

**BUYERS SPECIFIC ADDITIONAL TERMS & CONDITIONS****ITEM NAME:** Power Cable and FS Power Cable**PROJECTS-** Vijaywada-V**1. SCOPE OF ENQUIRY:**

Sl. No.	Material Code & Item Description	Total Qty.	LOT Quantity & Delivery schedule
1.	W90318105160 POWER CABLE FOR 24V SOLENOID VALVE (ARMOURED) 4 X 2.5 MM2 SPEC: ST51020 REV: 03	400 MR	Vijaywada-V : 400 MR -30/12/2025
2.	W90318105241 FS POWER CABLE FOR 24V SOLENOID VALVE (ARMOURED) 4X2.5 SQMM AS PER SPEC NO ST51020 REV 03	200 MR	Vijaywada-V : 200 MR -30/12/2025

**2. Project Details with consignee address:**

<b>Project Name</b>	VIJAYWADA-V
<b>Consignee Address</b>	THE DIVISIONAL ENGINEER (STORE AND SERVICES) , DR NTPS, STAGE-IV APGENCO, IBRAHIMPATNAM KRISHNA DISTT , ANDHRA PRADESH -521456 , STATE : Andhra Pradesh New-37 , GST No : 37AACCA2734J1ZR

**3. BUYERS SPECIFIC ADDITIONAL TERMS & CONDITIONS IN ADDITION TO GTC**

Sl. No.	Terms	Description	Supplier confirmation
1.	<b>Documents Checklist:</b>	Please submit signed and stamped copy of your offer on each page along with following documents; <ul style="list-style-type: none"> <li>• Buyer Specific T&amp;C.</li> <li>• Technical PQR &amp; its supportive document.</li> <li>• Technical drawing &amp; purchase specification.</li> <li>• Certificate/self-certification for minimum local content as per PPP-MII order.</li> <li>• Replica of price bid schedule without prices with part-I offer.</li> </ul>	
2.	<b>Special Instruction of Technical requirement</b>	a) Datasheets and type test reports shall be subject to BHEL approval. b) Technical spec ST51020 rev 03 are to read alongwith addendum no 418101D9006B. c) Clause no 5.2 of specification ST51020 rev03 may be read as "The tolerance on overall ordered length of each type of cable shall be +2% & -0%". i.e. no negative tolerance is allowed in each line item. d) The type test reports shall be submitted for one size of LT PVC power cables carried out within last 05 years from the date of bid opening. However, if the vendor is not able to submit report of the type test(s) conducted within last 05 years period from the date of bid opening, or in the case of type test report are not found to be meeting the specification requirements, the vendor shall conduct all such tests under this contract at no additional cost to BHEL in presence of customer/BHEL representative and submit the report for approval. Type test shall be as per standard : IS-1554 Part-1. e) Warranty shall be 18 months from the date of Dispatch.	
3.	<b>Compliance of GTC on GeM</b>	General Terms and Conditions on GeM 4.0 (Version 1.25) Dtd -14/07/2025 or it's latest revision of GeM portal shall be applicable against this enquiry. Kindly confirm to compliance the same for this tender.	
4.	<b>Pre-Qualification Requirements</b>	The Pre-Qualification Requirements have been compiled. All the bidders should ensure submission of complete details and documents as called for in these requirements. The Offers submitted by the bidders would be scrutinized with respect to Pre-Qualification Requirements first. Techno-	

		Commercial offer of only those bidders shall be evaluated who meet the Pre-Qualification Requirements.									
5.	Compliance of Rule 144 (xi) of GFR 2017	Compliance of Restrictions under Rule 144 (xi) of GFR 2017 shall be as per GeM.									
6.	Bid validity/ Validity of offer	Please note that validity of the offer shall be 180 days from the date opening of Techno-Commercial bid (Part-I bid) on GeM portal. Offer of bidder's having validity less than 180 days shall liable to reject. Please confirm.									
		The required validity is considering that offer is complete & clear w.r.t. PQR and all techno-commercial conditions. Vendors need to extend their offer validity for the time taken by them in responding BHEL's comments/clarification sought during techno-commercial scrutiny of the offer. In case regret by any bidder for such validity extension, their offer shall liable to be reject. Please confirm.									
7.	Loading and unloading	Vendor's scope will not cover Loading & Unloading at Final destination of delivery. Unloading at final destination (i.e. BHEL site) is in BHEL 'scope. Loading and unloading at other intermediate places due to any permitted transshipment will be the responsibility of the vendor. Kindly note									
8.	Prices/Basis of Quotation	The offered prices of the items shall remain firm and fixed till the execution of the contract, kindly confirm.									
		Kindly confirm that your quote prices are inclusive of P&F, Freight & GST for Total quantity on GeM portal.									
		Transit Insurance would be arranged by BHEL. Please quote your prices accordingly.									
		The prices are to be quoted on Ex-Works with freight Pre-paid up to project destination basis & inclusive of all taxes & duties, GST (i.e. Inclusive all). Bidders can dispatch goods through any Indian Bank Association approved transporters having their branch at HARIDWAR / destination. If material is dispatched through other than Indian Bank Association approved transporter, material to be delivered on door delivery basis. In case of dispatch of material through any other unapproved transporter, payment shall be made only after receipt of material and any additional charges payable to the transporter shall be to the bidder's account. Any demurrage / godown rent payable to the transporter /or to godown's owner due to any delay attributed by the supplier shall be recovered from supplier's account.									
9.	Special Instructions:	<ul style="list-style-type: none"><li>• ORIGINAL (GR/LR , MDCC, PKG LIST) ARE REQUIRED FOR BILLING.</li><li>• MATERIAL IS TO BE DESPATCHED ON DOOR DELIVERY BASIS TO SITE.</li><li>• BHEL BBU NOS. TO BE MENTIONED IN PACKING LIST BY VENDOR.</li><li>• Please inform 8 Digit HSN code for Oil Purification along with spares.</li><li>• 08 DIGIT GST HSN CODE to be provided &amp; mentioned in your invoice &amp; packing list.</li><li>• Vendor to ensure submission billing documents in the same month of material despatch. If vendor fail to provide the despatch documents in the same month GST Penalty shall be applicable and bear by vendor as per GST rule.</li></ul>									
10.	Evaluation criteria	Evaluation would be done on the basis of "total value wise evaluation" for the complete requirement covered in the enquiry Considering total material value, packing charges, Forwarding Charges, taxes & duties, Freight, taxes & duties).									
11.	Evaluation Currency	The evaluation currency for this tender shall be INR.									
12.	Payment terms:	The payment shall be done after receipt of Material at BHEL respective project site, within no. of days as defined in the below table from the date of receipt of Material at site i.e. MRC date).									
		<table><tr><td>Type of Bidder</td><td>Payment Terms (Number of Days)</td></tr><tr><td>Micro &amp; Small Enterprises (MSEs)</td><td>45 days</td></tr><tr><td>Medium Enterprises</td><td>60 days</td></tr><tr><td>Non MSME</td><td>90 days</td></tr></table>	Type of Bidder	Payment Terms (Number of Days)	Micro & Small Enterprises (MSEs)	45 days	Medium Enterprises	60 days	Non MSME	90 days	
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		The Payment terms are subject to receipt of non-discrepant document from supplier.									
13.	GeM charges	GeM charges if any shall be either side only i.e. buyer's GeM charges shall be in buyer's account and seller's GeM charges shall be on seller's account. Please confirm.									
14.	Contract execution	Bidder's are advised to read GeM related query & clarification carefully on GeM portal. Order shall be executed through GeM.									

