

Bharat Heavy Electricals Ltd  
Electronics Division  
Mysore Road, Bangalore – 560 026

**Tender Document for "Supply of EPR Insulated LHLS sheathed Instrumentation cable for M/s.NPCIL - KAPP & RAPP projects"**

<b>TENDER REFERENCE DOC</b>	SBA0000321
<b>TENDER DOCUMENT AVAILABLE FROM</b>	18-04-2017
<b>LAST DATE AND TIME FOR SUBMISSION OF TENDER</b>	11th May 2018 upto 13:00 Hrs
<b>DATE AND TIME FOR TENDER OPENING</b>	11th May 2018 13:30 Hrs

This Tender Document Contains documents as per below index:

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 भारत हेवी इलेक्ट्रिकल्स लिमिटेड

**Bharat Heavy Electricals Ltd.,**  
**(A Government of India undertaking)**  
**Electronics Division**

PB 2606 , Mysore Road Bangalore , 560026 INDIA

CE:PR:001- Rev 01

**INSTRUCTIONS TO BIDDERS**

**Bidder is requested to read the instructions carefully and submit their quotation taking into consideration of all the points:**

**A. GENERAL INSTRUCTIONS:**

1. Any Purchase Order resulting from this enquiry shall be governed by the Instructions to Bidders (document reference: CE: PR: 001 – Rev 01), General Conditions of Contract (document reference: CE: PR: 002 - Rev 01) and Special Conditions of Contract, if any, of the enquiry.
2. Any deviations from or additions to the “General Conditions of Contract” or “Special Conditions of Contract” require BHEL’s express written consent. The general terms of business or sale of the bidder shall not apply to this tender.
3. Regret letter (either through post or by mail or by EPS) indicating reasons for not quoting must be submitted without fail, in case of non-participation in this tender. Supplier shall be liable for removal as a registered vendor of BHEL when the supplier fails to quote against four consecutive tender enquiries for the same item or all enquiries in last two years for the same item, whichever is earlier.
4. Procurement directly from the manufacturers is preferred. However, if the OEM/ Principal insist on engaging the services of an agent, such agent shall not be allowed to represent more than one manufacturer/ supplier in the same tender. Moreover, either the agent could bid on behalf of the manufacturer/ supplier or the manufacturer/ supplier could bid directly but not both. Agent/Representative authorized by the OEM/Principal in turn cannot further sub authorize any other firm for submitting the offer or for placement of order.

In case bids are received from the manufacturer/ supplier and his agent, bid received from the agent shall be ignored.

5. Consultant / firm (and any of its affiliates) shall not be eligible to participate in the tender/s for the related goods for the same project if they were engaged for consultancy services for the same project.
6. If an Indian representative/associate/liaison office quotes on behalf of a foreign based bidder, such representative shall furnish the following documents:
  - a. Authorization letter to quote and negotiate on behalf of such foreign-based bidder.
  - b. Undertaking from such foreign based bidder that such contract will be honored and executed according to agreed scope of supply and commercial terms and conditions.
  - c. Undertaking shall be furnished by the Indian representative stating that the co-ordination and smooth execution of the contract and settlement of shortages/damages/replacement/repair of imported scope till the equipment is commissioned and handed over to customer will be the sole responsibility of the Indian representative/associates/agent/liaison office.
  - d. Refer **Annexure I** on “Guidelines for Indian Agents”.
7. In case of imported scope of supply, customs clearance & customs duty payment will be to BHEL account after the consignment is received at Indian Airport /Seaport. Bidders must provide all original documents required

for completing the customs clearance along with the shipment. Warehousing charges due to incomplete or missing documentation will be to supplier's account. All offers for imported scope of supply by air, must be made from any of the gateway ports (within the country) indicated (**Refer Annexure II**).

8. The offers of the bidders who are on the banned list and also the offers of the bidders, who engage the services of the banned firms, shall be rejected. The list of the banned firms is available on BHEL website: [http://www.bhel.com/vender\\_registration/vender.php](http://www.bhel.com/vender_registration/vender.php)
9. Business dealings with bidders will be suspended if they are found to have indulged in any malpractices/misconduct which are contrary to business ethics like bribery, corruption, fraud, pilferage, cartel formation, submission of fake/false/forged documents, certificates, information to BHEL or if they tamper with tendering procedure affecting the ordering process or fail to execute a contract, or rejection of 3 consecutive supplies or if their firms / works are under strike/lockout for a long period. Bidder may refer "Guidelines for Suspension of Business Dealings with Suppliers/ Contractors" available on [www.bhel.com](http://www.bhel.com) for more details.
10. 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 your notice.

#### **B. GUIDELINES FOR PREPARATION OF OFFER:**

1. Quotation shall be submitted in Single Part Bid, Two Part Bid or Three Part Bid, as called for in the tender:
  - **SINGLE PART BID:** Technical and Commercial Bid with prices along with price summary & filled in BHEL Standard Commercial terms and conditions in a single sealed envelope.
  - **TWO PART BID:** Unpriced offer i.e. "Techno-commercial Bid" with filled in BHEL Standard Commercial terms and conditions in a sealed envelope **along with the copy of the "Price Bid" without the prices** should be enclosed in one cover and the cover must be super scribed "**Techno-commercial offer**) and Priced offer i.e. "Price Bid" containing price summary in a separate sealed envelope and must be super scribed "**Price Bid**". Both these envelopes shall be enclosed in a single sealed envelope superscribed with enquiry number, due date of tender and any other details as called for in the tender document.
  - **THREE PART BID:** Pre-qualification Bid (Part-I), Techno Commercial Bid with filled in BHEL Standard Commercial terms and conditions (Part-II), and Price Bid (Part-III). All three envelopes shall be enclosed in a single sealed envelope superscribed with enquiry number, due date of tender and any other details as called for in the tender document.

If any of the offers (Part I, Part II or Part III) are not submitted before the due date and time of submission (or) if any part of the offer is incomplete, the entire offer of the bidder is liable for rejection.

2. Supplier shall ensure to superscribe each envelope with RFQ number, RFQ Date, RFQ Due date and time, Item Description and Project clearly & boldly. Also mention on the envelope whether it is "Techno Commercial Bid" or "Price Bid" or "Pre-Qualification Bid". Please ensure complete address, department name and purchase executive name is mentioned on the envelope (before dropping in the tender box or handing over) so that the tender is available in time for bid opening.
3. BHEL standard Commercial Terms and Conditions (duly filled, signed & stamped) must accompany Technical-Commercial offer without fail and should be submitted in original only.

The above indicated submission of Offers in "sealed envelope/hard copy" as mentioned in points B.1-B.3 is applicable for tenders that are not floated through E-Procurement System (EPS).

4. Validity: Unless otherwise specified in SCC (special commercial conditions of contract), the offer will be valid for a period of 90 days from the date of part-I bid opening and in case of Negotiation/Counter-offer/Reverse

Auction, price validity will apply afresh for a period of \_60\_ days from the date of according final price by bidder (or) upto original validity period, whichever is later.

5. Any of the terms and conditions not acceptable to supplier, shall be explicitly mentioned in the Techno-Commercial Bid. If no deviations are brought out in the offer it will be treated as if all terms and conditions of this enquiry are accepted by the supplier without deviation.
6. Deviation to this specification/item description, if any, shall be brought out clearly indicating "DEVIATION TO BHEL SPECIFICATION" without fail, as a part of Techno-Commercial Bid. If no deviations are brought out in the offer it will be treated as if the entire specification of this enquiry is accepted without deviation.
7. Suppliers shall submit one set of original catalogue, datasheets, bill of materials, dimensional drawings, mounting details and/or any other relevant documents called in purchase specification as part of Technical Bid.
8. "Price Bid" shall be complete in all respects containing price break-up of all components along with all applicable taxes and duties, freight charges (if applicable) etc. Once submitted no modification / addition / deletion will be allowed in the "Price Bid." Bidders are advised to thoroughly check the unit price, total price to avoid any discrepancy.
9. In addition, bidder shall also quote for erection & commissioning charges/erection supervision & commissioning charges (E&C service charges) if applicable, documentation charges, testing Charges (type & routine), training charges etc. as applicable along with corresponding tax. The price summary must indicate all the elements clearly.
10. For Physical Export projects or wherever services are rendered by foreign suppliers in India, bidders should indicate "lumpsum" Erection and Commissioning (or) Erection Supervision and Commissioning charges, as applicable (including To & Fro Fare, Boarding, Lodging, Local Conveyance etc.) for carrying out E&C activity and further handing over to customer. The quotation shall clearly indicate scope of work, likely duration of commissioning, pre-commissioning checklist (if any).
11. Wherever bidders require PAC (Project Authority Certificate)/applicable certificates for import of raw materials, components required for DECC,EPCG Power Projects, Export Projects or other similar projects wherein supplies are eligible for customs duty benefits, lists and quantities of such items and their values (CIF) has to be mentioned in the offer. Prices must be quoted taking into account of such benefits.
12. Prices should be indicated in both figures & words. Bid should be free from correction/overwriting, using corrective fluid, etc. Any interlineation, cutting, erasure or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid else bid shall be liable for rejection. Any typographical error, totalling mistakes, currency mistake, multiplication mistake, summing mistakes etc. observed in the price bids will be evaluated as per **Annexure III** "Guidelines for dealing with Discrepancy in Words & Figures – quoted in price bid" and BHEL decision will be final.
13. Documents submitted with the offer shall be signed and stamped in each page by authorized representative of the bidder. However, this requirement is not mandatory for offers uploaded through E-Procurement System (EPS).

### **C. GUIDELINES FOR OFFER SUBMISSION:**

The under-mentioned clauses 1, 2&3 will not be applicable for EPS tenders.

1. Offers / Quotations must be dropped in tender box before 13.00 Hrs. on or before due date mentioned in RFQ. The offers are to be dropped in the proper slot of the Tender Box kept in our reception area with caption "CE, SC&PV, DEFENCE". Tenders are opened on 3 days in a week (Monday/Wednesday/Friday). Tender must be deposited in the slot corresponding to the day (Monday - Box no.4/Wednesday - Box no. 6 /Friday - Box no.8) while depositing the offer.

2. E-Mail/ Internet/EDI offers received in time shall be considered only when such offers are complete in all respects. In case of offers received through E-mail, please send the offer to the email ID specified in the SCC document of the tender.
3. Offers of Vendors who already have a valid Technical/Commercial MOU with BHEL-EDN for the items of the RFQ shall mention the relevant MOU reference no. and give only such other details not covered in the MOU.
4. In cases where tender documents are bulky, or due to some reasons tender documents are required to be submitted by hand or through posts/couriers, the offers are to be handed over either of the two purchase officers whose names are mentioned in the SCC document of tender RFQ.
5. Tenders will be opened on due date, time and venue as indicated in the RFQ in the presence of bidders at the venue indicated in the RFQ. For EPS tenders, e-mail notifications will be automatically generated and forwarded to registered e-mail ID/s of bidders during opening of tenders.
6. Bidder will be solely responsible:
  - a. For submission of offers before due date and time. Offers submitted after due date and time will be treated as "Late offers" and will be rejected.
  - b. For submission of offers in the correct compartment of the tender box based on the day of due date (Monday/Wednesday/Friday). Please check before dropping your offer in the correct tender box.
  - c. For depositing offers in proper sealed condition in the tender box. If the bidder drops the tender in the wrong tender box (or) if the tender document is handed over to the wrong person, BHEL will not be responsible for any such delays.
  - d. For offers received through email etc., suppliers are fully responsible for lack of secrecy on information and ensuring timely receipt of such offers in the tender box before due date & time (This clause will not be applicable for EPS tenders).

The above indicated submission of Offers as mentioned in points 6.a-6.d is applicable for tenders that are not floated through EPS.

- e. In case of e-tender, all required documents should be uploaded before due date and time. Availability of power, internet connections, system/software requirements etc. will be the sole responsibility of the bidder. Wherever assistance is needed for submission of e-tenders, help-line numbers as available in the web-site of service provider of BHEL may be contacted.

**Purchase Executive/ BHEL shall not be responsible for any of the activities relating to submission of offer.**

#### **D. PROCESSING OF OFFERS RECEIVED:**

1. Any discount/ revised offer submitted by the supplier on its own shall be accepted provided it is received on or before the due date and time of offer submission (i.e. Part-I bid). The discount shall be applied on pro-rata basis to all items unless specified otherwise by the bidder.
2. Changes in offers or Revised offers given after Part-I bid opening shall not be considered as a part of the original offer unless such changes/revisions are requested by BHEL. In case of withdrawal of any Technical/Commercial deviation(s) by the bidder before opening of price bids/conducting the Reverse Auction, revision of price/impact bid will not be accepted.
3. In case there is no change in the technical scope and/ or specifications and/ or commercial terms & conditions, the supplier will not be allowed to change any of their bids after Technical bids are opened (after the due date and time of tender opening).
4. In case of changes in scope and/ or technical specifications and/ or commercial terms & conditions by BHEL and it accounts for price implications from bidders, all techno-commercially acceptable bidders shall be asked

by BHEL (after freezing the scope, technical specifications and commercial terms & conditions) to submit the impact of such changes on their price bid. Impact price will be applicable only for changes in technical specification / commercial conditions by BHEL. The impact price must be submitted on or before the cut-off date specified by BHEL and the original price bid and the price impact bid will be opened together at the time of price bid opening.

5. BHEL reserves the right to adopt Reverse Auction or standard Price Bid Opening procedure for price evaluation, at its discretion. This shall be decided after completion of techno-commercial evaluation of tender (Refer BHEL website [http://www.bhel.com/vender\\_registration/vender.php](http://www.bhel.com/vender_registration/vender.php) for Guidelines of Reverse Auction). In case BHEL does not resort to Reverse Auction, the price bids and price impacts (if any) already submitted and available with BHEL shall be opened as per BHEL's standard practice.
6. Un-opened bids (including price bids) will be returned to the respective bidders after release of Purchase order. Regarding Offers for EPS tenders that get rejected on PQC/ techno-commercial grounds, the bids for the subsequent parts will not be opened i.e., both technical bid and price bid (Parts-II & III) will not be opened in case of rejection on PQC ground and price bid (Part-II/Part-III, as applicable) will not be opened in case of rejection on techno-commercial ground.
7. After receipt of Purchase Order, supplier should submit required documents viz., specified drawings, bill of materials, datasheets, catalogues, quality plan, test procedure, type test report, O & M Manuals and/or any other relevant documents as per Specification/Purchase Order, as and when required by BHEL/Customer.
8. Any deviation to the terms and conditions not mentioned in the quotation by supplier in response to this enquiry will not be considered, if put forth subsequently or after issue of Purchase Order, unless clarification is sought for by BHEL and agreed upon in the Purchase Order.
9. Evaluation shall be on the basis of delivered cost (i.e. "Total Cost to BHEL").

"Total Cost to BHEL" shall include total basic cost, packing & forwarding charges, taxes and/or duties (as applicable), freight charges, taxes on Services, customs clearance charges for imported items, any other cost indicated by bidder for execution of the contract and loading factors (for non-compliance to BHEL Standard Commercial Terms & Conditions). Benefits arising out of Nil Import Duty on DEEC, EPCG, DFIA Projects, Physical Exports or such 100% exemptions (statutory benefits), project imports, customer reimbursements of statutory duties (like Basic Customs Duty and cess on customs duty), Input tax credits as applicable will also be taken into account for arriving at the Total cost to BHEL (wherever applicable and as indicated in SCC document of tender).

For EPS tenders, it shall be noted that the prices (including discounts) vis-a-vis currency quoted in EPS portal only will be considered as Final for the purpose of evaluation of the lowest bidder. Bidder shall ensure to indicate the applicable taxes against each line item in online portal, failing to which the same will be considered as inclusive/NIL.

10. For evaluation of offers in foreign currency, the exchange rate (TT selling rate of SBI) shall be taken as under:

Single part bids:	Date of tender opening
Two/three part bids:	Date of Part-I bid opening
Reverse Auction:	Date of Part-I bid opening

In case of Performance Bank Guarantee (PBG) also, exchange rate will be considered as mentioned above for converting foreign currency to Indian currency and vice versa.

If the relevant day happens to be a bank holiday, then the exchange rate as on the previous working day of the bank (SBI) shall be taken.

11. Ranking (L-1, L-2 etc.) shall be done only for the techno-commercially acceptable offers.

**E. INFORMATION ON PAYMENT TERMS:**

1. All payments will be through Electronic Fund transfer (EFT). Vendor has to furnish necessary details as per BHEL standard format (**Refer Annexure IV**) for receiving all payments through NEFT.(Applicable for Indian vendors only)
2. In case of High Sea Sales transaction, customs clearance of the consignment landed on Indian Sea/Air ports will be done by BHEL based on the original HSS documents provided by vendors. All warehousing charges due to delay in submission of complete and or correct HSS documents to BHEL will be to supplier's account only. Such recovery will be made out of any of the available bills (**Refer Annexure V**).
3. Statutory deductions, if any, will be made and the deduction certificate shall be issued. In case vendor does not provide PAN details, the TDS deduction shall be at the maximum percentage stipulated as per the provisions of Income Tax Act.

In addition to the above, Foreign vendors shall also submit relevant details of their bankers like Swift Code, Banker's Name &Address etc.

4. Incomplete documentation will not be accepted. Delayed submission of invoice / documents may result in corresponding delay in payment. In this connection, request to also refer clause: G about invoicing & payment formalities under GST regime. Applicable documents shall be submitted to the purchaser at the time of execution of supplies/services for availing GST input credits.

