

निवेदन / Enquiry



भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited
पारेषण व्यापार समूह / Transmission Business Group
सामग्री प्रबंधन / Materials Management

Project : TANTRANSCO ARIYALUR 765/400

Enquiry No	Enquiry Dt	Rev No	Rev Dt	PI No	Enquiry Type	Inspection by	Due Dt	Commercial Comments	Technical Comments	Signing Authority
277E195	10-Oct-17	0		342270233	Package		07-Nov-17			

Document Enclosed

SN	Equipment	HSN Code	Phy Unit	Qty	Plan Dt	Comments
1	AAC BULL AND ACSR BERSIMIS CONDCUTOR FOR ARIYALUR PROJECT	0	LOT	1	30-Jun-18	AAC BULL AND ACSR BERSIMIS CONDCUTOR SHALL BE SUPPLIED AS PER TECHNICAL SPECIFICATION DOC. NO. TB-394-316-145, REV -00
2	Main item - AAC Bull Conductor	0	kM	45		
3	Main item -ACSR Bersimis conductor	0	kM	24		
4	Mandatory spare- AAC Bull Conductor	0	kM	1		
5	Mandatory spare -ACSR Bersimis conductor	0	kM	1		

You are requested to submit your most competitive offer so as to reach us positively by the tender opening date & time. THE TENDERS NOT RECEIVED WITHIN SCHEDULED DATE AND TIME ARE LIKELY TO BE IGNORED. BHEL shall not be responsible for any postal delay.

IN YOUR OWN INTEREST YOU ARE ADVISED TO CAREFULLY READ "THE INSTRUCTIONS TO BIDDERS". INCOMPLETE BIDS AND/OR BIDS NOT COMPLYING WITH TENDER CONDITIONS SHALL BE TREATED AS NON RESPONSIVE AND ARE LIKELY TO BE IGNORED.

In case Tender Documents are not received within 7 days of this E-mail message, intimate BHEL accordingly. If no intimation is received, it will be considered that you have received tender enquiry and delay in submission offer due to late receipt of tender documents will not be entertained.

YOU ARE REQUESTED TO SUBMIT YOUR MOST COMPETITIVE OFFER SO AS TO REACH US POSITIVELY BY 2 PM ON THE TENDER OPENING DATE AND TENDER WILL BE OPENED AT 2:30 PM WITH EFFECT FROM 15-SEP-09.

BHEL RESERVES THE RIGHT TO OPT FOR REVERSE AUCTION FOR OBTAINING BEST PRICES.

OFFERS THROUGH E-MAIL / FAX:

WHOSOEVER DESIRES TO SEND OFFERS ON THEIR OWN RISK (COMPLETE IN ALL RESPECTS) VIA E-MAIL or FAX HAVE TO SEND THE OFFERS TO THE COMMON E-MAIL ADDRESS tenderbox@bhel.in or 0120-6748581 FAX .

THE RECEIVED EMAIL OFFERS WILL BE PRINTED BY PURCHASE COORDINATOR AND PUT THEM INTO COVERS AS PER CONVENTIONAL METHOD FOR TENDER OPENING I.E., TECHNO COMMERCIAL & PRICE OFFER SHALL BE PUT INTO TWO SEPARATE COVERS AND BOTH THE COVERS ARE KEPT IN THIRD COVER DULY SUPER SCRIBING ENQY. NO. AND DUE DATE.

OFFERS SENT TO ANY OTHER E-MAIL ID or FAX NO AND INCOMPLETE OFFERS SHALL NOT BE CONSIDERED FOR EVALUATION PURPOSE.

It is suggested that the bidders are advised to send the files with 'password protection'. procedure for giving a password to a file has been given below:

For saving Excel file with password

Steps to be followed:

1. Click on the FILE option in XP system and Start sign in Vista system then go to SAVE AS option.
2. Select the location to save and Click on the TOOLS box and go to GENERAL OPTION.
3. It will ask for the password, type the password into open or modify box or both as required.
4. Then click on the OK button it will ask for reenter of the password.
5. After reentering the password click on the save box.

For saving Word file with password

Steps to be followed:

1. Click on the FILE option in XP and Start sign in Vista then go to SAVE AS option.
2. Select the location to save and Click on the TOOLS box and go to SECURITY OPTION in XP system and GENERAL OPTION in Vista system.
3. It will ask for the password, type the password into open or modify box or both as required.
4. Then click on the OK button it will ask for reenter of the password.
5. After reentering the password click on the save box.

The vendors who has sent offers with password, the passwords are to be forwarded to another email id: supplierinfo@bhelinindustry.com

MSME STATUS

"THOSE INDUSTRIES WHO HAVE FILED A MEMORANDUM WITH THE CONCERNED AUTHORITIES AND REGISTERED AS MICRO & SMALL ENTERPRISE UNDER MICRO, SMALL AND MEDIUM ENTERPRISES DEVELOPMENT ACT 2006, HAVE TO SUBMIT A COPY OF SUCH REGISTRATION CERTIFICATE / MEMORANDUM TO BHEL FOR NECESSARY COMPLIANCES OF THE ABOVE ACT".

Please acknowledge the receipt of tender enquiry and fax back this letter by ticking the appropriate item below.

भारत हेवी इलेक्ट्रिकल्स लिमिटेड के लिए / for BHARAT HEAVY ELECTRICALS LTD

We acknowledge the receipt of tender.

- (a) The offer against subject enquiry shall be submitted by the scheduled date and time.
- (b) We regret to quote. The item in reference is out of our manufacturing range.
- (c) We regret because of our prior commitments.
- (d) Any other reason.

To
A K Chowdhary
Sr Dy General Manager
BHARAT HEAVY ELECTRICALS LIMITED
TRANSMISSION BUSINESS GROUP
TOWER-A, 5th Floor,
Advant Navis IT Business Park,
Plot No-7, Sector-142, Expressway Noida
Noida-201305
Distt. Gautam BudhNagar, U.P

Ph: 0120-6748471
Fax: 0120-6748581

हस्ताक्षर और प्रदाता का सील / Signature and Seal of Tenderer

Enquiry No : 277E195 Enquiry Dt : 10-Oct-17

1. For any technical clarification, Pls contact Shri Saroj Kumar, Sr. Manager (TBEM); Contact No. 0120 6748527; e-mail: sarojkumar@bhel.in
2. For any commercial clarification, Pls contact Shri Naveen Kumar, Sr. Engineer (TBMM); Contact No. 0120 6748472; e-mail: naveen.kumar@bhel.in
3. Proposed delivery plan: June-2018. However, vendor has to quote their best possible delivery plan in activity schedule 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. Project Status: Domestic. No GST is exempted or otherwise.
5. Permissible Technical Deviations: No permissible Technical Deviation has been envisaged.
6. Bidder has to submit the following certificate along with the offer:

Anti-Profiteering certificate under Sec 171 of the GST Act that the benefit of reduction in rate of tax and/or from input tax credit has been duly passed on to BHEL by way of commensurate reduction in prices+.

7. Clause No. 33 for Reverse Auction of NIT shall be as follows:

"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.