15.	<b>Reverse Auction (E-bidding)</b>	BHEL shall be resorting to Reverse Auction (RA) on GEM portal as per GEM functionalities for this tender. RA shall be conducted among the techno-commercially qualified bidders.	
16.	<b>Quantity Variation</b>	<p>BHEL reserves the right to cancel tender or reject any or all the quotations without assigning any reasons thereof.</p> <p><b>BHEL also reserves the right to Increase or decrease the tendered quantities or quantity of individual material code may be dropped as a whole also.</b></p> <p>Vendors should be prepared to accept order for reduced Quantity without any extra charges. Vendor should also be prepared for giving discount in case of Increase in Quantity.</p> <p>Vendor has to take manufacturing clearance from BHEL before starting manufacturing of material. In case ordered quantity is reduced at the time of manufacturing clearance, then payment shall be made accordingly as per decreased quantity. Kindly confirm.</p>	
17.	<b>Delivery Period</b>	<p>Please note that BHEL's Delivery requirements are mentioned in point no 1 of above.</p> <p>Early delivery w.r.t. above lot delivery will be accepted only after written confirmation from BHEL. BHEL reserve right to reject early delivery request of bidders / suppliers.</p> <p>Delivery period indicated in GeM bid is only indicative and final delivery of tender shall be taken as mentioned above.</p> <p>Accordingly bidders to confirm the above deliveries or quote their best possible delivery in no of months / weeks from the date of placement of Purchase order, including all activities like document approval, inspection by TPI time etc.</p>	
18.	<b>Technical Document/ Drawing approval conditions</b>	<p>Drawings/Data sheets/documents/QAP etc. as called for in the specifications shall be submitted by Vendor for BHEL/ Customer approval within 30 days of purchase order. BHEL shall approve these drawings/data sheets/ documents / QAP etc. within 30 days of receipt.</p> <p>Any comments on the documents shall be given by BHEL within 7 days of submission and vendor shall submit revised document / reply to comments, within 7 days of BHEL comments. However, total time for Document submission and approval shall not exceed 30 days for respective party.</p> <p>Delivery is from the date of PO, accordingly, delay in submission / revision of the documents by the vendor will automatically account for to vendor. In case of delay on account of BHEL in comments / approval of the documents, the delivery shall be re-scheduled by the no of days taken by BHEL in excess to 30 days. For delay analysis cumulative no of days (including time taken in comments), shall be considered for delivery extension.</p>	
19.	<b>Liquidated Damages (LD) for late delivery</b>	<p>Liquidated Damages shall be lot wise as per clause no. 15 (iii) of General terms and conditions on GeM 4.0 (Version 1.25) as under: kindly confirm.</p> <p>"If the Seller/Service Provider fails to deliver any or all of the Goods/Services within the original/re-fixed delivery period(s) specified in the contract, the Buyer will be entitled to deduct/recover the Liquidated Damages for the delay, unless covered under Force Majeure conditions aforesaid, @ 0.5% of the contract value of delayed quantity per week or part of the week of delayed period as pre-estimated damages not exceeding 10% of the contract value of delayed quantity without any controversy/dispute of any sort whatsoever".</p> <p>The date of LR would be treated as the date of delivery for penalty purposes.</p>	
20.	<b>MDCC clause</b>	<p>Please note that, material shall be dispatched only after issue of Material dispatch clearance certificate (MDCC) from end customer. For issue of MDCC, vendors are required to submit all test certificates (TC) and inspection report of third party (IR) to BHEL. After review &amp; acceptance of the quality document, BHEL will forward the same to end customer for issuance of MDCC.</p> <p>MDCC shall be issued within 7 days of receipt of complete quality documents / TCs,. In case of delay in issuance of MDCC, only delivery shall be extended by no of days taken by BHEL in excess to 7 days and all other terms and conditions of PO shall remains same &amp; binding.</p> <p>In case any material is dispatched without MDCC and any loss is incurred by Supplier/Vendor for any reason whatsoever, BHEL shall not be responsible in any manner to compensate the supplier in this regard.</p> <p>Kindly confirm.</p>	
21.	<b>BREACH OF CONTRACT, REMEDIES AND TERMINATION:</b>	<p><b>The following shall amount to breach of contract:</b></p> <p>I. Non-supply of material/ non-completion of work by the Supplier/Vendor within scheduled delivery/ completion period as per contract or as extended from time to time.</p> <p>II. The Supplier/Vendor fails to perform as per the activity schedule and there are sufficient reasons even before expiry of the delivery/ completion period to justify that supplies shall be inordinately delayed beyond contractual delivery/ completion period.</p> <p>III. The Supplier/Vendor delivers equipment/ material not of the contracted quality.</p> <p>IV. The Supplier/Vendor fails to replace the defective equipment/ material/ component as per guarantee clause.</p>	

		<p>V. Withdrawal from or abandonment of the work by the Supplier/Vendor before completion as per contract.</p> <p>VI. Assignment, transfer, subletting of Contract by the Supplier/Vendor without BHEL's written permission resulting in termination of Contract or part thereof by BHEL.</p> <p>VII. Non-compliance to any contractual condition or any other default attributable to Supplier/Vendor.</p> <p>VIII. Any other reason(s) attributable to Vendor towards failure of performance of contract. In case of breach of contract, BHEL shall have the right to terminate the Purchase Order/ Contract either in whole or in part thereof without any compensation to the Supplier/Vendor.</p> <p>IX. Any of the declarations furnished by the contractor at the time of bidding and/ or entering into the contract for supply are found untruthful and such declarations were of a nature that could have resulted in non-award of contract to the contractor or could expose BHEL and/ or Owner to adverse consequences, financial or otherwise.</p> <p>X. Supplier/Vendor is convicted of any offence involving corrupt business practices, antinational activities or any such offence that compromises the business ethics of BHEL, in violation of the Integrity Pact entered into with BHEL has the potential to harm the overall business of BHEL/ Owner.</p> <p>Note-Once BHEL considers that a breach of contract has occurred on the part of Supplier/Vendor, BHEL shall notify the Supplier/Vendor by way of notice in this regard. Contractor shall be given an opportunity to rectify the reasons causing the breach of contract within a period of 14 days. In case the contractor fails to remedy the breach, as mentioned in the notice, to the satisfaction of BHEL, BHEL shall have the right to take recourse to any of the remedial actions available to it under the relevant provisions of contract.</p> <p><b>Remedies in case of Breach of Contract.</b></p> <p>i) Wherein the period as stipulated in the notice issued under above clause has expired and Supplier/Vendor has failed to remedy the breach, BHEL will have the right to terminate the contract</p> <p>on the ground of "Breach of Contract" without any further notice to contractor.</p> <p>ii) Upon termination of contract, BHEL shall be entitled to recover an amount equivalent to 10% of the Contract Value for the damages on account of breach of contract committed by the Supplier/Vendor. on the ground of "Breach of Contract" without any further notice to contractor.</p> <p>ii) Upon termination of contract, BHEL shall be entitled to recover an amount equivalent to 10% of the Contract Value for the damages on account of breach of contract committed by the Supplier/Vendor. This amount shall be recovered by way of encashing the security instruments like performance bank guarantee etc available with BHEL against the said contract. In case the value of the security instruments available is less than 10% of the contract value, the balance amount shall be recovered from other financial remedies (i.e. available bills of the Supplier/Vendor, retention amount, from the money due to the Supplier/Vendor etc. with BHEL) or the other legal remedies shall be pursued.</p> <p>iii) wherever the value of security instruments like performance bank guarantee available with BHEL against the said contract is 10% of the contract value or more, such security instruments to the extent of 10% contract value will be encashed. In case no security instruments are available or the value of the security instruments available is less than 10% of the contract value, the 10% of the contract value or the balance amount, as the case may be, will be recovered in all or any of the following manners:</p> <p>iv) In case the amount recovered under sub clause (a) above is not sufficient to fulfil the amount recoverable then; a demand notice to deposit the balance amount within 30 days shall be issued to Supplier/Vendor.</p> <p>v) If Supplier/Vendor fails to deposit the balance amount within the period as prescribed in demand notice, following action shall be taken for recovery of the balance amount:</p> <p>a) from dues available in the form of Bills payable to defaulted Supplier/Vendor against the same contract.</p> <p>b) If it is not possible to recover the dues available from the same contract or dues are insufficient to meet the recoverable amount, balance amount shall be recovered from any money(s) payable to Supplier/Vendor under any contract with other Units of BHEL including recovery from security deposits or any other deposit available in the form of security instruments of any kind against Security deposit or EMD.</p> <p>vi) In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against defaulted supplier/Vendor.</p> <p>vii) It is an agreed term of contract that this amount shall be a genuine pre-estimate of damages that BHEL would incur in completion of balance contractual obligation of the contract through any other agency and BHEL will not be required to furnish any other evidence to the Supplier/Vendor for the purpose of estimation of damages.</p> <p>viii) In addition to the above, imposition of liquidated damages, debarment, termination, de-scoping, short-closure, etc., shall be applied as per provisions of the contract.</p>	
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		<p>Note:</p> <p>1) The defaulting Supplier/Vendor shall not be eligible for participation in any of the future enquiries floated by BHEL to complete the balance work. The defaulting contractor shall mean and include:</p> <p>(a) In case defaulted Supplier/Vendor is the Sole Proprietorship Firm, any Sole Proprietorship Firm owned by same Sole Proprietor.</p> <p>(b) In case defaulted Supplier/Vendor is The Partnership Firm, any firm comprising of same partners/ some of the same partners ; or sole proprietorship firm owned by any partner(s) as a sole proprietor.</p>	
22.	<b>Suspension of Business Dealings with Suppliers / Contractors:</b>	<p>The offers of the bidders who are under suspension as also the offers of the bidders, who engage the services of the banned firms / principal / agents, shall be rejected. The list of banned firms is available on BHEL web site <a href="http://www.bhel.com">www.bhel.com</a>.</p> <p>If any bidder / supplier / contractor during pre-tendering / tendering / post tendering / award / execution / post-execution stage indulges in any act, including but not limited to, mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or tampers the tendering process or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860( Bhartiya Nyaya Samhita 2023) or any other law in force in India, or does anything which is actionable under the Guidelines for Suspension of Business dealings, action may be taken against such bidder / supplier / contractor as per extant guidelines of the company available on <a href="http://www.bhel.com">www.bhel.com</a> and / or under applicable legal provisions. Guidelines for suspension of business dealings is available in the webpage: <a href="http://www.bhel.com/vender_registration/vender.php">http://www.bhel.com/vender_registration/vender.php</a>.</p>	
23.	<b>Settlement of Dispute, CONCILIATION &amp; ARBITRATION:</b>	<p><b>Settlement of Dispute</b></p> <p>If any dispute or difference of any kind whatsoever shall arise between BHEL and the Supplier/Vendor, arising out of the contract for the performance of the work whether during the progress of contract termination, abandonment or breach of the contract, it shall in the first place referred to Designated Officer / IEM for amicable resolution by the parties. Designated Officer / IEM who within 60 days after being requested shall give written notice of his decision to the contractor. Save as hereinafter provided, such decision in respect of every matter so referred shall forthwith be given effect to by the Supplier/Vendor who shall proceed with the work with all due diligence, whether he or BHEL desires to resolve the dispute as hereinafter provided or not. If after the Designated Engineer has given written notice of this decision to the party and no intention to pursue the dispute has been communicated to him by the affected party within 30 days from the receipt of such notice, the said decision shall become final and binding on the parties. In the event the Supplier/Vendor being dissatisfied with any such decision or if amicable settlement cannot be reached then all such disputed issues shall be resolved through conciliation in terms of the BHEL Conciliation Scheme 2018 as per 'CONCILIATION' Clause.</p> <p><b>CONCILIATION:</b></p> <p>Any dispute, difference or controversy of whatever nature howsoever arising under or out of or in relation to this Agreement (including its interpretation) between the Parties, and so notified in writing by either Party to the other Party (the "Dispute") shall, in the first instance, be attempted to be resolved amicably in accordance with the conciliation procedure as per BHEL Conciliation Scheme 2018. The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in - "Procedure for conduct of conciliation proceedings" (as available in <a href="http://www.bhel.com">www.bhel.com</a>).</p> <p><b>ARBITRATION:</b></p> <p>Except as provided elsewhere in this Contract, in case Parties are unable to reach amicable settlement (whether by Conciliation to be conducted as provided herein above or otherwise) in respect of any dispute 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 (hereinafter referred to as the 'Dispute'), then, either Party may, refer the disputes to Arbitral Institution and such dispute to be adjudicated by Sole Arbitrator appointed in accordance with the Rules of said Arbitral Institution.</p> <p>A party willing to commence arbitration proceeding shall invoke Arbitration Clause by giving notice to the other party in terms of section 21 of the Arbitration &amp; Conciliation Act, 1996 (hereinafter referred to as the 'Notice') before referring the matter to arbitral institution. The Notice shall be addressed to the Head of the Region, Power Sector/ Unit, BHEL, executing the Contract and shall contain the particulars of all claims to be referred to arbitration with sufficient detail and shall also indicate the monetary amount of such claim including interest, if any.</p> <p>After expiry of 30 days from the date of receipt of aforesaid notice, the party invoking the Arbitration shall submit that dispute to the Arbitral Institutions (shall be identified by the contract issuing agency) and that dispute shall be adjudicated in accordance with their respective Arbitration Rules. The matter shall be adjudicated by a Sole Arbitrator who shall necessarily be a Retd Judge having</p>	