**F. STANDARD PAYMENT TERMS OF BHEL-EDN:**

<b><u>PURCHASE ORDERS FOR:</u></b>	<b><u>SUPPLY WITH ERECTION &amp; COMMISSIONING</u></b>	<b><u>SUPPLY WITH ERECTION SUPERVISION &amp; COMMISSIONING</u></b>	<b><u>SUPPLY ONLY</u></b>
<b><u>INDIGENOUS PROCUREMENT</u></b>	<p>a. 90% of basic value + 100% of taxes and freight charges will be paid in 45 days from the date of dispatch or 15 days from the date of submission of complete set of documentation, whichever is later.</p> <p>Balance 10% of basic value (Retention money) will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of E&amp;C.</p> <p><u>Note:</u> In case PBG is not furnished, only 80% payment will be released against 90% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice &amp; Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.</p>	<p>b. 95% of the basic value + 100% of taxes and freight charges will be paid in 45 days from the date of dispatch or 15 days from the date of submission of complete set of documentation, whichever is later.</p> <p>Balance 5% of basic value (Retention money) will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of commissioning.</p> <p><u>Note:</u> In case PBG is not furnished, only 85% payment will be released against 95% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice &amp; Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.</p>	<p>c. 100% of PO value with taxes and freight will be paid in 45 days from the date of dispatch or 15 days from the date of submission of complete set of documentation, whichever is later.</p>

<b><u>PURCHASE ORDERS FOR:</u></b>	<b><u>SUPPLY WITH ERECTION &amp; COMMISSIONING</u></b>	<b><u>SUPPLY WITH ERECTION SUPERVISION &amp; COMMISSIONING</u></b>	<b><u>SUPPLY ONLY</u></b>
<b><u>IMPORT PROCUREMENT</u></b>	<p>d. 90% of the basic value will be paid on the 45th day, against usance draft of 45 days, from the date of AWB/BOL on submission of complete set of documents.</p> <p>Balance 10% of basic value (Retention money) will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of E&amp;C.</p> <p><u>Note:</u> In case PBG is not furnished, only 80% payment will be released against 90% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice &amp; Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.</p>	<p>e. 95% of the basic value will be paid on the 45th day, against usance draft of 45 days, from the date of AWB/BOL on submission of complete set of documents.</p> <p>Balance 5% of basic value (Retention money) will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of commissioning.</p> <p><u>Note:</u> In case PBG is not furnished, only 85% payment will be released against 95% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice &amp; Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.</p>	<p>f. 100% of PO value will be paid against usance draft of 45 days from the date of AWB/BOL on submission of complete set of documents.</p>
<b><u>HIGH-SEA SALES PROCUREMENT</u></b>	<p>g. 90% of basic value will be paid in 45 days from the date of signing of High Sea Sale agreement or 15 days from the date of submission of complete set of documentation, whichever is later.</p> <p>Balance 10% of basic value (Retention money) will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of E&amp;C.</p> <p><u>Note:</u> In case PBG is not furnished, only 80% payment will be released against 90% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice &amp; Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.</p>	<p>h. 95% of the basic value will be paid in 45 days from the date of signing of High Sea Sale agreement or 15 days from the date of submission of complete set of documentation, whichever is later.</p> <p>Balance 5% of basic value (Retention money) will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of commissioning.</p> <p><u>Note:</u> In case PBG is not furnished, only 85% payment will be released against 95% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice &amp; Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.</p>	<p>i. 100% of basic value will be paid in 45 days from the date of signing of High Sea Sale agreement or 15 days from the date of submission of complete set of documentation, whichever is later.</p>



**j. Comprehensive Annual Maintenance Contract:**

**Evaluation methodology:** Unless and otherwise specified in SCC, CAMC will be applicable for a period of 04 years from the date of expiry of warranty period (or) from the date of completion of commissioning of equipment, whichever is later and the total AMC value should not be less than 20% of the main supply value. In case the quoted total AMC value is less than 20% of the main supply value, BHEL shall evaluate Bidders Price deducting differential amount from main supply price and apportioning towards AMC charges.

**Payment terms:** 100% AMC charges along with tax as applicable, will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of AMC on yearly basis.

**k. Terms of Payment for Training:** 100% payment will be made in 45 days from the date of completion of Training or 15 days from the date of submission of complete set of invoice along with documentary evidence, whichever is later.

**LOADING FACTORS FOR DEVIATION IN PAYMENT TERMS (APPLICABLE FOR IMPORT PROCUREMENT ONLY):**

- 1) For offers received with Sight draft payment term in place of Usance draft, loading applicable will be 1.0% of basic value.
  - 2) For offers received with Letter of Credit payment term with Usance of 45 days, loading applicable will be 2.5% of basic value.  
Additional loading of 2% will be applicable for payment term as Letter of Credit at Sight.
- l.** Any payment term with credit period of less than 45 days for indigenous supply/HSS and any other variation of payment terms are liable for rejection.
- m.** Standard payment terms indicated in Clauses: F (a), (b), (c), (d), (e), (f), (g), (h), (i), (j) & (k) will not attract any loading.

**Note 1:** Basic value of Purchase Order mentioned above will include all components of the purchase order and will exclude only taxes, duties, freight, training charges, E&C and AMC charges (wherever applicable). Wherever the Purchase Order is split into import portion and indigenous portion of supply, the retention money will be 10% (where scope includes E&C) or 05% (where scope includes Erection supervision & Commissioning) of both purchase order values put together.

**Note 2:** If the E&C could not be completed till the end of the Warranty period due to reasons not attributable to the supplier, BHEL will release the retention money to the supplier against Bank Guarantee for equivalent value valid for an initial period of one year.

**Note 3:** In case of Physical Export projects or wherever services are rendered by foreign suppliers in India, E&C charges (if quoted separately/extra by bidder) will be paid in 15 days from the date of submission of supplementary invoice/ documents against proof of completion of E&C.

**Note 4:** In case of multiple packages/units in a power plant, payment of retention money/E&C charges will be processed on pro-rata basis.

**Note 5:** No deviation will be permitted from the duration of Guarantee/Warranty and/or Comprehensive Annual Maintenance Contract period specified in SCC.

**G. Terms & Conditions to be complied under GST regime:**

1. All invoices to contain BHEL-EDN (buyer) GSTIN number: 29AAACB4146P1ZB. However for CGST +SGST/UGST billing outside the state of Karnataka, invoice has to be generated with BHEL's Nodal Agency GSTIN number. Address of Nodal Agency along with GSTIN number will be provided by BHEL at the time of issuing dispatch clearance.
2. The Bidder shall mention Bidder's GSTIN number in all quotations and Invoices submitted.
3. The Bidder shall also mention HSN (Harmonized System of Nomenclature) / SAC (Services Accounting Code) mandatorily in all quotations and invoices submitted.
4. Invoice submitted should be in the format as specified under GST Laws viz., all details as mentioned in Invoice Rules like GST registration number(GSTIN), invoice number with date of issue, quantity, rate, value, taxes with nomenclature – CGST, SGST, UGST,IGST mentioned separately, HSN Code / SAC Code etc. Invoice should be submitted in original for buyer plus duplicate for credit availment.
5. Payment of GST to Vendor will be made only if it is matching with data uploaded by the Vendor in GST portal.
6. For invoices paid on Reverse charge basis – “Tax payable on reverse charge basis” to be mentioned on the invoice.
7. In case GST credit is delayed/denied to BHEL due to non/delayed receipt of goods and/or tax invoice or expiry of timeline prescribed in GST law for availing such ITC, or any other reasons not attributable to BHEL, GST amount will be recoverable from vendor along with interest levied/ leviable on BHEL.
8. In case vendor delays declaring such invoice in his return and GST credit availed by BHEL is denied or reversed subsequently as per GST law, GST amount paid by BHEL towards such ITC reversal as per GST law will be recoverable from vendor/contractor along with interest levied/ leviable on BHEL.
9. Vendor should intimate BHEL immediately on the same date of invoicing without any delay.
10. In case of discrepancy in the data uploaded by supplier in the GSTN portal or in case of any shortages or rejection in the supply, then BHEL will not be able to avail the tax credit and will notify the supplier of the same. Supplier has to rectify the data discrepancy in the GSTN portal or issue credit note (details to be uploaded in GSTN portal) for the shortages or rejections in the supplies, within the calendar month notified by BHEL.
11. Bidders to note that Rules & Regulations pertaining to E-way bill system are to be strictly adhered to, as and when notified by Govt. authorities.

**H. Performance bank guarantee (PBG):**

Performance bank guarantee (PBG) will be applicable as called in the tender documents. Unless otherwise specified in the SCC, the PBG against performance of the contract shall be valid for a period of 24 months from the date of dispatch of goods + claim period of 03 months, for a value equal to 10 % of the basic value of the purchase order which will include all components of the purchase order and will exclude only taxes, duties, freight, training charges, E&C and AMC charges (wherever applicable).

1. The BG issued in Indian Rupees by Banks in India is to be executed on Non-Judicial Stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the State(s) where the BG is submitted or is to be acted upon or the rate prevailing in the State where the BG was executed, whichever is

higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Vendor/Bank issuing the guarantee.

2. No deviation for the duration and value of PBG will be permitted.
3. PBG shall be from any of the BHEL consortium of bankers (**refer Annexure VI**).
4. PBGs from nationalized banks are also acceptable.
5. PBG should be sent directly by the bank to the dealing executive mentioned in the purchase order located at the address mentioned in the purchase order.
6. PBG should be in the format specified (**refer Annexure VII**). No deviation to this format will be allowed. However in case BHEL changes the PBG format, bidder shall honor the same.
7. Bank Guarantee should be enforceable in Bangalore.
8. 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 Bangalore.
  - b. From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)
    - b.1 Please note 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's (BHEL's Consortium Bank) branch in India. It shall be noted that all charges for issuance of Bank Guarantee/ counter- Guarantee should be borne by the Foreign Vendor.
    - 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 is 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).
9. Expired BGs / PBGs will be returned only after expiry of the claim period or on completion of the contractual obligation with respect to Purchase Order.
10. PBG shall not be applicable for spares.

**I. PROVISIONS APPLICABLE FOR MSE VENDORS (MICRO AND SMALL ENTERPRISES) :**

Benefits/facilities as applicable for Micro and Small Enterprises (MSEs) shall be available to MSEs registered with Government designated authorities as per the Purchase & Price Preference Policy of the Government subject to them becoming eligible otherwise.

Vendors who qualify as MSE vendors are requested to submit applicable certificates (as specified by the Ministry of Micro, Small and Medium Enterprises) at the time of vendor registration. Vendors have to submit any of the following documents along with the tender documents in the Part I / Technical bid to avail the applicable benefits:

- a. Attested copy of valid NSIC certificate or
- b. Attested copy of either Entrepreneur's Memorandum part II (EM II) certificate/Udyog Aadhar certificate having deemed validity (five years from the date of issue of acknowledgement in EM II/Udyog Aadhar) or
- c. EM II/ Udyog Aadhaar certificate along with attested copy of a CA certificate (Format enclosed at Annexure VIII where deemed validity of EM II certificate/ Udyog Aadhar certificate of five years have expired) applicable for the relevant financial year (latest audited).

Date to be reckoned for determining the deemed validity will be the date of bid opening (Part-I in case of two-part bid and three-part bid).

Documents have to be notarized/attested by a Gazetted officer and must be valid as on the date of part I bid opening for the vendors to be eligible for the benefits applicable for MSE vendors. Please note that no benefit shall be applicable if any deficiency in the above required documents are not submitted before the price bid opening/Reverse Auction. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal.

Bidders to however note the documents that shall be furnished in order to establish credentials as MSE vendor should be as per the extant statutory requirements specified by the Ministry of Micro, Small and Medium Enterprises.

**PURCHASE PREFERENCE FOR MSE VENDORS:**

- d. MSE vendors quoting within a price band of L1 + 15% shall be allowed to supply up to 20% of the requirement against this tender provided
1. The MSE vendor matches the L1 price.
  2. L1 price is from a non MSE vendor.
  3. L1 price will be offered to the vendor nearest to L1 in terms of price ranking (L2 - nearest to L1). In case of non-acceptance by the MSE vendor (L2), next ranking MSE vendor will be offered who is within the L1 + 15% band (if L3 is also within 15% band).
  4. 20% of the 20% (i.e. 4% of the total enquired quantity) will be earmarked for SC/ST owned MSE firms provided conditions as mentioned in (1) and (2) are fulfilled.
  5. In case no vendor under SC / ST category firms are meeting the conditions mentioned in (1) and (2) or have not participated in the tender, in such cases the 4% quantity will be distributed among the other eligible MSE vendors who have participated in the tender.
  6. Serial no. 1 to 5 will not be applicable wherever it is not possible to split the tendered quantity/items on account of customer contract requirement, or the items tendered are systems. Such information that tendered quantity will not be split shall be indicated in the SCC.

**J. INTEGRITY COMMITMENT IN THE TENDER PROCESS, AND EXECUTION OF CONTRACTS:**

1. Commitment by BHEL: BHEL commits to take all measures necessary to prevent corruption in connection with the Tender process and execution of the Contract. BHEL will, during the tender process, treat all bidder / suppliers in a transparent and fair manner, and with equity.
2. Commitment by Bidder(s)/ Contractor(s):
  - a. The Bidder(s)/ Contractor(s) commit(s) to take all measures to prevent corruption and will not directly or indirectly try to influence any decision or benefit which he is not legally entitled to.
  - b. The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding or any actions to restrict competition.
  - c. The Bidder(s)/ Contractor(s) will not commit any offence under the relevant Acts. The Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain or pass on to others, any information or document provided by BHEL as part of business relationship.
  - d. The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to the relevant guidelines issued from time to time by Government of India/ BHEL.

If the Bidder(s) / Contractor(s), before award or during execution of the Contract commit(s) a transgression of the above or in any other manner such as to put his reliability or credibility in question, BHEL is entitled to disqualify the Bidder(s) / Contractor (s) from the tender process or terminate the contract and/ or take suitable action as deemed fit.

**K. Integrity Pact (IP):**

- a) 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.

A panel of independent External Monitors (IEMs) have been appointed to oversee implementation of IP in BHEL.

The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory who signs in the offer) along with techno-commercial 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.

- b) Please refer Section-8 of the IP for Role and Responsibilities of IEMs (Annexure IX). In case of any complaint arising out of the tendering process, the matter may be referred to the IEM mentioned in the tender.

Note: 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.”

Annexure

Annexure I  
Guidelines for Indian Agents

- **Definition of Indian Agent:** An Indian Agent of foreign principal is an individual, a partnership, an association of persons, a private or public company, that carries out specific obligation(s) towards processing of BHEL tender or finalization or execution of BHEL's contract on behalf of the foreign supplier.

In case of yes, vendor to note the following and reply accordingly:

- i. BHEL shall deal directly with foreign vendors, wherever required, for procurement of goods. However, if the foreign principal desires to avail of the services of an Indian agent, then the foreign principal should ensure compliance to regulatory guidelines - which require mandatory submission of an Agency Agreement.
- ii. It shall be incumbent on the Indian agent and the foreign principal to adhere to the relevant guidelines of Government of India, issued from time to time.
- iii. The Agency Agreement should specify the precise relationship between the foreign OEM / foreign principal and their Indian agent and their mutual interest in the business. All services to be rendered by agent/ associate, whether of general nature or in relation to the particular contract, must be clearly stated by the foreign supplier/ Indian agent. Any payment, which the agent or associate receives in India or abroad from the OEM, whether as commission or as a general retainer fee should be brought on record in the Agreement and be made explicit in order to ensure compliance to laws of the country.
- iv. Any agency commission to be paid by BHEL to the Indian agent shall be in Indian currency only.
- v. Tax deduction at source is applicable to the agency commission paid to the Indian agent as per the prevailing rules.
- vi. In the absence of any agency agreement, BHEL shall not deal with any Indian agent (authorized representatives / associate / consultant, or by whatever name called) and shall deal directly with the foreign principal only for all correspondence and business purposes.
- vii. The "Guidelines for Indian Agents of Foreign Suppliers" enclosed at annexure -'A' shall apply in all such cases.

- viii. The supply and execution of the Purchase Order (including indigenous supplies/ service) shall be in the scope of the OEM/ foreign principal. The OEM/ foreign principal should submit their offer inclusive of all indigenous supplies/ services and evaluation will be based on 'total cost to BHEL'. In case OEM/ foreign principal recommends placement of order(s) towards indigenous portion of supplies/ services on Indian supplier(s)/ agent on their behalf, the credentials/ capacity/ capability of the Indian supplier(s)/ agent to make the supplies/ services shall be checked by BHEL as per the extant guidelines of Supplier Evaluation, Approval & Review Procedure (SEARP), before opening of price bids. In this regard, details may be checked as per Annexure-B (copy enclosed). It will be the responsibility of the OEM/ foreign principal to get acquainted with the evaluation requirements of Indian supplier/ agent as per SEARP available on [www.bhel.com](http://www.bhel.com).

The responsibility for successful execution of the contract (including indigenous supplies/ services) lies with the OEM/ foreign principal. All bank guarantees to this effect shall be in the scope of the OEM/ foreign principal.

