)	kV	
3	Base current ratings (*) based on Sl. (A) 7.0		
	(a) In air	Amp	
	(b) In ground	Amp	
	(c) ducts	Amp	

NAME OF VENDOR			SEAL	REV.	
NAME	SIGNATURE	DATE			



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4	Short circuit rating for 1 sec duration	kA	
5	(a) D.C. resistance of conductor at 20 deg C (main / neutral)	ohm/km	
	(b) A.C. resistance of conductor at 90 deg. C (main / neutral)	ohm/km	
	(c) Reactance of cable at Normal frequency	ohm/km	
	(d) Electrostatic capacitance of cable at normal frequency	μF/km	
6	CONDUCTOR		
	(a) Material type	-	
	(b) Grade	-	
	(c) No & dia of wires in each core before stranding	no x mm	
	(d) Shape	-	
7	INSULATION		
	(a) Material	-	
	(b) Nominal thickness (main / neutral)	mm	
	(c) Minimum thickness (main / neutral)	mm	
	(d) Minimum volume resistivity at 27 deg. C	Ohm-cm	
	(e) Minimum volume resistivity at 90 deg. C	Ohm-cm	
8	INNERSHEATH		
	(a) Material	-	
	(b) Whether FRLS	-	
	(c) Thickness (min.)	mm	
	(d) Method of application for multi-core cables	-	
	(e) Type and shape of fillers (if used)	-	
	(f) Colour	-	
9	ARMOUR		
	(a) Material	-	
	(b) Type of armour	-	
	(c) Size/ dimensions (Nominal dia of wire)	mm	
	(d) Minimum no. of round / formed wires	No.	
	(e) Minimum coverage	%	
	(f) Gap between armour wire/strip	-	
	(g) Breaking load of joint	-	
	(h) Maximum resistivity of GS formed / Round wire	Ohm-cm	
	(i) Maximum resistivity of Aluminium round wire	Ohm-cm	
10	OUTERSHEATH		
	(a) Material	-	
	(b) Whether FRLS	-	
	(c) Minimum thickness	mm	

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NAME	SIGNATURE	DATE			



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	(d) Colour	-	
	(e) Method of application	-	
11	DIAMETERS		
	(a) Diameter of insulated conductor	mm	
	(b) Cable diameter under armour	mm	
	(c) Cable diameter over armour	mm	
	(d) Overall diameter of cable	mm	
	(e) Tolerance on overall diameter	(±) mm	
12	Ovality	mm	
13	Minimum bending radius	x O.D	
14	Safe Pulling Force	N/mm ²	
15	Weight of cable	kg./km	
16	Dimension of drum	mm	
17	Shipping weight (approx.)	kg	
18	Cable marking on outer sheath	-	
19	Marking on drum	-	

(*) For single core cables, the continuous current rating shall be furnished separately for armour earthed at one end and at both ends.

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SECTION-II

STANDARD TECHNICAL REQUIREMENTS



TECHNICAL SPECIFICATION FOR LT XLPE Power Cable

SPECIFICATION NO. PE-RC-999-507-E002

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DATE:09.08.17

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1.0 CODES AND STANDARDS

- 1.1 The material shall comply with all currently applicable safety codes and statutory regulations of India as well as of the locality where the material is to be installed.
- 1.2 The design, material, construction, manufacture, inspection and testing of LT XLPE POWER Cable shall conform to the latest revision of relevant standards as per Data Sheet-A.
- 1.3 In case of conflict between the applicable reference standard and this specification, this specification shall govern.

2.0 TECHNICAL REQUIREMENTS

- 2.1 LT XLPE POWER Cable shall be supplied as per technical particulars specified in Data Sheet – A.

3.0 QUALITY ASSURANCE, TESTING & INSPECTION

- 3.1 Bidder shall confirm compliance with the BHEL Standard Quality Plan (PE-QP-999-507-E002, Rev-01) as attached with the specification without any deviations. At contract stage (project specific), the successful bidder shall submit the same QP for BHEL/ ultimate customer's approval. In case bidder has reference QP agreed with ultimate customer, same can be submitted for specific project after award of contract for BHEL/ultimate customer's approval. There shall be no commercial implication to BHEL on account of minor changes in QP during contract stage.
- 3.2 All materials shall be procured, manufactured, inspected and tested by vendor/ sub-vendor as per approved quality plan.
- 3.3 Type testing, routine / acceptance testing and special testing requirements shall be as per Annexure –A to QAP. Charges for all these tests for all the equipments & components shall be deemed to be included in the bid price (except UV Radiation & Hydraulic Stability test).
- 3.4 The charges of UV Radiation test & Hydrolytic Stability test (if applicable) shall be reimbursed extra at actual against original money receipt of Govt. Lab. (CPRI/ ERDA etc).
- 3.5 Cost of cables consumed for testing shall be to bidder's account.

4.0 PACKING

- 4.1 Cables shall be supplied in non-returnable drums. Material of cable drums shall be wooden.
- 4.2 For wooden drums, all wooden parts shall be manufactured from seasoned wood treated with copper naphthenates / zinc naphthenates (refer IS: 401) and anti-termite. The surface of the drum and the outer most cable layer shall be covered with water proof cover. Both the ends of the cables shall be properly sealed with heat shrinkable PVC/ rubber caps secured by 'U' nails so as to eliminate ingress of water during transportation, storage and erection. Dimensions of wooden drums shall be as per IS 10418. All ferrous parts shall be treated with suitable rust protective



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finish or coating to avoid rusting during transit and storage. BIS certification mark shall be stamped on each cable drum.

- 4.3 Each drum shall carry manufacturer's name, purchaser's name, address and contract no., item no. & type, size & length of cable and net gross weight stencilled on both sides of drum. A tag containing same information shall be attached to the leading end of the cable. An arrow & suitable accompanying wording shall be marked on one end of the reel indicating the direction in which it should be rolled.

		STANDARD QUALITY PLAN		CUSTOMER :			PROJECT: _____		SPECIFICATION PE-RC-999-507-E002 Rev 1		
				BIDDER/ : VENDOR			QUALITY PLAN NUMBER: PE-QP-999-507-E002, R01		SPECIFICATION TECHNICAL SPECIFICATION FOR TITLE LT XLPE POWER CABLE		
SHEET 1 OF 9		SYSTEM			ITEM : LT XLPE Power Cables			SECTION II		VOLUME II	
SL. NO.	COMPONENT/ OPERATION	CHARACTERISTIC CHECK	CAT.	TYPE/ METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORM	FORMAT OF RECORD	AGENCY		REMARKS
1	2	3	4	5	6	7	8	9	P	W	V
Instructions: 1. Cable manufacturer to maintain records to show co-relation of raw materials to finished cables i.e. raw material batch/ lot no. should be traceable to the final cable drum number or batch no. 2. Cable manufacturer to maintain all quality records identified as per all QP stages enumerated below whether it is identified for BHEL verification or witness or not.											
1.0	RAW MATERIALS & BOUGHT OUT ITEMS										
1.1	Aluminium /Copper Rods (Conductor/ Armour Wire)	GENERAL : 1. Physical properties	MA	Physical Tests	Sample/ Batch	IS:7098-I,IS:5082, IS:5484, IS:8130 & Appd Datasheet	IS:7098-I,IS: 5082, IS:5484, IS:8130 & Appd Datasheet	Inspection Report/ Test Cert	2/3	-	1/2
		2. Elec.Properties	MA	Electrical Tests	Sample/ Batch	-do-	-do-	-do-	2/3	-	1/2
		SPECIFIC CHECKS : a) Make	MA	Verify	100%	Manufacturer approved source Approved datasheet	Manufacturer approved source Approved datasheet	COC/ Test Cert. -do-	2/3	-	1
		b) Grade	MA	-do-	-do-			-do-	2/3	-	1
		c) Resistivity	MA	Electrical Tests	Manufacturer std.	IS 8130, IS 5082	IS 8130, IS 5082	-do-	2/3	-	1
1.2	XLPE Compound for insulation	GENERAL : 1. Physical properties	MA	Physical Tests	Sample/ Batch	IS 7098-I & Mfs Std./ Approved datasheet	IS 7098-I & Mfs Std./ Approved datasheet	Inspection Report/ Test Cert.	2/3	-	1/2
		2. Elec.Properties	MA	Electrical Tests	Sample/ Batch	-do-	-do-	-do-	2/3	-	1/2
		SPECIFIC CHECKS : a) Make	MA	Verify	100%	Manufacturer approved source Approved datasheet	Manufacturer approved source Approved datasheet	COC/ Test Cert. -do-	2/3	-	1
		b) Type/ Grade	MA	-do-	-do-			-do-	2/3	-	1
		c) Shelf life/ Storage condition	MA	-do-	-do-	Compound Manufacturer std.	Compound Manufacturer std.	-do-	2/3	-	1
BHEL			PARTICULARS			BIDDER/VENDOR					
			NAME								
			SIGNATURE								
			DATE						BIDDER'S/VENDORS COMPANY SEAL		

		STANDARD QUALITY PLAN		CUSTOMER :		PROJECT: TITLE		SPECIFICATION PE-RC-999-507-E002 Rev 1				
				BIDDER/ :		QUALITY PLAN		SPECIFICATION TECHNICAL SPECIFICATION FOR				
				VENDOR		NUMBER: PE-QP-999-507-E002, R01		TITLE LT XLPE POWER CABLE				
SHEET 2 OF 9		SYSTEM		ITEM : LT XLPE Power Cables		SECTION II VOLUME II						
SL. NO.	COMPONENT/ OPERATION	CHARACTERISTIC CHECK	CAT.	TYPE/ METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORM	FORMAT OF RECORD	AGENCY			REMARKS
1	2	3	4	5	6	7	8	9	P	W	V	11
1.3	PVC Compound (for sheath)	GENERAL : 1. Physical properties 2. Elec.Properties 3. FRLS Properties (as applicable) SPECIFIC CHECKS : a) Make b) Type/ Grade c) Shelf life/ Storage condition	MA	Physical Tests	Sample/ Batch	IS 7098-I, IS 5831& Mfr. Std./ Approved datasheet	IS 7098-I, IS 5831& Mfr. Std./ Approved datasheet	Inspection Report/ Test Cert.	2/3	-	1/2	(Fillers material chosen shall be compatible with the temerature rating of the cable and shall have no deleterious effect on any other componenet of the cable)
			MA	Electrical Tests	Sample/ Batch	-do-	-do-	-do-	2/3	-	1/2	
			CR	Chemical/ Environ.	Sample/ Batch	-do-	-do-	-do-	2/3	-	1/2	
			MA	Verify	100%	Manufacturer approved source	Manufacturer approved source	COC/ Test Cert.	2/3	-	1	
			MA	-do-	-do-	Approved datasheet	Approved datasheet	-do-	2/3	-	1	
			MA	-do-	-do-	Compound Manufacturer std.	Compound Manufacturer std.	-do-	2/3	-	1	
1.4	Fillers (as applicable)	1. Make	MA	Verify	100%	Manufacturer approved source	Manufacturer approved source	COC/ Test Cert.	2/3	-	1	
		2. Type/ Grade	MA	-do-	-do-	Approved datasheet	Approved datasheet	-do-	2/3	-	2	
BHEL			PARTICULARS			BIDDER/VENDOR						
			NAME									
			SIGNATURE									
			DATE						BIDDER'S/VENDORS COMPANY SEAL			

		STANDARD QUALITY PLAN		CUSTOMER :			PROJECT: _____			SPECIFICATION PE-RC-999-507-E002 Rev 1			
				BIDDER/ : _____			TITLE			NUMBER :			
		SHEET 3 OF 9		VENDOR			QUALITY PLAN			SPECIFICATION TECHNICAL SPECIFICATION FOR			
		SYSTEM			ITEM : LT XLPE Power Cables			TITLE			LT XLPE POWER CABLE		
SL. NO.	COMPONENT/ OPERATION	CHARACTERISTIC CHECK	CAT.	TYPE/ METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORM	FORMAT OF RECORD	SECTION II VOLUME II			REMARKS	
									P	W	V		
1	2	3	4	5	6	7	8	9	10			11	
1.5	Galvanised steel wire/strip for Armour (as applicable)	GENERAL : 1. Make 2. Dimension 3. Phy.and Elec. Properties 4. Galvanization Quality	MA	Verify	Manufacturer std.	Manufacturer approved source	Manufacturer approved source	Inspection Report/ Test Cert. -do-	2/3	-	1	* Sample from each armour size/ Batch / Lot	
			MA	Measurement	-do-	IS 7098-I, IS 3975 & Approved datasheet	IS 7098-I, IS 3975 & Approved datasheet	-do-	2/3	-	2		
			MA	Physical & Electrical Tests	Sample*	-do-	-do-	-do-	2/3	-	2		
			MA	Galv. Tests	-do-	IS 3975 & Mfr. Std.	IS 3975 & Mfr. Std.	-do-	2/3	-	2		
1.6	Wooden Drum	1. Phy. & Constructional checks	MA		Mfr's Plant Std.	IS 10418	IS 10418	Inspection Report/ Test Cert. COC	2/3	-	1		
		2. Anti termite treatment	MA	Chem.	Mfr's Plant Std.	Mfr's Plant Std.	Mfr's Plant Std.		2/3		1		
1.7	Steel Drum #	1. Dimension	MA	Meas.	Mfr's Plant Std.	Approved drawing of steel drum / BHEL specification	Approved drawing of steel drum / BHEL specification	Inspection Report/ Test Cert. -do-	2/3	-	1	# (If Applicable)	
		2. Surface finish	MA	Visual	-do-	Surface shall be smooth	Surface shall be smooth		2/3		1		
BHEL			PARTICULARS			BIDDER/VENDOR							
			NAME										
			SIGNATURE										
			DATE										
									BIDDER'S/VENDORS COMPANY SEAL				

		STANDARD QUALITY PLAN			CUSTOMER :			PROJECT TITLE			SPECIFICATION PE-RC-999-507-E002 Rev 1		
					BIDDER/ :			QUALITY PLAN			SPECIFICATION TECHNICAL SPECIFICATION FOR		
					VENDOR			NUMBER: PE-QP-999-507-E002, R01			TITLE LT XLPE POWER CABLE		
SHEET 4 OF 9		SYSTEM			ITEM : LT XLPE Power Cables			SECTION II			VOLUME II		
SL. NO.	COMPONENT/OPERATION	CHARACTERISTIC CHECK	CAT.	TYPE/METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORM	FORMAT OF RECORD	AGENCY			REMARKS	
1	2	3	4	5	6	7	8	9	P	W	V	11	
2.0	IN PROCESS												
2.1	Wire Drawing	1. Size	MA	Dimensional	Plant Mfg. Std.	IS 8130 & Appd. Datasheet	IS 8130 & Appd. Datasheet	Inspection Report	2	-	1		
		2. Surface finish	MA	Visual	-do-	Surface shall be smooth	Surface shall be smooth	-do-	2	-	1		
		3. % of Elongation	MA	Mechanical	-do-	IS 8130 & Appd. Datasheet	IS 8130 & Appd. Datasheet	-do-	2	-	1		
2.2	Stranding of wires	1. No. of wires	MA	Counting	Plant Mfg. Std.	IS 8130 & Appd. Datasheet	IS 8130 & Appd. Datasheet	Inspection Report	2	-	-		
		2. Resistance	CR	Electrical	-do-	-do-	-do-	-do-	2	-	-		
		3. Sequence, lay length & Direction	MA	Visual, Meas.	One Sample of each size/ lot	Mfrs Std. / Appd. Datasheet	Mfrs Std. / Appd. Datasheet	-do-	2	-	-		
		4. Surface Finish	MA	Visual	100%	Surface shall be smooth	Surface shall be smooth	-do-	2	-	-		
		5. Dimension	MA	Measurement	One Sample of each size/ lot	IS 8130 & Appd. Datasheet	IS 8130 & Appd. Datasheet	-do-	2	-	-		
2.3	Core Insulation (XLPE) (No repair permitted)	1. Surface finish	MA	Visual	100%	Free from bulging, burnt particles, lumps, cuts & scratches	Free from bulging, burnt particles, lumps, cuts & scratches	Inspection Report	2	-	1		
		2. Eccentricity & Ovality #	CR	Measurement	One Sample of each size/ lot	IS 7098-I & Appd. Datasheet	IS 7098-I & Appd. Datasheet	-do-	2	-	1	# To be checked at starting & finished end of extruded length.	
		3. Insulation Thickness	CR	Measurement	-do-	-do-	-do-	-do-	2	-	-		
		4. Dia over insulation	MA	Measurement	-do-	-do-	-do-	-do-	2	-	-		
		5. Tensile Strength & % Elongation	MA	Mechanical	100%	-do-	-do-	-do-	2	-	-		
		6. Spark Test or Water immersion test	CR	Electrical	100%	Mnfr's Std	Mnfr's Std	-do-	2	-	1		
BHEL			PARTICULARS			BIDDER/VENDOR							
			NAME										
			SIGNATURE										
			DATE						BIDDER'S/VENDORS COMPANY SEAL				

		STANDARD QUALITY PLAN		CUSTOMER :			PROJECT TITLE		SPECIFICATION PE-RC-999-507-E002 Rev 1				
				BIDDER/ :			QUALITY PLAN		SPECIFICATION TECHNICAL SPECIFICATION FOR				
				VENDOR			NUMBER: PE-QP-999-507-E002, R01		TITLE LT XLPE POWER CABLE				
SHEET 5 OF 9		SYSTEM			ITEM : LT XLPE Power Cables			SECTION II		VOLUME II			
SL. NO.	COMPONENT/OPERATION	CHARACTERISTIC CHECK	CAT.	TYPE/ METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORM	FORMAT OF RECORD	AGENCY			REMARKS	
									P	W	V		
1	2	3	4	5	6	7	8	9	10			11	
2.4	Core Laying	1. Dia over laid up core 2. Sequence of lay & direction 3. Lay Length	MA MA MA	Measurement Visual & Meas. Measurement	One Sample of each size/ lot -do- -do-	IS 7098-I & Appd. Datasheet IS 7098-I & Mfr. Std. -do-	IS 7098-I & Appd. Datasheet IS 7098-I & Mfr. Std. -do-	Inspection Report -do- -do-	2 2 2	- - -	- - -	(Pimple, fish eye, porosity & burnt particles not permitted.)	
2.5	InnerSheath Extrusion (as applicable)	1. Surface finish 2. Thickness 3. Dia over inner sheath	MA CR MA	Visual Measurement -do-	100% One Sample of each size/ lot -do-	Surface shall be smooth IS 7098-I & Appd. Datasheet -do-	Surface shall be smooth IS 7098-I & Appd. Datasheet -do-	Inspection Report -do- -do-	2 2 2	- - -	- - -		
2.6	Armour(as applicable)	1. No.of wires/Strips 2. Lay length & Direction 3. Dia over armouring 4. Coverage	MA MA MA MA	Counting Visual & Meas. Measurement Measurement	At the start of the process -do- -do- -do-	IS 7098-I & Appd. Datasheet IS 7098-I & Mfr. Std. IS 7098-I & Appd. Datasheet -do-	IS 7098-I & Appd. Datasheet IS 7098-I & Mfr. Std. IS 7098-I & Appd. Datasheet -do-	Inspection Report -do- -do- -do-	2 2 2 2	- - - -	- - - -		
2.7	Outer Sheath Extrusion (No repair permitted)	1. Surface finish 2. Sheath Thickness 3. Dia over outer sheath 4. Embossing/ Sequential Marking	MA CR MA MA	Visual Measurement -do- Visual	100% One Sample of each size/ lot -do- 100%	Surface shall be smooth IS 7098-I & Appd. Datasheet -do- Approved data sheet	Surface shall be smooth IS 7098-I & Appd. Datasheet -do- Approved data sheet	Inspection Report -do- -do- -do-	2 2 2 2	- - - -	- - - -		(Pimple, fish eye, porosity & burnt particles not permitted.)
BHEL			PARTICULARS			BIDDER/VENDOR							
			NAME										
			SIGNATURE										
			DATE						BIDDER'S/VENDORS COMPANY SEAL				

		STANDARD QUALITY PLAN		CUSTOMER :			PROJECT TITLE		SPECIFICATION PE-RC-999-507-E002 Rev 1			
				BIDDER/ : VENDOR			QUALITY PLAN NUMBER: PE-QP-999-507-E002, R01		SPECIFICATION TECHNICAL SPECIFICATION FOR TITLE LT XLPE POWER CABLE			
		SHEET 6 OF 9			SYSTEM			ITEM : LT XLPE Power Cables		SECTION II VOLUME II		
SL. NO.	COMPONENT/OPERATION	CHARACTERISTIC CHECK	CAT.	TYPE/METHOD OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORM	FORMAT OF RECORD	AGENCY			REMARKS
									P	W	V	
1	2	3	4	5	6	7	8	9	10			11
3.0	Finished Cable (INTERNAL)	1. Routine Test (Refer Note-F)	CR	Electrical Tests & Measurement	100%	IS 7098-I & Appd. Datasheet	IS 7098-I & Appd. Datasheet	Test Report	2	-	1	# Refer Annexure-A to QAP enclosed
4.0	Final Inspection (EXTERNAL)	1. Finish	MA	Visual	One drum in each Lot	IS 7098-I & Appd. Datasheet	Free from Porosity, Bulging, Burnt particles,lumps, cuts & scratches	Test Report	2	1	-	
		2. Length	MA	Measurement	-do-	-do-	Approved Data Sheet	-do-	2	1	-	
		3. Dimension	MA	-do-	As per IS	-do-	-do-	-do-	2	1	-	
		4. Armouring - Coverage & No.of Wires/Strips	MA	Visual & Meas.	-do-	-do-	-do-	-do-	2	1	-	
		5. Marking & Colour Coding	MA	Visual	As per IS	-do-	Approved Data Sheet	-do-	2	1	-	
		6. Acceptance Tests (Refer Note-F)	CR	Phy, Elect. Tests & FRLS Tests	Sample #	-do-	-do-	-do-	2	1	-	
		7. Type Tests (Refer Note-F)	CR	Physical & Electrical Tests	Sample #	-do-	-do-	-do-	2	1	-	
5.0	Packing	Sealing Identification	MA	Visual	100%	As per IS	As per IS	-do-	2	1	-	
NOTES:- (A) JOINTS IN WIRE SHALL BE AS PERMITTED BY IS / MANUFACTURER'S STANDARD, VENDOR TO CERTIFY THE SAME. (B) NO REPAIR OF CORE INSULATION PERMITTED (C) RECORD OF RAW MATERIAL, PROCESS & ALL STAGES SHALL BE CERTIFIED BY VENDORS QC. AND ARE LIABLE TO AUDIT CHECK BY PURCHASER. (D) FILLERS/DUMMY CORES ETC. SHALL BE AS PER APPROVED DATA SHEET (E) VENDOR SHALL FURNISH COMPLIANCE CERTIFICATE TO THE INSPECTION AGENCY CONFIRMING THE PACKING AS PER BHEL SPECIFICATION. (F) FOR LIST OF ROUTINE, TYPE & ACCEPTANCE TESTS, REFER ANNEXURE-A TO QAP ENCLOSED.												
LEGEND : P: PERFORMER W: WITNESSER V: VERIFIER 1- BHEL/CUSTOMER 2-VENDOR 3- SUB VENDOR CHP:CUSTOMER HOLD POINT WHICH WILL BE DECIDED AT CONTRACT STAGE												
BHEL			PARTICULARS		BIDDER/ VENDOR							
			NAME									
			SIGNATURE									
			DATE				BIDDER'S/VENDORS COMPANY SEAL					

	ANNEXURE-A TO QP	CUSTOMER:	PROJECT TITLE	SPECIFICATION NUMBER: PE-TS-RC-507-E002-R1
		BIDDER/VENDOR:	QUALITY PLAN NUMBER : PE-QP-999-507-E002, R01	SPECIFICATION TITLE:
	SHEET 7 OF 9	SYSTEM	ITEM: LT XLPE POWER CABLES	DOC. NO.

TYPE/ ACCEPTANCE/ ROUTINE TEST REQUIREMENTS

A. Type Test Conduction:

- Tests for which "T" is indicated in the 'Test Conduction Required As' column below shall be conducted as Type Test.
- Sampling:
 - Type test to be conducted on each type & size of cable on one drum out of every 10 drums for every lot (CU/AL conductor)
 - Flammability Test to be conducted only on one sample/ lot.

B. Acceptance Test Conduction:

- Tests for which "A" is indicated in the 'Test Conduction Required As' column below shall be conducted as Acceptance tests.
- Sampling:
Acceptance tests to be conducted on one drum out of every 10 drums/ lot for every size & type.
- Flammability Test to be conducted only on one sample/ lot (Project specific sampling plan shall be informed later)

C. Routine Test Conduction:

- Tests for which "R" is indicated in the 'Test Conduction Required As' column below shall be conducted as Routine tests.

D. Tests listed in S.No-7.0 & 8.0 shall be conducted only on one sample / lot.

Note: LOT shall be considered as per IS: 7098 Part-I, appendix-B.

S. No.	TEST	APPLICABLE FOR	TEST CONDUCTION REQUIRED AS	REFERENCE STANDARD	REMARKS
1.0	Tests for Conductor				
I.	Annealing test	For copper conductor only	T, A	IS 10810 Pt 1	<u>Internal in process Test Report to be furnished for acceptance test</u>
II.	Tensile test	For aluminium conductor only (Not applicable for compacted circular or shaped conductor)	T, A	IS 10810 Pt 2	
III.	Wrapping test	For aluminium conductor only (Not applicable for compacted circular or shaped conductor)	T, A	IS 10810 Pt 3	
IV.	Resistance test	For Al/Cu	T, A, R	IS 10810 Pt 5	

BHEL	PARTICULARS	BIDDER/ VENDOR	
	NAME		
	SIGNATURE		
	DATE		BIDDER'S / VENDORS COMPANY SEAL

	ANNEXURE-A TO QP	CUSTOMER:	PROJECT TITLE	SPECIFICATION NUMBER: PE-TS-RC-507-E002-R1
		BIDDER/VENDOR:	QUALITY PLAN NUMBER : PE-QP-999-507-E002, R01	SPECIFICATION TITLE:
	SHEET 8 OF 9	SYSTEM	ITEM: LT XLPE POWER CABLES	DOC. NO.

<u>S. No.</u>	<u>TEST</u>	<u>APPLICABLE FOR</u>	<u>TEST CONDUCTION REQUIRED AS</u>	<u>REFERENCE STANDARD</u>	<u>REMARKS</u>
2.0	<u>Tests for Armour Wires/Strips</u>				
I.	Measurement of dimensions	Applicable for Aluminium wire & GS wire/Strip	T,A	IS 10810 Pt 36	
II.	Tensile test	Applicable for Aluminium wire & GS wire/Strip	T, A	IS 10810 Pt 37	
III.	Elongation at break test	Applicable for GS wire/Strip only	T, A	IS 10810 Pt 37	
IV.	Torsion test	For GS round wire only	T, A	IS 10810 Pt 38	
V.	Winding / Adhesion Test	For GS strip only	T, A	IS 10810 Pt 39	
VI.	Resistivity test	Applicable for Aluminium wire & GS wire	T, A	IS 10810 Pt 42	
VII.	Uniformity of Zinc coating test	For G. S. wires/Strip only	T, A	IS 10810 Pt 40	
VIII.	Mass of Zinc coating test	For G. S. wires/Strip only	T, A	IS 10810 Pt 41	
IX.	Wrapping Test	Applicable for Aluminium wire & GS wire	A	IS 10810 Pt 3	
3.0	<u>Physical Tests for XLPE Insulation & PVC sheath</u>				
I.	Test for thickness	Applicable for XLPE insulation, PVC inner sheath & PVC outer sheath	T, A	IS 10810 Pt 6	
II.	Tensile strength and elongation test at break	Applicable for XLPE insulation & PVC outer sheath			
(a)	Before ageing		T, A	IS 10810 Pt 7	
(b)	After ageing		T, A	IS 10810 Pt 7	
III.	Ageing in air oven	Applicable for XLPE insulation & PVC outer sheath	T	IS 10810 Pt 11	
IV.	Loss of mass in air oven test	For PVC outer sheath only	T	IS 10810 Pt 10	
V.	Hot deformation test	For PVC outer sheath only	T	IS 10810 Pt 15	
VI.	Heat shock test	For PVC outer sheath only	T	IS 10810 Pt 14	
VII.	Shrinkage test	For XLPE insulation & PVC outer sheath only	T	IS 10810 Pt 12	
VIII.	Thermal stability test	For PVC outer sheath only	T	IS 10810 Pt 60	
IX.	Cold Impact test	For PVC outer sheath only	T	IS 5831/1984	
X.	Bleeding and Blooming test	For PVC outer sheath only	T	IS 5831/1984	
XI.	Hot set test	For XLPE insulation only	T, A	IS 10810 Pt 30	
XII.	Water absorption (gravimetric) test	For XLPE insulation only	T	IS 10810 Pt 33	
4.0	<u>Improved Fire performance (FR-LSH) Tests</u>				

BHEL	PARTICULARS	BIDDER/ VENDOR	
	NAME		
	SIGNATURE		
	DATE		BIDDER'S / VENDORS COMPANY SEAL

	ANNEXURE-A TO QP	CUSTOMER:	PROJECT TITLE	SPECIFICATION NUMBER: PE-TS-RC-507-E002-R1
		BIDDER/VENDOR:	QUALITY PLAN NUMBER : PE-QP-999-507-E002, R01	SPECIFICATION TITLE:
	SHEET 9 OF 9	SYSTEM	ITEM: LT XLPE POWER CABLES	DOC. NO.

S. No.	TEST	APPLICABLE FOR	TEST CONDUCTION REQUIRED AS	REFERENCE STANDARD	REMARKS
I.	Oxygen index test	For PVC outer sheath only	T, A	IS 10810 Pt 58 / ASTM D 2863/ NES 715-I	Applicable for Inner Sheath also, if the same is indicated in Datasheet-A
II.	Smoke density test	For PVC outer sheath only	T, A	IS 10810 Pt 63 / ASTM D 2843	
III.	Acid gas generation test	For PVC outer sheath only	T, A	IS 10810 Pt 59 / IEC-754-1	
IV.	Temperature Index Test	For PVC outer sheath only	T, A	IS 10810 Pt 64 / ASTM D 2863	
5.0	Flammability Tests				
I.	Flammability test for bunched cables	For complete cable	T	IS 10810 Pt 62/ IEC-60332 (Part-3-23-Cat-B)	Test & Category applicable as indicated in Datasheet-A
II.	Flammability test for single cable	For complete cable	T,A	IS: 10810 Pt 61 / IEC:60332 Part-1	
III.	Swedish chimney test	For complete cable	A	SEN SS 424 1475 (Class F3)	
IV.	Flammability test	For complete cable	A	IEEE: 60383	
6.0	Electrical Tests				
I.	High Voltage Test	For complete cable	T, A, R	IS 10810 Pt 45	
II.	Insulation Resistance Test (Volume resistivity method)	For complete cable	T, A	IS 10810 Pt 43	
7.0	Anti-rodent and Termite Repulsion test	For PVC outer sheath only	A	Refer Note	Test applicable if indicated in Datasheet-A
8.0	Anti-Fungal Test	For PVC outer sheath only	A	--	
9.0	Special Tests				
I.	Hydrolytic Stability Test	For complete cable	**	ASTM D 3137:81	Test applicable if indicated in Datasheet-A
II.	Ultraviolet Radiation Test	For complete cable	**	BS EN ISO 4892-2	

**** These tests shall be conducted on one sample for the entire contract and duration of these tests shall be 14 days.**

Note: A few chipping of the PVC compound is slowly ignited on a porcelain dish or cubicle in a muffle furnace at about 60-degree C. The resulting ignited ash is boiled with a little ammonium acetate solution (10%). Place a drop of aqueous sodium sulphide solution on a thick filter paper and allow soaking. Touch the spot with a drop of above extract. A black spot indicates the presence of lead, the anti-termite and rodent compound.

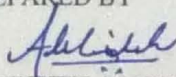
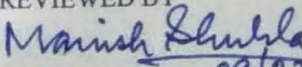
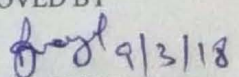
BHEL	PARTICULARS	BIDDER/ VENDOR	
	NAME		
	SIGNATURE		
	DATE		BIDDER'S / VENDORS COMPANY SEAL

	PRE-QUALIFICATION REQUIREMENTS FOR LT XLPE POWER CABLE	PE-PQ-999-507-E012
		REVISION NO. 04 DATE 05/03/2018
		SHEET NO. 1 OF 1

ITEMS : LT XLPE Power Cable	
SCOPE : Supply : YES; Erection & Commissioning : NO;	
1.0	Vendor should be a manufacturer of LT power cables.
2.0	Availability of test reports of tests on LT XLPE FRLS power cables to establish in-house capability to carry out all routine, type & acceptance tests as per relevant IS/ International Standards (except UV radiation & hydrolytic stability test which can be conducted at Govt. Lab/ Govt. approved Independent lab).
3.0	Capacity of manufacturing 200 km of LT Power cables per month.
4.0	Manufactured and supplied at least one (1) km of FRLS cables.
5.0	Manufactured and supplied LT Power cable sizes of minimum 240 sq. mm for 3/3.5 core and minimum 630 sq. mm for single core cable.
6.0	Manufactured & supplied at least 500 km of LT Power cables in one or more orders and at least 100 km in one single order.
7.0	Minimum two (2) nos. purchase orders for LT XLPE Power cables shall be submitted which should not be more than five (5) years old from the date of application for registration or date of techno- commercial bid opening (as applicable) for establishing continuity in business.

Notes (General points):

1. Consideration of offer shall be subject to customer's approval of bidders, if applicable.
2. Bidder to submit all supporting documents in English. If documents submitted by bidder are in language other than English, a self-attested English translated document should also be submitted.
3. Any other project specific requirement shall be as per Annexure-I and bidder shall submit relevant supporting documents. Bidder to meet criteria as stated above and as per Annexure- I.
4. Notwithstanding anything stated above, BHEL reserves the right to assess the capabilities and capacity of the bidder to perform the contract, should the circumstances warrant such assessment in the overall interest of BHEL.
5. After satisfactory fulfillment of all the above criteria/ requirement, offer shall be considered for further evaluation as per NIT and all the other terms of the tender.

PREPARED BY  ABHISHEK, MANAGER (CONVENOR) 09/03/18	REVIEWED BY  09/03/2018 MANISH SHUKLA, DGM (APPROVER)	APPROVED BY  09/3/18 RAJNISH GOYAL, AGM (DH)
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BHEL PEM-ELECTRICAL

PRE-QUALIFYING REQUIREMENTS FOR LT XLPE POWER CABLES

ANNEXURE – I

PROJECT SPECIFIC CRITERIA AGAINST ENQUIRY

RATE CONTRACT FOR LT XLPE POWER CABLES

The Vendor should have manufactured and supplied as on date 02.11.2015 the following:

- At least 100 km of aluminium conductor, XLPE insulated, PVC sheathed power cables of 1.1 kV or higher grade in one single contract.
- At least one (1) km of flame retardant low smoke cables.
- 1.1kV or higher grade power cable of minimum 630sq.mm. conductor size.

Note: In case of any conflicts of Project Specific PQR with Main PQR, vendor to furnish document meeting the stringent requirement between main PQR and project specific PQR.

[Signature]
26/07/19

[Dealing Engineer]

[Signature]
26/07/2019

[Controlling Officer]

[Signature]
26/07/19

[Section Head]

[Signature]
26/07/19

[DH-Electrical]

Ref: PW/PE/CMM-PVC Cables Packages (Rev-02)

Dated:19/02/2019

Note: Applicable for cable tenders released on or after 14/01/2019.

Price Variation Formulae for cables -Annexure-I

1. Prices shall be variable as per price variation formulae given below (basis IEEMA).
The price variation shall be limited to + 20% of total ex-works price actually supplied (cable size wise) and -ve price variation shall be unlimited. Rates for working out price variation shall be as per rates published by IEEMA for the factors given in Annexure-II

2. Base date for prices:

Initial Price (As per IEEMA) for- Alo, Cuo, CCo, PVCCo & Feo:

Base Date shall be- 1st working day of the previous month to the date of issue of tender enquiry.

Final Price (as per IEEMA) for- Al, Cu, Cc, PVCC & Fe:

1st working day of month, one month prior to the date on which cable is notified as being ready for inspection i.e TPIA inspection call raise date on web portal.

3. Variation factor value for ALF, CuF, CCFAL, CCFCu, XLFAL, XLFCu, FeF & FeW as applicable shall be as per Technical Specification.

4. PVC shall be payable within contractual delivery period (including any extension thereto).

IEEMA table for Price variation cause for various type of cable

1. Aluminium conductor cable

S.No	Cable Type	AIF (Single core unarmoured & Multi core armoured)	AIF (Single core armoured)	CCFAI	XLFAL (Single core)	XLFAL (Multi core)	FeF	FeW	IEEMA Formula
1.	HT XLPE Power cable	ALP	H1	H2	XL3	XL4	H3	H5	$P = P_o + AIF(AL - Alo) + XLFAL(CC - CCo) + CCFAI(PVCC - PVCCo) + FeF(Fe - Feo)$
2.	LT XLPE Power Cable	ALP	P1	L2	XL1	XL1	P3	P3 (Additional)	$P = P_o + AIF(AL - Alo) + XLFAL(CC - CCo) + CCFAI(PVCC - PVCCo) + FeF(Fe - Feo)$
3.	LT PVC Power Cable	ALP	P1	P2	-	-	P3	P3 (Additional)	$P = P_o + AIF(AL - Alo) + CCFAI(PVCC - PVCCo) + FeF(Fe - Feo)$
4.	LT HRPVC Power Cable	ALP	P1	P2	-	-	P3	P3 (Additional)	$P = P_o + AIF(AL - Alo) + CCFAI(PVCC - PVCCo) + FeF(Fe - Feo)$

2. Copper conductor cable

S no.	Cable type	CuF	AIF (single core armoured)	CCFCu	XLFCU (Single core)	XLFCU (Multi core)	FeF	FeW	IEEMA Formula
I	HT XLPE Power cable	CUP	H4	H2	XL3	XL4	H3	H5	$P = P_o + CuF(Cu - Cuo) + XLFCU(CC - CCo) + CCFCu(PVCC - PVCCo) + FeF(Fe - Feo) + AIF(AL - Alo)$
2	LT XLPE Power Cable	CUP	P4	L2	XL1	XL1	P3	P3 (Addit ional)	$P = P_o + CuF(Cu - Cuo) + XLFCU(CC - CCo) + CCFCu(PVCC - PVCCo) + FeF(Fe - Feo) + AIF(AL - Alo)$

S no.	Cable type	CuF	AIF (single core armoured)	CCFCu	XLFCU (Single core)	XLFCU (Multi core)	FeF	FeW	IEEMA Formula
3	LT PVC Power Cable	CUP	P4	P2	--	--	P3	P3 (Addit ional)	$P=Po+CuF(Cu-Cuo) + CCFCu (PVCC-PVCCo) + FeF(Fe-Feo) + AIF(AL-Alo)$
4	LT HRPVC Power Cable	CUP	P4	P2	--	--	P3	P3 (Addit ional)	$P=Po+CuF(Cu-Cuo) + CCFCu (PVCC-PVCCo) + FeF(Fe-Feo) + AIF(AL-Alo)$
5	LT XLPE Control Cable	CUC	--	P5	--	XL2	P6	P6 (Addit ional)	$P=Po+CuF(Cu-Cuo) + XLFCU(CC-CCo) + CCFCu (PVCC-PVCCo) + FeF(Fe-Feo)$
6	LT PVC Control Cable	CUC	--	P5	--	--	P6	P6 (Addit ional)	$P=Po+CuF(Cu-Cuo) + CCFCu (PVCC-PVCCo) + FeF(Fe-Feo)$
7	LT HRPVC Control Cable	CUC	--	P5	--	--	P6	P6 (Addit ional)	$P=Po+CuF(Cu-Cuo) + CCFCu(PVCC-PVCCo) + FeF(Fe-Feo)$
8	LT XLPE Fire Survival Power Cable	CUP	P4	L2	XL1	XL1	P3	P3 (Addit ional)	$P=Po+CuF(Cu-Cuo) + XLFCU(CC-CCo) + CCFCu (PVCC-PVCCo) + FeF(Fe-Feo) + AIF(AL-Alo)$
9	LT XLPE Fire Survival Control	CUC	--	P5	--	XL2	P6	P6 (Addit ional)	$P=Po+CuF(Cu-Cuo) + XLFCU(CC-CCo) + CCFCu (PVCC-PVCCo) + FeF(Fe-Feo)$
10	LT EPR Fire Survival Power Cable	CUP	P4	L2	--	--	P3	P3 (Addit ional)	$P=Po+CuF(Cu-Cuo) + CCFCu (PVCC-PVCCo) + FeF(Fe-Feo) + AIF(AL-Alo)$
11	LT EPR Fire Survival Control cable	CUC	--	P5	--	--	P6	P6 (Addit ional)	$P=Po+CuF(Cu-Cuo) + CCFCu (PVCC-PVCCo) + FeF(Fe-Feo)$
12	Screened control Cable (Overall screen)	Cu POS	--	--	--	--	Fe POS	Fe POS	$P=Po+CuF(Cu-Cuo) + FeF(Fe-Feo)$
13	Screened control Cable (Individual	Cu PIS	--	--	--	--	Fe PIS	Fe PIS	$P=Po+CuF(Cu-Cuo) + FeF(Fe-Feo)$

IEEMA Table for Price Variation Clause for various types of Cables**Notes:-**

- (i) Cu POS, Cu PIS, Fe POS & Fe PIS tables shall be as per IEEMA circular No. IEEMA (PVC) /Instrumentation Cable/2014 effective from dtd 01.07.2014.
- (ii) All other tables shall be as per IEEMA circular No. 35//DIV/CAB/05/ dated 24.04.2018.

Terms used in PVC formulae:

P = Price payable as adjusted in accordance with above appropriate formula (In Rs./Km).
 Po= Price quoted/confined (in Rs./km).

1. ALUMINIUM

ALF Variation factor for aluminium.
 Al =Price of aluminium.
 Alo = Price of aluminium.

2 COPPER

CuF =Variation factor for copper.
 Cu = Price of CC copper rods.
 Cuo = Price of CC copper rods.

3.PVCc COMPOUND/POLYMER

PVCc = Price of PVC compound.
 PVCco= Price of PVC compound.
 CCFAL= Variation factor for PVC compound/Polymer for aluminium conductor cable.
 CCFCu =Variation factor for PVC compound/Polymer for copper conductor cable.

4. XLPE COMPOUND

Cc = Price of XLPE compound.
 Cco= Price of XLPE compound.
 XLFAL= Variation factor for XLPE compound for aluminium conductor cable.
 XLFCu =Variation factor for XLPE compound for copper conductor cable.

5.STEEL

Fe= Price of steel strips/steel wire.
 Feo= Price of steel strips/steel wire.
 FeF =Variation factor for steel.
 FeW=Variation factor for round wire steel armouring.



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IEEMA (PVC)/Instrumentation Cable/2014

Effective from: 1st July 2014

Material Price Variation Clause For Instrumentation Cables

The Price quoted/confirmed is based on the input cost of raw materials/components as on the date of quotation, and the same is deemed to be related to the prices of raw materials as specified in the price variation clause given below. In case of any variation in these prices, the price payable shall be subject to adjustment up or down in accordance with the formulae provided in this document.

Terms used in price variation formulae:

P Price payable as adjusted in accordance with above appropriate formula (in Rs/Km)

P₀ Price quoted/confirmed (in Rs/Km)

COPPER

CuF Variation factor for copper

Cu Price of CC copper rods. This price is as applicable on first working day of the month, one month prior to the date of delivery.

Cu₀ Price of CC copper rods. This price is as applicable on first working day of the month, one month prior to the date of tendering.

STEEL

FeF Variation factor for steel

Fe Price of Steel Strips/steel wire. This price is as applicable on the first working day of the month, one month prior to the date of delivery.

Fe₀ Price of steel strips/steel wire. This price is as applicable on first working day of the month, one month prior to the date of tendering.

The above prices and indices are as published by IEEMA vide Circular reference IEEMA(PVC)/CABLE/--/prevailing as on 1st working day of the month i.e. one month prior to the date of tendering.

The date of delivery is the date on which the cable is notified as being ready for inspection/dispatch (in the absence of such notification, the date of manufacturer's dispatch note is to be considered as the date of delivery) or the contracted delivery date (including any agreed extension thereto), whichever is earlier.

Page 1 of 2

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IEEMA (PVC)/Instrumentation Cable/2014

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Notes

- (a) All prices of raw materials are exclusive of modvatable excise/CV duty amount and exclusive of any other central, state or local taxes, octroi, etc.
- (b) All Prices are as on first working day of the month.
- (c) The details of prices are as under:
 1. Price of CC copper rods (in Rs/MT) is ex-works price as quoted by the primary producer.
 2. Price of galvanized steel strip / steel wire (in Rs/MT) is ex-works price as quoted by the manufacturer for Round steel Wire and Flat steel strip (the relevant price of steel strip or steel wire is to be selected depending upon the type of armouring of the cable).

Price variation formula for 'Instrumentation Cables'

$$P = P_o + CuF (Cu - Cu_o) + FeF (Fe - Fe_o)$$

1. For Pair Instrumentation Over all Screen Cables

Tables References:

Cu POS Copper Factor
Fe POS Steel Factor

2. For Pair Instrumentation Individual and Over all Screen Cables

Tables References:

Cu PIS Copper Factor
Fe PIS Steel Factor

3. For Triad Instrumentation Over all Screen Cables

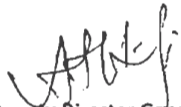
Tables References:

Cu TOS Copper Factor
Fe TOS Steel Factor

4. For Triad Instrumentation Individual & Overall Screen Cables

Tables References:

Cu TIS Copper Factor
Fe TIS Steel Factor


Deputy Director General
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Copper Factors for Instrumentation Cables - CuF

Cu POS

Pair Instrumentation Over all Screen Cables					
No. of Pairs Cable size in sq.mm	0.5 sq.mm	0.75 sq.mm	1.0 sq.mm	1.5 sq.mm	2.5 sq.mm
1	0.0142	0.0185	0.0233	0.0326	0.0500
2	0.0258	0.0345	0.0440	0.0625	0.0978
3	0.0353	0.0484	0.0626	0.0904	0.1433
4	0.0448	0.0623	0.0811	0.1183	0.1888
5	0.0578	0.0800	0.1022	0.1467	0.2356
6	0.0662	0.0926	0.1210	0.1768	0.2829
7	0.0756	0.1067	0.1378	0.2000	0.3245
8	0.0852	0.1204	0.1582	0.2327	0.3741
9	0.0933	0.1334	0.1734	0.2534	0.4134
10	0.1046	0.1485	0.1959	0.2893	0.4665
11	0.1111	0.1600	0.2089	0.3067	0.5023
12	0.1236	0.1764	0.2333	0.3452	0.5580
13	0.1289	0.1867	0.2445	0.3600	0.5912
14	0.1378	0.2000	0.2623	0.3867	0.6356
15	0.1467	0.2134	0.2800	0.4134	0.6801
16	0.1618	0.2322	0.3080	0.4573	0.7409
17	0.1645	0.2400	0.3156	0.4667	0.7690
18	0.1734	0.2534	0.3334	0.4934	0.8134
19	0.1822	0.2667	0.3512	0.5201	0.8579
20	0.1911	0.2800	0.3689	0.5467	0.9023
21	0.2000	0.2934	0.3867	0.5734	0.9468
22	0.2089	0.3067	0.4045	0.6001	0.9912
23	0.2178	0.3200	0.4223	0.6267	1.0357
24	0.2381	0.3437	0.4575	0.6813	1.1068
25	0.2356	0.3467	0.4578	0.6801	1.1246
26	0.2445	0.3600	0.4756	0.7068	1.1690
27	0.2534	0.3734	0.4934	0.7334	1.2135
28	0.2623	0.3867	0.5112	0.7601	1.2579
29	0.2711	0.4001	0.5290	0.7868	1.3024
30	0.2800	0.4134	0.5467	0.8134	1.3468
31	0.2889	0.4267	0.5645	0.8401	1.3913
32	0.2978	0.4401	0.5823	0.8668	1.4357
33	0.3067	0.4534	0.6001	0.8934	1.4802
34	0.3156	0.4667	0.6179	0.9201	1.5246
35	0.3245	0.4801	0.6356	0.9468	1.5691
36	0.3334	0.4934	0.6534	0.9735	1.6135
37	0.3423	0.5067	0.6712	1.0001	1.6580
38	0.3512	0.5201	0.6890	1.0268	1.7024
39	0.3600	0.5334	0.7068	1.0535	1.7469
40	0.3689	0.5467	0.7245	1.0801	1.7913
41	0.3778	0.5601	0.7423	1.1068	1.8358
42	0.3867	0.5734	0.7601	1.1335	1.8802
43	0.3956	0.5867	0.7779	1.1601	1.9247
44	0.4045	0.6001	0.7957	1.1868	1.9691
45	0.4134	0.6134	0.8134	1.2135	2.0136
46	0.4223	0.6267	0.8312	1.2402	2.0580
47	0.4312	0.6401	0.8490	1.2668	2.1025
48	0.4710	0.6759	0.9010	1.3410	2.2009

Copper Factors for Instrumentation Cables - CuF

Cu PIS

Pair Instrumentation Individual and Over all Screen Cables					
No. of Pairs Cable size in sq.mm	0.5 sq.mm	0.75 sq.mm	1.0 sq.mm	1.5 sq.mm	2.5 sq.mm
1	0.0133	0.0178	0.0222	0.0311	0.0489
2	0.0349	0.0437	0.0531	0.0717	0.1069
3	0.0490	0.0621	0.0763	0.1041	0.1570
4	0.0630	0.0806	0.0994	0.1389	0.2071
5	0.0800	0.1022	0.1245	0.1689	0.2578
6	0.0937	0.1200	0.1484	0.2042	0.3103
7	0.1067	0.1378	0.1689	0.2311	0.3556
8	0.1218	0.1569	0.1948	0.2692	0.4107
9	0.1334	0.1734	0.2134	0.2934	0.4534
10	0.1503	0.1943	0.2417	0.3349	0.5122
11	0.1600	0.2089	0.2578	0.3556	0.5512
12	0.1785	0.2313	0.2882	0.4001	0.6128
13	0.1867	0.2445	0.3023	0.4178	0.6490
14	0.2000	0.2623	0.3245	0.4489	0.6979
15	0.2134	0.2800	0.3467	0.4801	0.7468
16	0.2350	0.3053	0.3812	0.5305	0.8141
17	0.2400	0.3156	0.3912	0.5423	0.8446
18	0.2534	0.3334	0.4134	0.5734	0.8934
19	0.2667	0.3512	0.4356	0.6045	0.9423
20	0.2800	0.3689	0.4578	0.6356	0.9912
21	0.2934	0.3867	0.4801	0.6668	1.0401
22	0.3067	0.4045	0.5023	0.6979	1.0890
23	0.3200	0.4223	0.5245	0.7290	1.1379
24	0.3479	0.4535	0.5673	0.7911	1.2165
25	0.3467	0.4578	0.5690	0.7912	1.2357
26	0.3600	0.4756	0.5912	0.8223	1.2846
27	0.3734	0.4934	0.6134	0.8534	1.3335
28	0.3867	0.5112	0.6356	0.8846	1.3824
29	0.4001	0.5290	0.6579	0.9157	1.4313
30	0.4134	0.5467	0.6801	0.9468	1.4802
31	0.4267	0.5645	0.7023	0.9779	1.5291
32	0.4401	0.5823	0.7245	1.0090	1.5780
33	0.4534	0.6001	0.7468	1.0401	1.6269
34	0.4667	0.6179	0.7690	1.0712	1.6758
35	0.4801	0.6356	0.7912	1.1024	1.7247
36	0.4934	0.6534	0.8134	1.1335	1.7736
37	0.5067	0.6712	0.8357	1.1646	1.8225
38	0.5201	0.6890	0.8579	1.1957	1.8713
39	0.5334	0.7068	0.8801	1.2268	1.9202
40	0.5467	0.7245	0.9023	1.2579	1.9691
41	0.5601	0.7423	0.9246	1.2891	2.0180
42	0.5734	0.7601	0.9468	1.3202	2.0669
43	0.5867	0.7779	0.9690	1.3513	2.1158
44	0.6001	0.7957	0.9912	1.3824	2.1647
45	0.6134	0.8134	1.0135	1.4135	2.2136
46	0.6267	0.8312	1.0357	1.4446	2.2625
47	0.6401	0.8490	1.0579	1.4757	2.3114
48	0.6887	0.8936	1.1186	1.5587	2.4186