		<p>considerable experience in commercial matters to be appointed/nominated by the respective institution. The cost/expenses pertaining to the said Arbitration shall also be governed in accordance with the Rules of the respective Arbitral Institution. The decision of the party invoking the Arbitration for reference of dispute to a specific Arbitral institution for adjudication of that dispute shall be final and binding on both the parties and shall not be subject to any change thereafter. The institution once selected at the time of invocation of dispute shall remain unchanged.</p> <p>The fee and expenses shall be borne by the parties as per the Arbitral Institutional rules.</p> <p>The Arbitration proceedings shall be in English language and the seat and venue of Arbitration shall be at the court(s) of Haridwar.</p> <p>Subject to the above, the provisions of Arbitration &amp; Conciliation Act 1996 and any amendment thereof shall be applicable. All matters relating to this Contract and arising out of invocation of Arbitration clause are subject to the exclusive jurisdiction of the Court(s) situated at Haridwar, shall have exclusive jurisdiction.</p> <p>Notwithstanding any reference to the Designated Engineer or Conciliation or Arbitration herein, a. the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree. Settlement of Dispute clause cannot be invoked by the Contractor, if the Contract has been mutually closed or 'No Demand Certificate' has been furnished by the Contractor or any Settlement Agreement has been signed between the Employer and the Contractor.</p> <p>It is agreed that Mechanism of resolution of disputes through arbitration shall be available only in the cases where the value of the dispute is less than Rs. 10 Crores.</p> <p>In case the disputed amount Claim, Counter claim including interest is Rs. 10 crores and above, the parties shall be within their rights to take recourse to remedies other than Arbitration, as may be available to them under the applicable laws after prior intimation to the other party. Subject to the aforesaid conditions, provisions of the Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment thereof as amended from time to time, shall apply to the arbitration proceedings under this clause.</p> <p>In case, multiple arbitrations are invoked (whether sub-judice or arbitral award passed) by any party to under this contract, then the cumulative value of claims (including interest claimed or awarded) in all such arbitrations shall be taken in account while arriving at the total claim in dispute for the subject contract for the purpose of clause mentioned above. Disputes having cumulative value of less than 10 crores shall be resolved through arbitration and any additional dispute shall be adjudicated by the court of competent jurisdiction.</p>													
24.	<b>Action against Bidders / vendor / supplier / contractor in case of default:</b>	<p>In order to protect the commercial interests of BHEL, BHEL shall take action against supplies / contractors by way of suspension of business dealings, who either fail to perform or are in default without any reasonable cause, cause loss of business/ money/ reputation, indulge in malpractices, cheating, bribery, fraud or any other misconduct or formation of cartels so as to influence the bidding process or influence the price etc.</p> <p>Suspension of Business Dealings could be in the form of "Hold" or "Banning" a supplier/ contractor or a bidder and shall be as per "Guidelines for Suspension of Business Dealings with Suppliers/ Contractors" available at BHEL's website "<a href="https://www.bhel.com/guidelines-suspension-business-dealings-supplierscontractors">https://www.bhel.com/guidelines-suspension-business-dealings-supplierscontractors</a>"</p>													
25.	<b>MICRO AND SMALL ENTERPRISES (MSE):</b>	<p>Any Bidder falling under MSE category shall furnish the following details &amp; submit documentary evidence/ Govt. Certificate etc. in support of the same along with their techno-commercial offer.</p> <table border="1"> <thead> <tr> <th>Type under MSE</th><th>SC/ST owned</th><th>Women owned</th><th>Others (excluding SC/ ST &amp; Women Owned)</th></tr> </thead> <tbody> <tr> <td>Micro</td><td></td><td></td><td></td></tr> <tr> <td>Small</td><td></td><td></td><td></td></tr> </tbody> </table> <p><b>Note:</b> If the bidder does not furnish the above, offer shall be processed construing that the bidder is not falling under MSE category.</p> <p>a) MSE suppliers can avail the intended benefits in respect of the procurements related to the Goods and Services only (Definition of Goods and Services as enumerated by Govt. of India vide Office Memorandum F. No. 21(8)/2011-MA dtd. 09/11/2016 office of AS &amp; DC, MSME) only if they submit along with the offer, attested copies of either Udyam Registration. Date to be reckoned for determining the deemed validity will be the last date of Technical Bid submission. Non-submission of supporting document in GeM portal will lead to consideration of their bids at par with other bidders. No benefits shall be applicable for this enquiry if the above required documents are not uploaded at the time of bid submission. Documents submitted by the bidder shall be verified by BHEL for rendering the applicable benefits.</p>	Type under MSE	SC/ST owned	Women owned	Others (excluding SC/ ST & Women Owned)	Micro				Small				
Type under MSE	SC/ST owned	Women owned	Others (excluding SC/ ST & Women Owned)												
Micro															
Small															
26.	<b>JURISDICTION:</b>	<p>This contract shall be governed by the Law for the time being in force in the Republic of India. Subject to clause(s) mentioned above of this contract, the Civil Court having original Civil Jurisdiction at</p>													

		Haridwar shall alone have exclusive jurisdiction in regard to all matters in respect of the Contract.	
27.	<b>Force Majeure</b>	<p>"Force Majeure" shall mean circumstance which is: a) beyond control of either of the parties to contract, b) either of the parties could not reasonably have provided against the event before entering into the contract, c) having arisen, either of the parties could not reasonably have avoided or overcome, and d) is not substantially attributable to either of the parties And Prevents the performance of the contract, Such circumstances include but shall not be limited to: i) War, hostilities , invasion, act of foreign enemies. ii) Rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war. iii) Riot, commotion or disorder by persons other than the contractor's personnel and other employees of the contractor and sub-contractors. iv) Strike or lockout not solely involving the contractor's personnel and other employees of the contractor and sub-contractors. v) Encountering munitions of war, explosive materials, ionizing radiation or contamination by radio-activity, except as may be attributable to the contractor's use of such munitions, explosives, radiation or radio- activity. vi) Natural catastrophes such as earthquake, tsunami, volcanic activity, hurricane or typhoon, flood, fire, cyclones etc. vii) Epidemic, pandemic etc.</p> <p>The following events are explicitly excluded from Force Majeure and are solely the responsibilities of the non-performing party: a) any strike, work-to-rule action, goslow or similar labour difficulty (b) late delivery of equipment or material (unless caused by Force Majeure event) and (c) economic hardship.</p> <p>If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within 15 (fifteen) days after the occurrence of such event.</p> <p>The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The Time for Completion shall be extended by a period of time equal to period of delay caused due to such Force Majeure event.</p> <p>Delay or non-performance by either party hereto caused by the occurrence of any event of Force Majeure shall not</p> <p>i) Constitute a default or breach of the Contract. ii) Give rise to any claim for damages or additional cost expense occasioned thereby, if and to the extent that such delay or non-performance is caused by the occurrence of an event of Force Majeure.</p> <p>BHEL at its discretion may consider short closure of contract after 1 year of imposition of Force Majeure in line with extant guidelines. In any case, Supplier/Vendor cannot consider deemed short-closure after 1 year of imposition of Force Majeure</p>	
28.	<b>Cartel Formation</b>	The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). 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. In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.	
29.	<b>Order of Precedence:</b>	<p>In the event of any ambiguity or conflict between the Tender Documents, the order of precedence shall be in the order below:</p> <ol style="list-style-type: none"> <li>Amendments/Clarifications/Corrigenda/Errata etc. issued in respect of the tender documents by BHEL.</li> <li>Buyer Added Bid Specific ATC</li> <li>GeM Bid Technical Conditions of Contract (TCC)</li> <li>GeM GTC</li> </ol>	
30.	<b>Conflict of interest:</b>	<p>The bidder notes that a conflict of interest would said to have occurred in the tender process and execution of the resultant contract, in case of any of the following situations:</p> <ol style="list-style-type: none"> <li>If its personnel have a close personal, financial, or business relationship with any personnel of BHEL who are directly or indirectly related to the procurement or execution process of the contract, which can affect the decision of BHEL directly or indirectly;</li> <li>The bidder (or his allied firm) provided services for the need assessment/ procurement planning of the Tender process in which it is participating;</li> <li>Procurement of goods directly from the manufacturers/suppliers shall be preferred. However, if the OEM/Principal insists 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. In case bids are received from both the manufacturer/ supplier and the agent, bid received from the agent shall be ignored. However, this shall not debar more than one Authorized distributor (with/ or without the OEM) from quoting equipment manufactured by an Original</li> </ol>	