—x—

Vendor's Signature with Seal

**Guidelines for Indian Agents of Foreign Suppliers**

- 1.0 There shall be compulsory registration of agents for all Global (Open) Tender and Limited Tender. An agent who is not registered with BHEL shall apply for registration in the registration form in line with SEARP.
- 1.1 Registered agents will file an authenticated Photostat copy duly attested by a Notary Public/Original certificate of the Principal confirming the agency agreement and giving the status being enjoyed by the agent and the commission/ remuneration/ salary/ retainership being paid by the principal to the agent before the placement of order by BHEL.
- 1.2 Wherever the Indian representatives have communicated on behalf of their principals and the foreign parties have stated that they are not paying any commission to the Indian agents, and the Indian representative is working on the basis of salary or as retainer, a written declaration to this effect should be submitted by the party (i.e. Principal) before finalizing the order.
- 2.0 **Disclosure of particulars of agents/ representatives in India, if any.**
- 2.1 Tenderers of Foreign nationality shall furnish the following details in their offers:
  - 2.1.1 The Bidder(s)/ Contractor(s) of foreign origin shall disclose the name and address of the agents/ representatives in India if any and the extent of authorization and authority given to commit the Principals. In case the agent/ representative be a foreign Company, it shall be confirmed whether it is existing Company and details of the same shall be furnished.
  - 2.1.2 The amount of commission/ remuneration included in the quoted price(s) for such agents/ representatives in India.
  - 2.1.3 Confirmation of the Tenderer that the commission/ remuneration, if any, payable to his agents/ representatives in India, may be paid by BHEL in Indian Rupees only.
- 2.2 Tenderers of Indian Nationality shall furnish the following details in their offers:
  - 2.2.1 The Bidder(s)/ Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any, indicating their nationality as well as their status, i.e. whether manufacturer or agents of manufacturer holding the Letter of Authority of the Principal specifically authorizing the agent to make an offer in India in response to tender either directly or through the agents/ representatives.
  - 2.2.2 The amount of commission/ remuneration included in the price (s) quoted by the Tenderer for himself.
  - 2.2.3 Confirmation of the foreign principals of the Tenderer that the commission/ remuneration, if any, reserved for the Tenderer in the quoted price(s), may be paid by BHEL in India in equivalent Indian Rupees on satisfactory completion of the Project or supplies of Stores and Spares in case of operation items.
- 2.3 In either case, in the event of contract materializing, the terms of payment will provide for payment of the commission/ remuneration, if any payable to the agents/ representatives in India in Indian Rupees on expiry of 90 days after the discharge of the obligations under the contract.
- 2.4 Failure to furnish correct and detailed information as called for in paragraph 2.0 above will render the concerned tender liable to rejection or in the event of a contract materializing, the same liable to termination by BHEL. Besides this there would be a penalty of banning business dealings with BHEL or damage or payment of a named sum.



**ANNEXURE - II**  
**LIST OF INTERNATIONAL GATEWAY AIRPORTS**

For air based consignment, terms of delivery will be on FCA basis from following listed airports only. Vendors are requested to verify this list for use before submission of offer.

SCHEDULE NO	COUNTRY	CURRENCY CODE	AIRPORT
D01	UK	GBP	LONDON (HEATHROW)
D02	UK	GBP	NEW CASTLE
D03	UK	GBP	OXFORD. CHETLAM
D04	UK	GBP	BRISTOL. WELLINGBOROUGH
D05	UK	GBP	BIRMINGHAM
D06	UK	GBP	EAST MIDLANDS
D07	UK	GBP	MANCHESTER
D08	UK	GBP	LEEDS
D09	UK	GBP	GLASGOW
D10	FRANCE	EURO	PARIS (ROISSY) & LYON
D11	SWEDEN	EURO	STOCKHOLM
D12	SWEDEN	EURO	GOTHENBERG & MALMO
D13	ITALY	EURO	ROMA, MILAN
D14	ITALY	EURO	TURIN, BOLOGNA, FLORENCE
D15	NETHERLANDS	EURO	AMSTERDAM, ROTTERDAM
D16	AUSTRIA	EURO	VIENNA, LINZ, GRAZ
D17	BELGIUM	EURO	ANTWERP, BRUSSELS
D18	DENMARK	DKK	COPENHAGEN
D19	JAPAN	JPY	TOKYO, OSAKA
D20	SINGAPORE	SGD	SINGAPORE
D21	CANADA	CAD	TORONTO
D22	CANADA	CAD	MONTREAL
D23	USA	USD	NEW YORK, BOSTON
D24	USA	USD	CHICAGO
D25	USA	USD	SAN FRANCISCO, LOS ANGELES
D26	USA	USD	ALANTA, HOUSTON
D27	GERMANY	EURO	MUNICH, KOLN, DUSSELDORF, HANNOVER, HAMBURG, STUTTGART, DAMSTADT, MANIHIEM, NURUMBERG
D28	GERMANY	EURO	FRANKFURT
D29	GERMANY	EURO	BERLIN
D30	SWITZERLAND	SFR	BASLE, ZURICH, GENEVA
D31	SPAIN	EURO	BARCELONA
D32	AUSTRALIA	AUD	SYDNEY
D33	AUSTRALIA	AUD	MELBOURNE
D34	AUSTRALIA	AUD	PERTH
D35	CZECH	EURO	PRAGUE
D36	HONG KONG	HKD	HONG KONG
D37	NEW ZELAND	NZD	AUCKLAND
D38	RUSSIA	USD	MOSCOW
D39	SOUTH KOREA	USD	KIMPO INTERNATIONAL, INCHEON
D40	FINLAND	EURO	HELSINKI
D41	ROMANIA	EURO	BUCHAREST
D42	NORWAY	EURO	OSLO
D43	IRELAND	EURO	DUBLIN
D44	ISRAEL	USD	TEL AVIV
D45	UAE	USD	DUBAI
D46	OMAN	USD	MUSCAT
D47	EGYPT	USD	CAIRO
D48	TAIWAN	USD	TAIPEI
D49	UKRAINE	USD	KIEV
D50	CHINA	USD	SHANGHAI, SHENZHEN
D51	PHILIPINES	USD	MANILA
D52	MALAYSIA	USD	KUALALUMPUR, PE NANG
D53	CYPRUS	USD	LARNACA
D54	SOUTH AFRICA	USD	JOHANNESBERG, DURBAN
D55	SLOVAKIA	EURO	BARTISLOVA
D56	SAUDI ARABIA	SAR	RIYADH
D57	TURKEY	EURO	ISTANBUL
D58	THAILAND	USD	BANGKOK
D59	BRAZIL	USD	SAO PAULO, RIO DE JANEIRO

**ANNEXURE – III**  
**DISCREPANCY IN WORDS & FIGURES – QUOTED IN PRICE BID**

Following guidelines will be followed in case of discrepancy in words & figures-quoted in price bid:

(a) If, in the price structure quoted for the required goods/services/works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.

(b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

(c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

(d) If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date upto which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the purchaser, the bid is liable to be ignored.

**ANNEXURE - IV**  
**Electronic Funds Transfer (EFT) OR**  
**Paylink Direct Credit Form**

Please Fill up the form in **CAPITAL LETTERS** only.

TYPE OF REQUEST(Tick one): \_\_\_\_\_ **CREATE** \_\_\_\_\_ **CHANGE**

BHEL Vendor / Supplier Code:

Company Name :

Permanent Account Number(PAN):

Address

City:  PINCODE  STATE

Contact Person(s)

Telephone No:

Fax No:

e-mail id:

1 Bank Name:

2 Bank Address:

3 Bank Telephone No:

4 Bank Account No:

5 Account Type: Savings/Cash Credit

6 9 Digit Code Number of Bank and branch appearing on MICR cheque issued by Bank

7 Bank IFSC Code(applicable for NEFT )

8 Bank IFSC code(applicable for RTGS)  (Indian Financial System Code)

- A I hereby certify that the particulars given above are true, correct and complete and that I, as a representative for the above named Company, hereby authorise BHEL, EDN, Bangalore to electronically deposit payments to the designated bank account.
- B If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold BHEL / transferring Bank responsible.
- C This authority remains in full force until BHEL, EDN, Bangalore receives written notification requesting a change or cancellation.
- D I have read the contents of the covering letter and agree to discharge the responsibility expected of me as a participant under ECS / EFT.

Date:

Authorised Signatory:

Designation:

Telephone No. with STD Code

Company Seal

**Bank Certificate**

We certify that \_\_\_\_\_ has an Account No \_\_\_\_\_ with us and we confirm that the bank details given above are correct as per our records.

Date:

(.....)

Place:

Signature

Please return completed form along with a blank cancelled cheque or photocopy thereof to:

Bharath Heavy Electricals Ltd,

Attn:

Electronics Division, Mysore Road,

BANGALORE - 560 026

In case of any Query, please call concerned purchase executive.

**ANNEXURE - V**  
**PRESENT PROCEDURE FOR SALE IN TRANSIT (HIGH SEA SALES)**

In case of High Sea Sales, vendor should submit following documents:

**1. ORIGINAL HIGH SEA SALES AGREEMENT**

- Sale agreement (on Rs. 200/- non-judicial stamp paper & notarised with 2 witnesses with identity) has to be signed between BHEL and the Party importing material. The date of the sale documents should be in between the date of House Air Way Bill / Bill of Lading and before landing of the goods in Indian origin.
- Following shall be included in the High Sea Sales Agreement:  
"THE BUYER ALSO UNDERTAKE DISCHARGES, THE OBLIGATION AND FULFILLMENT OF CONDITIONS, IF ANY, ATTACHED TO THE IMPORTATION, ASSESSMENT AND CLEARANCE OF THE GOODS IN TERMS CUSTOMS TARIFF ACT 1975, THE CUSTOMS ACT 1962 & RULES & REGULATIONS MADE THERE UNDER AND OTHER RELEVANT ACTS, ORDERS, NOTIFICATIONS".

**2. ORIGINAL INVOICES: INDIGENOUS RUPEE INVOICE & FOREIGN CURRENCY INVOICE**

- Prices should be C.I.F., designated airport/seaport basis.
- I.E.C., C.S.T., K.S.T. Nos. to be mentioned.
- Description of item (Nomenclature), Unit & Quantity in both the Foreign Currency & the Indigenous Invoice in Rupee shall be exactly as per Purchase Order Description of item, Quantity and Unit. The Indigenous Invoice value shall be exactly as per Purchase Order value.
- Seller should give Foreign Currency Invoice from the original consignor. The Foreign Currency Invoice value should be at least 2% (two per cent) less than the Indigenous Rupee Invoice value in equivalent foreign currency.

**4. ORIGINAL HOUSE AIR WAY BILL/ BILL OF LADING**

- The sale agents should duly endorse House Air Way Bill (HAWB) for air shipments or original Bill of Lading (O.B.L.) for sea shipments and Foreign Currency Invoice in favour of BHEL-EDN.

**5. ORIGINAL CARGO ARRIVAL NOTICE FROM FORWARDER.**

**6. ORIGINAL DELIVERY ORDER ISSUED IN NAME OF BHEL-EDN.**

**7. ORIGINAL PACKING LIST.**

**8. A LETTER TO THE COMMISSIONER OF CUSTOMS FOR EFFECTING ABOVE SALE.**

**9. A LETTER TO THE DEPUTY ASSESSOR (OCTROI) FOR EFFECTING ABOVE SALE IN FAVOUR OF BHEL.**

**REMARKS:** In case vendor needs any clarifications on the above, the same may be sought in writing.

**Annexure-VI**

**BHEL MEMBER BANKS (LIST OF CONSORTIUM BANKS)**

**BANK GUARANTEE (BG) SHALL BE ISSUED FROM THE FOLLOWING BANKS ONLY:**

	<b>Nationalised Banks</b>		<b>Nationalised Banks</b>
1	Allahabad Bank	19	Vijaya Bank
2	Andhra Bank		<b>Public Sector Banks</b>
3	Bank of Baroda	20	IDBI
4	Canara Bank		<b>Foreign Banks</b>
5	Corporation Bank	21	CITI Bank N.A
6	Central Bank	22	Deutsche Bank AG
7	Indian Bank	23	The Hongkong and Shanghai Banking Corporation Ltd. (HSBC)
8	Indian Overseas Bank	24	Standard Chartered Bank
9	Oriental Bank of Commerce	25	J P Morgan
10	Punjab National Bank		
11	Punjab & Sindh Bank		<b>Private Banks</b>
12	State Bank of India	26	Axis Bank
13	State Bank of Hyderabad	27	The Federal Bank Limited
14	Syndicate Bank	28	HDFC Bank
15	State Bank of Travancore	29	Kotak Mahindra Bank Ltd
16	UCO Bank	30	ICICI Bank
17	Union Bank of India	31	IndusInd Bank
18	United Bank of India	32	Yes Bank

**Note:**

- All BGs must be issued from BHEL consortium banks listed above.
- This list is subject to changes. Hence vendors are requested to check this list every time before issuing BGs.
- Bank Guarantees issued by Co-Operative Banks/Financial Institutions cannot to be accepted under any circumstance.

Annexure-VII

**BANK GUARANTEE FOR PERFORMANCE SECURITY**

Bank Guarantee No:

Date:

To  
NAME  
& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

In consideration of Bharat Heavy Electricals Limited (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 \_\_\_\_\_<sup>1</sup> through its Unit at.....(name of the Unit) having awarded to ( Name of the Vendor / Contractor / Supplier) with its registered office at \_\_\_\_\_<sup>2</sup> hereinafter referred to as the 'Vendor / Contractor / Supplier', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No.....dated .....<sup>3</sup> valued at Rs.....<sup>4</sup> ( Rupees -----)/FC.....(in words.....) for .....<sup>5</sup> (hereinafter called the 'Contract') and the Vendor / Contractor / Supplier having agreed to provide a Contract Performance Bank 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 any sum or sums upto a maximum amount of Rs -- .....<sup>6</sup> ( Rupees -----) without any demur, immediately on first demand from the Employer and without any reservation, protest, and recourse and without the Employer needing to prove or demonstrate reasons for its such demand.

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 Vendor / Contractor / Supplier in any suit or proceeding pending before any Court or Tribunal, Arbitrator or any other authority, 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 Vendor / Contractor / Supplier shall have no claim against us for making such payment.

We the .....bank 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/satisfactory completion of the performance guarantee period as per the terms of the 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 Vendor / 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 Vendor / Contractor / Supplier and to forbear or enforce any of the terms and conditions relating to the said Contract and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Vendor / Contractor / Supplier or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Vendor / 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 Vendor / Contractor / Supplier and notwithstanding any security or other guarantee that the Employer may have in relation to the Vendor / Contractor / Supplier 's liabilities.

This Guarantee shall remain in force upto and including.....<sup>7</sup> 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 Vendor / 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 the .....<sup>8</sup>we 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.....<sup>6</sup>
- b) This Guarantee shall be valid up to .....<sup>7</sup>
- c) Unless the Bank is served a written claim or demand on or before .....<sup>8</sup> 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.....

<sup>1</sup> NAME AND ADDRESS OF EMPLOYER I.e Bharat Heavy Electricals Limited

<sup>2</sup> NAME AND ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER.

<sup>3</sup> DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

<sup>4</sup> CONTRACT VALUE

<sup>5</sup> PROJECT/SUPPLY DETAILS

<sup>6</sup> BG AMOUNT IN FIGURES AND WORDS

<sup>7</sup> VALIDITY DATE

<sup>8</sup> DATE OF EXPIRY OF CLAIM PERIOD



**Annexure – VIII**  
**(Applicable only for MSE suppliers)**  
**Certificate by Chartered Accountant on Letter Head**

This is to certify that M/s .....  
.....(hereinafter referred to as 'Company')  
having its registered office at ..... is registered under MSMED Act 2006,  
(Entrepreneur Memorandum No (Part-11 ..... dtd .....  
Category: ..... (Micro/Small) (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as  
per the latest audited financial year..... as per MSMED Act 2006 is as follows:

1. **For Manufacturing Enterprises:** Investment in plant and machinery ( i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No.S.O.1722 (E) dated October 5, 2006:  
Rs.....Lacs.
2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006:  
Rs. ....Lacs.

The above investment of Rs. ....Lacs in within permissible limit of  
Rs.....Lacs for.....Micro / Small (Strike off which is not  
applicable ) Category under MSMED Act 2006.

Or

The company has been graduated from its original category (Micro/ Small) (**Strike off which is not applicable**) and the date of graduation of such enterprise from its original category is ..... (dd/mm/yyyy) which is within the period of 3 years from the date of graduation of such enterprise from its original category as notified vide S.O. No. 3322(E) dated 01.11.2013 published in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:

(Signature)

Name:

Membership Number:

Seal of Chartered Accountant

**INTEGRITY PACT**

**Between**

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at "BHEL House", Siri Fort, New Delhi – 110049 (India) hereinafter referred to as "The Principal", which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the ONE PART

**and**

\_\_\_\_\_, (description of the party along with address), hereinafter referred to as "The Bidder/ Contractor" which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

**Preamble**

The Principal intends to award, under laid-down organizational procedures, contract/s for

\_\_\_\_\_. The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitor(s), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

## **Section 1 – Commitments of the Principal**

- 1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-
- 1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
- 1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
- 1.1.3 The Principal will exclude from the process all known prejudiced persons.
- 1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

## **Section 2 – Commitments of the Bidder(s)/ Contractor(s)**

- 2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
- 2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved

in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he / she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

2.1.2 The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant IPC/ PC Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

2.1.4 The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

### **Section 3 – Disqualification from tender process and exclusion from future contracts**

If the Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process or take action as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors". framed by the Principal.

