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भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Ltd.,
(A Government of India undertaking)
Electronics Division
 PB 2606 , Mysore Road Bangalore , 560026 INDIA

CE: PR: 003- Rev 00

SPECIAL COMMERCIAL CONDITIONS OF CONTRACT

Reference is brought to BHEL's Instructions to Bidders (Document Ref: CE: PR: 001- Rev 00) and General Commercial Conditions for Contract (Document Ref: CE: PR: 002- Rev 00). These documents along with required annexures are available in our website: _____ . These two documents along with Special Conditions of Contract annexed to this RFQ will form an integral part of the contract as and when the RFQ culminates into a Purchase Order / Contract.

RFQ No: PKN0000301

RFQ Date: As per EPS

Due Date: As per EPS

Project: NTPC Tanda (2X660 MW)

Item Description: IP BASED PA SYSTEM.

~~**Purchase Executives:** In cases where tender documents are bulky, or due to some reasons tender documents are required to be submitted by hand, the offers are to be handed over to either of the following Purchase Officers:~~

~~**NAGARAJ P K/Sr.Engineer/CE MM PR or Ponnuguru Packiam G/Sr.DGM/CE MM PR**~~

E-mail IDs: In case offers are sent through E-mail, please send the offers to both of the following email IDs:
 nagarajpk@bheledn.co.in & ponnuguru@bheledn.co.in

E-tendering: **Applicable** / Not Applicable.

Type of Bid: Two part Bid system

Reverse Auction: **Not Applicable** / Will be intimated during commercial clarifications to technically acceptable vendors.

In case BHEL does not resort to Reverse Auction, the price bids and price impacts (if any) shall be opened as per BHEL's standard practice.

~~**Splitting of tendered quantity to MSE vendors:** The tendered quantity will /will not be split to MSE vendors subject to submission of relevant documents by vendors. Refer clause H of Instructions to Bidders for conditions applicable and for information on documents to be submitted.~~

Destination: Items are to be directly despatched to BHEL's Site Office or Stores/Customer's Stores located at/near NTPC Tanda project, UP state. Road Permit, if applicable, will be issued by BHEL along with Despatch Clearance. For Import port of destination will be Chennai sea port, port of delivery will be ICD,Bangalore.

Project Benefits: Reimbursements is not applicable for this project.

• **Indigenous scope of supply: For Indigenous portion:**

- a) Project is Mega Power Project or Ultra Mega Power Project: Eligible for "NIL" Excise Duty. Necessary documents for availing Excise Duty exemption by suppliers will be furnished by BHEL.
- b) Physical Export project: Eligible for complete exemption of Excise Duty & Sales Tax. Necessary documents for availing such benefits will be furnished by BHEL to suppliers.
- c) Nuclear Power Project under a special category: Eligible for claiming Terminal Excise Duty benefit from DGFT as per present EXIM policy. Confirm submission of following in original:
 - o Disclaimer Certificate (Annexure XI)
 - o Copy of Excise Invoice attested by Suptd of Central Excise authorities with signature and seal, in blue ink, to enable BHEL to claim terminal Excise duty benefit from DGFT.

• **Imported scope of supply: No benefits**

- a) Project is Mega Power Project or Ultra Mega Power Project: Eligible for "NIL" Customs Duty.
- b) Physical Export project: Eligible for complete exemption of Customs Duty.

Terms of Delivery:

Indicate station of despatch: _____

Indicate place of manufacturing (wherever applicable): _____

- **Indigenous scope of supply:** Ex-works (including Packing & Forwarding charges but excluding Taxes & Duties):

- **Imported scope of supply:** ~~F.C.A. (for air consignments)~~ /C.I.F/ICD, Bangalore. (for sea consignments)

(Including Packing, Forwarding, Handling, Ancillary charges like processing of Sight Draft/ Letter of Credit, negotiation of bank Documents, Export declaration, Country of Origin etc): _____.

S NO.	TERMS	BHEL ACCEPTABLE TERM	BIDDER'S CONFIRMATION	DEVIATION IF ANY
01	Validity	The offer will be valid for a period of 120 days from the date of technical bid opening.	AGREE	
02	Excise Duty & Cess	If applicable, indicate current rate of Excise Duty and maximum rate of Excise Duty (against proof of Excise Invoice). However, for calculation purpose and arriving at "Total Cost to BHEL" maximum rate of Excise Duty will be considered. In case Excise Duty remains firm throughout the contract, the same shall be specifically indicated. Otherwise, maximum Excise Duty will be considered for arriving at lowest bidder. However, reimbursement of Excise Duty shall be at actuals against proof of Excise Invoice only. (Within contractual delivery). Physical export contract eligible for complete exemption of Excise duty against submission of necessary documents by BHEL like ARE 1/CT 1 form.	APPLICABLE / NOT APPLICABLE Present rate of Excise Duty with CESS% Maximum rate of Excise Duty with CESS%	
03	Central Sales Tax (CST)	If applicable, indicate current rate of sales tax against form "C". For issue of original form "C", vendor has to furnish "E1/E2" form. To enable vendor give E1/E2 form, photocopy of C form will be issued by BHEL. Please confirm submission of "E1/E2 Sale form". For physical export project, Sales Tax is exempted against necessary documents furnished by BHEL.	APPLICABLE / NOT APPLICABLE Present Sales Tax rate against form "C" % CONFIRMED	
04	Value Added Tax (VAT)	If applicable, indicate current rate of VAT. When VAT is applicable, BHEL ROD's/ Nodal Agency's Name, TIN No. and address to be indicated in invoice. (Note that two original invoice and one tax invoice should be submitted to BHEL).	APPLICABLE / NOT APPLICABLE VAT rate at present % NOTED	
05	Octroi	If applicable, indicate current rate of octroi.	AGREE Present Octroi rate%	
06	Freight Charges (for indigenous scope of supply)	Freight charges shall be to vendor's account. Quote lumpsum reasonable Freight charges separately in priced offer, plus service tax if any. Vendor's offer will be evaluated on "Total cost basis" including freight charges. Vendor shall book the consignment through their approved Road carriers on "Freight pre-paid" and door delivery consignee copy attached basis. Freight charges to be claimed from BHEL along with POD (Proof of Delivery) on original L/R.	AGREED and quoted as lumpsum amount in price bid. Service Tax ____% (extra /inclusive in freight charges)	
07	Service Tax on E&C and Training Charges	If applicable, indicate current rate of Service Tax% Service Tax Regn. No. _____ Confirmation that Service Tax register is maintained.	APPLICABLE / NOT APPLICABLE CONFIRMED	

08	Parting of license for imported raw materials	In case of Mega project, Ultra Mega project and Physical Export project where Custom Duty and Excise Duty are NIL and vendor is importing any raw materials / components for the enquired item, same are eligible for Zero Customs duty. As per EXIM policy, BHEL will part the import licence with the vendors to obtain import licence by themselves and custom clear the raw materials/ components by availing zero customs duty. Hence, please furnish list of raw materials / components to be imported by you with Quantity and CIF value (for which BHEL has to share import licence). The benefit due to the above shall be passed on to BHEL and confirmed in the quotation. If there are no imported raw materials/components, same shall be confirmed in the offer.	AGREE —CIF value ————— Yes, benefit passed on to BHEL in the priced quotation. We confirm that there are no imported components.	
09	Delivery Period	Within 12 weeks from the date of manufacturing clearance or document approval whichever is later.	AGREE ————— weeks	
10	Guarantee/ Warranty	24 months from the date of delivery of goods or 18 months from the date of commissioning of goods, whichever is earlier.	AGREE	
11	Inspection agency	Materials will be inspected by : • BHEL • Customer/Consultant/BHEL nominated Third Party Inspection Agency (TPIA)	AGREE	
12	Terms of Payment at the time of material supply	Refer Clause "F" of Instructions to Bidder for BHEL standard Payment terms and loading factors applicable for non-compliance against payment terms: Indigenous Scope: a) Supply with E&C b) Supply with Supervision of E&C c) Supply only Imported Scope: d) Supply with E&C e) Supply with Supervision of E&C f) Supply only Note: Kindly indicate if High Sea Sales will be operated. If yes, confirm submission of relevant documents as per Annexure V.	AGREE YES / NO CONFIRMED	
13	Performance Bank Guarantee (PBG)	PBG will be applicable for a period of 24 months + claim period of 6 months for a value equal to 10% of the basic value of the purchase order. Refer Clause "G" of Instructions to Bidders.	AGREE	
14	Terms of Payment not related to material supply	For Training: 100% will be paid in 45 days from the date of completion of Training or 15 days from the date of submission of complete set of documentation, whichever is later. Separate invoice shall be submitted for Training charges along with documentary evidence. For Engineering & Documentation Charges: 100% will be paid in 45 days from the date of approval of final documents or 15 days from the date of submission of invoice, whichever is later. Separate invoice to be submitted for Engineering & documentation charges.	AGREE	
15	Mode of despatch	Indigenous Scope: By Road on Door Delivery Consignee Copy attached basis through your approved transporter (unless otherwise indicated in Despatch Instructions), only on receipt of Despatch Clearance from BHEL. Imported Scope: By Sea through supplier approved Consolidator/Freight Forwarder, only on receipt of Despatch Clearance from BHEL.	AGREE	

16	Despatch Documents	Complete set of despatch documents (original + 1 photocopy set) as per Purchase Order shall be forwarded to BHEL directly. Depending upon the project/customer demands, despatch documents may include one or more documents from the following: Commercial Invoice, Excise Invoice (if ED is applicable), Lorry Receipt (L/R), Packing List, Air Way Bill (AWB), Country of origin certificate, Warranty Certificate, Insurance Intimation letter, NIL Short Shipment Certificate, Original Performance Bank Guarantee (directly from issuing bank to BHEL), POD (Proof of Delivery) on original L/R, Disclaimer Certificate (as per BHEL format attached as Annexure XI) along with ER 1 form & attested excise invoice (as per project demands like Nuclear Power plant) etc. The precise list of despatch documents needed for a particular project will be specified in the Purchase Order. One set of Invoice, Packing List and L/R or AWB shall be e-mailed/faxed immediately to BHEL-EDN after despatch.	AGREE	
17	O & M Manuals	As built Drawings, O & M Manuals and other approved documents shall be furnished in required no. of sets as per Specification/Purchase Order. Note: Supply of above documents (O&M) in required no. of sets along with material shall be indicated in packing list. If not mentioned BHEL may insist for submission in required sets once again.	AGREE	
18	Quantity Tolerance	If applicable, indicate Quantity tolerance for each of the line item. For impulse/seamless/ GI pipes one random length applicable for each variety of pipes.	CONFIRMED	Quantity Tolerance % Per Variety
19	Evaluation criteria for tendered item	Itemwise evaluation of tendered item. Splitting of tendered quantity to MSE vendors (if any) is applicable. OR Items will not be split on item wise lowest offer. Items to be evaluated and procured as a package (main+offsite).	AGREE	
20	Integrity Commitment	Integrity commitment will be applicable in the tender process and execution of contracts as mentioned in clause "1" of Instructions to Bidders.	AGREE	

Please fill the terms & conditions in EPS portal in-line with attached Special Commercial Conditions of contract and by referring to GCC & ITB. In this connection, please note that the attachment named "Commercial terms and Conditions" comprises of SCC, ITB & GCC along with relevant annexures. Separate attachment of filled SCC is not required. With this, it is inferred that vendor has understood and accepts all terms & conditions as indicated in Instructions to Bidders (Document Ref: CE: PR: 001- Rev 00) & General Commercial Conditions for Contract (Document Ref: CE: PR: 002- Rev 00).

If no deviations are brought, it will be treated as all terms and conditions of this enquiry are accepted by vendor without any deviation.

VENDOR'S SIGNATURE WITH SEAL

Important note: Due to size limit all documents are not attached. Documents can be downloaded from www.bheledn.com or <https://bheleps.buyjunction.in>.



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भारत हेवी इलेक्ट्रिकल्स लिमिटेड

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

PB 2606 , Mysore Road Bangalore , 560026 INDIA

CE: PR: 002- Rev 00

GENERAL COMMERCIAL CONDITIONS FOR CONTRACT

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

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

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

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

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

Interpretation:

In the contract, except where the context requires otherwise:

- a) words indicating one gender include all genders;
- b) words indicating the singular also include the plural and words indicating the plural also include the singular;
- c) provisions including the word "agree", "agreed" or "agreement" require the agreement to be recorded in writing, and
- d) "Written" or "in writing" means hand-written, type-written, printed or electronically made, and resulting in a permanent record.

Applicable Conditions:

1. **Price Basis:** All prices shall be firm until the purchase order is executed / completed in all respects. No price variations / escalation shall be permitted unless otherwise such variations / escalations are provided for and agreed by BHEL in writing in the purchase order.
2. **Validity:** The offer will be valid for a period of 120 days from the date of technical bid opening date. Validity beyond 120 days, if required, will be specified in the SCC (special conditions of contract).
3. **Ordering and confirmation of Order:** Vendor shall send the order acceptance on their company letter head within two weeks from the date of Purchase Order or such other period as specified / agreed by BHEL. BHEL reserves the right to revoke the order placed if the order confirmation differs from the original order placed. The acceptance of goods/services/supplies by BHEL as well as payments made in this regard shall not imply acceptance of any deviations.
The purchase order will be deemed to have been accepted if no communication to the contrary is received within two weeks (or the time limit as specified / agreed by BHEL) from the date of the purchase order.
4. **Documentation:** After receipt of Purchase Order, vendor should submit required documents like drawings, bill of materials, datasheets, catalogues, quality plan, test procedure, type test report , O & M Manuals and/or any other relevant documents as per Specification/Purchase Order, as and when required by BHEL/Customer.
At any stage within the contract period, the vendor shall notify of any error, fault or other defect found in BHEL's documents /specifications or any other items for reference. If and to the extent that (taking account of cost and time) any vendor exercising due care would have discovered the error, fault or other defect when examining the documents/specifications before submitting the tender, the time for completion shall not be extended. However if errors, omissions, ambiguities, inconsistencies, inadequacies or other defects are found in the vendor's documents, they shall be corrected at his cost, notwithstanding any consent or approval.
5. **Penalty:**
For delay in documentation: In the event of delay in submission of complete set of documents ((like drawings, bill of materials, datasheets, catalogues, quality plan etc. as called in tender specifications including soft copies wherever applicable) in required sets beyond three weeks (or as agreed/indicated in the Purchase Order) from the date of Purchase Order, penalty at 0.5% (half percent) per week or part thereof, limited to a maximum of 5% (five percent) of the basic material value of the Purchase Order will be applicable.

For delay in delivery: In the event of delay in agreed contractual delivery as per Purchase Order, penalty @ 0.5 % (half percent) per week or part thereof but limited to a max of 10% (ten percent) value of undelivered portion (basic material cost) will be applicable. Delivery will commence from the date of document approval by customer / BHEL or date of issue of manufacturing clearance, whichever is later. The date for which Inspection call is issued by vendor along with test certificates / test reports / Certificate of Conformance / calibration reports, as proof of completion of manufacturing will be treated as date of deemed delivery for penalty calculation. In the absence of furnishing such document indicated above as proof of completion of manufacturing along with inspection call, actual date of inspection will be considered as date of deemed delivery and BHEL will not be responsible for delay in actual date of inspection.

Penalty for delayed documentation/delayed delivery, if applicable, shall be deducted at the time of first payment. If penalty is applicable for duration of less than a week, penalty @ 0.5% (half percent) of the basic material value will be deducted.
6. **Contract variations (Increase or decrease in the scope of supply):** BHEL may vary the contracted scope as per requirements at site. If vendor is of the opinion that the variation has an effect on the agreed price or delivery period, BHEL shall be informed of this immediately in writing along with technical details. Where unit rates are available in the Contract, the same shall be applied to such additional work. Vendor shall not

perform additional work before BHEL has issued written instructions / amendment to the Purchase Order to that effect. The work which the vendor should have or could have anticipated in terms of delivering the service(s) and functionality (i.e.) as described in this agreement, or which is considered to be the result of an attributable error on the vendor's part, shall not be considered additional work.

7. Reverse Auction: BHEL reserves the right to follow REVERSE AUCTION PROCEDURE (ONLINE BIDDING ON NETWORK) before finalising the Purchase order on technically competent bidders, as per the guidelines given in Annexure III. In case BHEL does not resort to Reverse Auction, the price bids and price impacts (if any) already submitted and available with BHEL shall be opened as per BHEL's standard practice.
8. Inspection: Prior written notice of at least 10 days shall be given along with internal test certificates / COC and applicable test certificates. Materials will be inspected by BHEL-EDN-QS/CQS or BHEL nominated Third Party Inspection Agency (TPIA) or BHEL authorized Inspection Agency or Customer / Consultant or jointly by BHEL & Customer / consultant. All tests have to be conducted as applicable in line with approved Quality plan or QA Checklist or Purchase specification and original reports shall be furnished to BHEL-EDN, Bangalore for verification / acceptance for issue of dispatch clearance.
All costs related to inspections & re-inspections shall be borne by vendor. Whether the Contract provides for tests on the premises of the vendor or any of his Sub-contractor/s, vendor shall be responsible to provide such assistance, labour, materials, electricity, fuels, stores, apparatus, instruments as may be required and as may be reasonably demanded to carry out such tests efficiently. Cost of any type test or such other special tests shall be borne by BHEL only if specifically agreed to in the purchase order.
9. Transit Insurance: Transit insurance coverage between vendor's works and project site shall be to the account of BHEL, unless specifically agreed otherwise. However, vendor shall send intimation directly to insurance agency (as mentioned in dispatch instructions issued by BHEL) through fax/courier/e-mail, immediately on dispatch of goods for covering insurance. A copy of such intimation sent by vendor to insurance agency shall be given to BHEL along with dispatch documents. Dispatch documents will be treated as incomplete without such intimation copy. BHEL shall not be responsible for sending intimations to insurance agency on behalf of the vendor.
10. High Sea Sales (HSS): Customs clearance of the consignment landed on Indian Sea / Air ports will be done by BHEL based on the original HSS documents provided by vendors.
Any delay in submission of complete / correct HSS documents to BHEL may incur demurrage charges. All demurrage charges on account of incomplete / incorrect HSS documents submission by vendor will be to vendor's account and all such charges will be recovered from any of the available vendor bills with BHEL.
11. Packaging and dispatch: The Seller shall package the goods safely and carefully and pack them suitably in all respects considering the peculiarity of the material for normal safe transport by Sea / Air / Rail / Road to its destination suitably protected against loss, damage, corrosion in transit and the effect of tropical salt laden atmosphere. The packages shall be provided with fixtures / hooks and sling marks as may be required for easy and safe handling. If any consignment needs special handling instruction, the same shall be clearly marked with standard symbols / instructions. Hazardous material should be notified as such and their packing, transportation and other protection must conform to relevant regulations.
The packing, shipping, storage and processing of the goods must comply with the prevailing legislation and regulations concerning safety, the environment and working conditions. Any Imported/Physical Exports items packed with raw / solid wood packing material should be treated as per ISPM – 15 (fumigation) and accompanied by Phytosanitary / Fumigation certificate. If safety information sheets (MSDS – Material Safety Data Sheet) exist for an item or the packaging, vendor must provide this information without fail along with the consignment.
Each package must be marked with Consignee name, Purchase order number, Package number, Gross weight and net weight, dimensions (L x B x H) and Seller's name. Packing list of goods inside each package with PO item number and quantity must also be fixed securely outside the box to indicate the contents of each box. Total number of packages in the consignment must also be indicated.
Separate packing & identification of items should be as follows.
 1. Main Scope - All items must be tagged with part no. & item description.
 2. Commissioning spares - All items must be tagged with part no. & item description.
 3. Mandatory spares - All items must be tagged with part no. & item description.

12. Assignment of Rights & Obligations; Subcontracting: Vendor is not permitted to subcontract the delivery or any part thereof to third party or to assign the rights and obligations resulting from this agreement in whole or in part to third parties without prior written permission from BHEL. Any permission or approval given by the BHEL shall, however, not absolve the vendor of the responsibility of his obligations under the Contract.
13. Progress report: Vendor shall render such report as to the progress of work and in such form as may be called for by the concerned purchase officer from time to time. The submission and acceptance of such reports shall not prejudice the rights of BHEL in any manner.
14. Non-disclosure and Information Obligations: Vendor shall provide with all necessary information pertaining to the goods as it could be of importance to BHEL. Vendor shall not reveal confidential information that may be divulged by BHEL to Vendor's employees not involved with the tender/ contract & its execution and delivery or to third parties, unless BHEL has agreed to this in writing beforehand. Vendor shall not be entitled to use the BHEL name in advertisements and other commercial publications without prior written permission from BHEL.
15. Cancellation / Termination of contract: BHEL shall have the right to completely or partially terminate the agreement by means of written notice to that effect. Termination of the Contract, for whatever reason, shall be without prejudice to the rights of the parties accrued under the Contract up to the time of termination.
BHEL shall have the right to cancel/foreclose the Order/ Contract, wholly or in part, in case it is constrained to do so, on account of any decline, diminution, curtailment or stoppage of the business.
16. Risk Purchase Clause: In case of failure of supplier, BHEL at its discretion may make purchase of the materials / services NOT supplied / rendered in time at the RISK & COST of the supplier. Under such situation, the supplier who fails to supply the goods in time shall be wholly liable to make good to BHEL any loss due to risk purchase.
In case of items demanding services at site like erection and commissioning, vendor should send his servicemen /representatives within 7 days from the service call. In case a vendor fails to attend to the service call, BHEL at its discretion may also make arrangements to attend such service by other parties at the **RISK & COST** of the supplier. Under such situation the supplier who fails to attend the service shall be wholly liable to make good to BHEL any loss due to risk purchase / service including additional handling charges due to the change.
17. Shortages: In the event of shortage on receipt of goods and/or on opening of packages at site, all such shortages shall be made good within a reasonable time that BHEL may allow from such intimation and free of cost. In case BHEL raises an insurance claim, the cost of material limited to insurance settled amount less handling charges will have to be reimbursed by the Supplier.
Transit Damages: In the event of receipt of goods in damaged condition or having found them so upon opening of packages at site, Supplier shall make good of all such damages within a reasonable time from such intimation by BHEL. In case BHEL raises an insurance claim, the cost of material limited to insurance settled amount less handling charges will be reimbursed.
18. Remedial work: Notwithstanding any previous test or certification, BHEL may instruct the vendor to remove and replace materials/goods or remove and re-execute works/services which are not in accordance with the purchase order. Similarly BHEL may ask the vendor to supply materials or to execute any services which are urgently required for any safety reasons, whether arising out of or because of an accident, unforeseeable event or otherwise. In such an event, Vendor shall provide such services within a reasonable time as specified by BHEL.
19. Indemnity Clause: Vendor shall comply with all applicable safety regulations and take care for the safety of all persons involved. Vendor is fully responsible for the safety of its personnel or that of his subcontractor's men / property, during execution of the Purchase Order and related services. All statutory payments including PF, ESI or other related charges have to be borne by the vendor. Vendor is fully responsible for ensuring that all legal compliances are followed in course of such employment.

20. Product Information, Drawings and Documents: Drawings, technical documents or other technical information received by Vendor from BHEL or vice versa shall not, without the consent of the other party, be used for any other purpose than that for which they were provided. They may not, without the consent of the Disclosing party, otherwise be used or copied, reproduced, transmitted or communicated to third parties. All information and data contained in general product documentation, whether in electronic or any other form, are binding only to the extent that they are by reference expressly included in the contract.

Vendor, as per agreed date/s but not later than the date of delivery, provide free of charge information and drawings which are necessary to permit and enable BHEL to erect, commission, operate and maintain the product. Such information and drawings shall be supplied in as many numbers of copies as may be agreed upon.

All intellectual properties, including designs, drawings and product information etc. exchanged during the formation and execution of the Contract shall continue to be the property of the disclosing party.

21. Intellectual Property Rights, Licenses: If any Patent, design, Trade mark or any other intellectual property rights apply to the delivery (goods / related service) or accompanying documentation shall be the exclusive property of the Vendor and BHEL shall be entitled to the legal use thereof free of charge by means of a non-exclusive, worldwide, perpetual license. All intellectual property rights that arise during the execution of the Purchase Order/ contract for delivery by vendor and/or by its employees or third parties involved by the vendor for performance of the agreement shall belong to BHEL. Vendor shall perform everything necessary to obtain or establish the above mentioned rights. The Vendor guarantees that the delivery does not infringe on any of the intellectual property rights of third parties. The Vendor shall do everything necessary to obtain or establish the alternate acceptable arrangement pending resolution of any (alleged) claims by third parties. The Vendor shall indemnify BHEL against any (alleged) claims by third parties in this regard and shall reimburse BHEL for any damages suffered as a result thereof.

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

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

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

23. Guarantee / Warranty: Wherever required, and so provided in the specifications / Purchaser Order, the Seller shall guarantee that the stores supplied shall comply with the specifications laid down, for materials, workmanship and performance. Unless otherwise specified, guarantee / warranty period shall be 30 months after the date of delivery of goods or 24 months from the date of commissioning of goods whichever is earlier. The guarantee / warranty period as described above shall apply afresh to replaced, repaired or re-executed parts of a delivery. Unless otherwise specifically provided in the Purchase Order, Vendor's liability shall be co terminus with the expiration of the applicable guarantee / warranty period.
24. Limitation of Liability: Vendor's liability towards this contract is limited to a maximum of 100% of the contract value and consequential damages are excluded. However the limits of liability will have no effect in cases of criminal negligence or wilful misconduct.
- The total liability of Vendor for all claims arising out of or relating to the performance or breach of the Contract or use of any Products or Services or any order shall not exceed the total Contract price.

25. Liability during guarantee / warranty: Vendor shall arrange replacement / repair of all the defective materials / services under its obligation under the guarantee / warranty period. The rejected goods shall be taken away by vendor and replaced / repaired. In the event of the vendor's failure to comply, BHEL may take appropriate action including disposal of rejections and replenishment by any other sources at the cost and risk of the vendor.
In case, defects attributable to vendor are detected during first time commissioning or use, vendor shall be responsible for replacement / repair of the goods as required by BHEL at vendor's cost. In all such cases expiry of guarantee / warranty will not be applicable.
26. Liability after guarantee / warranty period: At the end of the guarantee / warranty, the Vendor's liability ceases except for latent defects (latent defects are defects / performance issues noticed after the guarantee / warranty has expired). The Contractor's liability for latent defects warranty for the plant and equipment including spares shall be limited to a period of six months from the end of the guarantee / warranty period of the respective plant and equipment including spares or first time commissioning whichever is later but not later than 3 (three) years from the date of shipment.
27. Compliance with Laws: Vendor shall, in performing the contract, comply with all applicable laws. The vendor shall make all remittances, give all notices, pay all taxes, duties and fees, and obtain all permits, licences and approvals, as required by the laws in relation to the execution and completion of the contract and for remedying of any defects; and the Contractor shall indemnify and hold BHEL harmless against and from the consequences of any failure to do so.
28. Settlement of Disputes: Except as otherwise specifically provided in the Purchase Order, decision of BHEL shall be binding on the vendor with respect to all questions relating to the interpretation or meaning of the terms and conditions and instructions herein before mentioned and as to the completion of supplies/work/services, other questions, claim, right, matter or things whatsoever in any way arising out of or relating to the contract, instructions, orders or these conditions or otherwise concerning the supply or the execution or failure to execute the order, whether arising during the schedule of supply/work or after the completion or abandonment thereof. Any disputes or differences among the parties shall to the extent possible be settled amicably between the parties thereto, failing which the disputed issues shall be settled through arbitration. Vendor shall continue to perform the contract, pending settlement of dispute(s).
29. Arbitration Clause: In case amicable settlement is not reached in the event of any dispute or difference arising out of the execution of the Contract or the respective rights and liabilities of the parties or in relation to interpretation of any provision in any manner touching upon the Contract, such dispute or difference shall (except as to any matters, the decision of which is specifically provided for therein) be referred by either party to the sole arbitration of an Arbitrator appointed by the Executive Director/ General Manager of the purchasing unit/ region/ division of BHEL. Vendor shall have no objection even if the Arbitrator so appointed is an employee of BHEL or has ever dealt/ had to deal with any matter relating to this Contract.
Subject as aforesaid the provisions of the Arbitration and Conciliation Act, 1996 of India or any statutory modification or re-enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceedings under this clause. It is a term of contract that the party initiating arbitration shall specify the dispute or disputes to be referred to arbitration under this clause together with the amount or amounts claimed in respect of each such dispute. The venue for the arbitration shall be Bangalore, India. The award of the arbitrator shall be a speaking award and shall be final, conclusive and binding on all parties to this contract.
The cost of arbitration shall be borne equally by the parties. Notwithstanding the existence of any dispute or difference or any reference for the arbitration, the vendor shall proceed with and continue without hindrance the performance of the work under the contract with due diligence and expedition in a professional manner.
30. Applicable Laws and Jurisdiction of Courts: Prevailing Indian laws both substantive and procedural, including modifications thereto, shall govern the Contract. Subject to the conditions as aforesaid, the competent courts in BANGALORE alone shall have jurisdiction to consider over any matters touching upon this contract.

31. General Terms: That any non-exercise, forbearance or omission of any of the powers conferred on BHEL and /or any of its authorities will not in any manner constitute waiver of the conditions hereto contained in these presents.

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

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



ಭಾರತ್ ಹೆವಿ ಎಲೆಕ್ಟ್ರಿಕಲ್ಸ್ ಲಿಮಿಟೆಡ್
भारत हेवी इलेक्ट्रिकल्स लिमिटेड

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

PB 2606 , Mysore Road Bangalore , 560026 INDIA

CE: PR: 001- Rev 00

INSTRUCTIONS TO BIDDERS (Common for all RFQs)

Bidder is requested to read the instructions carefully and submit their quotation covering all the points:

A. GENERAL INSTRUCTIONS:

1. Any Purchase Order resulting from this enquiry shall be governed by the Instructions to Bidders (document reference: CE: PR: 001 – Rev 00), General Conditions of Contract (document reference: CE: PR: 002 - Rev 00) and Special Conditions of Contract, if any, of the enquiry.
2. Any deviations from or additions to the “General Conditions of Contract” or “Special Conditions of Contract” require BHEL’s express written consent. The general terms of business or sale of the bidder shall not apply to this tender.
3. Bidders (also includes the term suppliers / contractors wherever used in this document) are instructed to quote their most competitive price and best delivery, etc. in the offer. Prices should be indicated in both figures & words. **(Please also refer clause 11 under section B)**
4. Regret letter (either through post or by mail) indicating reasons for not quoting must be submitted without fail, in case of non-participation in this tender. If a bidder fails to respond against 3 consecutive tenders for the same item, he will be liable for removal as a registered vendor of BHEL.
5. Procurement directly from the manufacturers shall be preferred. However, if the OEM / Principal insist on engaging the services of an agent, such agent shall not be allowed to represent more than one manufacturer / supplier in the same tender. Moreover, either the agent could bid on behalf of the manufacturer / supplier or the manufacturer / supplier could bid directly but not both. In case bids are received from the manufacturer / supplier and his agent, bid received from the agent shall be ignored.
6. Consultant / firm (and any of its affiliates) shall not be eligible to participate in the tender/s for the related goods for the same project if they were engaged for consultancy services for the same project.
7. If an Indian representative / associate / liaison office quotes on behalf of a foreign based bidder, such representative shall furnish compulsorily the following documents:
 - a. Authorization letter to quote and negotiate on behalf of such foreign-based bidder.
 - b. Undertaking from such foreign based bidder that such contract will be honored and executed according to agreed scope of supply and commercial terms and conditions.
 - c. Undertaking shall be furnished by the Indian representative stating that the co-ordination and smooth execution of the contract and settlement of shortages / damages / replacement / repair of imported scope till system is commissioned and handed over to customer will be the sole responsibility of the Indian representative / associates / agent / liaison office.
 - d. Refer **Annexure X** on “Guidelines for Indian Agents”.
8. In case of imported scope of supply, customs clearance & customs duty payment will be to BHEL account after the consignment is received at Indian Airport / Seaport. Bidders must provide all original documents required for completing the customs clearance along with the shipment. Warehousing charges due to

incomplete or missing documentation will be recovered from the supplier's bill. All offers for imported scope of supply must be made from any of the gateway ports (within the country) indicated. **(Refer Annexure I)**

9. The offers of the bidders who are on the banned list and also the offers of the bidders, who engage the services of the banned firms, shall be rejected. The list of the banned firms is available on BHEL website: **www.bhel.com**
10. Business dealings with bidders will be suspended if they are found to have indulged in any malpractices / misconduct which are contrary to business ethics like bribery, corruption, fraud, pilferage, cartel formation, submission of fake/false/forged documents, certificates, information to BHEL or if they tamper with tendering procedure affecting the ordering process or fail to execute a contract, or rejection of 3 consecutive supplies or if their firms / works are under strike / lockout for a long period.

B. GUIDELINES FOR PREPARATION OF OFFER:

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

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

2. Supplier shall ensure to super scribe each envelope with RFQ number, RFQ Date, RFQ Due date and time, Item Description and Project clearly & boldly. Also mention on the envelope whether it is "Techno Commercial Bid" or "Price Bid" or "Pre-Qualification Bid". Please ensure complete address, department name and purchase executive name is mentioned on the envelope (before dropping in the tender box or handing over) so that the tender is available in time for bid opening.
3. BHEL standard Commercial Terms and Conditions (duly filled, signed & stamped) must accompany Technical-Commercial offer without fail and should be submitted in original only. Xerox copy will not be accepted.
4. Any of the terms and conditions not acceptable to supplier, shall be explicitly mentioned in the Techno-Commercial Bid. If no deviations are brought out in the offer it will be treated as if all terms and conditions of this enquiry are accepted by the supplier without deviation.
5. Deviation to this specification / item description, if any, shall be brought out clearly indicating "DEVIATION TO BHEL SPECIFICATION" without fail, as a part of Techno-Commercial Bid. If no deviations are brought out in the offer it will be treated as if the entire specification of this enquiry is accepted without deviation.
6. Suppliers shall submit one set of original catalogue, datasheets, bill of materials, dimensional drawings, mounting details and / or any other relevant documents called in purchase specification as part of Technical Bid.
7. "Price Bid" shall be complete in all respects containing price break-up of all components along with all

applicable taxes and duties, packing & forwarding charges (if applicable), freight charges (if applicable) etc. Once submitted no modification / addition / deletion will be allowed in the "Price Bid." Bidders are advised to thoroughly check the unit price, total price to avoid any discrepancy.

8. In addition, bidder shall also quote for erection & commissioning charges (E&C charges), documentation charges, service charges, testing Charges (type & routine), training charges, service tax, etc. wherever applicable. The price summary must indicate all the elements clearly.
9. Vendors should indicate "lump sum" charges (including To & Fro Fare, Boarding, Lodging, Local Conveyance etc.) for Supervision of Erection, Commissioning and handing over to customer. The quotation shall clearly indicate scope of work, likely duration of commissioning, pre-commissioning checklist and service tax (if any).
10. Wherever bidders require PAC (Project Authority Certificate) for import of raw materials, components required for Mega Power Projects, Export Projects or other similar projects wherein supplies are eligible for customs duty benefits, lists and quantities of such items and their values (CIF) has to be mentioned in the offer. Prices must be quoted taking into account of such benefits.
11. All quotations shall be free from corrections /overwriting. Corrections if any should be authenticated with signature and seal. Any typographical error, totaling mistakes, currency mistake, multiplication mistake, summing mistakes etc. observed in the price bids will be evaluated as per **Annexure II** "Guidelines for dealing with Discrepancy in Words & Figures – quoted in price bid". BHEL decision will be final.

C. GUIDELINES FOR OFFER SUBMISSION:

1. Offers / Quotations must be dropped in tender box before 13.00 Hrs. on or before due date mentioned in RFQ. The offers are to be dropped in the proper slot of the Tender Box kept in our reception area with caption "CE, SC&PV, DEFENCE." Tenders are opened on 3 days in a week (Monday/Wednesday/Friday). Tender must be deposited in the slot corresponding to the day (Monday - Box no.4/Wednesday - Box no. 6 /Friday - Box no.8) while depositing the offer. **(This clause will not be applicable for e-tenders)**
2. E-Mail / Internet / EDI offers received in time shall be considered only when such offers are complete in all respects. In case of offers received through E-mail, please send the offer to the email ID specified in the SCC of the tender. (Refer to SCC document of tender)
3. In cases where tender documents are bulky, or due to some reasons tender documents are required to be submitted by hand or through posts/couriers, the offers are to be handed over either of the two officers whose names are mentioned in the RFQ. (Refer to SCC document of tender)
4. Tenders will be opened on due date, time and venue as indicated in the RFQ in the presence of bidders at the venue indicated in the RFQ. In case of e-procurement, bidders can see tender results till seven days after due date and time.
5. Vendor will be solely responsible:
 - a. For submission of offers before due date and time. Offers submitted after due date and time will be treated as "Late offers" and will be rejected.
 - b. For submission of offers in the correct compartment of the tender box based on the day of due date (Monday/Wednesday/Friday). Please check before dropping your offer in the correct tender box.
 - c. For depositing offers in proper sealed condition in the tender box. If the bidder drops the tender in the wrong tender box or if the tender document is handed over to the wrong person BHEL will not be responsible for any such delays.
 - d. For offers received through email etc., suppliers are fully responsible for lack of secrecy on information and ensuring timely receipt of such offers in the tender box before due date & time.
 - e. In case of e-tender, all required documents should be uploaded before due date and time. Availability of power, internet connections, etc. will be the sole responsibility of the vendor. Wherever assistance is

needed for submission of e-tenders, help line numbers and executives of service provider of BHEL may be contacted.

Service provider: M-junction

Website address: <https://bheleps.buyjunction.in/>

Helpline no.: 033-66106426/6217/6013/6046/6176 (9:30 am to 5:30 pm)

9163348283/9163348284/9163348285/9163348286/8584008116 (5:30 pm to 8:30 pm)

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

D. PROCESSING OFFERS RECEIVED:

1. Any discount / revised offer submitted by the supplier on its own shall be accepted provided it is received on or before the due date and time of offer submission (i.e. Part-I bid). The discount shall be applied on pro-rata basis to all items unless specified otherwise by the bidder.
2. Changes in offers or Revised offers given after Part-I bid opening shall not be considered as a part of the original offer unless such changes / revisions are requested by BHEL.
3. In case there is no change in the technical scope and / or specifications and / or commercial terms & conditions, the supplier will not be allowed to change any of their bids after Technical bids are opened (after the due date and time of tender opening).
4. In case of changes in scope and/ or technical specifications and/ or commercial terms & conditions by BHEL and it accounts for price implications from vendors, all techno-commercially acceptable bidders shall be asked by BHEL (after freezing the scope, technical specifications and commercial terms & conditions) to submit the impact of such changes on their price bid. Impact price will be applicable only for changes in technical specification / commercial conditions by BHEL. The impact price must be submitted on or before the cut-off date specified by BHEL and the original price bid and the price impact bid will be opened together at the time of price bid opening.
5. BHEL EDN reserves the right to adopt Reverse Auction or standard Price Bid Opening procedure for price evaluation, at its discretion. This will be decided after completion of technical evaluation of tender. **(Refer Annexure III for Guidelines for Reverse Auction).**
6. Un-opened bids (including price bids) will be returned to the respective bidders after release of PO and receipt of order acknowledgement from the successful bidder.
7. After receipt of Purchase Order, supplier should submit required documents like drawings, bill of materials, datasheets, catalogues, quality plan, test procedure, type test report , O & M Manuals and / or any other relevant documents as per Specification / Purchase Order, as and when required by BHEL / Customer.
8. Any deviation to the terms and conditions not mentioned in the quotation by supplier in response to this enquiry will not be considered, if put forth subsequently or after issue of Purchase Order, unless clarification is sought for by BHEL EDN and agreed upon in the Purchase Order.
9. Evaluation shall be on the basis of delivered cost (i.e. "Total Cost to BHEL").
 "Total Cost to BHEL" shall include total basic cost, packing & forwarding charges, taxes and duties, freight charges, insurance, service tax for services, any other cost indicated by vendor for execution of the contract and loading factors (for non-compliance to BHEL Standard Commercial Terms & Conditions). Benefits arising out of Nil Import Duty on Mega Projects, Physical Imports or such 100% exemptions (statutory benefits), customer reimbursements of statutory duties (like Excise Duty, CST, VAT) will also be taken into account at the time of tender evaluation. (wherever applicable and as indicated in SCC document of tender)

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

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

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

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

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

E. INFORMATION ON PAYMENT TERMS:

1. All payments will be through Electronic Fund transfer (EFT). Vendor has to furnish necessary details as per BHEL standard format **(Refer Annexure IV)** for receiving all payments through NEFT. (Applicable for Indian vendors only)
2. In case of High Sea Sales transaction, customs clearance of the consignment landed on Indian Sea / Air ports will be done by BHEL based on the original HSS documents provided by vendors. All warehousing charges due to delay in submission of complete and or correct HSS documents to BHEL will be to suppliers account only. Such recovery will be made out of any of the available bills. **(Refer Annexure V)**.
3. Statutory deductions, if any, will be made and the deduction certificate shall be issued. In case vendor does not provide PAN details, the TDS deduction shall be at the maximum percentage stipulated as per the provisions of Income Tax Act. (Applicable for Indian vendors only).
Foreign vendors shall submit relevant details of their bankers like Swift Code, Banker's Name & Address etc.
4. Vendors must submit bills & invoices along with required supporting documents in time. Incomplete documentation / delayed submission of invoice / documents will result in corresponding delay in payment.

F. STANDARD PAYMENT TERMS OF BHEL-EDN

Purchase Orders for indigenous procurement

Refer Annexure-XII for Highsea sales payment

(a) SUPPLY WITH E&C:

- 1) 85% of basic value (excluding E&C charges) + 100% of taxes, duties and freight charges will be paid in 45 days from the date of dispatch or 15 days from the date of submission of complete set of documentation whichever is later.
- 2) 15% of basic value (retention money), (excluding E&C charges) will be paid in 15 days from the date of submission of documents against supplementary invoice with proof of completion of E&C along with E & C charges (if any)

(b) SUPPLY WITH SUPERVISION OF E&C:

- 1) 90% basic value (excluding E&C charges) + 100% of taxes, duties and freight charges will be paid in 45 days from the date of dispatch or 15 days from the date of submission of complete set of documentation whichever is later.
- 2) 10% of basic value (retention money), (excluding E&C charges) will be paid in 15 days from the date of completion of erection and commissioning against supplementary invoice with proof of completion of E&C along with supervision charges (if any)

(c) SUPPLY ONLY:

- 1) 100% of PO value with taxes, duties and freight will be paid in 45 days from the date of dispatch or 15 days from the date of submission of complete set of documentation whichever is later.

Purchase orders for import procurement:**(d) SUPPLY WITH E&C:**

- 1) 85% of the basic value (excluding E&C charges) will be paid in 45 days, against usance draft of 45 days, from the date of AWB/BOL on submission of complete set of documents.
- 2) 15% of basic value (retention money), (excluding E&C charges) will be paid in 15 days from the date of completion of E&C along with E & C charges against supplementary invoice with proof of completion of E&C (if any).

(e) SUPPLY WITH SUPERVISION OF E&C:

- 1) 90% of the value of the order will be paid on the 45th day, against usance draft of 45 days, from the date of AWB/BOL on submission of complete set of documents.
- 2) 10% of basic value (retention money) will be paid in 15 days from the date of completion of erection and commissioning against supplementary invoice with proof of completion of E&C along with supervision charges (if any).

(f) SUPPLY ONLY:

- 1) 100% of PO value will be paid against usance draft of 45 days from the date of dispatch or 15 days from the date of submission of complete set of documents whichever is later.

LOADING FACTORS FOR PAYMENT TERMS:

- 1) For offers received with requests for negotiation of documents through bank loading will be 15% of basic value (all bank charges to be borne by the seller).
(This loading factor is applicable only for purchase orders for indigenous supply).
- 2) In all cases where credit period is 30 days but not in line with the above mentioned standard payment terms offered loading applicable will be 5% of basic value.
(This loading factor is applicable only for purchase orders for indigenous supply).
- 3) For offers received with Letter of Credit payment term in place of sight draft payment term, loading applicable will be 5% of basic value. Additional loading of 5% will be applicable for payment terms as Letter of Credit with usance of less than 45 days.
(This loading factor is applicable only for purchase orders for imported supply).
- 4) For offers received with Sight Draft payment terms with usance of less than 45 days, loading of 5% will be applicable.
(This loading factor is applicable only for purchase orders for imported supply).
- 5) All payment terms with credit period of less than 30 days for indigenous supply and any other variation of payment terms are liable for rejection.
- 6) Standard payment terms indicated in para F (a), (b), (c), (d), (e) and (f) will not attract any loading.

Note 1: Basic value of Purchase Order mentioned above will include all components of the purchase order and will exclude only taxes, duties, freight and E&C charges (wherever applicable).

Wherever the Purchase Order is split into import portion and indigenous portion of supply the retention money will be 15% or 10% (as applicable) of both purchase order values put together.

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

G. Bank guarantee (BG) / Performance bank guarantee (PBG):

1. Bank guarantee (BG) / Performance bank guarantee (PBG) will be applicable as called in the tender documents refer SCC. Such PBG shall be valid for a period as called in SCC for a value equal to 10 % of the basic value of the purchase order. No deviation for the duration of PBG / BG will be permitted.
 - a. PBG shall be from any of the BHEL consortium of bankers (**refer Annexure VI**).
 - b. PBGs from nationalized banks are also acceptable.
 - c. PBG should be sent directly by the bank to the dealing executive mentioned in the purchase order located at the address mentioned in the purchase order. PBG should be in the format indicated. (**Refer annexures VII & VIII respectively**). No deviation to these formats will be allowed.
 - d. Confirmation from any of the BHEL consortium of banks or any of the Indian Public Sector Banks is essential for the acceptance of PBGs issued by foreign banks (located outside India).
 - e. Expired BGs / PBGs will be returned only after expiry of the claim period or on completion of the contractual obligation.
 - f. **Non acceptance for submission of PBG will attract loading as indicated below**
 - i. Loading will be equal to the percentage of value for which BG / PBG is not provided. (Ex: if PBG / BG is given for 3 % of the basic value against 10% specified, loading applicable will be 7% ($10 - 3 = 7$ %). This value will be added to the quoted price while evaluating the lowest offer.

H. PROVISIONS APPLICABLE FOR MSE VENDORS (MICRO AND SMALL ENTERPRISES)

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

- a. Valid NSIC certificate or
- b. Entrepreneur's Memorandum part II (EM II) certificate (deemed valid for 2 years).
- c. EM II certificate with CA certificate (**in the prescribed format given in Annexure IX**) applicable for the year certifying that the investment in plant and machinery of the vendor is within permissible limits as per the MSME Act 2006 for relevant status where the deemed validity is over.
- d. Documents submitted for establishing the credentials of MSE vendors must be valid as on the date of part I / technical bid opening for the vendors to be eligible for the benefits applicable for MSE vendors. Documents submitted after the Part I / Technical bid opening date will not be considered for this tender.

PURCHASE PREFERENCE FOR MSE VENDORS:

- e. MSE vendors quoting within a price band of L1 + 15% shall be allowed to supply up to 20% of the requirement against this tender provided
 1. The MSE vendor matches the L1 price
 2. L1 price is from a non MSE vendor
 3. L1 price will be offered to the nearest vendor nearest to L1 in terms of price ranking (L2 - nearest to L1). In case of non-acceptance by the MSE vendor (L2) next ranking MSE vendor will be offered who is within the L1 + 15% band (if L3 is also within 15% band).
 4. 20% of the 20% (i.e. 4% of the total enquired quantity) will be earmarked for SC/ST owned MSE firms provided conditions as mentioned in (1) and (2) are fulfilled.

5. In case no vendor under SC / ST category firms are meeting the conditions mentioned in (1) and (2) or have not participated in the tender, in such cases the 4% quantity will be distributed among the other eligible MSE vendors who have participated in the tender.
6. Serial no. 1 to 5 will not be applicable wherever it is not possible to split the tendered quantity / items on account of customer contract requirement, or the items tendered are systems. Such information that tendered quantity will not be split will be indicated in the SCC.

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

1. Commitment by BHEL:

BHEL commits to take all measures necessary to prevent corruption in connection with the Tender process and execution of the Contract. BHEL will, during the tender process, treat all bidder / suppliers in a transparent and fair manner, and with equity.

2. Commitment by Bidder(s)/ Contractor(s):

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

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

PURCHASE EXECUTIVE

ANNEXURE - I
LIST OF INTERNATIONAL GATEWAY AIRPORTS

For airbased consignment, terms of delivery will be on FCA basis from following listed airports only.
This list is valid from 01.03.2013 to 28.02.2015. Vendors are requested to verify this list for use after 28.02.2015.

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

ANNEXURE – II
DISCREPANCY IN WORDS & FIGURES – QUOTED IN PRICE BID

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

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

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

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

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

ANNEXURE-III
GUIDELINES FOR REVERSE AUCTION PROCEDURE

Against this enquiry for the subject item/ system with detailed scope of supply as per enquiry specifications, BHEL may resort to “REVERSE AUCTION PROCEDURE” i.e., ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit “online sealed bid” in the Reverse Auction. Non-submission of “online sealed bid” by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
3. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
4. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
5. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
6. Bidders have to fax the Compliance form before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
7. In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at “Total Cost to BHEL” like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
8. Reverse auction will be conducted on scheduled date & time.
9. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.
10. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL’s standard practice.
12. Bidders shall be required to read the “Terms and Conditions” section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the “Business Rules of Reverse Auction”, which will be communicated before the Reverse Auction.
13. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant BHEL guidelines, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
15. In case BHEL decides to go for reverse auction, the H1 bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.

16. 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"

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

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

TYPE OF REQUEST(Tick one): _____ CREATE _____ CHANGE

BHEL Vendor / Supplier Code:

Company Name :

Permanent Account Number(PAN):

Address

City:

PINCODE

STATE

Contact Person(s)

Telephone No:

Fax No:

e-mail id:

1 Bank Name:

2 Bank Address:

3 Bank Telephone No:

4 Bank Account No:

5 Account Type: Savings/Cash Credit

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

7 Bank IFSC Code(applicable for NEFT)

8 Bank IFSC code(applicable for RTGS)

(Indian Financial System Code)

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

Date:

Authorised Signatory:

Designation:

Telephone No. with STD Code

Company Seal

Bank Certificate

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

Date:

(.....)

Place:

Signature

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

Bharath Heavy Electricals Ltd,

Attn:

Electronics Division, Mysore Road,

BANGALORE - 560 026

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

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

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

1. ORIGINAL HIGH SEA SALES AGREEMENT

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

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

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

4. ORIGINAL HOUSE AIR WAY BILL/ BILL OF LADING

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

5. ORIGINAL CARGO ARRIVAL NOTICE FROM FORWARDER.

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

7. ORIGINAL PACKING LIST.

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

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

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

Annexure-VI
BHEL MEMBER BANKS (LIST OF CONSORTIUM BANKS)

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

	Nationalised Banks		Nationalised Banks
1	Allahabad Bank	19	Vijaya Bank
2	Andhra Bank		Public Sector Banks
3	Bank of Baroda	20	IDBI
4	Canara Bank		Foreign Banks
5	Corporation Bank	21	CITI Bank N.A
6	Central Bank	22	Deutsche Bank AG
7	Indian Bank	23	The Hongkong and Shanghai Banking Corporation Ltd. (HSBC)
8	Indian Overseas Bank	24	Standard Chartered Bank
9	Oriental Bank of Commerce	25	The Royal Bank of Scotland N.V.
10	Punjab National Bank	26	J P Morgan
11	Punjab & Sindh Bank		Private Banks
12	State Bank of India	27	Axis Bank
13	State Bank of Hyderabad	28	The Federal Bank Limited
14	Syndicate Bank	29	HDFC Bank
15	State Bank of Travancore	30	Kotak Mahindra Bank Ltd
16	UCO Bank	31	ICICI Bank
17	Union Bank of India	32	IndusInd Bank
18	United Bank of India	33	Yes Bank

Note:

- All BGs must be issued from BHEL consortium banks listed above.
- BHEL may accept BG from other Nationalised Banks also which are not listed above.
- BG will not be accepted from Scheduled Banks and Co-operative Banks.
- In case BG is issued from a bank located outside Indian territory and is issued in foreign currency, the BG must be routed through and confirmed by any one of the above mentioned consortium banks or any of the Indian Public Sector Banks.
- This list is subject to changes. Hence vendors are requested to check this list every time before issuing BGs.

ANNEXURE-VII

BANK GUARANTEE FOR PERFORMANCE SECURITY

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

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

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

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

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

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

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

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

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

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

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

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

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

Notwithstanding anything to the contrary contained hereinabove:

- a) The liability of the Bank under this Guarantee shall not exceed.....⁸
- b) This Guarantee shall be valid up to⁹

c) Unless the Bank is served a written claim or demand on or before _____¹⁰ all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

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

For and on behalf of
(Name of the Bank)

Dated.....

Place of Issue.....

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

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

³ DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

⁴ PROJECT/SUPPLY DETAILS

⁵ BG AMOUNT IN FIGURES AND WORDS

⁶ VALIDITY DATE

⁷ DATE OF EXPIRY OF CLAIM PERIOD

⁸ BG AMOUNT IN FIGURES AND WORDS.

⁹ VALIDITY DATE

¹⁰ DATE OF EXPIRY OF CLAIM PERIOD

ANNEXURE-VIII

Note for performance bank guarantee:

1. To be executed in Rs. 100/- Non-Judicial stamp paper.
2. To be submitted by issuing bank to Purchase Dept. directly. Please give BHEL address to banker.
3. Do not enclose with Bank document.
4. Modifications and additions/deletions to this BG format shall not be permitted.
5. **In Case of Bank Guarantees submitted by Foreign Vendors-**
 - a. **From Nationalized/Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India)** can be accepted subject to the condition that the Bank Guarantee should be enforceable in the town/city or at nearest branch where the Unit is located i.e. Demand can be presented at the Branch located in the town/city or at nearest branch where the Unit is located.
 - b. **From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)**
 - b.1 In such cases, in the Tender Enquiry/ Contract itself, it may be clearly specified that Bank Guarantee issued by **any of the Consortium Banks only** will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter- Guarantee by Foreign Bank in favour of the Indian Bank (BHEL's Consortium Bank). It is advisable that all charges for issuance of Bank Guarantee/ counter- Guarantee should be borne by the Foreign Vendor. The tender stipulation should clearly specify these requirements.
 - b.2 **In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank** (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at **sl.no. b.1** will required to be followed.
 - b.3 The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time). In case, of Foreign Vendors, the BG Format provided to them should clearly specify the same.
 - b.4 The BG should clearly specify that the demand or other document can be presented in electronic form.

Annexure - IX
Certificate by Chartered Accountant on Letter Head

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

Further verified from the Books of Accounts that the investment of the company as
on date..... **as per MSMED Act 2006 is as follows:**

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

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

Date:

(Signature)

Name -

Membership Number -

Seal of Chartered Accountant

Guidelines for Indian Agents
ANNEXURE - X

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

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

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

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

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

---X---

Vendor's Signature with Seal

Guidelines for Indian Agents of Foreign Suppliers

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

Disclaimer Certificate For Deemed Export Benefits

I, (Name & Designation)on behalf of M/s. (Name and address of the supplier) hereby certify that we have supplied the following goods to M/s..... (Name and address of the recipient):

S.No.	Inv. No. & date	Description of goods	Unit	Qty.	Value

1. We are the manufacturer exporters/suppliers and are registered/not registered with Central Excise and have not availed and will not avail CENVAT facility in respect of the input/components used in aforesaid supplies. We have also not availed and will not avail rebate on the inputs/components used in aforesaid supplies.

OR

We are the suppliers and our supporting manufacturer(s) is/are registered/not registered with Central Excise and have not availed and will not avail CENVAT facility in respect of the inputs/components used in aforesaid supplies.

2. We also certify that we have not been issued any Advance Authorization/Duty Free Import Authorization in respect of the aforesaid supplied goods and have not availed any benefit thereon.

3. We further state that we have not drawn nor will draw any benefit for deemed export and we have no objection if M/s..... (Name and address of the recipient) draws the deemed export benefits on the supplies mentioned above. (Required to be given in case benefits are claimed by recipient of goods).

OR

We have not given disclaimer certificate to M/s..... (Name and address of the recipient) and will not give disclaimer certificate, in future, in respect of these supplies for claiming deemed export benefits (Required to be given in case benefits are claimed by DTA suppliers).

"Purchase Orders for HSS procurement

(a) SUPPLY WITH E&C:

85% basic value will be paid in 45 days from the date of signing of High Sea Sale agreement or 15 days from the date of submission of complete set of documentation whichever is later. 15% of basic value (retention money), will be paid in 15 days from the date of completion of erection and commissioning against supplementary invoice with proof of completion of E&C

(b) SUPPLY WITH SUPERVISION OF E&C:

90% basic value will be paid in 45 days from the date of signing of High Sea Sale agreement or 15 days from the date of submission of complete set of documentation whichever is later. 10% of basic value (retention money), will be paid in 15 days from the date of completion of Supervision of erection and commissioning against supplementary invoice with proof of completion of E&C

(c) SUPPLY ONLY:

100% basic value will be paid in 45 days from the date of signing of High Sea Sale agreement or 15 days from the date of submission of complete set of documentation whichever is later.

LOADING FACTORS FOR PAYMENT TERM:

In all cases where credit period is 30 days with the above offered standard payment terms, loading applicable will be 5% of basic value.
All payment terms with credit period of less than 30 days and any other variation of payment terms are liable for rejection."

Annexure-XII
High sea sales payment term:



Page 1 of 18

Dept Code 416	DRN.	NAME	SIGN	DATE
	PREPARED	Amit Kr Sharma		24.01.2017
	APPROVED	Rajasekar K		24.01.2017



Page 2 of 18

REV No.	DATE	NATURE OF CHANGE	REASON	PREPARED BY	REVIEWED BY
00	24.01.2017	FIRST ISSUE	---	AKS	KRS

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COPYRIGHT AND CONFIDENTIAL The information contained in this document is the property of BHARAT HEAVY ELECTRICALS LIMITED This must not be used directly or indirectly, in any manner detrimental to the interest of the company		SECTION-A GENERAL INSTRUCTIONS TO BIDDERS INTRODUCTION: System Integrators quoting on behalf of OEM of PA SYSTEM or PA SYSTEM OEM participating directly (henceforth referred as Bidders) are required to submit complete technical offer for supply, erection, commissioning and handing over of IP based PA SYSTEM for thermal power plant of M/s NTPC located at Tanda 2x660MW. All documents submitted by bidders shall be in English language only. Pre-Qualification Requirement (henceforth referred as PQR) for bidders are mentioned in section-B and technical requirement are mentioned in section-C of this document. 1. Submission of Documents: a) All documents/Forms/Authorization letters etc as listed in Section-B shall be uploaded by bidder under PART-1 section in EPS portal. b) Complete technical offer / proposal (refer section-C Cl 9 for list of documents to be submitted under technical offer) shall be uploaded by bidder under PART-2 section of EPS portal. c) Price bids are to be entered by bidder under PART-3 section of EPS portal. The priced BOM, having unit rate of each item shall be attached in PART-3 ONLY. 3. Evaluation Methodology a) PART-1 bid related to PQR qualification will be opened first for review and evaluation by BHEL. If a bidder does not submit complete PQR document or document submitted by bidder does not meet the PQR criteria mentioned, offer of such bidders will be summarily rejected and will not be considered for further evaluation in the tender. Technical bids of only those bidders who meet PQR criteria shall be opened for review and further consideration by BHEL. c) Provenness and Track Record (henceforth referred as PTR) criteria for PA system is indicated in Section-C Cl 7 of this specification. Bidders should submit all documents/forms etc mentioned at section-B cl 4 for both system integrator and make of PA system. d) Bidders declared qualified for meeting PQR criteria as mentioned in section-B, their credential documents (submitted under section-B cl 1, 2, 3 & 4) shall be forwarded to M/s NTPC for approval. These documents and forms are to be submitted by both system integrator and make of PA system. If make of PA system offered by a bidder is not approved by M/s NTPC, then offer of all such make participating directly or through system integrator will be rejected. Further, if a system integrator is not approved by M/s NTPC (irrespective of whether their offered make of PA system is approved or not), offer of such bidder will also be rejected and shall not be considered further in the tender. e) If bidder's offered make of PA system is not found meeting PTR / PQR criteria, offer of such bidders will be rejected and no change of make of PA system shall be allowed. Therefore bidders are advised to quote most suitable make and model of PA SYSTEM which meets all PTR and technical specification requirements of the PA system mentioned in Section-C		

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COPYRIGHT AND CONFIDENTIAL The information contained in this document is the property of BHARAT HEAVY ELECTRICALS LIMITED This must not be used directly or indirectly, in any manner detrimental to the interest of the company		f) Bidders may note that four makes of PA system are indicated by M/s NTPC as “Under approval, details required” (<u>refer Annexure IV</u>) for Tanda 2x660MW project. Therefore these makes are also not yet approved for this project. Bidder can offer any other make of PA system meeting PTR and technical requirements. g) One system integrator or OEM can submit only one bid. If multiple bids of same make or different makes of PA system are submitted, then both offer of bidder will be summarily rejected. 4. If required during evaluation of PQR / Technical bids, the bidder should visit BHEL- Electronics Division, Bangalore for discussion in 3 days notice and failure of this can result in rejection of bid. Further in event of order, the successful bidder along with PA system OEM representative shall visit M/s NTPC – Noida for discussion on document approval on as required basis. 5. This specification does not prohibit any bidder to quote / participate in this tender with clause wise deviation from the specification. Changes in technical specification / scope / BOM, if any, shall be informed to participating bidders only. 6. All bidders, irrespective of their existing approval with BHEL / other units of BHEL / NTPC, should submit all above mentioned documents. 7. Consolidated Pre-Bid queries must be sought by Bidders through email within 15days from floating the tender and it is suggested & preferred that bidders may visit BHEL-EDN for seeking clarifications to such queries. Clarification sought within 7 days from due date of bid submission will not be entertained and replied. 10. Multiple make / model number are not acceptable for all active components like call station, loudspeaker, servers, network switch etc. For indigenous components, bidder can offer maximum two makes / model nos within approved makes mentioned in <u>Annexure-IV</u> of this specification. For items whose approved makes are mentioned in <u>Annexure-IV</u>, if a bidder quotes any make other than approved makes, offer of such bidders will be summarily rejected. Therefore bidders are advised to quote only within approved makes of items that are specified in this tender document.		



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SECTION-B

PRE QUALIFICATION REQUIREMENTS

The bidder should be original equipment manufacturer (OEM) of PA SYSTEM or System Integrator of PA SYSTEM and shall meet all of following Pre-qualification requirements mentioned below:

1. The bidder should have supplied IP - PA SYSTEM or supplied & commissioned Analog PA system during last 5 years as on bid submission due date of this tender in a power plant / cement plant / petroleum refinery / steel plants / coal mine / other process industry / large commercial establishments which involves call stations in outdoor locations.

Bidder should furnish all of following document to substantiate the above requirement:

- i) Unpriced PO copy
- ii) Commissioning report/MOM signed by user, if system is commissioned
- iii) List of past supplies in tabular form mentioning name of project, Name & contact details of contact person of user of the system, year of supply, year of commissioning make and model of call station etc.
- v) System Integrators participating on behalf of OEM of PA SYSTEM should submit colour scanned file of Manufacturer Authorisation Letter (ink signed) from OEM for their consent to participate in this tender and confirmation for support / troubleshooting during commissioning and operation of the systems. The MAF should also indicate that the offered models of PA system are new (not refurbished), the models are not End of Life and spares of these models shall be available for 5 years from delivery of the PA system.

2. OEM of PA system based outside India who are submitting offer directly for this tender, shall have authorized representatives in India for support related to Documentation, technical support, troubleshooting, Erection, Commissioning and other co-ordination work. Letter from OEM detailing Indian representative details should be provided. OEM to also furnish an undertaking letter that in case of change in Indian representative / agent, OEM shall continue to support for commissioning and troubleshooting the supplies made through this tender.

3. All bidder should submit unpriced BOM clearly indication make and model number of each items offered in Part-A bid also.

4. i) PTR requirement of PA system is mentioned at section-C cl 7. The bidder shall submit following supporting documents for meeting PTR requirements:

- a) Unpriced PO copy along with detailed BOM clearly indicating the make/model of PA system components
- b) Contact details of end user
- c) Commissioning certificate or MOM or performance certificate clearly indicating date of commissioning

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COPYRIGHT AND CONFIDENTIAL The information contained in this document is the property of BHARAT HEAVY ELECTRICALS LIMITED This must not be used directly or indirectly, in any manner detrimental to the interest of the company		ii) The OEM of PA system shall submit filled up NTPC's sub-supplier approval form provided Annexure-V of this specification. iii) Clause wise Technical compliance (in tabular form) to all technical specification of PA system mentioned in Annexure-I 5. Bidder should have a clean track record, i.e. the bidder should not be under hold or blacklist by any of the BHEL units / any Govt of India PSU / Govt of India as on bid submission date. To this effect, a declaration should be given by the bidder.		

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COPYRIGHT AND CONFIDENTIAL The information contained in this document is the property of BHARAT HEAVY ELECTRICALS LIMITED This must not be used directly or indirectly, in any manner detrimental to the interest of the company		SECTION-C 1. Project Location: TANDA 2x660MW STAGE-II: The Stage-I (4x110 MW) of the project is under commercial operation and the Stage-II shall be a mega project comprising of two units of 660 MW each. The site is located on the right bank of Main Tanda Canal near Bahadurpur village in Ambedkar Nagar District of Uttar Pradesh having latitude and longitude of 26° 35' 30" N and 82° 47' 35" 40' E respectively. The site is approachable from Tanda - Faizabad State Highway. Nearest railway station Akbarpur is at a distance of 20 kms on Faizabad-Shahganj section of Northern Central railways. The nearest airport at Lucknow is at a distance of about 240 Kms from the project site. 2. INTENT OF SPECIFICATION 2.01.01 This specification is intended to cover the design, manufacture, assembly, Inspection and testing at Bidder's works; delivery including packaging in container for road worthy shipping for the items and all accessories specified in the scope of supply and as required for safe and trouble free operation of IP PUBLIC ADDRESS (PA) SYSTEM. 2.01.02 All systems covered herein shall be for the permanent phase of the project and shall include but not be limited to; design, supply, supervision of interface installation Bidder's works, test, commission and hand over to End user. 2.01.03 It is not the intent to completely specify all details of design and construction herein. Nevertheless, the system shall conform to high standard of engineering, design and workmanship in all respects and shall be capable of performing satisfactorily in continuous commercial operation under the prevailing environmental condition of the project site. 3. SCOPE OF WORK AND EXCLUSIONS GENERAL The scope of work in this document specifies the technical & contractual requirements for the design, supply, erection, testing and commissioning of PA SYSTEM. Bidder shall be fully responsible for compliance of the system to be supplied in line with the requirements of this specification. Provisions included in the specification will not be limitative to the scope of work and bidder shall be responsible for supply, installation, erection, commissioning and handing over of complete system. Bidder shall provide supply/services for any further activities which will improve the quality & performance of the system offered		

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COPYRIGHT AND CONFIDENTIAL The information contained in this document is the property of BHARAT HEAVY ELECTRICALS LIMITED This must not be used directly or indirectly, in any manner detrimental to the interest of the company		within the quoted price. Tentative list of distribution of call station are listed in the Annexure-1 of this specification. The plot plan of the projects are enclosed as <u>Annexure-VI</u> INCLUSION IN SUPPLY: The scope of supply in this specification includes complete design, fabrication, manufacture and assembly, inspection, shop testing at manufactures works, supply, transportation to site, site testing, erection and commissioning and performance testing of the complete PA SYSTEM except specific exclusion mentioned in later section of this specification. SCOPE OF SERVICE Following service shall also be provided by Bidder for equipment & systems supplied under this specification except specific exclusion mentioned in later section of the specification:- ▪ Carrying out detail engineering, preparation and submission of all drawings as specified elsewhere in this specification including preparation and submission of area wise bill of materials, layout and erection drawings showing location of all system equipment and components, cable schedule, cable tray/rack and conduit routing. ▪ Inspection and testing at Bidder's works as per the approved Quality Assurance Plan. ▪ Packing and forwarding of all items (except cables) included under this specification in a weather proof container with lock and key. The bidder shall be responsible for safe storage of the items inside the container against weather. It shall be bidder's responsibility to take materials out of container for erection and commissioning of the systems. ▪ The erection, installation and commissioning of the complete PA SYSTEM will be in bidder scope of services. This will include storage in weather proof container, fixing of call station and loudspeakers (as per site requirement), all cable laying & termination/splicing of all types of cables, fixing of conduits/cable tray, installation and commissioning of all items supplied under PA SYSTEM as required basis. The cables of the systems will be generally laid on the cable tray available in the plant. For end termination, the cable may be required to be laid inside conduits/cable trays. Underground cabling is also to be done where ever cable tray is not available. ▪ Bidder shall supply and install the necessary interconnecting cables, conduits and other accessories as mentioned in BOM or as required for the system along with other required accessories for completion of the systems. ▪ Bidder will, during the time of detail engineering and installation of the quoted system, interact and coordinate with any other agency regarding collection/retrieval of inputs/information/data and all such works shall be under the scope of this Bidder. If necessary, the Bidder may contact the purchaser for clarifications before submission of their Bid. ▪ Establish the specified interfaces and demonstrate operation.		

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COPYRIGHT AND CONFIDENTIAL The information contained in this document is the property of BHARAT HEAVY ELECTRICALS LIMITED This must not be used directly or indirectly, in any manner detrimental to the interest of the company		▪ Site modification and preparation of “as-built” documentation”. ▪ Securing certification from relevant authorities, wherever applicable. ▪ Project management and scheduling including micro-planning in specific work area and reporting progress periodically. ▪ Bidder has to provide the services required for completeness and correctness of the system irrespective of whether it is mentioned in the specification or not. ▪ The complete erection and commissioning of PA SYSTEM shall be done as per availability of fronts in the project and would have to be done spreading over a period of approximately 2-3years from delivery of the materials at site. The erection and commissioning would therefore require multiple visit to site for survey, planning, cable schedule preparation, laying of cables, call station / loudspeaker mounting, sever installation and commissioning and call station / loudspeaker commissioning and bidders should include the same in their offer for E&C. 1) Erection, mounting & installation of call station and loudspeaker (all varieties including pole mounted if any) and connecting to network 2) Mounting & installation Servers, recording/storage devices, programming stations and connecting to network 3) Erection and commissioning of networking e.g., cables(UTP/OFC thru’ conduit/cable tray), network panels, enclosure, switch, media converter, LIU, patch cords etc. 4) Termination and testing of OFC (all cores) 5) Erection and commissioning of power connection (using min UPS/mini UPS as applicable) 6) Cable laying, erection and commissioning of Alarm contacts and configuration of the same 7) Erection and commissioning of all the interfaces 8) Installation and configuration of all the software’s 9) Also includes Travel from headquarters to site, stay at site and local travel at site. Any incidental expenses at site to engage local man power. 10) Demonstration of functionality to BHEL/END users 11) Training on operation and maintenance to end users 12) Storage and security to be arranged by vendor at site at their cost for all the equipment’s supplied till handing over to the end user (M/S. NTPC). i. Labor regulations especially obtaining labor license, furnishing of wage sheet and PF deposit challan along with yearly returns to be provided by the vendors each month. ii. It is highly preferable to provide the PA SYSTEM solution based on open architecture as described in the specification with any one of the approved makes. Proprietary products / solutions are not acceptable. 13) The cable laying (all type) scope shall include 40,000mtrs of cable to be laid in cable trays, 5,000mtrs using conduit and 500mtrs by road cutting/trenching.		



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EXCLUSIONS from scope of supply / services:

- a) Lifting of PA SYSTEM 42U panels / from stores to control room
- b) Supply of FO and CAT-5 cables. However supply of FO and CAT-5 accessories like LIU, patch cords etc and laying, splicing & termination of these cables shall be in bidder scope. Bidder should consider 5000mtrs of CAT-5 cable and 20000mtrs of FO cable for their estimation purpose.

4. ENVIRONMENTAL CONDITIONS

Instruments, devices and equipment for location in outdoors/indoor/air-conditioned areas shall be designed to suit the environmental conditions indicated below and shall be suitable for continuous operation in the operating environment of a coal fired utility station and also during periods of air conditioning failure without any loss of function, or departure from the specification requirements covered under this specification.

Ambient Temperature (outside cabinets)	Pressure	Relative humidity	Atmosphere	Required protection Class of CABINETS
Outdoor Location				
55 degree C max.	Atmosphere	100 % Max.	Air (dirty)	IP 55
4 degree C min.	Atmosphere	5 % min.	Air (dirty)	IP 55
Indoor Location				
55 degree C max.	Atmosphere	95 % Max.	Air	IP 54**
4 degree C min.	Atmosphere	5 % min.	Air	IP 54**
Air Conditioned Areas				
24 +/- 5 degree C normal	Atmosphere	95 %Max.	Air	IP 22***
50 degree C max.*	Atmosphere	5 %min.	Air	IP 22***

* During air conditioning failure.

**For non-ventilated enclosures. For ventilated enclosures, protection class shall be IP 42.

***With a suitable canopy at the top to prevent ingress of dripping water. For Hazardous areas the protection class shall be in accordance with the requirements of the relevant NEC code for the location

PCs, OWS, EWS, Servers, Network Switches, Printers, mini UPS and other peripherals, maximum temperature limit shall be 35 Deg. C. For LVS the same shall be around 25 Deg. C

5. FACTORY ACCEPTANCE TEST (FAT)

- i. Factory Acceptance Test procedure shall be prepared by Bidder along with Quality Assurance Plan. The document shall be subject to End user's approval.
- ii. All System equipment shall be tested in the factory prior to clearance for shipping. The FAT shall include individual equipment tests and integrated under fully assembled condition.
- iii. The FAT shall demonstrate adherence that the equipment meets the design standards and functional compliance.

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COPYRIGHT AND CONFIDENTIAL The information contained in this document is the property of BHARAT HEAVY ELECTRICALS LIMITED This must not be used directly or indirectly, in any manner detrimental to the interest of the company		iv. One (1) month prior to the FAT, Bidder shall submit a test procedure to End user for approval. v. Factory Acceptance Tests (FATs) shall be documented with the results obtained and the success or failure of the test. The test results shall be submitted to End user prior to clearance of the FAT and authority by End user is given to ship 6. DISCREPANCIES In case of discrepancies between the technical requirements and other applicable Engineering Standards, Materials System Specifications, Standard Drawings, or industry standards, codes, and forms shall be resolved in writing by Bidder with Purchase. Before starting the manufacturing / supply, Bidder shall inform Purchase of any discrepancy between the instructions of the present specification and Bidder's standard. Bidder is also advised to discuss on any clarification required before submitting their offer to avoid any ambiguity/dispute later on. It shall be the responsibility of Bidder to determine and comply with the statutory regulation (i.e. city, state, national, provincial, etc. codes or ordinances) which will apply in the location where the item is to be installed. Mandatory regulations cannot be superseded by this specification. In case of any discrepancy in specification / parameter mentioned in this purchase specification, the stringent one shall be considered/offered/applicable. 7. Provenness and track record requirements: The PA system offered shall be from reputed manufacturer who would have designed, manufactured, tested and commissioned a distributed amplifier type Industrial Public Address system, as specified in this section, in a thermal power plant or large industrial installation as on 03.02.2015.		
		8. Technical Specification Requirements 8.1 Interface to PA SYSTEM: Interface from Master Clock System: Complete PA SYSTEM has to be time synchronized with Master Clock (MC) available at site. This has to be achieved by acquiring clock signal either to servers or to network switch using Network Time Protocol (NTP). Subsequently rest of PA SYSTEM items i.e, other servers, client stations, call stations and network switches shall be time synchronized with master clock. Interface from Telephone exchange: Shall be finalized during detailed engineering. Interface from CCTV system: Shall be finalized during detailed engineering.		



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8.2 Detailed specifications of system components: The detailed technical specification of the PA SYSTEM is enclosed as Annexure-I. However, technical requirement for other components are mentioned below.

22 Inch LED Backlit Monitor:

Viewable size min	21.5 inches
Max resolution	1920 x 1080 Pixels.
Contrast ratio	1000:1
Brightness	250 cd /m ² .
Viewing angle	160V / 170H Typical (@ 10:1 CR)
Interface	VGA & DVI D
Power supply	100 to 240 VAC; 50/60Hz.
Other features	Height adjustable stand, pivot, tilt and swivel provisions to be present.

Full Function Keyboard:

Interface	USB 1.1/2.0 Complaint.(USB extender device for length upto 150 ft to be provided)
Power	USB interface.
System requirements	Windows 7 or above, Vista, XP, 2000, 2003 Server
Keypad jog dial	22 keys: 10 application defined hotkeys of which 5 are backlit. 0-9, tab, alt 6 application defined hotkeys. Deflection Shuttle operating angle 160°.

Alarm I/O Device:

Input ports	
Output ports	
Interface	RJ-45, 10/100 mbps Ethernet.
Mounting kit	DIN Rail or Rack Mount.
Compatibility	Should seamlessly integrate with proposed VMS

Network Switch: As per requirement of the system offered.

Cat 5e UTP Patch Cable:

UTP Patch Cable – 3 Meters Length

Cat 5e UTP, 4 Pair Stranded Copper Cable with RJ 45 Connectors.
1000 Mbps – 3 Meters Length.
Stranded, Unshielded 24 AWG
Polycarbonate Plug & Gold over Nickel Contacts

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COPYRIGHT AND CONFIDENTIAL The information contained in this document is the property of BHARAT HEAVY ELECTRICALS LIMITED This must not be used directly or indirectly, in any manner detrimental to the interest of the company	Confirming to EIA/TIA 568B		
	UL/ETL Verified.		
	Single Mode Fiber Patch Cable Fiber Patch Cable - 3 Meters Length		
	SC-LC or SC-SC Duplex(refer BOM), 9/125 microns Single Mode with plastic molded plug type connector. Standard 2.5mm Ceramic ferrule.		
	Confirming to EIA/TIA 568		
	Cat5e Patch Panel:		
	Powder coated steel in 24 port configuration		
	Should support port identification numbers on the front of the panel.		
	IDC: Suitable for 22-26 AWG stranded and solid wire compatible with both 110 & Krone punch down tools		
	The Cat-5e transmission performance should be in compliance with the ANSI/TIA/EIA 568C.2 standard		
	RoHS Compliant		
	50 μinches gold on plug contact area , Phosphor bronze with nickel plated IDC Contact		
	Light Interface Unit (LIU) 24 port: LIU– 24 Port Rack mount loaded with SC SM Simplex Couplers. Cable entry for six nos. shall be considered for this LIU.		
	19” Rack Mountable Cabinet		
	LIU Box Powder Coated Aluminum alloy, Cable grommets should be FR Grade Nylon. Flame retardant plastic.		
	SC Simplex SM Couplers compatibility to optical fiber 9/125 μm.		
	Operating temperature of coupler up to 80°C.		
	LIU qualifies as per ISO/IEC. Couplers – UL listed. RoHS Complaint.		
	Light Interface Unit (LIU)12 port: LIU – 12 Port Rack mount loaded with SC SM Simplex Couplers.		
	19” Rack Mountable Cabinet		
	LIU Box Powder Coated Aluminum alloy, Cable grommets should be FR Grade Nylon. Flame retardant plastic.		
	SC Simplex SM Couplers compatibility to optical fiber 9/125 μm.		
	Operating temperature of coupler up to 80°C.		
	LIU qualifies as per ISO/IEC. Couplers – UL listed. RoHS Complaint.		
	SC Pigtail Simplex (Single mode FOC)		

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Industrial Panel:				
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	Front door	2mm thick single front door, with partial glass window dimensions as Width : 442mm Height : 1067mm Fitted with Nitrile gasket.		
	Rear door	2mm thick dual rear door with complete steel.		
	Rear panel	2mm thick, rear panel screw fixed		
	Side panel	1.6mm thick, panel screw fixed		
	Top panel	1.6mm thick panel with cable entry facility, fan mounting option. Top Canopy.		
	Bottom panel	1.6mm thick panel with 3 part gland plate for cable entry		
	19” rails	Adjustable 19” rails at the front and rear to mount 19” equipment.		
	Base frame	3mm thick, base frame to rest the cabinet on the floor		
	Baffle plate	3mm thick, baffle plate / mounting plate to mount the industrial equipment.		
	Load bearing capacity	Load rating of 1000Kgs		
	Ingress protection	IP 32		
	Dimensions - Width - Height - Depth	800 width in mm 2000 height in mm 800 depth in mm (The above dimension are tentative and shall be finalized during detailed engineering)		
	Material	Steel		
Powder coating	Folded end covers / Side Covers Exterior RAL 5012 Interior RAL 9002 Front /Rear doors, Canopy and plain end covers (Both exterior &Interior RAL 9002- paint shade shall be finalized during detailed engineering)			
Accessories 1U fan tray - Cooling fans	1.2mm thick tray with 4 fans position 230v AC, 50 Hz, 90 cfm			

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A4-10	Power factor : ≥ 0.7 Overall efficiency $\geq 85\%$ Automatic switch over time : < 5 millisecond or better. With overload, short circuit, over & under voltage protections. Battery : SMF SNMP(Network) interface card	
Junction Box - Material- min 4mm thick FRP (Fiberglass Reinforced Polyester) - Type- Screwed at four corners of door, door gasket shall be synthetic rubber - Mounting clamps and accessories: Mounting plate of 2mm thick mild steel to be Provided inside JB, mounting clamps suitable for mounting on walls, columns, structures etc. shall be provided. The brackets, bolts, nuts, screws, glands, SS handle and Lugs required for erection shall be of SS304, included in Bidders scope of supply. M6 earthing to be provided. - Protection Type : IP55 of indoor and IP65 for outdoor - Grounding: To be provided - Colour: To be decided during detailed engineering. Notes: - BHEL will provide 230 VAC 50HZ single phase centralized UPS power supply at each power generation unit of the project's CCR area to the Power Distribution panel of PA SYSTEM. SI may use this UPS supply to power the PA SYSTEM items like Servers, Clients, Network active components and Field Enclosures located up to 500 mtr from CCR. For far away Field Enclosures (located beyond 500mtr from CCR) shall be powered from 1 KVA online mini UPS. Any power conversion needed by PA system / other equipment due to their rated operating voltage level / types the suitable power packs shall be included from the same make of the main equipment. - SI shall ensure fiber patch cable compatibility at Switch side and LIU side (i.e. simplex / duplex or type of connector or SMOFC / MMOFC etc.) - For all the software Permanent licenses for required qty and Life time support for all the software to be included. 9 Documents to be submitted Along with offer - Data sheets for all the items. - Signed Technical compliance to each clause of this specification. - Deviation list, if any; Bidder may note that for all the items exact or better specifications (if model meeting exact specification is not available) are acceptable but not inferior.		

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COPYRIGHT AND CONFIDENTIAL The information contained in this document is the property of BHARAT HEAVY ELECTRICALS LIMITED This must not be used directly or indirectly, in any manner detrimental to the interest of the company		9.4 Block diagram for connectivity of PA SYSTEM 9.5 Write-up on functionality of each item and overall system Documents to be submitted after receipt of order 9.6 On receiving the order prior to supply, manufacturing datasheet for all the items to be provided which will be approved by end user 9.7 Quality plan based on format attached in this specification. 9.8 Power distribution scheme drawing. 9.9 Network scheme drawing. 9.10 General Arrangement (GA) of Power Distribution, Network panel and wall mount Enclosure. 9.11 User manuals for all the equipment. 9.12 Original Software Set up CDs OS, VMS, VCA and any other relevant CDs. 9.13 Standard Test certificates for Call stations, loud speakers, accessories, Computers, Storage, Network switches, cables. To be submitted for project site 9.14 Operation and Maintenance manual. 9.15 System check-out or Acceptance document. This document shall provide functional and parameter verification of various system features. 9.16 Handing over document / Minutes of Meeting (MOM) with BHEL Site / End user.		

Annexure-I

CLAUSE NO.

TECHNICAL REQUIREMENTS

एन टी पी सी
NTPC

SECTION – VI

PART – B

SUB-SECTION – IIIC - 10

PUBLIC ADDRESS SYSTEM

CLAUSE NO.	एनटीपीसी NTPC TECHNICAL REQUIREMENTS
	PUBLIC ADDRESS SYSTEM
1.00.00	PUBLIC ADDRESS SYSTEM (PAS)
1.01.00	General Requirements
1.01.01	The intent of the specification is to define the functional & design requirements for the Public address system. The Contractor shall be responsible for selection, design, engineering, manufacturing, testing at manufacturer's works/ site, erection, installation and commissioning of public Address system meeting the intent and functional requirement of specifications.
1.01.02	The Bidder's scope shall also include successful demonstration of performance testing specified herein complete in all respects. All the items, including public Address system erection hardware, racks, cables (except Optical fiber cable and UTP/STP cable), cable trays, conduits, etc. as required, for the proper installation (conforming to IS:1881, IS:1882) to make the IP based PA system complete and functional are under Contractor's scope on as required basis. All equipment, accessories and facilities required for completeness of this system shall be furnished by the Contractor within the quoted lump sum price, whether these are specifically mentioned herein or not.. Refer Bill of material for specific details of quantity of items to be supplied
1.01.03	The equipment furnished under this section shall meet the requirements of all-applicable codes and standards as specified in international codes and standards.
1.01.04	The Public Address System (PAS) offered by the bidder shall be from reputed manufacture <u>who should have designed, manufactured, tested and commissioned a distributed amplifier type industrial Public Address systems as specified in thermal power plants or large industrial installation as 03.02.2015</u>
1.01.05	The system shall be adequately protected from signal and power line noise and meet the Surge Withstand Capability (SWC) requirements of ANSI C37.90 A/IEEE standard 472-1989 or equivalent. Equipment shall be self-protecting against transients in the input ac supply.
1.01.06	The Bidder shall guarantee satisfactory performance of the equipment under stipulated variations of voltage and frequency. The design and manufacture shall be such that equipment/components of same type and rating shall be interchangeable.
1.01.07	In addition to the facilities to be provided by the Bidder as mentioned in relevant clauses of this section the Bidder shall make his own arrangements for any other requirements that are necessary to put the system in service.
1.01.08	Unit Public Address System (PAS) shall cover all operational areas of one generating unit from transformer yard to I.D. Fans.
1.01.09	PAS for coal handling plant shall cover all its operational areas from wagon tipplers to bunker filling floor of all units.

CLAUSE NO.	TECHNICAL REQUIREMENTS
1.01.10	The <u>common Plant PAS shall be provided to link all</u> Control Rooms, Shift In-Charge Room, D.G. Room, Compressor House, Fuel-Oil Pump House, Water Treatment System Control Room, Ash Handling Plant Control Room, CHP Control Room and other off-site/auxiliary buildings distributed throughout the plant area. The Contractor is advised to refer to the general layout plan for understanding the relative location of various system/requirement etc.
2.00.00	POWER SUPPLY ARRANGEMENT
2.01.00	The PA system along with all its system components i.e. network switches, servers, media converters, PC stations etc. shall be powered from UPS system as detailed in Sub-section-Power Supply, Part-B, and Section – VI. Contractor shall also provide <u>local power distribution boxes</u> Feeder from 230V AC main plant UPS shall be provided for the PA system. Cabling from UPS to PA system panel (housing server etc) shall be in bidder's scope.
2.02.00	For call stations & amplifiers, mini UPS of suitable rating are to be provided by the Contractor within his quoted lump sum price. Contractor shall also provide local power distribution boxes as required for sub-distribution of supply from mini-UPS to call stations & amplifiers. The location of mini-UPS & power distribution scheme shall be finalized during detail engineering.
2.03.00	If the offered equipment is operating at voltage level other than 230V AC, the Contractor shall provide all required hardware, within lump sum quoted price to make the offered system compatible with specified power supply arrangement
3.00.00	SYSTEM DESCRIPTION
3.01.00	DESIGN AND TECHNICAL REQUIREMENTS
3.01.01	The PA system shall be designed as standalone IP based network architecture. The system shall be based on centralized control together with distributed nodes permitting speech broadcasts and pre-recorded messages /alarm tones etc. The complete system is divided into zones as defined in Annexure-II of the technical specifications. The PA system shall be designed such that <u>no single failure shall disrupt the availability of complete system.</u> The network switches in PA system shall be connected employing <u>ring topology.</u> A redundant server will cater to all zones of the plant. However, <u>one server shall be located at Unit CER and another server shall be located at CHP CR.</u> These shall be interconnected through <u>redundant OFC based network.</u> For more details refer block diagram of PA system provided in the document
3.01.02	The carrier system shall be based on Voice Over IP, extended to provide IP communication across the complete PA system. The call stations and standalone amplifiers shall be individually IP addressable. <u>Any conversion of the analog field call station to IP mode by separate attachment of the intelligent module/ unit shall not be acceptable.</u> Each call station should be able to selectively call another call station without manual intervention of any other equipment. The design shall be such as to provide highly intelligible <u>full duplex voice communication</u> even in areas of high background noise <u>(up to 80 db).</u>

CLAUSE NO.	TECHNICAL REQUIREMENTS	एन टी सी NTPC
3.01.03	PA System Management Software: Configuration of the system shall be achieved by user Friendly GUI based software for maximum flexibility, easy re-configuration, maintenance & future expansion. This software should be <u>configured on each PC station</u>, located at Unit CER & CHP Control Room which enables an operator to implement speed commissioning and also carry out routine diagnostic checks / fault finding functions of PA system components. It should be possible to make adjustments when the system is installed without resulting in modification to the system wiring. It shall be possible to download/ store the configuration parameters & scheme from the server without taking the system out of service. Levels of system access and privileges shall be maintained through security passwords etc. The software shall be able to work with the latest windows version. All software utilized shall be latest and upgraded version.	
3.01.04	Built in Diagnostic features: The Bidder shall provide all hardware/software in order to have a comprehensive built in diagnostic test feature covering the complete PA system components including call stations & amplifiers, standalone amplifiers along with associated loudspeakers, servers, network components i.e. network switches and interconnecting cables, power supplies etc. so that at all times, the status of the complete system can be monitored. Active fault reporting concerning all aspects of PA system shall be extended to PC Stations which shall record the system malfunction messages with time & date stamp.	
3.01.05	Recording functionality for calls to and from master call station in each zone shall be provided. System shall ensure that once recorded, audio cannot be altered.	
3.01.06	The system shall be able to accept potential free contacts from other systems (like fire alarm system, security system and access control system etc.) for predefined actions (like fire or security alarm announcement on call stations (configurable) etc.) For implementation of the same, <u>10 nos. potential free contacts per unit, 10 nos. potential free contacts for CHP and 10 nos. potential free contacts for common plant area</u> shall be provided by Employer for interfacing with PA system. The exact details shall be finalized during detail engineering.	
3.02.00	Communication within a zone	
3.02.01	The PA system shall allow party calls i.e. between one call station to another and also Group/ conference calls i.e. simultaneous conversation amongst multiple call stations. Party calls and group/conference calls shall be in full duplex mode.	
3.02.02	Each call station shall be able to broadcast a message to all the associated call stations or selected call stations in a zone. The priority of call mode or broadcast mode or Emergency priority settings shall be configurable for each call Station.	
3.02.03	Portable type call stations with network compatible ports shall be used at certain location where operational personnel are not present normally. Necessary network connection, power supplies etc., shall be provided at these locations. The locations (distributed across different zones) shall be finalized during detailed engineering.	

CLAUSE NO.	TECHNICAL REQUIREMENTS
3.02.04	Unless requested, announcements/communication within a zone shall not be audible in other zones.
3.03.00	Inter Zone Communication
3.03.01	One no. indoor desktop mounted call station in each zone shall be Master Control Unit. Any interzone communication shall be possible through this master control unit.
3.03.02	The communication facilities (including broadcast) amongst call stations of different zones shall be such as if they have now become a single zone.
3.03.03	Multiple group or individual calls shall be possible at the same time across multiple zones without interfering with each other.
4.00.00	CALL STATION
4.01.00	Call Stations shall be of the following types: (a) Outdoor Wall/column mounting type.(Type - A) (b) Indoor desk-top mounting type. (Type - B)
4.02.00	<u>Each Call Station shall have LCD indicator, 10 digit dial pad & 2 special keys, Pre-amplifier & power amplifier, Indication for 'Power Supply On' and 'Network Connection Healthy' as a minimum.</u>
4.03.00	The outdoor wall/column mounting type call station shall be dust-tight and weather proof, with appropriate protection against direct rain, ingress of dust and moisture conforming to IP-65 degree of protection as per IS/IEC:60947-1, outdoor wall/column mounting type. The indoor desk-top mounting type call station shall have a degree of protection of at least IP-32 . All call stations and their components shall be capable of continued satisfactory operation at an ambient <u>temperature at 55 Deg C.</u>
4.04.00	The indoor desk-top mounting type call station shall be suitable for flush mounting on control desk Suitable accessories for the same shall be provided by Contractor.
4.05.00	Call stations transmitter/microphone shall be dynamic noise cancelling type and anti-side tone control facility shall be inbuilt.
4.06.00	All call stations shall have a compact, robust, rust resistant, shock resistant body made of high impact polycarbonate/ Stainless Steel or equivalent. The outdoor call station shall be inside an enclosure with transparent glass door which can be opened through number padlock only.
4.07.00	The wall/column mounting call stations shall be tamper-proof, using internal anchoring bolts and peculiar (e.g. triangular head, counter-sunk) screws which can be loosened only with special keys. Constructions where the entire electronic part shall be modular type and can be removed from the call station enclosure for easy maintenance.

CLAUSE NO.	एनटीपीसी NTPC TECHNICAL REQUIREMENTS
4.08.00	The call stations in the noisy areas like Turbine hall, BFPs, Mill area, etc. shall be housed in Acoustic hoods. An industrial type free standing, floor mounting hood shall be used for providing the above requirement. The design noise level within the hood shall be limited to a maximum of 60dB SIL. Also refer drawing no 0000-999-POI-A-070 for details of Acoustic hood.
4.09.00	The indoor desk mounting type call stations shall preferably be PoE powered and the same shall be IEEE 802.a.f compliant.
5.00.00	AMPLIFIERS
5.01.00	Amplifiers shall be solid state, class-D, push-pull type, in built with the call station fully conforming to IS: 10426 or equivalent international standard.
5.02.00	Amplifier shall have 0-100% volume control facility for coarse and fine setting, Input sensitivity control, Receiver volume control, Bass cut filter and Anti-side tone control feature
5.03.00	Standalone Amplifier Amplifiers of suitable rating as mentioned in Part-A of specifications shall be provided for general announcement. Multiple loudspeakers spread across a zone shall be used along with a standalone amplifier. This amplifier shall be IP based and health monitoring of the associated loudspeakers shall be provided.
6.00.00	LOUDSPEAKERS
6.01.00	Indoor loudspeaker shall be cone type housed in sturdy metal cabinet suitable for wall/column mounting. The mounting bracket shall be treated with acoustic under-coats to prevent resonance. They shall have IP-52 degree of protection as per IS/ IEC:60947-1.
6.02.00	Outdoor loudspeaker shall be industrial horn type and of pressure die cast aluminum or equivalent industrial grade material construction. The mounting bracket shall be with adjustable base suitable for vertical and horizontal orientation. They shall have IP-65 degree of protection as per IS/ IEC:60947-1.
7.00.00	SERVER
7.01.00	The server shall be based on state of art VOIP technology. The server should support protocols including SIP or equivalent, TCP, IPV4/ IPV6, Codec G.722, SNMP, RTP, NTP etc. <u>Suitable built in IP security such as firewall, SSH, HTTPS etc.</u> shall be provided in server. The server should be able to support the required number of call stations incl 30% spare provision as defined in Annexure-II of the specifications. The required no. of all hardware/software licenses to meet the Employer specifications shall be supplied by the Contractor.
7.02.00	The server shall be capable of self-recovery in case of any fault/ network break down. <u>It shall be rack mounted type.</u>

CLAUSE NO.	TECHNICAL REQUIREMENTS	एनटीपीसी NTPC
7.03.00	The server shall be able to support minimum <u>4 channels for GSM communication</u> with PA system. Suitable interface for the same shall be provided by Contractor.	
7.04.00	All programming tools & software that are required to program/ reprogram the system shall also be provided along with the server.	
8.00.00	MASTER CONTROL UNIT	
8.01.00	The Master Control Unit shall facilitate interzone communication amongst different zones. It shall have minimum 40 direct access keys with LED indication, which shall be configured as per requirement, a goose neck type Microphone and a hand receiver unit attached to it. Emergency announcement facility like fire alarms etc., shall be done from master control unit automatically.	
9.00.00	NETWORK SWITCH	
9.01.00	All the network switches shall be of high quality and shall be sized to meet the functional requirements as specified. The location of network switches shall be decided during detail engineering and shall be subject to approval of Employer.	
10.00.00	PC STATION	
10.01.00	PC station shall be provided for overall viewing and monitoring of PA system functionality in plant area. It shall be provided with PA system management software as mentioned elsewhere. For hardware specification please refer specification of Operator work stations given in later in this specification.	
11.00.00	CABLES AND JUNCTION BOXES	
11.01.00	The bidder shall supply the all required cables (except Optical fiber cable and UTP/STP cable) for PA system as per BOM provided. Colour of the outer sheath shall be YELLOW. <u>All cables of PA system shall be armoured</u> , if unarmoured, the same shall necessarily be laid in GI conduits.	
11.02.00	Cables shall be of FRLS PVC sheathed cables for use in PA system and shall conform to latest edition of Indian/International standards.	
11.03.00	N/A	
11.04.00	Twisted multipair, multistrand with at least one spare pair, minimum 0.5 mm ² cross section, annealed copper (shielded and armoured) shall be provided for loud speakers.	

CLAUSE NO.	TECHNICAL REQUIREMENTS																										
12.00.00	TECHNICAL PARTICULARS 12.01.00 Public Address Systems shall conform to the following technical parameters. <table data-bbox="292 338 1409 1361"> <thead> <tr> <th data-bbox="292 338 890 376">Items</th><th data-bbox="890 338 1409 376">Technical Particulars</th></tr> </thead> <tbody> <tr> <td data-bbox="292 421 890 459">(i) Amplifiers</td><td data-bbox="890 421 1409 459"></td></tr> <tr> <td data-bbox="379 488 890 526">(a) Band width (± 3 db)</td><td data-bbox="890 488 1409 526">100-16000 Hz</td></tr> <tr> <td data-bbox="379 555 890 593">(b) THD</td><td data-bbox="890 555 1409 593">< 0.5% at 1 KHz at rated output</td></tr> <tr> <td data-bbox="379 622 890 660">(c) Signal to Noise Ratio</td><td data-bbox="890 622 1409 660">Min. 80dB</td></tr> <tr> <td data-bbox="292 696 890 734">(ii) Microphones</td><td data-bbox="890 696 1409 734"></td></tr> <tr> <td data-bbox="379 763 890 801">(a) Band width (± 3 db)</td><td data-bbox="890 763 1409 801">Codec G.722, 200-7000Hz</td></tr> <tr> <td data-bbox="379 831 890 869">(b) Type</td><td data-bbox="890 831 1409 943">Omnidirectional & Dynamic noise cancelling type</td></tr> <tr> <td data-bbox="292 972 890 1010">(iii) Loudspeakers</td><td data-bbox="890 972 1409 1010"></td></tr> <tr> <td data-bbox="379 1039 890 1077">(a) Outdoor</td><td data-bbox="890 1039 1409 1077">wall/column mounted Horn Type</td></tr> <tr> <td data-bbox="379 1106 890 1144">(i) Capacity</td><td data-bbox="890 1106 1409 1218">105 dB for broadcast, 95dB for call mode, 15 W (RMS)</td></tr> <tr> <td data-bbox="379 1247 890 1285">(b) Indoor</td><td data-bbox="890 1247 1409 1285">wall/column mounted Cone Type</td></tr> <tr> <td data-bbox="379 1314 890 1352">(i) Capacity</td><td data-bbox="890 1314 1409 1352">85dB , 4 W (RMS)</td></tr> </tbody> </table>	Items	Technical Particulars	(i) Amplifiers		(a) Band width (± 3 db)	100-16000 Hz	(b) THD	< 0.5% at 1 KHz at rated output	(c) Signal to Noise Ratio	Min. 80dB	(ii) Microphones		(a) Band width (± 3 db)	Codec G.722, 200-7000Hz	(b) Type	Omnidirectional & Dynamic noise cancelling type	(iii) Loudspeakers		(a) Outdoor	wall/column mounted Horn Type	(i) Capacity	105 dB for broadcast, 95dB for call mode, 15 W (RMS)	(b) Indoor	wall/column mounted Cone Type	(i) Capacity	85dB , 4 W (RMS)
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CLAUSE NO.	TECHNICAL REQUIREMENTS		Annexure IIIC-02G	
1.00.00				
1.01.00				
1.01.01				
1.01.02				
1.01.03				
1.01.04				
1.01.05				
1.01.06				
	Refer workstation specification given below for PC stations to be supplied in PA system			
1.01.07	Servers/Workstations			
	Sl No	Features	Servers (HMI Alt. I)/ Workstations for Information functions (HMI Alt. II) / Station LAN Server/ Programming station/NMS Server	Operator workstations/ Other workstations/ Documentation station (in case not part of prog. Stn.)
	1.	Processor	64 bit/32 bit (Core 2 duo processor) or better	64 bit/32 bit (Core 2 duo processor) or better
	2.	Memory	4 GB RAM	2 GB RAM
TANDA TPP STAGE-II (2X660 MW) STATION CONTROL & INSTRUMENTATION (C&I) PACKAGE		BID DOC. NO.: CS-9562-405-2	TECHNICAL SPECIFICATIONS SECTION VI. PART-B	SUB-SECTION - IIIC-02 DDCMIS ANNEXURE IIIC-02G
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CLAUSE NO.	TECHNICAL REQUIREMENTS Annexure IIIC-02G 			
	3.	Hard Disk	3 x 72 GB SAS, Hot swappable	72 GB SAS
	4.	Monitor (color)	Min 20" TFT Flat Monitor with non-interfaced refresh rate min. 75 Hz.	Min 20" TFT Flat Monitor with non-interfaced refresh rate min. 75 Hz.
	5.	RAID	SAS-channels, hardware RAID level 5 implemented.	
	6.	Redundant hot swappable power-supply	2 nos.	-
	7.	Removable bulk storage drive (DVD)	6GB (minimum)	
	8.	Removable Bulk Storage Media for above (with each server/work-station)	10 nos	
	9.	DVD R/W	16x or higher	16x or higher
	10.	Intelligent UPS (on line) with remote monitoring for each work-station/ server	1 no., For mini UPS specification refer clause 1.05.00(c), Sub Section IIIC-04, Part-B, Power supply chapter.	
	11.	Keyboard	ASCII	ASCII
	12.	Pointing Device	Mouse	Mouse
	13.	Accessories	Industrial grade furniture as approved during detailed engineering	Industrial grade furniture as approved during detailed engineering
	14.	Additional general purpose software (for using over network by servers/workstations/PCs)	Comprehensive disk maintenance utility for disk clean sweep/ crash guard/antivirus, etc. (like "Norton System Works 2007")	
	For NMS server., the dual CPU speed shall be 3.0 GHz or more, memory shall be 4 GB or more and the hard disk space shall be 72 GB or more			
TANDA TPP STAGE-II (2X660 MW) STATION CONTROL & INSTRUMENTATION (C&I) PACKAGE	BID DOC. NO.: CS-9562-405-2	TECHNICAL SPECIFICATIONS SECTION VI, PART-B	SUB-SECTION - IIIC-02 DDCMIS ANNEXURE IIIC-02G	PAGE 2 OF 12

CLAUSE NO.

CONTRACT QUANTITIES FOR PA SYSTEM

APPENDIX - I TO PART – A
CONTRACT QUANTITIES OF
PA SYSTEM

(A)

1.00.00

CONTRACT QUANTITIES FOR PA SYSTEM

1.01.01

The Public Address System shall consist of zones, sub-zones and servers to interface all these zones among themselves and with Employer's existing telephone exchange. The major zones shall be as under:

- (1) One zone for each of the generating unit **total 2 units**
- (2) One zone for common plant system
- (3) One zone with at least two sub-zones for coal handling system

Also refer drawing no. 0000-999-POI-A-071A, Block Diagram of IP Based Public Address System for further details.

NOTES:

1. All the above zones shall be connected to redundant server (2 X 100 %), one to be located in Control Equipment Room (CER) and the other in Coal Handling Plant (CHP) Control Room.
2. The server shall be able to cater all the specified zones along with necessary provision for future requirements as specified elsewhere. Suitable interface shall be provided for connection with Employer's main telephone exchange and minimum 4 channel GSM connectivity from both the Servers such that it shall be possible to communicate with any station in any zone from any telephone set.

1.01.00

The quantities mentioned below are minimum required and will be updated at the time of detailed engineering:

S.No	Item Description		Unit PAS (for each generating unit) (nos.)	CHP PAS (Covering Complete Coal Handling Plant) (nos.)	Common Plant PAS (nos.)
1.	Call Stations				
	(i)	Outdoor wall/column mounting type with amplifier	45	60	20
	(ii)	Indoor desk top mounting type with amplifier	10	4	10
2.	Master Control Unit (MCU)		1	1	1
3.	Amplifier				
	Standalone amplifier		1	1	1

4.	Loudspeakers				
	(i)	Outdoor Industrial Horn type	45+4*	60+4*	20+4*
	(ii)	Indoor wall mounted Cone type	10	4	10
5.	Portable call stations with network connection port				
	(i)	Network connection ports	10	-	-
	(ii)	Portable call station with minimum 2 meters connecting cable	2	-	-
6.	Cables				
	(i)	All Interconnecting cables including power cables	On as required basis (except Optical fiber cable and UTP/STP cable) within the Contractor's quoted lump sum price		
7.	G.I. conduit for				
	(i)	Interconnecting cables	On as required basis within the Contractor's quoted lump sum price		
8.	Acoustic hood (nos.)		8	-	-
9.	Server		Minimum one redundant server		
10.	PC Station		2 nos., one located at CER and another at CHP CR		
11.	Network Switches		On as required basis within Contractor's quoted lump sum Price. Minimum one no. for each zone.		
12.	Layer-III Switch/Router		On as required basis within Contractor's quoted lump sum Price.		
13.	Software(s) for PA system		On as required basis within Contractor's quoted lump sum Price.		
NOTES					
1.	Any other equipment, accessories and facilities required for the completeness of this system shall be furnished by Contractor on as required basis within the quoted price.				
2.	Refer S.No.6, the cable shall be laid in existing cable trays. If cable is unarmoured, the same shall be laid in G.I. conduits.				
3.	* These loudspeakers shall be connected to Standalone Amplifier.				

1.02.00

Hardware like network switches, servers, Layer-3 switches/ routers, trunk cables (i.e. cables between network switches), mini UPS, PDB etc. & software along with

necessary licenses shall be capable of handling **30% additional** call stations over and above the number of call stations specified in each zone for future use.

1.03.00

Following are the indicative IP Based PA system Call Station Location details.