		<p>Equipment Manufacturer (OEM) in procurements under a Proprietary Article Certificate.</p> <p>d) A bidder participates in more than one bid in this tender process. Participation in any capacity by a Bidder (including the participation of a Bidder as a partner/ JV member or sub-contractor in another bid or vice-versa) in more than one bid shall result in the disqualification of all bids in which he is a party. However, this does not limit the participation of an entity as a sub-contractor in more than one bid if he is not bidding independently in his own name or as a member of a JV.</p> <p>The Bidder declares that they have read and understood the above aspects, and the bidder confirms that such conflict of interest does not exist and undertakes that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s), in this regard. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or nonsubmission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.</p> <p>In case, the Bidder is found having indulged in above activities, the same will be considered as a violation of the tender conditions, and suitable action shall be taken by BHEL as per extant policies/ guidelines.</p>	
31.	Warranty	Kindly confirm that <b>Warranty</b> shall be provided for a period of “ <b>18 months from the date of dispatch.</b> ”	
		Supplier shall be responsible for free replacement of defective equipment / material at our site	
		Please note that offers with guarantee period lesser than above mentioned guarantee period may result in rejection of the offer.	
32.	Order Acceptance:	Ink signed order acceptance shall be furnished within 15 days of order placement. In case, order acceptance do not received within 15 days of order placement, PO deemed to be accepted by you.	
33.	Beneficiary of PO	Kindly confirm on whom the PO will be placed in the event of ordering.	
34.	Dispatch documents	<p>Following dispatch documents to be provided immediately after directly dispatch to BHEL Project site for billing purpose:</p> <ul style="list-style-type: none"> <li>• Guarantee/Warranty Certificates</li> <li>• E- Invoice and commercial invoice</li> <li>• GeM invoice</li> <li>• Original consignee copies of GR/LR/RR (Material shall be dispatched on door delivery basis without consignee copy)</li> <li>• Packing list</li> <li>• Original GST compliance certificate</li> <li>• E-way bill</li> <li>• MRC/POD/Receipted LR/RR/GR copy (as per proof of delivery of material at BHEL Project site)</li> </ul>	
35.	IP Address	The bids received from same IP address shall be outrightly rejected and shall not be considered for further evaluation.	
36.	Additional Conditions for Assessment	BHEL also reserves the right to have on-site assessment of the facilities at supplier's works during the bid evaluation.	
37.	Quality Requirement	VENDOR TO CONFIRM THAT PRE-INSPECTION BY BHEL/ BHEL NOMINATED AGENCY AS PER ENCLOSED QUALITY PLAN NO. "QA/BE/QP/318/VJYWD KRSHNPTUM REV.01	
		VENDORS TO CONFIRM THE SAME. ALSO, VENDORS TO ENDORSE THE SQP ALONG WITH OFFERS.	
		The Charges for Pre-Inspection would be borne by BHEL. However at least 15 days' notice is to be provided for arranging Pre-Inspection.	
	Bidder Contact details	Please provide Contact details of your representative for techno-commercial clarifications: Mobile no. & Email id (minimum 2 person)	

**SPECIAL NOTE FOR BIDDERS:**

- In the event of our customer order covering this tender being cancelled /placed on hold /otherwise modified, BHEL would be constrained to accordingly cancel / hold / modify the tender at any stage of execution.
- BHEL may negotiate the L1 rate, if not meeting our budget / estimated cost. BHEL may re-float the tender opened, if L1 price is not acceptable to BHEL even after negotiation.
- Any change in applicable rates of Tax or any other statutory levies (Direct / Indirect) or any new introduction of any levy by means of statute and its corresponding liability for the deliveries beyond the agreed delivery date for reasons not attributable to BHEL will be to vendors account. BHEL will not reimburse the same and any subsequent claim in this respect will be summarily rejected.
- BHEL reserves its right to reject an offer due to unsatisfactory past performance by the respective Vendor in the execution of any contract to any BHEL project / Unit.
- The offers of the bidders who are under suspension and also the offers of the bidders, who engage the services of the banned firms /principal/agents, shall be rejected. The list of banned firms is available on BHEL web site [www.bhel.com](http://www.bhel.com).

- f. Recovery / deduction as applicable as per Direct and Indirect taxes as notified by Govt. Of India from time to time will be made and information/certificate for such deduction/recoveries shall be provided by BHEL to the vendor.
- g. If the delivery of supply as detailed above gets delayed beyond the delivery period, the Supplier/Vendor shall request for a delivery extension and BHEL at its discretion may extend the Contract. However, if any 'Delivery extension' is granted to the Supplier/Vendor for completion of supply, due to backlog attributable to the Supplier/Vendor, then it shall be without prejudice to the rights of BHEL to impose LD for the delays attributable to the Supplier/Vendor.
- h. In case BHEL increase the quantity during currency of the contract in line with quantity variation clause of GeM bid, delivery extension on pro-rata basis shall be given for supply of these additional quantity.

Following documents are an integral part of this Tender Enquiry and endorsed copies of these documents (duly signed and stamped on each page, as a token of acceptance) are to be submitted/uploaded along with offer on GeM portal against this bid.

- 1. Please submit replica of Price schedule (without prices) showing "quoted" in place of price along with techno-commercial bid (Part-I).
- 2. Please submit signed & Stamped copy (each page) of duly filled of confirmation column of "Buyers Specific Additional Terms & Conditions (ATC)" and its clause wise supporting documents where required.
- 3. Please submit signed & stamped copy (each page) for qualifying PQR with proper filled information and related supporting documents as mentioned in PQR.
- 4. Please submit certificate of Minimum local content as specified in the Make In India Certificate of the tender



## CONTROLS & INSTRUMENTATION

### PRE-QUALIFICATION REQUIREMENT (PQR) GUIDELINES CABLES REQUIREMENT – 4 CORE 2.5 MMSQ POWER CABLE

Sl. No.	Description	Bid Requirements	Vendor remarks
1	Type of Vendor	Vendor shall be the Original Equipment Manufacturer (OEM) of 4X2.5 mm <sup>2</sup> 1.1kV power cables. <b>Vendor to Submit OEM certificate or equivalent document.</b>	<b>Accepted / Not accepted</b>
2	Proven Track record/Past Experience	a) Vendor should have manufactured and supplied at least minimum 15 km Power cables, in a single order for any power plant in India, within last 4 years as on the date of enquiry. <b>Vendor to submit PO copy supporting this point.</b>  b) Vendor should have manufacturing capacity of 30 Km of Power cable per month. <b>Vendor to submit document(s) supporting this point.</b>  c) Vendor shall <b>submit the reference list</b> (signed and sealed) of supplied Power cables with details of recent PO no., customer, project/site, year of supply, contact details.  d) Vendor shall <b>submit a copy of the largest purchase order</b> for LT Power cables in terms of Quantity & value, executed by them in last 3 years from the date of enquiry.	<b>Accepted / Not accepted</b>
3	Facilities required	All machineries and facilities that are required for the complete manufacturing of cables, shall be available in house. None of the major stages/processes (wire drawing, stranding, bunching, sheathing (extrusion/wrapping), armouring, printing, embossing) involved in the manufacturing of the cable, shall be off loaded or outsourced. <b>Vendor to submit list of machineries / facilities.</b>	<b>Accepted / Not accepted</b>
4	Testing Facilities	Vendor shall have the facility to conduct acceptance, routine and type tests as per the enquiry, either inhouse or at NABL accredited labs. <b>Vendor to submit list of Measuring instruments &amp; Testing facilities &amp; submit Sample report.</b>	<b>Accepted / Not accepted</b>
5	Past Supply Association / Experience with BHEL	Previous purchase orders executed with BHEL, NTPC or State electricity boards, if any shall be referred to. <b>Vendor to submit PO copies. This is for reference only.</b>	<b>Accepted / Not accepted</b>

PREPARED- SUNIL KUMAR GAUTAM

*Sunil*  
02/08/25

DATE-02.08.25

CHECKED - DEEPAK GOYAL

*Deepak Goyal*  
02/08/25

APPROVED - SURESH CHANDRA

*Suresh*  
02/08/25



## CONTROL & INSTRUMENTATION ENGINEERING

ITEMS: POWER CABLES 4X2.5 mm<sup>2</sup> (Armoured)

Doc. No. 418101D9006B

Date: 02.08.2025

### Addendum to Specification no ST 51020 REV 03


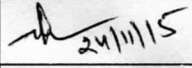
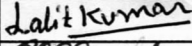
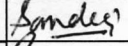
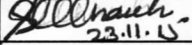
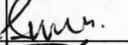

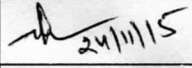
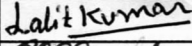
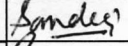
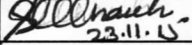
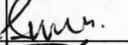

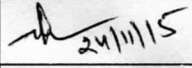
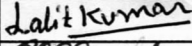
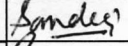
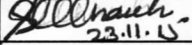
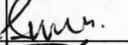

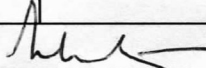
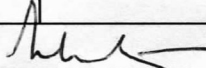
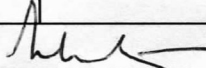
1. The clause No. 3.2 of spec no ST 51020, Rev 03 shall be read as "Insulation: Extruded HR PVC compound conforming to type C of IS: 5831, by extrusion Process.
2. The clause No. 3.5 of spec no ST 51020, Rev 03 shall be read as "Inner sheath: Extruded FRLS PVC compound conforming to type ST2 of IS: 5831 by extrusion Process.
3. The clause No. 3.6 of spec no ST 51020, Rev 03 shall be read as "The Power cable shall be Armoured (Galvanized single round steel wire/strip) conforming to IS: 3975 and IS: 1554."
4. The clause No. 3.7 of spec no ST 51020, Rev 03 shall be read as "Overall sheath: Extruded FRLS PVC compound conforming to type ST2 of IS: 5831 by extrusion process.
5. For fire survival cable material code W90318105241 required taping of fibre glass or any other proven material shall be provided over conductor to meet the requirement of IEC 331, and for it minimum thickness of the tape shall be 0.13 mm, overlapping shall not be less than 30% and shall have 100% coverage.
6. All cables shall be anti-rodent and anti-termite with moisture resistant and anti-fungus properties. Test for anti-rodent and anti-termite shall be conducted as per vendor standard.
7. Heat Shrinkable end cap to be provided at both end of all the cable drums to protect the ingress of water during transportation and storage of drums.
8. All Cable Drum shall be of good quality & shall meet the requirement of IS:10418. Drums shall be treated with Anti-Termite solution.

