

**BHARAT HEAVY ELECTRICALS LTD.
(TRANSMISSION BUSINESS GROUP)**

GENERAL TERMS AND CONDITIONS FOR TENDER ENQUIRY / CONTRACT

This is to be submitted duly signed by bidder in original. Clause-wise deviations and / or additional conditions / clarifications, if any, are to be brought out clearly in “Schedule of Commercial Deviation”. Deviations and / or additional conditions / clarifications, if any, mentioned elsewhere in the bid / offer, shall not be considered.

Sr. No.	
1.	INSTRUCTION TO BIDDERS : 1.1 Sealed bids are invited for the items mentioned in the tender enquiry conforming to the NIT including Technical Specifications. Bids should be typed and free from overwriting and erasures. Corrections or additions / deletions, if any, must be clearly written and attested, otherwise offer may be rejected. 1.2 Bidder must ensure that their bid is submitted / dropped in the tender box on or before 14-00 Hrs. IST on the due date of opening, unless otherwise specified in the NIT, at the address as follows :- Tender Box, Materials Management, Transmission Business Group, Bharat Heavy Electricals Limited, 5th Floor, Tower-A, Advant Navis IT Business Park, Plot-7, Sector-142, Noida Expressway, Noida, Dist. G. B. Nagar, U. P. – 201305 1.3 In case tender enquiry is floated through the e-procurement system, offer / bid has to be submitted through the e-procurement system ONLY as per instructions given in the e-procurement portal (https://bheleps.buyjunction.in). 1.4 The bids shall be opened at 14-30 Hrs. IST on the due date of opening, in the presence of participating bidders who may like to be present, unless otherwise specified in the NIT. Bids received late are liable for rejection. Bidders sending bids by courier or post will have to ensure that it is timely delivered at the above address. 1.5 Bids are to be submitted duly signed with seal in two parts :- a) Techno-commercial Bid (Part-I) – To be submitted in 2 sets (original + copy). A copy of Price Bid (Part-II) clearly mentioning all the necessary information as per format without prices “Un-Priced Bid” is also to be enclosed in Part-I Bid. b) Price Bid (Part-II) – To be submitted only in one set in a separate sealed envelope. This should not contain any Technical and / or Commercial Terms and Conditions. The rates should be quoted both in figures and words. 1.6 The Part-I and Part-II Bids are to be sealed in separate envelopes and

Sr. No.	
	marked as “Techno-commercial Bid (Part-I)” and “Price Bid (Part-II)” respectively. Both the envelopes are to be kept in another common envelope and marked as “BID”. Each envelope should be sealed and superscribed with tender enquiry no., item / package name, project name and due date of opening. Bidder’s name and address shall also be mentioned on each envelope. 1.7 For any technical clarification, please contact official mentioned in the tender enquiry / NIT. 1.8 For any commercial clarification please contact official issuing tender enquiry / NIT. 1.9 Price bid (Part-II) should not contain any additional information / description other than given in “Un-Priced Bid” submitted with “Techno-commercial Bid (Part-I)” except prices, otherwise bid is liable for rejection. 1.10 Price Bid submitted along with the bid shall remain valid up to validity of offer. Any discount / revised offer submitted by the bidder on its own shall be accepted provided it is received 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 including optional items, if any, unless specified otherwise by the bidder. Discount offered shall be valid for full duration of validity of the offer including extension of validity, if any. Unsolicited Supplementary / Revised Price Bid submitted after the due date and time of offer submission (i.e. Part-I Bid), during validity period of offer, unless asked by BHEL, shall not be considered. Withdrawal of quotation by the bidder, at any stage after its opening, may entail suitable action against such bidder by BHEL. 1.11 The consultants / firm (and any of its affiliates) shall not be eligible to participate against tender enquiry for the related goods or works or services for the same project, if they were engaged by BHEL-TBG for the consultancy services. 1.12 In case any Foreign OEM / Foreign 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 the manufacturer / supplier and the agent, bid received from the agent shall be ignored. 1.13 Non-conformities / errors / discrepancies in quoted prices in price bids shall be dealt as follows :- 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 BHEL 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.

Sr. No.	
	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 as mentioned in (a), (b) & (c) above, 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 BHEL, the bid is liable to be ignored. 1.14 In case the scope of the successful bidder / supplier against this tender enquiry includes Erection, Testing and Commissioning (ETC) of the equipment / material at site in addition to Supply, Purchase Order shall be placed for Supply Portion and Contract shall be separately awarded for ETC at Site Portion. General Terms and Conditions for Tender Enquiry / Contract mentioned herein shall be applicable for both Supply & ETC at Site. Additional Terms and Conditions for Tender Enquiry / Contract for Erection, Testing and Commissioning at Site “BHEL/TBG/GTC-ETC/2016 REV01” shall be applicable for ETC at Site only which is to be read in conjunction with General Terms and Conditions for Tender Enquiry / Contract mentioned herein. However, any breach of either the Purchase Order or the Contract shall be deemed to be breach of the other. 1.15 Taxes and Duties payable extra as per Clause No. 2.3 in NIT, if not specified/quoted clearly as extra shall be considered as included in Ex-works Price and therefore shall not be reimbursed. Taxes and duties not payable extra as per NIT shall be deemed to be included in Ex-works Price. 1.16 If the rates for taxes and duties in respect of the quoted materials and / or services assumed by the Supplier are less than the tariff prevailing at the time of tendering, Supplier will be responsible for such under quotations. However if the rates assumed are higher than the correct rates prevailing at the time tendering, the difference will be to the credit of BHEL. Note : Representative / official deputed by the bidder to witness tender opening must produce authorization letter for the same.
2.	PRICES : 2.1 Unless specifically indicated in the NIT, all prices shall be FIRM. No enhancement of rate for whatsoever reasons unless and until asked by BHEL shall be allowed. 2.2 Unless specifically indicated in the NIT, the prices shall be on INR basis. 2.3 Unless specifically indicated in the NIT, the prices are to be quoted on FOR (Site / Destination) basis excluding GST. The break-up of prices shall be as under :- a) Ex-works Price: Ex-works price including packing & forwarding charges.

Sr. No.	
	b) Freight: Freight for door delivery up to destination / site / store are to be quoted separately. c) Insurance: Insurance for door delivery up to destination / site / store are to be quoted separately. d) Type Test Charges: If asked in the technical specification, it is to be quoted separately for each test. e) Charges for Supervision of Erection, Testing & Commissioning (ETC) at Site: To be quoted separately if specified in NIT/Price Schedule. f) Charges for Testing & Commissioning at Site: To be quoted separately if specified in NIT/Price Schedule. g) Charges for Erection, Testing & Commissioning at Site: To be quoted separately if specified in NIT/Price Schedule. h) Training Charges: To be quoted separately if specified in NIT/Price Schedule. 2.4 GST rates along with HSN/SAC code as applicable on Sr No (a) to (h) above is to be mentioned separately in percentage in both un-priced bid and price bid. Note : i) Unless otherwise specified in the NIT, the purchase order shall be placed on Ex-works basis for Indian bidders. ii) Prices quoted by Indian bidders shall be in Indian Rupees only. iii) In case Supervision of Erection, Testing & Commissioning (ETC) at Site or Testing & Commissioning at Site or Erection, Testing & Commissioning at Site is also in scope of the bidder along with supply, bidder has to ensure that prices quoted for such services also are in line with special terms & conditions of the NIT, if any. iv) Unless otherwise specified in the NIT, Unloading at Site / Destination shall not be in the scope of the supplier. v) Prices in respect of Sr No (a) to Sr No (h) of Clause 2.3 above are to be quoted inclusive of all taxes & Duties, charges. Levies , royalty etc if any, excluding GST.
3.	TERMS OF PAYMENT : 3.1 For Supply only in scope of the supplier 100% of payment within 60 days from the date of receipt of complete invoice along with documents in 3 sets (original + 2 copies) as follows : · LR / GR duly endorsed by BHEL Site Official. · Material Receipt Certificate issued by BHEL Site Official. · GST Compliant Tax Invoice · Packing List (Case-wise) · Copy of Transit Insurance Certificate from underwriters. · Material Inspection Clearance Certificate (MICC) issued by BHEL Quality Management · Guarantee Certificate · Copy of Performance Bank Guarantee (PBG) · Certificate of acceptance of Type Test Reports issued by BHEL Engineering Management wherever specifically mentioned in the Purchase Order.

Sr. No.	
	3.2 For Supply where Supervision of Erection, Testing & Commissioning (ETC) at Site is in scope of the supplier or Supply where Testing & Commissioning at Site is in scope of the supplier a) 95% of payment within 60 days from the date of receipt of complete invoice along with documents in 3 sets (original + 2 copies) as follows : · LR / GR duly endorsed by BHEL Site Official. · Material Receipt Certificate issued by BHEL Site Official. · GST Compliant Tax Invoice · Packing List (Case-wise) · Copy of Transit Insurance Certificate from underwriters. · Material Inspection Clearance Certificate (MICC) issued by BHEL Quality Management · Guarantee Certificate · Copy of Performance Bank Guarantee (PBG) · Certificate of acceptance of Type Test Reports issued by BHEL Engineering Management wherever specifically mentioned in the Purchase Order. b) 5% of payment within 60 days from the date of receipt of complete invoice along with documents in 3 sets (original + 2 copies) as follows : · Certificate of successful completion of Supervision of Erection, Testing & Commissioning at Site if it is in the scope of the supplier or Certificate of successful completion of Testing & Commissioning at Site if it is in the scope of the supplier. · Certificate of completion of final documentation as per Purchase Order / Technical Specification issued by BHEL Engineering Management 3.3 For Supply where Erection, Testing & Commissioning (ETC) at Site is in scope of the supplier a) 90% of payment within 60 days from the date of receipt of complete invoice along with documents in 3 sets (original + 2 copies) as follows : · LR / GR duly endorsed by BHEL Site Official. · Material Receipt Certificate issued by BHEL Site Official. · GST Compliant Tax Invoice · Packing List (Case-wise) · Copy of Transit Insurance Certificate from underwriters. · Material Inspection Clearance Certificate (MICC) issued by BHEL Quality Management · Guarantee Certificate · Copy of Performance Bank Guarantee (PBG) · Certificate of acceptance of Type Test Reports issued by BHEL Engineering Management wherever specifically mentioned in the Purchase Order b) 10% of payment within 60 days from the date of receipt of complete invoice along with documents in 3 sets (original + 2 copies) as follows : · Certificate of successful completion of Erection, Testing & Commissioning at Site issued by BHEL Site Official / Construction Management · Certificate of completion of final documentation as per Purchase Order / Technical Specification issued by BHEL Engineering Management 3.4 For Type Test Charges 100% payment along with applicable GST within 60 days from the date of receipt

Sr. No.	
	of complete GST compliant Tax invoice along with copy of Certificate of acceptance of Type Test Reports issued by BHEL Engineering Management in 3 sets (original + 2 copies) on completion of delivery (at site, if F&I is in scope of supplier) of main supplies (excluding spares) for which Type Tests are applicable. List of main supplies (excluding spares) for which Type Tests are applicable shall be certified by BHEL Engineering Management. 3.5 For Charges for Supervision of Erection, Testing & Commissioning at Site 100% payment along with applicable GST within 60 days from the date of receipt of complete GST compliant Tax invoice along with certificate of successful completion of Supervision of Erection, Testing & Commissioning at Site issued by BHEL Site Official / Construction Management in 3 sets (Original + 2 copies). 3.6 For Charges for Testing & Commissioning at Site 100% payment along with applicable GST within 60 days from the date of receipt of complete GST compliant Tax invoice along with certificate of successful completion of Testing & Commissioning at Site issued by BHEL Site Official / Construction Management in 3 sets (Original + 2 copies). 3.7 For Training Charges 100% payment along with applicable GST within 60 days from the date of receipt of complete GST compliant Tax invoice along with certificate of completion of training issued by BHEL Engineering Management in 3 sets (original + 2 copies). Note : i) Supplier has to submit invoice(s) as per PO or approved billing break-up of prices (if applicable as per NIT). ii) In case of supplies for overseas project, Material Receipt Certificate issued by BHEL Authorized Representative shall also be acceptable. iii) In case of Transit Insurance under Open Insurance Policy, Intimation / Declaration of Transit Insurance as per terms of the relevant Open Insurance Policy along with copy of Open Insurance Policy from underwriters shall also be acceptable. iv) Supplier has to ensure commencement of transit insurance from the date not later than LR / GR date. v) Supplier has to submit Tax Invoice(s). Supplier should ensure that Tax Invoice should comply all statutory requirements under GST Law to enable BHEL to avail input credit vi) MSMED Act, 2006 and the rules made thereunder as amended from time to time shall be applicable for release of payment to suppliers qualified & registered as Micro & Small Enterprises based on documents mentioned in the NIT for MSME. vii) Supplier has to submit PBG (as per BHEL format) & Guarantee Certificate as per

Sr. No.	
	PO terms. viii) In case any shortages and / or damages in supplies, an amount calculated based on comments against Material Receipt Certificate issued by the BHEL Site Official shall be withheld from the supply payment against 3.1(a) or 3.2(a) above to be deemed fit by BHEL subject to a minimum of 10% of the total ex-works value of the invoice corresponding to the LR / GR against which any shortages and / or damages are reported. The withheld amount shall be released after the shortages and / or damages in supplies are supplied / replenished against Certification by BHEL Site Official. ix) Payment of GST component shall be made only if vendor has deposited the Tax and credit for the same is reflected in GSTN (GST Network). In case credit of the same is not reflected in GSTN , vendor may alternatively furnish BG of GST Amount for a period valid for not less than 1 month .In case of disallowance of credit /non reflection of credit in GSTN , amount will be recovered from supplier along with applicable Interest , penalty etc from any of his dues. x) If GST is payable by BHEL on reverse Charge Mechanism basis, vendor should ensure the submission of GST compliant Tax invoice immediately on dispatch/ performance of service. In case of non-compliance any additional charges towards interest , penalty etc , will be to vendors account. xi) TDS under GST Act, if applicable, shall be deducted unless Exemption Certificate If applicable, from the appropriate authority is furnished to BHEL along with Invoice.
4.	INTEREST LIABILITY : In case of any delay in payment due to any reason, BHEL shall not pay any interest on delayed payment. Also, no interest shall be payable by BHEL on the bank guarantee / deposit amount or balance payment or any other money which may become due owing to difference or misunderstanding or any dispute before any quasi judicial authority between BHEL and the Supplier / Contractor.
5.	GUARANTEE : The equipment / material supplied and services rendered (if applicable) shall be guaranteed to be free from all defects and faults in design & engineering, material, workmanship & manufacture and in full conformity with the Purchase Order / Contract, Technical Specifications & approved drawings / data sheets, if any, for 18 months from the date of last delivery or 12 months from the date of commissioning, whichever is earlier. Wherever Erection, Testing & Commissioning at Site are also in the scope of the Supplier, the guarantee period shall be 18 months from the date of last delivery or 12 months from the date of commissioning, whichever is later. The defective equipment / material / component shall be replaced free of cost at site. Freight & Insurance during transit shall also be in the scope of the supplier / contractor. Any expenditure for dismantling and re-erection of the replaced equipment / material / component shall be to supplier's / contractor's account. All replacements during the guarantee period shall be delivered at site promptly and satisfactorily within a period not more than 45 days from the date of reporting the defect / rejection etc. In the event of the supplier / contractor failing to replace the defective equipment / material / component within the time period mentioned above, BHEL may proceed to

Sr. No.	
	undertake the replacement of such defective equipment / material / component at the risk and cost of the supplier / contractor without prejudice to any other rights under the contract and recover the same from PBG / other dues of this Purchase Order / Contract or any other Purchase Order / Contract executed by the supplier / contractor. Note : i) In case of Illumination System, items viz. Lamps, Tubes, Ballast, Starters, Capacitors & Fuses will not be under Guarantee after commissioning. ii) In addition to the above guarantee period, Extended Guarantee / Warranty, if any, shall be as per NIT / Technical Specifications. iii) In case offer of agent of Foreign OEM / Foreign Principal is considered, as per Clause No. 1.12 above, Guarantee as mentioned above has to be provided by the Foreign OEM / Foreign Principal also.
6.	LATENT DEFECT : Liability for latent defects shall be for defects inherently lying within material or arising out of design deficiency which does not manifest itself during guarantee period but later and shall be limited to five years from the expiry of the guarantee period.
7.	PERFORMANCE BANK GUARANTEE (PBG) : Supplier shall arrange to submit Performance BG / deposit on a non-judicial stamp paper of appropriate value along with first invoice or within 60 days from placement of Purchase Order (PO) whichever is earlier, in line with one of the applicable options as follows :- <u>Option "A"</u> A single rolling PBG for Rs. 50 Lakhs initially valid for 18 months with claim period of 3 months extra over and above 18 months for all the Purchase Orders being executed for Transmission Business Group, BHEL. However, validity of the PBG shall be extended till 18 months from the date of last delivery with 3 months claim period extra over and above 18 months. Single Rolling PBG option shall not be applicable in case Ex-works value of the PO at the time of placement of PO exceeds Rs. One Crore. <u>Option "B"</u> PBG for 10% of the total Ex-works PO value, valid for 18 months from the date of last delivery with claim period of 3 months extra over and above 18 months. Ex-works PO value at the time of placement of PO shall be considered for calculation of the PBG amount. <u>Option "C"</u> In case the total Ex-works PO value at the time of placement of PO does not exceed Rs. Ten Lakhs, interest free Deposit of 10% of the total Ex-works PO value at the time of placement of PO in form of Demand Draft favouring "Bharat Heavy Electricals Limited" and payable at New Delhi / Delhi / Noida shall also be acceptable to BHEL in lieu of PBG, which shall be released after expiry of 21 months from the date of last delivery after deduction, if any, within 60 days from receipt of invoice in 3 sets (original + 2 copies) to be submitted by the supplier. Note : i) The Bank Guarantee shall be from any bank as per Annexure for List of Banks (32 Nos.). The original PBG should be sent by issuing Bank directly to AGM (Finance), TBG, BHEL, Noida. ii) Extension of validity of the PBG in original, as per above clause, should be sent by issuing Bank directly to AGM (Finance), TBG, BHEL, Noida at least 45 days