Steel Factors for Instrumentation Cables - FeF					
Fe POS					
Pair Instrumentation Over all Screen Cables					
No. of Pairs Cable size in sq.mm	0.5 sq.mm	0.75 sq.mm	1.0 sq.mm	1.5 sq.mm	2.5 sq.mm
1	0.1490	0.1565	0.1635	0.1735	0.1930
2	0.2190	0.2335	0.2470	0.2665	0.2595
3	0.2360	0.2545	0.2690	0.2900	0.2680
4	0.2390	0.2580	0.2715	0.2945	0.2830
5	0.2630	0.2820	0.2420	0.2805	0.3155
6	0.2840	0.3160	0.2805	0.2995	0.3430
7	0.2840	0.2595	0.2805	0.2995	0.3430
8	0.3235	0.2930	0.3030	0.3315	0.3780
9	0.2805	0.3180	0.3290	0.3590	0.4205
10	0.2970	0.3215	0.3455	0.3755	0.4385
11	0.3005	0.3255	0.3490	0.3805	0.4435
12	0.3055	0.3440	0.3680	0.3880	0.4520
13	0.3265	0.3530	0.3780	0.4105	0.4785
14	0.3265	0.3530	0.3780	0.4105	0.4785
15	0.3490	0.3765	0.4015	0.4365	0.5195
16	0.3490	0.3765	0.4015	0.4365	0.5195
17	0.3590	0.4005	0.4140	0.4635	0.5470
18	0.3590	0.4005	0.4265	0.4635	0.5470
19	0.3590	0.4005	0.4265	0.4635	0.5470
20	0.3830	0.4240	0.4535	0.4920	0.5760
21	0.3830	0.4240	0.4535	0.4920	0.5760
22	0.4065	0.4520	0.4785	0.5310	0.6190
23	0.4065	0.4520	0.4810	0.5310	0.6190
24	0.4305	0.4770	0.5070	0.5595	0.6475
25	0.4305	0.4770	0.5070	0.5595	0.6475
26	0.4305	0.4770	0.5070	0.5595	0.6475
27	0.4355	0.4820	0.5245	0.5660	0.6700
28	0.4570	0.5045	0.5345	0.5895	0.6950
29	0.4570	0.5045	0.5345	0.5895	0.6950
30	0.4570	0.5045	0.5345	0.5895	0.6950
31	0.4795	0.5285	0.5595	0.6150	0.7225
32	0.4820	0.5285	0.5595	0.6150	0.7225
33	0.4820	0.5285	0.5595	0.6150	0.7225
34	0.4920	0.5520	0.5835	0.6410	0.7500
35	0.4920	0.5520	0.5835	0.6410	0.7500
36	0.4920	0.5520	0.5835	0.6410	0.7500
37	0.4920	0.5520	0.5835	0.6410	0.7500
38	0.5145	0.5760	0.6225	0.6550	0.7805
39	0.5145	0.5760	0.6225	0.6550	0.7805
40	0.5145	0.5760	0.6225	0.6550	0.7805
41	0.5395	0.6025	0.6475	0.6975	0.8230
42	0.5395	0.6025	0.6475	0.6975	0.8230
43	0.5395	0.6025	0.6475	0.6975	0.8230
44	0.5635	0.6265	0.6735	0.7250	0.8540
45	0.5635	0.6265	0.6760	0.7250	0.8540
46	0.5635	0.6265	0.6760	0.7250	0.8540
47	0.5635	0.6265	0.6760	0.7250	0.8540
48	0.5635	0.6265	0.6760	0.7375	0.8665

Steel Factors for Instrumentation Cables - FeF

Fe PIS

Pair Instrumentation Individual and Over all Screen Cables

No. of Pairs Cable size in sq.mm	0.5 sq.mm	0.75 sq.mm	1.0 sq.mm	1.5 sq.mm	2.5 sq.mm
1	0.1880	0.1980	0.2070	0.2220	0.2410
2	0.2315	0.2460	0.2595	0.2815	0.2755
3	0.2505	0.2690	0.2820	0.2495	0.2830
4	0.2645	0.2830	0.2420	0.2805	0.3155
5	0.2895	0.2730	0.2805	0.3005	0.3430
6	0.2755	0.2980	0.3005	0.3280	0.3730
7	0.2755	0.2980	0.3005	0.3280	0.3730
8	0.2980	0.3215	0.3455	0.3740	0.4230
9	0.3230	0.3490	0.3730	0.4040	0.4685
10	0.3405	0.3655	0.3765	0.4215	0.4885
11	0.3430	0.3690	0.3815	0.4265	0.4945
12	0.3490	0.3765	0.4015	0.4470	0.5160
13	0.3715	0.3990	0.4255	0.4720	0.5420
14	0.3715	0.3990	0.4255	0.4720	0.5420
15	0.3955	0.4240	0.4510	0.5020	0.5720
16	0.3955	0.4240	0.4510	0.5020	0.5720
17	0.4190	0.4495	0.4795	0.5295	0.6150
18	0.4190	0.4495	0.4795	0.5295	0.6150
19	0.4190	0.4495	0.4795	0.5295	0.6150
20	0.4445	0.4770	0.5060	0.5570	0.6450
21	0.4445	0.4895	0.5060	0.5695	0.6450
22	0.4695	0.5045	0.5345	0.5870	0.6885
23	0.4695	0.5045	0.5345	0.5870	0.6885
24	0.4970	0.5310	0.5620	0.6285	0.7210
25	0.4970	0.5310	0.5620	0.6285	0.7210
26	0.4970	0.5310	0.5620	0.6285	0.7210
27	0.5035	0.5495	0.5810	0.6360	0.7410
28	0.5135	0.5610	0.6050	0.6610	0.7690
29	0.5135	0.5610	0.6050	0.6610	0.7690
30	0.5260	0.5610	0.6050	0.6610	0.7690
31	0.5495	0.5845	0.6300	0.6885	0.7990
32	0.5495	0.5845	0.6300	0.6885	0.7990
33	0.5495	0.5845	0.6300	0.6885	0.7990
34	0.5735	0.6225	0.6585	0.7285	0.8405
35	0.5735	0.6225	0.6585	0.7285	0.8405
36	0.5735	0.6225	0.6585	0.7285	0.8405
37	0.5735	0.6225	0.6585	0.7285	0.8405
38	0.5990	0.6485	0.6850	0.7575	0.8740
39	0.5990	0.6485	0.6850	0.7575	0.8740
40	0.5990	0.6485	0.6850	0.7575	0.8740
41	0.6250	0.6775	0.7135	0.7880	0.9180
42	0.6250	0.6775	0.7135	0.7880	0.9180
43	0.6250	0.6775	0.7135	0.7880	0.9180
44	0.6485	0.7050	0.7410	0.8165	0.9495
45	0.6485	0.7050	0.7410	0.8165	0.9495
46	0.6485	0.7050	0.7410	0.8165	0.9495
47	0.6485	0.7050	0.7410	0.8165	0.9495
48	0.6485	0.7050	0.7535	0.8290	0.9620



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Cir. No. 35/DIV/CAB/05/

24th April 2018

To Members of the Cable Division, Utilities, Railways & Listed purchasing organizations

Sub: Correction in PV formulae of LT XLPE Power Cable and addition of factors for HT XLPE Power Cables

We have recently published revised Price Variation Clause for LT&HT XLPE Power Cables and made it effective from 1st November 2017 vide Cir. No.111/DIV/CAB/05 dated 5th December 2017

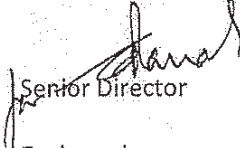
While replying to a query of a buyer it is observed that the polymer factor for LT XLPE Power Cables (both aluminium and copper) was incorrectly represented by Table P2.

We have now corrected the anomaly by correcting the PV formulae of LT XLPE Aluminium and Copper Insulated Cables (Sl. No. D & E) by representing Polymer factor by Table L2.

We have also worked out factors for XLPE, Copper and Steel for 3 core HT XLPE Power Cables for 500 and 630 sq.mm.

We now enclose complete PV clause of Cable by including all the PV formulae of different types of power cable (Sl. No. A to I), polymer factor Table L2 and updated XL4, H2 and H5 Table of factors for your perusal & record.

We request to replace PV clause of Cable already circulated vide Cir. 111/DIV/CAB/05 dated 5th December 2017 with the enclosed PV clause in your records for future use.


 Senior Director
 Encl: as above

prasad partners in implementation



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IEEMA (PVC)/CABLE(R-1)/2017**Effective from: 1st November 2017****Material Price Variation Clause For PVC And XLPE Insulated Cables**

The Price quoted/confirmed is based on the input cost of raw materials/components as on the date of quotation, and the same is deemed to be related to the prices of raw materials as specified in the price variation clause given below. In case of any variation in these prices, the price payable shall be subject to adjustment up or down in accordance with the formulae provided in this document.

Terms used in price variation formulae:

P Price payable as adjusted in accordance with above appropriate formula (in Rs/Km)

Po Price quoted/confirmed (in Rs/Km)

ALUMINIUM

AIF Variation factor for aluminium

AI Price of Aluminium. This price is as applicable of first working day of the month, one month prior to the date of delivery.

Alo Price of aluminium. This price is as applicable on first working day of the month, one month prior to the date of tendering.

COPPER

CuF Variation factor for copper

Cu Price of CC copper rods. This price is as applicable on first working day of the month, one month prior to the date of delivery.

Cuo Price of CC copper rods. This price is as applicable on first working day of the month, one month prior to the date of tendering.

PVC COMPOUND

PVCc price of PVC compound. This price is as applicable on first working day of the month, one month prior to the date of delivery.

PVCco Price of PVC compound. This price is as applicable on first working day of the month, one month prior to the date of tendering.

CCFAI Variation factor for PVC compound/Polymer for aluminum conductor cable.

CCFCu Variation factor for PVC compound/Polymer for copper conductor cable.

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IEEMA (PVC)/CABLE(R-1)/2017
XLPE COMPOUND

Effective from: 1st November 217

Cc price of XLPE compound. This price is as applicable on first working day of the month, one month prior to the date of delivery.

Cco Price of XLPE compound. This price is as applicable on first working day of the month, one month prior to the date of tendering.

XLFAL Variation factor for XLPE compound for aluminum conductor cable.

XLFCU Variation factor for XLPE compound for Copper conductor cable.

STEEL

FeF Variation factor for steel

FeW Variation factor for round wire steel armouring

Fe Price of Steel Strips/steel wire. This price is as applicable on the first working day of the month, one month prior to the date of delivery.

Feo Price of steel strips/steel wire. This price is as applicable on first working day of the month, one month prior to the date of tendering.

The above prices and indices are as published by IEEMA vide Circular reference IEEMA (PVC)/CABLE R(1)/--/-- prevailing as on 1st working day of the month i.e. one month prior to the date of tendering.

The date of delivery is the date on which the cable is notified as being ready for inspection/dispatch (in the absence of such notification, the date of manufacturer's dispatch note is to be considered as the date of delivery) or the contracted delivery date (including any agreed extension thereto), whichever is earlier.

Notes

- (a) All prices of raw materials are exclusive of GST amount.
- (b) All prices excluding Aluminium & Copper are as on first working day of the month.
- (c) The details of prices are as under:

1. Price of Aluminium is LME average Cash SELLER Settlement price of Primary Aluminium in US\$ per MT as published by London Metal Bulletin (LME) including Premium for Aluminium Ingot in US\$ per MT is converted in Indian Rs./MT.
2. Price of PVC Compound (in Rs/MT) is the ex-works price, as quoted by the manufacturer.
3. Price of XLPE Compound (in Rs/MT) is the ex-works price, as quoted by the manufacturer
4. Price of CC copper rods (in Rs/MT) is ex-works price as quoted by the primary producer.
5. Price of galvanized steel strip / steel wire (in Rs/MT) is ex-works price as quoted by the manufacturer for Round steel Wire and Flat steel strip (the relevant price of steel strip or steel wire is to be selected depending upon the type of armouring of the cable).

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Effective from: 1st November 217

Price variation formulae for 'Power Cables'

A. Aluminum conductor PVC insulated 1.1 kV power cables

$$P = P_o + AIF (AL - ALo) + CCFAI (PVCc - PVCco) + FeF (Fe - Feo)$$

For unarmoured multicore cables (without steel armour); FeF = 0

Table References:

ALP	Aluminium conductor in single core unarmoured & multicore cables
P1	Aluminium conductor aluminium armour in single core armoured cables
P2	PVC compound
P3	Steel armour

B. Copper conductor PVC insulated 1.1 kV power cables

$$P = P_o + CuF (Cu - Cuo) + CCFCu (PVCc - PVCco) + FeF (Fe - Feo) + AIF (Al - ALo)$$

For steel armoured cables; AIF = 0 For aluminium armoured cables; FeF = 0

For unarmoured cables; FeF, AIF = 0

Tables References:

CUP	Copper conductor
P2	PVC compound
P3	Steel armour
P4	Aluminium armour

C. Copper conductor PVC insulated 1.1 kV control cables

$$P = P_o + CuF (Cu - Cuo) + CCFCu (PVCc - PVCco) + FeF (Fe - Feo)$$

For unarmoured cables; FeF = 0

Tables References:

CUC	Copper conductor
P5	PVC compound
P6	Steel armour

D. Aluminum conductor XLPE insulated 1.1 kV power cables

$$P = P_o + AIF (AL - ALo) + XLFAL (CC - Cco) + CCFAI (PVCc - PVCco) + FeF (Fe - Feo)$$

For unarmoured multicore cables (without steel armour); FeF = 0

Table References:

ALP	Aluminium conductor in single core unarmoured & multicore cables
P1	Aluminium conductor aluminium armour in single core armoured cables
L2	Polymer (CCFAI)
P3	Steel armour
XL1	XLPE Compound (XLFAL)

E. Copper conductor XLPE insulated 1.1 kV power cables

$$P = P_o + CuF (Cu - Cuo) + XLFCU (CC - Cco) + CCFCu (PVCc - PVCco) + FeF (Fe - Feo) + AIF (Al - ALo)$$

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For steel armoured cables; AIF = 0 For aluminium armoured cables; FeF = 0

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For unarmoured cables; FeF, AIF = 0

Tables References:

CUP	Copper conductor
L2	Polymer (CCFCu)
P3	Steel armour
P4	Aluminium armour
XL1	XLPE Compound (XLFCu)

F. Copper conductor XLPE insulated 1.1 kV control cables

$$P = P_o + CuF (Cu - Cu_o) + XLFCU (CC-Cco) + CCFCu (PVCc-PVCco) + FeF (Fe-Fe_o)$$

For unarmoured cables; FeF = 0

Tables References:

CUC	Copper conductor
P5	PVC compound
P6	Steel armour
XL2	XLPE Compound

G. For Aluminium conductor XLPE insulated 3.3 to 33 kV power cables

$$P = P_o + AIF (Al - Al_o) + XLFAL (CC-Cco) + CCFAI (PVCc - PVCco) + FeF (Fe - Fe_o)$$

For unarmoured multicore cables (without steel armour); FeF = 0

Table References:

ALP	Aluminium conductor in single core unarmoured & multicore cables
H1	Aluminium conductor + aluminium armour in single core armoured cables
H2	Polymer
H3/H5	Steel armour (Flat/Round)
XL3/XL4	XLPE Compound (Single core /Multicore)

H. Copper conductor XLPE Insulated 3.3 to 33 kV power cables

$$P = P_o + CuF (Cu - Cu_o) + XLFCU (CC-Cco) + CCFCu (PVCc - PVCco) + FeF (Fe - Fe_o) + AIF (Al - Al_o)$$

For steel armoured cables; AIF = 0 For aluminium armoured cables; FeF = 0

For unarmoured cables; FeF, AIF = 0

Table References:

CUP	Copper conductor
H2	Polymer
H3/H5	Steel armour (Flat/Round)
H4	Aluminium armour
XL3/XL4	XLPE Compound (Single core /Multicore)

I. Copper conductor XLPE insulated 1.0 and 1.5 kV Solar PV DC cables

$$P = P_o + CuF (Cu - Cu_o)$$

Table CUdc Copper Conductor

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TABLE ALP

VARIATION FACTOR FOR ALUMINIUM (AIF)
POWER CABLES WITH ALUMINIUM CONDUCTOR
(EXCLUDING SINGLE CORE ARMoured CABLES)

Nominal Cross Sectional Area (in Sq. mm.)	1 core	2 core	3 core	3.5 core	4 core
2.5	0.007	0.014	0.021	-	0.028
4	0.011	0.023	0.034	-	0.046
6	0.017	0.034	0.052	-	0.069
10	0.029	0.053	0.087	-	0.116
16	0.046	0.091	0.137	-	0.183
25/16	0.073	0.146	0.219	0.262	0.292
35/16	0.101	0.202	0.302	0.345	0.404
50/25	0.137	0.273	0.410	0.478	0.547
70/35	0.197	0.395	0.593	0.687	0.791
95/50	0.274	0.548	0.821	0.949	1.095
120/70	0.346	0.691	1.035	1.221	1.382
150/70	0.425	0.853	1.279	1.464	1.706
185/95	0.533	1.070	1.605	1.861	2.140
225/120	0.655	1.310	1.965	2.287	2.620
240/120	0.703	1.400	2.099	2.421	2.799
300/150	0.879	1.757	2.635	3.033	3.514
400/185	1.126	2.249	3.374	3.873	4.498
500	1.418	2.838	4.256	-	5.675
630	1.828	3.663	5.494	-	7.326
800	2.340	4.679	7.018	-	9.357
1000	2.951	5.890	8.834	-	11.779

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TABLE CUP

VARIATION FACTOR FOR COPPER CONDUCTOR (CUF)
POWER CABLES WITH COPPER CONDUCTOR

Nominal Cross Sectional Area (in Sq. mm.)	1 core	2 core	3 core	3.5 core	4 core
2.5	0.023	0.046	0.069	-	0.092
4	0.036	0.076	0.112	-	0.151
6	0.056	0.112	0.171	-	0.227
10	0.095	0.174	0.286	-	0.382
16	0.151	0.299	0.451	-	0.602
25/16	0.240	0.480	0.720	0.862	0.960
35/16	0.332	0.664	0.993	1.135	1.329
50/25	0.451	0.898	1.348	1.572	1.799
70/35	0.648	1.299	1.950	2.260	2.602
95/50	0.901	1.802	2.700	3.121	3.601
120/70	1.138	2.273	3.407	4.016	4.545
150/70	1.398	2.806	4.207	4.815	5.611
185/95	1.753	3.519	5.279	6.121	7.038
225/120	2.154	4.309	6.463	7.522	8.617
240/120	2.312	4.605	6.904	7.963	9.206
300/150	2.891	5.779	8.667	9.976	11.558
400/185	3.703	7.397	11.097	12.738	14.794
500	4.664	9.334	13.998	-	18.665
630	6.012	12.048	18.070	-	24.095
800	7.696	15.389	23.082	-	30.775
1000	9.706	19.372	29.055	-	38.741

TABLE CU_{sd}c

VARIATION FACTOR FOR COPPER CONDUCTOR (CUF)
1.0 & 1.5KV Solar PV DC Cables with Copper Conductor

Cable Size in sq.mm.	Copper content in MT/km
2.5	0.023
4	0.038
6	0.058
10	0.090

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TABLE CUC

**VARIATION FACTOR FOR COPPER CONDUCTOR (CUF)
CONTROL CABLES WITH COPPER CONDUCTOR**

No of Cores	Core size 1.5 sq mm	Core size 2.5 sq mm
2	0.026	0.047
3	0.039	0.070
4	0.052	0.094
5	0.065	0.117
6	0.078	0.141
7	0.091	0.164
8	0.110	0.182
9	0.117	0.205
10	0.130	0.235
12	0.157	0.282
14	0.183	0.329
16	0.209	0.376
18	0.246	0.410
19	0.248	0.446
20	0.260	0.456
24	0.313	0.563
27	0.352	0.634
30	0.391	0.704
37	0.483	0.869
44	0.573	1.033
52	0.678	1.221
61	0.796	1.432