(Sunil Kumar Gautam)

(Deepak Goyal)


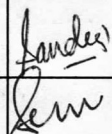
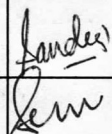
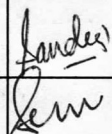
(Suresh Chandra)



दिनांक एवं हस्ताक्षर SIGN & DATE		<b>उत्पाद मानक</b>  <b>PRODUCT STANDARD</b> <b>STEAM TURBINE ENGINEERING</b>	<b>ST 51020</b>  <b>पृष्ठ 3 का 1</b> <b>Page 1 of 3</b>																								
SUPERSEDES सामग्री सूची संख्या को अधिकृतित करता है । INVENTORY NO.	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <b>BASED ON OWN EXPERIENCE</b> </div> <b><u>PURCHASE SPECIFICATION OF POWER CABLE(2.5mm<sup>2</sup>)</u></b> <b><u>FOR 24V SOLENOID VALVES</u></b>  <b>1.0 APPLICATION:</b>  Fire retardant low smoke (FRLS) type, 1100 V voltage grade multicore power cable for power plant application. The cable shall be suitable for laying in wet or dry locations in trays, conduits, ducts, trenches and underground-buried installation. Cable shall be suitable for ambient conditions of (-) 10 °C to 60 °C and relative humidity 85%.  <b>2.0 REFERENCE STANDARD:</b> The standard is based on IS:1554 (Pt 1)-1988 in general.  <b>3.0 CONSTRUCTION:</b>  3.1 Conductor: Each core shall be stranded copper (untinned) circular shape material of 2.5 mm <sup>2</sup> cross sectional area as per IS:8130. The conductor shall be made of annealed high conductivity conductor complying IS :8130.  3.2 Insulation: Each core shall be insulated by extrusion process with PVC type A , as per IS:5831, and thickness shall be as per IS:1554(Pt 1)  3.3 Number of cores and cross-sectional area: As per enquiry.  3.4 Identification of cores: Colour codes as per IS: 1554(Pt-1)  3.5 Inner sheath: The cable shall be sheathed with FRLS PVC type ST-1, as per IS: 5831 by extrusion process and thickness shall be as per IS: 1554(Pt- 1)  Overall diameter and tolerance of cable shall be indicated in offer.  3.6 Armouring: As per enquiry.																										
COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited It must not be used directly or indirectly in any way detrimental to the interest of the company  स्वतंत्राधिकार एवं गोपनीय इस प्रलेख में दी गई सूचना भारत भारती इलेक्ट्रिकल्स की संपत्ति है इसका प्रयोग एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए ।	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">PSC Member</td> <td style="width:15%;">Vinod kr.</td> <td style="width:15%; text-align: center;">  </td> <td style="width:20%;">अनुवादक TRANSLATED BY</td> <td style="width:15%;">नाम NAME</td> <td style="width:20%;">हस्ताक्षर एवं दिनांक SIGN. &amp; DATE</td> </tr> <tr> <td>TSX</td> <td>Lalit kumar</td> <td style="text-align: center;">  </td> <td>निर्माणकर्ता WORKED BY</td> <td>Sandeep Gupta</td> <td style="text-align: center;">  18.11.15         </td> </tr> <tr> <td>QAX</td> <td>SK Chauhan</td> <td style="text-align: center;">  </td> <td>परीक्षणकर्ता CHECKED BY</td> <td>Suresh Chandra</td> <td style="text-align: center;">  18.11.15         </td> </tr> <tr> <td>सहमत विभाग AGREED DEPTT.</td> <td>नाम NAME</td> <td>दिनांक एवं हस्ताक्षर DATE &amp; SIGNATURE</td> <td>पर्यवेक्षणकर्ता SUPERVISED BY</td> <td>B S Rana</td> <td style="text-align: center;">  18.11.15         </td> </tr> </table>			PSC Member	Vinod kr.		अनुवादक TRANSLATED BY	नाम NAME	हस्ताक्षर एवं दिनांक SIGN. & DATE	TSX	Lalit kumar		निर्माणकर्ता WORKED BY	Sandeep Gupta	 18.11.15	QAX	SK Chauhan		परीक्षणकर्ता CHECKED BY	Suresh Chandra	 18.11.15	सहमत विभाग AGREED DEPTT.	नाम NAME	दिनांक एवं हस्ताक्षर DATE & SIGNATURE	पर्यवेक्षणकर्ता SUPERVISED BY	B S Rana	 18.11.15
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Rev. No. 03			निर्माण : PREPARED CIE	ज़ारी : ISSUED TSX	दिनांक : DATE 18.11.2015																						
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सामग्री सूची संख्या INVENTORY NO.	हस्ताक्षर एवं दिनांक SIGN & DATE	स्वत्वधिकार एवं गोपनीय The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	सामग्री सूची संख्या को अधिकृतित करता है। INVENTORY NO.	ST 51020	उत्पाद मानक <b>PRODUCT STANDARD</b> <b>STEAM TURBINE ENGINEERING</b>
					पृष्ठ 3 का 2 Page 2 of 3
<p>3.7 <b>Outer sheath:</b> The cable shall be sheathed with extrusion process distinctly over inner sheath, with FRLS PVC type ST1 as per IS:5831 and thickness as per IS:1554(Pt-I). The sheath shall be resistant to fungus, termite and rodent attacks &amp; test for same shall be conducted as per manufacturer's standard practice. Colour of sheath shall be black.</p> <p>3.8 <b>Identification marking:</b> Durable identification marking shall be provided at every 1000 mm distance on the outer sheath as per the following example-          A 4 core cable of conductor cross section 2.5 mm<sup>2</sup> shall be marked as:FRLS -1100 V-4Cx2.5-BHEL (HW).</p> <p><b>4.0 INSPECTION:</b> At supplier works by BHEL's representative. The test shall include the following:</p> <p>4.1 Cable shall be visually inspected as per cl.3.0</p> <p>Following measured values shall be recorded. Conductor cross sectional area, numbers of cores, thickness of insulation, inner sheath &amp; outer sheath.</p> <p>4.2 Routine, Acceptance and type tests for the material used for conductor, insulation, inner sheath, outer sheath. and finished cable shall be conducted as per IS: 1554(Pt-I) and other applicable standards.</p> <p>4.3 Following Acceptance tests for FRLS properties of inner and outer sheath material/finished cable are required.</p> <p>4.3.1 Value of oxygen index as per ASTM-D2863 shall be minimum 29.</p> <p>4.3.2 Temperature index of outer sheath as per ASTM-D2863. The test shall be carried out by extrapolation as per BICC Hand book, chapter 6 on "cable in fire". A number of measurements up to 120 °C shall be taken and results plotted in a graph and then extrapolated. Minimum value of temp index shall be 250 °C.</p> <p>4.3.3 Acid gas generation by weight as per IEC-754-1 shall be 20% (max).</p> <p>4.3.4 Smoke generation of sheath material under fire as per ASTM-D2843 shall have maximum smoke density rating of 60%.</p> <p>4.3.5 Flammability characteristics of complete cable as per IEEE-383.</p>					
सामग्री सूची संख्या INVENTORY NO.	हस्ताक्षर एवं दिनांक SIGN & DATE	स्वत्वधिकार एवं गोपनीय इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स की संपत्ति है इसका प्रयोग एवं प्रसारण के बिना किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।	सामग्री सूची संख्या को अधिकृतित करता है। INVENTORY NO.	REV NO. 03	निर्माणकर्ता Worked by जांचकर्ता Checked by
P-6298	18/11/15				S. Gupta S.Chandra
					18/11/15 18/11/15

सामग्री सूची संख्या INVENTORY NO.	हस्ताक्षर एवं दिनांक SIGN & DATE	स्वत्वधिकार एवं गोपनीय The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	सामग्री सूची संख्या को अधिकृत किया जाता है। INVENTORY NO. SIGN & DATE		उत्पाद मानक <b>PRODUCT STANDARD</b> <b>STEAM TURBINE ENGINEERING</b>	ST 51020						
				पृष्ठ 3 का 3 Page 3 of 3								
<p>4.3.6 Flammability characteristics of complete cable as per Swedish standard SS-4241475 for class F3.</p> <p>4.3.7 Flammability characteristics of cable as per IEC332 part3.</p> <p><b>5.0 PACKING &amp; MARKING:</b></p> <p>5.1 Cable shall be supplied in non-returnable drums as per IS:10418. Ends of cables shall be properly sealed and secured to the drum. A layer of water proof shall be applied to the surface of drum and over the outer cable layer.</p> <p>5.2 Standard length of cable shall be 1000M/500M(+/-5%) meters. The tolerance on the overall ordered length of each type of cable shall be +5% and -0 % .</p> <p>5.3 Identification marking and type of cable (as per Cl. 3.8 above) shall be marked on each drum besides name of manufacturer.</p> <p><b>6.0 DOCUMENT:</b></p> <p>6.1 Quality plan and detail data sheet shall be submitted by vendor for approval.</p> <p><b>7.0 CROSS REFERRED STANDARDS:</b></p> <p>IS:- 1554, ASTM-D2863          IEEE-383, IS-10418, ASTM D2843          IS:- 5831, IS: 8130          IEC-754-I, SS-4241475 cl F3, IEC332 part3</p>												
REV NO. 03		<table border="1"> <tr> <td>निर्माणकर्ता Worked by</td> <td>S. Gupta</td> <td rowspan="2">  </td> <td rowspan="2">         18/11/15       </td> </tr> <tr> <td>जांचकर्ता Checked by</td> <td>S. Chandra</td> </tr> </table>					निर्माणकर्ता Worked by	S. Gupta		18/11/15	जांचकर्ता Checked by	S. Chandra
निर्माणकर्ता Worked by	S. Gupta		18/11/15									
जांचकर्ता Checked by	S. Chandra											