### **Section 4 – Compensation for Damages**

- 4.1 If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent Earnest Money Deposit/Bid Security.
- 4.2 If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/Performance Bank Guarantee, whichever is higher.

### **Section 5 – Previous Transgression**

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
- 5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

## **Section 6 – Equal treatment of all Bidders/ Contractors/ Sub-contractors**

- 6.1 The Bidder(s)/ Contractor(s) undertake(s) to obtain from all subcontractors a commitment consistent with this Integrity Pact and report Compliance to the Principal. This commitment shall be taken only from those sub-contractors whose contract value is more than 20 % of Bidder's/ Contractor's contract value with the Principal. The Bidder(s)/ Contractor(s) shall continue to remain responsible for any default by his Sub-contractor(s).
- 6.2 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.
- 6.3 The Principal will disqualify from the tender process all bidders who do not sign this pact or violate its provisions.

## **Section 7 – Criminal Charges against violating Bidders/ Contractors /Sub-contractors**

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

## **Section 8 –Independent External Monitor(s)**

- 8.1 The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

- 8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.
- 8.3 The Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the Principal including that provided by the Bidder(s)/ Contractor(s). The Bidder(s)/ Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-contractor(s). The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Sub-contractor(s) with confidentiality.
- 8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
- 8.5 As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or heal the situation, or to take other relevant action. The Monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
- 8.6 The Monitor will submit a written report to the CMD, BHEL within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.
- 8.7 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.
- 8.8 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant IPC / PC Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the

Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.

8.9 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.

8.10 The word 'Monitor' would include both singular and plural.

### **Section 9 – Pact Duration**

9.1 This Pact begins and shall be binding on and from the submission of bid(s) by bidder(s). It expires for the Contractor 12 months after the last payment under the respective contract and for all other Bidders 6 months after the contract has been awarded.

9.2 If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified as above, unless it is discharged / determined by the CMD, BHEL.

### **Section 10 – Other Provisions**

10.1 This agreement is subject to Indian Laws and jurisdiction shall be registered office of the Principal, i.e. New Delhi.

10.2 Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

10.3 If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

10.4 Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.



10.5 Only those bidders/ contractors who have entered into this agreement with the Principal would be competent to participate in the bidding. In other words, entering into this agreement would be a preliminary qualification.

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For & On behalf of the Principal

For & On behalf of the Bidder/ Contractor

(Office Seal)

(Office Seal)

Place-----

Date-----

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_

(Name & Address) \_\_\_\_\_

(Name & Address) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



ಭಾರತ್ ಹೆವಿ ಎಲೆಕ್ಟ್ರಿಕಲ್ಸ್ ಲಿಮಿಟೆಡ್  
 भारत हेवी इलेक्ट्रिकल्स लिमिटेड

**Bharat Heavy Electricals Ltd.,  
 (A Government of India undertaking)  
 Electronics Division**

PB 2606 , Mysore Road Bangalore , 560026 INDIA

CE: PR: 002- Rev 01

### **GENERAL COMMERCIAL CONDITIONS FOR CONTRACT**

These 'General Commercial Conditions for Contract for Purchase' herein after referred to as GCC apply to all enquiries, tenders, requests for quotations, orders, contracts and agreements concerning the supply of goods and the rendering of related services (hereinafter referred to as "deliveries") to Bharat Heavy Electricals Limited and any of its units, regions or divisions (hereinafter referred to as "BHEL" or the Purchaser) or its projects/ customers.

Any deviations from or additions to these GCC require BHEL's express written consent. The general terms of business or sale of the vendor shall not apply to BHEL. Acceptance, receipt of shipments or services or effecting payment shall not mean that the general terms of business or sale of the vendor have been accepted.

Orders, agreements and amendments thereto shall be binding if made or confirmed by BHEL in writing. Only the Purchasing department of BHEL is authorized to issue the Purchase Order or any amendment thereof.

Definitions: Throughout these conditions and in the specifications, the following terms shall have the meanings assigned to them, unless the subject matter or the context requires otherwise.

- a) 'The Purchaser' means Bharat Heavy Electricals Limited, Electronics division, Mysore road, Bangalore 560 026, a Unit of Bharat Heavy Electricals Limited (A Govt. of India Undertaking) incorporated under the Companies Act having its registered office at BHEL House, Siri Fort, New Delhi-110049, India and shall be deemed to include its successors and assigns. It may also be referred to as BHEL.
- b) 'The vendor' means the person, firm, company or organization on whom the Purchase Order is placed and shall be deemed to include the vendor's successors, representative heirs, executors and administrator as the case may be. It may also be referred to as Seller, Contractor or Supplier.
- c) 'Contract' shall mean and include the Purchase Order incorporating various agreements, viz. tender/ RFQ, offer, letter of intent/acceptance/ award, the General Conditions of Contract and Special Conditions of Contract for Purchase, Specifications, Inspection/ Quality Plan, Schedule of Prices and Quantities, Drawings, if any enclosed or to be provided by BHEL or his authorized nominee and the samples or patterns if any to be provided under the provisions of the contract.
- d) 'Parties to the Contract' shall mean the 'The Vendor' and the Purchaser as named in the main body of the Purchase Order.

#### Order of Precedence:

In case of any inconsistency or contradiction between any of the documents, the order of precedence shall be Purchase Order, LOI / LOA, Special Conditions of Contract and General Conditions of Contract for commercial conditions; and specific agreement on technical conditions, RFQ/offer and specification for Technical Conditions.

#### Interpretation:

In the contract, except where the context requires otherwise:

- a) words indicating one gender include all genders;
- b) words indicating the singular also include the plural and words indicating the plural also include the singular;

- c) provisions including the word "agree", "agreed" or "agreement" require the agreement to be recorded in writing, and
- d) "Written" or "in writing" means hand-written, type-written, printed or electronically made, and resulting in a permanent record.

**Applicable Conditions:**

1. **Price Basis:** All prices shall be firm until the purchase order is executed / completed in all respects. No price variations / escalation shall be permitted.
2. **Ordering and confirmation of Order:** Vendor shall send the order acceptance on their company letter head/ through e-mail within a week from the date of receipt of Purchase Order or such other period as specified/ agreed by BHEL. BHEL reserves the right to revoke the order placed if the order confirmation differs from the original order placed. The acceptance of goods/services/supplies by BHEL as well as payments made in this regard shall not imply acceptance of any deviations.  
The purchase order will be deemed to have been accepted if no communication to the contrary is received within one week (or the time limit as specified/agreed by BHEL) from the date of receipt of the purchase order.
3. **Documentation:** After receipt of Purchase Order, vendor should submit necessary documents (if & as applicable) like drawings specified, bill of materials, datasheets, catalogues, quality plan, test procedure, type test report, O & M Manuals and/or any other relevant documents as per Specification/Purchase Order, as and when required by BHEL/ Customer.  
At any stage within the contract period, the vendor shall notify of any error, fault or other defect found in BHEL's documents / specifications or any other items for reference. If and to the extent that (taking account of cost and time) any vendor exercising due care would have discovered the error, fault or other defect when examining the documents/specifications before submitting the tender, the time for completion shall not be extended. However if errors, omissions, ambiguities, inconsistencies, inadequacies or other defects are found in the vendor's documents, they shall be corrected at his cost, notwithstanding any consent or approval.
4. **Penalty:**
  - a. **For delay in documentation:** In the event of delay in submission of complete set of specified documents ((like drawings, bill of materials, datasheets, catalogues, quality plan etc. as called in tender specifications including soft copies wherever applicable) in required sets beyond two(02) weeks (or as agreed/indicated in the SCC/Purchase Order) from the date of receipt of Purchase Order (by email), penalty at 0.5% (half percent) per week or part thereof, limited to a maximum of 5% (five percent) of the basic material value of the Purchase Order will be applicable.  
  
Penalty for delayed documentation if applicable, shall be deducted at the time of first supply payment. If penalty is applicable for duration of less than a week, penalty @ 0.5% (half percent) of the basic material value will be deducted. GST as applicable will be recovered along with penalty amount.
  - b. **For delay in delivery:** In the event of delay in agreed contractual delivery as per Purchase Order, penalty @ 0.5 % (half percent) per week or part thereof but limited to a max of 10% (ten percent) value of undelivered portion (basic material cost) will be applicable. Delivery will commence from the date of issue of Manufacturing clearance along with approved document. The date for which Inspection call is issued by vendor along with test certificates / test reports / Certificate of Conformance / calibration reports, as proof of completion of manufacturing will be treated as date of deemed delivery for penalty calculation. In the absence of furnishing such document indicated above as proof of completion of manufacturing along with inspection call, actual date of inspection will be considered as date of deemed delivery and BHEL will not be responsible for delay in actual date of inspection.

Penalty for delayed delivery if applicable, shall be deducted at the time of first supply payment. If penalty is applicable for duration of less than a week, penalty @ 0.5% (half percent) of the basic material value will be deducted. GST as applicable will be recovered along with penalty amount.

5. Contract variations (Increase or decrease in the scope of supply): BHEL may vary the contracted scope as per requirements at site. If vendor is of the opinion that the variation has an effect on the agreed price or delivery period, BHEL shall be informed of this immediately in writing along with technical details. Where unit rates are available in the Contract, the same shall be the basis for such additional work. Vendor shall not perform additional work before BHEL has issued written instructions/ amendment to the Purchase Order to that effect. The work which the vendor should have or could have anticipated in terms of delivering the service(s) and functionality (i.e.) as described in this agreement, or which is considered to be the result of an attributable error on the vendor's part, shall not be considered additional work.
6. Inspection: Prior written notice of at least 10 days shall be given along with internal test certificates/COC and applicable test certificates. Materials will be inspected by BHEL-EDN-QS/CQS or BHEL nominated Third Party Inspection Agency (TPIA) or BHEL authorized Inspection Agency or Customer / Consultant or jointly by BHEL & Customer / consultant. All tests have to be conducted as applicable in line with approved Quality plan or QA Checklist or Purchase specification and original reports shall be furnished to BHEL-EDN, Bangalore for verification/acceptance for issue of dispatch clearance.  
All costs related to inspections & re-inspections shall be borne by vendor. Whether the Contract provides for tests on the premises of the vendor or any of his Sub-contractor/s, vendor shall be responsible to provide such assistance, labour, materials, electricity, fuels, stores, apparatus, instruments as may be required and as may be reasonably demanded to carry out such tests efficiently. Cost of any type test or such other special tests shall be borne by BHEL only if specifically agreed to in the purchase order.
7. Transit Insurance: Transit insurance coverage between vendor's works and project site shall be to the account of BHEL, unless specifically agreed otherwise. However, vendor shall send intimation directly to insurance agency (as mentioned in dispatch instructions issued by BHEL) through fax/courier/e-mail, immediately on dispatch of goods for covering insurance. A copy of such intimation sent by vendor to insurance agency shall be given to BHEL along with dispatch documents. Dispatch documents will be treated as incomplete without such intimation copy. BHEL shall not be responsible for sending intimations to insurance agency on behalf of the vendor.
8. Mode of dispatch:  
Indigenous Scope: By road on Door Delivery Consignee Copy attached basis through your approved transporter (unless otherwise indicated in Dispatch Instructions), only on receipt of Dispatch Clearance from BHEL.  
Imported Scope: By Air/Sea through BHEL approved Freight Forwarder/supplier approved Consolidator respectively as per agreed contractual terms, only on receipt of Dispatch Clearance from BHEL.
9. Changes in Statutory levies:  
If any rates of Tax are increased or decreased, a new Tax is introduced, an existing Tax is abolished, or any change in interpretation or application of any Tax occurs in the course of the execution of Contract, which was or will be assessed on the bidder in connection with performance of the Contract, an equitable adjustment of the Contract Price shall be made to fully take into account any such change by addition to the Contract Price or deduction there from, as the case may be. However, these adjustments would be restricted to direct transactions between BHEL and the bidder /agent of foreign bidder (if applicable). These adjustments shall not be applicable on procurement of raw materials, intermediary components etc. by the bidder /agent.
10. Availing duty/tax exemption benefits by bidder, wherever applicable: BHEL shall issue the required Certificate/s, as per relevant policies of the Govt. of India, to facilitate the bidders to avail any such benefits under the Contract. In case of failure of the bidders to receive the benefits partly or fully from the Govt. of India and/or in case of any delay in receipt of such benefits, BHEL shall neither be liable nor responsible in any manner whatsoever.

11. Taxes against sub-vendor dispatches: All taxes/levies, as applicable in respect of all components, equipments and material to be despatched directly from the sub-vendor's works to Site irrespective of the fact whether such taxes and levies are assessable and chargeable on Vendor or the BHEL, shall be to the vendor's account and no separate claim in this regard will be entertained by BHEL.
12. High Sea Sales (HSS): Customs clearance of the consignment landed on Indian Sea/Air ports will be done by BHEL based on the original HSS documents provided by vendors.  
Any delay in submission of complete/correct HSS documents to BHEL may incur demurrage charges. All demurrage charges on account of incomplete /incorrect HSS documents submission by vendor will be to vendor's account and all such charges will be recovered from any of the available vendor bills with BHEL.
13. Packaging and dispatch:The Seller shall package the goods safely and carefully and pack them suitably in all respects considering the peculiarity of the material for normal safe transport by Sea/ Air / Rail/ Road to its destination suitably protected against loss, damage, corrosion in transit and the effect of tropical salt laden atmosphere. The packages shall be provided with fixtures/ hooks and sling marks as may be required for easy and safe handling. If any consignment needs special handling instruction, the same shall be clearly marked with standard symbols / instructions. Hazardous material should be notified as such and their packing, transportation and other protection must conform to relevant regulations.  
The packing, shipping, storage and processing of the goods must comply with the prevailing legislation and regulations concerning safety, the environment and working conditions. Any Imported/Physical Exports items packed with raw/ solid wood packing material should be treated as per ISPM – 15 (fumigation) and accompanied by Phytosanitary/ Fumigation certificate. If safety information sheets (MSDS – Material Safety Data Sheet) exist for an item or the packaging, vendor must provide this information without fail along with the consignment.  
Each package must be marked with Consignee name, Purchase order number, Package number, Gross weight and net weight, dimensions (LxBxH) and Seller's name. Packing list of goods inside each package with PO item number and quantity must also be fixed securely outside the box to indicate the contents of each box. Total number of packages in the consignment must also be indicated in the packing list.  
Separate packing & identification of items should be as follows.  
1. Main Scope - All items must be tagged with part no. & item description.  
2. Commissioning accessories/spares - All items must be tagged with part no. & item description.  
3. Mandatory spares - All items must be tagged with part no. & item description.  
Nevertheless, vendor shall adhere to dispatch & packing instructions issued by BHEL at the time of dispatch.
14. Assignment of Rights & Obligations; Subcontracting: Vendor is not permitted to subcontract the delivery or any part thereof to third party or to assign the rights and obligations resulting from this agreement in whole or in part to third parties without prior written permission from BHEL. Any permission or approval given by the BHEL shall, however, not absolve the vendor of the responsibility of his obligations under the Contract.
15. Progress report: Vendor shall render such report as to the progress of work and in such form as may be called for by the concerned purchase officer from time to time. The submission and acceptance of such reports shall not prejudice the rights of BHEL in any manner.
16. Non-disclosure and Information Obligations: Vendor shall provide with all necessary information pertaining to the goods as it could be of importance to BHEL. Vendor shall not reveal any specified confidential information that may be divulged by BHEL to Vendor's employees not involved with the tender/ contract & its execution and delivery or to third parties, unless BHEL has agreed to this in writing beforehand. Vendor shall not be entitled to use the BHEL name in advertisements and other commercial publications without prior written permission from BHEL.
17. Cancellation /Termination of contract: BHEL shall have the right to completely or partially terminate the agreement by means of written notice to that effect. Termination of the Contract, for whatever reason, shall be without prejudice to the rights of the parties accrued under the Contract up to the time of termination.  
BHEL shall have the right to cancel/foreclose the Order/ Contract, wholly or in part, in case it is constrained to do so on account of any decline, diminution, curtailment or stoppage of the business.