Sr. No.	
	before expiry of validity of the PBG. iii) Unless otherwise specified in the NIT, deviation taken for non-submission of PBG / Deposit, as applicable, shall not be accepted. iv) Supplier has to confirm one of the applicable options for submission of PBG / Deposit before placement of PO. v) In case of non-submission PBG / Deposit, as applicable, BHEL reserve the right for Risk Purchase as per terms of the NIT and impose Suspension of Business Dealings with the Supplier / Contractor. vi) BHEL reserve the right to encash the Bank Guarantee and forfeit the amount in the event of any default, failure or neglect on part of the Supplier in fulfilment of performance of the Purchase Order. vii) Value of the Bank Guarantee (at the time of submission) shall remain unchanged for any subsequent variations in Purchase Order value up to $\pm 20\%$. Beyond this variation of $\pm 20\%$, the Supplier shall arrange to enhance or may reduce the value of the Bank Guarantee accordingly for the total variation promptly. viii) Vendor to ensure submission of Certificate of Final Documentation /Confirmation regarding Non applicability of Final Documentation, as the case may be, as referred in clause No 9 regarding Final Documentation. BG shall be released only after submission of the same to BHEL TBMM.
8.	SUBMISSION OF DRAWINGS / DOCUMENTS FOR APPROVAL : Supplier shall submit the master document list within 7 days from date of Purchase Order / Contract, unless otherwise specified in the NIT, with planned dates for submission which shall be in line with activity schedule as per Purchase Order / Contract and shall be finalized with BHEL Engineering Management. Date of first submission of drawings / documents shall be certified by BHEL Engineering Management after the receipt of applicable drawings / documents (e.g. project specific cover sheet, GTP, OGA drawings, schemes, type test reports etc.) by BHEL. During detailed engineering stage, necessary hard copies of the engineering drawings / documents shall also be submitted by the supplier as per the Purchase Order / Contract requirement. The supplier shall also submit the packing drawings as per technical specifications. In case item(s) offered require any interface details of other item (not in the scope of supplier & required for operating the equipment), the supplier has to submit interfaces schedule along with submission of engineering drawings / documents. It shall be responsibility of the supplier to get the details of the interfaced item from BHEL before manufacturing to avoid any mismatch at site.
9.	FINAL DOCUMENTATION : Final documentation as called in the Technical /contract specification is to be submitted within 3 months from the date of first delivery of respective equipment, item/material. After submission of Final Documentation, BHEL Engineering Management (TBEM) will issue a Certificate of Completion of Final Documentation. Wherever Final Documentation is not applicable, BHEL Engineering Management (TBEM) will issue confirmation regarding the same, Vendor to submit the Certificate of Final Documentation /Confirmation regarding Non applicability of Final Documentation, as the case may be, to BHEL TBMM. In case of Non Submission of Certificate of Final Documentation /Confirmation regarding Non applicability of Final Documentation, BG will be liable for encashment.
10.	INSPECTION : BHEL / customer / third party shall inspect equipment / material before despatch. Stage inspection during manufacturing may also be carried out. Material to be despatched only after getting Material Despatch Clearance Certificate (MDCC) / MICC issued by BHEL. Supplier shall send inspection call on prescribed format / web site only, with an

Sr. No.	
	advance notice of 15 days. Supplier to ensure submission of all routine / acceptance test reports, inspection reports and all other documents related to inspection, immediately to BHEL. BHEL representative is authorised to carry out audits along with Third Party Inspection Agency at vendor's / supplier's works before clearing the items for despatch.
11.	DESPATCH DOCUMENTS : Despatch documents to be immediately sent to BHEL on despatch are as follows :- • Copy of Invoice • Copy of LR / GR in case of Indian suppliers or BL / AWB in case of foreign suppliers • Copy of Packing List (Case-wise) • Copy of Transit Insurance Certificate from underwriters • Copy of Guarantee Certificate
12.	DELIVERY PERIOD : Delivery / Completion requirement shall be mentioned in the NIT. Bidder to specify best delivery / completion period possible in weeks from the date of LOI / PO as per activity schedule for consideration by BHEL. Time required for type test, if applicable, is to be separately indicated. Note : LR / GR date or invoice date (whichever is later) for indigenous supplies and BL / AWB date for FOB / CIF (if applicable) contracts shall be considered as delivery date.
13.	LIQUIDATED DAMAGES FOR DELAYED DELIVERY: In case of delay in execution of Purchase Order beyond the contractual delivery time, an amount of 0.5% of the total Purchase Order value for supply (incl. taxes and duties, freight & insurance as applicable) per week of delay or part thereof subject to a maximum of 10% of the total Purchase Order value for supply (incl. taxes and duties, freight & insurance as applicable) shall be deducted as Liquidated Damages (LD) along with applicable GST (if any) on LD. However, in case of staggered (lot-wise) contractual delivery schedule, an amount of 0.5% of the total Purchase Order value for supply (incl. taxes, duties, freight & insurance as applicable) of delayed lot per week of delay or part thereof subject to maximum of 10% of the total Purchase Order value.(Incl taxes, duties, Freight & Insurance as applicable) shall be deducted as Liquidated Damages (LD) along with applicable GST (if any) on LD. Note : i) In case of any amendment / revision in P.O./WO, the LD shall be linked to the amended / revised Purchase Order / Contract value and delivery / completion time / schedule, if applicable. ii) LR / GR date or invoice date (whichever is later) for indigenous supplies and BL / AWB date for FOB / CIF (if applicable) for imported supplies shall be treated as the date of dispatch for levying LD as above. iii) However, for indigenous supply, if time period between date of receipt of material at site / destination by Site Official & the date of LR / GR or invoice (whichever is later) is more than 30 days, where distance from place of despatch as per LR / GR is upto 1000 Kms or if time period between date of receipt of material at site / destination by Site Official & the date of LR / GR or invoice (whichever is later) is more than 45 days, where distance from place of despatch as per LR / GR is more than 1000 Kms, such excess period shall also be considered for LD

Sr. No.	
	purpose. iv) If, as per supplier, delay is not attributable to the supplier, delay analysis with documentary evidence may be submitted by the supplier at the earliest but not later than six months from the end of the financial year in which the payment is withheld. Based on the above details / documents submitted by the supplier, BHEL shall take final decision and if considered appropriate by BHEL, withheld amount (full or part as the case may be) shall be released, otherwise, full or balance withheld amount shall be treated as deduction of Liquidated Damages (LD) towards delayed delivery.
14.	VALIDITY OF OFFER : The offer shall be valid for 120 days from the due date of opening of tender (i.e. techno-commercial bid unless otherwise specified in the NIT). Prices of Spares, wherever they optional items, shall be valid till two years from the date of placement of PO.
15.	ACCEPTANCE / REJECTION OF TENDER : BHEL reserve the right to reject in full or part, any or all tender without assigning any reason thereof. BHEL also reserve right to vary the quantities as mentioned in the NIT. Acceptance of offer is subject to vendor approval by customer before opening of price bid. BHEL shall not be bound by any power of attorney granted by tenderer or by changes in composition of the firm made subsequent to award of order / contract. BHEL may however recognize such power of attorney and changes after obtaining proper legal advice, cost of which will be chargeable to the seller / contractor concerned. If the tenderer deliberately gives wrong information, BHEL reserves the right to reject such an offer at any stage or cancel the order / contract, if awarded, and forfeit the security deposit and bank guarantee.
16.	DEVIATION : The bids having deviation(s) w.r.t. tender are liable for rejection. However, BHEL, at its discretion, may load the prices for evaluation of offer with prior intimation to bidder.
17.	TENDER EVALUATION : Comparative statement shall be prepared and evaluated on total cost basis at destination/site (as per terms of NIT) considering overall quantity indicated in NIT unless contrary to same is specifically mentioned in the tender enquiry / NIT. Total cost for this purpose shall include cost of scope of work as mentioned in NIT along with applicable taxes & duties, and other services etc. (if applicable). GST input credit available to BHEL shall be reduced from prices while determining L1 status. In case all bidders are foreign & Port of Import (destination port) is same for all the bidders, evaluation of offers shall be done on CIF (Port of Import) basis. Otherwise, evaluation of offers shall be done on the basis of delivered cost at site /destination to BHEL. Further, in case of foreign bidders, marine freight & insurance are to be quoted separately & the purchase order may be placed on FOB basis with an option for delivery on CIF / CFR basis, if required, later. In case of foreign bidders, Exchange Rate (TT selling rate of State Bank of India) as on date of tender opening (Part-I Bid in case of two part bid) shall be considered. If the relevant day happens to be a bank holiday, then the forex rate as on the previous bank (SBI) working day shall be taken for tender evaluation.
18.	LOADING CRITERIA : List of permissible deviations & loading criteria thereof are as follows :- a) Payment Terms Base rate of SBI (as applicable on the date of bid opening / techno-commercial bid opening in case of two part bids) + 6% shall be considered for loading for the

Sr. No.	
	period of relaxation sought by bidder(s) against terms of payment in the NIT. b) Liquidated Damages (LD) for Delayed Delivery Loading on LD clause shall be to the extent to which it is not agreed to by the bidder (at offered value). c) In case of foreign bidders, if the quoted prices is on CIF basis only, it shall be loaded to arrive at total FOR (Site / Destination) price, as applicable, by factors as follows :- i) Port handling / clearing charges: @ 1% of CIF value to arrive at Customs Assessable Value. ii) Custom Duty (including CVD & SAD) as per NIT prevailing on date of price bid opening. iii) Inland Freight & Transit Insurance: @ 5% of CIF value where distance between site / destination and Port of Discharge is upto 1000 Kms or @ 7% of CIF value where distance between site / destination and Port of Discharge is more than 1000 Kms. Note : Additional deviations (if considered acceptable by BHEL) & the loading criteria shall be communicated to all the qualified bidders before price bid opening.
19.	ARBITRATION : In the event of any dispute emanating from and relating to this contract, the matter shall be referred to the sole arbitration of the person appointed by the competent authority of BHEL. Subject to aforesaid, the provisions of "The Arbitration and Conciliation Act, 1996" and the rules made thereunder as amended from time to time in India shall apply to the arbitration proceedings. The venue of arbitration shall be in New Delhi. Further there shall be no claim for any pre-reference or pendente-lite interest on the claims and any claim for such interest made shall be void. However, in case of contract with Public Sector Enterprise / Undertaking (PSE/PSU) or Govt. Dept., the extant guidelines of Govt. of India shall be followed.
20.	LEGAL SETTLEMENT : Indian Courts at New Delhi / Delhi shall have exclusive jurisdiction to decide the dispute, if any, arising out of or in respect of the contract(s) to which these conditions are applicable. Contract, including all matters connected with contract, shall be governed by the Indian Law, both substantive and procedural, for the time being in force including modification thereto.
21.	SUB-CONTRACTING : In case further subcontracting of BHEL Purchase Order / Contract or part thereof is envisaged by supplier, the same can be done after written permission is obtained from BHEL. However it shall not absolve the Supplier / Contractor of the responsibility of fulfilling BHEL Purchase Order / Contract requirements. In case of subcontracting of Purchase Order / Contract awarded by BHEL or part thereof without such permission, BHEL reserve the right to cancel the Purchase Order / Contract and source such material / component / equipment / system from any other agency at the risk and cost of the Supplier / Contractor. If Supplier / Contractor is an individual or proprietary concern and the individual or the proprietor dies or the partnership is dissolved or substantially affected, then unless BHEL is satisfied that legal representative of individual Supplier / Contractor or proprietor of proprietary concern and surviving partners of partnership firm are capable of carrying out and completing the Purchase Order / Contract, BHEL shall be entitled to cancel the Purchase Order / Contract as to its incomplete portion and without being in any way liable to payment of any compensation to legal

Sr. No.	
	representative of Supplier / Contractor and / or to surviving partners of Supplier's / Contractor's firm on account of cancellation of the Purchase Order / Contract. Decision of BHEL that legal representatives of deceased Supplier / Contractor or surviving partners of the Supplier's / Contractor's firm cannot carry out and complete the Purchase Order / Contract shall be final and binding on the parties hereto. Terms and Conditions shall not get affected in case of de-merger / amalgamation / taking-over / re-constitution etc.
22.	RISK PURCHASE : In case the Supplier / Contractor fails to supply or fails to comply with terms & conditions of the Purchase Order / Contract or delivers equipment / material not of the contracted quality or fails to adhere to the contract specifications or 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, BHEL reserve the right to cancel the Purchase Order / Contract either in whole or in part thereof without compensation to Supplier / Contractor and if BHEL so desires, may procure such equipment / material / items not delivered or others of similar description where equipment / material / items exactly complying with particulars are not readily procurable in the opinion of BHEL which is final and in such manner as deemed appropriate, at the risk and cost of the Supplier / Contractor and the Supplier / Contractor shall be liable to BHEL for any excess cost to BHEL. However, the Supplier / Contractor shall continue execution of the Purchase Order / Contract to the extent not cancelled under the provisions of this clause. Recovery amount on account of purchases made by BHEL at the risk and cost of Supplier / Contractor shall be the difference of total value of new Purchase Order (PO) value and total value of old Purchase Order for applicable items, where the total value of new PO is more than total value of old PO for applicable items, plus additional 15% of the total ex-works value of new PO as overheads. The Supplier / Contractor shall on no account be entitled to any gain on such risk & cost purchase. In case the purchase order (PO) value of the new PO is less than the PO value of the old PO, 15% of the total ex-works value of the new PO shall be recovered as overheads and the difference between the PO value of the old PO and the new PO shall not be considered for calculation of the recovery amount.
23.	ADJUSTMENT OF RECOVERY : Any amount payable by the Supplier / Contractor under any of the condition of this contract shall be liable to be adjusted against any amount payable to the Supplier / Contractor under any other Purchase Order / Contract awarded to him by any BHEL unit. This is without prejudice to any other action, as may be deemed fit, by BHEL.
24.	FORCE MAJEURE CONDITION : If by reason of war, civil commotion, act of god, Government restrictions, strike, lockout which are not in control of Supplier / Contractor the deliveries / services are delayed, Supplier / Contractor shall not be held responsible. If at any time during the continuance of the Purchase Order / Contract, the performance in whole or in part by either party of any obligations under the Purchase Order / Contract is prevented or delayed by reason of any war hostilities, acts of the public enemy, restrictions by Govt. of India, civil commotion, sabotage, fires, floods, explosion, epidemics, quarantine restrictions, strike, lock-outs or acts of God (hereinafter referred to as "event"), which are not in control of Supplier / Contractor or BHEL, then provided notice of the happening of such event is given by either party to the other within fifteen (15) days from the date of occurrence thereof, neither party shall by reason of such event be entitled to terminate the Purchase Order /

Sr. No.	
	Contract nor shall have any claim for damages against each other in respect of such non-performance and delay in performance. Performance under the Purchase Order / Contract shall be resumed immediately after such event has come to an end or ceased to exist and decision of BHEL as to whether the deliveries have to be resumed or not shall be final, conclusive and binding on the parties hereto. In the event of the parties hereto not able to agree that a force majeure event has occurred, the parties shall submit the disputes for resolution pursuant to the provisions hereunder, provided that the burden of proof as to whether a force majeure event has occurred shall be upon the party claiming such an event. Notwithstanding above provisions, BHEL shall reserve the right to cancel the Purchase Order / Contract, wholly or partly, in order to meet the overall project schedule and make alternative arrangements for completion of delivery and other schedules.
25.	MANUFACTURING QUALITY PLAN (MQP) : Supplier to submit approved MQP in line with requirement of BHEL/customer.
26.	SUPPLIER PERFORMANCE MONITORING AND RATING SYSTEM : BHEL reserve the right for evaluation of Supplier Performance Rating as per Supplier Performance Monitoring and Rating System of BHEL for necessary action. Details are available at BHEL Website www.bhel.com for reference.
27.	DEALING WITH BANNED SUPPLIERS / CONTRACTORS IN BHEL : Offers of the bidders, who are on the banned list, as also the offers of the bidders who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL website www.bhel.com for reference.
28.	ORDER OF PRECEDENCE : The order of precedence shall be as follows :- a) Special Terms & Conditions (STC) for Tender Enquiry / Contract, if any b) General Terms & Conditions (GTC) for Tender Enquiry / Contract & Additional General Terms & Conditions (GTC) for Tender Enquiry / Contract for Erection Testing & Commissioning (ETC) at Site, if applicable Provisions in (a) above shall prevail over (b). In case of conflict, between Technical Specifications and STC / GTC, bidder to seek necessary clarifications from BHEL concerned official as specified in NIT.
29.	PACKING : Packing shall be in conformity with specifications and shall be such as to ensure prevention of damages, corrosion, deterioration, shortages, pilferage and loss in transit or storage. In case of shipment by sea or air, the packing shall be sea-worthy or air-worthy respectively and of international standards. Different types of spares i.e. start-up / commissioning spares and initial spares (mandatory spares and recommended O&M spares) are to be packed separately. Packing List shall be submitted as per standard format along with advance set of documents for claiming payment which shall also indicate :- a) Case / Packing size (as applicable). b) Gross weight and net weight of each package. c) Detailed contents of the package with quantity of each item separately. Project, Item / Package Description, BHEL's PO No. with date & Case / Packing Mark should also be clearly mentioned on the Case / Packing and Packing List for identification. Also, Packing List must be duly signed & should include respective Invoice No. & LR No. Note : Foreign suppliers to furnish details to arrange inland transportation by BHEL, if applicable, as follows :-