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MANUFACTURER'S NAME AND ADDRESS		STANDARD QUALITY PLAN				TO BE FILLED BY BIHEL		TO BE FILLED BY BIHEL		
BIHEL	VENDOR'S NAME	ITEM	POWER CABLE FOR 24 V SOLENOID VALVES (4X2.5MM2) ES POWER CABLE FOR 24 V SOLENOID VALVES (4X2.5MM2) AS PER PO	Q.P. NO.	QA/BE/OP/318/VJWD KRSHNP/NTM	REV. 01				
		DRG. NO.								
		SPEC.								
		REV.								
SL. NO.	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	REMARKS	
1	2	3	4	5	6	7	8	9	10	

1.3.3	Tensile Strength & Elongation at break before & after ageing	Major	Physical	1Sample/Lot	IS 10810	IS 5831	TC	V	P	V	
1.3.4	Loss of mass in air oven	Major	Thermal	1Sample/Lot	IS 10810	IS 5831	TC	V	P	V	
1.3.5	Hot Deformation	Major	Thermal	1Sample/Lot	IS 10810	IS 5831	TC	V	P	V	
1.3.6	Heat Shock	Major	Thermal	1Sample/Lot	IS 10810	IS 5831	TC	V	P	V	
1.3.7	Shrinkage Test	Major	Thermal	1Sample/Lot	IS 10810	IS 5831	TC	V	P	V	
1.3.8	Thermal Stability	Major	Thermal	1Sample/Lot	IS 5831	IS 5831	TC	V	P	V	
1.3.9	Oxygen Index	Major	Physical / Chemical	1Sample/Lot	ST51020	ASTMD-2863	TC	V	P	V	
1.3.10	Temperature Index	Major	Physical / Chemical	1Sample/Lot	ST51020	ASTMD-2863	TC	V	P	V	
1.3.11	Acid gas generation	Major	Physical / Chemical	1Sample/Lot	ST51020	IEC-754-I	TC	V	P	V	
1.3.12	Smoke Generation	Major	Physical / Chemical	1Sample/Lot	ST51020	ASTMD-2843	TC	V	P	V	
1.4	Galvanized Steel Wire / Strip for Armouring										As applicable
1.4.1	Chemical Composition	Major	Chemical	1Sample/Lot	IS 3975	IS 3975	TC	V	P	V	
1.4.2	Tensile strength & % of elongation	Major	Physical	1Sample/Lot	IS 3975	IS 3975	TC	V	P	V	
1.4.3	Torsion Test	Major	Physical	1Sample/Lot	IS 3975	IS 3975	TC	V	P	V	
1.4.4	Wrapping Test	Major	Physical	1Sample/Lot	IS 3975	IS 3975	TC	V	P	V	

MANUFACTURER/SUBCONTRACTOR	<p>LEGEND:</p> <p>D: RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION.</p> <p>M: MANUFACTURER / SUBCONTRACTOR</p> <p>N: CUSTOMER</p> <p>INDICATE 'P' PERFORM 'W' WITNESS 'V' VERIFICATION 'ADS' APPROVED DATA SHEET 'IR' INTERNAL RECORDS 'ADS' APPROVED DATA SHEET 'IR' INSPECTION REPORT 'TC' TEST CERTIFICATE.</p> <p>ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHIP' OF CUSTOMER</p>	FOR CUSTOMER USE	APPROVED BY
		<p>31.10.16</p>	

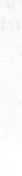







MANUFACTURER'S NAME AND ADDRESS		STANDARD QUALITY PLAN				TO BE FILLED BY		TO BE FILLED BY BHEL						
VENDOR'S NAME		ITEM	POWER CABLE FOR 24 V SOLENOID VALVES (4X2.5MM2) FS POWER CABLE FOR 24 V SOLENOID VALVES (4X2.5MM2)	QIP NO.	QA/BE/QP/318/VJYWD KRSHINPTNM	REFERENCE DOCUMENT		ACCEPTANCE NORMS		FORMAT OF RECORDS		AGENCY		REMARKS
				REV.	01	QUANTUM OF CHECK	7	8	9	10	11			
		DRG. NO.	AS PER PO			Page 4 of 10								
		SPEC. REV	ST 51020 Rev 03 with addendum 418101D9006											
COMPONENT & OPERATIONS		CHARACTERISTICS		CLASS	TYPE OF CHECK	6	7	8	9	10	11			
SL. NO.	2	3	4	5	6	7	8	9	10	11				

2.2.2	Resistance	Major	Electrical	-do-	IS 10810	ADS	In R	P	-	-
2.2.3	Surface Finish	Major	Visual	-do-	Smooth free from scratches	Smooth free from scratches	In R	P	-	-
2.3	Insulation of core									
2.3.1	Type of insulation	Major	Chemical	-do-	ST 51020	ADS	In R	P	-	-
2.3.2	Insulation thickness	Major	Physical	-do-	ST 51020	ADS	In R	P	-	-
2.3.3	Dia of core	Major	Physical	-do-	ST 51020	ADS	In R	P	-	-
2.3.4	Color of core	Major	Visual	-do-	ST 51020	ADS	In R	P	-	-
2.3.5	Spark testing	Major	Electrical	-do-	No failure is permitted	No failure permitted	In R	✓ P	V	-
2.3.6	Numbering of cores	Major	Visual	-do-	ST 51020	ADS	In R	P	-	-
2.3.7	Surface finish	Major	Visual	-do-	Smooth & free from defects	Smooth & free from defects	In R	P	-	-
2.3.8	Tensile strength of insulation	Major	Mechanical	-do-	IS 10810	ADS	In R	P	-	-
2.3.9	Elongation of insulation	Major	Mechanical	-do-	IS 10810	ADS	In R	P	-	-
2.3.10	Shrinkage test	Critical	Chemical	-do-	IS 10810	ADS	In R	P	-	-
2.3.11	Thermal stability	Critical	Chemical	-do-	IS 5831	IS 5831	In R	P	-	-
2.3.12	Volume resistivity	Critical	Electrical	-do-	IS 10810	ADS	In R	P	-	-
2.4	Laying up for multi core cables									
2.4.1	Direction of lay	Major	Visual	-do-	Mfg's std	Mfg's std	In R	P	-	-

	MANUFACTURER/SUBCONTRACTOR	LEGEND: D: RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION. M: MANUFACTURER / SUBCONTRACTOR B: BHEL / NOM. INSPECTION AGENCY N: CUSTOMER INDICATE 'P' PERFORM 'W' WITNESS 'V' VERIFICATION 'ADS' APPROVED DATA SHEET 'In R' INTERNAL RECORDS 'ADS' APPROVED DATA SHEET 'IR' INSPECTION REPORT 'TC' TEST CERTIFICATE ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CIP' OF CUSTOMER	FOR CUSTOMER USE	APPROVED BY 	29.04.17
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MANUFACTURER'S NAME AND ADDRESS		STANDARD QUALITY PLAN					TO BE FILLED BY BHEL		TO BE FILLED BY BHEL	
VENDOR'S NAME		ITEM	POWER CABLE FOR 24 V SOLENOID VALVES (4X2.5MM2) FS POWER CABLE FOR 24 V SOLENOID VALVES (4X2.5MM2)	QIP NO. REV.	QIP NO. REV.	QIP NO. REV.	QIP NO. REV.	QIP NO. REV.	QIP NO. REV.	QIP NO. REV.
BHEL		DRG. NO.	AS PER PO	ST 51020 Rev 03 with addendum 418101D9006	Page 5 of 10	Page 5 of 10	Page 5 of 10	Page 5 of 10	Page 5 of 10	Page 5 of 10
COMPONENT & OPERATIONS		CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	AGENCY	REMARKS
S/N	2	3	4	5	6	7	8	9	M B N	10
2.4.2		Sequence of laying	Major	Visual	-do-	Mfg's std	Mfg's std	In R	P	
2.4.3		Shape of laid up assembly	Major	Visual	-do-	Mfg's std	Mfg's std	In R	P	
2.5		Inner sheath for multicore cables only								As applicable
2.5.1		Radial thickness	Major	Physical	-do-	ST 51020	ADS	In R	P	
2.5.2		colour	Major	visual	-do-	ST 51020	ADS	In R	P	
2.5.3		Surface finish	Major	visual	-do-	Smooth & free from defects	Smooth & free from defects	In R	P	
2.6		Armouring								As applicable
2.6.1		Size of wire / strip	Major	Physical	-do-	ST 51020	ADS	In R	P	
2.6.2		Dia over armouring	Major	Physical	-do-	ST 51020	ADS	In R	P	
2.6.3		Direction of lay & % of coverage	Major	Visual	-do-	Mfg's Std.	ADS	In R	P	
2.6.4		Tightness	Major	Physical	-do-	Mfg's Std.	Mfg's Std.	In R	P	
2.6.5		Surface finish	Major	Visual	-do-	Smooth	Smooth	In R	P	
2.7		Inner / Outer sheaths								
2.7.1		Dia of cable	Major	Physical	-do-	ST 51020	ADS	In R	P	
2.7.2		Color of cable	Major	Visual	-do-	ST 51020	ADS	In R	P	
2.7.3		Radial thickness	Major	Physical	-do-	ST 51020	ADS	In R	P	
2.7.4		Embossing / identification marking	Major	Visual	-do-	ST 51020	ST 51020/ADS	In R	P	

MANUFACTURER/SUBCONTRACTOR		FOR CUSTOMER USE	
<p>LEGEND:</p> <p>D: RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION.</p> <p>M: MANUFACTURER / SUBCONTRACTOR B: BHEL / NOM INSPECTION AGENCY</p> <p>N: CUSTOMER</p> <p>INDICATE 'P' PERFORM 'W' WITNESS 'V' VERIFICATION 'ADS' APPROVED DATA SHEET 'In R' INTERNAL RECORDS 'ADS' APPROVED DATA SHEET 'IR' INSPECTION REPORT 'TC' TEST CERTIFICATE</p> <p>ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHIP' OF CUSTOMER</p>		<p>APPROVED BY</p> <p>FILE NO. 566</p>	



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MANUFACTURER'S NAME AND ADDRESS		STANDARD QUALITY PLAN					TO BE FILLED BY BHEL		TO BE FILLED BY BHEL											
VENDOR'S NAME		ITEM	POWER CABLE FOR 24 V SOLENOID VALVES (4X2.5MM2) FS POWER CABLE FOR 24 V SOLENOID VALVES (4X2.5MM2)	Q.P. NO.	Q.A./B.E./Q.P./S18/VJYWD KRSHPINPM	REV.	01													
DRG. NO.		AS PER PD		ST 51020 Rev 03 with addendum 418101D0006		B														
SPEC.		03																		
REV																				
CHARACTERISTICS		CLASS	4	TYPE OF CHECK	5	QUANTUM OF CHECK	6	REFERENCE DOCUMENT	7	ACCEPTANCE NORMS	8	FORMAT OF RECORDS	9	D	10	AGENCY	M	B	N	REMARKS
COMPONENT & OPERATIONS		3																		
1	2																			
2.7.5	Surface finish	Major	Visual	-do-		Surface shall be smooth & free from defects		Surface shall be smooth & free from defects		In R		P								
3.0	FINAL INSPECTION																			
3.1	Type Tests																			
3.1.1	Tests on conductor																			
a.	Annealing	Major	Process	As per IS	IS 10810	IS 8130	In R	V	P	V										
b.	Conductor resistance	Critical	Electrical	As per IS	IS 10810	ADS	IR	V	P	V										
3.1.2	Test for armouring wires/strips																			
a.	Chemical composition	Major	Chemical	As per IS	IS 3975	IS 3975	IR	V	P	V										
b.	Tensile strength & % of elongation	Major	Physical	As per IS	IS 3975	IS 3975	IR	V	P	V										
c.	Torsion test	Major	Physical	As per IS	IS 3975	IS 3975	IR	V	P	V										
d.	Wrapping test	Major	Physical	As per IS	IS 3975	IS 3975	IR	V	P	V										
e.	Resistance measurement	Major	Electrical	As per IS	IS 3975	IS 3975	IR	V	P	V										
f.	Mass of zinc coating	Major	Physical	As per IS	IS 3975	IS 3975	IR	V	P	V										
g.	Uniformity of zinc coating	Major	Visual	As per IS	IS 3975	IS 3975	IR	V	P	V										
h.	Adhesion test	Major	Physical	As per IS	IS 3975	IS 3975	IR	V	P	V										
i.	Size	Major	Physical	As per IS	IS 3975	IS 3975	IR	V	P	V										
MANUFACTURER/SUBCONTRACTOR		<p>LEGEND:</p> <p>D: RECORDS IDENTIFIED WITH "TICK" SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION.</p> <p>M: MANUFACTURER / SUBCONTRACTOR B: BHEL / NOM. INSPECTION AGENCY</p> <p>N: CUSTOMER</p> <p>INDICATE "P" PERFORMANCE "W" WITNESS "V" VERIFICATION "ADS" APPROVED DATA SHEET "IR" INTERNAL RECORDS "ADS" APPROVED DATA SHEET "IR" INSPECTION REPORT "TC" TEST CERTIFICATE</p> <p>ALL "W" INDICATED IN COLUMN "N" SHALL BE "CHIP" OF CUSTOMER</p>																		
		<p>FOR CUSTOMER USE</p> <p>APPROVED BY</p> <p><i>[Signature]</i></p> <p>22.10.2024</p>																		



MANUFACTURER'S NAME AND ADDRESS		STANDARD QUALITY PLAN				TO BE FILLED BY BHEL				
BHEL	VENDOR'S NAME	ITEM	POWER CABLE FOR 24 V SOLENOID VALVES (4X2.5MM2) FS POWER CABLE FOR 24 V SOLENOID VALVES (4X2.5MM2)	QIP NO. REV.	QIP NO. REV.	QIP NO. REV.	QIP NO. REV.			
	DRG. NO.	AS PER PO	ST 51020 Rev 03 with addendum 418101D9006	Page 7 of 10						
	SPEC. REV.	03								
	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTITY OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	AGENCY		
SL. NO.	COMPONENT & OPERATIONS	3	4	5	6	7	8	9	10	11

Test for thickness of insulation & sheaths										
3.1.3		Thickness	Major	Physical	As per IS	IS 10810	IS 5831	IR	V	P
Physical tests for insulation and sheaths										
a.		Tensile strength & elongation at break	Critical	Physical	As per IS	IS 10810	IS 5831	IR	V	P
b.		Ageing in air oven	Critical	Thermal	As per IS	IS 10810	IS 5831	IR	V	P
c.		Shrinkage	Critical	Thermal	As per IS	IS 10810	IS 5831	IR	V	P
d.		Hot deformation	Critical	Thermal	As per IS	IS 10810	IS 5831	IR	V	P
e.		Loss of mass in air oven	Critical	Thermal	As per IS	IS 10810	IS 5831	IR	V	P
f.		Heat shock	Critical	Thermal	As per IS	IS 10810	IS 5831	IR	V	P
g.		Thermal stability	Critical	Thermal	As per IS	IS 5831	IS 5831	IR	V	P
h.		Insulation resistance	Critical	Electrical	As per IS	IS 10810	ADS	IR	V	P
i.		High Voltage test at RT	Critical	Electrical	As per IS	IS 10810	ADS	IR	V	P
j.		High Voltage test (water immersion)	Critical	Electrical	As per IS	IS 10810	ADS	IR	V	P
k.		Flammability	Critical	Chemical	As per IS	IS 10810	ADS	IR	V	P
l.		Volume Resistivity	Critical	Electrical	As per IS	IS 10810	IS 5831	IR	V	P
m.		Cold bend / Cold impact test	Critical	Physical	As per IS	IS 10810	IS 5831	IR	V	P
n.		Color fastness test	Critical	Physical	As per IS	IS 10810	IS 5831	IR	V	P
o.		Bleeding & blooming test	Critical	Physical	As per IS	IS 10810	IS 5831	IR	V	P

MANUFACTURER/SUBCONTRACTOR	<p>LEGEND:</p> <p>D: RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION.</p> <p>M: MANUFACTURER / SUBCONTRACTOR</p> <p>N: CUSTOMER</p> <p>INDICATE 'P' PERFORM 'W' WITNESS 'V' VERIFICATION 'ADS' APPROVED DATA SHEET 'IR' INTERNAL RECORDS 'ADS' APPROVED DATA SHEET 'IR' INSPECTION REPORT 'TC' TEST CERTIFICATE</p> <p>ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHIP' OF CUSTOMER</p>	FOR CUSTOMER USE	APPROVED BY
		<p>38.04.17</p> <p>38.04.17</p>	





MANUFACTURER'S NAME AND ADDRESS		STANDARD QUALITY PLAN				TO BE FILLED BY BHEL		TO BE FILLED BY BHEL						
BHEL	VENDOR'S NAME	ITEM	POWER CABLE FOR 24 V SOLENOID VALVES (4X2.5MM2) FS POWER CABLE FOR 24 V SOLENOID VALVES (4X2.5MM2)	QIP NO.	QA/BE/OP/318/VJWID KRSINPTNM	REFERENCE DOCUMENT	7	ACCEPTANCE NORMS	8	FORMAT OF RECORDS	9	D	AGENCY M B N	REMARKS
		DRG. NO.	AS PER PO	REV.	01									
		SPEC.	ST 51020 Rev 03 with addendum 418101D9006	REV.	03									
		CHARACTERISTICS	CLASS	4	TYPE OF CHECK									
SL. NO.	1	COMPONENT & OPERATIONS	2	3	4	5	6	7	8	9	10	11		