8. Guarantee for goods and works shall remain valid for 36 months for the specified works from the date commissioning of works in all respect and taking over by the TANTRANSCO (date is 31/03/2019).
9. Bidders are required to submit their credentials along-with their offer for customer approval. Type test certificate & Performance certificate from end user (State utility / PGCIL / NTPC etc.) as per contract specification is to be ensured.
10. Vendor to quote as per specified price format of NIT, otherwise their offer shall be liable to be rejected.
11. Clause No. . 7 - If no option is specified, by default option . B shall be considered for confirmation.
12. Following confirmation to be provided by vendor:

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

13 Integrity Pact: Not Applicable.

14 Pre-Qualifying Requirement is as under:

- a) Guarantee for goods and works shall remain valid for 36 months for the specified works from the date commissioning of works in all respect and taking over by the TANTRANSCO (date is 31/03/2019).
- b) The qualified manufacturer should have manufactured, Type-tested & supplied at least 50% of the required quantity of the ACSR Bersimis and AAC Bull conductor in any one year during the last 5 years from the date of bid opening.

Sl. No.	Description	Total Quantity	Minimum Supplied in any one year during last 5 years. (50% of the Total Quantity)
1.	AAC Bull Conductor	46 KM	23 KM
2.	ACSR Bersimis Conductor	25 KM	12.5 KM

15. Bidders, not registered with BHEL TBG, need to submit application for Assessment of Registration through Online supplier registration portal at: www.bhel.com under supplier registration.
In case any clarifications are required by BHEL TBG, it should be furnished properly at the earliest but not later than 15 days from the date clarification is sought by BHEL. In case of non-reply/improper reply, BHEL reserves the right to complete the Assessment based on available documents and decide acceptance or rejection of bid accordingly. Price Bids shall be opened only for those Bidders who are registered with BHEL TBG, either previously or after quoting for this tender.

Name:

Signature:

Stamp:

**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.	<p>INSTRUCTION TO BIDDERS :</p> <p>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.</p> <p>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 :-</p> <p style="padding-left: 40px;">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</p> <p>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).</p> <p>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.</p> <p>1.5 Bids are to be submitted duly signed with seal in two parts :-</p> <p style="padding-left: 40px;">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.</p> <p style="padding-left: 40px;">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.</p> <p>1.6 The Part-I and Part-II Bids are to be sealed in separate envelopes and</p>

Sr. No.	
	<p>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.</p> <p>1.7 For any technical clarification, please contact official mentioned in the tender enquiry / NIT.</p> <p>1.8 For any commercial clarification please contact official issuing tender enquiry / NIT.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>1.13 Non-conformities / errors / discrepancies in quoted prices in price bids shall be dealt as follows :-</p> <p>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.</p> <p>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.</p>

Sr. No.	
	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Note : Representative / official deputed by the bidder to witness tender opening must produce authorization letter for the same.</p>
2.	<p>PRICES :</p> <p>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.</p> <p>2.2 Unless specifically indicated in the NIT, the prices shall be on INR basis.</p> <p>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 :-</p> <p>a) Ex-works Price: Ex-works price including packing & forwarding charges.</p>

Sr. No.	
	<p>b) Freight: Freight for door delivery up to destination / site / store are to be quoted separately.</p> <p>c) Insurance: Insurance for door delivery up to destination / site / store are to be quoted separately.</p> <p>d) Type Test Charges: If asked in the technical specification, it is to be quoted separately for each test.</p> <p>e) Charges for Supervision of Erection, Testing & Commissioning (ETC) at Site: To be quoted separately if specified in NIT/Price Schedule.</p> <p>f) Charges for Testing & Commissioning at Site: To be quoted separately if specified in NIT/Price Schedule.</p> <p>g) Charges for Erection, Testing & Commissioning at Site: To be quoted separately if specified in NIT/Price Schedule.</p> <p>h) Training Charges: To be quoted separately if specified in NIT/Price Schedule.</p> <p>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.</p> <p>Note :</p> <p>i) Unless otherwise specified in the NIT, the purchase order shall be placed on Ex-works basis for Indian bidders.</p> <p>ii) Prices quoted by Indian bidders shall be in Indian Rupees only.</p> <p>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.</p> <p>iv) Unless otherwise specified in the NIT, Unloading at Site / Destination shall not be in the scope of the supplier.</p> <p>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.</p>
3.	<p>TERMS OF PAYMENT :</p> <p>3.1 For Supply only in scope of the supplier</p> <p>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 :</p> <ul style="list-style-type: none"> • 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.	
	<p>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</p> <p>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 :</p> <ul style="list-style-type: none"> • 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. <p>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 :</p> <ul style="list-style-type: none"> • 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 <p>3.3 For Supply where Erection, Testing & Commissioning (ETC) at Site is in scope of the supplier</p> <p>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 :</p> <ul style="list-style-type: none"> • 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 <p>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 :</p> <ul style="list-style-type: none"> • 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 <p>3.4 For Type Test Charges</p> <p>100% payment along with applicable GST within 60 days from the date of receipt</p>

Sr. No.	
	<p>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.</p> <p>3.5 For Charges for Supervision of Erection, Testing & Commissioning at Site</p> <p>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).</p> <p>3.6 For Charges for Testing & Commissioning at Site</p> <p>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).</p> <p>3.7 For Training Charges</p> <p>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).</p> <p>Note :</p> <ul style="list-style-type: none"> 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.	
	<p>PO terms.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>
4.	<p>INTEREST LIABILITY :</p> <p>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.</p>
5.	<p>GUARANTEE :</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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</p>

Sr. No.	
	<p>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.</p> <p>Note :</p> <ul style="list-style-type: none"> 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.	<p>LATENT DEFECT :</p> <p>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.</p>
7.	<p>PERFORMANCE BANK GUARANTEE (PBG) :</p> <p>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 :-</p> <p><u>Option "A"</u></p> <p>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.</p> <p>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.</p> <p><u>Option "B"</u></p> <p>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.</p> <p><u>Option "C"</u></p> <p>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.</p> <p>Note :</p> <ul style="list-style-type: none"> 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.	
	<p>before expiry of validity of the PBG.</p> <p>iii) Unless otherwise specified in the NIT, deviation taken for non-submission of PBG / Deposit, as applicable, shall not be accepted.</p> <p>iv) Supplier has to confirm one of the applicable options for submission of PBG / Deposit before placement of PO.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>
8.	<p>SUBMISSION OF DRAWINGS / DOCUMENTS FOR APPROVAL :</p> <p>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.</p> <p>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.</p>
9.	<p>FINAL DOCUMENTATION :</p> <p>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.</p>
10.	<p>INSPECTION :</p> <p>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.</p> <p>Supplier shall send inspection call on prescribed format / web site only, with an</p>

Sr. No.	
	<p>advance notice of 15 days.</p> <p>Supplier to ensure submission of all routine / acceptance test reports, inspection reports and all other documents related to inspection, immediately to BHEL.</p> <p>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.</p>
11.	<p>DESPATCH DOCUMENTS :</p> <p>Despatch documents to be immediately sent to BHEL on despatch are as follows :-</p> <ul style="list-style-type: none"> • 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.	<p>DELIVERY PERIOD :</p> <p>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.</p> <p>Time required for type test, if applicable, is to be separately indicated.</p> <p>Note :</p> <p>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.</p>
13.	<p>LIQUIDATED DAMAGES FOR DELAYED DELIVERY:</p> <p>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.</p> <p>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.</p> <p>Note :</p> <ol style="list-style-type: none"> 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.	
	<p>purpose.</p> <p>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.</p>
14.	<p>VALIDITY OF OFFER :</p> <p>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).</p> <p>Prices of Spares, wherever they optional items, shall be valid till two years from the date of placement of PO.</p>
15.	<p>ACCEPTANCE / REJECTION OF TENDER :</p> <p>BHEL reserve the right to reject in full or part, any or all tender without assigning any reason thereof.</p> <p>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.</p> <p>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.</p>
16.	<p>DEVIATION :</p> <p>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.</p>
17.	<p>TENDER EVALUATION :</p> <p>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.</p> <p>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.</p> <p>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.</p>
18.	<p>LOADING CRITERIA :</p> <p>List of permissible deviations & loading criteria thereof are as follows :-</p> <p>a) Payment Terms</p> <p>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</p>