1. Unit Area

S. No.	Description	Qty(per unit)	Type of Call Station
1	ESP Control Room	1	B
2	ID Fan-A	1	A
3	ID Fan-B	1	A
4	Boiler Elevations	24	A
5	FD/PA Fan-A	1	A
6	FD/PA Fan-B	1	A
7	Near ESP Structure	1	A
8	Near Daerator	1	A
9	Near TDBFP/HPHeater	1	A
10	TG Hall	2	A
11	Near TG Main Oil Tank	1	A
12	Near MDBFP/LPH	1	A
13	Charger/UPS room (8.5 mtrs)	1	S
14	Near Gas cylinder room	1	A
15	Near TG Seal oil unit	1	A
16	Near Hotwell	1	A
17	Near Clean oil/Dirty oil tank	1	A
18	Control fluid room	1	A
19	Boiler MCC Room	1	B
20	LT Switchgear Room	1	B
21	MV Switchgear Room	1	B
22	CCR (On UCD)	2	B
23	CER	1	B
24	Shift Incharge Room	1	S
25	Programmer Room	1	S
26	other locations (to be decided during detailed engg.)	5	A
27	other locations (to be decided during detailed engg.)	3	B
28	other locations (to be decided during detailed engg.)	7	S

2. CHP area

Sl. No.	Description	Total Qty	Type of Call Station
1	Bunker Floors	4	A
2	CHP CR	1	B
3	Machinery Wells	4	A

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CONTRACT QUANTITIES FOR PA SYSTEM

4	MCC Rooms	3	B
5	Pent Houses	6	A
6	Pump Houses	1	A
7	TPs	20	A
8	Wagon tippler	6	A
9	Crusher Houses	5	A
10	Track Hopper (at different points)	4	A
11	Reclaimer hopper	4	A
12	Other locations as per site requirements	6	A

3. Common Plant Area

Sl. No.	Description	Total Qty	Type of Call Station
1	Air Compressor House	1	A
2	DM Plant Area	1	A
3	PT Plant Area	1	A
4	Chlorination Plant	1	A
5	Fire Water Pump House (FWPH)	1	A
6	Ash Silo Control Room	1	B
7	Switchyard CR	1	B
8	Cooling Tower area	1	A
9	Chimney	1	A
10	CPU Regeneration Building	1	A
11	Transformer Yard	1	A
12	FO Pump House	1	A
13	Raw Water PH Control Room	1	B
14	HCSD Area	1	A
15	CW Chem. Treatment / SW PH Area	1	A
16	CW Pump House Control Room	1	B
17	Water System Control Room	1	B
18	DG Room	1	B
19	AHP Control Room	1	B
20	Ash water pump house	1	B
21	Transport air compressor house	1	A
22	Ash slurry pump house	1	A
23	Switchyard CR	1	B
24	FGD Area	1	A

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CONTRACT QUANTITIES FOR PA SYSTEM

25	Ash Dyke Area	3	A
26	other locations (to be decided during detailed engg.)	2	A
27	other locations (to be decided during detailed engg.)	1	B

Notes:

1. The locations are indicative only. The exact location of call stations shall be decided during detailed engg. based on accessibility and installation ease as per site requirement.
2. Similar locations(unit area) are to be considered for other Units.
3. Type-A - Outdoor Wall/column mounting type Call Station
4. Type-B- Indoor desk-top mounting type Call Station
5. Type-S – Network Port for Portable Call Station

(Signature)

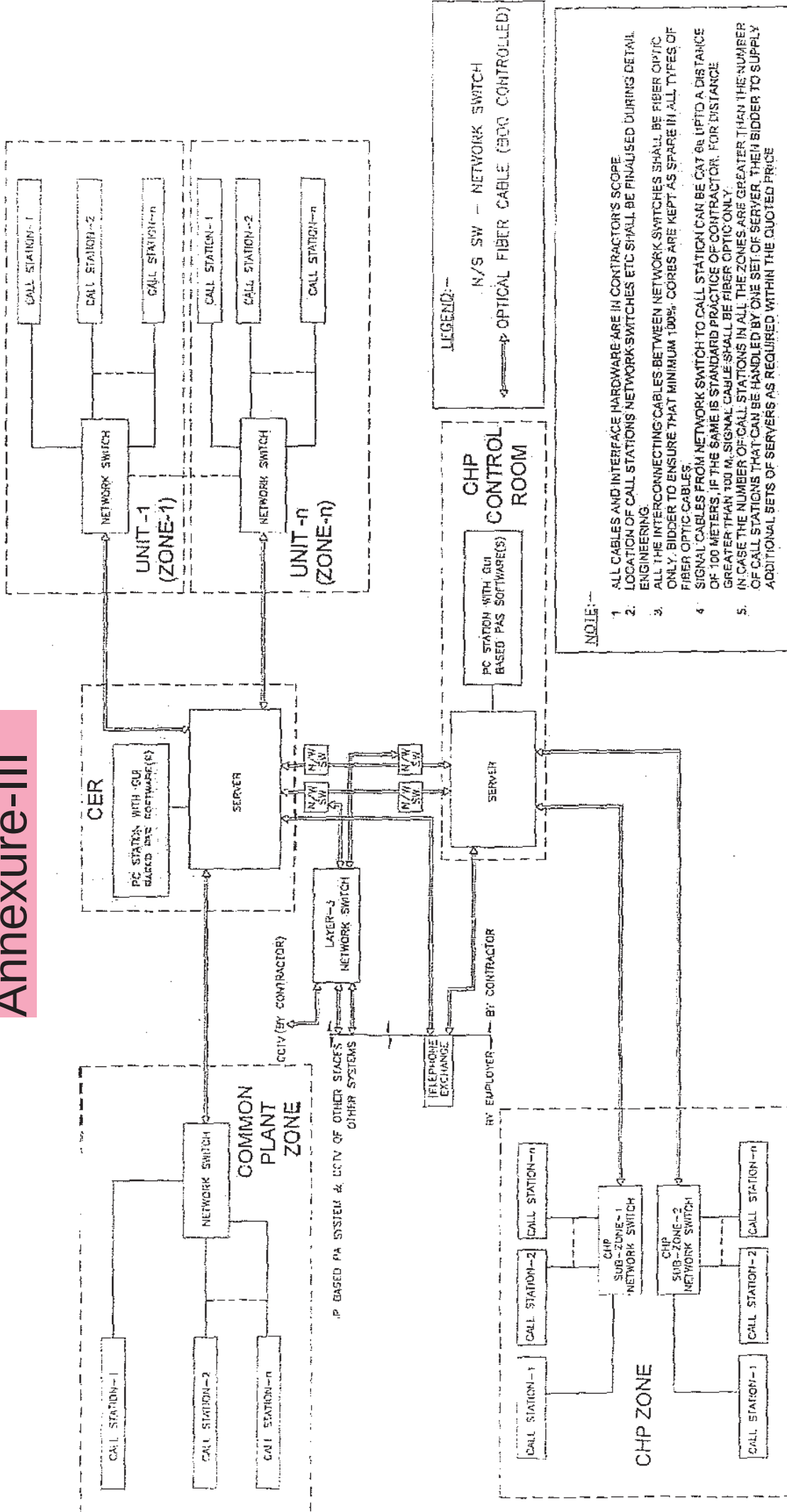
Annexure-II

BOM OF IP PA system for NTPC Tanda C&I 2x660MW project

SL.NO	ITEMS DESCRIPTION	UNIT	QTY
1	CALL STATIONS		
a	OUTDOOR WALL/COLUMN MOUNTING TYPE WITH AMPLIFIER	NOS	170
b	INDOOR DESK TOP MOUNTING TYPE WITH AMPLIFIER	NOS	34
2	LOUDSPEAKERS		
a	OUTDOOR INDUSTRIAL HORN TYPE	NOS	186
b	INDOOR WALL MOUNTED CONE TYPE	NOS	34
3	PORTABLE CALL STATIONS WITH NETOWRK CONNECTION PORT		
a	NETWORK CONNECTION PORT	NOS	10
b	PORTABLE CALL STATIONS WITH MINIMUM TWO METER CONNECTION CABLE	NOS	6
4	ACOUSTIC HOOD (booth)	NOS	16
5	MASTER CONTROL UNIT (INCL 30% SPARE CAPABILITY)	NOS	4
6	STANDALONE AMPLIFIER	NOS	4
7	REDUNDANT SERVER WITH SOFTWARE FOR PA SYSTEM INCL 30% SPARE CAPACITY	SET	1
8	PC STATION	SETS	2
9	NETWORK SWITCHES (INCL 30% SPARE PORT OF EACH TYPE OF PORT FOR EACH SWITCH)		
a	Layer-III Switch	SET	2
b	Distribution Switch for unit zone with 45 call station and 30% spare	SET	2
c	Distribution Switch for CPA zone with 20 call station and 30% spare	SET	1
d	Distribution Switch for CHP zone with 30 call station and 30% spare	SET	2
e	NETWORK SWITCH FOR REDUNDANT CONNECTION BETWEEN REDUNDANT SERVERS	SET	4
f	NETWORK Switch(Edge Switch)	LOT	1
10	CABLES FOR THE SYSTEM		
a	POWER CABLE ARMoured (MIN 1.5SQMM OR AS REQD) FOR HANDSET	MTRS	20000
b	POWER CABLE UNMOURED (MIN 0.75SQMM) BETWEEN HANDSET TO LOUDSPEAKER	MTRS	1000
c	12Pair 0.5Sqmm armoured Instrumentation cable for connecting PFC contacts to PA system.	MTRS	2000
11	All Cat 5e cable accessories like UTP Patch Cable, patch panel, etc for completion of termination of all CAT5e cable for entire PA system	LOT	1
12	All fiber optic accessories like Fiber Patch Cable (Duplex for both UPT as well as Fiber ports), LIU (of suitable port at server ends, camera ends, looping etc), Pigtails, all other accessories required for completion of the splicing and termination of FO cables for entire PA system.	LOT	1
13	Pair of Single Mode Media Converters -100 MBPS speed, suitable for approx 5 KM distance, Power supply: 230 VAC	SETS	100
14	Industrial Wall Mount Enclosure	SETS	4
15	Cable Tray with necessary mounting accessories	MTRS	3000
16	1 inch Flexible GI Conduit with necessary accessories	MTRS	2000
17	HDPE 50mm ISI, with bends, coupler and other mounting accessories	MTRS	1000
18	Mini UPS OF SUITABLE RATING WITH PDB FOR POWERING 4-6 CALL STATION & LOUDSPEAKER	NOS	10
19	42U PANEL as required for housing SERVER, NETWORK SWITCH, PDB ETC in control room	LOT	1
20	Interface to/from GSM system, plant EPABX system and CCTV system	SET	1
21	Interface FOR ALARMS	SET	1
22	Fringe electrical items such as PDB, Terminal Blocks(TBs), Miniature Circuit Breakers(MCB), cable coverings, cable managers, panel lamp (for Panel & Enclosure) and RJ45 connectors and crimping tool etc.	LOT	1
23	Fringe mechanical items such as G / C channels and DIN rail, junction boxes with MCB (main and field), cable glands, mounting brackets bolts & nuts etc. for fiber accessories, Panel, Enclosure & camera mounting	LOT	1
24	Container of suitable size and quantity as required for each project with lock and key for storing PA SYSTEM components except cable	LOT	1
25	ANY OTHER HARDWARE, SOFTWARE, ACCESSORY, CABLE ETC REQUIRED TO COMPLETE THE SYSTEM OR MENTIONED ELSE WHERE IN TECHNICAL SPECIFICATION BUT NOT COVERED IN THIS BOM	LOT	1

26	MANDATORY SPARES:		
i	CALL STATION AND AMPLIFIER		
a	CALL STATION FOR OUTDOOR AREA WITH AMPIIFIER (20% of each type, make & model)	NOS	34
b	CALL STATION FOR INDOOR AREA DESKTOP MOUNTING TYPE WITH AMPIIFIER (20% of each type, make & model)	NOS	7
c	MASTER CONTROL UNIT (20% of each type, make & model)	NOS	1
d	PORTABLE CALL STATIONS WITH MINIMUM TWO METER CONNECTION CABLE (20% of each type, make & model)	NOS	2
e	STANDALONE AMPLIFIER (15% of each type, make & model)	NOS	1
ii	LOUDSPEAKERS		
a	OUTDOOR INDUSTRIAL HORN TYPE LOUDSPEAKER (20% of each type, make & model)	NOS	37
b	INDOOR CONE TYPE LOUDSPEAKER (15% of each type, make & model)	NOS	6
c	CRADLE SWITCH (20% of each type, make & model)	LOT	1
iii	NETWORK DEVICES AND ACCESSORIES		
a	NETWORK SWITCH OF EACH TYPE, RATING AND MODEL (10% of each type, make & model)	LOT	1
b	MEDIA CONVERTER (10% of each type, make & model)	NOS	10
c	COMPLETE SERVER WITH SOFTWARE AND APPLICABLE LICENCE (10% of each type, make & model)	NOS	1
d	PC STATION WITH SOFTWARE AND APPLICABLE LICENCE (10% of each type, make & model)	NOS	1
27	ERECTION, CABLE LAYING, INSTALLATION, COMMISSIONING & HANDLING OVER OF THE COMPLTE PA SYSTEM	SET	1
28	Training for 4 mandays at project site or vendor's work	SET	1

Annexure-III



NOTE:-

1. ALL CABLES AND INTERFACE HARDWARE ARE IN CONTRACTOR'S SCOPE.
2. LOCATION OF CALL STATIONS NETWORK SWITCHES ETC SHALL BE FINALISED DURING DETAIL ENGINEERING.
3. ALL THE INTERCONNECTING CABLES BETWEEN NETWORK SWITCHES SHALL BE FIBER OPTIC ONLY. BIDDER TO ENSURE THAT MINIMUM 100% CORES ARE KEPT AS SPARE IN ALL TYPES OF FIBER OPTIC CABLES.
4. SIGNAL CABLES FROM NETWORK SWITCH TO CALL STATION CAN BE CAT 6r UP TO A DISTANCE OF 100 METERS. IF THE SAME IS STANDARD PRACTICE OF CONTRACTOR, FOR DISTANCE GREATER THAN 100 M, SIGNAL CABLE SHALL BE FIBER OPTIC ONLY.
5. IN CASE THE NUMBER OF CALL STATIONS IN ALL THE ZONES ARE GREATER THAN THE NUMBER OF CALL STATIONS THAT CAN BE HANDLED BY ONE SET OF SERVER, THEN BIDDER TO SUPPLY ADDITIONAL SETS OF SERVERS AS REQUIRED WITHIN THE QUOTED PRICE.

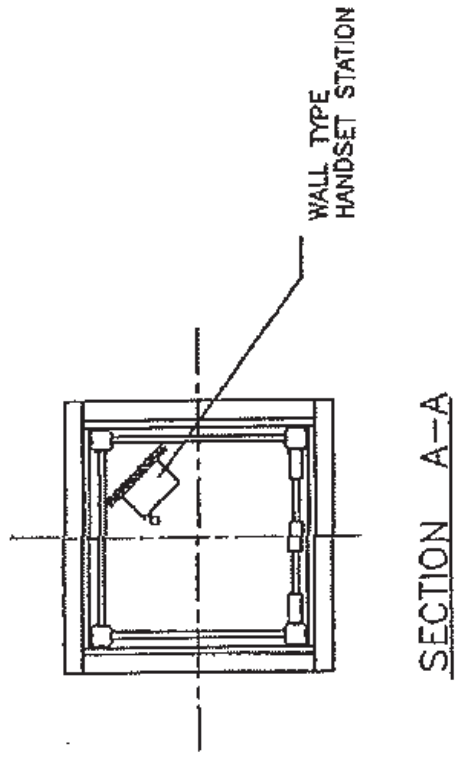
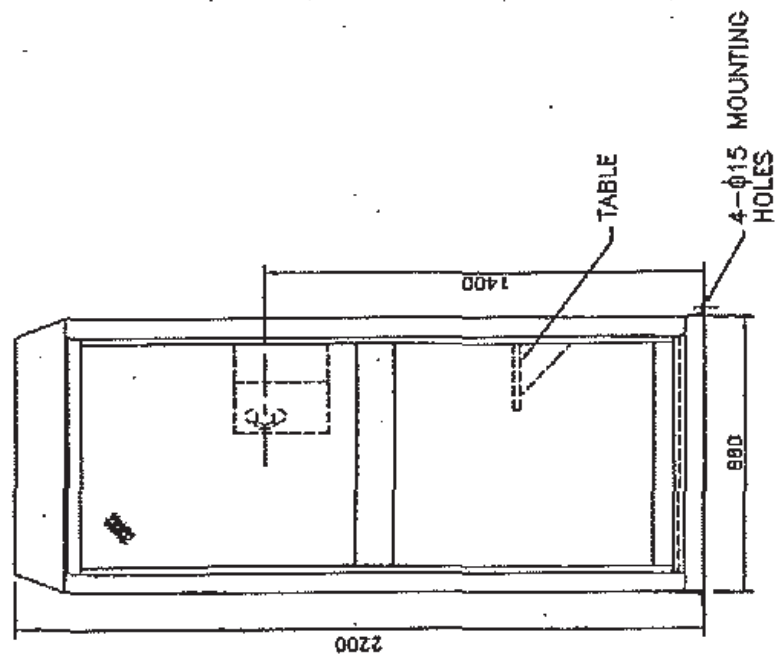
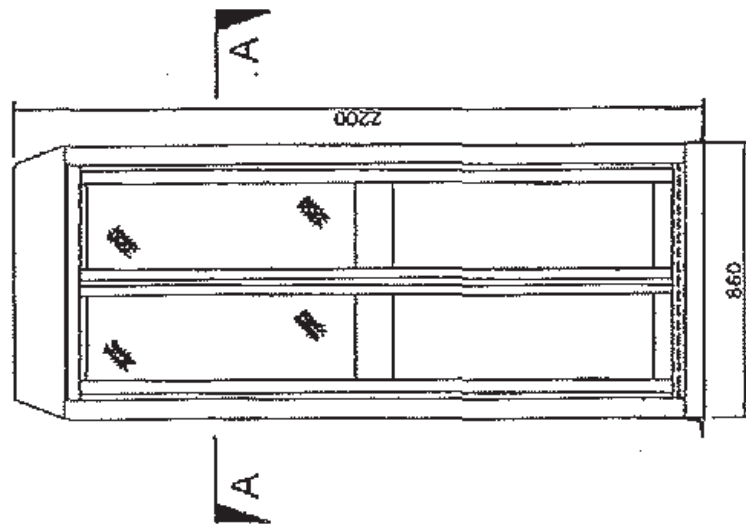
FOR TENDER PURPOSE ONLY

NTPC LIMITED

(A GOVERNMENT OF INDIA ENTERPRISE)
ENGINEERING DIVISION

NTPC

ACOUSTICS HOOD OUTLINE



Annexure-IV

MINI UPS
HITACHI HIREL (GANDHINAGAR)
APC (BANGALORE)
EMERSON/TATA LIEBERT (MUMBAI)
APLAB (India)
DB POWER (PUNE / SATARA)
DELTA (RUDRAPUR)
IP PA system
1) STENTOFON ZENITEL, NORWAY (DR category)
2) COMMEND, AUSTRIA (DR category)
3) ARMTTEL, RUSSIA/INDIA (DR category)
SERVER AND WORK STATION
1) IBM/LENOVO
2) HP/COMPAQ
3) DELL
4) SIEMENS FUJITSU
NETWORK SWITCH
CISCO
BROCADE (FOUNDARY)
HIRSHMANN (GERMANY)
GARRET (USA)
NETGEAR
JUNIPER (USA)
ALLIED TELESYS
RED LION, USA
40" TFT MONITOR
DELL
IBM/LENOVO
HP/COMPAQ
SIEMENS FUJITSU, GERMANY
FLEXIBLE GI CONDUIT
PLICA, GHAZIABAD
TRINITY TOUCH
BANSAL LABORATORIES
CABLE TRAY
VATCO ELECTRIC POWER (MUMBAI)
STEELITE ENGG, MUMBAI
VATCO ELECTRIC POWER (MUMBAI)
TECHNO ENGG (CHANDIGARH)
A.V ENGG, CHANDIGARH
ANAND UDYOG, MUMBAI
GRAM ENGG, KOLKATA
INAR PROFILES, VISHAKAPATNAM
INDIA ELECTRIC SYNDICATE, KOLKATA
INDIAN GRATING, PUNE
INDIANA, MUMBAI
INDUSTRIAL PERFORATION, KOLKATA
JAMUNA METAL, NEW DELHI
RUKMANI, RAIPUR