3.2	Routine tests											
3.2.1	Conductor resistance	Critical	Electrical	As per IS	IS 10810	ADS	IR	V	P	V		
3.2.2	High Voltage test at RT	Critical	Electrical	As per IS	IS 10810	ADS	IR	V	P	V		
3.3	Acceptance tests											
3.3.1	Conductor resistance	Critical	Electrical	Sample as per IS 1554-I	IS 10810	ADS	IR	V	P	W		
3.3.2	Conductor annealing	Critical	Mechanical	-DO-	Annealing process	Annealing process	In R	V	P	V		
3.3.3	Test for thickness of insulation & sheaths	Critical	Physical	-DO-	IS 10810	ADS	IR	V	P	W		
3.3.4	Tensile strength & elongation at break of insulation and sheaths	Critical	Physical	-DO-	IS 10810	ADS	IR	V	P	W		
3.3.5	Volume resistivity	Critical	Electrical	-DO-	IS 10810	ADS	IR	V	P	W		
3.3.6	Thermal stability of insulation & sheath	Critical	Chemical	-DO-	IS 5831	ADS	IR	V	P	W		
3.3.7	Insulation Resistance	Critical	Electrical	-DO-	IS 10810	ADS	IR	V	P	W		
3.3.8	High Voltage test at RT	Critical	Electrical	-DO-	IS 10810	ADS	IR	V	P	W		
3.3.9	Dia of cable	Major	Physical	-DO-	ST 51020	ADS	IR	V	P	W		
3.3.10	Color of cable	Major	Visual	-DO-	ST 51020	ADS	IR	V	P	W		
3.3.11	Embossing / identification marking	Major	Visual	-DO-	ST 51020	ADS	IR	V	P	W		

MANUFACTURER/SUBCONTRACTOR		<p>LEGEND:</p> <p>D: RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION.</p> <p>M: MANUFACTURER / SUBCONTRACTOR</p> <p>N: CUSTOMER</p> <p>INDICATE 'P' PERFORM 'W' WITNESS 'V' VERIFICATION 'ADS' APPROVED DATA SHEET 'In R' INTERNAL RECORDS 'ADS' APPROVED DATA SHEET 'IR' INSPECTION REPORT 'TC' TEST CERTIFICATE</p> <p>ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHIP' OF CUSTOMER</p>	FOR CUSTOMER USE	APPROVED BY
			<p><i>Signature</i></p> <p>30.04.18</p>	



MANUFACTURER'S NAME AND ADDRESS		STANDARD QUALITY PLAN				TO BE FILLED BY BIHEL		TO BE FILLED BY BIHEL						
VENDOR'S NAME		ITEM	POWER CABLE FOR 24 V SOLENOID VALVES (4X2.5MM2) FS POWER CABLE FOR 24 V SOLENOID VALVES (4X2.5MM2)	Q.P. NO. REV.	Q.P. NO. REV.	Q.A.BE/QP/318/VJYWD KRSINPTNM	Q.A.BE/QP/318/VJYWD KRSINPTNM	Q.A.BE/QP/318/VJYWD KRSINPTNM	Q.A.BE/QP/318/VJYWD KRSINPTNM					
BHEL		DRG. NO. SPEC.	AS PER PO	ST 51020 Rev 03 with addendum 418101D9006 B	Page 9 of 10	Page 9 of 10	Page 9 of 10	Page 9 of 10	Page 9 of 10					
SL. NO.		COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS					
1		2	3	4	5	6	7	8	9					
3.3.12		Surface finish of cable	Major	Visual	-DO-	Surface shall be smooth & free from any defects	Surface shall be smooth & free from any defects	ADS	IR	V	P	W		
3.3.13		Dia over armouring	Major	Physical	-DO-	ST 51020	ST 51020	ADS	IR	V	P	W		As applicable
3.3.14		Size of armouring wire / strip	Major	Physical	-DO-	ST 51020	ST 51020	ADS	IR	V	P	W		As applicable
3.3.15		Mass of zinc coating of armouring wire / strip	Major	Physical	-DO-	IS 3975	IS 3975	IS 3975	IR	V	P	W		As applicable
3.3.16		Uniformity of zinc coating of armouring wire / strip	Major	Visual	-DO-	IS 3975	IS 3975	IS 3975	IR	V	P	W		As applicable
3.3.17		Adhesion test on armouring wire / strip	Major	Physical	-DO-	IS 3975	IS 3975	IS 3975	IR	V	P	W		As applicable
3.3.18		No. of cores & Dia of core	Major	Physical	-DO-	IS 3975	IS 3975	ADS	IR	V	P	W		
3.3.19		Color of core	Major	Visual	-DO-	ST 51020	ST 51020	ADS	IR	V	P	W		
3.3.20		Conductor cross section area	Major	Physical	-DO-	ST 51020	ST 51020	ADS	IR	V	P	W		
3.3.21		No. of wires & Dia of wire	Major	Physical	-DO-	ST 51020	ST 51020	ADS	IR	V	P	W		
3.3.22		Constructional details of cable	Major	Physical	-DO-	ST 51020	ST 51020	ADS	IR	V	P	W		
3.4		FRLS tests on sheath												

MANUFACTURER/SUBCONTRACTOR		FOR CUSTOMER USE		APPROVED BY
		LEGEND: D: RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION. M: MANUFACTURER / SUBCONTRACTOR B: BIHEL / NOM. INSPECTION AGENCY N: CUSTOMER INDICATE 'P' PERFORM 'W' WITNESS 'V' VERIFICATION 'ADS' APPROVED DATA SHEET 'IR' INTERNAL RECORDS 'ADS' APPROVED DATA SHEET 'IR' INSPECTION REPORT 'TC' TEST CERTIFICATE ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHIP' OF CUSTOMER		



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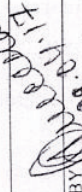
MANUFACTURER'S NAME AND ADDRESS		STANDARD QUALITY PLAN				TO BE FILLED BY BHEL	
BHEL		ITEM		POWER CABLE FOR 24 V SOLENOID VALVES (4X2.5MM2) FS POWER CABLE FOR 24 V SOLENOID VALVES (4X2.5MM2)		QA/BEL/QP/318/VJYWD KRSHNPTNM	
		DRG. NO.		AS PLR PO		REV. 01	
		SPEC. REV.		ST 51020 Rev 03 with addendum 418101D9006		Page 10 of 10	
COMPONENT & OPERATIONS		CHARACTERISTICS		CLASS		TYPE OF CHECK	
2		3		4		5	
SL. NO.		1		6		7	
		ACCEPTANCE NORMS		FORMAT OF RECORDS		AGENCY	
		8		9		10	
						REMARKS	
						11	

SL. NO.	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	AGENCY	REMARKS
1	2	3	4	5	6	7	8	9	10
3.4.1	Oxygen Index	Critical	Physical / Chemical	1 sample/lot	ST 51020	ASTMD-2863/ADS	IR	V P W	
3.4.2	Temperature Index	Critical	Physical / Chemical	-do-	ST 51020	ASTMD-2863/ADS	IR	V P W	
3.4.3	Acid Gas Generation	Critical	Physical / Chemical	-do-	ST 51020	IEC 754-1/ADS	IR	V P W	
3.4.4	Smoke Generation	Critical	Physical / Chemical	-do-	ST 51020	ASTMD-2843/ADS	IR	V P W	
3.4.5	Flammability characteristics	Critical	Chemical	-do-	ST 51020	SS 4241475 Class3/ADS	IR	V P W	
3.4.6	Flammability characteristics	Critical	Chemical	-do-	ST 51020	IEEE 383/ADS	IR	V P W	
3.4.7	Flammability characteristics	Critical	Chemical	-do-	ST 51020	IEC-332 Part-3	IR	V P W	
3.4.8	Flammability characteristics	Critical	Chemical	-do-	ST 51020	IEC-331	IR	V P W	For FS cable only
3.4.8	Completion of documents	Critical	Physical / Visual	100%	ST 51020	ST 51020 /QP/ADS	Docum ents	V P V	
4.0	PACKING & MARKING								
4.1	End sealing	Major	Visual	100%	ST 51020	ST 51020	In R	V P V	
4.2	Stenciling / marking on drum/king	Major	Visual	100%	ST 51020	ST 51020	In R	V P V	

Note:

- Approved Data Sheet means BHEL approved Data Sheet.
- Type tests clearance from BHEL Engineering to be verified by Inspection Engineer during Inspection at vendor's works.

All page of inspection documents shall be numbered in chronology with the QAP clause , duly mentioning the corresponding QAP clause nos. at the top of each page. One index page containing the documents descriptions, their page no & QAP clause shall be attached upfront the inspection documents.

MANUFACTURER/SUBCONTRACTOR	CONTRACTOR IN QA DOCUMENTATION:	
	M: MANUFACTURER / SUBCONTRACTOR	B: BHEL / NOM. INSPECTION AGENCY
	N: CUSTOMER	INDICATE 'P' PERFORM 'W' WITNESS 'V' VERIFICATION 'ADS' APPROVED DATA SHEET 'In R' INTERNAL RECORDS 'ADS' APPROVED DATA SHEET
	'IR' INSPECTION REPORT 'TC' TEST CERTIFICATE	ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHP' OF CUSTOMER
APPROVED BY		APPROVED BY
 Aarti Meena अभियन्ता/Eng ineer गुणता आश्वासन/Quality Assurance बी. एच. ई. एल., हरिद्वार BHEL, Haridwar		305

MANUFACTURER'S NAME AND ADDRESS			QUALITY PLAN				TO BE FILLED BY BHEL		TO BE FILLED BY BHEL			
BHEL	VENDOR'S NAME	ITEM			QP NO.							
					REV							
		DRG. NO.	AS PER PO									
		SPEC.	AS PER PO									
		REV				Page 1 of 1						
SL. NO.	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	AGENCY			REMARKS


Note: All page of inspection documents shall be numbered in chronology with the QAP clause , dully mentioning the corresponding QAP clause nos. at the top of each page. One index page containing the documents descriptions, their page no & QAP clause shall be attached upfront the inspection documents.

MANUFACTURER/SUBCONTRACTOR		LEGEND:	FOR CUSTOMER USE	
		! RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION.		
		M: MANUFACTURER / SUBCONTRACTOR B: BHEL / NOM. INSPECTION AGENCY N: CUSTOMER INDICATE 'P' PERFORM 'W' WITNESS AND 'V' VERIFICATION ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHP' OF CUSTOMER		APPROVED BY