18. Risk Purchase Clause: In case of failure of supplier, BHEL at its discretion may make purchase of the materials / services not supplied / rendered in time at the RISK & COST of the supplier. Under such situation, the supplier who fails to supply the goods in time shall be wholly liable to make good to BHEL any loss due to risk purchase.
- In case of items demanding services at site like erection and commissioning, vendor should send his servicemen/representatives within 7 days from the service call. In case a vendor fails to attend to the service call, BHEL at its discretion may also make arrangements to attend such service by other parties at the **RISK & COST** of the supplier. Under such situation the supplier who fails to attend the service shall be wholly liable to make good to BHEL any loss due to risk purchase/service including additional handling charges due to the change.
19. Shortages: In the event of shortage on receipt of goods and/or on opening of packages at site, all such shortages, caused by supplier's act or omission, shall be made good at free of cost within a reasonable time that BHEL may allow from such intimation.
- Transit Damages: In the event of receipt of goods in damaged condition or having found them so upon opening of packages at site, supplier shall make good of all such damages within a reasonable time from such intimation by BHEL. In case BHEL raises an insurance claim, the cost of material limited to insurance settled amount less handling charges will be reimbursed to supplier.
20. Remedial work: Notwithstanding any previous test or certification, BHEL may instruct the vendor to remove and replace materials/goods or remove and re-execute works/services which are not in accordance with the purchase order. Similarly BHEL may ask the vendor to supply materials or to execute any services which are urgently required for any safety reasons, whether arising out of or because of an accident, unforeseeable event or otherwise. In such an event, Vendor shall provide such services within a reasonable time as specified by BHEL.
21. Indemnity Clause: Vendor shall comply with all applicable safety regulations and take care for the safety of all persons involved. Vendor is fully responsible for the safety of its personnel or that of his subcontractor's men / property, during execution of the Purchase Order and related services. All statutory payments including PF, ESI or other related charges have to be borne by the vendor. Vendor is fully responsible for ensuring that all legal compliances are followed in course of such employment.
22. Product Information, Drawings and Documents: All specified drawings, technical documents or other technical information received by Vendor from BHEL or vice versa shall not, without the consent of the other party, be used for any other purpose than that for which they were provided. They may not, without the consent of the Disclosing party, otherwise be used or copied, reproduced, transmitted or communicated to third parties. All information and data contained in general product documentation, whether in electronic or any other form, are binding only to the extent that they are by reference expressly included in the contract.
- Vendor, as per agreed date/s but not later than the date of delivery, provide free of charge information and drawings which are necessary to permit and enable BHEL to erect, commission, operate and maintain the product. Such information and drawings shall be supplied in as many numbers of copies as may be agreed upon.
- All intellectual properties, including designs, drawings and product information etc. exchanged during the formation and execution of the Contract shall continue to be the property of the disclosing party.
23. Intellectual Property Rights, Licenses: If any Patent, design, Trade mark or any other intellectual property rights apply to the delivery (goods/related service) or accompanying documentation shall be the exclusive property of the Vendor and BHEL shall be entitled to the legal use thereof free of charge by means of a non-exclusive, worldwide, perpetual license. All intellectual property rights that arise during the execution of the Purchase Order/ contract for delivery by vendor and/or by its employees or third parties involved by the vendor for performance of the agreement shall belong to BHEL. Vendor shall perform everything necessary to obtain or establish the above mentioned rights. The Vendor guarantees that the delivery does not infringe on any of the intellectual property rights of third parties. The Vendor shall do everything necessary to obtain or establish the alternate acceptable arrangement pending resolution of any (alleged)

claims by third parties. The Vendor shall indemnify BHEL against any (alleged) claims by third parties in this regard and shall reimburse BHEL for any damages suffered as a result thereof.

24. Force Majeure: Notwithstanding anything contained in the purchase order or any other document relevant thereto, neither party shall be liable for any failure or delay in performance to the extent said failures or delays are caused by the "Act of God" and occurring without its fault or negligence, provided that, force majeure will apply only if the failure to perform could not be avoided by the exercise of due care and vendor doing everything reasonably possible to resume its performance.

A party affected by an event of force majeure which may include fire, tempest, floods, earthquake, riot, war, damage by aircraft etc., shall give the other party written notice, with full details as soon as possible and in any event not later than seven (7) calendar days of the occurrence of the cause relied upon. If force majeure applies, dates by which performance obligations are scheduled to be met will be extended for a period of time equal to the time lost due to any delay so caused.

Notwithstanding above provisions, in an event of Force Majeure, BHEL reserves for itself the right to cancel the order/ contract, wholly or partly, in order to meet the overall project schedule and make alternative arrangements for completion of deliveries and other schedules.

25. Warranty:

Wherever required, and so provided in the specifications/ Purchaser Order, the Seller shall ensure that the goods supplied shall comply with the specifications laid down, for materials, workmanship and performance.

Unless otherwise specified in SCC, warranty period shall be applicable for a period of 24 months from the date of delivery of goods or 18 months from the date of commissioning of goods, whichever is earlier.

The warranty period as described above shall apply afresh to replaced, repaired or re-executed parts of a delivery. Unless otherwise specifically provided in the Purchase Order, Vendor's liability shall be co terminus with the expiration of the applicable warranty period.

26. Limitation of Liability: Vendor's liability towards this contract is limited to a maximum of 100% of the contract value and consequential damages are excluded. However the limits of liability will have no effect in cases of criminal negligence or wilful misconduct.

The total liability of Vendor for all claims arising out of or relating to the performance or breach of the Contract or use of any Products or Services or any order shall not exceed the total Contract price.

27. Liability during warranty: Vendor shall arrange replacement / repair of all the defective materials / services under its obligation during the warranty period. The rejected goods shall be taken away by vendor and replaced / repaired. In the event of the vendor's failure to comply, BHEL may take appropriate action including disposal of rejections and replenishment by any other sources at the cost and risk of the vendor. In case, defects attributable to vendor are detected during Warranty period or where the commissioning call is issued within the warranty period, vendor shall be responsible for replacement/ repair of the goods as required by BHEL at vendor's cost even after expiry of warranty period.

Further if the equipment or any part thereof cannot be used by reason of such defect and/or making good of such defect, the warranty period of the equipment or such part, as the case may be, shall be extended by a period equal to the period during which the equipment or such part cannot be used by BHEL because of any of the aforesaid reasons. Upon correction of the defects in the facilities or any part thereof by repair/replacement, such repair/replacement shall have the warranty period for a period of twelve (12) months from the time such replacement/repair of the equipment or any part thereof has been completed.

28. Liability after warranty period: At the end of the warranty, the Vendor's liability ceases except for latent defects. For the purpose of this clause, latent defects shall be the defects inherently lying within the material or arising out of design deficiency which do not manifest themselves during the warranty Period, but later. The Contractor's liability for latent defects warranty for the equipment including spares shall be limited to a period of six months from the end of the warranty period of the respective equipment including spares or first time commissioning, whichever is later but not later than one (01) year from the date of expiry of warranty period.

29. Compliance with Laws: Vendor shall, in performing the contract, comply with all applicable laws. The vendor shall make all remittances, give all notices, pay all taxes, duties and fees, and obtain all permits, licences and approvals, as required by the laws in relation to the execution and completion of the contract and for remedying of any defects; and the Contractor shall indemnify and hold BHEL harmless against and from the consequences of any failure to do so.
30. Settlement of Disputes: Except as otherwise specifically provided in the Purchase Order, decision of BHEL shall be binding on the vendor with respect to all questions relating to the interpretation or meaning of the terms and conditions and instructions herein before mentioned and as to the completion of supplies/work/services, other questions, claim, right, matter or things whatsoever in any way arising out of or relating to the contract, instructions, orders or these conditions or otherwise concerning the supply or the execution or failure to execute the order, whether arising during the schedule of supply/work or after the completion or abandonment thereof. Any disputes or differences among the parties shall to the extent possible be settled amicably between the parties thereto, failing which the disputed issues shall be settled through arbitration. Vendor shall continue to perform the contract, pending settlement of dispute(s).
31. Arbitration Clause in case of Contract with vendors other than Public Sector Enterprise (PSE) or a Government Department:

#### ARBITRATION & CONCILIATION

The parties shall attempt to settle any disputes or difference arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract, or in connection with this contract through friendly discussions. In case no amicable settlement can be reached between the parties through such discussions, in respect of any dispute; then, either Party may, by a notice in writing to the other Party refer such dispute or difference to the sole arbitration of an arbitrator appointed by Head of the BHEL–EDN. Such Sole Arbitrator appointed, shall conduct the arbitration in English language.

The Arbitrator shall pass a reasoned award and the award of the Arbitration shall be final and binding upon the Parties.

Subject as aforesaid, the provisions of Arbitration and Conciliation Act 1996 (India) or statutory modifications or re-enactments thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceedings under this clause. The seat of arbitration shall be Bangalore.

The cost of arbitration shall be borne as decided by the Arbitrator upon him entering the reference.

Subject to the Arbitration Clause as above, the Courts at Bangalore alone shall have exclusive jurisdiction over any matter arising out of or in connection with this Contract.

Notwithstanding the existence or any dispute or differences and/or reference for the arbitration, the parties shall proceed with and continue without hindrance the performance of its obligations under this Contract with due diligence and efficiency in a professional manner except where the Contract has been terminated by either Party in terms of this Contract.

#### Arbitration Clause in case of Contract with a Public Sector Enterprise (PSE) or a Government Department:

In the event of any dispute or difference relating to the interpretation and application of the provisions of the Contract, such dispute or difference shall be referred by either party for Arbitration to the Sole Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprises. The Arbitration and Conciliation Act, 1996 shall not be applicable to arbitration under this clause. The award of the Arbitrator shall be binding upon the parties to the dispute, provided, however, any Party aggrieved by such Award may make further reference for setting aside or revision of the Award to the Law Secretary, Department of Legal Affairs, Ministry of Law and Justice, Government of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary or Additional Secretary when so authorized by the Law Secretary, whose decision shall bind the Parties hereto finally and conclusively. The Parties to the dispute will share equally the cost of arbitration as intimated by the Arbitrator.'



32. Applicable Laws and Jurisdiction of Courts: Prevailing Indian laws both substantive and procedural, including modifications thereto, shall govern the Contract. Subject to the conditions as aforesaid, the competent courts in Bangalore alone shall have jurisdiction to consider over any matters touching upon this contract.
33. General Terms: That any non-exercise, forbearance or omission of any of the powers conferred on BHEL and /or any of its authorities will not in any manner constitute waiver of the conditions hereto contained in these presents.

That the headings used in this agreement are for convenience of reference only.

That all notices etc., to be given under the Purchase order shall be in writing, type script or printed and if sent by registered post or by courier service to the address given in this document shall be deemed to have been served on the date when in the ordinary course, they would have been delivered to the addressee.



ಭಾರತ ಹೆವಿ ಎಲೆಕ್ಟ್ರಿಕಲ್ಸ್ ಲಿಮಿಟೆಡ್  
भारत हेवी इलेक्ट्रिकल्स लिमिटेड  
Bharat Heavy Electricals Ltd.,  
(A Government of India undertaking)  
Electronics Division

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CE: PR: 003- Rev 01

PB 2606 , Mysore Road Bangalore , 560026 INDIA

**SPECIAL COMMERCIAL CONDITIONS OF CONTRACT**

Reference is brought to BHEL's Instructions to Bidders (Document Ref: CE: PR: 001- Rev 01) and General Commercial Conditions for Contract (Document Ref: CE: PR: 002- Rev 01). These documents along with required annexures are available in our website: \_\_\_\_\_ .These two documents along with Special Conditions of Contract annexed to this RFQ will form an integral part of the contract as and when the RFQ culminates into a Purchase Order / Contract.

RFQ No: SBA0000321 RFQ Date: 18-04-2018

Due Date: 11-05-2018 Customer/Project: KAPP & RAPP

Item Description: EPR Insulated LHLS sheathed Instrumentation cable

TYPE OF BID: **THREE PART BID**

Purchase Executives: Clarifications with regard to the tender shall be addressed to purchase officers whose e-mail IDs are given below: saravanababu@bhel.in or neelkantghode@bhel.in

Submission of documents post PO viz., drawings /data sheet etc. as indicated in Cl: 04 of GCC: Within 02 weeks from the date of receipt of Purchase Order. Delay in submission of complete set of specified documents in NIT, will attract Penalty as per GCC Clause no.:04.a.

Splitting of tendered quantity to MSE vendors: The tendered quantity will not be split to MSE vendor/s

Destination: a) For Indigenous scope of supply, items are to be directly despatched to BHEL's Site Office or Stores located at/near Tapi & Kota District/City in Gujarat & Rajasthan State respectively . Consignee details and Road Permit, if applicable, will be issued by BHEL along with Despatch Clearance.

b) For Imported scope of supply, port of discharge will be Chennai seaport and port of delivery shall be Bangalore.

Project Benefits:

Imported scope of supply:

- ~~DEEC / SEZ/EPCG/DFIA/ Physical Export contract: Eligible for "NIL" Basic Customs Duty.~~
- ~~Project Imports: Eligible for Concessional Basic Custom Duty.~~
- ~~Basic Custom duty and Cess on Basic Custom duty are reimbursable by customer.~~

Terms of Delivery:

• **Indigenous scope of supply:**

Ex-works < station of dispatch > (including Packing & Forwarding charges but excluding Taxes & Duties).

• **Imported scope of supply:**

C.I.F. (for sea consignments) ICD,Bangalore (including Packing, Forwarding, Handling, Ancillary charges like processing of Sight Draft/ Letter of Credit, negotiation of bank documents, Export declaration, Country of Origin etc.).

Kindly indicate the approximate weight of the total imported consignment, which is required for calculating air-freight charges:

\_\_\_\_\_

Under-mentioned details shall be provided against indigenous supplies and services:

a. GSTIN (no.) of place of supply: \_\_\_\_\_

b. HSN (Harmonized System of Nomenclature) code: \_\_\_\_\_

Applicable tax and Rate: \_\_\_\_\_ & \_\_\_\_\_

I. Bidders to mandatorily provide confirmation/compliance for the under-mentioned terms:

SL NO.	TERMS	BHEL ACCEPTABLE TERM	BIDDER'S CONFIRMATION	REMARKS,if any
01	<b>Reverse Auction</b>	Will be intimated separately to qualified bidders after finalization of techno-commercial evaluation. Non-acceptance to participate in RA may result in non-consideration of the bid, in case BHEL decides to go for RA. In case BHEL does not resort to Reverse Auction, the price bids and price impacts (if any) shall be opened as per BHEL's standard practice.	<b>AGREE</b>	
02	<b>Delivery Period</b>	Within <u>16</u> weeks from the date of issue of Manufacturing clearance along with approved document. Delay in contractual delivery will attract Penalty as per GCC Clause no.:04.b.	<b>AGREE</b>  ..... weeks	
03	<b>Terms of Payment at the time of material supply</b>	Refer Clause "F" of Instructions to Bidder for BHEL standard Payment terms and loading factors applicable for non-compliance against payment terms: <b>Indigenous Scope:</b> c) Supply only <b>Imported Scope:</b> f) Supply only <b>High-Sea sales:</b> i) Supply only	<b>AGREE</b>	

**II. Bidder to note that Deviations shall not be permitted for the below mentioned terms and are deemed to be complied. In case of non-compliance/deviation, offer shall be liable for rejection:**

- (1) **Validity:** The offer will be valid for a period of 90 days from the date of part-I bid opening and in case of Negotiation/ Counter-offer/Reverse Auction, price validity will apply afresh for a period of 30 days from the date of according final price by bidder (or) upto original validity period, whichever is later.
- (2) **Guarantee/ Warranty:** 24 months from the date of dispatch of goods or 18 months from the date of commissioning of goods, whichever is earlier.
- (3) **Despatch Documents:** Complete set of despatch documents (original + 1 photocopy set) as per Purchase Order shall be forwarded to Purchase Executive/BHEL directly. Depending upon the project/customer demands, despatch documents may include one or more documents from the following: Invoice (02 sets of original), Lorry Receipt (L/R), Packing List, Air Way Bill (AWB)/Bill Of Lading (BOL), Copy of High Sea Sales (HSS) agreement, Country of origin certificate, insurance intimation letter, POD (Proof of Delivery) on L/R.  
**The precise list of despatch documents needed for the project will be specified in the Purchase Order.**  
One set of Invoice, Packing List and L/R or AWB shall be e-mailed/faxed immediately to BHEL-EDN after despatch.
- (4) **Freight Charges (for indigenous scope of supply):** Freight charges shall be to vendor's account. Vendor to quote reasonable lump sum Freight charges separately, with applicable tax in priced offer.
- (5) **Evaluation criteria for tendered item/s:**

Items will not be split on item-wise lowest offer. Items shall be evaluated and procured as a combined package.

(6) **Integrity Pact:** Execution of Integrity Pact is applicable for this tender (Refer clause "K" of Instructions to Bidders)

Details of IEM for this tender are mentioned below:

Name: D.R.S Chaudhary

Address: E-1/164 Arera Colony , Bhopal 462016

Email: dilip.chaudhary@icloud.com

***With this, we hereby confirm that all the terms & conditions as indicated in Instructions to Bidders (Document Ref: CE: PR: 001- Rev 01) & General Commercial Conditions for Contract (Document Ref: CE: PR: 002- Rev 01) are accepted without any deviation.***

**Vendor's Signature with Seal**

Note :

- 1. The above filled-in and signed-sealed document (in original) shall be furnished as part of Part-II Bid without fail.**
- 2. Evaluation methodology:** BHEL shall initially open Bidder's PQR documents only as per "Pre-Qualification Requirements" document of tender for review acceptance. Only after acceptance of PQR evaluation, BHEL shall open Bidder's part-II for evaluation. In the event of acceptance of Bidder's technical offers, the names of such Bidders along with details provided by them for PQR shall be submitted to End-users/Customers for their acceptance/approval. Accepted / Approved Bidders by End-users/Customers only shall be considered by BHEL for further processing.

## INTEGRITY PACT INFORMANTION

IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors are handle d in a fair, transparen t and corruption free manner. A panel of Independent External Monitors (IEMs) have been appointed to oversee implementation of IP in BHEL.

The IP as e nclosed with the tender is to be su bmitted (duly signed by authorized signatory who signs in the offer) along with techno-co mmercial 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.

(a). Details of IEM for this tender is furnished below:

Name : Shri D.R.S Chaudhary, IAS (Retd.)  
Address : E-1/164 Arera Colony ,  
Bhopal-462016  
Phone : +91 755 4050495  
Email : dilip.chaudhary@icloud.com

(b). Please refer Secti on-8 of IP f or Role and Responsi bilities of IE Ms. In case of any complaint arising out of the tendering process, the matter ma y be re ferred to the IEM mentioned in the tender.


*Note:*

No routine correspondence shall be addressed to the IEM (phone/ post/ email) regarding the clarifications, time extensions or any other adm inistrative queries, etc on the tender issued. All such clarification/ issues shall be addressed directly to the tender issuing (procur ement) department.

For all clarifications/ issues related to the tender, Please contact:

Name : Mr. Saravana Babu A, Deputy Manager  
Department : CE-MM-PR  
Address : BHEL EDN, NEB 2<sup>nd</sup> Floor, Mysore Road  
P B No. 2606, Bangalore.  
Phone : +91 80 2699 8728  
Email : saravanababu@bhel.in  
Mobile : +91 9449869725

# REQUEST FOR QUOTATION

	<b>BHARAT HEAVY ELECTRICALS LIMITED</b> Electronics Division PB No. 2606, Mysore Road Bangalore - 560026 INDIA	RFQ NUMBER: SBA0000321  RFQ DATE : 18.APR.2018	Due Date <b>11.MAY.2018</b> Time: 13:00 HRS  VENUE : <b>NEW ENGG. BLDG</b>
MMI:PU:RF:003			

(for all correspondence)

Purchase Executive : Saravana Babu A  
 Phone : 2699 8728  
 Fax : 2698 9227  
 E-mail: saravanababu@bhel.in


Please submit your lowest quotation subject to our terms and conditions attached for the material mentioned below. The quotation must be enclosed in a sealed envelope / Fax superscribed with RFQ no. and due date, should reach us on or before the due date by **13.00** hours IST and will be opened on the same day at **13.30** hours at the venue mentioned above. **PLEASE DROP THE OFFER IN THE BOX PROVIDED AT RECEPTION.**

SI No.	Description	Qty	Unit	Delivery qty	Delivery Date
1	PR0120007369 50P,0.75 Sq.mm,ATC,EPR-LHLS, G type, U/A 50P,0.75 sq.mm, Annealed Tinned Copper conductor, EPR insulation, Overall sheilding with drain wire, Un-armoured, LHLS outer sheathed and as per purchase specification Test Certificate	6,800	M	1,700 1,700 1,700 1,700	Within 16 weeks from the date of issue of Manufacturing clearance along with approved document
2	PR0120007377 25P,1.5 Sq.mm,ATC,EPR-LHLS, G type, U/A 25P,1.5 sq.mm, Annealed Tinned Copper conductor, EPR insulation, Overall sheilding with drain wire, Un-armoured, LHLS outer sheathed and as per purchase specification Test Certificate	4,800	M	1,200 1,200 1,200 1,200	
3	PR0120007385 25P,0.75 Sq.mm,ATC,EPR-LHLS, G type, U/A 25 Pair, 0.75 sq.mm, Annealed Tinned Copper conductor, EPR insulation, Overall sheilding with drain wire, Un-armoured, LHLS outer sheathed and as per purchase specification Test Certificate	18,000	M	4,500 4,500 4,500 4,500	
4	PR0120007393 24P, 0.75 Sq.mm, ATC,EPR-LHLS,G type,U/A 24P,0.75 sq.mm, Annealed Tinned Copper conductor, EPR insulation, Overall sheilding with drain wire, Un-armoured, LHLS outer sheathed and as per purchase specification Test Certificate	42,000	M	10,500 10,500 10,500 10,500	
5	PR0120007401 5P,0.75 Sq.mm,ATC,EPR-LHLS, G type, U/A 5P,0.75 sq.mm, Annealed Tinned Copper conductor, EPR insulation, Overall sheilding with drain wire, Un-armoured, LHLS outer sheathed and as per purchase specification Test Certificate	18,000	M	4,500 4,500 4,500 4,500	
6	PR0120007410 10P,0.75 Sq.mm,ATC,EPR-LHLS, G type, U/A 10P,0.75 sq.mm, Annealed Tinned Copper conductor, EPR insulation, Overall sheilding with drain wire, Un-armoured, LHLS outer sheathed and as per purchase specification Test Certificate	50,000	M	12,500 12,500 12,500 12,500	

For and On behalf of BHEL.

Page 1 OF 2

# REQUEST FOR QUOTATION

	<b>BHARAT HEAVY ELECTRICALS LIMITED</b> Electronics Division PB No. 2606, Mysore Road Bangalore - 560026 INDIA	RFQ NUMBER: SBA0000321  RFQ DATE : 18.APR.2018	<b>Due Date</b> <b>11.MAY.2018</b> <b>Time: 13:00 HRS</b>  VENUE : <b>NEW ENGG. BLDG</b>
MMI:PU:RF:003		(for all correspondence) Purchase Executive : Saravana Babu A Phone : 2699 8728 Fax : 2698 9227 E-mail: saravanababu@bheledn.co.in	
Please submit your lowest quotation subject to our terms and conditions attached for the material mentioned below. The quotation must be enclosed in a sealed envelope / Fax superscribed with RFQ no.and due date, should reach us on or before the due date by <b>13.00</b> hours IST and will be opened on the same day at <b>13.30</b> hours at the venue mentioned above. <b>PLEASE DROP THE OFFER IN THE BOX PROVIDED AT RECEPTION.</b>			
Total Number of Items - 6			
Please note that the tender will be opened in the presence of the bidders or his authorised representatives (maximum two per organisation) who choose to be present with authorisation letters. Refer annexure for the terms and conditions. <del>Preference will be given to vendors who accepts our standard payment terms i.e.100% payment -- 30 days after receipt of material at our works subject to acceptance.</del> <del>Please specify Terms of delivery, Excise duty, sales tax, Ex-BHEL, Ex-works surcharge, Insurance,P&amp;F, Freight and other taxes very clearly .</del> For evaluation,exchange rate(TT selling rate of SBI) as on scheduled date of tender opening (Part-I bid incase of two part bid) shall be considered. 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 web site www.bhel.com			
i). This is only RFQ not an order. ii). In all correspondence quote RFQ No. & due date. iii). In Quotation BHEL material code / RFQ Sl. No. should be mentioned clearly. iv). Quotation Envelope / Fax not superscribed with RFQ No.and due date is liable for rejection. <del>v). Quotation should remain valid for a minimum period of 90 days from due date.</del> vi). In case of non-receipt of Quotation or regret letter for 3 consecutive RFQs you are liable to be removed from our vendors list. vii). All Prices should be written in words and numbers. viii). Excise Chapter Heading should be mentioned for all items where VAT is applicable .			

For and On behalf of BHEL.



A4-10

**EPR INSULATED LHLS CABLE**

**CE/416/NPCIL/PQR**

**Rev. 00**

**Page 1 of 2**

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**PROJECT : KAPP – UNIT 3&4  
RAPP – UNIT 7&8**

**CUSTOMER : M/S NPCIL**

**ITEM : INSTRUMENTATION CABLES**





A4-10

## EPR INSULATED LHLS CABLE

CE/416/NPCIL/PQR

Rev. 00

Page 2 of 2

### Pre-Qualification Requirements (PQR)

- a) The bidder should be a manufacturer and have supplied cables to power plants. Following supporting documents shall be submitted for meeting above requirements:
- i) The bidders shall submit a list of similar supplies made by him to standards and tolerance specified in this tender document.
  - ii) The bidder shall submit along with the offer, a list of in-house test facilities available with them for carrying out all tests specified in specification Ref: CE/416/NPCIL/CBL/IC/QP, Rev 00 (07 Pages).
  - iii) The bidder shall submit along with the offer the test reports of all the tests specified in specification Ref: CE/416/NPCIL/CBL/IC/QP, Rev 00 (07 Pages) carried out by him on similar type of cables.
  - iv) Bidder shall submit Datasheet & along with the offer.
  - v) The vendor general information like registered office address, Manufacturing Plant address and financial statement such as balance sheet for part three years shall be filled and submitted along with the bid.
- b) Original Manufacturers of cables outside india, who are submitting offer for this tender, shall have authorized representatives in India for support related to Documentation, technical support and other co-ordination work. Letter from Original Manufacturers detailing Indian representative details should be provided.

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CE/416/NPCIL/CBL/IC

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**PROJECT: 1. KAPP – UNIT 3 & 4  
2. RAPP – UNIT 7 & 8**

**CUSTOMER: M/S NPCIL**

**PURCHASE SPECIFICATION FOR  
INSTRUMENTATION CABLES (Additional Cables)**

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REVISION:00

CHECKED & APPROVED

M. DHARMASHEKAR

PREPARED

ISSUED

DATE

ARULJOTHI.G.D

416

07/03/18



A4-11

CE/416/NPCIL/CBL/IC

REV 00

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### CONTENTS

Sl. No.	Description	Reference
1	Scope of Supply of Instrumentation Cables	CE/416/NPCIL/CBL/IC/SOS , Rev 00, Sheets 05
2	Technical Requirements of Instrumentation Cables	CE/416/NPCIL/CBL/IC/TR, Rev 00, Sheets 07
3	Quality Plan	CE/416/NPCIL/CBL/IC/QP, Rev 00, Sheets 07

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CE/416/NPCIL/CBL/IC/SOS

REV 00

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**PROJECT: 1. KAPP – UNIT 3 & 4  
2. RAPP – UNIT 7 & 8**

**CUSTOMER: M/S NPCIL**

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**SCOPE OF SUPPLY FOR  
INSTRUMENTATION CABLES (Additional Cables)**

REVISION:00

CHECKED & APPROVED

M. DHARMASHEKAR

PREPARED

ISSUED

DATE

ARULJOTHI.G.D

416

07/03/18



A4-11

CE/416/NPCIL/CBL/IC/SOS

REV 00

PAGE 02 OF 05

### SCOPE OF SUPPLY

1) Manufacture, testing, packing, delivery and guarantee of following Instrumentation cables as per technical requirements reference: CE/416/NPCIL/CBL/IC/TR

1.1) Instrumentation Cables - are Annealed Tinned copper conductor, 0.75 sq.mm, Ethylene-Propylene Rubber insulated, Low Halogen Low smoke (LHLS) sheathed, Un-Armoured, G type, 500 V grade cables conforming to IS-6380. (Core to Core – 500 V & Core to earth – 300 V)

### 2) Documents to be furnished

2.1) Along with the offer(in one set)

- i) Datasheet of complete cable with all electrical/mechanical/FRLS Properties/parameters
- ii) Clause-wise deviation list

2.2) After placement of Purchase Order:(for BHEL/Customer approval-soft copy/hard copy (if required))

- i) Datasheet of complete cable with all electrical/mechanical/FRLS properties/parameters
- ii) Complete Bill of Material
- iii) Quality plan of raw material tests, in-process inspection & final inspection for completed cables enlisting all routine, acceptance & type tests in line with specification requirements
- iv) Drawings for cable construction

2.3) Before Dispatch: (02 sets for review/acceptance)

- i) Type test reports, acceptance test reports for cables from manufacturer

2.4) Final approved drawings/documents: (02 sets at the time of dispatch)

- i) Bill of Material
- ii) Datasheets
- iii) Drawings for the construction of complete cable

These documents shall be in final as-built/approved status.

One (01) set soft copy of Final documents shall also be provided to BHEL.

The final documents for supply, inspection, dispatch & records shall only be those which are accorded final approval by BHEL/Customer/Consultant. No other documents apart from those finally approved by BHEL/Customer/Consultant shall be referred for supply, inspection, dispatch & records.

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**3) Points to be confirmed and adhered by vendor:**

- 3.1) Before quoting, vendor shall go through BHEL specifications & RFQ and then submit quotation complete in all respects. Vendor must furnish, all documents, in line with specification along with Offer. The offer should be correct & complete in all respects. Incomplete offers (without documents / not relevant documents as mentioned above) /erroneous offers will be rejected without any notice. Vendor shall confirm/agree to BHEL clarifications during technical scrutiny. However, if anything is missed out in the original offer due to errors in quoting, the same shall be supplied as per BHEL specifications requirement without any price impact else the offer shall be technically rejected.
- 3.2) This specification has been prepared in line with customer requirements. However if any parameter(s) is/are not possible to meet technically or are practically incompatible with application requirements or deviate from standard technical application requirements, the suppliers are asked to quote as per the standard technical application requirements and bring out such deviations clearly in the technical offer which may get accepted during technical evaluation by BHEL/Customer/Consultant. Please note that any changes related to practical compatibility/standard technical application requirements due to above will be informed to all participating vendors. If a vendor has not participated/not offered originally under this RFQ, he will not be informed of any changes/revised specifications as he is not allowed to quote/offer now. The changes can pertain to quantity changes also under any size of cable. However, if there are any deviations in offer which are not related to any technical application/practical compatibility issues or there are deviations due to error in quoting, the vendor shall have to agree to BHEL clarifications during technical scrutiny and shall supply the material as per the BHEL clarifications & specifications without any price implications on original offer.
- 3.3) Vendor shall provide at least 2 valid emails and 2 valid phone numbers which shall serve communication requirements for clarifications during technical clearance and later on during datasheet scrutiny. A separate field in technical offer should be made for this, indicating the emails and numbers. BHEL-EDN shall use these mails and phone numbers for any clarification required. In case the provided mails and phone numbers turn out to be unresponsive and cause excessive delays to the clarifications, the offer would attract technical rejection. Please note that BHEL EDN shall not be responsible for any losses/problems that take place due to misperformance of the above sought emails and phone numbers to be provided by the vendor.



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- 3.4) Unit rates to be provided which shall be used for any addition/deletion during tender stage or during detailed engineering or later in case of order.
- 3.5) Please note that all vendors shall meet Customer-QA conditions in total, applicable to test facilities also and same should be confirmed in the technical offer. In case any vendor has finalized/installed a facility recently, then the acceptance of technical offer will rest primarily on confirmation of this facility as per Customer-QA requirements. BHEL will evaluate this facility at vendor's works for approval of Customer-QA and if approved, then only vendor's technical offer will be accepted under this RFQ.
- 3.6) The minimum tests shall be conducted as per specifications. Apart from these, tests shall be conducted to demonstrate parameters listed in specifications. In any case, since the cable specifications requirements are similar to BHEL standard of procurement, hence the QP and cable construction/parameters along with various tests shall be as executed for earlier BHEL projects / or as agreed during technical discussions under various earlier RFQs.
- 3.7) The cable shall be provided as per Customer approved documents - specs, data sheets and Quality Plan after order placement on any vendor.
- 3.8) Please note that during inspection, one drum at random of each cable size/type will be uncoiled and the length will be physically measured. The other drums shall be compared on weight basis, taking the weight of the measured cable drum as reference. Also please note that all the drums so measured/weighed during inspection will be sealed in presence of Inspector before dispatch.
- 3.9) The MQP submitted for approval (after ordering) shall contain the tests/Inspection related to above mentioned progressive length marking and drums length measurement.



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PROJECT: KAPP 3 &amp; 4

SL No	Cable Type	Type/ Description	Armouring	Qty/Unit (Mtrs)	Total qty (Mtrs)	Color code
<b>a) Overall shielded (OA)</b>						
1	I	5PX0.75 mm <sup>2</sup>	Un-armoured	4500	9000	Clause 3.3
2	I	10PX0.75 mm <sup>2</sup>	Un-armoured	12500	25000	Clause 3.3
3	I	24PX0.75 mm <sup>2</sup>	Un-armoured	10500	21000	Clause 3.2
4	I	25PX0.75 mm <sup>2</sup>	Un-armoured	4500	9000	Clause 3.3
5	I	50PX0.75 mm <sup>2</sup>	Un-armoured	1700	3400	Clause 3.3
6	I	25PX1.5 mm <sup>2</sup>	Un-armoured	1200	2400	Clause 3.3

PROJECT: RAPP 7 &amp; 8

SL No	Cable Type	Type/ Description	Armouring	Qty/Unit (Mtrs)	Total qty (Mtrs)	Color code
<b>a) Overall shielded (OA)</b>						
1	I	5PX0.75 mm <sup>2</sup>	Un-armoured	4500	9000	Clause 3.3
2	I	10PX0.75 mm <sup>2</sup>	Un-armoured	12500	25000	Clause 3.3
3	I	24PX0.75 mm <sup>2</sup>	Un-armoured	10500	21000	Clause 3.2
4	I	25PX0.75 mm <sup>2</sup>	Un-armoured	4500	9000	Clause 3.3
5	I	50PX0.75 mm <sup>2</sup>	Un-armoured	1700	3400	Clause 3.3
6	I	25PX1.5 mm <sup>2</sup>	Un-armoured	1200	2400	Clause 3.3

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**PROJECT: 1. KAPP – UNIT 3 & 4  
2. RAPP – UNIT 7 & 8**

**CUSTOMER: M/S NPCIL**

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**TECHNICAL REQUIREMENTS FOR  
INSTRUMENTATION CABLES (Additional Cables)**

REVISION:00

CHECKED & APPROVED

M. DHARMASHEKAR

PREPARED

ISSUED

DATE

*G. S. Aruljoti*  
ARULJOTHI.G.D

416

07/03/18



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**1) General Requirements:**

Sl. No.	Description	Technical Requirement
1.1	Codes and Standards	All cables shall comply with std BS 6360 , IS 8130, IS 9968 (Part I), IS 6380, ASTM-D-2863, ASTM-D-2843, IEC -60754-1, NES 713, SEN-SS 4241475 (Class F-3), IEEE 383, VG 95218-Part 66, IS-10810 (latest editions) and their amendments.
1.2	Voltage Grade	As per SOS
1.3	Continuous operation suitability	At 90 deg. C
1.4	Material	All materials used shall be first class. Material should be thermoset. All the materials and processes which are not specified herein shall be chosen so as to enable the purchased product to meet the performance requirement of this specification. Vendor shall have proper machinery for steam vulcanization / e-beam cross linking.
1.5	Workmanship	Workmanship shall be of high industrial quality to ensure the product to be uniform in quality and free from all defects and deformities so as to perform its required function in the specified environment as mentioned over an expected plant life of 40 years.
1.6	Environment conditions	Normal operating conditions: Ambient temp : 8 °C to 45 °C Relative Humidity : 90 %  Occasional/Storage conditions: Ambient temp : 5 °C to 55 °C Relative Humidity : 95 %
1.7	Progressive automatic on-line sequential marking of length in meters	To be provided at every 1 m on outer sheath
1.8	Marking to read 'LHLS'	To be provided at every 1 m on outer sheath
1.9	Allowable tolerance on overall diameter	±2 mm (max.) over the declared value in datasheet

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Sl. No.	Description	Technical Requirement
1.10	Marking on outer sheath (Printing)	Durable embossing at intervals not exceeding 1 m shall include manufacturer's name, insulation material, conductor's size, number of pairs, Overall shielded, sheath material, Binary, year of manufacture, drum no or lot no to be provided
1.11	Overall Quantity Tolerance	+2%, -0% (Negative values are not acceptable)
1.12	Others	Cables shall be suitable for crimping, screw termination or cage clamp type screw less terminal blocks, laying in conduits, ducts, trenches, racks and underground-buried installation with chances of flooding by water
		Repaired cables shall not be acceptable
		All cables shall be termite proof type.
		Joints of any kind in the conductor, insulation and sheath are not allowed.
		Rip cord shall be provided for all cables



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**2) Technical Requirements:**

Sl. No.	Specification Requirement	Overall Shielding
<b>A</b>	<b>Conductors</b>	
i	Cross section Area (sq.mm)	0.75/1.5 sq.mm
ii	Conductor material	Annealed Tinned Copper conductor
iii	Color code	Refer page no 7, Clause - 3
iv	Conductor grade	Electrolytic
v	No & dia. of strands	Solid circular conductor
vi	No of pairs	As required
vii	Max conductor resistance per Km(in ohm) at 20 °C	24.8 ohm/Km for 0.75 sq.mm 12.2 ohm/Km for 1.5 sq.mm
viii	Reference standard	BS 6360/IS 8130
<b>B</b>	<b>Insulation</b>	
i	Material	Ethylene-Propylene Rubber insulated – Type IE2 of IS-6380
ii	Thickness in mm (Nom)	0.65 mm (Nominal) & 0.585 (Min. at any point)
iii	Reference standard	IS 6380
iv	Process	Insulation shall be applied by extrusion process and curing by steam vulcanization/e-beam method.
<b>C</b>	<b>Pairing and Twisting</b>	
i	Min lay of pair (nos)	Min 12 lays/Mtr
ii	Single layer of numbered binder tape on each pair provided	Non-metallic binder such as polyester tape shall be applied over the assembled pairs.
iii	Unit formation of four pairs with printing of no. of unit provided	Yes
iv	Conductor /pair identification as per VDE0815	To be provided (Refer to Clause No. 3 under CE/416/NPCIL/CBL/IC/TR)
<b>D</b>	<b>Shielding</b>	
i	Type of shielding	Polyester backed aluminium tape (polyester surface comes to the top)
ii	Overall cable assembly shielding	To be provided
iii	Minimum thickness of overall cable shielding	25 micron
iv	Shielding coverage	100% with at least 25% overlap
v	Drain wire provided for overall shield	0.75 sq.mm
vi	Metallic side of screen	Metallic side (Aluminium side) of screen shall be in contact with drain wire
vii	Others	Electrostatic fields of individual pairs shall be electrically isolated by providing proper insulation such as polyester tape over the shields.



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Sl. No.	Specification Requirement	Overall Shielding
<b>E</b>	<b>Fillers (if applicable)</b>	
i	Non-Hygroscopic flame retardant	To be provided for circular shape
<b>F</b>	<b>Outer sheath</b>	
i	Material	Low Halogen Low Smoke type – Type SE3
ii	Reference standard	IS 6380
iii	Thickness in mm	1.30 mm (Nom) & 1.04 mm (min at any point) up to 10 pair 1.70 mm (Nom) & 1.36 mm (min at any point) above 10 pair
iv	Color	Black
v	Resistance to water, fungus, termite & rodent attack	Required
vi	Oxygen index	Not less than 29 % as per ASTMD-2863/IS 10810-58
vii	Temperature index	Not less than 250 °C as per ASTMD-2863/IS 10810-58
viii	Smoke density rating as per ASTMD 2843. Test has to be conducted as per IS 10801-63	Maximum 20 % Supplier to indicate the acceptance criterion which is equivalent to 20% smoke density rating as per ASTM-D-2843. Test shall be conducted for 12 minutes instead of 4 minutes as specified by the standard (4 minutes testing is for PVC plastics. Since elastomeric compound is used which do not conform exactly to the standard, therefore test shall be conducted for 12 minutes)
ix	Acid Gas generation by weight as per IEC -60754-1/IS 10810-59	Maximum 2 %
x	Toxicity Index as per NES 713.	Maximum 5
xi	Process	Sheath shall be applied by extrusion process and curing by steam vulcanization/e-beam method.
xii	Others	It should be possible to strip the sheath without damaging the insulation
<b>G</b>	<b>Electrical parameters (at 20 deg. C)</b>	
i	Maximum Mutual capacitance between conductors at 0.8 KHz	150 nF/Km
ii	Maximum Mutual capacitance between conductors and shield	250 nF/Km
iii	Insulation Resistance (min)	Insulation resistance constant at 27°C – 3760 M Ω Km Insulation resistance constant at 90°C – 3.67 M Ω Km
iv	Test Voltage	Core to core & Core to screen : 1.5 KV AC for 5 minutes
<b>H</b>	<b>Complete cable</b>	
I	Complete cable assembly	Shall pass Swedish chimney test as per SEN-SS 4241475 class F3
II	Flammability	Shall pass Swedish chimney test as per SEN-SS 4241475 (F3)
<b>I</b>	<b>Tests</b>	
I	Refer attached QAP Ref: CE/416/NPCIL/CBL/IC/QP (07 sheets)	



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Sl. No.	Specification Requirement	Overall Shielding
J	Cable drum	
I	Type	The cables shall be so packed as not to suffer deterioration, damage or breakage during shipment. The ends of the cable shall be sealed by means of non-hygroscopic sealing material and it should prevent ingress of moisture. Packing should be such that the ingress of moisture, dirt and other foreign material can be avoided. Packing method shall be adequate to withstand a period in transit for more than two months and storage at site under a tropical climate for minimum period of one year without suffering any damage or deterioration. Each package shall be properly labelled to indicate the type and quantity of material it contains, purchase order number, dimensions, weight and other necessary data to identify the equipment and relate it to the contract.
li	Outer most layer covered with water proof paper	Yes
iii	Painting	Entire surface to be painted
iv	Length	Cables of each type shall be applied in coil lengths of 500 m $\pm$ 10%. Coil lengths of 100 to 449 m are considered as non-standard lengths. Non standard lengths of only 10% of ordered quantity are acceptable. Lengths less than 100 m are not acceptable. (The cable is to be provided separately against each unit of the project and therefore balance quantity to complete the supply under each unit of the project shall be provided as a separate drum)
v	Marking on Drum	The drum shall be marked up with the following information: Reference standard, manufacturer's name, type of cable and voltage grade, number of pairs, cross-sectional area of conductor, length of cable on drum, number of lengths on drum (if more than one) direction of rotation, approximate gross weight, country and year of manufacture etc.



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### 3) Conductor/Pair Identification, Unit identification

3.1) The color of insulation for G type cables shall be as below. Numbering method used to identify the pairs of cables. The numbers shall be repeated at regular intervals along the core, consecutive numbers being inverted in relation to each other. When the number is single numeral a dash shall be placed underneath it. If the number consists of two numerals they shall be printed one below the other and a dash placed below the lower numeral. The numbers shall be printed on both the wires of pair at an interval of not more than 150 mm.

3.2) The pairs shall be numbered as given in the example for 24 pair cables for overall shielded cables.

Blue-1, Red-1, Grey-1, Yellow-1, Green-1, Brown-1, White-1, Black-1;  
Blue-2, Red-2, Grey-2, Yellow-2, Green-2, Brown-2, White-2, Black-2;  
Blue-3, Red-3, Grey-3, Yellow-3, Green-3, Brown-3, White-3, Black-3;  
Blue-4, Red-4, Grey-4, Yellow-4, Green-4, Brown-4, White-4, Black-4;  
Blue-5, Red-5, Grey-5, Yellow-5, Green-5, Brown-5, White-5, Black-5;  
Blue-6, Red-6, Grey-6, Yellow-6, Green-6, Brown-6, White-6, Black-6;

3.3) The pairs shall be numbered as given in the example for 4 pair cables

Overall shielded cables: The color of insulation in one conductor in a pair shall be Red and other conductor shall be Yellow.

1<sup>st</sup> Pair : RED – 1 (R 1) & YELLOW – 1 (Y 1)

2<sup>nd</sup> Pair : RED – 2 (R 2) & YELLOW – 2 (Y 2)

3<sup>rd</sup> Pair : RED – 3 (R 3) & YELLOW – 3 (Y 3)

4<sup>th</sup> Pair : RED – 4 (R 4) & YELLOW – 4 (Y 4)

3.4) Color code to be followed for each type of cables is mentioned in BOM.

### 4) TESTS

4.1) All cables shall be subject to Routine, Acceptance & Type Tests in line with the requirements under this specification.

4.2) Tests shall be conducted as per attached QAP Ref: CE/416/NPCIL/CBL/IC/QP (07 sheets)

QUALITY ASSURANCE PLAN														
CLIENT:		Nuclear Power Corporation Of India Limited			Item: EPR INSULATED LHLS SHEATHED UNARMoured INSTRUMENTATION CABLES					Contractor: BHEL-EDN				
Sl. No.	COMPONENTS	CHARACTERISTICS	Class	TYPE OF CHECK	QUANTUM OF CHECK (Nos.)			REFERENCE DOCUMENT	ACCEPTANCE NORMS / VALUE	FORMAT OF REPORT	AGENCY			REMARKS
					3	2	1				P	W	V	
1.0	<b>RAW MATERIAL</b>													
1.1	<b>CONDUCTOR</b>													
	<b>Copper Conductor &amp; (Drain Wire)</b>	Surface Finish	A	Visual	As per IS: 2500 AQL 2.5% S-3	--	--	IS: 8130	Shall be smooth & free from scratches	T. R.	3	3	1,2	
		Diameter	B	Measurement	-do-			-do-	Approved DS	T. R.	3	3	1,2	
		Conductor Resistance at 20 °C	C	Electrical	-do-			-do-	Approved DS	T. R.	3	3	1,2	
		Annealing test (Cu)	C	Physical	-do-			-do-	Approved DS	T. R.	3	3	1,2	
		Persulphate Test for conductor & Drain wire (Test for continuity of tin coating)	C	Chemical	-do-			-do-	3g/ sq. mtr (max.)	T. R.	3	3	1,2	
1.2	<b>INSULATION (EPR Type IE-2) (on moulded sheet)</b>	Type of Compound	C	Visual	One sample / Batch			Approved DS	Type IE2	T. R.	3	3	1,2	
		Tensile strength & Elongation at break	C	Physical				IS: 6380 & IS: 10810 (Pt-7)	Min 4.20 N/mm <sup>2</sup> & Min. 200 %	T. R.	3	1,2	1,2	
1.3	<b>Polyester backed Aluminium Mylar Tape</b>	Surface Appearance	A	Visual	As per IS: 2500 AQL 2.5% S-3			Approved DS	Shall be smooth	T. R.	3	3	1,2	
		Thickness of Al	C	Measurement	-do-			IS: 10810 Pt-6	0.025 mm nom.	T. R.	3	3	1,2	
		Thickness of composite (Al + Polyester)	C	Measurement	-do-			IS: 10810 Pt-6	0.040 mm min	T. R.	3	3	1,2	
1.4	<b>Binder Tape (Polyester)</b>	Thickness	B	Measurement	-do-			Approved DS	0.025 mm nom.	T. R.	3	3	1,2	
1.5	<b>SHEATH (LHLS Type-SE3) (On moulded sheet)</b>	Visual Check of Material	A	Visual	One sample/ Batch			IS: 6380	Moulded sheet should be free from foreign particles	T. R.	3	3	1,2	
		Type of compound	C	Visual	-do-			Approved DS	Type SE3	T. R.	3	3	1,2	
		Tensile Strength & Elongation (Without Ageing)	C	Physical	-do-			IS: 6380 & IS: 10810 (Pt-7)	Min 8.0 N/mm <sup>2</sup> & Min. 200 %	T. R.	3	1,2	1,2	
		Oxygen index	C	Physical	-do-			Approved DS/ ASTM-D-2863	Min. 29 %	T. R.	3	1,2	1,2	
		Temperature index	C	Physical	-do-			Approved DS/ ASTM-D-2863	Min. 250 °C	T. R.	3	1,2	1,2	
		Smoke density (12 min duration)	C	Physical	-do-			Approved DS/ ASTM-D-2843	Max. 20 %	T. R.	3	1,2	1,2	
		HCL emission	C	Chemical	-do-			Approved DS/ IEC-754-1	Max. 2 %	T. R.	3	1,2	1,2	
		Toxicity Index	C	Chemical	1 Sample on first lot			Approved DS/ NES 713	Max. 5.0	T. R.	3	1,2	1,2	
		Termite proof	C	Chemical	-do-			Approved DS/ NPCIL test procedure	Max. 0.5 % (Weight loss)	T. R.	3 or 4	--	1,2,3	
1.6	<b>WOODEN DRUM</b>													
		Appearance Check	A	Visual	As per IS: 2500 AQL 2.5% S-3			As per Mfg Standard	Shall be satisfactory	T. R.	3	3	1,2	
		Dimension	B	Measurement	-do-			-do-	As per requirement	T. R.	3	3	1,2	

**LEGEND :**

P : Performed by  
W : Witnessed by  
V : Verification of Document

A : Minor  
B : Major  
C : Critical  
TR : Test Report

1 : Purchaser (NPCIL)  
2 : Contractor (BHEL-EDN, Bangalore)  
3 : Prime supplier  
4 : Out Side Lab/ NPCIL Approved Lab

Approved DS      Approved DataSheet



QUALITY ASSURANCE PLAN														
CLIENT:		Nuclear Power Corporation Of India Limited			Item: EPR INSULATED LHLS SHEATHED UNARMoured INSTRUMENTATION CABLES					Contractor: BHEL-EDN				
Sl. No.	COMPONENTS	CHARACTERISTICS	Class	TYPE OF CHECK	QUANTUM OF CHECK (Nos.)			REFERENCE DOCUMENT	ACCEPTANCE NORMS / VALUE	FORMAT OF REPORT	AGENCY			REMARKS
					3	2	1				P	W	V	
2.0	<b>IN-PROCESS INSPECTION &amp; TESTING</b>													
2.1	<b>INSULATION (EPR Type IE-2)</b>													
		Type of insulation Compound	B	Physical	1 Sample/Batch			Approved DS	Type IE2	T.R.	3	3	1,2	
		Dia over conductor	B	Physical	do			Approved DS	Approved DS	T.R.	3	3	1,2	
		Surface Finish	B	Visual	At the time of M/C Setting after stabilization	--	--	Approved DS/ IS: 6380	Shall be smooth	T. R.	3	3	1,2	
		Radial Thickness (Min & Nom)	C	Measurement	-do-			Approved DS/ IS 10810 (Pt-6)	Approved TDS	T. R.	3	3	1,2	
		Core Colour, Core sequence & numbering	C	Visual	-do-			Approved DS	Approved TDS	T. R.	3	3	1,2	
		Spark test at 6 kV rms	C	Electrical	100%	10%	1%	IS-9968 (Pt-1)/ IS 10810 (44)	Shall Pass	T. R.	3	1,2	1,2	Customer Hold Point
		Tensile Strength & Elongation (Without Ageing)	C	Physical	1 Sample/ Setting			Approved DS/ IS: 6380/IS 10810 (Pt-7)	Min 4.20 N/mm <sup>2</sup> & Min. 200 %	T. R.	3	3	1,2	
2.2	<b>PAIRING</b>													
	<b>Twisting</b>	Sequence of Cores/Pair Numbering	C	Visual	1 Sample/ Setting & Twice in a shift			Approved DS	BHEL Spec	T. R.	3	3	1,2	
		Colour Code	C	Visual	-do-			Approved DS	BHEL Spec/TDS	T. R.	3	3	1,2	
		Lay length	B	Measurement	-do-			Approved DS	12 twist/ mtr min	T. R.	3	3	1,2	
2.3	<b>INDIVIDUAL PAIR SHIELDING (Wherever Applicable)</b>													
	<b>Binder Tape (Polyester)</b>	Thickness	B	Measurement	At the time of M/C Setting and once in each shift			Approved DS/ IS 10810 (Pt-6)	0.025 mm nom.	T. R.	3	3	1,2	
	<b>Polyester backed Aluminium Mylar Tape</b>	Surface Appearance	B	Visual	At the time of M/C Setting and once in each shift			Approved DS	Shall be smooth	T. R.	3	3	1,2	
		Thickness of Al.	B	Measurement	-do-			Approved DS/ IS 10810 (Pt-6)	0.025 mm nom.	T. R.	3	3	1,2	
		Thickness of composite (Al + Polyester)	B	Measurement	-do-			Approved DS/ IS 10810 (Pt-6)	0.040 mm min	T. R.	3	3	1,2	
		% Overlap & Coverage	B	Measurement	-do-			-do-	25% min & 100%	T. R.	3	3	1,2	
		ATC Drain wire & size	B	Measurement	-do-			Approved DS	Approved DS	T. R.	3	3	1,2	
	<b>Tape Over Shielding (Wherever Applicable)</b>													
		Material	B	Visual	At the time of M/C Setting and once in each shift			Approved DS	Polyester Tape	T. R.	3	3	1,2	
		Thickness	B	Measurement	-do-			IS 10810 (Pt-6)	0.025 mm nom.	T. R.	3	3	1,2	
		% Overlap & Coverage	B	Measurement	-do-			-do-	10% min & 100%	T. R.	3	3	1,2	
	<b>Laying-up</b>													
		Direction of lay	B	Measurement	1 Sample/ Setting			Approved DS	Outer Layer Right Hand	T. R.	3	3	1,2	
		Lay Length	B	Measurement	-do-			--	Suitable lay length to make cable compact	T. R.	3	3	1,2	
		Diameter over laid up cable	B	Measurement	-do-			Approved DS/ IS 10810 (Pt-6)	-	T. R.	3	3	1,2	

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QUALITY ASSURANCE PLAN														
CLIENT:		Nuclear Power Corporation Of India Ltd			Item: EPR INSULATED LHLS SHEATHED UNARMoured INSTRUMENTATION CABLES				Contractor: BHEL-EDN					
Sl. No.	COMPONENTS	CHARACTERISTICS	Class	TYPE OF CHECK	QUANTUM OF CHECK (Nos.)			REFERENCE DOCUMENT	ACCEPTANCE NORMS / VALUE	FORMAT OF REPORT	AGENCY			REMARKS
					3	2	1				P	W	V	
2.4	<b>Overall Shielding</b>													
	<b>Binder Tape (Polyester)</b>	Thickness	B	Measurement	At the time of M/C Setting and once in each shift			Approved DS	0.025 mm nom.	T. R.	3	3	1,2	
	<b>Polyester backed Aluminium Mylar Tape</b>	Thickness of Al	B	Measurement	-do-			Approved DS	0.025 mm nom.	T. R.	3	3	1,2	
		Thickness of composite (Al + Polyester)	B	Measurement	-do-			Approved DS	0.040 mm min.	T. R.	3	3	1,2	
		% Overlap & Coverage	B	Measurement	-do-			-do-	25% min & 100%	T. R.	3	3	1,2	
		ATC Drain Wire Size	B	Measurement	-do-			Approved DS	Approved DS	T. R.	3	3	1,2	
	<b>Tape Over Shielding</b>													
		Material	B	Visual	At the time of M/C Setting and once in each shift			-do-	Polyester Tape	T. R.	3	3	1,2	
		Thickness of tape	B	Measurement	-do-			Approved DS	0.025 mm nom.	T. R.	3	3	1,2	
		% Overlap & Coverage	B	Measurement	-do-			-do-	10% min & 100%	T. R.	3	3	1,2	
2.5	<b>Rip Cord</b>	Material	B	Visual	-do-			Approved DS	Suitable Nylon thread	T. R.	3	3	1,2	
2.6	<b>Sheath (LHLS Type SE3)</b>													
		Type of Compound	B	Physical	1 Sample/Batch			Approved DS	Type SE3	T.R.	3	3	1,2	
		Surface finish	B	Visual	At the time of M/C Setting after stabilization			Approved DS	Smooth Finish	T. R.	3	3	1,2	
		Colour	B	Visual	100%			Approved DS	Black	T. R.	3	3	1,2	
		Radial Thickness (Min & Nom)	C	Measurement	At the time of M/C Setting and once in each shift			Approved DS/ IS 10810(Pt-6)	Approved DS	T. R.	3	3	1,2	
		Overall diameter of cable	B	Measurement	--do--			Approved DS/ IS 10810 (Pt-6)	Approved DS	T. R.	3	3	1,2	
		Tensile Strength & Elongation at break (Without Ageing)	C	Physical	--do--			Approved DS/ IS: 6380/ IS 10810 (7)	Min 8.00 N/mm <sup>2</sup> & Min. 200 %	T. R.	3	3	1,2	
2.7	<b>Cable Identification</b>	Printing on Outer Sheath	B	Visual	100%			Approved DS/IS: 9968 (Pt-1)/1988	TDS	T. R.	3	3	1,2	
2.8	<b>Rewinding</b>													
		Surface	A	Visual	100%			Data Sheet	Smooth Finish	T. R.	3	3	1,2	
		Length & Sequential Marking	A	Measurement	100%			Data Sheet	Every meter	T. R.	3	3	1,2	

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					3	2	1				P	W	V	
3.0	<b>FINAL INSPECTION &amp; TESTING</b>													
3.1	<b>Type Test</b>													
3.1.1	<b>Conductor</b>													
		No. of wire	C	Count	One sample each size on 1st lot			Approved DS/ IS: 8130	Solid (1)	Test Report	3	1,2	1,2	
		Dia of wire	C	Measurement	--do--			Approved DS/	Approved TDS	Test Report	3	1,2	1,2	
		Conductor resistance at 20 °c	C	Electrical	--do--			Approved DS/ IS 10810 (Pt-5)	Approved TDS	Test Report	3	1,2	1,2	
		Elongation Test (annealing test)	C	Physical	--do--			Approved DS/ IS 10810 (Pt-1)	Approved TDS	Test Report	3	1,2	1,2	
		Persulphate Test for conductor & Drain wire(tin coating)	B	Chemical	--do--			Approved DS/ IS: 8130/ IS 10810 (Pt-4)	Max. 3.00 g/m <sup>2</sup>	Test Report	3	1,2	1,2	
3.1.2	<b>INSULATION (EPR Type IE-2)</b>													
		Colour/Core sequence /Pair Numbering	C	Visual	One sample each size on 1st lot			Approved DS/ TDS	BHEL Spec	T. R.	3	1,2	1,2	
		Radial Thickness	C	Measurement	--do--			Approved DS/ IS 10810 (Pt-6)	Approved TDS	Test Report	3	1,2	1,2	
		Tensile strength & Elongation at break without Ageing	C	Physical	--do--			Approved DS/ IS:6380/ IS 10810(Pt-7)	Min 4.20 N/mm <sup>2</sup> & Min. 200 %	Test Report	3	1,2	1,2	
		Variation in Tensile Strength & Elongation at break after Ageing in air oven	B	Physical	--do--			Approved DS/ IS:6380/ IS 10810(Pt-11)	Max. ± 30% Max. ± 30%	Test Report	3	1,2	1,2	
		Variation in Tensile Strength & Elongation at break after Ageing in air bomb	B	Physical	--do--			Approved DS/ IS:6380	Max. ± 30% Max. ± 30%	Test Report	3	1,2	1,2	
		Hot set test & Permanent set	C	Physical	-do-			Approved DS/ IS:6380/ IS 10810(Pt-30)	Max. 175% Max. 15%	Test Report	3	1,2	1,2	
3.1.3	<b>Constructional Details</b>													
		Constructional Details: Conductor dia, thickness of insulation & sheath, shield thickness, coverage & overlap of shield, overall dia, marking on outer sheath, numbering of pairs, colours, continuity of drain wire.	C	Measurement	-do-			IS 10810 (Pt-6)	TDS	Test Report	3	1,2	1,2	
3.1.4	<b>Polyester backed Aluminium Mylar Tape</b>													
		Thickness of Al	B	Measurement	One sample each size on 1st lot			Approved DS	0.025 mm nom.	Test Report	3	1,2	1,2	
		Thickness of composite (Al + Polyester)	B	Measurement	-do-			Approved DS	0.040 mm min	Test Report	3	1,2	1,2	
		Overlap	B	Measurement	-do-			-do-	25% min	Test Report	3	1,2	1,2	
		ATC Drain wire & size	B	Measurement	-do-			-do-	Approved DS	Test Report	3	1,2	1,2	
		Continuity test for al-mylar shield and drain wire	C	Physical	-do-			-do-	Shall Pass	Test Report	3	1,2	1,2	

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SI. No.	COMPONENTS	CHARACTERISTICS	Class	TYPE OF CHECK	QUANTUM OF CHECK (Nos.)			REFERENCE DOCUMENT	ACCEPTANCE NORMS / VALUE	FORMAT OF REPORT	AGENCY			REMARKS
					3	2	1				P	W	V	
3.1.5	<b>Tape Over Shielding</b>													
		Material	--	--	One sample each size on 1st lot			Approved DS	Polyester Tape	Test Report	3	1,2	1,2	
		Thickness	B	Measurement	-do-			IS 10810 (Pt-6)	0.025 mm nom	Test Report	3	1,2	1,2	
		Overlap	B	Measurement	-do-			-do-	10% min	Test Report	3	1,2	1,2	
3.1.6	<b>Rip Cord</b>	Material	B	Visual	-do-			Approved DS	Shall be provide under Shaeth	Test Report	3	1,2	1,2	
3.1.7	<b>Sheath (LHLS Type SE3)</b>													
		Colour & Finish	B	Visual	One sample on each size on 1st lot			Approved DS	Black/ Smooth	Test Report	3	1,2	1,2	
		Radial Thickness	C	Measurement	--do--			Approved DS/ IS 10810 (Pt-6)	TDS	Test Report	3	1,2	1,2	
		Overall Diameter of finished cable	C	Measurement	--do--			Approved DS/ IS 10810 (Pt-6)	TDS	Test Report	3	1,2	1,2	
		Tensile Strength & Elongation at break (Without Ageing)	C	Physical	--do--			Approved DS/ IS:6380/ IS 10810(Pt-7)	Min 8 N/mm <sup>2</sup> & Min. 200 %	Test Report	3	1,2	1,2	
		Variation in Tensile Strength & Elongation at break after Ageing in air bomb	B	Physical	--do--			Approved DS/ IS:6380	Max. ± 50% Max. ± 50%	Test Report	3	1,2	1,2	
		Variation in Tensile Strength & Elongation at break after Ageing in Oil Resistant test	B	Physical	--do--			Approved DS/ IS:6380/ IS 10810(Pt-31)	Max. ± 40% Max. ± 40%	Test Report	3	1,2	1,2	
		Hot set test & Permanent set	B	Physical	-do-			Approved DS/ IS:6380/ IS 10810(Pt-30)	Max. 175% Max. 15%	Test Report	3	1,2	1,2	
		Smoke density	C	Physical	One sample of any size on 1st lot			Approved DS/ ASTM-D-2843/ IS 10810 (Pt-63)	Max. 20 %	Test Report	3	1,2	1,2	
		Oxygen index	C	Physical	-do-			Approved DS/ ASTM-D-2863	Min. 29 %	Test Report	3	1,2	1,2	
		Temperature index	C	Physical	-do-			Approved DS/ ASTM-D-2863	Min. 250 °C	Test Report	3	1,2	1,2	
		HCL emission	C	Chemical	-do-			Approved DS/ IEC-754-1	Max. 2 %	Test Report	3	1,2	1,2	
		Toxicity Index	C	Chemical	-do-			Approved DS/ NES 713	Max. 5.0	Test Report	3	1,2	1,2	
		Termite proof	C	Chemical	-do-			Approved DS/ NPCIL test procedure	Max. 0.5 % (Weight loss)	Test Report	4	--	1,2,3	To be conducted at raw material
3.1.8	<b>Electrical Test</b>	High Voltage Test	C	Electrical	One sample/ each size/ 1st lot			IS: 9968 (Pt-1)/ IS 10810 (Pt-45) & Data Sheet	Shall withstand as per Approved Data Sheet	Test Report	3	1,2	1,2	
		IR Constant at (27 °C & 90 °C)	C	Electrical	-do-			IS : 6380	for 27 °C - Min. 3670 MΩ km for 90 °C - Min. 3.67 MΩ km	Test Report	3	1,2	1,2	
		Mutual capacitance between conductor & between core and shield	C	Electrical	One sample/ each size/ 1st lot			Approved DS	C to C 150 nF/km (max) & C to S 250 nF/km	Test Report	3	1,2	1,2	
3.1.9	<b>Flammability Test</b>	Swedish chimney test	C	Measurement	One sample/ each size/ 1st lot			SS-424-14-75(F-3) & IS: 10810-61	No visible damage in 300 mm min length from top	Test Report	3	1,2	1,2	

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					3	2	1				P	W	V	
3.2	<b>ROUTINE TESTS</b>													
3.2,1	(On full drum length)	High Voltage Test at 1.5 kV for 5 min	C	Electrical	100%	100%	100%	IS: 9968 (Pt-I)/ IS 10810 (Pt-45) & Data Sheet	Shall withstand as per Approved Data Sheet	Test Report	3	1,2	1,2	
3.2,2		Conductor resistance at 20 °c	C	Electrical	--do--	--do--	--do--	IS: 8130/ IS 10810(5)	Approved TDS	Test Report	3	1,2	1,2	
3.2,3		IR Constant at room temperature	C	Electrical	-do-	--do--	--do--	IS: 6380	Min. 3670 MΩ km	Test Report	3	1,2	1,2	
3.3	<b>ACCEPTANCE TESTS</b>													
3.3,1		Annealing test	C	Physical	As per IS: 9968 Pt.-1			IS: 8130/ IS 10810 (Pt-1)	Approved TDS	Test Report	3	1,2	1,2	
3.3,2		Conductor resistance at 20 °C on full drum length	C	Electrical	-do-			IS: 8130/ IS 10810 (Pt-5)	Approved TDS	Test Report	3	1,2	1,2	
3.3,3		Constructional Details: Conductor dia, thickness of insulation & sheath, shield thickness, coverage & overlap of shield, overall dia, marking on outer sheath, numbering of pairs, colours, continuity of drain wire.	C	Measurement	-do-			Approved DS/ IS 10810 (Pt-6)	TDS	Test Report	3	1,2	1,2	
3.3.4		High Voltage Test at 1.5 kV for 5 min	C	Electrical	-do-			IS: 9968 (Pt-I)/ IS 10810 (Pt-45) & Data Sheet	Shall withstand as per Approved Data Sheet	Test Report	3	1,2	1,2	
3.3.5		IR Constant at room temperature on full drum length	C	Electrical	-do-			IS-6380	Min. 3670 MΩ km	Test Report	3	1,2	1,2	
3.3.6	<b>Capacitance Measurement</b>	Mutual capacitance between conductor & between core and shield	C	Electrical	-do-			Approved DS	C to C 150 nF/km (max) & C to S 250 nF/km	Test Report	3	1,2	1,2	
3.3.7	<b>EPR Isulation and LHLS Sheath</b>	Tensile Strength & Elongation at break (Without Ageing)	C	Physical	One sample each size / lot			Approved DS/ IS:6380/ IS 10810(Pt-7)	Min 4.20 N/mm <sup>2</sup> & Min. 200 % on EPR Insulation Min 8 N/mm <sup>2</sup> & Min. 200 % on LHLS Sheath	Test Report	3	1,2	1,2	

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					3	2	1				P	W	V	
3,3,8	<b>LHLS Test</b>													
3,3,8,1		Smoke density (12 min)	C	Physical	One sample/ any one size/ lot			ASTM-D-2843	Max. 20 %	Test Report	3	1,2	1,2	
3,3,8,2		Oxygen index	C	Physical	-do-			ASTM-D-2863	Min. 29 %	Test Report	3	1,2	1,2	
3,3,8,3		Temperature index	C	Physical	-do-			ASTM-D-2863	Min. 250 °C	Test Report	3	1,2	1,2	
3,3,8,4		HCL emission	C	Chemical	-do-			IEC-754-1	Max. 2 %	Test Report	3	1,2	1,2	
3,,3,9	<b>Flammability Test</b>	swedish chimney test	C	Physical	One sample/ each size/ lot			SS-424-14-75 (F-3) & IS: 10810-61/ Data Sheet	No visible damage in 300 mm min length from top	Test Report	3	1,2	1,2	
3,3,10		Toxicity Index	C	Chemical	One sample/ any one size / lot			NES 713	Max. 5.0	Test Report	3	1,2	1,2	
3.4	<b>Cable identification</b>	Printing on Outer Sheath	B	Visual	As per IS: 9968 Pt.-1			Approved DS	Technical Data Sheet	Test Report	3	1,2	1,2	
4.0	<b>Packing &amp; Marking Cables</b>													
4.1	Packing & Marking	End Sealing	B	Visual	100%	each lot	--	Approved DS	Tech. Spec. PO	--	3	1,2	1,2	1 will witness only for first lot.
4.2		Packing	B	Visual	100%			--do--	--do--	--	3	1,2	1,2	
4.3		Marking / Stencilling on drum	B	Visual	100%			Approved DS	Tech. Spec. PO/ IS: 9968	--	3	1,2	1,2	

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