Sr. No.	
	i) No. of Packages ii) Size with Weight (Gross & Net) of each Package iii) No. of Containers with type & size required for inland transportation iv) Type of Cargo (Break Bulk / LCL / FCL) v) Customs Tariff No.
30.	COLOUR CODING : Aluminium stickers are required to be attached to large components but plastic sheet tags should be tied with small components, giving details like purchase order, description of the component, quantity etc. Tags should be of the colour as follows :- a) Main equipment : Yellow or White tag b) Start-up / Commissioning spares : Blue tag c) Mandatory spares : Pink or Red tag d) Recommended / O&M spares : Green tag
31.	MICRO, SMALL & MEDIUM ENTERPRISES (MSME) : MSMED Act 2006 as amended from time to time & extant regulations of Govt. of India for MSME will be applicable. Micro & Small Enterprises (MSE) can avail the intended benefits only if they submit along with the offer / bid, attested copies of either Acknowledgement of Entrepreneur Memorandum Part-II (EM-II certificate) having deemed validity (five years from the date of issue of acknowledgement in EM-II) or valid NSIC certificate or EM-II certificate along with attested copy of a CA certificate (As per BHEL format where deemed validity of EM-II 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 opening (for Techno-commercial Bid : Part-I in case of two part bid). Non-submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or arrested (in original) by a Gazetted officer. Copy of Udyog Aadhaar Memorandum with Acknowledgement of Ministry of Micro, Small & Medium Enterprises should also be furnished.
32.	BUSINESS ETHICS / SUSPENSION OF BUSINESS DEALINGS WITH SUPPLIERS / CONTRACTORS : If any bidder / supplier / contractor during pre-tendering / tendering / post tendering / award / execution / post-execution, indulges in malpractices cheating, bribery, fraud or other misconduct or formation of cartel so as to influence the bidding process or influences the price or fails to perform or is in default without any reasonable cause etc or performs any act considered objectionable as per extant guidelines, action may be taken against such bidders/supplier/contractor as per extant "Guidelines for Suspension of Business Dealings with Suppliers/Contractors". Abridged version of same is available at BHEL website (www.bhel.com) on "Supplier Registration" Page.
33.	REVERSE AUCTION : BHEL reserve the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder or price bid submitted by the bidder through e-procurement system. This will be decided after techno-commercial evaluation. All bidders to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA. In case BHEL decides to go for Reverse Auction, only those bidders who have given their unconditional acceptance to participate in RA will be allowed to participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit "online sealed bid" in the Reverse Auction. Non-submission of "online sealed bid" by the bidder will be

Sr. No.	
	considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue. General Terms and Conditions of RA are available at Annexure. Business Rules for RA shall be sent to the bidders before conducting RA. Abridged Version of “Common Guidelines for Conducting Reverse Auction” may also be seen at BHEL website (www.bhel.com) on “Supplier Registration” Page & “Tender Notifications” Page.
34.	INTEGRITY PACT : Bidders shall have to enter into Integrity Pact with BHEL, duly signed with seal in original, if specified in NIT / RFQ failing which bidder's offer shall be liable for rejection.
35.	TERMINATION OF CONTRACT : BHEL shall have the right to cancel the Purchase Order / Contract without any financial implication to BHEL if vendor approval by end user / customer is withdrawn or in case of Suspension of Business Dealings with the Suppliers / Contractors by BHEL. BHEL shall have the right to cancel Purchase Order / Contract, wholly or in part, in case they are obliged to do so on account of any decline, diminution, curtailment or stoppage of their business and in that event, the Supplier's / Contractor' compensation claim shall be settled mutually. In case of cancellation of Purchase Order / Contract for main supply, all other associated Purchase Orders / Contracts like those for Mandatory Spares / Recommended Spares / Erection, Testing & Commissioning (ETC) / Supervision of ETC, if any, would also get cancelled.
36.	SHELF LIFE : Supplier has to inform the list of the items / sub-items which have limited shelf life like consumables or those required for the first fill and shall indicate the corresponding shelf life period in the offer. Such items / sub-items shall be manufactured / despatched only after getting formal clearance from BHEL.
37.	LIMITATION OF LIABILITY : Notwithstanding any other provisions, except in cases of wilful misconduct and / or criminal negligence / acts, a) Neither the Supplier / Contractor nor BHEL shall be liable to the other, whether in Purchase Order / Contract, tort, or otherwise, for any consequential loss or damage, loss of use, loss of production or loss of profits or interest costs, provided however that this exclusion shall not apply to any obligation of the Supplier / Contractor to pay Liquidated Damages to the BHEL and b) Notwithstanding any other provisions incorporated elsewhere in the contract, the aggregate liability of the Contractor in respect of this contract, whether under the Contract, in tort or otherwise, shall not exceed total Contract Price, provided however that this limitation shall not apply to any obligation of the Vendor to indemnify BHEL with respect to Patent Infringement or Intellectual Property Rights.
38.	SHORTAGES / DAMAGES : a) Against Supply only or Supply where Supervision of Erection, Testing & Commissioning (ETC) at Site or Supply where Testing & Commissioning at Site is in scope of the supplier : Any shortages and / or damages in supplies shall be supplied / replenished free of cost by the supplier as early as possible but not later than 30 days from the date of intimation by BHEL to the supplier.

Sr. No.	
	b) Against Supply where Erection, Testing & Commissioning (ETC) at Site is in scope of the supplier : Any shortages and / or damages in supplies and during handling / storage, erection, testing and commissioning at site shall be supplied / replenished free of cost by the Supplier / Contractor, as early as possible, to meet the contractual completion time / schedule. Note: There shall not be any extension in the contractual delivery time / schedule due to any shortages and / or damages in supplies.
39.	VARIATION OF CONTRACT VALUE / QUANTITY VARIATION : BHEL shall have the right to variation in quantities of items within $\pm 30\%$ of the total Purchase Order / Contract value at the time of placement of PO or award of Contract on overall basis for all amendments together within two years from the date of original Purchase Order / Contract or completion of execution of the Purchase Order / Contract whichever is earlier but quantities of individual items may vary to any extent or may get deleted unless otherwise specified in the technical specifications. No compensation is payable due to variation in the quantities and the Supplier / Contractor shall be bound to accept the same the contracted prices / rates without any escalation. However, if the Purchase Order / Contract is on "Lumpsum" basis, no variation of Purchase Order / Contract value shall be admissible to the Supplier / Contractor within the scope of Purchase Order / Contract, as long as the inputs remain unchanged.
40.	STATUTORY VARIATION : GST rates prevailing at the time of dispatch of goods/ completion of services shall be payable by BHEL. All other taxes, duties, charges, royalty, cess, other levies shall be deemed to be included in the Ex Works Prices / Charges quoted by bidders and no variations shall be payable in respect thereof. No other variations such as on customs duty, exchange rate, minimum wages, prices of controlled commodities, any other input etc. shall be payable by the BHEL. Notwithstanding anything above, where the actual completion of the supply / services occurs beyond the period stipulated in the Purchase Order / Contract or any extension thereof, variations referred to above, will be limited to the rates prevailing on the dates of such agreed completion periods only. For variations after the agreed completion periods, the Supplier / Contractor alone shall bear the impact for the upward revisions and for downward revisions BHEL shall be given the benefit of reduction in applicable taxes / GST. This will be without prejudice to the levy of liquidated damages for delay in delivery / completion. If new tax is introduced by Central/ State Govt/ Municipality becomes directly applicable on items specified in Bill of Quantities/Purchase Order/Contract, full reimbursements shall be made provided it becomes applicable on items specified in Bill of Quantities. However, any additional tax implication due to delay in delivery, beyond the Contractual Delivery, attributable to supplier shall be borne by supplier.
41.	MODE OF PAYMENT : Payment shall be made directly to the Supplier / Contractor by BHEL through NEFT / RTGS.
42.	CONFIDENTIALITY : Supplier / Contractor shall, at all times, undertake to maintain complete confidentiality of all data, information, software, drawings & documents etc. belonging to BHEL and also of systems, procedures, reports, input documents, manuals, results and any other BHEL documents discussed and / or finalized during the course of execution of Purchase Order / Contract.

Sr. No.	
43.	INDEMNIFICATION : The Supplier / Contractor shall indemnify and keep indemnified and hold harmless BHEL and its employees and officers from and against any and all claims, suits, actions or administrative proceedings, demands, losses, damages, costs and expenses and any other claim of whatsoever nature in respect of the death or injury of any person or loss of or damage to any property arising during the course and out of the execution of the Purchase Order / Contract.
44.	TITLE OF GOODS : a) Ownership of the equipment / material procured in India, shall be transferred to BHEL upon loading on to the mode of transport to be used for transportation of the said equipment / material from the works to the site / destination and upon endorsement of the dispatch documents in favour of BHEL. b) Ownership of the equipment / material to be imported into the country where the site is located, if not procured in India, shall be transferred to BHEL upon loading on the mode of transport to be used for transportation of the equipment / material from the country of origin to that country / destination and upon endorsement of despatch document in favour of BHEL. c) Notwithstanding the transfer of ownership of the equipment / material, the responsibility for care and safe custody thereof together with the risk of loss or damage thereto for whatsoever reason shall remain with the Supplier.
45.	COMPLIANCE OF STATUTORY REQUIREMENTS : The vendor shall comply with all State and Central Laws / Acts, Statutory Rules, Regulations etc., as may be enacted by the Government during the tenure of the Purchase Order / Contract and having in force and applicable to the Purchase Order / Contract and nothing shall be done by the Supplier / Contractor in contravention of any Law / Act and / or Rules / Regulations, thereunder or any amendment thereof. The Supplier / Contractor shall pay all taxes, fees, licence charges / deposits, duties, tolls, royalty, commissions or other charges which may be levied on account of any of his operations connected with the Purchase Order / Contract. In case BHEL is constrained to make any of such payments, BHEL shall recover the same from the Supplier / Contractor either from moneys due to him or otherwise as deemed fit.
46.	ACCEPTANCE OF ORDER : Supplier should acknowledge and accept the Letter of Award / Purchase Order issued by BHEL within 7 days of the issue of Letter of Award / Purchase Order. In case of any discrepancy / typographical error in issue of Purchase Order / Contract, the agreed terms & conditions, scope of work, rates / prices for placement of PO / award of contract shall be applicable and BHEL reserves the right to issue amendment(s) to PO / Contract for correction of discrepancies / typographical errors in the PO / Contract at a later date.
47.	FRAUD PREVENTION POLICY : The Bidder along with its associate / collaborators / sub-contractors / sub-vendors / consultants / service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website http://www.bhel.com and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.

Signature of Bidder (Authorized Signatory) with Date & Seal

1. For any technical clarification, pls contact:

SH. M VIJAY KUMAR, Manager (TBEM)

SH. S K SHUKLA, DGM (TBEM)

Phone: 0120 ñ 6748537 / 0120 ñ 6748531

E-mail : vijaykumar@bhel.in / skshukla@bhel.in

For any technical clarification, pls. contact:

RAJ NARAYAN RAM, Sr. ENGINEER(TBMM)

SH. S . K. JAIN, AGM (TBMM)

Phone : 0120 - 6748532 / 0120 - 6748137

E-mail : raj.ram@bhel.in / skjain@bhel.in

2. The tenders are invited and evaluated online through e-Procurement System. The bidder shall submit his response through bid submission to the tender on e-Procurement platform at <https://bhel.abcpurchase.com/EPROC/>
3. Material Delivery plan is 22.04.2019. However, vendor has to quote their best possible delivery plan in activity schedule to meet the tender delivery requirement. In case, BHEL's delivery requirement is not met by vendor(s), then a chance may be given to all such vendors to review their quoted delivery schedule in line with BHEL's delivery requirement. However, if vendor fails to meet the requisite delivery plan, then BHEL reserves the right not to consider the offer of such vendor(s).
4. Permissible Technical Deviations: No permissible Technical Deviation has been envisaged.
5. Price are to be QUTOED on **FIRM** basis i. e. PVC is not applicable.
6. As per Technical specification. Prices are to be quoted in Rs. / MT. for individual Items for MT detailed in front of each line item in Price Bid.
7. **Integrity Pact:** Not Applicable
8. For Reverse Auction, kindly refer to attachment to this STC titled **REVERSE AUCTION GUIDELINES** for further applicable conditions.
9. **Note:** If no option is specified for Performance Bank Guarantee by Bidders in their offer, by default Option ñ B of Clause 7 ñ Performance Bank Guarantee (PBG) shall be considered as accepted by the Bidder.
10. **EVALUATION CRITERIA – TOTAL LANDED COST TO BHEL FOR OVERALL QUANTITY BASIS OF TANTRANSCO VELLALAVIDUTHI.**
11. Approval of L-1 vendor shall be arranged from customer i. e. M/s. TANTRANSCO VELLALAVIDUTHI. Following credentials are required for customer approval of L-1 Bidder:
1. **Vendor approval letter from other TANTRANSCO projects/PGCIL/NTPC/public Utilities.**
 2. **Proof of supplies (PO / work order copies of above customers)**
 3. **Performance certificate (wherever applicable)**
 4. **Valid Type test reports (if applicable) as per technical specification of contract for respective voltage ratings**
12. **Quantity Variation - +- 30%**

13. PQR :

- i) The Bidder must be manufacturer of angle /channel/ support /structure and tray.

AND

- ii) The Bidder should have supplied at least **40 MT** galvanized mild steel tray (perforated/ladder) in last three years from date of technical bid opening (i.e. 21.08.2017).

AND

- iii) The Bidder should have supplied at least **20 MT** angle/channel/support /structure in last three years from date of technical bid opening (i.e. 21.08.2017).

14. For this procurement, Public Procurement (Preference to Make in India), Order 2017 dated 15.06.2017 & 28.05.2018 and subsequent orders issued by the respective nodal ministry shall be applicable even if issued after issue of this NIT but before finalization of contract/PO/WO against this NIT.

In the event of any Nodal Ministry prescribing higher or lower percentage of purchase preference and/ or local content in respect of this procurement, same shall be applicable.

Preference to Make in India will be as per the Public Procurement (Preference to Make in India), Order 2017 available in the following link:

http://dipp.nic.in/sites/default/files/publicProcurement_MakeinIndia_15June2017.pdf
http://dipp.nic.in/sites/default/files/Revised-PPP-MII-Order-2017_28052018.pdf

13. Following confirmation to be provided by vendor:

“We confirm that we have quoted as per specified price format provided along with this tender”.

Name :

Signature :

Stamp :



TENDER ENQUIRY NO. 828E534 DATE : 02.04.2019
DUE DATE : 18.04.2019

SCHEDULE OF COMMERCIAL DEVIATION

The following are the deviations/ variations exception from the General Terms and Conditions:

SL. NO.	CLAUSE NO. OF GENERAL TERMS AND CONDITION	STATEMENT OF DEVIATION

- In case, this schedule is not submitted, it will be presumed that the equipment/ material to be supplied under this contract is deemed to be in compliance with the General Terms and Conditions.
- If there is NIL deviation, even then the format to be filled as **NIL DEVIATION**.

Note: Continuation Sheets of like size and format may be used as per the Bidder's Requirement and shall be annexed to this scheduled.

Place: -

Date: -

Signature of the authorized representative of

Bidder's name:.....

Designation.....

Company Seal:.....

TENDER ENQUIRY NO. 828E534 DATE : 02.04.2019

DUE DATE : 18.04.2019

SCHEDULE OF TECHNICAL DEVIATION

The following are the deviations/ variations exception from the Specification:

SECTION	CLAUSE NO. / PAGE NO.	STATEMENT OF DEVIATION/ VARIATIONS/EXCEPTIONS

- In case, this schedule is not submitted, it will be presumed that the equipment/ material to be supplied under this contract is deemed to be in compliance with the General Terms and Conditions.
- If there is NIL deviation, even then the format to be filled as **NIL DEVIATION**.

Note: Continuation Sheets of like size and format may be used as per the Bidder's Requirement and shall be annexed to this scheduled.

Signature of the authorized representative of

Place: -

Bidder's Name:.....

Date: -

Designation:.....

Company Seal:.....