Sr. No.	
	<p>period of relaxation sought by bidder(s) against terms of payment in the NIT.</p> <p>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).</p> <p>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 :-</p> <ul style="list-style-type: none"> 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. <p>Note : Additional deviations (if considered acceptable by BHEL) & the loading criteria shall be communicated to all the qualified bidders before price bid opening.</p>
19.	<p>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.</p>
20.	<p>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.</p>
21.	<p>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.</p> <p>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</p>

Sr. No.	
	<p>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.</p> <p>Terms and Conditions shall not get affected in case of de-merger / amalgamation / taking-over / re-constitution etc.</p>
22.	<p>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.</p> <p>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.</p> <p>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.</p>
23.	<p>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.</p>
24.	<p>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.</p> <p>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 /</p>

Sr. No.	
	<p>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.</p> <p>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.</p> <p>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.</p>
25.	<p>MANUFACTURING QUALITY PLAN (MQP) : Supplier to submit approved MQP in line with requirement of BHEL/customer.</p>
26.	<p>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.</p>
27.	<p>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.</p>
28.	<p>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.</p>
29.	<p>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.</p> <p>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.</p> <p>Note :</p> <p>Foreign suppliers to furnish details to arrange inland transportation by BHEL, if applicable, as follows :-</p>

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.	
	<p>considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.</p> <p>General Terms and Conditions of RA are available at Annexure. Business Rules for RA shall be sent to the bidders before conducting RA.</p> <p>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.</p>
34.	<p>INTEGRITY PACT :</p> <p>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.</p>
35.	<p>TERMINATION OF CONTRACT :</p> <p>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.</p> <p>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.</p> <p>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.</p>
36.	<p>SHELF LIFE :</p> <p>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.</p>
37.	<p>LIMITATION OF LIABILITY :</p> <p>Notwithstanding any other provisions, except in cases of wilful misconduct and / or criminal negligence / acts,</p> <p>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</p> <p>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.</p>
38.	<p>SHORTAGES / DAMAGES :</p> <p>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 :</p> <p>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.</p>

Sr. No.	
	<p>b) Against Supply where Erection, Testing & Commissioning (ETC) at Site is in scope of the supplier :</p> <p>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.</p> <p>Note: There shall not be any extension in the contractual delivery time / schedule due to any shortages and / or damages in supplies.</p>
39.	<p>VARIATION OF CONTRACT VALUE / QUANTITY VARIATION :</p> <p>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.</p>
40.	<p>STATUTORY VARIATION :</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>However, any additional tax implication due to delay in delivery, beyond the Contractual Delivery, attributable to supplier shall be borne by supplier.</p>
41.	<p>MODE OF PAYMENT :</p> <p>Payment shall be made directly to the Supplier / Contractor by BHEL through NEFT / RTGS.</p>
42.	<p>CONFIDENTIALITY :</p> <p>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.</p>

Sr. No.	
43.	<p>INDEMNIFICATION :</p> <p>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.</p>
44.	<p>TITLE OF GOODS :</p> <p>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.</p> <p>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.</p> <p>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.</p>
45.	<p>COMPLIANCE OF STATUTORY REQUIREMENTS :</p> <p>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.</p> <p>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.</p>
46.	<p>ACCEPTANCE OF ORDER :</p> <p>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.</p> <p>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.</p>
47.	<p>FRAUD PREVENTION POLICY :</p> <p>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.</p>

Signature of Bidder (Authorized Signatory) with Date & Seal

Annexure for List of Banks (32 Nos.)

Sr. No.	Name of Bank
1	Allahabad Bank
2	Andhra Bank
3	Bank of Baroda
4	Canara Bank
5	Corporation Bank
6	Central Bank
7	Indian Bank
8	Indian Overseas Bank
9	Oriental Bank of Commerce
10	Punjab National Bank
11	Punjab & Sindh Bank
12	State Bank of India
13	State Bank of Hyderabad
14	Syndicate Bank
15	State Bank of Travancore
16	UCO Bank
17	Union Bank of India
18	United Bank of India
19	Vijaya Bank
20	IDBI
21	CITI Bank N. A.
22	Deutsche Bank AG
23	The Hongkong and Shanghai Banking Corporation Limited
24	Standard Chartered Bank
25	J P Morgan
26	Axis Bank
27	The Federal Bank Limited
28	HDFC
29	Kotak Mahindra Bank
30	ICICI
31	Indusind Bank
32	Yes Bank

SCHEDULE OF PRICES

(BIDDER TO STRICTLY ENSURE SUBMITTING THE PRICE BIDS IN THIS FORMAT)

ENQUIRY NO: 277E195 Dtd: 10/10/17

PROJECT: TANTRANSCO ARIYALUR

	S.No.	Description of Item	Destination	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	16
	A	Main item - AAC Bull Conductor	Ariyalur	76149000	KM	45										
	B	Main item - ACSR Bersimis Conductor	Ariyalur	76141000	KM	24										
	C	Mandatory Spare - AAC Bull Conductor	Ariyalur	76149000	KM	1										
	D	Mandatory Spare - ACSR Bersimis Conductor	Ariyalur	76141000	KM	1										

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.

2. If the HSN code is different from the above mentioned HSN code, please mention it.

TENDERER

**TRANSMISSION BUSSINESS GROUP
MATERIAL MANGEMENT
BHEL TBG NOIDA
ACTIVITY SCHEDULE**

Please submit this format duly filled in along with offer. Time indicated will be used for calculating contractual delivery period.

ENQUIRY NO: 277E195

Dated: 10/10/17

PROJECT: TANTRANSCO ARIYALUR 765/400

ITEM: AAC BULL & ACSR BERSIMIS CONDUCTOR

VENDOR.....

OFFER REF.....

SL. NO.	ACTIVITY	ACTIVITY TIME IN WEEKS	REMARKS IF ANY
1.	Receipt of P.O		
2.	P.O Acceptance	ONE WEEK	Vendor must Submit PO acceptance within one week
3.	Submission of documents necessary for getting manufacturing clearance like Drawings, date sheet etc.		Documents complete in all respect are to be Submitted. Delay in approval on account of incomplete / inadequate information shall be the responsibility of supplier
4.	Review and Approval of documents and issue of manufacturing clearance	BHEL ACTIVITY (2 weeks)	Vendor must reply all queries expeditiously.
5.	Manufacturing Time		Manufacturing time be indicated considering all constrains & must include time required for internal inspections etc.
6	Raise inspection call	-VE 2 WEEKS TO SL NO 5	Call for inspection must be raised at least two weeks in advance in the prescribed format. Non availability of offered material for inspection to the inspector will be viewed very seriously & may result in financial implications. The date of inspection must be with in the period indicated in 5 above.
7	Inspection	BHEL (1 week)	
8	Issue of MICC, MDCC & other documents like EDEC, Road permits etc	BHEL (1 week)	Vendor must indicate requirement well in advance.
9	Dispatch	ONE WEEK	Vendor must ensure to dispatch with in one Week of receiving all documents required

Total time in vendor's scope.

1. Please mention constraints if any. For multiple lot delivery activity landmark for each lot should be mentioned. Multiple inspection calls for one lot are to be avoided & delay on this account shall be vendor's responsibility. Vendors to quote their Best Delivery Plan.
2. Inspection call should be given in the prescribed format only. Inspection calls not in the prescribed format shall not be entertained.
3. Qty. to be offered for Inspection should be in accordance within Delivery- schedule - lot BHEL reserves the right not to entertain multiple inspection calls for a Delivery- lot and delay on this account shall be the responsibility of Supplier.
4. Bidders to mention the period in weeks in the Activity Schedule Format ensuring scheduled delivery preferably within three months from the date of placement of Purchase Order.

SIGNATURE AND SEAL OF COMPANY

SCHEDULE OF COMMERCIAL DEVIATION

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

SL. NO.	CLAUSE NO. OF GENERAL TERMS & CONDITIONS	STATEMENT OF DEVIATION

Incase, 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 Bidders requirement and shall be annexed to this schedule.

Place _____

Signature of the authorized representative of

Date _____

Bidders Name _____

Designation _____

Company seal _____

ENQUIRY NO: 277E195

DATED: 10/10/17

SCHEDULE OF TECHNICAL DEVIATION

The following are the deviations / variations exception from the Technical Specifications:-

SL. NO.	CLAUSE NO. OF TECHNICAL SPECIFICATIONS	STATEMENT OF DEVIATION

Incase, 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 Technical Specifications.

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 Bidders requirement and shall be annexed to this schedule.

Place _____

Signature of the authorized representative of

Date _____

Bidders Name _____

Designation _____

Company seal _____

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"

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 per the latest audited financial year as per MSMED Act 2006 is as follows:

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

(Strike off whichever is not applicable)

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.

Or

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

Date:



(Signature)

Name -

Membership number -

Seal of Chartered Accountant



BHARAT HEAVY ELECTRICALS LIMITED
TRANSMISSION BUSINESS GROUP
MATERIAL RECEIPT CERTIFICATE

- a) Site:
b) LR No. with date:
c) Vehicle no.:
d) Date 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)



BHARAT HEAVY ELECTRICALS LIMITED

TRANSMISSION PROJECTS ENGINEERING MANAGEMENT

DOCUMENT No.	TB-394-316-145	Rev. No.	00		Prepared	Checked	Approved
TYPE OF DOC.	TECHNICAL SPECIFICATION			NAME	SK	SK	RS/DM
TITLE AAC BULL AND ACSR BERSIMIS CONDUCTOR				SIGN	<i>SK</i>	<i>SK</i>	<i>RS</i>
				DATE	05.10.17	05/10/17	5/10/17
				GROUP	TBEM	W.O. No	86009

CUSTOMER	Tamilnadu Transmission Corporation Limited (TANTRANSCO)
----------	---

PROJECTS	765/400kV AIS S/S Ariyalur
----------	----------------------------

CONTENTS

Section	Description	No. of Sheets
1.	Scope, Specific Technical Requirements & Quantities - Section-1	02
2.	Equipment Specification - Section-2	11
3.	Project Details And General Technical Requirements - Section-3	6
4.	Check List (To be submitted at Tender Stage) - Section-4	01
	Enclosures:	
	Annexure – 1 (NO DEVIATION Certificate)	01
	Annexure-E- (TANTRANSCO Standard GTP of AAC Bull and ACSR Bersimis conductor)	06

Rev No.	Date	Altered	Checked	Approved	REVISION DETAILS			
				Distribution	TBMM	TBQM	TBCM	TBTS
				Copies	-	-	01	-

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It must not be used directly or indirectly in anyway detrimental to the interest of the company

SECTION - 1**1.1 SCOPE:**

This technical specification covers the requirements of design, manufacture, testing at works, packing and dispatch of AAC Bull Conductor and ACSR Bersimis conductor.

The equipment is required for the following project:

Customer : **Tamilnadu Transmission Corporation Limited (TANTRANSCO)**

Project : **765/400kV AIS S/S Ariyalur**

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

1.2 SPECIFIC TECHNICAL REQUIREMENTS: As per section -2**1.3 BILL OF QUANTITIES :****1.3.1 Main Quantities**

Sl. No	Description	Qty.
1.	AAC Bull Conductor	45.0 kM
2.	ACSR Bersimis conductor	24.0 kM

1.3.2 Mandatory spare Quantities

Sl. No	Description	Qty.
1.	AAC Bull Conductor	1.0 kM
2.	ACSR Bersimis conductor	1.0 kM

NOTE:

- 1) Total quantity may vary upto $\pm 25\%$.

1.4 TYPE TESTING:

Bidder shall submit valid type test reports (As per relevant IEC/IS standard) for the tests carried out within last ten years **from the date of opening of the tender (i.e. 30.09.2016)**. The reports should have been conducted on identical or similar equipment/components to those offered. In case type test reports are more than 10 years old (from the date of opening of the tender) or the reports of type tests are found to be technically unacceptable , the type test shall be conducted by the vendor without cost and delivery implication to BHEL. The type test if conducted shall be witnessed by BHEL/Customer.

1.5 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.

1.6 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 / customer's approval within 1 week of P.O. placement.

1.7 DRAWING/DOCUMENTS APPROVAL:

Standardized GTP of TANTRANSCO is enclosed as Annexure-B, no approval on GTP is required and inspection shall be carried out as per standardized GTP.

Drum drawings and type test reports shall be submitted for approval.

SECTION-11 02
AAC BULL & BESIMIS CONDUCTOR

1.1 Details of AAC Conductor

1.1.2 The Conductor shall conform to IEC: 1089/IS: 398 (Part V) - 1992 except where otherwise specified herein.

The contractor shall supply the conductor as per the standard guaranteed technical particulars enclosed in Annexure¹ of the technical specification in this Section .

~~Switchyard Erection~~ and separate approval for **guaranteed technical particulars** is not required during detailed engineering.

1.1.2The details of the AAC Bull conductor is tabulated below:

Sl. No.	Description	Unit	AAC BULL
a)	Stranding and wire diameter	mm	61/4.25
b)	Number of Strands		
	1st Aluminium Layer	Nos.	1
	2nd Aluminium Layer	Nos.	6
	3rd Aluminium Layer	Nos.	12
	4th Aluminium Layer	Nos.	18
	5th Aluminium Layer	Nos.	24
c)	Total sectional area	Sq.mm	865.36
d)	Overall diameter	mm	38.25
e)	Approximate weight	kg/ km	2400
f)	Calculated d.c. resistance at 20oC	ohm/km	0.0334
g)	Minimum UTS	kN	139

1.1.3 The details of Aluminium strand are as follows:

Sl. No.	Description	Unit	AAC BULL
a)	Minimum breaking load of strand before stranding	KN	2.23
b)	Minimum breaking load of strand after stranding	KN	2.12
c)	Maximum D.C. resistance of strand at 20 deg. Centigrade	Ohm/KM	3.651

1.2 Details of ACSR Conductor

1.2.1 The Conductor shall conform to IEC: 1089/IS: 398 (Part V) - 1992 except where otherwise specified herein.

1.2.2 The details of the ACSR Bersimis, conductors shall be as per the standard guaranteed technical particulars enclosed in Annexure ^E of the technical specification, in this Section and separate approval for **guaranteed technical particulars** is not required during detailed engineering.

1.2.3 The details of ACSR Bersimis is tabulated below

Sl. No.	Description	Unit	ACSR BERSIMIS
a)	Stranding and wire diameter	mm	42/4.57 (Al)+ 7/2.54 (Steel)
b)	Number of Strands		
	Steel Centre	Nos.	1
	1 st Steel Layer	Nos.	6
	1st Aluminium Layer	Nos.	8
	2nd Aluminium Layer	Nos.	14
	3rd Aluminium Layer	Nos.	20
c)	Sectional area of Aluminium	Sq.mm	689.5
d)	Total sectional area	Sq.mm	725.00

e)	Overall Diameter	mm	35.05
f)	Approximate weight	kg/ km	2181
f)	Calculated d.c. resistance at 20oC	ohm/km	0.04189
g)	Minimum UTS	kN	154

1.2.4 The details of Aluminium strand are as follows:

Sl. No.	Description	Unit	ACSR BERSIMIS
a)	Minimum breaking load of strand before stranding	KN	2.64
b)	Minimum breaking load of strand after stranding	KN	2.51
c)	Maximum D.C. resistance of strand at 20 deg. Centigrade	Ohm/KM	1.738

1.2.5 The details of Steel strand are as follows:

Sl. No.	Description	Unit	ACSR BERSIMIS
a)	Minimum breaking load of strand before stranding	KN	6.87
b)	Minimum breaking load of strand after stranding	KN	6.53
c)	Minimum number of twists to be withstood in torsion test when tested on a gauge length of 100 times diameter of wire	Nos	18 (Before stranding) 16 (Before stranding)

1.3 Workmanship

1.3.1 The finished conductor shall be smooth, compact, uniform and free from all imperfections including kinks (**protrusion** of wires), wire cross over, over riding, looseness (wire being dislocated by finger/hand pressure and/or unusual bang noise on tapping), material inclusions, white rust, powder formation or black spot (on account of reaction with trapped rain water etc.), dirt, grit etc.

1.3.2 All the Aluminium and steel strands shall be smooth, uniform and free from all imperfections, such as spills and splits, diemarks, scratches, abrasions, etc., after drawing.

1.3.3 The steel strands shall be hot dip galvanised and shall have a minimum zinc coating as indicated in the guaranteed technical particulars. The zinc coating shall be smooth, continuous and of uniform thickness, free from imperfections and shall withstand minimum three dips in standard Preece test. The steel wire rods shall be of such quality and purity that, when drawn to the size of the strands specified and coated with zinc, the finished strands and the individual wires shall be of uniform quality and have the same properties and characteristics as prescribed in IEC: 888.

1.3.4 The steel strands shall be preformed and post formed in order to prevent spreading of strands in the event of cutting of composite core wire. Care shall be taken to avoid, damages to galvanisation during pre-forming and post-forming operation.

1.4 Joints in Wires

1.4.1 Aluminium Wires

1.4.1.1 During stranding, no aluminium wire welds shall be made for the purpose of achieving the required conductor length.

1.4.1.2 No joints shall be permitted in the individual wires in the outer most layer of the finished conductor. However joints are permitted in the inner layer of the conductor unavoidably broken during stranding, provided such breaks are not associated with either inherently defective wire or with the use of short lengths of aluminium wires. Such joints shall not be more than four (4) per conductor length and shall not be closer than 15 meters from joint in the same wire or in any other aluminium wire of the completed conductor.

1.4.1.3 Joints shall be made by cold pressure butt welding and shall withstand a stress of not less than the breaking strength of individual strand guaranteed.

1.4.2 Steel Wires

There shall be no joint of any kind in the finished wire **used for the manufacturing** of the strand. There shall also be no strand joints or strand splices in any length of the completed stranded steel core of the conductor.

1.5 Tolerances

The manufacturing tolerances to the extent indicated in the guaranteed technical particulars shall be permitted in the diameter of individual aluminium and steel strands and lay-ratio of the conductor.

1.6 Materials

1.6.1 Aluminium

The aluminium strands shall be hard drawn from electrolytic aluminium rods having purity not less than 99.5% and a copper content not exceeding 0.04%. They shall have the same properties and characteristics as prescribed in IEC:889.

1.6.2 Steel

The steel wire strands shall be drawn from high carbon steel wire rods produced by either the acid or the basic open-hearth process, the electric furnace process, or the basic oxygen process and shall conform to the chemical composition indicated in the guaranteed technical particulars.

The Steel wire strands shall have the same properties and characteristics as prescribed for regular strength steel wire in IEC: 888.

1.6.3 Zinc

The zinc used for galvanising shall be electrolytic High Grade Zinc of 99.95% purity.

It shall conform to and satisfy all the requirements of IS:209 -1979.

1.7 Standard Length

1.7.1 The conductor shall be supplied as required. No joint shall be allowed within a single span of stringing, jumpers and equipment interconnection.

1.8 Tests:

3.8.1 The following type, acceptance & routine tests and tests during manufacturing shall be carried out on the conductor.

1.8.1.1 Type Tests

In accordance with the stipulation of specification, the following type tests reports of

the conductor shall be submitted for approval ~~as per clause 9.2 of Section GTR.~~

- | | | |
|--|---|-------------------|
| a) UTS test on stranded conductor. |) | |
| |) | |
| |) | |
| b) Corona extinction voltage test (dry) |) | As per Annexure-A |
| |) | |
| |) | |
| (c) Radio Interference voltage test (dry) |) | |
| |) | |
| |) | |
| (d) DC resistance test on stranded conductor |) | |

1.8.1.2 Acceptance Tests

- | | | |
|---|---|---------------------|
| a) Visual check for joints, scratches etc. and lengths of conductor |) | |
| |) | As per Annexure - A |
| |) | |
| b) Dimensional check on steel and aluminium strands |) | |
| |) | |
| |) | |
| c) Check for lay ratios |) | do |

various layers)	
)	
d) Galvanising test on steel strands)	
)	
e) Torsion and Elongation test on steel strands)	
f) Breaking load test on steel and aluminium strands)	
)	
g) Wrap test on steel and aluminium strands)	As per IEC:888 & 889
)	
h) DC resistance test on aluminium strands)	As per IEC:889
)	
i) UTS test on welded joint of aluminium strands)	As per Annexure - A
)	

NOTE:

All the above tests except test mentioned at (a) shall be carried out on aluminium and steel strands after stranding only.

1.8.1.3 Routine Tests

- Check to ensure that the joints are as per specification.
- Check that there are no cuts, fins etc. on the strands.
- All acceptance tests as mentioned above to be carried out on each coil/drum (as applicable).

1.8.1.4 Tests During Manufacture

- Chemical analysis of zinc used for galvanising)
)
)
- Chemical analysis of aluminium used for making aluminium strands)
) As per Annexure - A
)
)
- Chemical analysis of steel used for making steel strands)
)
)

1.9 Galvanised Steel Earth wire

1.9.1 Details of Earth wire

1.9.1.1 The galvanised steel earth wire shall generally conform to the specification of ACSR core wire as mentioned in IEC:60888/IS: 398 (Part-II)-1976 except where otherwise specified herein.

The contractor shall supply the earthwire as per the standard guaranteed technical

b) ~~Chemical analysis of steel~~)

ANNEXURE "A"

(Testing Procedure for ACSR/AAC Conductor)

1.0 UTS Test on Stranded Conductor

Circles perpendicular to the axis of the conductor shall be marked at two places on a sample of conductor of minimum 5m length suitably compressed with dead end clamps at either end. The load shall be increased at a steady rate upto 50% of minimum specified UTS and held for one minute. The circles drawn shall not be distorted due to Relative movement of strands. Thereafter the load shall be increased at a steady rate to 100% of minimum specified UTS and held for one minute. The conductor sample shall not fail during this period. The applied load shall then be increased until the failing load is reached and the value recorded.

2.0 Corona Extinction Voltage Test

Two samples of conductor of 5m length shall be strung with a spacing of 450 mm between them at a height not exceeding 8.0 m above ground. This assembly shall be tested as per Annexure-C, Corona extinction voltage shall not be less than 510 kV (rms) & 320 KV (RMS) Line to ground for 765 kV & 400 kV respectively.

3.0 Radio Interference Voltage Test

Under the conditions as specified under (2.0) above, the conductor samples shall have radio interference voltage as indicated in the guaranteed technical particulars enclosed with. This test may be carried out with corona control rings and arcing horns. The test procedure shall be in accordance with IEC-437.

4.0 D.C Resistance Test on Stranded Conductor

On a conductor sample of minimum 5 m length two contact clamps shall be fixed with a pre-determined bolt torque. The resistance shall be measured by a Kelvin double bridge by placing the clamps initially zero metre and subsequently one metre apart. The test shall be repeated at least five times and the average value recorded. The value obtained shall be corrected to the value at 20°C as per clause no. 12.8 of IS:398 (Part V)-1982. The resistance corrected at 20°C shall conform to the requirements of this specification.

5.0 Chemical Analysis of Zinc

Samples taken from the zinc ingots shall be chemically/spectrographically analysed. The same shall be in conformity to the requirements stated in this specification.

6.0 Chemical Analysis of Aluminium and Steel

Samples taken from the Aluminium ingots/coils/strands shall be chemically/spectrographically analysed. The same shall be in conformity to the requirements stated in this specification.

7.0 Visual Check for Joints, Scratches etc.

Conductor drums shall be rewound in the presence of the inspector. The inspector shall visually check for scratches, joints, etc. and that the conductor generally conform to the requirements of this specification. The length of conductor wound on the drum shall be measured with the help of counter meter during rewinding.

8.0 Dimensional Check for Steel and Aluminium Strands.

The individual strands shall be dimensionally checked to ensure that they conform to the requirements of this specification.

9.0 Check for Lay-ratios of various Layers.

The lay-ratios of various layers shall be checked to ensure that they conform to the requirements of this Specification.

10.0 Galvanising Test

The test procedure shall be as specified in IEC:888. The material shall conform to the requirements of this Specification. The adherence of zinc shall be checked by wrapping around a mandrel four times the diameter of steel wire.

11.0 Torsion and Elongation Tests on Steel Strands

The test procedures shall be as per clause No. 10.3 of IEC:888. In torsion test, the number of complete twists before fracture shall not be less than that indicated in the GTP. In case test sample length is less or more than 100 times the stranded diameter of the strand, the minimum number of twists will be proportioned to the length and if number comes in the fraction then it will be rounded off to next higher whole number. In elongation test, the elongation of the strand shall not be less than 4% for a gauge length of 250 mm.

12.0 Procedure Qualification test on welded Aluminium strands

Two Aluminium wires shall be welded as per the approved quality plan and shall be subjected to tensile load. The breaking strength of the welded joint of the wire shall not be less than the breaking strength of individual strands.

4.10 Clamps and connectors shall be designed to be corona controlled.

5.0 Tests

5.1 Clamps and connectors should be type tested as per IS:5561 and shall also be subjected to routine tests as per IS:5561. Following type test reports shall be submitted for approval as per clause 9.2 above except for sl. no.(ii) & (iii) for which type test once conducted shall be applicable (i.e. the requirement of test conducted within last ten years shall not be applicable).

- i) Temperature rise test (maximum temperature rise allowed is 35°C over 50°C ambient)
- ii) Short time current test
- iii) Corona (dry) and RIV (dry) test (for 220 KV and above voltage level clamps)
- iv) Resistance test and tensile test

ANNEXURE-A C

CORONA AND RADIO INTERFERENCE VOLTAGE (RIV) TEST

1. General

Unless otherwise stipulated, all equipment together with its associated connectors, where applicable, shall be tested for external corona (for 400kV & above) both by observing the voltage level for the extinction of visible corona under falling power frequency voltage and by measurement of radio interference voltage (RIV) for 132kV above.

2. Test Levels: The test voltage levels for measurement of external RIV and for corona extinction voltage are listed under the relevant clauses of the specification.

3. Test Methods for RIV:

3.1 RIV tests shall be made according to measuring circuit as per International Special-Committee on Radio Interference (CISPR) Publication 16-1(1993) Part -1. The measuring circuit shall preferably be tuned to frequency with 10% of 0.5 MHz but other frequencies in the range of 0.5 MHz to 2 MHz may be used, the measuring frequency being recorded. The results shall be in microvolts.

3.2 Alternatively, RIV tests shall be in accordance with NEMA standard Publication No. 107-1964, except otherwise noted herein.

3.3 In measurement of, RIV, temporary additional external corona shielding may be provided. In measurements of RIV only standard fittings of identical type supplied with the equipment and a simulation of the connections as used in the actual installation will be permitted in the vicinity within 3.5 meters of terminals.

3.4 Ambient noise shall be measured before and after each series of tests to ensure that there is no variation in ambient noise level. If variation is present, the lowest ambient noise level will form basis for the measurements. RIV levels shall be measured at increasing and decreasing voltages of 85%, 100%, and 110% of the specified RIV test voltage for all equipment unless otherwise specified. The specified RIV test voltage for 765kV, 400 kV, 220 KV is listed in the detailed specification together with maximum permissible RIV level in microvolts.

3.5 The metering instruments shall be as per CISPR recommendation or equivalent device so long as it has been used by other testing authorities.

3.6 The RIV measurement may be made with a noise meter. A calibration procedure of the frequency to which noise meter shall be tuned shall establish the ratio of voltage at the high voltage terminal to voltage read by noise meter.

4. Test Methods for Visible Corona

The purpose of this test is to determine the corona extinction voltage of apparatus, connectors etc. The test shall be carried out in the same manner as RIV test described above with the exception that RIV measurements are not required during test and a search technique shall be used near the onset and extinction voltage, when the test voltage is raised and lowered to determine their precise values. The test voltage shall be raised to 110% of specified corona extinction voltage and maintained there for five minutes. In case corona inception does not take place at 110%, test shall be stopped, otherwise test shall be continued and the voltage will then be decreased slowly until all visible corona disappears. The procedure shall be repeated at least 4 times with corona inception and extinction voltage recorded each time. The corona extinction voltage for purposes of determining compliance with the specification shall be the lowest of the four values at which visible corona (negative or positive polarity) disappears. Photographs with laboratory in complete darkness shall be taken under test conditions, at all voltage steps i.e. 85%, 100%, and 110%. Additional photographs shall be taken at corona inception and extinction voltages. At least two views shall be photographed in each case using Panchromatic film with an ASA daylight rating of 400 with an exposure of two minutes at a lens aperture of f/5.6 or equivalent. The photographic process shall be such that prints are available for inspection and comparison with conditions as determined from direct observation. Photographs shall be taken from above and below the level of

connector so as to show corona on bushing, insulators and all parts of energised connectors. The photographs shall be framed such that test object essentially, fills the frame with no cut-off.

For recording purpose, modern devices utilizing UV recording methods such as image intensifier may also be used.

4.1 The test shall be recorded on each photograph. Additional photograph shall be taken from each camera position with lights on to show the relative position of test object to facilitate precise corona location from the photographic evidence.

4.2 In addition to photographs of the test object preferably four photographs shall be taken of the complete test assembly showing relative positions of all the test equipment and test objects. These four photographs shall be taken from four points equally spaced around the test arrangement to show its features from all sides. Drawings of the laboratory and test set up locations shall be provided to indicate camera positions and angles. The precise location of camera shall be approved by Purchaser's inspector, after determining the best camera locations by trial energisation of test object at a voltage which results in corona.

Annexure - C

4.3 The test to determine the visible corona extinction voltage need not be carried out simultaneously with test to determine RIV levels.

4.4 However, both test shall be carried out with the same test set up and as little time duration between tests as possible. No modification on treatment of the sample between tests will be allowed. Simultaneous RIV and visible corona extinction voltage testing may be permitted at the discretion of Purchaser's inspector if, in his opinion, it will not prejudice other test.

5. Test Records:

In addition to the information previously mentioned and the requirements specified as per CISPR or NEMA 107-1964 the following data shall be included in test report:

- a) Background noise before and after test.
- b) Detailed procedure of application of test voltage.
- c) Measurements of RIV levels expressed in micro volts at each level.
- d) Results and observations with regard to location and type of interference sources detected at each step.
- e) Test voltage shall be recorded when measured RIV passes through 100 microvolts in each direction.
- f) Onset and extinction of visual corona for each of the four tests required shall be recorded.

SECTION – 3

GENERAL TECHNICAL REQUIREMENTS

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 : 765/400KV AIS SUB STATION AT ARIYALUR
c) Transport facilities : Road/Rail

Physical and other parameters:

3.1.1 Location of the substation

- 3.1.2 Nearest Railway station : Tindivanam
Railway : Southern Railway

3.1.3 Meteorological data

- | | |
|---|---------------------|
| (i) Atmosphere | : Polluted |
| (ii) Maximum ambient temperature | : 50°C |
| (iii) Minimum ambient temperature | : 20°C |
| (iv) Maximum daily average ambient air temperature | : 45° C |
| (v) Maximum yearly average ambient air temperature | : 32° C |
| (vi) Maximum Humidity (%) | : 100% |
| (vii) Average thunder storm days per annum | : 50 |
| (viii) Average rainy days per annum | : 65 |
| (ix) Average annual rainfall (mm) | : 750 mm |
| (x) No. of months during which tropical monsoon condition prevail | : 3 |
| (xi) Maximum wind pressure | : 150 Kgf/Sqmm |
| (xii) Altitude above MSL | : <1000M |
| (xii) Basic Wind Speed | : 39 m/s (Zone -2) |

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

TAMIL NADU TRANSMISSION CORPORATION LIMITED
BHARAT HEAVY ELECTRICALS LIMITED (TBG)
765/400KV AIS SUB STATION ARIYALUR

3.1.4 System Parameter

SL No	Description of parameters	765kV System	400 kV System
1.	System operating Voltage	765kV	400kV
2.	Maximum operating voltage of the system(rms)	800kV	420kV
3.	Rated Frequency	50HZ	50HZ
4.	Number of Phases	3	3
5.	Rated Insulation Levels (i)Full wave impulse withstand voltage.(1.2 to 50 micro sec) (ii)Switching impulse withstand voltage(250/2500 micro sec) dry and wet. (iii) One minute power frequency dry withstand voltage (rms)frequency dry withstand voltage (rms)	2100kVp 1550kVp 830kV	1550kVp 1050kVp 630kV
6.	Corona extinction voltage	508kV	320kV
7.	Max. radio interference voltage for frequency between 0.5 MHz and 2 MHz at 508 kV rms for 765kV,and 266kV rms for 400kV system	2500 microvolts	1000 microvolts
8.	Minimum creepage distance (25mm/kV)	20000 mm	10500 mm
9.	Rated short circuit current for 1 sec. Duration	50kA	63kA
10.	System neutral earthing	Effectively earthed	Effectively earthed
11.	Seismic acceleration	0.3g horizontal	0.3g horizontal
12.	Plinth level of switchyard	300mm above FGL	300mm above FGL

**TAMIL NADU TRANSMISSION CORPORATION LIMITED
BHARAT HEAVY ELECTRICALS LIMITED (TBG)
765/400KV AIS SUB STATION ARIYALUR**

3.2 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 each section.

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

3.3 TYPE TEST:

The Type Test for all the equipment's/materials used for this project should have been conducted in any approved Government/Govt. recognized laboratories conforming to latest IS/IEC. The above type test certificates should accompany the drawings of the materials equipment's, duly signed under seal by the Institution, who have issued the type test certificate. The above type test should have been conducted not earlier than Ten years, subject to no change in design as on the originally scheduled date of technical bid opening i.e. **30.09.2016**

In case the type tests were conducted earlier than 10 (ten) years prior to the originally scheduled date of bid opening, the contractor shall repeat these test (s) at no extra cost to the purchaser.

3.4 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.

**TAMIL NADU TRANSMISSION CORPORATION LIMITED
BHARAT HEAVY ELECTRICALS LIMITED (TBG)
765/400KV AIS SUB STATION ARIYALUR**

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 producers 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.

3.5 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

TAMIL NADU TRANSMISSION CORPORATION LIMITED
BHARAT HEAVY ELECTRICALS LIMITED (TBG)
765/400KV AIS SUB STATION ARIYALUR

- (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 breakers 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.

- 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 inspection. The quality assurance plan and hold point shall be discussed between the employer 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 breaker.

3.6 APPROVAL PROCEDURE

The scheduled dates for the submission of drawings as well as for, any data/information to be furnished by the Employer would be as per the following schedule. The supplier shall also submit required no. of copies as mentioned in this specification of all drawings/design documents/test reports for approval by the BHEL/TANTRANSCO. The following schedule shall be followed generally for approval.

i.	First Submission	7 days after LOI/PO
ii.	Approval/comments/by employer on Initial submission	Reasonable time
iii.	Resubmission	Within 7 days (whenever from date of comments required) Including both ways postal time.
iv.	Approval or comments	Within 2 weeks of receipt of resubmission.
v.	Furnishing of distribution copies	2 weeks from the date of last approval.

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

The title block of drawings shall contain the following information incorporated in all contract drawings. Please refer below mention Title block for Submission of Documents.

TAMIL NADU TRANSMISSION CORPORATION LIMITED
BHARAT HEAVY ELECTRICALS LIMITED (TBG)
765/400KV AIS SUB STATION ARIYALUR

Title Block

Customer	M/s Tamil Nadu Transmission Corporation Limited
Project:	765/400KV Air Insulated substation Ariyalur
Contractor	BHEL

3.7 DOCUMENTS TO BE SUBMITTED ALONGWITH OFFER

Drawings, GTP ,Type Test Reports and List of Past Supplies. Drawings & Documents submitted at the time of offer shall be subject to review at contract stage.

3.8 DOCUMENTATION SCHEDULE

Following Documentation schedule to be followed per project.

S. No.	DESCRIPTION	TENDER STAGE	CONTRACT STAGE FOR APPROVAL	FINAL DOCUMENTATION	
			Prints	Prints	CDs
1	Drawings and Data Sheets	1	7	10	5
2	Drawings "As Built "	-	-	10	
3	Type Test Reports	1	7	10	
4	Erection Manuals	-	7	10	
5	Operation and Maintenance Manuals	-	7	10	
6	Manufacturing Quality Plan	-	7	10	
7	Field Quality Plan	-	7	10	
8	Inspection Test Reports	-	7	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.

SECTION -4

TECHNICAL CHECK LIST

(INFORMATION TO BE FURNISHED WITH OFFER)

RETURN THIS CHECKLIST AS THE PART OF THE OFFER DULY SIGNED BY THEM.

S.No.		Confirmation	Remarks
1.	Compliance to TANTRANSCO GTP enclosed with specification (As per Annexure-E)	Yes	
2.	Type test Reports as per clause 1.4 of section-1 of Technical specification as on 30.09.16	Yes	
3.	Type test charges (if not acceptable to customer)	Free	
4.	Drawing /documents approval as per cl. No. 1.7 of section -1	Yes	

Date:

Place:

Phone:

Fax:

E-mail:

Mobile:

Website:

ANNEXURE - 1

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
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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

STANDARD GTP OF AAC BULL AND ALSR BERSIMTS CONDUCTOR — ANNEXURE - E

A. GTP of AAC BULL

Sl.	Description	Unit	AAC BULL
1.0	Applicable Standard		IS:398
2.0	Raw Materials		
2.1	Steel Wire / Rods		
2.1.1	Aluminium		
a)	Minimum purity of Aluminium	%	99.50
b)	Maximum copper content	%	0.04
3.0	Aluminum strands after stranding		
3.1	Diameter		
a)	Nominal	mm	4.25
b)	Maximum	mm	4.29
c)	Minimum	mm	4.21
3.2	Minimum breaking load of strand		
a)	Before stranding	KN	2.23
b)	After stranding	KN	2.12
3.3	Maximum resistance of 1 m length of strand at 20 deg. C	Ohm	0.00203
4.0	AAC Conductor		
4.1.	Stranding		Al – 61/4.25 mm
a)			
b)	Number of Strands		
i.	1st Aluminium Layer	Nos.	1
ii.	2nd Aluminium Layer	Nos.	6
iii.	3rd Aluminium Layer	Nos.	12
iv.	4th Aluminium Layer	Nos.	18
v.	5th Aluminium Layer	Nos.	24

Annexure - E

4.2	Sectional Area of aluminium	Sq. mm	865.36
4.3	Total sectional area	Sq. mm	865.36
4.4	Approximate Weight	Kg/m	2.4
4.5	Diameter of the conductor	mm	38.25
4.6	UTS of the conductor	kN	139 (Min.)
4.7	Lay ratio of the conductor	mm	Max Min
a)	6 wire Aluminium layer	mm	16 10
b)	12 wire Aluminium layer	mm	16 10
c)	18 wire Aluminium layer	mm	16 10
d)	24 wire Aluminium layer	mm	14 10
4.8	DC resistance of the conductor at 20°C	ohm/km	0.03340
4.9	Standard length of the conductor	m	1000
4.10	Tolerance on Standard length	%	(+/-) 5
4.11	Direction of lay of outer layer		Right Hand
4.12	Linear mass of the conductor		
a)	Standard	kg/km	2400
b)	Minimum	kg/km	2355
c)	Maximum	kg/km	2445
4.13	Modulus of Elasticity	Kg/sq. mm	4709 (Initial) 5869 (Final)
4.14	Co-efficient of Linear Expansion	Per Deg. C	23.0x10 ⁻⁶
4.15	Minimum Corona	KV	508

Annexure- E

	Extinction Voltage	(rms)	
4.16	RIV at 1 Mhz	Micro volts	Less than 1000 at 508 kV (rms)
5.0	Drum Dimensions		Generally conforms to IS:1778
a)	Flange Diameter	mm	1855
b)	Traverse Width	mm	925
c)	Barrel Diameter	mm	850
d)	Flange thickness	mm	50x50

B. GTP of ACSR BERSIMIS :

Sl.	Description	Unit	ACSR BERSIMIS
1.0	Applicable Standard		IS:398 / IEC - 1089
2.0	Raw Materials		
2.1	Aluminium		
a)	Minimum purity of Aluminium	%	99.50
b)	Maximum copper content	%	0.04
2.2	Steel wires/ rods		
a)	Carbon	%	0.50 to 0.85
b)	Manganese	%	0.50 to 1.10
c)	Phosphorous	%	Not more than 0.035
d)	Sulphur	%	Not more than 0.045
e)	Silicon	%	0.10 to 0.35(Max)
2.3	Zinc		
a)	Minimum purity of Zinc	%	99.95
3.0	Aluminum strands after stranding		
3.1	Diameter		

Annexure-E

a)	Nominal	mm	4.57
b)	Maximum	mm	4.61
c)	Minimum	mm	4.53
3.2	Minimum breaking load of strand		
a)	Before stranding	KN	2.64
b)	After stranding	KN	2.51
3.3	Maximum resistance of 1m length of strand at 20 deg C	Ohm	0.001738
4.0	Steel Strand after stranding		
4.1	Diameter		
a)	Nominal	mm	2.54
b)	Maximum	mm	2.57
c)	Minimum	mm	2.51
4.2	Minimum Breaking load of strand		
a)	Before Stranding	KN	6.87
b)	After Stranding	KN	6.53
4.3	Galvanising		
a)	Minimum weight of zinc coating per sq.m	gm	260
b)	Minimum number of dips that the galvanised strand can withstand in the standard preece test	Nos	2 dips of one minute & 1 dip of half minute.
c)	Min.No. of twists in guage length equal 100 times the dia of wire which the strand can withstand in the torsion test(after Stranding)	Nos	16(After stranding) 18(Before stranding)
5.0	ACSR Conductor		

Annexure - E

5.1 a)	Stranding		Al-42/4.57 mm+	
			Steel-7/2.54 mm	
b)	Number of Strands			
i.	Steel Centre	Nos.	1	
ii.	1 st Steel Layer	Nos.	6	
iii.	1 st Aluminium Layer	Nos.	8	
iv.	2 nd Aluminium Layer	Nos.	14	
v.	3 rd Aluminium Layer	Nos.	20	
5.2	Sectional Area of Aluminium	Sq mm	689.50	
5.3	Total Sectional Area	Sq mm	725.00	
5.4	Approximate Weight	Kg/m	2.181	
5.5	Diameter of the conductor	mm	35.05	
5.6	UTS of the conductor	mm	154(min)	
5.7	Lay ratio of the conductor	mm	Max	Min
a)	Outer steel layer	mm	24	16
b)	8/12 wire Aluminium layer	mm	17	10
c)	14/18 wire Aluminium layer	mm	16	10
d)	20/24 wire Aluminium layer	mm	13	10
5.8	DC resistance of conductor at 20 Deg C	Ohm/km	0.04242	
5.9	Standard length of the conductor	m	1800	
5.10	Tolerance on standard length	%	(+/-)5	
5.11	Direction of lay of outer layer	-	Right Hand	
5.12	Linear mass of the conductor			
a)	Standard	Kg/km	2181	
b)	Minimum	Kg/km	2142	

Annexure - E

c)	Maximum	Kg/km	2221
5.13	Modulus of Elasticity(Final State)	Kg/sq mm	-
5.14	Coefficient of LinearExpansion	Per Deg C	21.5x10-6
5.15	Minimum Corona Extinction Voltage	KV(rms)	320
5.16	RIV at 1 Mhz under dry condition	Micro volts	Max.1000 at 320 KV(rms)
6.0	Drum Dimensions	Generally conforma to IS:1778	
a)	Flange Diameter	mm	1800
b)	Traverse width	mm	950
c)	Barrel Diameter	mm	650
d)	Flange thickness	mm	50x50

Guaranteed Technical Particulars (GTP) for conductors:

Guaranteed technical particulars of Galvanised Steel Earthwire

Sl.	Description	Unit	Standard Values
1.0	Raw Materials		
1.1	Steel Wire / Rods		
a)	Carbon	%	Not more than 0.55
b)	Manganese	%	0.40 to 0.90
c)	Phosphorous	%	Not more than 0.04
d)	Sulphur	%	Not more than 0.04
e)	Silicon	%	0.15 to 0.35
1.2	Zinc		
a)	Minimum purity of Zinc	%	99.95
2.0	Steel strands		
2.1	Diameter		