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TABLE P1

VARIATION FACTOR FOR ALUMINIUM (AIF)
ALUMINIUM ARMoured SINGLE CORE PVC INSULATED 1.1 KV CABLES

Nominal cross sectional area (in Sq.mm)	Aluminium factor for Aluminium armoured cable with aluminium conductor
4	0.0685
6	0.0795
10	0.1017
16	0.1303
25	0.1693
35	0.2090
50	0.2597
70	0.3360
95	0.4567
120	0.5443
150	0.6427
185	0.7743
240	0.9737
300	1.2582
400	1.5502
500	1.8958
630	2.3650
800	2.9306
1000	3.7666

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TABLE P2

VARIATION FACTOR FOR PVC COMPOUND (CCFAI/CCFCu)
PVC INSULATED 1.1 KV POWER CABLES WITH COPPER/ALUMINIUM CONDUCTOR

Nominal cross Sectional Area (in Sq. mm)	1 core	2 core		3 core		3.5 core		4 core	
	Unarm	Unarm	arm	Unarm	arm	Unarm	arm	Unarm	arm
2.5	0.079	0.125	0.139	0.141	0.157	-	-	0.161	0.179
4	0.094	0.140	0.156	0.164	0.182	-	-	0.188	0.209
6	0.101	0.154	0.171	0.179	0.199	-	-	0.198	0.220
10	0.114	0.194	0.216	0.214	0.238	-	-	0.249	0.277
16	0.142	0.234	0.246	0.279	0.290	-	-	0.328	0.345
25	0.171	0.288	0.303	0.364	0.383	0.422	0.444	0.443	0.466
35	0.189	0.321	0.338	0.403	0.429	0.489	0.515	0.498	0.524
50	0.211	0.411	0.433	0.508	0.535	0.613	0.645	0.647	0.681
70	0.241	-	-	0.613	0.645	0.707	0.744	-	-
95	0.284	-	-	0.795	0.811	0.908	0.927	-	-
120	0.339	-	-	0.866	0.884	1.024	1.045	-	-
150	0.388	-	-	1.070	1.092	1.289	1.315	-	-
185	0.450	-	-	1.310	1.337	1.499	1.530	-	-
225	0.521	-	-	1.586	1.618	1.840	1.878	-	-
240	0.534	-	-	1.649	1.683	1.990	2.031	-	-
300	0.653	-	-	2.007	2.048	2.361	2.409	-	-
400	0.770	-	-	2.437	2.487	2.616	2.669	-	-
500	0.936	-	-	3.117	3.181	3.687	3.762	-	-
630	1.175	-	-	-	-	-	-	-	-
800	1.433	-	-	-	-	-	-	-	-
1000	1.642	-	-	-	-	-	-	-	-

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Effective from: 1st November 2017

TABLE P3

VARIATION FACTOR FOR STEEL (FeF)
PVC INSULATED 1.1 KV POWER CABLES WITH COPPER/ALUMINIUM CONDUCTOR

Nominal Cross sectional Area (in Sq. mm)	2 core	Shape	3 core	Shape	3 ½ core	Shape	4 core	Shape
4	0.305	W	0.335	W	-	-	0.363	W
6	0.348	W	0.363	W	-	-	0.407	W
10	0.392	W	0.407	W	-	-	0.293	F
16	0.235	F	0.293	F	-	-	0.323	F
25	0.293	F	0.352	F	0.382	F	0.382	F
35	0.323	F	0.382	F	0.411	F	0.440	F
50	0.382	F	0.440	F	0.469	F	0.499	F
70	0.411	F	0.499	F	-	F	0.587	F
95	0.499	F	0.587	F	0.616	F	0.645	F
120	0.528	F	0.616	F	0.675	F	0.731	F
150	0.587	F	0.675	F	0.731	F	0.790	F
185	0.645	F	0.761	F	0.820	F	0.879	F
240	0.731	F	0.879	F	0.937	F	0.996	F
300	0.820	F	0.966	F	1.055	F	1.113	F
400	0.937	F	1.083	F	1.172	F	1.231	F
500	1.055	F	1.231	F	1.348	F	1.406	F
630	1.172	F	-	-	-	-	-	-

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TABLE P3 (Additional)

Effective from: 1st November 217

VARIATION FACTOR FOR ROUND WIRE 'W' STEEL (FeF)
PVC INSULATED 1.1 KV POWER CABLES WITH COPPER/ALUMINIUM CONDUCTOR

Nominal Cross Sectional Area (in sq. mm)	2 Core	3 Core	3.5 Core	4 Core
1.5	0.247	0.259		0.288
2.5	0.273	0.289		0.329
4	0.305	0.335		0.363
6	0.348	0.363		0.407
10	0.392	0.407		0.533
16	0.439	0.523	0.014	0.573
25	0.526	0.625	0.664	0.685
35	0.591	0.685	0.729	0.761
50	0.661	0.790	0.864	1.108
70	0.745	1.122	1.200	1.256
95	1.085	1.286	1.376	1.443
120	1.147	1.386	1.479	1.562
150	1.267	1.526	1.684	2.173
185	1.403	2.090	2.315	2.421
240	1.994	2.397	2.641	2.722
300	2.180	2.642	3.670	3.842
400	2.987	3.728	4.126	4.292
500	3.517	4.226	5.958	6.301
630	4.774	6.018	6.737	7.141

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TABLE P4

VARIATION FACTOR FOR ALUMINIUM (AIF)
PVC INSULATED 1.1 KV POWER CABLES WITH COPPER CONDUCTOR

Nominal Cross Sectional Area (in Sq. mm)	Aluminium Factor for Aluminium armoured cable with copper conductor
4	0.058
6	0.063
10	0.073
16	0.084
25	0.096
35	0.108
50	0.123
70	0.139
95	0.183
120	0.198
150	0.218
185	0.241
240	0.271
300	0.379
400	0.424
500	0.478
630	0.537
800	0.591
1000	0.816

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TABLE P5

VARIATION FACTOR FOR PVC COMPOUND (CCFCu)
PVC INSULATED CONTROL CABLES WITH COPPER CONDUCTOR

No of cores	Core size 1.5 sq mm		Core size 2.5 sq mm	
	Unarm	Arm	Unarm	Arm
2	0.118	0.121	0.125	0.139
3	0.121	0.131	0.141	0.157
4	0.137	0.152	0.161	0.179
5	0.157	0.174	0.187	0.206
6	0.179	0.199	0.234	0.260
7	0.179	0.199	0.234	0.260
8	0.193	0.215	0.292	0.325
9	0.216	0.241	0.300	0.335
10	0.236	0.262	0.303	0.337
12	0.249	0.277	0.334	0.371
14	0.311	0.327	0.389	0.409
16	0.344	0.362	0.435	0.458
18	0.352	0.371	0.474	0.500
19	0.375	0.395	0.476	0.501
20	0.391	0.412	0.519	0.546
24	0.457	0.481	0.584	0.615
27	0.491	0.517	0.631	0.664
30	0.529	0.557	0.706	0.743
37	0.615	0.647	0.835	0.879
44	0.739	0.778	1.019	1.026
52	0.845	0.889	1.100	1.158
61	0.952	1.002	1.246	1.312

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Effective from: 1st November 2017

TABLE P6

VARIATION FACTOR FOR STEEL (FeF)
PVC INSULATED CONTROL CABLES WITH COPPER CONDUCTOR

No of cores	Core size 1.5 sq mm	Shape of armour	Core size 2.5 sq mm	Shape of armour
2	0.243	W	0.277	W
3	0.257	W	0.289	W
4	0.277	W	0.314	W
5	0.303	W	0.342	W
6	0.329	W	0.379	W
7	0.329	W	0.379	W
8	0.341	W	0.456	W
9	0.383	W	0.275	F
10	0.408	W	0.325	F
12	0.289	F	0.342	F
14	0.306	F	0.360	F
16	0.317	F	0.372	F
18	0.332	F	0.350	F
19	0.343	F	0.397	F
20	0.368	F	0.400	F
24	0.398	F	0.475	F
27	0.414	F	0.478	F
30	0.425	F	0.503	F
37	0.461	F	0.548	F
44	0.507	F	0.601	F
52	0.556	F	0.641	F
61	0.585	F	0.685	F

IEEMA (PVC)/CABLE(R-1)/2017
TABLE P6 (Additional)

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VARIATION FACTOR FOR ROUND WIRE 'W' STEEL (FeF)
PVC INSULATED CONTROL CABLES WITH COPPER CONDUCTOR

No. of Cores	Core size 1.5 sq mm	Core size 2.5 sq mm
2	0.243	0.273
3	0.257	0.289
4	0.277	0.314
5	0.303	0.342
6	0.329	0.379
7	0.329	0.379
8	0.341	0.456
9	0.383	0.508
10	0.408	0.535
12	0.510	0.572
14	0.546	0.625
16	0.581	0.660
19	0.608	0.696
24	0.714	0.819
25	0.679	0.798
27	0.732	0.837
28	0.696	0.815
30	0.758	0.881
33	0.747	0.883
37	0.820	1.217
44	0.926	1.355
48	1.122	1.308
50	1.122	1.308
52	1.149	1.361
56	1.202	1.388
61	1.299	1.520

IEEMA (PVC)/CABLE(R-1)/2017

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TABLE L2

VARIATION FACTOR FOR POLYMER (CCFAI / CCFCu)
XLPE INSULATED 1.1 KV POWER CABLES WITH COPPER / ALUMINIUM CONDUCTOR

Nominal Cross Sectional Area (in Sq. mm)	1 core	2 core		3 core		3.5 core		4 core	
	Unarm	Unarm	Arm	Unarm	Arm	Unarm	Arm	Unarm	Arm
2.5	0.055	0.163	0.175	0.166	0.177	-	-	0.177	0.188
4	0.075	0.201	0.204	0.205	0.213	-	-	0.218	0.213
6	0.085	0.213	0.234	0.205	0.230	-	-	0.242	0.232
10	0.082	0.252	0.280	0.217	0.251	-	-	0.285	0.298
16	0.089	0.278	0.341	0.289	0.246	-	-	0.300	0.279
25	0.101	0.307	0.278	0.276	0.247	0.295	0.264	0.331	0.290
35	0.109	0.330	0.319	0.305	0.270	0.328	0.292	0.368	0.319
50	0.124	0.482	0.685	0.348	0.311	0.372	0.335	0.422	0.394
70	0.146	0.354	0.335	0.469	0.397	0.489	0.420	0.528	0.464
95	0.163	0.436	0.389	0.504	0.441	0.544	0.471	0.591	0.523
120	0.176	0.475	0.421	0.556	0.498	0.599	0.538	0.722	0.656
150	0.217	0.510	0.490	0.690	0.611	0.717	0.633	0.840	0.762
185	0.236	0.631	0.608	0.836	0.738	0.854	0.756	1.007	0.899
240	0.273	0.750	0.726	1.002	0.842	1.079	0.952	1.238	1.119
300	0.303	0.919	0.887	1.161	1.012	1.170	1.031	1.457	1.414
400	0.372	1.093	1.040	1.376	1.283	1.545	1.379	1.778	1.626
500	0.413	1.342	-	1.568	1.400	1.806	1.456	-	-
630	0.469	1.546	-	-	-	-	-	-	-
800	0.569	-	-	-	-	-	-	-	-
1000	0.667	-	-	-	-	-	-	-	-

IEEMA (PVC)/CABLE(R-1)/2017

Effective from: 1st November 217

TABLE XL1
VARIATION FACTOR FOR XLPE COMPOUND (XLFAL/XLFUCU)
XLPE INSULATED 1.1 KV POWER CABLES WITH COPPER/ALUMINIUM CONDUCTOR

Nominal cross Sectional Area (in Sq. mm)	1 core		2 core		3 core		3.5 core		4 core	
	Unarm	Arm	Unarm	Arm	Unarm	arm	Unarm	Arm	Unarm	arm
2.5	0.007	0.010	0.014	0.014	0.021	0.021			0.028	0.028
4	0.009	0.012	0.018	0.018	0.027	0.027			0.036	0.036
6	0.010	0.015	0.022	0.022	0.033	0.033			0.043	0.043
10	0.013	0.018	0.025	0.025	0.039	0.039			0.053	0.053
16	0.016	0.023	0.034	0.034	0.049	0.049			0.065	0.065
25	0.021	0.030	0.048	0.048	0.070	0.070	0.084	0.084	0.093	0.093
35	0.025	0.035	0.059	0.059	0.084	0.084	0.099	0.099	0.112	0.112
50	0.033	0.044	0.075	0.075	0.108	0.108	0.130	0.130	0.144	0.144
70	0.042	0.054	0.095	0.095	0.137	0.137	0.160	0.160	0.179	0.179
95	0.048	0.062	0.110	0.110	0.160	0.160	0.190	0.190	0.211	0.211
120	0.060	0.076	0.138	0.138	0.200	0.200	0.239	0.239	0.266	0.266
150	0.078	0.095	0.180	0.180	0.259	0.259	0.296	0.296	0.344	0.344
185	0.097	0.116	0.224	0.224	0.324	0.324	0.369	0.369	0.430	0.430
240	0.116	0.137	0.266	0.266	0.388	0.388	0.446	0.446	0.518	0.518
300	0.138	0.164	0.325	0.325	0.467	0.467	0.540	0.540	0.620	0.620
400	0.175	0.214	0.357	0.357	0.536	0.536	0.619	0.619	0.714	0.714
500	0.217	0.260	0.440	0.440	0.660	0.660	0.769	0.769	0.880	0.880
630	0.265	0.318	0.542	0.542	0.814	0.814	0.941	0.941	1.085	1.085
800	0.323	0.389								
1000	0.375	0.444								

IEEMA (PVC)/CABLE(R-1)/2017

Effective from: 1st November 217

TABLE XL2
VARIATION FACTOR FOR XLPE COMPOUND (XLFCU)
XLPE INSULATED CONTROL CABLES WITH COPPER CONDUCTOR

No of cores	Core size 1.5 sq mm		Core size 2.5 sq mm	
	Unarm	Arm	Unarm	Arm
2	0.010	0.010	0.012	0.012
3	0.016	0.016	0.018	0.018
4	0.021	0.021	0.025	0.025
5	0.026	0.026	0.031	0.031
6	0.031	0.031	0.037	0.037
7	0.036	0.036	0.043	0.043
8	0.036	0.036	0.043	0.043
9	0.042	0.042	0.049	0.049
10	0.052	0.052	0.061	0.061
12	0.062	0.062	0.074	0.074
14	0.073	0.073	0.086	0.086
16	0.083	0.083	0.098	0.098
18	0.094	0.094	0.110	0.110
19	0.099	0.099	0.116	0.116
20	0.104	0.104	0.123	0.123
24	0.125	0.125	0.147	0.147
27	0.140	0.140	0.165	0.165
30	0.156	0.156	0.184	0.184
37	0.192	0.192	0.227	0.227
44	0.229	0.229	0.270	0.270
52	0.270	0.270	0.319	0.319
61	0.317	0.317	0.374	0.374

IEEMA (PVC)/CABLE(R-1)/2017

Effective from: 1st November 217

TABLE XL3

VARIATION FACTOR FOR XLPE(XLFAL/XLFUCU)

SINGLE CORE ARMoured /UNARMoured XLPE INSULATED 3.3 to 33 KV POWER CABLES WITH
CU / AL CONDUCTOR

Nominal Cross Sectional Area (in Sq. mm.)	XLPE Factor for Armoured/ Unarmoured Cable with AL /CU Conductor					
	3.3 KV	6.6 KV (E)	11 KV (E)/ 6.6 KV (UE)	11 KV (UE)	22 KV (E)	33 KV (E)
25	0.110	0.131	0.170	0.279		
35	0.122	0.137	0.175	0.284	0.317	0.522
50	0.135	0.151	0.191	0.307	0.341	0.563
70	0.155	0.172	0.215	0.342	0.379	0.615
95	0.174	0.193	0.241	0.377	0.417	0.670
120	0.192	0.212	0.262	0.407	0.449	0.713
150	0.209	0.229	0.283	0.437	0.481	0.757
185	0.228	0.250	0.308	0.471	0.518	0.809
240	0.255	0.279	0.343	0.519	0.569	0.883
300	0.280	0.322	0.372	0.560	0.613	0.943
400	0.326	0.392	0.420	0.625	0.683	1.041
500	0.388	0.461	0.469	0.694	0.757	1.142
630	0.467	0.520	0.529	0.777	0.845	1.265
800	0.567	0.593	0.602	0.874	0.949	1.407
1000	0.656	0.665	0.660	0.955	1.036	1.525

Note : XLPE factors include Semicons for Conductor & Insulation screen

TABLE - XL4

VARIATION FACTOR FOR XLPE (CCF1A/ / CCF1Cu)

3 CORE XLPE INSULATED 3.3 to 33 KV POWER CABLES WITH COPPER / ALUMINIUM CONDUCTOR

Nominal Cross Sectional Area (in Sq. mm)	3.3 KV ARM	6.6 KV (E) ARM	6.6 KV (UE) / 11 KV (E) ARM	11 KV (UE) ARM	22 KV (E) ARM	33 KV (E) ARM
25	0.315	0.394	0.511	0.838		
35	0.339	0.427	0.545	0.880	0.982	1.638
50	0.378	0.474	0.600	0.957	1.065	1.751
70	0.435	0.541	0.679	1.067	1.183	1.916
95	0.489	0.604	0.755	1.171	1.295	2.071
120	0.537	0.661	0.822	1.265	1.396	2.210
150	0.585	0.719	0.890	1.359	1.497	2.350
185	0.642	0.784	0.968	1.468	1.614	2.513
240	0.717	0.873	1.074	1.615	1.773	2.732
300	0.781	1.006	1.167	1.744	1.928	2.919
400	0.886	1.227	1.314	1.948	2.130	3.229
500	0.956	1.421	1.446	2.148	2.381	3.538
630	1.129	1.582	1.609	2.382	2.630	3.940

Note : XLPE factors include Semicons for Conductor & Insulation screen

TABLE H1
VARIATION FACTOR FOR ALUMINIUM (AIF)
ALUMINIUM ARMoured SINGLE CORE XLPE INSULATED 3.3 TO 33 KV CABLES

Nominal Cross Sectional Area (in Sq. mm.)	Aluminium Factor for Aluminium Armoured Cable with Aluminium Conductor					
	3.3 KV	6.6 KV (E)	11 KV (E)/ 6.6 KV (UE)	11 KV (UE)	22 KV (E)	33 KV (E)
35	0.251	0.284	0.301	0.344	0.358	0.473
50	0.312	0.336	0.352	0.397	0.408	0.672
70	0.385	0.409	0.423	0.469	0.501	0.723
95	0.476	0.500	0.518	0.637	0.656	0.856
120	0.561	0.586	0.601	0.726	0.744	0.949
150	0.653	0.678	0.696	0.823	0.842	1.050
185	0.773	0.797	0.893	0.949	0.965	1.183
240	0.997	1.063	1.083	1.139	1.154	1.387
300	1.209	1.271	1.283	1.333	1.307	1.753
400	1.438	1.556	1.565	1.620	1.636	2.046
500	1.873	1.901	1.910	2.110	2.128	2.484
630	2.337	2.361	2.369	2.580	2.595	2.978
800	3.007	3.071	3.080	3.145	3.163	3.588
1000	3.737	3.741	3.749	3.804	3.822	4.565

TABLE H2
VARIATION FACTOR FOR POLYMER (CCFAI / CCFCu)
3 CORE XLPE INSULATED 3.3 to 33 KV POWER CABLES WITH COPPER / ALUMINIUM CONDUCTOR

Nominal Cross Sectional Area (in Sq. mm)	3.3 KV ARM	6.6 KV (E) ARM	6.6 KV (UE) / 11 KV (E) ARM	11 KV (UE) ARM	22 KV (E) ARM	33 KV (E) ARM
35	0.374	0.990	1.142	1.604	1.782	-
50	0.445	1.119	1.260	1.834	2.046	2.864
70	0.547	1.290	1.396	2.011	2.284	3.219
95	0.594	1.440	1.647	2.269	2.428	3.367
120	0.732	1.692	1.877	2.498	2.715	3.646
150	0.812	1.906	2.061	2.767	2.931	3.927
185	0.960	2.086	2.406	3.028	3.180	4.166
240	1.130	2.484	2.744	3.398	3.580	4.589
300	1.219	2.912	3.161	3.840	4.016	5.029
400	1.313	3.530	3.664	4.353	4.666	5.736
500	1.652	3.925	3.971	4.621	4.878	5.913
630	1.949	4.487	4.982	5.225	5.477	6.696

Fillers added in PVC consumption

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Effective from: 1st November 217

TABLE H3
VARIATION FACTOR FOR STEEL (FeF)
XLPE INSULATED 3.3 TO 33 KV POWER CABLES WITH COPPER / ALUMINIUM CONDUCTOR

Nominal Cross Sectional Area Sq. mm.	3.3 KV	6.6 KV (E)	11 KV (E) / 6.6 KV (UE)	11 KV (UE)	22 KV (E)	33 KV (E)
25	0.551	0.604	0.656	0.814		
35	0.645	0.645	0.731	0.879	0.937	-
50	0.675	0.703	0.761	0.937	0.966	1.181
70	0.761	0.761	0.849	0.996	1.055	1.289
95	0.820	0.849	0.907	1.083	1.113	1.348
120	0.879	0.907	0.966	1.142	1.172	1.406
150	0.966	0.966	1.055	1.201	1.259	1.494
185	1.025	1.055	1.113	1.259	1.318	1.553
240	1.142	1.142	1.231	1.377	1.406	1.641
300	1.231	1.259	1.318	1.465	1.524	1.758
400	1.348	1.406	1.435	1.582	1.641	1.876

IEEMA (PVC)/CABLE(R-1)/2017

Effective from: 1st November 217

TABLE H4
VARIATION FACTOR FOR ALUMINIUM (AIF)
XLPE INSULATED SINGLE CORE 3.3 TO 33 KV POWER CABLES WITH COPPER CONDUCTOR

Nominal Cross Sectional Area (in Sq. mm.)	Aluminium Factor for Aluminium Armoured Cable with Copper Conductor					
	3.3 KV	6.6 KV (E)	11 KV (E)/ 6.6 KV (UE)	11 KV (UE)	22 KV (E)	33 KV (E)
35	0.153	0.187	0.204	0.247	0.258	0.372
50	0.179	0.203	0.220	0.262	0.275	0.425
70	0.196	0.219	0.233	0.278	0.311	0.444
95	0.213	0.237	0.254	0.373	0.392	0.470
120	0.228	0.253	0.268	0.393	0.410	0.488
150	0.243	0.269	0.287	0.414	0.432	0.504
185	0.261	0.285	0.381	0.437	0.455	0.526
240	0.324	0.389	0.410	0.465	0.480	0.556
300	0.365	0.428	0.440	0.490	0.510	0.737
400	0.432	0.471	0.480	0.536	0.552	0.783
500	0.489	0.517	0.526	0.726	0.744	0.844
630	0.544	0.568	0.572	0.787	0.801	0.902
800	0.706	0.787	0.797	0.862	0.880	0.982
1000	0.824	0.865	0.867	0.923	0.940	1.324

TABLE - H5
VARIATION FACTOR FOR STEEL (FeW)
XLPE INSULATED 3.3KV TO 33 KV POWER CABLES WITH COPPER / ALUMINIUM CONDUCTOR

Nominal Cross Sectional Area in Sq. mm	3.3/3.3 KV	3.3/6.6 KV	11 KV (E) / 6.6 KV (UE)	11 KV (UE)	22 KV (E)	33 KV (E)
25	1.258	1.457	1.612	2.509	1.503	--
35	1.361	1.569	1.853	2.644	2.797	2.517
50	1.682	1.687	2.321	2.800	2.921	4.569
70	2.033	1.979	2.503	3.219	3.347	4.809
95	2.202	2.507	2.718	4.019	4.200	5.437
120	2.371	2.675	2.882	4.241	4.416	6.713
150	2.870	2.847	3.265	4.447	4.621	6.976
185	3.121	3.309	4.148	4.726	5.289	7.356
240	3.758	4.227	4.442	5.442	6.651	7.718
300	4.099	5.024	5.182	6.894	7.084	8.187
400	5.750	6.572	6.658	7.433	7.657	8.760
500	6.716	6.777	6.861	7.588	7.797	8.830
630	7.492	7.465	7.477	8.209	8.386	9.413

GST related Corrigendum to GCC Rev 06

Clause Ref:	Existing Clause as:	Replaced/ New Clause as:
Clause No.4 of GCTC (General commercial terms and conditions)	TAXES AND DUTIES 4.1 EXCISE DUTY 4.1.1 Seller/ Contractor is required to ensure that excise duty including cess, if any, is quoted as per the existing tariff on the date of the offer and all benefits as per existing rules have been considered. 4.1.2 Excise duty actually incurred by Seller/ Contractor on self-manufactured items alone shall be reimbursed against documentary evidence. Excise duty paid by Purchaser on inputs, bought out items, raw materials and components consigned directly to site from sources other than Seller/ Contractor's factory/ works shall be included by the bidder in the quoted basic price. 4.1.3 If excise duty is paid under protest or dispute, it shall not be reimbursed till the dispute is settled. If the Seller/ Contractor claims/ obtains any refund of the excise duty paid, the same shall be refunded to the Purchaser immediately 4.1.4 Invoice cum Excise duty gate pass (Excise Invoice) should contain the name of the ultimate consignee as per Order/ Contract/ Special Conditions of Contract. 4.1.5 If required by Purchaser, the Seller / Contractor will provide a certificate stating that CENVAT benefit has been availed of on the inputs and the same has been passed on to the Purchaser. 4.1.6 Excise duty shall be paid at actuals against documentary evidence but restricted to the amount and percentage indicated in the Order/ Contract. 4.2 SALES TAX / VALUE ADDED TAX (VAT) 4.2.1 Central Sales Tax / Value Added Tax shall be reimbursed only if the same is paid by the Seller / Contractor to the respective Govt. authorities on direct sales by the Seller/ Contractor to the Purchaser, meeting all statutory requirements and availing all exemptions/ concessions under the respective Central Sales Tax / Value Added Tax Acts. The offer should clearly indicate CST/ VAT percentage and the total	TAXES AND DUTIES 4.1 CGST/SGST/UTGST/IGST 4.1.1 Seller/ Contractor is required to ensure that CGST/SGST/UTGST/IGST (whichever is applicable) is quoted as per the existing tariff on the date of the offer and all benefits as per existing laws have been considered. 4.1.2 It is the responsibility of the seller/contractor to issue the Tax Invoice strictly as per the format prescribed under the relevant applicable GST law (CGST Act/SGST Act/UTGST Act/IGST Act). Vendor to indicate the proper GSTN Registration/ HSN code in their tax invoice. 4.1.3 The purchaser is registered in the State of Uttar Pradesh vide following GST registration number: 09AAACB4146P22C 4.1.4 Seller/contractor is required to mention the above registration number in their tax invoice unless stated otherwise in NIT/SCC. 4.1.5 CGST/SGST/UTGST/IGST shall be paid at actuals against Tax Invoice but restricted to the amount and percentage in the order/contract

GST related Corrigendum to GCC Rev 06

	amount along with concessional form(s), if any. 4.2.2 Purchaser is registered in NOIDA, U.P. vide following Registration Numbers: Central Sales Tax Registration No. : ND – 5341151 w.e.f. 01-07-2006 UP Trade Tax Registration No. : ND – 0345307 w.e.f. 01-07-2006 UP TIN No. : 09765702874 4.2.3 Central Sales Tax/ Value Added Tax shall be reimbursed, as per tariff applicable, but restricted to the percentage and amount shown in the Order/ Contract. If it is shown as included in the quoted price/ not applicable, it will not be reimbursed by the Purchaser. 4.2.4 Purchaser proposes to make sale-in-transit under section 6 (2) (b) of Central Sales Tax Act where goods movement is inter-state. Form-C shall be issued and exchanged against Form-E1/E2 based on quarterly transactions. Seller/Contractor is required to submit his request in the format enclosed at Annexure-VI within 30 days from end of the Quarter, giving State-wise invoice details. 4.2.5 VAT invoices, in format prescribed by the respective State Sales Tax Act, have to be submitted in the name of Nodal Agency specified in Special Conditions of Contract. 4.3 SERVICE TAX 4.3.1 Service Tax paid by the Service Provider /contractor to the Government authorities directly shall only be reimbursed at actuals against documentary evidence, but restricted to the rate and amount mentioned in the order/contract. The offer should clearly indicate the percentage and the total amount of service tax. 4.3.2 Service provider/Contractor to ensure their registration for “Intended Service” to be provided, before claiming Service tax under the “intended category”. Decision of BHEL shall be final w.r.t. the “Intended category” in which the service will be falling. 4.3.3 If required by the Purchaser, the Service Provider/Contractor will provide a certificate stating that “CENVAT Benefit has been availed of on the input and the	4.2 OTHER TAXES & LEVIES 4.2.1 All taxes/duties/Cess other than CGST/SGST/UTGST/IGST shall be deemed to be included in the Ex-Works prices unless specified otherwise by the bidder in the price bid. No variation in other taxes and duties shall be payable by Purchaser. 4.3 CUSTOMS DUTY
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GST related Corrigendum to GCC Rev 06

	same has been passed on to the purchaser” or “CENVAT Benefit has not been availed of on the inputs”. 4.4 OTHER TAXES & LEVIES All taxes and duties other than Excise Duty, Sales Tax/ VAT, Service Tax shall be deemed to be included in the Ex-Works prices unless specified otherwise by the bidder in the price bid. No variation in other taxes and duties shall be payable by Purchaser. However, statutory variation in Octroi will be payable extra against documentary evidence. 4.5 CUSTOMS DUTY 4.5.1 Customs Duty element for imported items as per Special Conditions of Contract shall be included in the Ex-Works prices. No variation in customs duty and exchange rate for imported items shall be payable by Purchaser. 4.5.2 Seller/ Contractor shall arrange for his own import license, if required, since Purchaser will not provide any import license. Therefore, Seller/ Contractor alone shall be responsible for any delay in getting import license or non-availability of the same or completion of other related formalities. Purchaser shall not be responsible for any financial liability, whatsoever, on this account. 4.5.3 Essentiality Certificate or Project Authority Certificate (PAC) as per Import Policy, if required to avail concessional customs duty, shall be clearly specified in the offer. Import content (CIF value in rupees) with list of items, quantity, foreign currency, country of origin etc., shall be submitted by the bidder as part of Price bid. 4.6 DIRECT TAX 4.6.1 Purchaser shall not be liable towards income tax of whatever nature including variations thereof, arising out of this Order/ Contract, as well as tax liability of the Seller/ Contractor and his personnel.	4.3.1 Customs Duty/IGST/Goods and Services compensation cess under Goods and Services Tax (Compensation to States) Act, 2017 element for imported items as per Special Conditions of Contract shall be included in the Ex-Works prices. 4.3.2 Seller/ Contractor shall arrange for his own import license, if required, since Purchaser will not provide any import license. Therefore, Seller/ Contractor alone shall be responsible for any delay in getting import license or non-availability of the same or completion of other related formalities. Purchaser shall not be responsible for any financial liability, whatsoever, on this account. 4.3.3 Essentiality Certificate or Project Authority Certificate (PAC) as per Import Policy, if required to avail concessional customs duty, shall be clearly specified in the offer. Import content (CIF value in rupees) with list of items, quantity, foreign currency, Country of origin etc., shall be submitted by the bidder as part of Price bid. 4.4 DIRECT TAXES 4.4.1 Purchaser shall not be liable towards income tax of whatever nature including variations thereof, arising out of this Order/ Contract, as well as tax liability of the Seller/ Contractor and his personnel. 4.4.2 Deductions of Tax at source at the prevailing rates shall be effected by the Purchaser before release of payment, as a statutory obligation, if applicable. TDS certificate will be issued by the Purchaser as per statutory provisions
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GST related Corrigendum to GCC Rev 06

	4.6.2 Deductions of Tax at source at the prevailing rates shall be effected by the Purchaser before release of payment, as a statutory obligation, if applicable. TDS certificate will be issued by the Purchaser as per statutory provisions.	
	5.0 STATUTORY VARIATION 5.1 If the rates for taxes and duties in respect of the quoted materials and/ or services assumed by the Seller/ Contractor are less than the tariff prevailing at the time of tendering, Seller/ Contractor will be responsible for such under quotations. However, if the rates assumed are higher than the correct rates prevailing at the time of tendering, the difference will be to the credit of the Purchaser. 5.2 Statutory Variations in Excise Duty, Service Tax and Central Sales Tax/ Value Added Tax only on self-manufactured items/ services rendered by vendor himself on the rates prevailing at the time of delivery/ completion in comparison to the date of offer, will be to the account of the Purchaser. No other variations such as on customs duty, exchange rate, minimum wages, prices of controlled commodities, any other input etc. shall be payable by the Purchaser. 5.3 Notwithstanding the above, where the actual completion of the supply occurs beyond the period stipulated in the Order/ Contract or any extension thereof, variations referred to above, will be limited to the rates prevailing on the dates of such agreed completion periods only. For variations after the agreed completion periods, the Seller/ Contractor alone shall bear the impact for the upward revisions and for downward revisions; purchaser shall be given the benefit of reduction in taxes/ duties. This will be without prejudice to the levy of penalty for delay in delivery/ completion schedule. 5.4 Any new tax structure (like Goods & Services Tax) as and when implemented by the Government shall become applicable in addition to or in lieu of existing tax structure.	5.0 STATUTORY VARIATION 5.1 Statutory variation for CGST/SGST/UGST/IGST is available provided the actual completion of supply does not occur beyond the period stipulated in the order/contract or any extension (without levy of penalty). 5.2 For variation after the agreed completion periods, the seller/contractor alone shall bear the impact for the upwards revisions and adjust the price in their basic price in such a manner that total price with tax matches with the ex-works with taxes of Purchase Order/Contract. For downward revisions, purchaser shall be given the benefit of reduction in CGST/SGST/UGST/IGST. This will be without prejudice to the levy of penalty for delay in delivery/completion schedule. 5.4 No other variations such as on Custom Duty, exchange rate, minimum wages, prices of controlled commodities, any other input etc. shall be payable by the purchaser.

GST related Corrigendum to GCC Rev 06

Clause 8	8.0 TRANSPORTATION & FREIGHT CHARGES 8.1 All dispatches shall be through road carriers approved by Purchaser/ Bank, on freight pre-paid basis. 8.2 Road permit/ entry permit, if required as per law of the State, shall be arranged by Purchaser. 8.3 Freight charges (including Service Tax) shall be payable after delivery of the goods at the project site, on receipt of MRC or receipted LR on pro-rata basis.	8.0 TRANSPORTATION & FREIGHT CHARGES 8.1 All dispatches shall be through road carriers approved by Purchaser/ Bank, on freight pre-paid basis. 8.2 Road Permit/E-way bill, if required, will be arranged by Supplier.
	9.0 TERMS OF PAYMENT 9.1 SUPPLY PACKAGES 9.1.1 Ninety percent (90%) of basic price of materials supplied, as per PO, along with 100% taxes and duties (as applicable), shall be paid against receipt of material at site on pro-rata basis. 9.1.2 Ten percent (10%) of basic price of materials supplied will be released on pro-rata basis after receipt of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser, on submission of all final documents for the packages as detailed below, duly certified by Engg. Deptt. of purchaser, and submission of Form E1/ E2 against Form-C, if applicable. List of packages with required final documents is as per Annexure-X. 9.2 SUPPLY PACKAGES WITH PERFORMANCE GUARANTEE / DEMONSTRATION TEST AT SITE IN VENDOR'S SCOPE 9.2.1 Eighty Five percent (85%) of basic price of materials supplied, as per PO / approved billing schedule, along with 100% taxes and duties (as applicable), shall be paid against receipt of material at site on pro-rata basis. 9.2.2 Ten percent (10%) of basic price of materials supplied will be released on pro-rata basis after receipt of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser and submission of Form E1/ E2 against Form-C, if applicable. 9.2.3 Five percent (5%) of the total basic price of materials and PG/ Demonstration test charges shall be released after submission of all final documents as per Technical	9.0 TERMS OF PAYMENT 9.1 SUPPLY PACKAGES Payment of basic price of materials supplied alongwith freight and taxes and duties (as applicable), shall be paid against receipt of material at site on pro-rata basis. 10% of basic price of materials supplied will be retained as security deposit which will be released on pro – rata basis after receipt of Material Receipt Certificate (MRC) from project site engineer of owner/purchaser on submission of all the final documents for the packages as detailed below, duly certified by engineering department of purchaser. List of packages with required final documents is as per Annexure-X. 9.2 Supply packages with performance guarantee/demonstration test at site in vendor's scope Payment of basic price of materials supplied, as per PO/ as per approved billing schedule, along with freight and taxes and duties (as applicable), shall be paid against receipt of material at site on pro-rate basis. 15% of basic price of materials supplied will be retained as security deposit which will be released on pro – rata basis as details below: a) 10% will be released after receipt of Material Receipt Certificate (MRC) from project site engineer of owner/purchaser.

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Specifications and successful completion of the Performance Guarantee (PG)/ Demonstration Test at site. Note: If the Performance Guarantee/ Demonstration Test is not conducted up to 24 months from supply completion for reasons not attributable to the vendor, then last 5% payment will be released against Bank Guarantee of an equivalent amount, valid for 12 months. This bank guarantee will be in addition to Contract Performance Bank Guarantee for 10% of the contract value (excluding taxes, duties and freight). 9.3 SUPPLY PAYMENT FOR TURNKEY PACKAGES (E&C IN VENDOR'S SCOPE) 9.3.1 Eighty Five percent (85%) of basic price of materials supplied, as per approved billing schedule, along with 100% taxes and duties (as applicable), shall be paid against receipt of material at site on pro-rata basis. OR i) Five percent (5%) lump sum payment of total basic price (excluding taxes, duties & freight) against approval of design documents and quality plan as certified by Engineering. Design documents and quality plan shall be as defined in the Technical Specifications. ii) Eighty percent (80%) of basic price of materials supplied, as per approved billing schedule, along with 100% taxes and duties (as applicable), shall be paid against receipt of material at site on pro-rata basis. 9.3.2 Five percent (5%) of basic price of materials supplied along with freight, if applicable, will be released on pro-rata basis after submission of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser and submission of Form E1/ E2 against Form-C, if applicable. Collection of Material Receipt Certificate from Site/ Owner and its submission for claiming the payment shall be the responsibility of the Seller/ Contractor. 9.3.3 Ten percent (10%) of the total basic price shall be released after i) submission of all final documents as per Technical Specifications and ii) successful completion of	b) 5% will be released after submission of final documents as per technical specification and successful completion of the performance guarantee (PG)/ Demonstration test at site. Note: If the Performance Guarantee/ Demonstration Test is not conducted up to 24 months from supply completion for reasons not attributable to the vendor, then 5% security deposit will be released against Bank Guarantee of an equivalent amount, valid for 12 months. This bank guarantee will be in addition to Contract Performance Bank Guarantee for 10% of the contract value (excluding taxes, duties and freight). 9.3 SUPPLY PAYMENT FOR TURNKEY PACKAGES (E&C IN VENDOR'S SCOPE) 9.3.1 Payment of basic price of materials supplied, as per approved billing schedule, along with freight, taxes and duties (as applicable), shall be paid against receipt of material at site on pro-rata basis. 15% of basic price of materials supplied will be retained as security deposit which will be released on pro – rata basis as details below: a) 5% will be released on pro-rata basis after submission of Material Receipt Certificate (MRC) from project site engineer of owner/purchaser. Collection of Material Receipt Certificate from site/owner and its submission for claiming the payment shall be the responsibility of the Seller/Contractor. b) 10% will be released after i) submission of all final documents as per Technical Specifications and ii) successful completion of Performance Guarantee (PG)/ Demonstration Test and handing over of the system/ package, if applicable, as per Order/ Contract
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	Performance Guarantee (PG)/ Demonstration Test and handing over of the system/ package, if applicable, as per Order/ Contract. 9.4 ERECTION & COMMISSIONING PAYMENT FOR TURNKEY PACKAGES 9.4.1 Eighty percent (80%) payment on pro-rata basis for the work completed, as per approved billing schedule, shall be released by Site authorities/ Region on submission of protocols, duly signed by BHEL Site/ Owner. 9.4.2 Ten percent (10%) of the total value shall be released by Site authorities/ Region on successful commissioning of the complete system/ package. 9.4.3 Ten percent (10%) of the total value shall be released by Site authorities/ Region on successful completion of PG/ Demonstration test(s) and handing over system/ package to the Owner, as applicable. 9.5 PG TEST, INSTALLATION CHECK, SUPERVISION OF ERECTION / COMMISSIONING CHARGES 100% payment shall be released after successful completion of the activity, on Site certification. 9.6 Vendors shall submit documents for payment directly to BHEL. Payment will be released within 60 days after receipt of complete documents as per order/ contract (45 days for vendors qualified and registered as Micro or Small as per MSMED Act). To be eligible for payment as Micro and Small category, vendors shall submit annual certification for validation from designated authority under MSMED Act or Chartered Accountant within first quarter of every financial year. . <u>Note:</u> 1) For indigenous suppliers, if the documents are routed through Bank, then all bank charges will be to vendor's account. 2) Foreign bidders can opt for payment (less agency commission, if applicable) through irrevocable and unconfirmed letter of credit. In that case for	9.4 ERECTION & COMMISSIONING PAYMENT FOR TURNKEY PACKAGES 9.4.1 Eighty percent (80%) payment on pro-rata basis for the work completed, as per approved billing schedule, shall be released by Site authorities/ Region on submission of protocols, duly signed by BHEL Site/ Owner. 9.4.2 Ten percent (10%) of the total value shall be released by Site authorities/ Region on successful commissioning of the complete system/ package. 9.4.3 Ten percent (10%) of the total value shall be released by Site authorities/ Region on successful completion of PG/ Demonstration test(s) and handing over system/ package to the Owner, as applicable. 9.5 PG TEST, INSTALLATION CHECK, SUPERVISION OF ERECTION / COMMISSIONING CHARGES 100% payment shall be released after successful completion of the activity, on Site certification. 9.6 Vendors shall submit documents for payment directly to BHEL. Payment will be released within 60 days after receipt of complete documents as per order/ contract (45 days for vendors qualified and registered as Micro or Small as per MSMED Act). <u>Note:</u> 1) Vendors are required to issue Tax Invoice inclusive of PVC value (if applicable) wherever indices are available. 2) For indigenous suppliers, if the documents are routed through Bank,
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GST related Corrigendum to GCC Rev 06

	evaluation purpose, prices of foreign bidders will be loaded on account of payment through LC, equal to loading specified against 'Payment through Bank' in Annexure-VIII. No loading will be done if foreign vendors agree for 90 days usance LC or submit the documents on collection basis for payment within 90 days of submission of complete documents. 3) LC opening/ negotiation/ confirmation charges will be to vendor's account. 4) Form C/ E1/E2 are not applicable for foreign bidders. 5) In extreme case of vendors not agreeing to link 10% payment with submission of Form E1/ E2 against Form-C as above, their prices will be loaded as per Annexure-VIII. 6) Any negative PVC, if not adjusted in earlier payments, will be adjusted at the time of MRC payment. 7) Payment terms for mandatory spares shall be as per clause 9.1.	then all bank charges will be to vendor's account. 3) Foreign bidders can opt for payment (less agency commission, if applicable) through irrevocable and unconfirmed letter of credit. In that case for evaluation purpose, prices of foreign bidders will be loaded on account of payment through LC, equal to loading specified against 'Payment through Bank' in Annexure-VIII. No loading will be done if foreign vendors agree for 90 days usance LC or submit the documents on collection basis for payment within 90 days of submission of complete documents. 4) LC opening/ negotiation/ confirmation charges will be to vendor's account. 5) Payment terms for mandatory spares shall be as per clause 9.1. 9.7 The applicable TDS under CGST/SGST/UGST/IGST/ Goods and Services (Compensation to States) Act will be deducted from the payments. 9.8 Other clauses 1. Vendor/Supplier will intimate & upload the Tax invoice along with LR/RR(as applicable) on web portal & intimate BHEL immediately on removal of goods from vendor/supplier works. In case of Services, Vendor is required to upload the Tax invoice on Web Portal immediately after raising the invoice. BHEL will issue the delivery order/instruction to dispatch the material to the customer as indicated in SCC. 2. All payments against Tax Invoice to vendors/contractors shall be released only after:
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GST related Corrigendum to GCC Rev 06

		a) Vendor/contractor declaring such invoice in GSTR-1 within the prescribed timeline as per the relevant Act. b) The tax component charged by the vendor in the invoice should be matched with the details uploaded by vendor in GSTR-1. c) Confirmation of payment of GST thereon by vendor on GSTN portal 3. In case, any GST credit is delayed/denied to BHEL due to non/delayed receipt of goods and/or tax invoice or expiry to timeline prescribed in the relevant Act for availing such ITC, or any other reasons not attributable to BHEL, tax amount shall be recoverable from the vendor/contractor along with interest levied/leviable on BHEL. 4. Wherein GST liability arises on BHEL under reverse charge, any interest levied/leviable due to any reasons not attributable to BHEL shall be recovered from the vendor/contractor.
Clause 9	9.7 DOCUMENTS TO BE SUBMITTED BY VENDOR 9.7.1 For Recognition of Dispatch Copy of the following documents by e-mail/ fax immediately on despatch: a. Invoice b. LR along with Delivery Order c. Packing List d. Insurance Intimation e. Dispatch Clearance 9.7.2 For Claiming Payments (under clause 9.1.1, 9.2.1, 9.3.1): a. Invoice – original+1 copy b. Receipted LR (signed & stamped)/ confirmation from site regarding receipt of packages/ Boxes original/ copy	9.7 All same a. to be replaced with “GST compliant invoice” in 9.7.1, 9.7.2, 9.7.3 Modification in the clause Duty drawback documents “As per applicable law” (original+1 copy.)

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	c. Delivery order- 2 copies d. Packing List - clearly showing number of packages, gross weight and net weight. - original+1 copy e. MDCC from BHEL/ Customer – as per SCC – 2 copies f. Guarantee Certificate – Original + 1 copy g. Insurance Intimation - 2 copies CQIR / Inspection Reports – Original+1 copy i. PVC Calculation and copy of all applicable indices, if PVC applicable. – 2 copies j. Duty drawback documents (original excise invoice, original disclaimer certificate, original certificate from excise authority for payment of excise duty), if applicable. – original + 1copy 9.7.3 For Claiming Freight Payment a. Invoice – Original + 1 copy b. Receipted LR (signed & stamped)/ confirmation from site regarding receipt of packages/ Boxes original/ copy c. Transporter's document indicating the freight amount. Original money receipt to be submitted if required as per SCC. 9.7.4 For Claiming MRC Payment a. Invoice – Original + 1 copy b. Copy of MRC 9.7.5 For Claiming Payment for Services involving Service Tax a. Invoice as per rule 4A of Service Tax Act – Original + 1 copy b. Copy of Service Tax registration certificate c. Copy of challan for Service Tax payment	
Clause 3.0 Instruction to bidders	Total erection & commissioning charges including service tax should be minimum 20% (or as specified in NIT) of the total quoted package price (excluding mandatory spares but including all taxes and freight), failing which the break-up of prices shall be adjusted accordingly for ordering.	Total erection & commissioning charges including applicable tax but excluding freight along with GST should be minimum 20% (or as specified in NIT) of the total quoted package price (excluding mandatory spares but including all taxes and freight), failing which the break-up of prices shall be adjusted accordingly for ordering.

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Clause 16.0 Instruction to bidder	For deviations w.r.t. Payment terms, Liquidated damages, Firm prices and submission of E1/ E2 forms before claiming 10% payment, if a bidder chooses not to give any cost of withdrawal of deviation loading as per Annexure-VIII will apply.	For deviations w.r.t. Payment terms, Liquidated damages, Firm prices before claiming 10% payment, if a bidder chooses not to give any cost of withdrawal of deviation loading as per Annexure-VIII will apply.
Clause 16.0 of GCTC	Purchaser reserves the right to recover from the Seller/ Contractor, as agreed liquidated damages and not by way of penalty, a sum equivalent to half ($\frac{1}{2}$) percent of the total contract price per week or part thereof, subject to a maximum of ten (10) percent of the total contract price excluding elements of taxes, duties and freight, if the Seller/ Contractor fails to deliver any part of the ordered stores within the period stipulated in the Order/ Contract. For Turnkey packages (Supply and E&C in vendor's scope), Liquidated Damages shall be levied on the total contract value of both Supply and E&C orders (excluding taxes, duties and freight) if E&C completion of the package is delayed beyond the contractual completion date or extension thereof. Liquidated Damages will not be withheld from supply payment. LR/ GR/ RR date for indigenous supplies and AWB/ BL date for FOB contracts shall be treated as the date of dispatch for levying LD as per Clause 16. However, for indigenous supply if receipted LR date is beyond three months from the date of LR, such excess period shall also be considered for LD purpose. 2. In case of any amendment/ revision, LD shall be linked to the amended/ revised contract value and delivery date(s)	Purchaser reserves the right to recover from the Seller/ Contractor, as agreed liquidated damages and not by way of penalty, a sum equivalent to half ($\frac{1}{2}$) percent plus applicable GST of the total contract price per week or part thereof, subject to a maximum of ten (10) percent of the total contract price excluding elements of taxes, duties and freight, if the Seller/ Contractor fails to deliver any part of the ordered stores within the period stipulated in the Order/ Contract. For Turnkey packages (Supply and E&C in vendor's scope), Liquidated Damages shall be levied on the total contract value of both Supply and E&C orders (excluding taxes, duties and freight) if E&C completion of the package is delayed beyond the contractual completion date or extension thereof. Liquidated Damages will not be withheld from supply payment. LR/ GR/ RR/ eway bill date for indigenous supplies and AWB/ BL date for C&F contracts shall be treated as the date of dispatch for levying LD as per Clause 16. However, for indigenous supply if receipted LR/eway bill date is beyond three months from the date of LR/e-way bill, such excess period shall also be considered for LD purpose. 2. In case of any amendment/ revision, LD shall be linked to the amended/ revised contract value and delivery date(s)

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Deviation sheet- Cost of Withdrawal	Point no-9 For deviations w.r.t. Payment terms, Liquidated damages, Firm prices and submission of E1/ E2 forms before claiming 10% payment, if a bidder chooses not to give any cost of withdrawal of deviation loading as per Annexure-VIII of GCC, Rev-06 will apply. For any other deviation mentioned in un-priced copy of this format submitted with Part-I bid but not mentioned in priced copy of this format submitted with Priced bid, the cost of withdrawal of deviation shall be taken as NIL.	For deviations w.r.t. Payment terms, Liquidated damages, Firm prices before claiming 10% payment, if a bidder chooses not to give any cost of withdrawal of deviation loading as per Annexure-VIII of GCC, Rev-06 will apply. For any other deviation mentioned in un-priced copy of this format submitted with Part-I bid but not mentioned in priced copy of this format submitted with Priced bid, the cost of withdrawal of deviation shall be taken as NIL.
Annexure-VI		Deleted
Annexure-VIII		Following changes in annexure-8, (remaining portion of annex-8 is same): C) LIQUIDATED DAMAGES If maximum limit asked for is 10% or 5% of Undelivered Portion – 10% value of the total quoted price including GST & freight. If maximum limit asked is less than 10 % of contract value loading shall be to the extent to which not agreed by bidder (at offered value) . E) DEVIATION TO SUBMISSION OF FORM E1/ E2 BEFORE CLAIMING 10% PAYMENT 10% of Ex-Works supply value.
New clauses:		
a) In case of discrepancy in CGST/SGST/UTGST/IGST rate corresponding to HSN ;code and quotes rates, the evaluation shall be done on quoted price and correct CGST/SGST/UTGST/IGST rate shall be considered for ordering (limited to quoted FOR Site Price) b) The bidder should have been registered with the appropriate authority under relevant GST laws. c) The bidder to specify in their offer (part 1 bid) the category of registration under GST i.e. registered dealer and composite dealer d) No CGST/SGST/UTGST/IGST will be reimbursed to composite dealer. In the event of any GST quoted by composite dealer, the same shall be considered for evaluation purpose. However, the ordering will be done without considering the tax. e) In the event of any change in the status of vendor from composite to regular dealer after the submission of the bid but before the supply, no reimbursement of CGST/SGST/UTGST/IGST will be made. However, the vendor has to raise the invoice strictly, as per the law, by adjusting their ex-works price.		



PRE - QUALIFYING REQUIREMENTS

ENQUIRY NO:

PROJECT :

RATE CONTRACT

PACKAGE:

LT XLPE POWER CABLE

CRITERIA FOR EVALUATION - FINANCIAL :

Average annual financial turnover during the last Three Financial Years
should not be less than
Rupees Seventeen Crore Twenty Two Lakh(s) Only

Amount (in Rs.)
Rs.17,22,00,000.00

Notes:-

a) The bidder has to submit financial accounts (audited, if applicable comprising of Audit report, Balance Sheet, Profit & Loss A/c Statement and Notes/Schedules pertaining to Turnover/Sales/Revenue), for last three years (or from the date of incorporation, whichever is less) as on tender due date to review the above criteria. In case the incorporation of vendor is less than 3 years, average annual financial turnover shall be calculated based on available information as below:-

i) If the accounts are available for ≤ 1 Financial Year, the Average Annual Turnover shall be calculated based on available information divided by 1 (One).

ii) If the accounts are available for >1 but ≤ 2 Financial Years, the Average Annual Turnover shall be calculated based on available information divided by 2 (Two).

iii) If the accounts are available for >2 but ≤ 3 Financial Years, the Average Annual Turnover shall be calculated based on available information divided by 3 (Three).

b) Foreign bidder is to submit a latest report from reputed third party business rating agency like Dun & Bradstreet, Credit reform etc. in addition to the documents mentioned at point (a) above for review of above criteria.

c) Other Income shall not be considered for arriving at Annual Turnover/Sales. For evaluation purpose, Turnover figure excluding taxes shall be considered.

d) For evaluation of foreign bidder, exchange rate (TT selling rate of SBI) as on scheduled date of tender opening (Part-I bid in case of two part bid) shall be considered.

BANK GUARANTEE FOR PERFORMANCE SECURITY

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

In consideration of the Bharat Heavy Electricals Limited ¹ (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Companies Act, 1956 and having its registered office at _____ through its Unit at.....(name of the Unit) having awarded to (Name of the Vendor / Contractor / Supplier) having its registered office at _____ ² hereinafter referred to as the 'Contractor/Supplier', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No.....dated³ valued at Rs.....⁴ (Rupees -----)/FC.....(in words.....) for⁵ (hereinafter called the 'Contract') and the Contractor having agreed to provide a Contract Performance Guarantee, equivalent to% (.... Percent) of the said value of the Contract to the Employer for the faithful performance of the Contract,

we,, (hereinafter referred to as the Bank), having registered/Head office at and inter alia a branch at being the Guarantor under this Guarantee, hereby, irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer a maximum amount Rs ----- (Rupees -----) without any demur, immediately on a demand from the Employer, .

Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____.

We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Contractor/ Supplier in any suit or proceeding pending before any Court or Tribunal relating thereto our liability under this present being absolute and unequivocal.

The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment thereunder and the contractors/supplier shall have no claim against us for making such payment.

We thebank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Contract and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said Contract have been fully paid and its claims satisfied or discharged.

We BANK further agree with the Employer that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract or to extend time of performance by the said Contractor/Supplier from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said Contractor/Supplier and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor/Supplier or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Contractor/Supplier or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

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

This Guarantee shall remain in force upto and including.....⁶ and shall be extended from time to time for such period as may be desired by Employer.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Contractor/Supplier but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms thereof.

Unless a demand or claim under this guarantee is made on us in writing on or before the⁷we shall be discharged from all liabilities under this guarantee thereafter.

We, BANK lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

Notwithstanding anything to the contrary contained hereinabove:

- a) The liability of the Bank under this Guarantee shall not exceed.....⁸
- b) This Guarantee shall be valid up to⁹
- c) Unless the Bank is served a written claim or demand on or before¹⁰ all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

We, _____ Bank, have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

For and on behalf of
(Name of the Bank)

Dated.....

Place of Issue.....

¹ NAME AND ADDRESS OF EMPLOYER I.e Bharat Heavy Electricals Limited

² NAME AND ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER.

³ DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

⁴ PROJECT/SUPPLY DETAILS

⁵ BG AMOUNT IN FIGURES AND WORDS

⁶ VALIDITY DATE

⁷ DATE OF EXPIRY OF CLAIM PERIOD

⁸ BG AMOUNT IN FIGURES AND WORDS.

⁹ VALIDITY DATE

¹⁰ DATE OF EXPIRY OF CLAIM PERIOD

Note:

1. Units are advised that expiry of claim period may be kept 2/3 months after validity date.
2. In Case of Bank Guarantees submitted by Foreign Vendors-
 - a. **From Nationalized/Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India)** can be accepted subject to the condition that the Bank Guarantee should be enforceable in the town/city or at nearest branch where the Unit is located i.e. Demand can be presented at the Branch located in the town/city or at nearest branch where the Unit is located.
 - b. **From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)**
 - b.1 In such cases, in the Tender Enquiry/ Contract itself, it may be clearly specified that Bank Guarantee issued by **any of the Consortium Banks only** will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter- Guarantee by Foreign Bank in favour of the Indian Bank (BHEL's Consortium Bank). It is advisable that all charges for issuance of Bank Guarantee/ counter- Guarantee should be borne by the Foreign Vendor. The tender stipulation should clearly specify these requirements.
 - b.2 **In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank** (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at **sl.no. b.1** will required to be followed.
 - b.3 The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time). In case, of Foreign Vendors, the BG Format provided to them should clearly specify the same.
 - b.4 The BG should clearly specify that the demand or other document can be presented in electronic form.

ANNEXURE-C

BRIEF PROCEDURE FOR CONDUCT OF CONCILIATION PROCEEDINGS

1. The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided herein:
2. The party desirous of resorting to Conciliation shall send an invitation/notice in writing to the other party to conciliate specifying all points of Disputes with details of the amount claimed. The party concerned shall not raise any new issue thereafter. Parties shall also not claim any interest on claims/counter-claims from the date of notice invoking Conciliation till the conclusion of the Conciliation proceedings.
3. The party receiving the invitation/notice for Conciliation shall within 30 days of receipt of the notice of Conciliation intimate its consent for Conciliation along with its counter-claims, if any.
4. The Conciliation in a matter involving claim or counter-claim (whichever is higher) up to Rs 5 crores shall be carried out by sole Conciliator nominated by BHEL while in a matter involving claim or counter-claim (whichever is higher) of more than Rs 5 crores Conciliation shall be carried out by 3 Conciliators nominated by BHEL.
5. The Parties shall be represented by only their duly authorized in-house executives/officers and neither Party shall be represented by a Lawyer.
6. The first meeting of the IEC shall be convened by the IEC by sending appropriate communication/notice to both the parties as soon as possible but not later than 30 days from the date of his/their appointment. The hearings in the Conciliation proceeding shall ordinarily be concluded within two (2) months and, in exceptional cases where parties have expressed willingness to settle the matter or there exists possibility of settlement in the matter, the proceedings may be extended by the IEC by a maximum of further 2 months with the consent of the Parties subject to cogent reasons being recorded in writing.
7. The IEC shall thereafter formulate recommendations for settlement of the Disputes supported by reasons at the earliest but in any case within

15 days from the date of conclusion of the last hearing. The recommendations so formulated along with the reasons shall be furnished by the IEC to both the Parties at the earliest but in any case within 1 month from the date of conclusion of the last hearing.

8. Response/modifications/suggestions of the Parties on the recommendations of the IEC are to be submitted to the IEC within time limit stipulated by the IEC but not more than 15 days from the date of receipt of the recommendations from the IEC.
9. In the event, upon consideration, further review of the recommendations is considered necessary, whether by BHEL or by the other Party, then, the matter can be remitted back to the IEC with request to reconsider the same in light of the issues projected by either/both the Parties and to submit its recommendations thereon within the following 15 days from the date of remitting of the case by either of the Parties.
10. Upon the recommendations by the Parties, with or without modifications, as considered necessary, the IEC shall be called upon to draw up the Draft Settlement Agreement in terms of the recommendations.
11. When a consensus can be arrived at between the parties only in regard to any one or some of the issues referred for Conciliation the draft Settlement Agreement shall be accordingly formulated in regard to the said Issue(s), and the said Settlement Agreement, if signed, by the parties, shall be valid only for the said issues. As regards the balance issues not settled, the parties may seek to resolve them further as per terms and conditions provided in the contract.
12. In case no settlement can be reached between the parties, the IEC shall by a written declaration, pronounce that the Conciliation between the parties has failed and is accordingly terminated.
13. Unless the Conciliation proceedings are terminated in terms of para 22 (b), (c) & (d) herein below, the IEC shall forward his/its recommendations as to possible terms of settlement within one (1) month from the date of last hearing. The date of first hearing of Conciliation shall be the starting date for calculating the period of 2 months.

14. In case of 3 members IEC, 2 members of IEC present will constitute a valid quorum for IEC and meeting can take place to proceed in the matter after seeking consent from the member who is not available. If necessary, videoconferencing may be arranged for facilitating participation of the members. However, the IEC recommendations will be signed by all members. Where there is more than one (1) Conciliator, as a general rule they shall act jointly. In the event of differences between the Members of IEC, the decision/recommendations of the majority of the Members of IEC shall prevail and be construed as the recommendation of the IEC.
15. The Draft Settlement Agreement prepared by the IEC in terms of the consensus arrived at during the Conciliation proceedings between the Parties shall be given by the IEC to both the parties for putting up for approval of their respective Competent Authority.
16. Before submitting the draft settlement agreement to BHEL's Competent Authority viz. the Board Level Committee on Alternative Dispute Resolution (BLCADR) for approval, concurrence of the other party's Competent Authority to the draft settlement agreement shall be obtained by the other party and informed to BHEL within 15 days of receipt of the final draft settlement agreement by it. Upon approval by the Competent Authority, the Settlement Agreement would thereafter be signed by the authorized representatives of both the Parties and authenticated by the members of the IEC.
17. In case the Draft Settlement Agreement is rejected by the Competent Authority of BHEL or the other Party, the Conciliation proceedings would stand terminated.
18. A Settlement Agreement shall contain a statement to the effect that each of the person(s) signing thereto (i) is fully authorized by the respective Party(ies) he/she represents, (ii) has fully understood the contents of the same and (iii) is signing on the same out of complete freewill and consent, without any pressure, undue influence.
19. The Settlement Agreement shall thereafter have the same legal status and effect as an arbitration award on agreed terms on the substance of the dispute rendered by an arbitral tribunal passed under section 30 of the Arbitration and Conciliation Act, 1996.
20. Acceptance of the Draft Settlement Agreement/recommendations of the Conciliator and/or signing of the Settlement Agreement by BHEL shall

however, be subject to withdrawal/closure of any arbitral and/or judicial proceedings initiated by the concerned Party in regard to such settled issues.

21. Unless otherwise provided for in the agreement, contract or the Memorandum of Understanding, as the case may be, in the event of likelihood of prolonged absence of the Conciliator or any member of IEC, for any reason/incapacity, the Competent Authority/Head of Unit/Division/Region/Business Group of BHEL may substitute the Conciliator or such member at any stage of the proceedings. Upon appointment of the substitute Conciliator(s), such reconstituted IEC may, with the consent of the Parties, proceed with further Conciliation into the matter either de-novo or from the stage already reached by the previous IEC before the substitution.
22. The proceedings of Conciliation under this Scheme may be terminated as follows:
- On the date of signing of the Settlement agreement by the Parties; or,
 - By a written declaration of the IEC, after consultation with the parties, to the effect that further efforts at conciliation are no longer justified, on the date of the declaration; or,
 - By a written declaration of the Parties addressed to the IEC to the effect that the Conciliation proceedings are terminated, on the date of the declaration; or,
 - By a written declaration of a Party to the other Party and the IEC, if appointed, to the effect that the Conciliation proceedings are terminated, on the date of the declaration.
 - On rejection of the Draft Settlement Agreement by the Competent Authority of BHEL or the other Party.
23. The Conciliator(s) shall be entitled to following fees and facilities:

Sl No	Particulars	Amount
1	Sitting fees	Each Member shall be paid a Lump Sum fee of Rs 75,000/- for the whole case payable in terms of paragraph No. 27 herein below.
2	Towards drafting of settlement agreement	In cases involving claim and/or counter-claim of up to Rs 5crores. Rs 50,000/- (Sole Conciliator)

Sl No	Particulars	Amount
		In cases involving claim and/or counter-claim of exceeding Rs 5 crores but less than Rs 10 crores. Rs 75,000 (per Conciliator) In cases involving claim and/or counter-claim of more than Rs 10 crores. Rs 1,00,000/- (per Conciliator) Note: The aforesaid fees for the drafting of the Settlement Agreement shall be paid on Signing of the Settlement Agreement after approval of the Competent Authority or Rejection of the proposed Settlement Agreement by the Competent Authority of BHEL.
3	Secretarial expenses	Rs 10,000/- (one time) for the whole case for Conciliation by a Sole Member IEC. Where Conciliation is by multi member Conciliators –Rs 30,000/- (one time)- to be paid to the IEC
4	Travel and transportation and stay at outstation i) Retired Senior Officials of other Public Sector Undertakings (pay scale wise equivalent to or more than E-8 level of BHEL)	As per entitlement of the equivalent officer (pay scale wise) in BHEL.
	Others	As per the extant entitlement of whole time Functional Directors in BHEL.

Sl No	Particulars	Amount
		Ordinarily, the IEC Member(s) would be entitled to travel by air Economy Class.
5	Venue for meeting	Unless otherwise agreed in the agreement, contract or the Memorandum of Understanding, as the case may be, the venue/seat of proceedings shall be the location of the concerned Unit / Division / Region / Business Group of BHEL. Without prejudice to the seat/venue of the Conciliation being at the location of concerned BHEL Unit / Division / Region / Business Group, the IEC after consulting the Parties may decide to hold the proceedings at any other place/venue to facilitate the proceedings. Unless, Parties agree to conduct Conciliation at BHEL premises, the venue is to be arranged by either Party alternately.

24. The parties will bear their own costs including cost of presenting their cases/evidence/witness(es)/expert(s) on their behalf. The parties agree to rely upon documentary evidence in support of their claims and not to bring any oral evidence in IEC proceedings.
25. If any witness(es) or expert(s) is/are, with the consent of the parties, called upon to appear at the instance of the IEC in connection with the matter, then, the costs towards such witness(es)/expert(s) shall be determined by the IEC with the consent of the Parties and the cost so determined shall be borne equally by the Parties.
26. The other expenditures/costs in connection with the Conciliation proceedings as well as the IEC's fees and expenses shall be shared by the Parties equally.
27. Out of the lump sum fees of Rs 75,000/- for Sitting Fees, 50% shall be payable after the first meeting of the IEC and the remaining 50% of the Sitting Fees shall be payable only after termination of the conciliation proceedings in terms of para 22 hereinabove.

28. The travelling, transportation and stay at outstation shall be arranged by concerned Unit as per entitlements as per Serial No. 3 of the Table at para 23 above, and in case such arrangements are not made by the BHEL Unit, the same shall be reimbursed to the IEC on actuals limited to their entitlement as per Serial No. 4 of the Table at Para 23 above against supporting documents. The IEC Member(s) shall submit necessary invoice for claiming the fees/reimbursements.
29. The Parties shall keep confidential all matters relating to the conciliation proceedings. Confidentiality shall extend also to the settlement agreement, except where its disclosure is necessary for purposes of its implementation and enforcement or as required by or under a law or as per directions of a Court/Governmental authority/regulatory body, as the case may be.
30. The Parties shall not rely upon or introduce as evidence in any further arbitral or judicial proceedings, whether or not such proceedings relate to the Disputes that is the subject of the Conciliation proceedings:
- a. Views expressed or suggestions made by the other party in respect of a possible settlement of the Disputes;
 - b. admissions made by the other party in the course of the Conciliator proceedings;
 - c. proposals made by the Conciliator;
 - d. The fact that the other Party had indicated his willingness to accept a proposal for settlement made by the Conciliator.
31. The Parties shall not present the Conciliator(s) as witness in any Alternative Dispute Resolution or Judicial proceedings in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.
32. None of the Conciliators shall act as an arbitrator or as a representative or counsel of a Party in any arbitral or judicial proceeding in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.
33. The Parties shall not initiate, during the Conciliation proceedings, any arbitral or judicial proceedings in respect of a Disputes that is the subject matter of the Conciliation proceedings except that a Party may initiate arbitral or judicial proceedings where, in his opinion, such proceedings are necessary for preserving his rights including for preventing expiry of period of limitation. Unless terminated as per the provisions of this Scheme, the Conciliation proceedings shall continue

notwithstanding the commencement of the arbitral or judicial proceedings and the arbitral or judicial proceedings shall be primarily for the purpose of preserving rights including preventing expiry of period of limitation.

34. The official language of Conciliation proceedings under this Scheme shall be English unless the Parties agree to some other language.

**FORMAT FOR SEEKING CONSENT FOR REFERRING THE DISPUTES TO
CONCILIATION THROUGH IEC**

To,

M/s. (Stakeholder's name)

Sub: Resolution of the Disputes through conciliation by Independent Expert Committee (IEC).

Ref: Contract No/MoU/Agreement/LOI/LOA& date _____.

Sir,

With reference to above referred Contract/MoU/Agreement/LOI/LOA, you have raised certain Disputes/claims. Vide your letter dated_____ you have requested BHEL to refer the Disputes/claims to IEC for Conciliation.

We are enclosing herewith Format (3) for giving consent and the terms and conditions of BHEL Conciliation Scheme, 2018 governing conciliation through IEC. You are requested to give your unconditional consent to the said terms and conditions of the Scheme by returning the same duly sealed and signed on each page. On receipt of your consent, matter will be put to the Competent Authority for consideration and decision.

Please note that BHEL has also certain claims against you (if applicable). BHEL reserves its right to agree or not to agree conciliation of the said disputes through BHEL and this letter is being issued without prejudice to BHEL's rights and contentions available under the contract and law.

Yours faithfully,

Representative of BHEL

**FORMAT FOR GIVING CONSENT BY
CONTRACTOR/VENDOR/CUSTOMER/COLLABORATOR/CONSORTIUM PARTNERS FOR REFERRING THE DISPUTES TO CONCILIATION
THROUGH IEC**

To,

BHEL

.....

Sub: Resolution of Disputes through Conciliation by Independent Expert Committee (IEC).

Ref: Contract/MoU/Agreement/LOI/LOA No & date ____

With reference to above referred contract, our following bills/invoices/claims submitted to BHEL are still unpaid giving rise to Disputes:

SL. no.	Claim Description	Bill submitted to BHEL (no. and date)	Amount of the bill/claim	Amount received from BHEL	Outstanding Amount

Accordingly we request you to kindly refer the Disputes in respect of above claims to IEC for Conciliation.

We hereby agree and give our unconditional consent to the terms and conditions of BHEL Conciliation Scheme, 2018 governing conciliation through IEC. We have signed the same on each page and enclosed it for your consideration.

Yours faithfully,

(Signature with stamp)

Authorized Representative of Contractor

Name, with designation

Date

**STATEMENT OF CLAIMS/COUNTER CLAIMS TO BE SUBMITTED TO
THE IEC BY BOTH THE PARTIES**

1. Chronology of the Disputes
2. Brief of the Contract/MoU/Agreement/LOI/LOA
3. Brief history of the Disputes:
4. Issues:
5. Details of Claim(s)/Counter Claim(s):

Sl. No.	Description of claim(s)/Counter Claim	Amount (in INR)Or currency applicable in the contract	Relevant contract clause

6. Basis/Ground of claim(s)/counter claim(s) (along with relevant clause of contract)

Note– *The Statement of Claims/Counter Claims may ideally be restricted to maximum limit of 20 pages. Relevant documents may be compiled and submitted along with the statement of Claims/Counter Claims. The statement of Claims/Counter Claims is to be submitted to all IEC members and to the other party by post as well as by email.*