TENDER ENQUIRY NO. 828E534 DATE : 02.04.2019
DUE DATE : 18.04.2019

PAGE 01 TO 01
BHEL/TBG/ATS/01

ACTIVITY SCHEDULE

(To be filled – up by the supplier)

NOTE: This format is to be submitted in original only, duly filled in. Reproduction of this format on bidder's letter head or on other paper is not acceptable.

SL. NO.	ACTIVITY		ACTIVITY TIME IN WEEKS	CUMULATIVE TIME IN WEEKS FROM LOI/PO DATE	REMARKS IF ANY
1.	Submission of P.O Acceptance	Max 1 week			
2.	Submission of documents necessary for getting manufacturing clearance like Drawings, date sheet etc.				
3.	Review and Approval of documents and issue of manufacturing clearance	‘BY BHEL’			
4.	Manufacturing Time				
5.	Inspection	‘BY BHEL’			
6.	Issue of MICC and other documents like Road Permits etc.	‘BY BHEL’			
7.	Dispatch				

- Note :
- 1) For Sl. No. 4) Inspection call for entire lot to be issued 2 weeks in advance. Date given in call for inspection should be within the period indicated in for completion of activity at Sl. No. 5.
 - 2) Supplier must ensure the completeness and correctness of the requisite documents before submission for approval. Delay in approval on account of incomplete / inadequate information shall be the responsibility of supplier.
 - 3) Inspection call should be given in the prescribed format only. Inspection calls not in the prescribed format shall not be entertained.
 - 4) Qty to be offered for inspection should be in accordance within Delivery-schedule ñ lot. BHEL reserves the right not to entertain multiple inspection calls for a Delivery ñ lot and delay on this account shall be the responsibility of Supplier.
 - 5) Delivery is required AT THE EARLIEST. Bidders to quote their best Delivery Plan in this schedule.

Signature & Seal of
Supplier

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-II) dtd:.....,
Category: (Micro/Small)). (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as on
date..... 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 is within permissible limit of
Rs.....Lacs forMicro / Small (~~Strike off which is not applicable~~)
Category under MSMED Act 2006.

Date:

(Signature)

Name -

Membership number -

Seal of Chartered Accountant

ANNEXURE TO STC OF ENQUIRY NO. 828E534 DATED 02.04.2019
DUE ON 18.04.2019

REVERSE AUCTION GUIDELINES

BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on www.bhel.com) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the designated service provider) as well as 'Online sealed bid' in the Reverse Auction. Non-submission of 'Process compliance form' or 'Online sealed bid' by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).

*The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer. **The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates.***

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

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

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



BHARAT HEAVY ELECTRICALS LIMITED
TRANSMISSION BUSINESS GROUP
MATERIAL RECEIPT CERTIFICATE

- a) ite:
b) R No. with date:
c) ehicle no.:
d) ate of receipt of material at site:
e) Material details (as mentioned below):

S.no.	Item Description	Type of Packages	Unit (MT/KM/ NO.)	Qty as per packing list	Qty Received	Remarks

Other Remarks:

Signature with date: _____

Name & designation: _____
(With seal)

Important Remarks:

1. LR endorsement Format-

“LR no./ Date: _____ Endorsed in favour of (Customer Name) and the transporter is instructed to deliver the goods to (Site name)”.

For Example-

LR no./ Date: 22126/ dt. 30/04/15

Endorsed in favour of TANTRANSCO and the transporter is instructed to deliver the goods to TANTRANSCO, Anikadavu substation.

(sign and stamp with name & designation)

2. LR will only be endorsed as per the given Format and strictly not be receipted.

3. Material receiving will only be given through the MRC (Format attached).

*This sample checklist is only for the benefit of prospective bidders/ suppliers to obtain Class-III, SHA2 2048 BIT – Signing & Encryption, Digital Signature Certificates (DSCs). **For actual requirement of documents and procedure to be followed, the authorized Certifying Authority in India shall be contacted by the applicants. Further details available on <http://www.cca.gov.in>.***

Proofs and checklist for the certificates with organization name (for Indian Applicants)

- One self-attested recent Photograph of the applicant (only Passport size photo accepted)
- All mandatory columns should be clearly filled
- Mobile number and valid email ID are must
- The Company address should be written in the application form
- Applicant's signature is must in section 3
- If the applicant is a Director or Partner or Proprietor
 - Signature with seal/ stamp in Section 3 is mandatory
 - Self-attestation with seal/ stamp is mandatory in the company proofs
- If the applicant is not a Director or Partner or Proprietor
 - Signature with seal/ stamp from the Director or Partner or Proprietor in Section 4 is mandatory - valid authorisation letter from authorised signatory of the organization
- If the applicant is the Authorised signatory of the organisation
 - Self-attestation of the applicant along with the attestation of the Director or Partner or Proprietor is mandatory in all the company proofs - valid authorisation letter to be attached
- All the proofs including the company proofs should be valid, clear and self-attested
- Signature and address mentioned in the application form should match with the attached proofs

Note: The applicant should contact LRA (Local Registering Authority) nearest to their coordinates to enable LRAs to conduct physical verification for faster delivery of DSCs.

Applicant's identification proofs (any one of the following proofs attested by gazetted officer or bank manager or post master. In case of bank statement, attestation only from the same banker):

Identification proof:

- PAN card
- Passport
- Driving License
- Signature verification letter from banker

Residential Address proof:

- Passport
- Driving License
- Voters ID
- Aadhar card
- Latest bank statement with transaction
- Latest telephone bill
- Vat / sales tax certificate
- Latest Electricity / water bill latest by 3months
- Ration card

*This sample checklist is only for the benefit of prospective bidders/ suppliers to obtain Class-III, SHA2 2048 BIT – Signing & Encryption, Digital Signature Certificates (DSCs). **For actual requirement of documents and procedure to be followed, the authorized Certifying Authority in India shall be contacted by the applicants. Further details available on <http://www.cca.gov.in>.***

Organization proofs (any one of the following proofs attested by a company Secretary (who is in employment) or Director or partner or proprietor with organization seal)

Company

- Certificate of incorporation (1st page)
- In case of public limited company certificate of commencement of business
- In case the above certificates contain the address of the company, the same can be taken as address proof also

Partnership firm

- Partnership deed
- If the deed contains the address of the firm, the same can be taken as address proof also

Sole proprietorship firm

- Sales tax or VAT certificate
- Latest IT Return copy
- Service tax certificate

Organization Address Proof (any one of the following proofs attested by a company Secretary (in employment) or Director or partner or proprietor with organization seal. In case of bank statement, attestation must be done only by the same banker)

- Latest telephone bill not exceeding 3 months
- Bank statement attested by banker latest by 3 months

*This sample checklist is only for the benefit of prospective bidders/ suppliers to obtain Class-III, SHA2 2048 BIT – Signing & Encryption, Digital Signature Certificates (DSCs). **For actual requirement of documents and procedure to be followed, the authorized Certifying Authority in India shall be contacted by the applicants. Further details available on <http://www.cca.gov.in>.***

Proofs and checklist for the certificates with organization name (for Foreign Applicants)

Identification and address proofs

- One self-attested recent photograph of applicant authorised by the organization (only passport size photograph accepted)
- Identification and address proofs must be attested by the Indian EMBASSY at the country of the applicant
- Self-attestation is mandatory on all the proofs
- Signature and address in the application form should match with those in the proofs

Company Proof

- The document of registration like certificate of incorporation or establishment proof or licence which is applicable in the concerned country must be self-attested by the applicant and counter-attested by the Indian EMBASSY of the country of origin
- If the applicant is a Director
 - All the rules as mentioned in section 3 of the application are to be followed
- If the applicant is the Authorised signatory of the organisation
 - All the rules as mentioned in section 4 of the application are to be followed
 - All the proofs must be self-attested by the applicant
- If the applicant is not Authorised signatory of the organisation
 - Authorisation letter duly signed by authorised signatory along with Identification proof of the Authorized signatory to validate the signature
- If the proofs are in foreign language, they must be translated to English

Note: Company proofs also must be self-attested by the applicant. All signatures by the respective applicants should be followed by official stamp of the organization.

All the documents shall be attested by the Indian Embassy of the country of origin

SCHEDULE OF PRICES															
(BIDDER TO STRICTLY ENSURE SUBMITTING THE PRICE BID IN THIS FORMAT)															
ENQUIRY NO: 828E534				Dated: 02.04.2019				DUE ON : 18.04.2019							
PROJECT: TANTRANSCO VELLALAVIDUTHI															
ITEM : CABLE TRENCH MATERIAL															
S.No.	Description of Item	HSN Code	Unit	Quantity	Unit Price Ex-works (Rs.)	Total Ex-Works (Rs.)	GST @ _ % on Total Ex Works (Rs.)	Unit Freight (Rs.)	Total Freight (Rs.)	GST @ _ % on Total Freight (Rs.)	Unit Insurance (Rs.)	Total Insurance (Rs.)	GST @ _ % on Total Insurance (Rs.)	TOTAL (FOR Destination) PRICE (Rs.)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	Ladder type cable tray 2.5 m long, 600mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm, along with 2 Nos. side plate and 16 Nos., M8 bolts with nuts and washers for coupling two trays.		MT	99.51											
2	Ladder type cable tray 2.5 m long, 450mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm, along with 2 Nos. side plate and 16 Nos., M8 bolts with nuts and washers for coupling two trays.		MT	0.95											
3	Ladder type cable tray 2.5 m long, 300mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm, along with 2 Nos. side plate and 16 Nos., M8 bolts with nuts and washers for coupling two trays.		MT	2.77											
4	Perforated type cable tray 2.5 m long, 150mm wide, 100 mm high, 2 mm thick along with 2 Nos. side plate and 8 Nos., M8 bolts with nuts and washers for coupling two trays.		MT	2.64											
5	Horizontal Cross for ladder type cable tray 2.5 m long, 600mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm.		MT	0.12											
6	90° Horizontal Elbow for ladder type cable tray 2.5 m long, 600mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm.		MT	0.98											
7	90° Horizontal Elbow for ladder type cable tray 2.5 m long, 450mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm.		MT	0.05											
8	90° Horizontal Elbow for ladder type cable tray 2.5 m long, 300mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm.		MT	0.04											
9	Horizontal Tee for ladder type cable tray 2.5 m long, 600mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm.		MT	0.92											
10	Horizontal Tee for ladder type cable tray 2.5 m long, 450mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm.		MT	0.04											
11	Horizontal Tee for ladder type cable tray 2.5 m long, 300mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm.		MT	0.04											
12	3 tier galvanized cable rack assembly with 50x50x6thk MS angle as per Fig. 1 of Annexure-3		MT	20.25											
13	3 tier galvanized cable rack assembly with 50x50x6thk MS angle as per Fig. 2 of Annexure-3		MT	13.37											
14	2 tier galvanized cable rack assembly with 50x50x6thk MS angle as per Fig. 3 of Annexure-3		MT	1.49											
15	2 tier galvanized cable rack assembly with 50x50x6thk MS angle as per Fig. 4 of Annexure-3		MT	0.54											
16	Hanger assembly as per Fig. 5 of Annexure-3		MT	2.76											
17	Hanger assembly as per Fig. 6 of Annexure-3		MT	1											
18	2500 mm long Galvanized mild steel cover suitable for 150mm wide Perforated type cable tray. Cover shall be 15 mm high, 1.6 mm thick along with 2 Nos. clamps made of 25x3 mm GI flat for each cover		MT	1.07											
	TOTAL														

1. It is certified that M/s _____ have quoted as per the specified price format of the tender, otherwise offer shall be liable for rejection.



BHARAT HEAVY ELECTRICALS LIMITED
TRANSMISSION BUSINESS ENGINEERING MANAGEMENT
NEW DELHI

DOCUMENT No.	TB-399-316-008	Rev	00		Prepared	Checked	Approved
--------------	----------------	-----	----	--	----------	---------	----------

CUSTOMER Doc. No.		NAME	MVK	MVK	SKS
-------------------	--	------	-----	-----	-----

TYPE OF DOC.	TECHNICAL SPECIFICATION	SIGN	47	47	SKS
--------------	-------------------------	------	----	----	-----

TITLE	DATE	18.02.19	18.02.19	18.02.19
-------	------	----------	----------	----------

**CABLE TRENCH MATERIAL
(CABLE TRAYS & RACKS)**

GROUP	TBEM
-------	------

W.O. No

CUSTOMER	TAMIL NADU TRANSMISSION CORPORATION LIMITED (TANTRANSCO)
----------	--

PROJECT	400/230-110 kV Substation at Vellalaviduthi
---------	---

<u>List of Contents</u>	<u>No. of Pages</u>
-------------------------	---------------------

Cover Sheet	01
-------------	----

Section 1 Specific Technical Requirements, Quantities	10
---	----

Section 2 Standard Specification	04
----------------------------------	----

Section 3 Project Details and General Specification	15
---	----

Enclosures:

Annexure - A (NO DEVIATION Certificate)	01
---	----

Annexure - B.1 (Guaranteed Technical Particulars - Trays)	01
---	----

Annexure - B.2 (Guaranteed Technical Particulars - Racks)	01
---	----

Annexure - C.1 (Check-list - Trays)	01
-------------------------------------	----

Annexure - C.2 (Check-list - Tray Cover)	01
--	----

Annexure - C.3 (Check-list - Racks)	01
-------------------------------------	----

Check-list for TE	01
-------------------	----

00					First Issue
----	--	--	--	--	-------------

Rev.	Date	Altered	Checked	Approved	REVISION DETAILS
------	------	---------	---------	----------	------------------

Distribution				CUSTOMER	TBMM	O/C
--------------	--	--	--	----------	------	-----

				-	4	1
--	--	--	--	---	---	---

COPYRIGHT & CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED
THIS MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY MANNER DETRIMENTAL TO THE INTEREST OF THE COMPANY

CHECKLIST FOR TECHNICAL EVALUATION

Along with the Technical Bids of the offers, the Bidder should submit this checklist confirming the inclusion of the enclosures as listed below. (Shall tick as ✓)

Sr No	Documents to be enclosed	Bidder to check & confirm
1	Copy of Unpriced BOQ as enclosed in the Technical Specification to confirm that bidder has quoted as per BOQ OF SECTION-1	
2.	Schedule of Technical Deviation format duly signed.	
3.	Supporting documents as asked in the Technical PQR. (As per cl. No. 1.5, Section-1 of Technical Specification)	NA
4.	Checklist of Technical parameters as per Annexure-C.1 to C.3 duly filled and signed.	
5.	Compliance to Technical Specification	

NOTE:- If the Bidder fails to submit any of the documents as asked in the above check list, their bid is likely to be rejected / not evaluated.

The above checklist is verified for:-

NIT Ref No. :

Name of Equipment :

Name of Project :

Name of Bidder :

Signed with Seal of Bidder.

Date

SECTION - 1

1.1 SCOPE

This technical specification covers the requirements of design, manufacture, testing at works, packing and dispatch of Cable Trench Material (Cable Racks Assemblies & Trays) to site.

This section covers the scope, specific technical requirements and quantities of Cable Trench Material. This constitutes minimum technical parameters for the above item as specified by the customer (TANTRANSCO). The offered equipment shall also comply with the General Technical Requirements for the project as detailed under section-3 of this specification.

In case of any discrepancies between the requirements mentioned under Section-1, Section-2 and those specified in Section-3, the order of preference shall be Section-1, then Section-2 followed by Section-3 and shall be treated as binding requirement.

No deviation from the requirements specified in various clauses of this specification shall be allowed. A certificate to this effect shall have to be furnished along with the offer.

The Cable Trench Material is required for the following project:

Name of the Customer : TAMIL NADU TRANSMISSION CORPORATION LIMITED
(TANTRANSCO)
Name of the Project : 400/230-110 kV Substation at Vellalaviduthi

The scope of supplies shall be as per commercial terms and conditions enclosed separately with the enquiry.

1.2 SPECIFIC TECHNICAL REQUIREMENTS

(a) Cable Trays

S. No.	Particulars	Data
1)	Material of cable trays	Galvanized Mild Steel
2)	Width (mm)	As per BOQ
3)	Thickness of sheet metal for trays & fittings etc	2 mm
4)	Whether Ladder type or perforated type	Ladder and Perforated type
5)	Mass of Zinc coating	460 gm/m ²
6)	Length of single cable tray piece	2.5 m
7)	Accessories:	Coupler Plates & Hardware for tray interconnection and for fixing to supports.
8)	Reference drawing	Annexure-1 (Ladder Tray) Annexure-2 (Perforated Tray)

(b) Rack Assembly

S. No.	Particulars	Data
1)	Material of cable racks	Galvanized Mild Steel
2)	Size and material of cable rack assemblies	50x50x6 (thick) mm MS angles
3)	Applicable Standards for cable racks	IS 2062
4)	Mass of Zinc coating	610 g/m ²
5)	Reference drawing	Annexure-3

(c) Hanger Assembly

S. No.	Particulars	Data
1)	Material of cable racks	Galvanized Mild Steel
2)	Size and material of hanger assemblies	50x50x6 (thick) mm MS angles & ISMC 100 channels
3)	Applicable Standards for cable racks	IS 2062
4)	Mass of Zinc coating	610 g/m ²
5)	Reference drawing	Annexure-3

(d) Cover for Perforated Tray

S. No.	Particulars	Data
1)	Material of cable trays	Galvanized Mild Steel
2)	Width (mm)	As per BOQ
3)	Thickness of sheet metal for cover	1.6 mm
4)	Mass of Zinc coating	460 gm/m ²
5)	Length of cover	2.5 m
6)	Accessories:	2 nos. clamps (25x3 mm GI flat) for each tray
7)	Height	15 mm

All other details shall be as per standard specification for Cable Trays, Racks and Hanger Assembly in Section-2.