CHEMIN PONDICHERRY (DR CATEGORY)
PREMIUM POWER PRODUCTS, HOWRAH
WEST COAST ENGINEERING (DR CATEGORY)
KANADE ANAND UDYOG PVT LTD, AMERNATH
APT ENGINEERING WORKS (DR CATEGORY)
M J ENGINEERING, OKHLA/BHIWADI
AMTECH, PUNE
PASSIVE INFRA, ROHTAK
PATNY SYSTEMS, SECUNDERBAD (DR CATEGORY)
RABI ENGINEERING, KOLKATA (DR CATEGORY)
RATAN PROJECTS, KOLKATA
TRG, CHENNAI
UNITECH FBRICATORS, HOWRAH
42U PANEL / WALL MOUNTABLE PANELS
PYROTECH (UDAIPUR)
RITTAL (BANGALORE)
PENTAIR TECHNICAL PRODUCTS INDIA PVT LTS (HOFFMAN)- BANGALORE
IL (KOTA)
FRP JUNCTION BOX
MANISHA ENTERPRISE, PUNE
DEVI POLYMER, CHENNAI
K S INSTRUMENTS, BANGALORE
BALIGA LIGHTING, CHENNAI
SUCHITRA INDUSTRIES, BANGALORE
PHOENIX MECANO, PUNE
SCHNEIDER ELCTRIC, PUNE
SCHRENIK AND CO. AHMEDABAD
HENSEL, CHENNAI
MANISHA ENTERPRISE, PUNE
SUDHIR SWITCHGEARS, MUMBAI
FO cable:
Birla Erricson
Aksh Fibre
Finolex (Pune / Goa)
CORNING CABLE SYSTEM, USA (DR CATEGORY)
HFCL, GOA
R&M, Switzerland
Instrumentation Cable
M/S PARAMOUNT, KHUSKHERA
M/S POLYCAB WIRES, DAMAN
M/S DELTON CABLES, FARIDABAD.
M/S KEI INDUSTRIES, BHIWADI
M/S CORDS CABLE, BHIWADI / KAHARANI
M/S UNIVERSAL CABLE, SATNA
M/s NICCO, KOLKATA
M/S THERMO CABLES LTD., HYDERABAD
M/S GUPTA POWER INFRA LTD. BHUBANESWAR
M/S INCAB, PUNE

Power cable
M/S CORDS CABLE, BHIWADI
M/S DELTON CABLES, FARIDABAD
M/S GEMSCAB INDUSTRIES LTD, BHIWADI
M/S HINDUSTAN VIDYUT PRODUCT LTD,
M/S NICCO CORPORATION LTD., KOLKATA
M/S PARAMOUNT COMM LTD., ALWAR
M/S POLYCAB WIRES, DAMAN
M/S RADIANT RSCC SPECIALITY CABLE, HYD
M/S TORRENT CABLES LTD
M/S UNIVERSAL CABLES LTD
M/S KEI INDUSTRIES, CHENNAI
M/S INCAB, PUNE
M/S HAVELLS INDIA LTD., ALWAR
M/S THERMO CABLES LTD., HYDERABAD
M/S RAVIN CABLE, PUNE
M/S GUPTA POWER INFRA LTD, BHUBANESHWAR
M/s FINOLEX, PUNE
M/s SBEE, BANGALORE
M/s SUYOG CABLES, VADODARA
M/s Sriram cables, Bhiwadi
M/s LS CABLE, KOREA
M/S ANHUI HAULING, CHINA
M/s SCOT INNOVATION WIRES & CABLES, BADDI
CAT 5e UTP CABLE / PATCH CABLE/PATCH PANEL/LIU:
AMP / DIGILINK / D-LIK / SYSTEMAX
SINGLE MODE FIBER PATCH CABLE / SC PIGTAIL SIMPLEX
Avaya / Belden /D-Link / Digilink / Tyco
SINGLE MODE MEDIA CONVERTER
Avaya / Belden /D-Link / Digilink / Tyco/ CTC Union
Notes:
*DR category = These makes of camera are presently not approved by customer for
For all other items whose make are not mentioned in technical specification and above, the offered make shall be reputed and must have been supplied & commissioned earlier in power/process industry.

Annexure-V

	CORPORATE QUALITY ASSURANCE SUB-VENDOR QUESTIONNAIRE
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i.	Item/Scope of Sub-contracting			
ii.	Address of the registered office	Details of Contact Person (Name, Designation, Mobile, Email)		
iii.	Name and Address of the proposed Sub-vendor's works where item is being manufactured	Details of Contact Person: (Name, Designation, Mobile, Email)		
iv.	Annual Production Capacity for proposed item/scope of sub-contracting			
v.	Annual production for last 3 years for proposed item/scope of sub-contracting			
vi.	Details of proposed works			
1.	Year of establishment of present works			
2.	Year of commencement of manufacturing at above works			
3.	Details of change in Works address in past (if any)			
4.	Total Area			
	Covered Area			
5.	Factory Registration Certificate	Details attached at Annexure – F2.1		
6.	Design/ Research & development set-up (No. of manpower, their qualification, machines & tools employed etc.)	Applicable / Not applicable if manufacturing is as per Main Contractor/purchaser design Details attached at Annexure – F2.2 (if applicable)		
7.	Overall organization Chart with Manpower Details (Design/Manufacturing/Quality etc)	Details attached at Annexure – F2.3		
8.	After sales service set up in India, in case of foreign sub-vendor (Location, Contact Person, Contact details etc.)	Applicable / Not applicable Details attached at Annexure – F2.4		
9.	Manufacturing process execution plan with flow chart indicating various stages of manufacturing from raw material to finished product including outsourced process, if any	Details attached at Annexure – F2.5		

	CORPORATE QUALITY ASSURANCE SUB-VENDOR QUESTIONNAIRE
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10.	Quality Control exercised during receipt of raw material/BOI, in-process , Final Testing, packing	Details attached at Annexure – F2.6			
11.	Manufacturing facilities (List of machines, special process facilities, material handling etc.)	Details attached at Annexure – F2.7			
12.	Testing facilities (List of testing equipment)	Details attached at Annexure – F2.8			
13.	If manufacturing process involves fabrication then-	Applicable / Not applicable			
	List of qualified Welders	Details attached at Annexure – F2.9			
	List of qualified NDT personnel with area of specialization	(if applicable)			
14.	List of out-sourced manufacturing processes with Sub-Vendors' names & addresses	Applicable / Not applicable Details attached at Annexure. –F2.10 (if applicable)			
15.	Supply reference list including recent supplies	Details attached at Annexure – F2.11 (as per format given below)			
Project/ package	Customer Name	Supplied Item (Type/Rating/Model /Capacity/Size etc)	PO ref no/date	Supplied Quantity	Date of Supply
16.	Product satisfactory performance feedback letter/certificates/End User Feedback			Attached at annexure - F2.12	
17.	Summary of Type Test Report (Type Test Details, Report No, Agency, Date of testing) for the proposed product (similar or higher rating) Note:- Reports need not to be submitted			Applicable / Not applicable Details attached at Annexure – F2.13 (if applicable)	
18.	Statutory / mandatory certification for the proposed product			Applicable / Not applicable Details attached at Annexure – F2.14 (if applicable)	
19.	Copy of ISO 9001 certificate (if available)			Attached at Annexure – F2.15	
20.	Product technical catalogues for proposed item (if available)			Details attached at Annexure – F2.16	

Name:		Desig:		Sign:		Date:	
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Company's Seal/Stamp:-

Annexure-VI



1. TO BE IN THE TOWNSHIP AREA
2. TO BE IN THE TOWNSHIP AREA
3. TO BE IN THE TOWNSHIP AREA

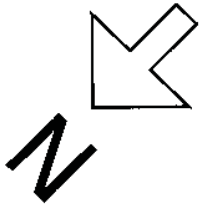
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9. TO BE IN THE TOWNSHIP AREA
10. TO BE IN THE TOWNSHIP AREA

1:1000

SPECIAL NOTES:-
1. THE TOWNSHIP AREA IS NOT TO BE USED FOR THE TOWNSHIP AREA.
2. THE TOWNSHIP AREA IS NOT TO BE USED FOR THE TOWNSHIP AREA.
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NO.	REVISION	DATE	BY	CHKD.	APPD.
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4					
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7					
8					
9					
10					

NTPC Limited
TANDA THERMAL POWER PROJECT
GENERAL LAYOUT PLAN
9562-000-POC-P-001 4



FIGURE

1. The drawing is a schematic diagram of the proposed layout of the power plant. It shows the main components of the plant, including the boiler, turbine, condenser, and cooling tower. The drawing is intended to provide a general overview of the plant's layout and to show the relative positions of the various components. It is not intended to be a detailed engineering drawing.

NOTES:-

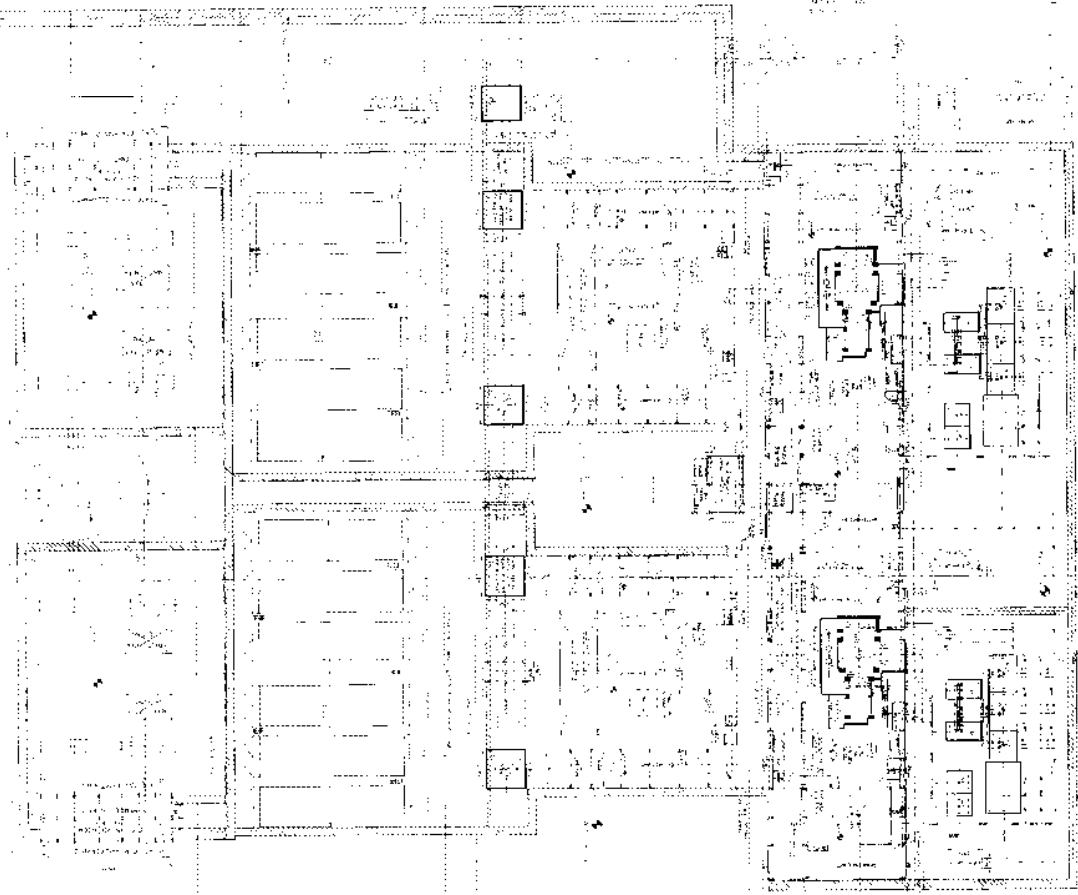
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FOR TENDER PURPOSE ONLY



NTPC Limited
NATIONAL THERMAL POWER CORPORATION
TANDA THERMAL POWER PROJECT

SIT PLAN, LEVEL PLAN AT 1:1000
9582-99/PONA-001



TYPE TEST REQUIREMENTS

1.00.00 TYPE TEST REQUIREMENTS

1.01.00 General Requirements

1.01.01 The Contractor shall furnish the type test reports of all type tests as per relevant standards and codes as well as other specific tests indicated in this specification. If the bidder proposes a different standard/code from that indicated at table 3.00.00, same is acceptable provided the equivalence of the proposed standard is established by the bidder. A list of such tests are given for various equipment in table titled 'TYPE TEST REQUIREMENT FOR C&I SYSTEMS' at the end of this chapter and under the item Special Requirement for Solid State Equipments/Systems. For the balance equipment instrument, type tests may be conducted as per manufactures standard or if required by relevant standard.

(a) Out of the tests listed, the Bidder/ sub-vendor/ manufacturer is required to conduct certain type tests specifically for this contract (and witnessed by Employer or his authorized representative) even if the same had been conducted earlier, as clearly indicated subsequently against such tests.

(b) For the rest, submission of type test results and certificate shall be acceptable provided.

i. The same has been carried out by the Bidder/ sub-vendor on exactly the same model /rating of equipment.

ii. There has been no change in the components from the offered equipment & tested equipment.

iii. The test has been carried out as per the latest standards along with amendments as on the date of Bid opening.

(c) In case the approved equipment is different from the one on which the type test had been conducted earlier or any of the above grounds, then the tests have to be repeated and the cost of such tests shall be borne by the Bidder/ sub-vendor within the quoted price and no extra cost will be payable by the Employer on this account.

1.01.02 As mentioned against certain items, the test certificates for some of the items shall be reviewed and approved by the main Bidder or his authorized representative and the balance have to be approved by the Employer.

1.01.03 The schedule of conduction of type tests/ submission of reports shall be submitted and finalized during pre-award discussion.

1.01.04 For the type tests to be conducted, Contractor shall submit detailed test procedure for approval by Employer. This shall clearly specify test setup, instruments to be used, procedure, acceptance norms (wherever applicable), recording of different parameters, interval of recording precautions to be taken etc. for the tests to be carried out.

CLAUSE NO.	TECHNICAL REQUIREMENTS
1.01.05	The Bidder shall indicate in the relevant BPS schedule, the cost of the type test for each item only for which type tests are to be conducted specifically for this project. The cost shall only be payable after conduction of the respective type test in presence of authorize representative of Employer. If a test is waived off, then the cost shall not be payable.
2.00.00	The following type test report should be submitted for PA system
2.01.00	The minimum type test reports, over and above the requirements of above clause, which are to be submitted for each of the major C&I systems shall be as indicated below: i) Surge Withstand Capability (SWC) for Solid State Equipments/ Systems All solid state systems/ equipments shall be able to withstand the electrical noise and surges as encountered in actual service conditions and inherent in a power plant. All the solid state systems/ equipments shall be provided with all required protections that needs the surge withstand capability as defined in ANSI 37.90.1/ IEEE-472. Hence, all front end cards which receive external signals like Analog input & output modules, Binary input & output modules etc. including power supply, data highway, and data links shall be provided with protections that meet the surge withstand capability as defined in ANSI 37.90.1/ IEEE-472. Complete details of the features incorporated in electronics systems to meet this requirement, the relevant tests carried out, the test certificates etc. shall be submitted along with the proposal. As an alternative to above, suitable class of EN 61000-4-12 which is equivalent to ANSI 37.90.1/ IEEE-472 may also be adopted for SWC test. ii) Dry Heat test as per IEC-68-2-2 or equivalent. iii) Damp Heat test as per IEC-68-2-3 or equivalent. iv) Vibration test as per IEC-68-2-6 or equivalent. v) Electrostatic discharge tests as per EN 61000-4-2 or equivalent. vi) Radio frequency immunity test as per EN 61000-4-6 or equivalent. vii) Electromagnetic Field immunity as per EN 61000-4-3 or equivalent. Test listed at item no. v, vi, vii, above are applicable for electronic cards only as defined under item (i) above.

The following type test report should be submitted for PA system components

14 Public Address System

To be performed
specifically for this
projectTest report to be
submitted for approval

- Amplifiers

As standard
(col 4)

per

IS Part-II

9302,

No

Yes

Microphones

As per
standard
(col 4)

IS Part-III

9302,

No

Yes

IS 15482:
2004/ IEC
61842(2002
)

Loudspeaker

As per
standard
(col 4)

IS Part-IV

9302,

No

Yes

PUBLIC ADDRESS SYSTEM – IP Based							
Attributes Characteristics Item Components Sub System Assembly	Make, Model, Type, Rating, ®	Dimension / constructional requirement®	Functional / operational check®	Switching capability and sequence®	No. of inputs/outputs, display®	SPL level and Sweep test response®	Operational check regarding communication with different zones ®
LAN Switch/Network Switch	Y		Y	Y	Y		
Call Stations	Y		Y				
Amplifier (Standalone)	Y		Y				
Power Supply	Y		Y				
Loud Speaker	Y	Y	Y			Y	
EPBAX	Y		Y				
Master Control Unit	Y		Y				
Media Converter	Y		Y				
Software	Y		Y				
Enclosure (Outdoor application)	Y	Y	Y				
Acoustic Hood	Y	Y	Y				
Server, Work Station, Storage Device	Y		Y				
Integrated Testing							Y
Note : 1) Detailed procedure of Environmental Stress Screening test shall be as per Quality Assurance Programme in General Technical Conditions. This requirement will be finalized during finalization of Testing requirement / Quality Plan. 2) This is an indicative list of test/checks. The manufacturer is to furnish a detailed quality plan indicating the Practice and procedure along with relevant supporting documents. R – Routine Test Y -Test Applicable							

The QAP shall be discussed during detailed engineering and shall be subject to end user approval.