S. No.	Item Required	TECHNICAL PARAMETERS	Unit	Data
1.	Cable Trays (Ladder type) Refer Annexure-1	Width	mm	600, 450 and 300
2.	Cable Trays (Perforated type) Refer Annexure-2	Width	mm	150
3.	Cable Rack assembly as per Figure-1 of Annexure-3	Width	mm	750
		Tier	No.	3
4.	Cable Rack assembly as per Figure-2 of Annexure-3	Width	mm	750
		Tier	No.	3

5.	Cable Rack assembly as per Figure-3 of Annexure-3	Width	mm	450/750
		Tier	No.	2
6.	Cable Rack assembly as per Figure-4 of Annexure-3	Width	mm	450/600
		Tier	No.	2
7.	Hanger assembly as per Figure-5 of Annexure-3	Width	mm	750/750
		Tier	No.	3
8.	Hanger assembly as per Figure-6 of Annexure-3	Width	mm	750
		Tier	No.	3

1.3 BILL OF QUANTITIES

The following items are required -

Sl. No	Description	Unit	Qty	
			Nos	Eqvt. MT
1.	Ladder type cable tray 2.5 m long, 600mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm, along with 2 Nos. side plate and 16 Nos., M8 bolts with nuts and washers for coupling two trays.	Nos	4727	99.51
2.	Ladder type cable tray 2.5 m long, 450mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm, along with 2 Nos. side plate and 16 Nos., M8 bolts with nuts and washers for coupling two trays.	Nos	50	0.95
3.	Ladder type cable tray 2.5 m long, 300mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm, along with 2 Nos. side plate and 16 Nos., M8 bolts with nuts and washers for coupling two trays.	Nos	165	2.77
4.	Perforated type cable tray 2.5 m long, 150mm wide, 100 mm high, 2 mm thick along with 2 Nos. side plate and 8 Nos., M8 bolts with nuts and washers for coupling two trays.	Nos	165	2.64
5.	Horizontal Cross for ladder type cable tray 2.5 m long, 600mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm.	Nos	6	0.12
6.	90° Horizontal Elbow for ladder type cable tray 2.5 m long, 600mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm.	Nos	51	0.98
7.	90° Horizontal Elbow for ladder type cable tray 2.5 m long, 450mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm.	Nos	3	0.05
8.	90° Horizontal Elbow for ladder type cable tray 2.5 m long, 300mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm.	Nos	3	0.04
9.	Horizontal Tee for ladder type cable tray 2.5 m long, 600mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm.	Nos	60	0.92
10.	Horizontal Tee for ladder type cable tray 2.5 m long, 450mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of 250 mm.	Nos	3	0.04
11.	Horizontal Tee for ladder type cable tray 2.5 m long, 300mm wide, 100 mm high, 2 mm thick, having slotted rung spacing of	Nos	3	0.04

	250 mm.			
12.	3 tier galvanized cable rack assembly with 50x50x6thk MS angle as per Fig. 1 of Annexure-3	Nos	1500	20.25
13.	3 tier galvanized cable rack assembly with 50x50x6thk MS angle as per Fig. 2 of Annexure-3	Nos	990	13.37
14.	2 tier galvanized cable rack assembly with 50x50x6thk MS angle as per Fig. 3 of Annexure-3	Nos	200	1.49
15.	2 tier galvanized cable rack assembly with 50x50x6thk MS angle as per Fig. 4 of Annexure-3	Nos	80	0.54
16.	Hanger assembly as per Fig. 5 of Annexure-3	Nos	55	2.76
17.	Hanger assembly as per Fig. 6 of Annexure-3	Nos	25	1.00
18.	2500 mm long Galvanized mild steel cover suitable for 150mm wide Perforated type cable tray. Cover shall be 15 mm high, 1.6 mm thick along with 2 Nos. clamps made of 25x3 mm GI flat for each cover	Nos	165	1.07

Notes:-

- 1) The quantity may vary +/- 30% during drawing approval at contract stage.
- 2) The bidder shall indicate in his offer, the final weight of the tray after punching and galvanising.
- 3) The bidder shall indicate in his offer, the final weight of the cable rack assembly after punching and galvanising.
- 4) Cable trench material (rack assembly, Cover and tray) shall be supplied in number only, but payment shall be made in MT.
- 5) Other hardware and accessories as may be required for complete assembly and installation of support system shall be supplied.
- 6) Typical drawing of Ladder tray enclosed in ANNEXURE-1.
- 7) Typical drawing of Perforated tray enclosed in ANNEXURE-2.
- 8) Typical Rack & Hanger assemblies are enclosed in ANNEXURE-3.

Supports and screws and bolts for cable trays shall be made of the same materials as the cable trays they support.

1.4 INSPECTION & TESTING

Before being fitted on the equipment, all components shall be subjected to routine tests at the Contractors factory, as per the relevant IEC/IS standards. A detailed test report proving the successful passing of such tests shall be provided.

Prior to dispatch, the routine & acceptance tests shall be carried out on equipment in accordance with the applicable IEC /IS and the material shall be offered for final inspection to BHEL and TANTRANSCO in accordance with agreed quality plan with 3 weeks advance information.

1.5 QUALITY PLAN

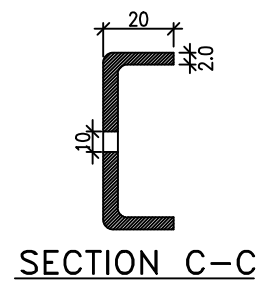
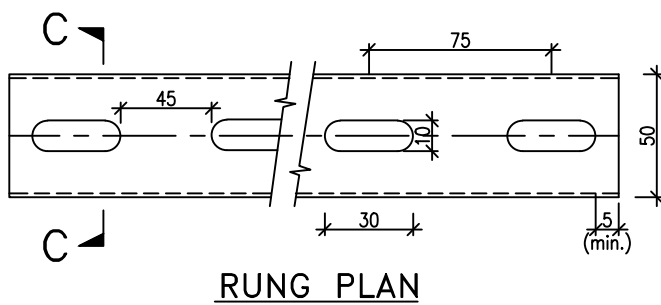
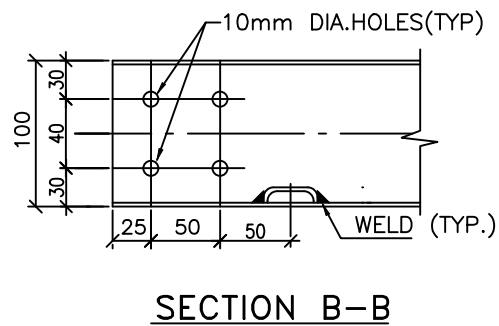
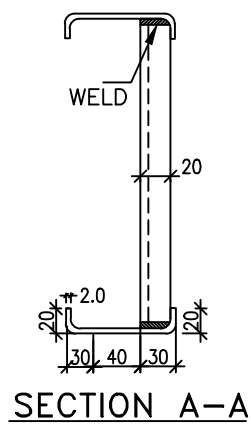
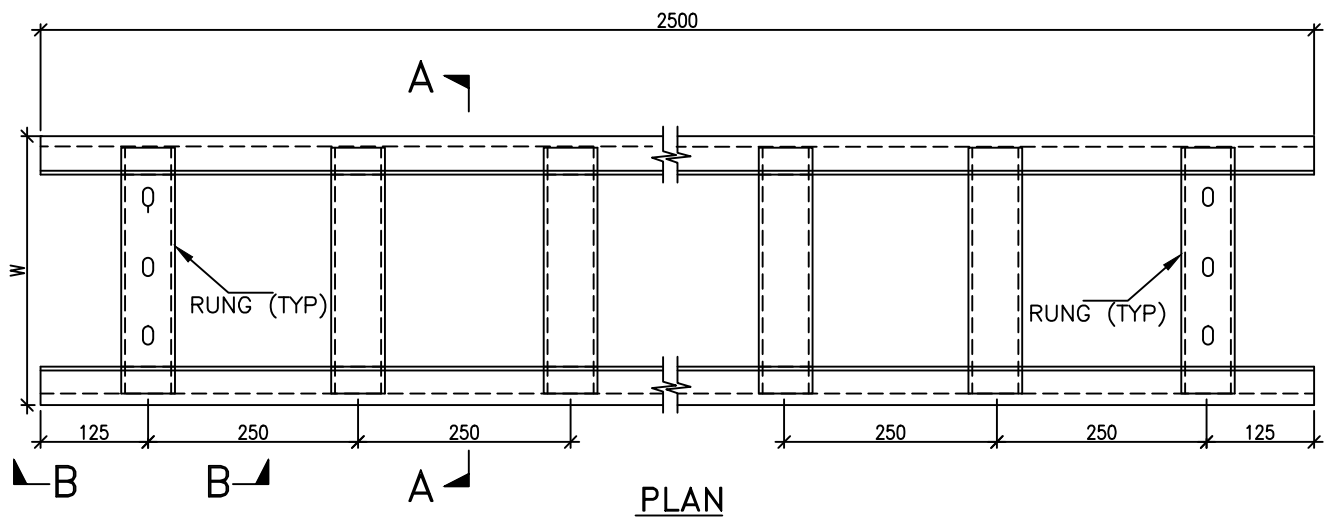
The contractor shall carry out contract works in accordance with sound quality management principles which shall include such as controls which are necessary to ensure full compliance to all requirements of the specification & applicable international standards. These quality management requirement shall apply to all activities during design, procurement, manufacturing,

inspection, testing, packaging, shipping, inland transportation, storage, site erection & commissioning. Contractor shall submit detailed Quality Plan for BHEL / TANTRANSCO approval within 1 week of P.O. placement.

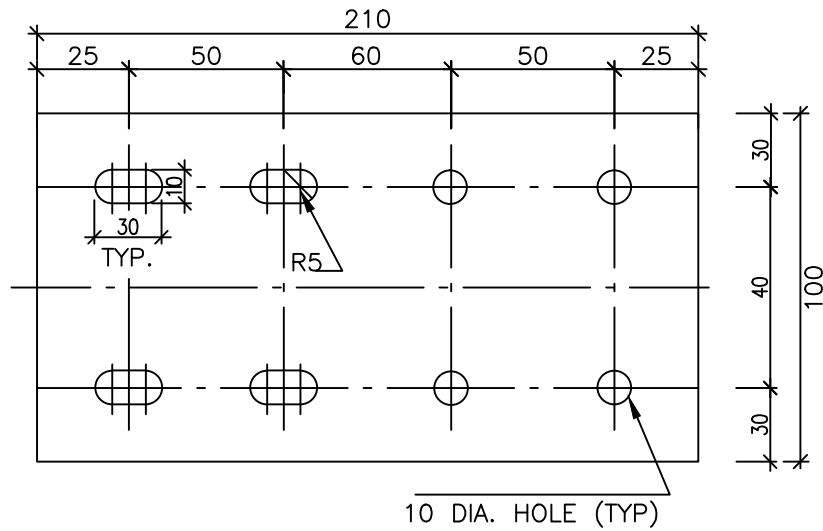
1.6 PROJECT TITLE BLOCK

CUSTOMER	TAMIL NADU TRANSMISSION CORPORATION LIMITED (TANTRANSCO)				
PROJECT	400/230-110 kV Substation at Vellalaviduthi				
CONTRACT NO	LOA No. CE/TR/SE/TR IV/EE3/AEE1/F.T-2004/LOA2966/D080/2018, dt. 28.06.2018				
BHEL P.O. No.		PROJ. DOC. No.		REV. No.	
CONTRACTOR	BHARAT HEAVY ELECTRICALS LIMITED				
VENDOR'S STANDARD TITLE BLOCK					

-- X X --



W	600	450	300
---	-----	-----	-----

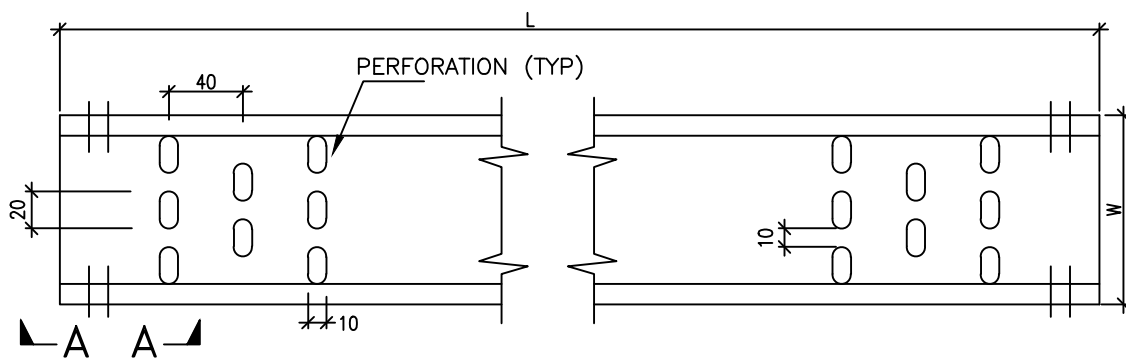


COUPLER PLATE (CP)
(TYP) FOR LADDER TYPE TRAY

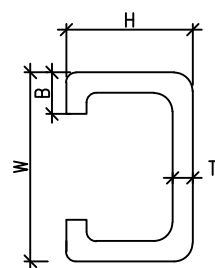
MATERIAL – GALVANISED M.S SHEET (2.0mm THICK)

NOTE:-

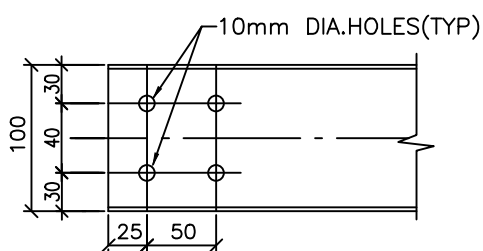
1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED.
2. LADDER TYPE CABLE TRAY SHALL BE FABRICATED FROM MILD STEEL WITH 2mm THICK.
3. SIDE COUPLER PLATE SHALL BE FABRICATED FROM 2mm THICK GALVANISED M.S. FLAT.
4. ALL NUTS, BOLTS AND WASHERS SHALL BE ZINC PASSIVATED.
5. CABLE TRAY ASSEMBLIES SHALL BE FABRICATED AS PER IS : 1079 GRADE "O"/
IS : 2026 GRADE "A". OTHERWISE SPECIFIED.
6. CABLE TRAYS, SIDE COUPLER PLATES & CABLE RACK ASSEMBLIES
SHALL BE HOT DIP GALVANISED AS PER IS : 2629
7. FABRICATION TOLERANCE ± 5 mm TO BE ALLOWED.
8. TOLERANCE ON THICKNESS ± 0.2 mm TO BE ALLOWED, OTHERWISE SPECIFIED.
TOLERANCE ON DIMENSION – AS PER IS 1852.



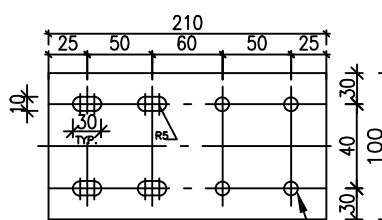
PERFORATED TYPE CABLE TRAY



END VIEW



SECTION A-A



10 DIA. HOLE (TYP)
COUPLER PLATE

MATERIAL : M.S SHEET 2mm THK. (T) AS PER IS: 1079/10748/2062/5986
FINISH : HOT DIP GALVANISED (460gm/m^2) AS PER IS: 2629 & IS: 4759)

NOTE:-

1. UNLESS OTHERWISE STATED ALL DIMENSIONS ARE IN mm.
2. MATERIAL SHALL BE GALVANISED SHEET STEEL AS PER IS: 2629.
3. TOLERANCE : THICKNESS ± 0.2 , WEIGHT ± 2 , HEIGHT ± 2 AND LENGTH ± 15 .
4. ALL NUT BOLTS & WASHERS SHALL BE ELECTRO PLATED.

LENGTH (L) = 2500mm
WIDTH (W) = 150mm
HEIGHT (H) = 100mm
THICK (T) = 2mm
(B) = 10mm

RACK ASSEMBLY:-

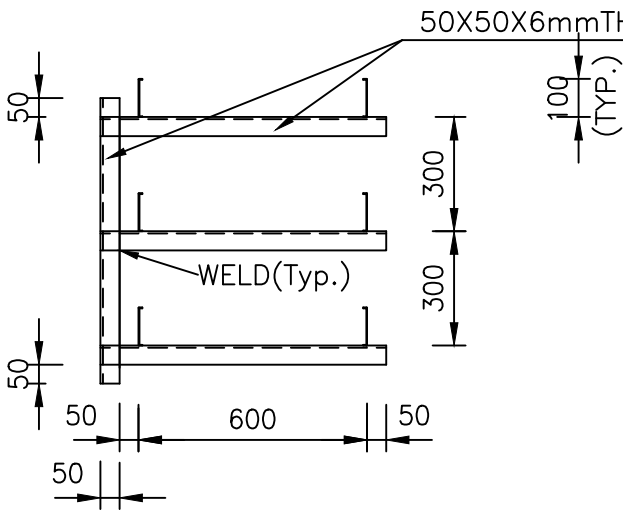


FIGURE-1

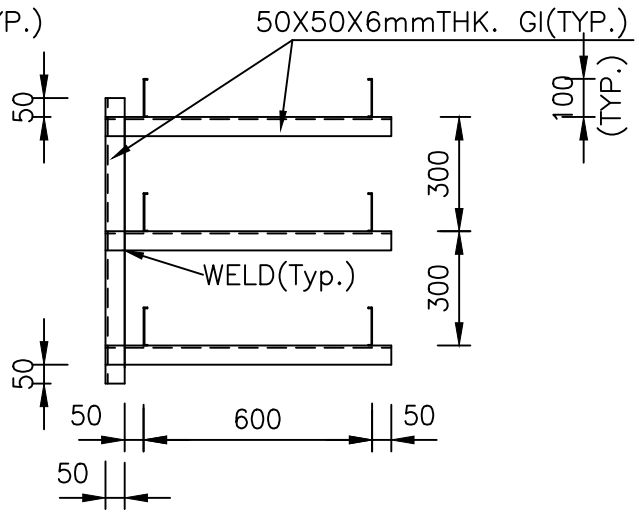


FIGURE-2

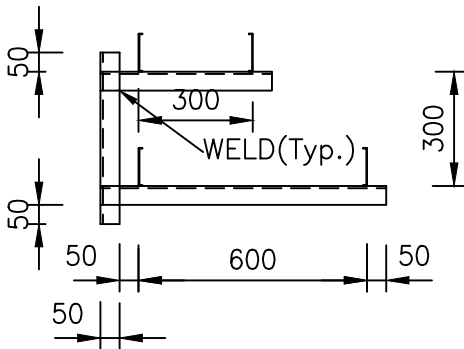


FIGURE-3

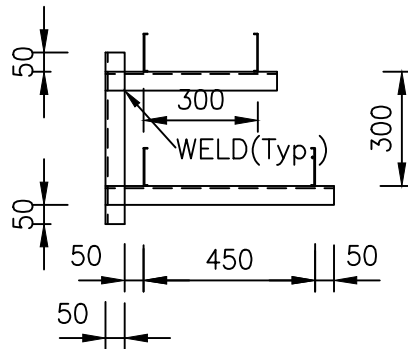


FIGURE-4

ANNEXURE-3



TYPICAL RACK
ARRANGEMENT DETAILS

DRG.NO.
TB-4-399-316-008
REV-00

SHEET 1 OF 2

HANGER ASSEMBLY:—

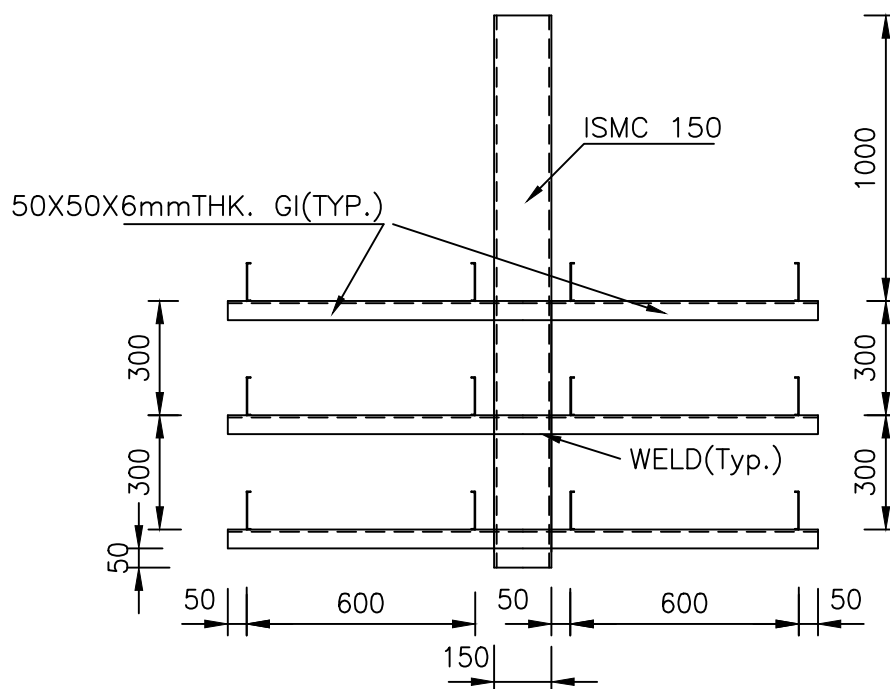


FIGURE-5

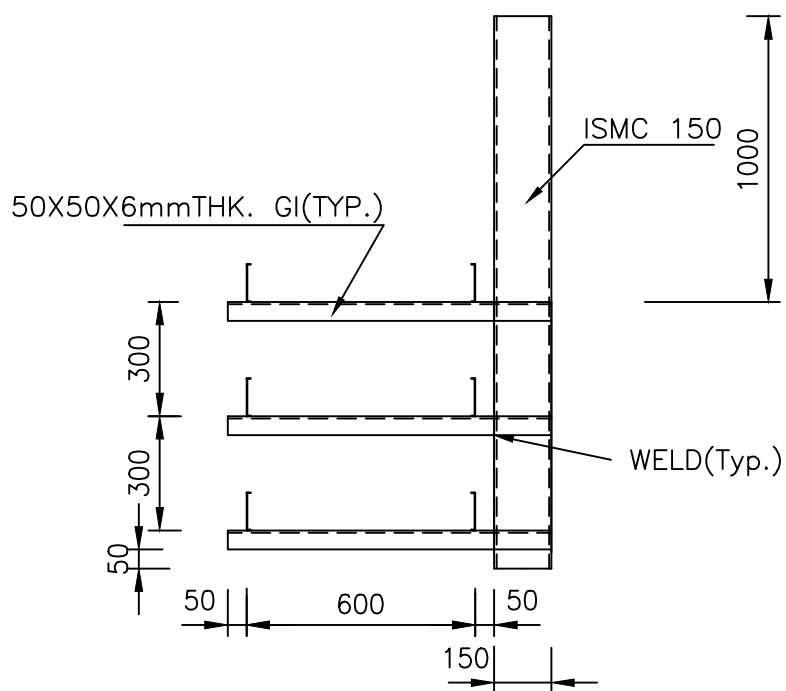


FIGURE-6

ANNEXURE-3



TYPICAL RACK ARRANGEMENT DETAILS

DRG.NO.

TB-4-399-316-008
REV-00

SHEET 2 OF 2

SECTION-2

STANDARD SPECIFICATION

2.1 GENERAL

This section covers the general technical requirements of Cable Trench Material. In case of any discrepancies between the requirements mentioned in this section and those specified in other sections of this specification, the latter shall prevail and shall be treated as binding requirements.

2.1.1 TECHNICAL PARAMETERS

A. Rack assembly

Material of cable racks	:	MS
Size and material of cable rack assemblies	:	50 x 50 x 6 (thick) mm MS angles
Whether Galvanised or Painted	:	Galvanised
Mass of Zinc coating	:	610 g/sqm.

B. Hanger assembly

Material of cable racks	:	MS
Size and material of cable rack assemblies	:	50 x 50 x 6 (thick) mm MS angles & ISMC 100 channels
Whether Galvanised or Painted	:	Galvanised
Mass of Zinc coating	:	610 g/sqm.

C. Cable Trays

Material of cable trays	:	Galvanised/MS
Thickness of sheet metal for trays & fittings etc	:	Rung - 2mm thick Side member- 2mm thick
Whether Ladder type or perforated type	:	Ladder and Perforated Type
Mass of Zinc coating	:	460 g/sqm.
Thickness of sheet metal for trays	:	2 mm
Accessories	:	Coupler Plates, Bends, T-joints & Hardware for Tray interconnection and for fixing to supports

2.2 APPLICABLE STANDARDS

The Cable Trench Material shall conform to latest revision of the following Indian Standards:

Steel for general structural purpose	:	IS:2062
Hot Rolled Carbon Steel Sheets and Strips specification	:	IS:1079
Mechanical Testing of Metals - Tensile	:	IS:1068

Testing

Dimensions for steel plates, sheets strips and flats for general engineering purpose	:	IS:1730
Method of Tensile Testing of sheet steel and strip of thickness 0.5 to 3 mm	:	IS:1608
General technical delivery requirements for steel and steel products	:	IS:8910
Method of chemical analysis of pig iron, cast iron and plain carbon and low alloy steel , Part-1	:	IS:228
Method for testing uniformity of coating on Zinc coated articles	:	IS:2633
Recommended practice for hot dip galvanising on iron & steel	:	IS:2629
Hot dip Zinc coating on structural steel and other allied products	:	IS:4759
Method for determination of mass of zinc coating on zinc coated iron and steel articles	:	IS:6745
Rolled steel beams, channel and angles	:	IS:808
Rolling and Cutting tolerances for rolled steel products	:	IS:1852
Recommended practice for red oxide And zinc chromate on iron & steel	:	IS:2074

Latest version of the standard shall be referred.

2.3 TECHNICAL REQUIREMENTS

Cable Trays

2.3.1. The cable trays shall be ladder/perforated type.

2.3.2. The material (Mild Steel) used for the supply shall be in sound condition and of recent manufacture, free from defects, loose mill scale, slag, pitting, rust, etc.

- 2.3.3. The cable trays shall be hot dip galvanised (zinc coating).
- 2.3.4. The min. weight of zinc coating shall be 460gm/m².
- 2.3.5. The trays shall not have sharp edges cuts, abrasions etc. and the zinc coating shall be adherent, smooth and reasonably bright, continuous and free from such imperfections as flux, ash, bare and black spot, pimples, lumpiness, rust stains, bulky white deposits and blisters.
- 2.3.6. All drilling, cutting, bending etc. of fabricated steel work shall be carried out before galvanising. After galvanising, no drilling or welding shall be performed on the galvanized parts of the equipment excepting that nuts may be threaded after galvanizing. Sodium dichromate treatment shall be provided to avoid formation of white rust after hot dip galvanisation.
- 2.3.7. Bolts and nuts shall be of steel with hexagonal head of approved supplier. All bolts shall be galvanised including threaded portions. The threaded portions of all bolts shall be cleared of smear by spinning / brushing. All washers and nuts shall also be galvanised but threading of nuts shall be oiled / greased.
- 2.3.8. All angles / flats etc. shall be cut with shearing machine / power hack-saw, cutting with gas welding is not permitted.
- 2.3.9. The bidder shall indicate in his offer, the final weight of the tray after punching and galvanising.

Rack/Hanger Assembly

- 2.3.1. The material (Mild Steel) used for the supply shall be in sound condition and of recent manufacture, free from defects, loose mill scale, slag, pitting, rust, etc.
- 2.3.2. The cable rack/hanger assembly shall be hot dip galvanised.
- 2.3.3. Galvanising of the rack/hanger assembly shall be done. The min. thickness of zinc at any spot shall not be less than 75 microns. Coating shall be adherent, smooth and reasonably bright, continuous and free from such imperfection as flux, ash, bare and black spot, pimples, lumpiness, rust stains, bulky white deposits and blisters and zinc chromate/red oxide shall conform to IS : 2074-1992.
- 2.3.4. Galvanising of the rack/hanger assembly shall be done. The min. thickness of coating shall be 85 micron for all items thicker than 6 mm. For item with thickness lower than 6 mm requirement of coating thickness shall be as per relevant ASTM. Coating shall be adherent, smooth and reasonably bright, continuous and free from such imperfection as flux, ash, bare and black spot, pimples, lumpiness, rust stains, bulky white deposits and blisters and zinc chromate/red oxide shall conform to IS: 2074.

- 2.3.5. The hanger assemblies shall not have sharp edges cuts, abrasions etc. and the zinc coating shall be adherent, smooth and reasonably bright, continuous and free from such imperfections as flux, ash, bare and black spot, pimples, lumpiness, rust stains.
- 2.3.6. All drilling, cutting, bending etc. of fabricated steel work shall be carried out before galvanising.
- 2.3.7. All angles shall be cut with shearing machine / power hack-saw, cutting with gas welding is not permitted.
- 2.3.8. The bidder shall indicate in his offer, the final weight of the cable rack assembly after punching and galvanising.

2.4 TESTS

Details of tests for Cable Trench Material shall be as follows:

Cable Trays

- 1. Dimensional and visual examination - As per BHEL approved drawing.
- 2. Mass of Galvanisation - IS: 6745
- 3. Test for galvanising (Acceptance Test)
The test shall be done as per approved standards.
- 4. Uniformity of zinc coating - IS: 2633
- 5. Deflection Test: (Type test)
A 2.5 metre straight section of each type of cable tray shall be simply supported at the two ends. A uniformly distributed load of 76 kg per metre shall be applied along the length of the tray. The maximum deflection at the mid span shall not exceed 7 mm.

Rack/Hanger Assembly

- 1. Dimensional and visual examination - As per BHEL approved drawing.
- 2. Mass of Galvanisation - IS: 6745
- 3. Test for galvanising (Acceptance Test)
The test shall be done as per approved standards
- 4. Uniformity of zinc coating - IS: 2633
- 5. Mass of zinc coating - IS: 6745
- 6. Chemical composition test - As per IS: 2062.
- 7. Tensile - As per IS: 2062.
- 8. Bending test - As per IS: 2062.

SECTION – 3

PROEJCT DETAILS & GENERAL TECHNICAL REQUIREMENT

3.0 FOREWORD

The provisions under this section are intended to supplement general requirements for the materials, equipment's and services covered under other sections.

3.1 PROJECT INFORMATION AND SYSTEM PARAMETERS

- a) Customer : M/s Tamil Nadu Transmission Corporation Limited
- b) Project Title : 400/230-110 kV Substation at Vellalaviduthi
- c) Transport facilities : Road/Rail

Physical and other parameters:

- 3.1.1 Location of the substation : Vellala viduthi, Pudukottai district
- 3.1.2 Nearest Railway station : Pudukottai
Railway : Southern Railway
- 3.1.3 Meteorological data
- (i) Maximum ambient temperature : 50°C
 - (ii) Minimum ambient temperature : 20°C
 - (iii) Maximum daily average ambient air temperature : 45° C
 - (iv) Maximum yearly average ambient air temperature : 32° C
 - (v) Maximum Humidity (%) : 100%
 - (vi) Average thunder storm days per annum : 50
 - (vii) Average rainy days per annum : 90
 - (viii) Average annual rainfall (mm) : 1000 mm
 - (ix) No. of months during which tropical monsoon condition prevail : 5
 - (x) Maximum wind pressure : 150 Kgf/Sqmm
 - (xi) Altitude above MSL : 1000M

However for design purpose, ambient temperature should be considered as 50° C and relative humidity as 100%.

MAIN ELECTRICAL PARAMETRS:		
a)	Fault Levels	400kV: 63kA for 1 sec. 230kV: 40kA for 3 sec. 110kV: 40kA for 3 sec.
a)	Creepage Distance	25mm/kV

3.1.4 AUXILIARY POWER SUPPLY :

Auxiliary electrical equipment's, maintenance equipment's etc., shall be suitable for operation on the following supply system.

3 phase AC Supply	415V, 3 phase 4 wire, 50 Hz, neutral grounded AC supply -10% to +10%, Frequency +/- 5%
1 phase AC supply	240V, single phase, 50 Hz, neutral grounded AC supply -10% to +10%, Frequency +/- 5%,
DC supply	220V, 2 wire DC supply + 10% to -15%, Ungrounded 48V, 2 wire DC supply , Positively earthed

3.2 GENERAL REQUIREMENT

3.2.0 ALL THE EQUIPMENTS / MATERIALS TO BE SUPPLIED SHOULD BE IN ACCORDANCE WITH RELEVANT LATEST / AMENDED IS/IEC, WHETHER IT HAS BEEN SPECIFICALLY MENTIONED IN THE SPECIFICATION OR NOT.

3.0.1 The bidder shall also furnish drawings for the following:

All EQUIPMENTS and type of clamps, fittings hardware, insulators, bus bar. These designs/ drawing shall be got approved by the purchaser before commencing the manufacture/ construction/ erection and are to be as per latest IS/ IEC.

3.2.2 GENERAL:

The bidder shall be fully responsible for providing all equipment, materials system and services specified or otherwise which are required to complete the construction and successful commissioning of the substation in all respects.

Any other items not specifically mentioned in the specification but which are required for erection of materials/equipment under the scope of work, testing and commissioning are deemed to be included in the scope of the specification unless specifically excluded.

All items shall be supplied as per schedule and as specified in the relevant Indian standard of latest revision. The Technical specification of the main materials/equipment is furnished. The Technical specification contained herein for the materials are for the guidance of the tenderer.

The bidders are requested to procure the equipment's/materials/component only from reputed /qualified manufacturer as per Technical requirement stipulated in Section-1 of Technical specifications. Approval of make of item shall be taken up by vendor from TANTRANSCO himself.

3.3 SPECIFIC REQUIREMENT

The bidder shall furnish make/manufacturer, catalogues, engineering data, technical information, design documents, drawings etc., fully in conformity with the technical specification and get approval from competent authority before commencement of any work.

All steel materials, other than materials for earthing should be of galvanized if not specified.

3.4 STANDARD:

The works covered by the specification shall be designed, engineered, manufactured, built, tested and commissioned in accordance with the Acts, Rules, Laws and Regulations of India.

The equipment to be furnished under this specification shall conform to latest issue with all amendments (as on the date of bid opening) of standards specified in the specification.

The Bidder shall note that standards mentioned in the specification are not mutually exclusive or complete in themselves, but intended to complement each other.

The Bidder shall also note that list of standards presented in this specification is not complete. Whenever necessary the list of standards shall be considered in conjunction with specific IS/IEC.

When the specific requirements stipulated in the specifications exceed or differ than those required by the applicable standards, the stipulation of the specification shall take precedence.

3.5 TEST CERTIFICATE:

Copies of all test certificates relating to material to be procured by the contractor for the works shall be forwarded to the OWNER.

3.6 TESTS :

All the tests as per relevant IS/IEC shall be carried out.

3.7 MATERIALS AND WORKMANSHIP:

All the materials shall be of the best class and capable of satisfactory operation in the tropics with humid atmosphere conditions. Unless otherwise specified, they shall conform to the requirements of the appropriate IS/IEC.

The workmanship shall be of the best grade and the entire construction in accordance with the best modern practice.

The equipment shall be designed to facilitate inspection and repairs and to ensure satisfactory operation under atmosphere condition prevailing at site and under such sudden variation of load and voltage as may be met with under working conditions in the system including those due to faulty synchronizing and short circuit within the rating of the apparatus.

The design shall incorporate every reasonable precaution and provision for the safety of all those concerned in the operation and maintenance of the equipment.

All the equipments should operate without undue vibration and with the least practicable amount

of noise.

3.8 INSPECTION :

The inspection may be carried out by the TANTRANSCO/BHEL at any stage of manufacture. The supplier shall grant free access to TANTRANSCO's/BHEL representative at a reasonable time when the work is in progress. The TANTRANSCO/BHEL shall have access at all times to the works and all other places of manufacture/fabrication, where the equipments are being manufactured/fabricated and the bidder shall provide TANTRANSCO's/BHEL representative all facilities for unrestricted inspection of the works, raw materials, manufacture of all the accessories and for conducting necessary tests.

Inspection and acceptance of any equipment under this specification by the TANTRANSCO/BHEL shall not relieve the supplier of his obligation of furnishing equipment in accordance with the specification and shall not prevent subsequent rejection if the equipment is found to be defective. The supplier shall keep the TANTRANSCO/BHEL informed in advance, about the manufacturing programme so that arrangement can be made for inspection.

The TANTRANSCO/BHEL , reserves the right to insist for witnessing the acceptance/routine testing of the bought out items. No material shall be dispatched from its point of manufacture unless the material has been satisfactorily inspected and tested.

The correct grade and quality of steel shall be used by the supplier. To ascertain quality of steel, the TANTRANSCO/BHEL may at his discretion get the material tested at an approved laboratory.

The bidder shall take an account the fabrication wastage while quoting the rates. The Employer will not accept any liability in connection with the wastage of steel during fabrication or otherwise. Steel shall be procured exclusively from the main producers. However, sections not rolled by main produces can be procured from reroller, provided rerolling of structural steel section is done from billets/ingots of tested quality. Rerolled sections are duly tested as per relevant standards. Supplier should obtain approval of list of primary producers of Steel and Zinc before Proto assembly.

The BHEL/TANTRANSCO or his representative shall have the right to inspect and/or test the goods /works to confirm their conformity to the supplier. BHEL/TANTRANSCO shall notify the supplier in writing of the identity of any representatives authorized for these purposes.

The inspections and tests may be conducted on the premises of the supplier or his Sub vendor at the point of delivery and /or at the goods' final destination. Where tests are conducted in the premises of Supplier, all reasonable facility and assistance including access to drawings and production data shall be furnished at no charge to the BHEL.

Should any inspected or tested goods fail to conform to specifications, the BHEL/TANTRANSCO may reject them and the supplier shall either replace the rejected goods or make all alterations necessary to meet specification requirements free of cost to the BHEL/TANTRANSCO within one week of intimation.

The BHEL/TANTRANSCO's right to inspect, test and where necessary reject the goods after the goods; arrival at the site, shall in no way be limited or waived by reason of the goods having been previously inspected. Tested and passed by the BHEL/TANTRANSCO or his representative prior to the goods dispatch.

Not less than 15 (Fifteen) days advance intimation shall be given about the quantity of materials that will be ready for inspection by the officers of TANTRANSCO/ BHEL/Third agency authorized by the Corporation. The materials should not be dispatched without instruction from the Corporation.

3.9 GUARANTEE:

The supplier shall guarantee that the goods under the Contract are new, unused of the most recent or current models and incorporated all recent improvements in design and materials unless provided otherwise in the Contract. The supplier shall further guarantee that the goods supplied under this Contract shall have no defects arising from design, materials or workmanship, installation and erection, if that may develop under normal use of the supplied goods. The supplier shall also guarantee the performance of the works executed by him including the performance of all the materials/goods supplied by him.

BHEL shall promptly notify supplier in writing of any claims arising under guarantee in respect of goods. Upon receipt of such notice, the supplier shall, with all reasonable speed, repair or replace the defective works or parts thereof, free of cost at site. All the expenses towards transportation of defective parts to supplier's works and of repaired/replaced parts to site shall be borne by the Supplier.

If the Supplier, having been notified, fails to remedy the defects within 14 days, the BHEL will proceed to take such remedial action as may be necessary, at the supplier's risk and expenses. All expenses in this regard will be recovered from Supplier.

3.10 PRE COMMISSIONING TESTING (if applicable) :

On completion of erection of equipment's and before charging each item of equipment's shall be thoroughly cleaned and inspected jointly by the TANTRANSCO/ BHEL and the bidder for correctness and completeness of installation and acceptability for charging leading to initial pre commissioning test. The pre commissioning testing to be carried all equipment's in the presence of BHEL/ TANTRANSCO. Necessary tools, testing kits to be arranged by the Supplier.

3.11 DOCUMENTATION :

All drawings shall conform to relevant international standards Organization (ISO) specification. All drawings shall be in ink and suitable for micro filming. All dimensions and data shall be in S.I. units.

3.12 PAINTING, GALVANISING :

All interiors and exteriors of all metal parts shall be thoroughly cleaned to remove all rust, scales, corrosion, greases or other adhering foreign matter and the surfaces treated by phosphating (e.g. seven tank phosphating sequences).

All metal surfaces exposed to atmosphere shall be given, in addition to the treatment, two primer coats of zinc chromate and two coats of epoxy paint with epoxy base thinner. All metal parts not accessible for painting shall be made of corrosion resisting material. All machine finished or bright surfaces shall be coated with a suitable preventive compound and suitably wrapped or otherwise protected. All paints shall be carefully selected to withstand tropical heat and extremes of weather within the limits specified. The paint shall not scale off or wrinkle or be removed by abrasion due to normal handling. All external paintings shall be as per shade **No.697/631 of IS-5**.

Paint inside the metallic housing shall be of anti condensation type and the paint on outside surfaces shall be suitable for outdoor installation.

All components shall be given adequate treatment of climate proofing as per **IS: 3202** so as to withstand corrosive and several service conditions.

All ferrous parts including all sizes of nuts, bolts, support channel structures, etc. as also the mechanism housing shall be hot dip galvanized conforming to latest version of IS : 2629 or epoxy painted. Spring washers shall be electro-galvanised.

All members of the structure members shall be hot dipped galvanised with a zinc coating of **610 gms. per square metre** . Galvanising shall be done after a work is completed, except that the nuts may be tapped or rerun after galvanization. The zinc coating shall be smooth, clean, of uniform thickness and free from defects. The preparation for galvanising itself shall not adversely affect the mechanical properties of the coated materials. The employer shall be at liberty to have the samples of zinc used, test checked in any laboratory at his own cost and reject the particular supply if it is below standard.

All galvanised material shall withstand test as per IS 2633-1972 or any other equivalent standard. The zinc used for galvanising fabricated material shall be of high grade Electrolytic zinc of 99.99% purity.

All nuts and pins shall be adequately locked. Nuts, bolts and pins used inside the transformer and tap-changer compartment where gaskets are not used shall be provided with spring washers or locknuts. Where galvanizing is specified, it shall be applied by the hot dipped process or by electro-galvanizing process and for all parts, other than steel wires, shall consist of a thickness of zinc coating equivalent to not less than 610gm of zinc per square meter of surface. The zinc coating shall be smooth, of uniform thickness and free from defects.

3.13 SURFACE FINISH

All interiors and exteriors of tanks, control cubicles and other metal parts shall be thoroughly cleaned to remove all rust, scales, corrosion, greases or other adhering foreign matter. All steel surfaces in contact with insulating oil as far as accessible, shall be painted with not less than two coats of heat resistant, oil insoluble, insulating paints.

All metal surfaces exposed to atmosphere shall be given two primer coats of zinc chromate and two coats of epoxy paint with epoxy base thinner. All metal parts not accessible for painting shall be made of corrosion resisting material. All machine finished or bright surfaces shall be coated with a

suitable preventive compound and suitably wrapped or otherwise protected. All paints shall be carefully selected to withstand tropical heat and extremes of weather within the limit specified. The paint shall not scale off or wrinkle or be removed by abrasion due to normal handling.

3.14 PROTECTION

All coated surfaces shall be protected against abrasion, impact, discoloration and any other damages. All exposed threaded portions shall be suitably protected with either a metallic or a non-metallic protecting device. All ends of all valves, pipings and conduit equipment connections shall be properly sealed with suitable devices to protect them from damage.

All equipment accessories and wiring shall have fungus protection, involving special treatment of insulation and metal against fungus, insects and corrosion. The parts which are likely to get rusted, due to exposure to weather should also be properly treated and protected in a suitable manner. Screens of corrosion resistant material shall be furnished on all ventilating louvers to prevent entry of insects.

3.15 FUNGI-STATIC VARNISH

Besides the space heaters, special moisture and fungus resistant varnish shall be applied on the parts, which may be subjected or predisposed to the formation of fungi due to the presence or deposit of nutrient substances. The varnish shall not be applied to any surface of part where the treatment will interface with the operation or performance of the equipment. Such surfaces or parts shall be protected against the application to the varnish.

3.16 DEGREE OF PROTECTION

The supplier shall propose following Degree of protection for those equipment/Items for which the degree of protection has not been specified in the specification for the approval of BHEL/TANTRANSCO. The decision of BHEL/TANTRANSCO shall be final. The enclosures of the Control Cabinets, Junction boxes and Marshalling boxes, panels etc to be installed shall provide degree of protection as detailed here under:

- a) Installed outdoor: IP-55
- b) Installed indoor in air conditioned area: IP-42
- c) Installed in covered area IP:52
- d) For LT switchgear (AC & DC distribution Boards): IP-54

The degree of protection shall be in accordance with IS: 13947 (Part-1)/ IEC-60947 (Part-1)/ IS 12063 / IEC-60529. Type test report for degree of protection test on each type of the box shall be submitted for approval.

3.17 FIRST FILL OF CONSUMABLES, OIL AND LUBRICANTS

All the first fill of consumables such as oils, lubricants, filling compounds, touch up paints, soldering/brazing material for all copper piping of circuit breakers and essential chemicals etc. which will be required to put the equipment covered under the scope of the specifications, into operation,

shall be furnished by the Contractor unless specifically excluded under the exclusions in these specifications and documents.

3.18 RATING PLATES, NAME PLATES AND LABELS :-

The equipments shall be provided with a rating plate or plates marked with but not limited to following data whatever needs to that particular equipments (as applicable).

- (a) Manufacturer's name or trade mark.
- (b) Serial number and type design making it possible to get all relevant information from the manufacturer.
- (c) Year of manufacture.
- (d) Rated voltage
- (e) Rated insulation level.
- (f) Rated frequency
- (g) Rated Normal current.
- (h) Rated short circuit breaking current
- (i) First pole to clear factor
- (j) Rated duration of short circuit
- (k) Rated auxiliary D.C. supply voltage of closing and opening devices.
- (l) Rated pressure of SF6 gas for operation and interruption.
- (m) Rated out of phase breaking current.
- (n) Rated supply voltage of auxiliary circuit.
- (o) Rated supply frequency of auxiliary circuits.
- (p) Purchase Order Number and Date.

The rating plate shall be visible in position of normal service and installation. The rating plate shall be weather proof and corrosion proof.

Each main and auxiliary item of substation is to have permanently attached to it in a conspicuous position a rating plate of non-corrosive material upon which is to be engraved manufacturer's name, year of manufacture, equipment name, type or serial number together with details of the loading conditions under which the item of substation in question has been designed to operate, and such diagram plates as may be required by the BHEL/TANTRANSCO. The rating plate of each equipment shall be according to IEC requirement.

All such nameplates, instruction plates, rating plates of transformers, reactors, CB, CT, CVT, SA, Isolators, C & R panels and PLCC equipments shall be bilingual with Hindi inscription first followed by English. Alternatively two separate plates one with Hindi and the other with English inscriptions may be provided. During approvals drawings of Rating/name plates/labels shall also be submitted.

3.19 TERMINAL CONNECTORS :

The terminal connectors shall meet the following requirements.

- a. Terminal connectors shall be manufactured and tested as per IS : 5561.
- b. All castings shall be free from blow holes, surface blisters, cracks and cavities.

-
- c. All sharp edges and corners shall be blurred and rounded off.
 - d. No part of a clamp shall be less than 10mm thick.
 - e. All ferrous parts shall be hot dip galvanized conforming to IS: 2633.
 - f. For bimetallic connectors, copper alloy liner of minimum thickness of 2mm shall be cast integral with Aluminium body. Flexible connectors shall be made from tinned copper.
 - g. All current carrying parts shall be designed and manufactured to have a minimum contact resistance.
 - h. Connectors shall be designed to be corona free in accordance with the requirements stipulated in IS : 5561.
 - i. Terminal connectors shall be for Twin Moose Conductor with a spacing of 450mm between the conductor.

3.20 EARTHING :

The operating mechanism housing, control cabinets, support structure etc. shall be provided with two separate earthing terminals suitable for bolted connection to 50x8mm mild steel flat to be provided for connection to station earth mat.

Circuit breakers, LA, Isolator, CVT, CT, BPI shall be provided with two grounding pads suitable for connection to galvanized steel flat of Size 75x12 mm. Control panels, Relay panel, outdoor marshalling boxes, Junction boxes, Lighting panels and distribution board shall be provided with two grounding pads, for connection to galvanized steel flat. The two pads shall be provided, one each at the middle of the two opposite sides of the bottom frame of the equipment. Earthing of hinged door shall be done by using a separate earth wire.

3.21 TERMINAL BLOCKS AND WIRING

Control and instrument leads from the switchboards or from other equipment will be brought to terminal boxes or control cabinets in conduits. All Inter-phase and external connections to equipment or to control cubicles will be made through terminal blocks.

Terminal blocks shall be 1100 V grade and have continuous rating to carry the maximum expected current on the terminals. Those shall be of moulded piece complete with insulated barriers stud type terminals, washers, nuts and lock nuts. Screw clamp, overall insulated, insertion type, rail mounted terminals can be used in place of stud type terminals. But preferably the terminal blocks shall be non-disconnecting stud type equivalent to Elmex type CATM4, Phoenix cage clamp type of Wedge or equivalent. The Insulating material of terminal block shall be nylon 6.6 which shall be free of halogens, fluorocarbons etc.

Terminal block for current transformer and voltage transformer secondary leads shall be provided with test links and isolating facilities. The current transformer secondary leads shall also be provided with short circuiting and earthing facilities.

The terminal shall be that maximum contact area is achieved when a cable is terminated. The terminal shall have a locking characteristic to prevent cable from escaping from the terminal clamp unless it is done intentionally. The conducting part in contact with cable shall preferably be tinned or silver plated however Nickel plated copper or zinc plated steel shall also be acceptable. The terminal blocks shall be of extensible design. The terminal blocks shall have locking arrangement to prevent

its escape from the mounting rails.

The terminal blocks shall be fully enclosed with removable covers of transparent, non-deteriorating type plastic material. Insulating barriers shall be provided between the terminal blocks. These barriers shall not hinder the operator from carrying out the wiring without removing the barriers.

Unless otherwise specified terminal blocks shall be suitable for connecting the following conductors on each side.

All circuits except CT circuits :	Minimum of 2 nos. of 2.5 sq.mm.copper flexible.
-----------------------------------	---

All CT circuits :	Minimum of 4 nos. of 2.5 sq.mm, copper flexible.
-------------------	--

The arrangements shall be in such a manner so that it is possible to safely connect or disconnect terminals on live circuits and replace fuse links when the cabinet is live. At least 20 % spare terminals shall be provided on each panel/cubicle/box and these spare terminals shall be uniformly distributed on all terminals rows.

There shall be a minimum clearance of 250mm between the first bottom row of terminal block and the associated cable gland plate. Also the clearance between two rows of terminal blocks shall be a minimum of 150 mm. The Supplier shall furnish all wire, conduits and terminals for the necessary inter-phase electrical connection (where applicable) as well as between phases and common terminal boxes or control cabinets.

All input and output terminals of each control cubicle shall be tested for surge withstand capability in accordance with the relevant IEC Publications, in both longitudinal and transverse modes. The supplier shall also provide all necessary filtering, surge protection, interface relays and any other measures necessary to achieve an impulse withstand level at the cable interfaces of the equipment. TB sizes for incoming power supply shall be informed/confirmed during drawing approval stage.

3.22 CONTROL CABINETS, JUNCTION BOXES, TERMINALS BOXES AND MARSHALLING BOXES FOR OUTDOOR EQUIPMENTS

All types of boxes, cabinets etc. shall generally conform to and be tested in accordance with IS-5039, IS-8623 or IEC-439, as applicable and the clause given below.

Control cabinet, Junction boxes, Marshalling boxes & Terminal boxes shall be made of sheet steel. Sheet steel used shall be at least 2.0 mm thick cold rolled or 2.5 mm hot rolled. The box shall be properly braced to prevent wobbling. There shall be sufficient reinforcement to provide level surfaces, resistance to vibrations and rigidity during transportation and installation. Cabinet/boxes shall be free standing floor mounting type, wall mounting type or pedestal mounting type as per requirements.

Cabinet /boxes shall be provided with double hinged doors with padlocking arrangements. The distance between two hinges shall be adequate to ensure uniform sealing pressure against atmosphere. The quality of gaskets shall be such that it does not get damaged/cracked during the operation of the equipment.

All door, removable covers and plates shall be gasketed all around with suitably profiled Neoprene /EPDM gaskets. The gasket shall be tested in accordance with approved quality plan. The quality of gasket shall be such that it does not get damaged /cracked during the years of the equipment or its major overhaul whichever is earlier. All gasketed surfaces shall be smooth, straight and reinforced if necessary to minimize distortion and to make a tight seal. Ventilating Louvers, if provided, shall have screen and filters. The screen shall be fine wire mesh made of brass.

All boxes/cabinets shall be designed for the entry of cables from bottom by means of weather proof and dust-proof connections. Boxes and cabinets shall be designed with generous clearances to avoid interference between the wiring entering from below and any terminal blocks or accessories mounted within the box or cabinet. Suitable cable gland plate projecting at least 150 mm above from the base of the Marshalling Kiosk/box shall be provided for this purpose along with the proper blanking plates. Necessary number of cable glands shall be supplied and fitted on this gland. The gland shall project at least 25mm above gland plate to prevent entry of moisture in cable crutch. Gland plate shall have provision for some future glands to be provided later, if required.

3.23 SPACE HEATERS

The heater shall be suitable for continuous operation at 240 V AC supply voltage and shall be provided with on – off switch and fuse shall be provided for heater.

One or more adequately rated, thermostatically connected heaters shall be supplied to prevent condensation in any compartment.

3.24 DELIVERY OF GOODS AND DOCUMENTS RELATED THERETO:

Delivery of goods shall be made by the supplier in accordance with the terms specified by the BHEL in its schedule of requirements.

3.25 INCIDENTAL SERVICES:

The Supplier is required to provide any or all the services broadly outlined in the Technical specification. Any other minor incidental service related to the scope of work like providing necessary assistance whether specifically mentioned or not must be carried out by the Supplier at his own cost. All tools, Tackles Plant etc., required for completion of above works shall be brought by the Supplier.

3.26 DISCREPANCIES BETWEEN DRAWING AND SPECIFICATION:

Should there be any discrepancy between the specifications and/or schedule of prices and/or drawings or any inconsistency, error or omission in either of them, reference must be made to the BHEL/TANTRANSCO for an explanation and the Supplier will be held responsible for any errors that may occur in the work through neglect of this precaution. The explanation of the BHEL/TANTRANSCO shall be final and binding on the Supplier.

3.27 LIST OF DRAWINGS AND DOCUMENTS :

The drawings for the equipments provided by the TANTRANSCO/BHEL shall be followed strictly by the bidder while designing. For the rest of the equipments, the design is in the scope of the bidder and the same got approved by the TANTRANSCO/BHEL.

The bidder shall furnish one set of relevant descriptive and illustrative published literature pamphlets and the following drawings/documents for preliminary study along with the Offer (as applicable). (Drawings, GTP, type test reports, list of past supplies etc. Drawings & documents submitted at the time of offer shall be subject to review at contract stage)

- (i) General outline drawings showing dimensions and shipping weights, quantity of insulating media, etc.
- (ii) Sectional views showing the general constructional features of the equipment (eg. Breaker drg includes operating mechanism, arcing chambers, contacts with lifting dimensions for maintenance).
- (iii) Schematic diagrams of equipment (eg. Breaker drg includes for control supervision and re-closing.)
- (iv) Structural drawing, design calculations and loading data for support structures.
- (v) Foundation drilling plan and loading data for foundation design.
- (vi) The Type Test Reports
- (vii) Bill of materials shall be furnished along with drawings.

The supplier shall, within 1 week of placement of order submit six sets of final version of all the above drawings for TANTRANSCO/BHEL approval. The TANTRANSCO/BHEL shall communicate its comments/approval on the drawings to the supplier within reasonable period. The Supplier shall, if necessary, modify the drawings and resubmit six copies of the modified drawings for TANTRANSCO/ BHEL approval within one week from the date of comments. After receipt of TANTRANSCO/BHEL approval, the supplier shall, within two weeks, submit 8 prints and two good quality reproducible of the approved drawings for TANTRANSCO/BHEL use. However the drawing approval does not absolve the supplier from complying with the terms of the specification.

The following should be supplied to each consignee circle along with the initial supply of equipments ordered.

- 1) Five copies of printed and bound volumes of operation, maintenance and erection manual in English along with the copies of approved drawings and type test reports etc.
- 2) Three sets of manuals detailed in item (1) shall be supplied to the TANTRANSCO/BHEL within one week from the date of approval of drawings.
- 3) The spares for the Equipment's ordered under the scope of the Contract should also be supplied to the consignee circle along with initial supply of the equipments.
- 4) It should be noted that if the above conditions are not fulfilled the initial payment will not be released.

Note: The supplier may please note that all resubmissions must incorporate, all comments given in the submission by the TANTRANSCO/BHEL failing which the submission of documents is likely to be returned. Every revision shall have a revision number, date and subject, in a revision block provided in the drawing, clearly marking the changes incorporated.

Following Documentation schedule to be followed

S. No.	DESCRIPTION	TENDER STAGE	CONTRACT STAGE FOR APPROVAL	FINAL DOCUMENTATION	
				Prints	CDs
1	Drawings and Data Sheets	1	6	10	5
2	Drawings "As Built "	-	-	10	

3	Type Test Reports	1	6	10	
4	Erection Manuals	-	6	10	
5	Operation and Maintenance Manuals	-	6	10	
6	Manufacturing Quality Plan	-	6	10	
7	Field Quality Plan	-	6	10	
8	Inspection Test Reports	-	6	10	

Note: Drawings will also be submitted in CD/DVD in Latest AUTOCAD-2004 or Later version or any other CAD package along with conversion files for all major items. Final Documentation shall be submitted in bound volumes with details of Customer & Project etc. written on top.

3.28 QUALITY ASSURANCE PLAN :

The bidder shall invariably furnish following information along with his offer.

- (i) Statement giving list of important raw materials including but not limited to:
 - (a) Contact material
 - (b) Insulation
 - (c) Porcelain
 - (d) Sealing material
 - (e) Contactor, limit switches, etc. in control cabinet.

Name of sub-supplier for the raw materials, list of standards according to which the raw materials are tested, list of test normally carried out on raw materials in presence of bidder's representative, copies of test certificates.

- (ii) Information and copies of test certificates as in (i) above in respect of bought out accessories.
- (iii) List of areas in manufacturing process, where such inspections are normally carried out for quality control and details of such tests and inspections.
- (iv) Special features provided in the equipment to make it maintenance free.
- (v) List of testing equipment available with the Bidder for final testing of equipments vis-à-vis, the type, special, acceptance and routine tests specified in the relevant standards. These limitations shall be very clearly brought out in the relevant schedule i.e. schedule of deviations from specified test requirements.

The supplier shall submit following information to the TANTRANSCO/BHEL.

- 1) List of raw materials as well bought out accessories and the names of sub-suppliers selected from those furnished along with offer.
- 2) Type test certificates of the raw material and bought out accessories.
- 3) Quality assurance plan (QAP) withhold points for TANTRANSCO/BHEL inspection. The quality assurance plan and hold points shall be discussed between the TANTRANSCO/BHEL and supplier before the QAP is finalized.

The supplier shall submit the routine test certificates of bought out items and raw material, at the time of routine testing of the fully assembled equipment.

3.29 TEMPERATURE RISE :

The maximum temperature attained by any part of the equipment when in service at site under continuous full load conditions and exposed to the direct rays of the sun shall not exceed 30(/25) deg. C over an ambient of 45(/50) deg. C limits specified in relevant IEC. When the standard specify the limit of temperature rise these shall be exceeded when corrected for the difference between ambient temperature at site and that specified in the approved specifications.

No material shall be dispatched from its point of manufacture unless the material has been satisfactorily inspected and tested.

3.30 FITTINGS AND ACCESSORIES :

Following is a partial list of some of the major fittings and accessories to be furnished by contractor as an integral part of the equipment.

Operation mechanism housing complete with:

- (a) Locking arrangement.
- (b) Heaters equipped with automatic thermostatic control and control switch.
- (c) Cable glands.
- (d) Local/Remote change over switch.
- (e) Operation Counter.
- (f) Terminal Blocks.
- (g) Control switches to cut off control power supply.
- (h) MCCBs/MCBs are required with permanent identification marks for protection of D.C. circuits and A.C. circuits.
- (i) Two earthing terminals.

3.31 PACKING AND FORWARDING:

The equipment shall be packed in crates suitable for vertical/horizontal Transport, as the case may be and suitable to withstand handling transport and outdoor storage during transit. The supplier shall be responsible for any damage to the equipment during transit due to improper and inadequate packing and handling. The easily damageable material shall be carefully packed and marked with the appropriate caution symbols. Wherever necessary, proper arrangement for lifting, such as lifting hooks etc., shall be provided. Any material found short inside the packing cases shall be supplied by supplier without any extra cost.

The supplier shall provide such packing of the goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit to their final destination as indicated in the Contract and exposure to extreme temperatures, salt and precipitation etc., during transport and open storage. Packing case size and weights shall be taken into consideration wherever appropriate, the remoteness of the 'goods' final destination and absence of heavy mechanized handling facilities, at all points in transit.

The packing, marking and documentation within and outside the package shall comply strictly with such special requirements as shall be expressly provided for in the Contract or in any subsequent instructions issued by BHEL.

3.32 SPECIFICATION FOR NITRYL BUTYL RUBBER

The gaskets are to be used in tanks exposed to Transformer mineral oil/SF6 at about 110° C.

1. Hardness should be Shore A 70 ± 5 .
2. Tensile Strength should be min. 10.8N/sq.mm (Minimum)
3. Elongation strength should be 270% (Minimum)

AFTER AGEING

1. Change in weight should not be more than 10% and change in Hardness should not be more than Shore A ± 10 after 7 days aging in transformer oil.
2. There should not be any visible damages after accelerated aging of 24 hours in transformer oil of temperature 110° C.

ANNEXURE - A
SCHEDULE OF TECHNICAL DEVIATIONS

Bidder shall list below all technical deviation clause wise w.r.t. tender specifications:

S.No.	Page No.	Clause No.	Deviation	Reason / Justification
-------	----------	------------	-----------	------------------------

Any deviation not specifically brought out in this section shall not be admissible for any commercial implication at later stage. Except to the technical deviations listed in this schedule, bidder's offer shall be considered in full compliance to the tender specifications irrespective of any such deviation indicated / taken elsewhere in the submitted offer.

Date:

Tenderer's Stamp & Signature

ANNEXURE-B.1

GUARANTEED AND TECHNICAL PARTICULARS (CABLE TRAYS)

(To be filled and submitted at Contract stage)

- 1.0 Name of the Project :
- 2.0 Tenderer's Name and Address :
- 3.0 Manufacturer's Name and Address:
- 4.0 Applicable Standards :
- 5.0 Application :
- 6.0 Material specification :
- 7.0 Thickness of sheet metal
for cable trays, fittings etc. :
- 8.0 Maximum permissible
loading for a 2.5 m. long
simply supported at both ends :
- 9.0 Corresponding deflection
at centre, for the loading
as in 8.0 above :
- 10.0 Weight of Zinc coating :
- 11.0 Min. Thickness of Zinc
deposit at any spot :
- 12.0 Length of single cable tray
piece :
- 13.0 Maximum permissible
loading at another end of
tray. :

Name of the firm:-----

Signature of the Tenderer:-----

Designation:-----

Date:

Place:

ANNEXURE-B.2

GUARANTEED TECHNICAL PARTICULARS (CABLE RACKS)

(To be submitted by the supplier at the contract execution stage)

- | | | |
|-----|--|---|
| 1.0 | Name of the Project | : |
| 2.0 | Tenderer's Name and Address | : |
| 3.0 | Manufacturer's Name and Address | : |
| 4.0 | Applicable Standards | : |
| 5.0 | Application | : |
| 6.0 | Material specification | : |
| 7.0 | Weight of Zinc coating | : |
| 8.0 | Min. thickness of Zinc coating at any spot | : |
| 9.0 | Dimension of angle used for fabricating
Rack assembly | : |

Name of the firm:-----

Signature of the Tenderer:-----

Designation:-----

Date:

Place:

ANNEXURE-C.1 (CABLE TRAYS)
CHECK LIST FOR INFORMATION TO BE FURNISHED WITH OFFER RETURN
THIS CHECKLIST AS PART OF THE OFFER DULY SIGNED

The offer may not be considered if the following information and this Checklist are not enclosed with the Offer.

BHEL ENQUIRY. NO:
BIDDER OFFER REFERENCE:

(1)	(2)	(3)	(4)	(5)
S. No.	Parameter	Requirement	Yes / No	Remarks in case reply in Col (4) is <i>NO</i>
1.	Equipment	Cable tray	YES / NO	
2.	Thickness of Tray			
a)	2.0 mm		YES / NO	
3.	Type of cable-tray			
a)	Ladder type		YES / NO	
b)	Perforated type		YES / NO	
4.	Material certificate	As per Relevant Standards (cl.2.2, Section-2)	YES / NO	
5.	Weight of zinc coating	460gm/m ²	YES / NO	
6.	Maximum permissible deflection at centre of 2.5m long tray simply supported at both ends after applying the uniformly distributed required load of 75 Kg per metre	≤ 7mm	YES / NO	
7.	Required accessories (as per cl. 1.3, Section-1 of Technical spec.)	Included	YES / NO	
8.	Conformance to the Applicable standard	IS:2629, IS:2633, IS:6745, IS:4759	YES / NO	
9.	Deflection Test (Type test) on tray as per Cl No. 2.6.2, Section-2	Available	YES / NO	

Name of the firm:-----

Signature of the Tenderer:-----

Designation:-----

Date:

Place:

ANNEXURE-C.2 (CABLE TRAY COVER)
CHECK LIST FOR INFORMATION TO BE FURNISHED WITH OFFER RETURN
THIS CHECKLIST AS PART OF THE OFFER DULY SIGNED

The offer may not be considered if the following information and this Checklist are not enclosed with the Offer.

BHEL ENQUIRY. NO:

BIDDER OFFER REFERENCE:

(1)	(2)	(3)	(4)	(5)
S. No.	Parameter	Requirement	Yes / No	Remarks in case reply in Col (4) is <i>NO</i>
1.	Equipment	Cover for Perforated tray	YES / NO	
2.	Thickness of Tray			
a)	1.6 mm		YES / NO	
3.	Weight of zinc coating	460gm/m ²	YES / NO	
4.	Required accessories (as per cl. 1.3, Section-1 of Technical spec.)	Included	YES / NO	
5.	Length of cover	2500mm	YES / NO	
6.	Height	15mm	YES / NO	

Name of the firm:-----

Signature of the Tenderer:-----

Designation:-----

Date:

Place:

ANNEXURE-C.3 (CABLE RACKS)
CHECK LIST FOR INFORMATION TO BE FURNISHED WITH OFFER RETURN
THIS CHECKLIST AS PART OF THE OFFER DULY SIGNED

The offer may not be considered if the following information and this Checklist are not enclosed with the Offer.

BHEL ENQUIRY. NO:
BIDDER OFFER REFERENCE:

(1) S.No.	(2) Parameter	(3) Requirement	(4) Yes / No	(5) Remarks in case reply in Col (4) is <i>NO</i>
A)	Rack assembly (Fig. 1 to 4)	As per Annexure-3	YES / NO	
B)	Hanger assembly (Fig. 5 & 6)	As per Annexure-3	YES / NO	
1.	Weight of zinc coating	610 gm/m ²	YES / NO	
2.	Min. thickness of zinc coating at any spot	85 micron	YES / NO	
3.	Material certificate	As per Relevant Standards (cl.2.2, Section-2)	YES / NO	
4.	Complete fixing hardware	Included	YES / NO	
5.	Conformance to the Applicable standard	IS:2629, IS:2633, IS:6745, IS:4759	YES / NO	

Name of the firm:-----

Signature of the Tenderer:-----

Designation:-----

Date:

Place: