REQUEST FOR QUOTATION

MMI:PU:RF:003

BHARAT HEAVY ELECTRICALS LIMITED
Electronics Division
PB No. 2606, Mysore Road Bangalore - 560026
INDIA

RFQ NUMBER:
SGKNIC0017

RFQ DATE :
06.APR.2021

Due Date
21.APR.2021
Time: 13:00 HRS

PURCHASE FILE COPY

(for all correspondence)
Purchase Executive : SUYASH KUMAR
Phone : 080 26998395
Fax :
E-mail: suyash@bhel.in

Sl No.	Description	Qty	Unit	Delivery qty	Delivery Date
1	PR0880000180 Mandatory Spares CCTV system Test Certificate	1	ST	1	As per SCC
2	PR0900000137 IP CCTV System IP BASED CLOSE CIRCUIT TELEVISION INCLUDING ITEMS LIKE CAMERA, LENSES AND ACCESSORIES Test Certificate	1	ST	1	As per SCC

Total Number of Items - 2

For and On behalf of BHEL.

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: 003- Rev 02

SPECIAL COMMERCIAL CONDITIONS OF CONTRACT

Reference is brought to BHEL's Instructions to Bidders (Document Ref: CE: PR: 001- Rev 03) and General Commercial Conditions for Contract (Document Ref: CE: PR: 002- Rev 02).

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.	:	**SGKNIC0017 dtd.06.04.2021**
RFQ Due Date	:	**DTD: 21.04.2021**
Customer/Project	:	**BHUSAWAL-1x660 MW**
Scope Description	:	**CCTV System**

Kindly submit your quotation as ~~single~~/**two**/~~three-part bid~~ (Pre-Qualification Criteria & Techno-Commercial bid-1st part & Price bid- 2nd Part) in E-Procurement System portal: https://eprocurebhel.co.in within the Due- Date of **21.04.2021** before **13.00** hours IST and note that tenders will be opened on the same day at **13.30** hours IST.

Purchase Executives: Clarifications with regard to the tender shall be addressed to purchase officers whose e-mail IDs are given below:

suyash@bhel.in_____ or padmanabha@bhel.in

Splitting of tendered quantity to MSE vendors: The tendered quantity will not be split to MSE vendor/s subject to submission of relevant document/s by vendors. Refer clause:I of Instructions to Bidders for conditions applicable and for information on document/s to be submitted. *(Strike off, if not applicable)*

Destination: For Indigenous scope of supply, items are to be directly despatched to BHEL site office/stores located at Bhusawal TPP in MH state, India. Detailed Consignee details will be issued by BHEL along with Despatch Clearance.

Terms of Delivery:

- **Indigenous scope of supply:** Ex-works, ___<indicate station of dispatch>_____ (including Packing & Forwarding charges but excluding Taxes).

- ~~**Imported scope of supply:**~~

  ~~F.C.A. (for air consignments) < indicate international port of dispatch > / C.I.F. (for sea consignments) < ICD, Bangalore > (including Packing, Forwarding, Handling, Ancillary charges like processing of Sight Draft/ Letter of Credit, negotiation of bank documents, Export declaration, Country of Origin etc.).~~
  ~~Kindly indicate the approximate weight of the total imported consignment, which is required for calculating air-freight charges:_____~~

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

a. GSTIN of place of supply : _____

b. HSN (Harmonized System of Nomenclature) code : _____
Applicable tax and Rate : _____&_____

c. GSTIN of place of supply of service :

d. SAC (Service Accounting Code) :_____
Applicable tax and Rate : _____&_____

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

SL NO.	TERMS	BHEL ACCEPTABLE TERM	BIDDER'S CONFIRMATION	REMARKS,if any
01	**Reverse Auction (RA)** *(strike off, if not applicable)*	BHEL shall be resorting to Reverse Auction (Guidelines as available on http://www.bhel.com/index.php/vender) for this tender. RA shall be conducted among all the techno-commercially qualified bidders. Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered as initial bids of bidders in RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking.	AGREE	
02	~~**Parting of license for imported raw materials**~~ ~~*(strike off, if not applicable)*~~	~~In case of projects where Basic Custom Duty is 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.~~ ~~(or)~~ ~~We confirm that there are no imported components~~	
03	**Delivery Period**	Within 08 weeks from the date of issue of Manufacturing clearance along with approved document. Delay in contractual delivery will attract Penalty as per GCC Clause no.:04.b.	AGREE …… weeks	

04	**Terms of Payment at the time of material supply** *(strike off, whichever is not applicable)*	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 Service(s)** b) ~~Supply only~~ ~~Imported Scope :~~ ~~c)Supply with Service(s)~~ ~~d) Supply only~~ ~~High-Sea sales :~~ ~~e) Supply with Service(s)~~ ~~f) Supply only~~ **Spares :** b) and/or d)/f) depending upon the scope	AGREE	
05	**Declaration of local content :** The 'Class-I local supplier'/'Class-II local supplier' shall be required to indicate percentage of local content and provide self-certification that the item offered meets the local content requirement for 'Class-I local supplier'/'Class-II local supplier', as the case may be.	'Local content' means the amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent. {'Class-I local supplier' means a supplier or service provider, whose goods, services or works offered for procurement, has local content equal to or more than 50%, as defined under Public procurement order no.P-45021/2/2017-PP (BE-II) dt: 16.09.2020. 'Class-II local supplier' means a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%, as defined under Public procurement order no.P-45021/2/2017-PP (BE-II) dt: 16.09.2020. In the event of any Nodal Ministry prescribing higher or lower margin of purchase preference and/or higher or lower percentage of local content in respect of this procurement, same shall be applicable}.' **(**Refer Clause 'A' Sl. No. 12 of Instructions to Bidders**).**	Percentage of local content : _____% Details of the Location(s) at which the local value addition is made : _____	
06	Declaration as a compliance to Rule 144(xi) of GFR, 2017 amendment dt 23.07.2020 issued by	The below declaration is to be submitted on Company Letter head duly signed and sealed by authorised signatory, for ascertaining the eligibility of offer in the tender. "I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that our		

	Ministry of Finance, Govt. of India.	firm is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that our firm fulfils all requirements in this regard and is eligible to be considered." **(**Refer Clause 'A' Sl. No. 13 of Instructions to Bidders**).**		

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

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

(2) **Validity:** The offer will be valid for a period of 90 days from the date of part-I bid opening and in case of Negotiation/ Counter-offer/RA, price validity will apply afresh for a period of 60 days from the date of according final price by bidder (or) up to original validity period, whichever is later.

(3) **Warranty:** 36 months from the date of dispatch of goods (or) 30 months from the date of commissioning, whichever is earlier.

(4) **Performance Bank Guarantee (PBG):** PBG will be applicable for a period of 36 months from the date of dispatch of goods + claim period of 03 months, for a value equal to 10% of the basic value of purchase order. It shall however be noted that PBG is not applicable against supply of Mandatory Spares.

Refer Clause "H" of Instructions to Bidders. Also note that PBG should be in the format specified in Annexure VII of ITB and no deviation to this format will be allowed.

Note: In case PBG is not furnished, the 10% basic amount will be withheld from the supply invoice. This withheld amount will be paid either against submission of supplementary invoice & Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.

(5) **Despatch Documents:** Complete set of despatch documents (original + 1 photocopy set) as per Purchase Order shall be forwarded to Purchase Executive/BHEL directly. Depending upon the project/customer demands, Despatch documents may include one (or) more documents from the following:

Invoice (01 original and 01 copy with original sign & seal / digitally signed invoice), Lorry Receipt (L/R), Packing List, NIL Short-Shipment Certificate, insurance intimation letter, E-way bill, original Performance Bank Guarantee (directly from issuing bank to BHEL),Country of Origin certificate and original POD (Proof of Delivery) on L/R.
The precise list of despatch documents needed for the project will be specified in the Purchase Order.
One set of Invoice, Packing List, Lorry Receipt (or) AWB/BOL shall be e-mailed immediately to BHEL-EDN at the time of despatch.
Note: Detailed Packing List should indicate package-wise content details and also Net & Gross weight of each package.

(6) **Freight Charges (for indigenous scope of supply):** Freight charges shall be to vendor's account. Bidder to quote reasonable Freight charges along with applicable tax, in price bid.

(7) **Evaluation criteria to determine L1 bidder**:

(a) ~~Item-wise evaluation of tendered item~~.

(or)

(b) Items will not be split on item-wise lowest offer. Evaluation of the lowest bidder will be done as a combined package basis.

(8) **Erection and Commissioning charges:**

In case the quoted total E&C value is less than 10% of the main supply value, BHEL shall evaluate Bidders Price deducting differential amount from main supply price and apportioning towards E&C charges.

Refer Sl. no. 'g' under Clause 'F' of Instructions to Bidders for Payment terms of E&C charges.

~~(9) **Erection Supervision and Commissioning charges:** *(strike off, if not applicable)*~~

~~In case the quoted total Erection Supervision & Commissioning value is less than _____ of the main supply value, BHEL shall evaluate Bidders Price deducting differential amount from main supply price and apportioning towards Erection Supervision & Commissioning charges.~~

~~Refer Sl. no. 'h' under Clause 'F' of Instructions to Bidders for Payment terms of Erection Supervision & Commissioning charges.~~

(10) ~~**Comprehensive Annual Maintenance Contract:** *(strike off, if not applicable)*~~

~~CAMC will be applicable for a period of __ years from the date of expiry of warranty period (or) from the date of completion of commissioning of equipment, whichever is later.~~

~~In case the quoted total CAMC value is less than __% of the main supply value, BHEL shall evaluate Bidders Price deducting differential amount from main supply price and apportioning towards CAMC charges. It shall also be noted that year-wise quote/ charges for CAMC should be either uniform (or) in increasing trend. Refer Sl. no. 'i' under Clause 'F' of Instructions to Bidders for Payment terms of CAMC.~~

(11) Integrity Pact:

Execution of Integrity Pact is applicable for this tender (Refer clause "K" of Instructions to Bidders). The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory who signs in the offer) along with techno-commercial bid (Part-I, in case of two/three part bid). Only those Bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.

With this, we hereby confirm that all the terms & conditions as indicated in Instructions to Bidders (Document Ref: CE: PR: 001- Rev 03) & General Commercial Conditions for Contract (Document Ref: CE: PR: 002- Rev 02) are accepted without any deviation.

Vendor's Signature with Seal

<u>On Bidder Letter Head</u>

Date:

To,

M/s Bharat Heavy Electricals Ltd.
Electronics Division, Mysore Road,'
Bangalore – 560026

Sub: Model Clause / Certificate as per clause 9 (a) of Revised Public Procurement (Preference to Make in India Order, 2017 of DPIIT dated 13.06.2020.

Ref: BHEL Tender / RFQ / NIT Number ……

I (authorized signatory for M/s ……..) a 'Class-I Local Supplier' / 'Class-II Local Supplier' at the time of tender, bidding or solicitation hereby confirm that the item meets the Local Content requirement for 'Class-I Local Supplier' / 'Class-II Local Supplier' (Tick appropriate option & cut the other one) and the Local Content percentage is ……..

The address is as below, where the local content / value addition is made:

[Factory Address]

For M/s ……

Authorized Signatory
(with company seal & Name)

<u>On Bidder Letter Head</u>

Date:

To,

M/s Bharat Heavy Electricals Ltd.
Electronics Division, Mysore Road,'
Bangalore – 560026

Sub: Model Clause / Certificate as per Annex-III (Tenders) of Restrictions Under Rule 144 (xi) of the General Financial Rules (GFRs) 2017, Dated 23.07.2020.

Ref: BHEL Tender / RFQ / NIT Number ……

I (authorized signatory for M/s …….) have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India , we certify that this bidder M/s ……[Vendor Name & address] is not from such a country or , if from such a country , has been registered with the competent authority . We hereby certify that we fulfill all requirements in this regard and is eligible to be considered [attach evidence of valid registration certificate with competent authority].

For M/s ……

Authorized Signatory
(with company seal & Name)

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

CE: PR: 002- Rev 02

GENERAL COMMERCIAL CONDITIONS FOR CONTRACT

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

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

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

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

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

Order of Precedence:

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

Interpretation:

In the contract, except where the context requires otherwise:

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

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

Applicable Conditions:

1. Price Basis: All prices shall be firm until the purchase order is executed / completed in all respects. No price variations / escalation shall be permitted.

2. Ordering and confirmation of Order:Vendor shall send the order acceptance on their company letter head/ through e-mail within a week from the date of receipt of Purchase Order or such other period as specified/ agreed by BHEL. BHEL reserves the right to revoke the order placed if the order confirmation differs from the original order placed. The acceptance of goods/services/supplies by BHEL as well as payments made in this regard shall not imply acceptance of any deviations.
   The purchase order will be deemed to have been accepted if no communication to the contrary is received within one week (or the time limit as specified/agreed by BHEL) from the date of receipt of the purchase order.

3. Documentation:After receipt of Purchase Order, vendor should submit necessary documents(if & as applicable) like drawings specified, bill of materials, datasheets, catalogues, quality plan, test procedure, type test report , O & M Manuals and/or any other relevant documents as per Specification/Purchase Order, as and when required by BHEL/Customer.
   At any stage within the contract period, the vendor shall notify of any error, fault or other defect found in BHEL's documents /specifications or any other items for reference. If and to the extent that (taking account of cost and time) any vendor exercising due care would have discovered the error, fault or other defect when examining the documents/specifications before submitting the tender, the time for completion shall not be extended. However if errors, omissions, ambiguities, inconsistencies, inadequacies or other defects are found in the vendor's documents, they shall be corrected at his cost, notwithstanding any consent or approval.

4. Penalty:
   a. For delay in documentation: In the event of delay in submission of complete set of specified documents ((like drawings, bill of materials, datasheets, catalogues, quality plan etc. as called in tender specifications including soft copies wherever applicable) in required sets beyond two(02) weeks (or as agreed/indicated in the SCC/Purchase Order) from the date of receipt of Purchase Order(by email), penalty at 0.5% (half percent) per week or part thereof, limited to a maximum of 5% (five percent) of the basic material value of the Purchase Order will be applicable.

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

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

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

5. Contract variations (Increase or decrease in the scope of supply): BHEL may vary the contracted scope as per requirements at site. If vendor is of the opinion that the variation has an effect on the agreed price or delivery period, BHEL shall be informed of this immediately in writing along with technical details. Where unit rates are available in the Contract, the same shall be the basis for such additional work. Vendor shall not perform additional work before BHEL has issued written instructions/ amendment to the Purchase Order to that effect. The work which the vendor should have or could have anticipated in terms of delivering the service(s) and functionality (i.e.) as described in this agreement, or which is considered to be the result of an attributable error on the vendor's part, shall not be considered additional work.

6. Inspection: Prior written notice of at least 10 days shall be given along with internal test certificates/COC and applicable test certificates. Materials will be inspected by BHEL-EDN-QS/CQS or BHEL nominated Third Party Inspection Agency (TPIA) or BHEL authorized Inspection Agency or Customer / Consultant or jointly by BHEL & Customer / consultant. All tests have to be conducted as applicable in line with approved Quality plan or QA Checklist or Purchase specification and original reports shall be furnished to BHEL-EDN, Bangalore for verification/acceptance for issue of dispatch clearance. BHEL reserves the right for conducting repeat test, if required.
   All costs related to inspections & re-inspections shall be borne by vendor. Whether the Contract provides for tests on the premises of the vendor or any of his Sub-contractor/s, vendor shall be responsible to provide such assistance, labour, materials, electricity, fuels, stores, apparatus, instruments as may be required and as may be reasonably demanded to carry out such tests efficiently. Cost of any type test or such other special tests shall be borne by BHEL only if specifically agreed to in the purchase order.

7. Transit Insurance: Transit insurance coverage between vendor's works and project site shall be to the account of BHEL, unless specifically agreed otherwise. However, vendor shall send intimation directly to insurance agency (as mentioned in dispatch instructions issued by BHEL) through fax/courier/e-mail, immediately on dispatch of goods for covering insurance. A copy of such intimation sent by vendor to insurance agency shall be given to BHEL along with dispatch documents. Dispatch documents will be treated as incomplete without such intimation copy. BHEL shall not be responsible for sending intimations to insurance agency on behalf of the vendor.

8. Mode of dispatch:
   Indigenous Scope: By road on Door Delivery Consignee Copy attached basis through your approved transporter (unless otherwise indicated in Dispatch Instructions), only on receipt of Despatch Clearance from BHEL.
   Imported Scope: By Air/Sea through BHEL approved Freight Forwarder/supplier approved Consolidator respectively as per agreed contractual terms, only on receipt of Dispatch Clearance from BHEL.

9. Changes in Statutory levies:
   If any rates of Tax are increased or decreased, a new Tax is introduced, an existing Tax is abolished, or any change in interpretation or application of any Tax occurs in the course of the execution of Contract, which was or will be assessed on the bidder in connection with performance of the Contract, an equitable adjustment of the Contract Price shall be made to fully take into account any such change by addition to the Contract Price or deduction there from, as the case may be. However, these adjustments would be restricted to direct transactions between BHEL and the bidder /agent of foreign bidder (if applicable). These adjustments shall not be applicable on procurement of raw materials, intermediary components etc. by the bidder /agent.

10. Availing duty/tax exemption benefits by bidder, wherever applicable: BHEL shall issue the required Certificate/s, as per relevant policies of the Govt. of India, to facilitate the bidders to avail any such benefits under the Contract. In case of failure of the bidders to receive the benefits partly or fully from the Govt. of India and/or in case of any delay in receipt of such benefits, BHEL shall neither be liable nor responsible in any manner whatsoever.

11. Taxes against sub-vendor dispatches: All taxes/levies, as applicable in respect of all components, equipments and material to be despatched directly from the sub-vendor's works to Site irrespective of the fact whether such taxes and levies are assessable and chargeable on Vendor or the BHEL, shall be to the vendor's account and no separate claim in this regard will be entertained by BHEL.

12. High Sea Sales (HSS): Customs clearance of the consignment landed on Indian Sea/Air ports will be done by BHEL based on the original HSS documents provided by vendors.
    Any delay in submission of complete/correct HSS documents to BHEL may incur demurrage charges. All demurrage charges on account of incomplete /incorrect HSS documents submission by vendor will be to vendor's account and all such charges will be recovered from any of the available vendor bills with BHEL.

13. Packaging and dispatch:The Seller shall package the goods safely and carefully and pack them suitably in all respects considering the peculiarity of the material for normal safe transport by Sea/ Air / Rail/ Road to its destination suitably protected against loss, damage, corrosion in transit and the effect of tropical salt laden atmosphere. The packages shall be provided with fixtures/ hooks and sling marks as may be required for easy and safe handling. If any consignment needs special handling instruction, the same shall be clearly marked with standard symbols / instructions. Hazardous material should be notified as such and their packing, transportation and other protection must conform to relevant regulations.
    The packing, shipping, storage and processing of the goods must comply with the prevailing legislation and regulations concerning safety, the environment and working conditions. Any Imported/Physical Exports items packed with raw/ solid wood packing material should be treated as per ISPM – 15 (fumigation) and accompanied by Phytosanitory/ Fumigation certificate. If safety information sheets (MSDS – Material Safety Data Sheet) exist for an item or the packaging, vendor must provide this information without fail along with the consignment.
    Each package must be marked with Consignee name, Purchase order number, Package number, Gross weight and net weight, dimensions (LxBxH) and Seller's name. Packing list of goods inside each package with PO item number and quantity must also be fixed securely outside the box to indicate the contents of each box. Total number of packages in the consignment must also be indicated in the packing list.
    Separate packing & identification of items should be as follows.
    1. Main Scope - All items must be tagged with part no. & item description.
    2. Commissioning accessories/spares - All items must be tagged with part no. & item description.
    3. Mandatory spares - All items must be tagged with part no. & item description.
    Nevertheless, vendor shall adhere to dispatch & packing instructions issued by BHEL at the time of dispatch.

14. Assignment of Rights & Obligations; Subcontracting: Vendor is not permitted to subcontract the delivery or any part thereof to third party or to assign the rights and obligations resulting from this agreement in whole or in part to third parties without prior written permission from BHEL. Any permission or approval given by the BHEL shall, however, not absolve the vendor of the responsibility of his obligations under the Contract.

15. Progress report: Vendor shall render such report as to the progress of work and in such form as may be called for by the concerned purchase officer from time to time. The submission and acceptance of such reports shall not prejudice the rights of BHEL in any manner.

16. Non-disclosure and Information Obligations: Vendor shall provide with all necessary information pertaining to the goods as it could be of importance to BHEL. Vendor shall not reveal any specified confidential information that may be divulged by BHEL to Vendor's employees not involved with the tender/ contract & its execution and delivery or to third parties, unless BHEL has agreed to this in writing beforehand. Vendor shall not be entitled to use the BHEL name in advertisements and other commercial publications without prior written permission from BHEL.

17. Cancellation /Termination of contract: BHEL shall have the right to completely or partially terminate the agreement by means of written notice to that effect. Termination of the Contract, for whatever reason, shall be without prejudice to the rights of the parties accrued under the Contract up to the time of termination.
    BHEL shall have the right to cancel/foreclose the Order/ Contract, wholly or in part, in case it is constrained to do so on account of any decline, diminution, curtailment or stoppage of the business.

18. Risk Purchase Clause: In case of failure of supplier, BHEL at its discretion may make purchase of the materials / services not supplied / rendered in time at the RISK & COST of the supplier. Under such situation, the supplier who fails to supply the goods in time shall be wholly liable to make good to BHEL any loss due to risk purchase.
    In case of items demanding services at site like erection and commissioning, vendor should send his servicemen/representatives within 7 days from the service call. In case a vendor fails to attend to the service call, BHEL at its discretion may also make arrangements to attend such service by other parties at the **RISK & COST** of the supplier. Under such situation the supplier who fails to attend the service shall be wholly liable to make good to BHEL any loss due to risk purchase/service including additional handling charges due to the change.

19. Shortages: In the event of shortage on receipt of goods and/or on opening of packages at site, all such shortages, caused by supplier's act or omission, shall be made good at free of cost within a reasonable time that BHEL may allow from such intimation.
    Transit Damages: In the event of receipt of goods in damaged condition or having found them so upon opening of packages at site, supplier shall make good of all such damages within a reasonable time from such intimation by BHEL. In case BHEL raises an insurance claim, the cost of material limited to insurance settled amount less handling charges will be reimbursed to supplier.

20. Remedial work: Notwithstanding any previous test or certification, BHEL may instruct the vendor to remove and replace materials/goods or remove and re-execute works/services which are not in accordance with the purchase order. Similarly BHEL may ask the vendor to supply materials or to execute any services which are urgently required for any safety reasons, whether arising out of or because of an accident, unforeseeable event or otherwise. In such an event, Vendor shall provide such services within a reasonable time as specified by BHEL.

21. Indemnity Clause: Vendor shall comply with all applicable safety regulations and take care for the safety of all persons involved. Vendor is fully responsible for the safety of its personnel or that of his subcontractor's men / property, during execution of the Purchase Order and related services. All statutory payments including PF, ESI or other related charges have to be borne by the vendor. Vendor is fully responsible for ensuring that all legal compliances are followed in course of such employment.

22. Product Information, Drawings and Documents: All specified drawings, technical documents or other technical information received by Vendor from BHEL or vice versa shall not, without the consent of the other party, be used for any other purpose than that for which they were provided. They may not, without the consent of the Disclosing party, otherwise be used or copied, reproduced, transmitted or communicated to third parties. All information and data contained in general product documentation, whether in electronic or any other form, are binding only to the extent that they are by reference expressly included in the contract.
    Vendor, as per agreed date/s but not later than the date of delivery, provide free of charge information and drawings which are necessary to permit and enable BHEL to erect, commission, operate and maintain the product. Such information and drawings shall be supplied in as many numbers of copies as may be agreed upon.
    All intellectual properties, including designs, drawings and product information etc. exchanged during the formation and execution of the Contract shall continue to be the property of the disclosing party.

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

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

24. Force Majeure: Notwithstanding anything contained in the purchase order or any other document relevant thereto, neither party shall be liable for any failure or delay in performance to the extent said failures or delays are caused by the "Act of God" and occurring without its fault or negligence, provided that, force majeure will apply only if the failure to perform could not be avoided by the exercise of due care and vendor doing everything reasonably possible to resume its performance.
A party affected by an event of force majeure which may include fire, tempest, floods, earthquake, riot, war, damage by aircraft etc., shall give the other party written notice, with full details as soon as possible and in any event not later than seven (7) calendar days of the occurrence of the cause relied upon. If force majeure applies, dates by which performance obligations are scheduled to be met will be extended for a period of time equal to the time lost due to any delay so caused.

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

25. Warranty:
Wherever required, and so provided in the specifications/ Purchaser Order, the Seller shall ensure that the goods supplied shall comply with the specifications laid down, for materials, workmanship and performance.
Unless otherwise specified in SCC, warranty period shall be applicable for a period of 24 months from the date of delivery of goods or 18 months from the date of commissioning of goods, whichever is earlier.
The warranty period as described above shall apply afresh to replaced, repaired or re-executed parts of a delivery. Unless otherwise specifically provided in the Purchase Order, Vendor's liability shall be co terminus with the expiration of the applicable warranty period.

26. Limitation of Liability: Vendor's liability towards this contract is limited to a maximum of 100% of the contract value and consequential damages are excluded. However the limits of liability will have no effect in cases of criminal negligence or wilful misconduct.
The total liability of Vendor for all claims arising out of or relating to the performance or breach of the Contract or use of any Products or Services or any order shall not exceed the total Contract price.

27. Liability during warranty: Vendor shall arrange replacement / repair of all the defective materials / services under its obligation during the warranty period. The rejected goods shall be taken away by vendor and replaced / repaired. In the event of the vendor's failure to comply, BHEL may take appropriate action including disposal of rejections and replenishment by any other sources at the cost and risk of the vendor.
In case, defects attributable to vendor are detected during Warranty period or where the commissioning call is issued within the warranty period, vendor shall be responsible for replacement/ repair of the goods as required by BHEL at vendor's cost even after expiry of warranty period.
Further if the equipment or any part thereof cannot be used by reason of such defect and/or making good of such defect, the warranty period of the equipment or such part, as the case may be, shall be extended by a period equal to the period during which the equipment or such part cannot be used by BHEL because of any of the aforesaid reasons. Upon correction of the defects in the facilities or any part thereof by repair/replacement, such repair/replacement shall have the warranty period for a period of twelve (12) months from the time such replacement/repair of the equipment or any part thereof has been completed.

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

29. Compliance with Laws: Vendor shall, in performing the contract, comply with all applicable laws. The vendor shall make all remittances, give all notices, pay all taxes, duties and fees, and obtain all permits, licences and approvals, as required by the laws in relation to the execution and completion of the contract and for remedying of any defects; and the Contractor shall indemnify and hold BHEL harmless against and from the consequences of any failure to do so.

30. Settlement of Disputes:Except as otherwise specifically provided in the Purchase Order, decision of BHEL shall be binding on the vendor with respect to all questions relating to the interpretation or meaning of the terms and conditions and instructions herein before mentioned and as to the completion of supplies/work/services, other questions, claim, right, matter or things whatsoever in any way arising out of or relating to the contract, instructions, orders or these conditions or otherwise concerning the supply or the execution or failure to execute the order, whether arising during the schedule of supply/work or after the completion or abandonment thereof. Any disputes or differences among the parties shall to the extent possible be settled amicably between the parties thereto, failing which the disputed issues shall be settled through arbitration. Vendor shall continue to perform the contract, pending settlement of dispute(s).

31. Arbitration Clause in case of Contract with vendors other than Public Sector Enterprise (PSE) or a Government Department:

    ARBITRATION & CONCILIATION

    The parties shall attempt to settle any disputes or difference arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract, or in connection with this contract through friendly discussions. In case no amicable settlement can be reached between the parties through such discussions, in respect of any dispute; then, either Party may, by a notice in writing to the other Party refer such dispute or difference to the sole arbitration of an arbitrator appointed by Head of the BHEL–EDN. Such Sole Arbitrator appointed, shall conduct the arbitration in English language.
    The Arbitrator shall pass a reasoned award and the award of the Arbitration shall be final and binding upon the Parties.
    Subject as aforesaid, the provisions of Arbitration and Conciliation Act 1996 (India) or statutory modifications or re-enactments thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceedings under this clause. The seat of arbitration shall be Bangalore.
    The cost of arbitration shall be borne as decided by the Arbitrator upon him entering the reference.
    Subject to the Arbitration Clause as above, the Courts at Bangalore alone shall have exclusive jurisdiction over any matter arising out of or in connection with this Contract.
    Notwithstanding the existence or any dispute or differences and/or reference for the arbitration, the parties shall proceed with and continue without hindrance the performance of its obligations under this Contract with due diligence and efficiency in a professional manner except where the Contract has been terminated by either Party in terms of this Contract.

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

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

32. Applicable Laws and Jurisdiction of Courts: Prevailing Indian laws both substantive and procedural, including modifications thereto, shall govern the Contract. Subject to the conditions as aforesaid, the competent courts in Bangalore alone shall have jurisdiction to consider over any matters touching upon this contract.

33. General Terms: That any non-exercise, forbearance or omission of any of the powers conferred on BHEL and /or any of its authorities will not in any manner constitute waiver of the conditions hereto contained in these presents.
    That the headings used in this agreement are for convenience of reference only.
    That all notices etc., to be given under the Purchase order shall be in writing, type script or printed and if sent by registered post or by courier service to the address given in this document shall be deemed to have been served on the date when in the ordinary course, they would have been delivered to the addressee.

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 03

INSTRUCTIONS TO BIDDERS

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

A. GENERAL INSTRUCTIONS:

1. Any Purchase Order resulting from this enquiry shall be governed by the Instructions to Bidders (document reference: CE: PR: 001 – Rev 03), General Conditions of Contract (document reference: CE: PR: 002 - Rev 02) and Special Conditions of Contract, if any, of the enquiry.
2. Any deviations from or additions to the "General Conditions of Contract"or "Special Conditions of Contract" require BHEL's express written consent. The general terms of business or sale of the bidder shall not apply to this tender.
3. Regret letter (either through post or by mail or by EPS) indicating reasons for not quoting must be submitted without fail, in case of non-participation in this tender. Supplier shall be liable for removal as a registered vendor of BHEL when the supplier fails to quote against four consecutive tender enquiries for the same item or all enquiries in last two years for the same item, whichever is earlier.
4. Procurement directly from the manufacturers is preferred. However, if the OEM/ Principal insist on engaging the services of an agent, such agent shall not be allowed to represent more than one manufacturer/ supplier in the same tender. Moreover, either the agent could bid on behalf of the manufacturer/ supplier or the manufacturer/ supplier could bid directly but not both. Agent/Representative authorized by the OEM/Principal in turn cannot further sub authorize any other firm for submitting the offer or for placement of order.

   In case bids are received from the manufacturer/ supplier and his agent, bid received from the agent shall be ignored.
5. Consultant / firm (and any of its affiliates) shall not be eligible to participate in the tender/s for the related goods for the same project if they were engaged for consultancy services for the same project.
6. If an Indian representative/associate/liaison office quotes on behalf of a foreign based bidder, such representative shall furnish the following documents:
   a. Authorization letter to quote and negotiate on behalf of such foreign-based bidder.
   b. Undertaking from such foreign based bidder that such contract will be honored and executed according to agreed scope of supply and commercial terms and conditions.
   c. Undertaking shall be furnished by the Indian representative stating that the co-ordination and smooth execution of the contract and settlement of shortages/damages/replacement/repair of imported scope till the equipment is commissioned and handed over to customer will be the sole responsibility of the Indian representative/associates/agent/liaison office.
   d. Refer **Annexure I** on "Guidelines for Indian Agents".

7. In case of imported scope of supply, customs clearance & customs duty payment will be to BHEL account after the consignment is received at Indian Airport /Seaport. Bidders must provide all original documents required

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

8. The offers of the bidders who are on the banned list and also the offers of the bidders, who engage the services of the banned firms, shall be rejected. The list of the banned firms is available on BHEL website: http://www.bhel.com/vender_registration/vender.php
9. Business dealings with bidders will be suspended if they are found to have indulged in any malpractices/misconduct which are contrary to business ethics like bribery, corruption, fraud, pilferage, cartel formation, submission of fake/false/forged documents, certificates, information to BHEL or if they tamper with tendering procedure affecting the ordering process or fail to execute a contract, or rejection of 3 consecutive supplies or if their firms / works are under strike/lockout for a long period.Bidder may refer "Guidelines for Suspension of Business Dealings with Suppliers/ Contractors" available on www.bhel.com for more details.
10. The bidder along with its associate/collaborators/sub-contractors/sub-vendors/consultants/service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website http://www.bhel.com and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to your notice.

11. Offers to be submitted in English language only.

12. For this procurement, Public procurement (Preference to Make in India), Order 2017 dated 15.06.2017, 28.05.2018, 29.05.2019 & 04.06.2020 and subsequent Orders issued by the respective Nodal Ministry shall be applicable even if issued after issue of this NIT but before finalization of contract/PO against this NIT.

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

    Any Indian Bidder intending to avail the benefits shall submit the requisite documents as per the aforesaid orders.

B. <u>GUIDELINES FOR PREPARATION OF OFFER:</u>

1. Quotation shall be submitted in Single Part Bid, Two Part Bid or Three Part Bid, as called for in the tender:

    - **SINGLE PART BID**: Technical and Commercial Bid with prices along with price summary & filled in BHEL Standard Commercial terms and conditions in a single sealed envelope.

    - **TWO PART BID**: Unpriced offer i.e. "Techno-commercial Bid" with filled in BHEL Standard Commercial terms and conditions in a sealed envelope **along with the copy of the "Price Bid"without the prices** should be enclosed in one cover and the cover must be super scribed **"Techno-commercial offer)** and Priced offer i.e. "Price Bid"containing price summary in a separate sealed envelope and must be super scribed **"Price Bid"**.Both these envelopes shall be enclosed in a single sealed envelope superscribed with enquiry number, due date of tender and any other details as called for in the tender document.

    - **THREE PART BID**: Pre-qualification Bid (Part-I), Techno Commercial Bid with filled in BHEL Standard Commercial terms and conditions (Part-II), and Price Bid (Part-III). All three envelopes shall be enclosed in a single sealed envelope superscribed with enquiry number, due date of tender and any other details as called for in the tender document.

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

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

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

4. Validity: Unless otherwise specified in SCC (special commercial conditions of contract), the offer will be valid for a period of 90 days from the date of part-I bid opening and in case of Negotiation/Counter-offer/Reverse Auction, price validity will apply afresh for a period of _60_ days from the date of according final price by bidder (or) upto original validity period, whichever is later.
5. Any of the terms and conditions not acceptable to supplier, shall be explicitly mentioned in the Techno-Commercial Bid. If no deviations are brought out in the offer it will be treated as if all terms and conditions of this enquiry are accepted by the supplier without deviation.
6. Deviation to this specification/item description, if any, shall be brought out clearly indicating "DEVIATION TO BHEL SPECIFICATION" without fail, as a part of Techno-Commercial Bid. If no deviations are brought out in the offer it will be treated as if the entire specification of this enquiry is accepted without deviation.
7. Suppliers shall submit one set of original catalogue, datasheets, bill of materials, dimensional drawings, mounting details and/or any other relevant documents called in purchase specification as part of Technical Bid.
8. "Price Bid" shall be complete in all respects containing price break-up of all components along with all applicable taxes and duties, freight charges (if applicable) etc. Once submitted no modification / addition / deletion will be allowed in the "Price Bid." Bidders are advised to thoroughly check the unit price, total price to avoid any discrepancy.
9. In addition, bidder shall also quote for erection & commissioning charges/erection supervision & commissioning charges (E&C service charges), documentation charges, testing Charges (type & routine), training charges etc. as applicable along with corresponding tax. The price summary must indicate all the elements clearly.
10. Wherever applicable, bidders should indicate "lumpsum" Erection and Commissioning (or) Erection Supervision and Commissioning charges, as applicable (including To & Fro Fare, Boarding, Lodging, Local Conveyance etc.) for carrying out E&C activity and further handing over to customer. The quotation shall clearly indicate scope of work, likely duration of commissioning, pre-commissioning checklist (if any).
11. Wherever bidders require PAC (Project Authority Certificate)/applicable certificates for import of raw materials, components required for DECC,EPCG Power Projects, Export Projects or other similar projects wherein supplies are eligible for customs duty benefits, lists and quantities of such items and their values (CIF) has to be mentioned in the offer. Prices must be quoted taking into account of such benefits.
12. Prices should be indicated in both figures & words**.** Bid should be free from correction/overwriting, using corrective fluid, etc. Any interlineation, cutting, erasure or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid else bid shall be liable for rejection. Any typographical error, totalling mistakes, currency mistake, multiplication mistake, summing mistakes etc. observed in the price bids will be evaluated as per **Annexure III** "Guidelines for dealing with Discrepancy in Words & Figures – quoted in price bid" and BHEL decision will be final.

13. Documents submitted with the offer shall be signed and stamped in each page by authorized representative of the bidder. However, this requirement is not mandatory for offers uploaded through E-Procurement System (EPS).

C. <u>GUIDELINES FOR OFFER SUBMISSION:</u>

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

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

2. E-Mail/ Internet/EDI offers received in time shall be considered only when such offers are complete in all respects. In case of offers received through E-mail, please send the offer to the email ID specified in the SCC document of the tender.

3. Offers of Vendors who already have a valid Technical/Commercial MOU with BHEL-EDN for the items of the RFQ shall mention the relevant MOU reference no. and give only such other details not covered in the MOU.

4. In cases where tender documents are bulky, or due to some reasons tender documents are required to be submitted by hand or through posts/couriers, the offers are to be handed over either of the two purchase officers whose names are mentioned in the SCC document of tender RFQ.
5. Tenders will be opened on due date, time and venue as indicated in the RFQ in the presence of bidders at the venue indicated in the RFQ. For EPS tenders, e-mail notifications will be automatically generated and forwarded to registered e-mail ID/s of bidders during opening of tenders.
6. Bidder will be solely responsible:
   a. For submission of offers before due date and time. Offers submitted after due date and time will be treated as "Late offers" and will be rejected.

   b. For submission of offers in the correct compartment of the tender box based on the day of due date (Monday/Wednesday/Friday). Please check before dropping your offer in the correct tender box.

   c. For depositing offers in proper sealed condition in the tender box. If the bidder drops the tender in the wrong tender box (or) if the tender document is handed over to the wrong person, BHEL will not be responsible for any such delays.

   d. For offers received through email etc., suppliers are fully responsible for lack of secrecy on information and ensuring timely receipt of such offers in the tender box before due date & time (This clause will not be applicable for EPS tenders).

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

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

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

D. PROCESSING OF OFFERS RECEIVED:

1. Any discount/ revised offer submitted by the supplier on its own shall be accepted provided it is received on or before the due date and time of offer submission (i.e. Part-I bid). The discount shall be applied on pro-rata basis to all items unless specified otherwise by the bidder.
2. Changes in offers or Revised offers given after Part-I bid opening shall not be considered as a part of the original offer unless such changes/revisions are requested by BHEL. In case of withdrawal of any Technical/Commercial deviation(s) by the bidder before opening of price bids/conducting the Reverse Auction, revision of price/impact bid will not be accepted.
3. In case there is no change in the technical scope and/ or specifications and/ or commercial terms & conditions, the supplier will not be allowed to change any of their bids after Technical bids are opened (after the due date and time of tender opening).
4. In case of changes in scope and/ or technical specifications and/ or commercial terms & conditions by BHEL and it accounts for price implications from bidders, all techno-commercially acceptable bidders shall be asked by BHEL (after freezing the scope, technical specifications and commercial terms & conditions) to submit the impact of such changes on their price bid. Impact price will be applicable only for changes in technical specification / commercial conditions by BHEL. The impact price must be submitted on or before the cut-off date specified by BHEL and the original price bid and the price impact bid will be opened together at the time of price bid opening.
5. Un-opened bids (including price bids) will be returned to the respective bidders after release of Purchase order. Regarding Offers for EPS tenders that get rejected on PQC/ techno-commercial grounds, the bids for the subsequent parts will not be opened i.e., both technical bid and price bid (Parts-II & III)will not be opened in case of rejection on PQC ground and price bid (Part-II/Part-III, as applicable) will not be opened in case of rejection on techno-commercial ground.
6. After receipt of Purchase Order, supplier should submit required documents viz.,specified drawings, bill of materials, datasheets, catalogues, quality plan, test procedure, type test report , O & M Manuals and/or any other relevant documents as per Specification/Purchase Order, as and when required by BHEL/Customer.
7. Any deviation to the terms and conditions not mentioned in the quotation by supplier in response to this enquiry will not be considered, if put forth subsequently or after issue of Purchase Order, unless clarification is sought for by BHEL and agreed upon in the Purchase Order.
8. Evaluation shall be on the basis of delivered cost (i.e. “Total Cost to BHEL").
   “Total Cost to BHEL” shall include total basic cost, packing & forwarding charges, taxes and/or duties(as applicable), freight charges, taxes on Services, customs clearance charges for imported items, any other cost indicated by bidder for execution of the contract and loading factors (for non-compliance to BHEL Standard Commercial Terms & Conditions). Benefits arising out of Nil Import Duty on DEEC, EPCG, DFIA Projects, Physical Exports or such 100% exemptions (statutory benefits), project imports, customer reimbursements of statutory duties (like Basic Customs Duty and cess on customs duty), Input tax credits as applicable will also be taken into account for arriving at the Total cost to BHEL (wherever applicable and as indicated in SCC document of tender).

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

In the course of evaluation, if more than one bidder happens to occupy L-1 status, effective L-1 will be decided by soliciting discounts from the respective L-1 bidders.
Incase more than one bidder happens to occupy the L-1 status even after soliciting discounts, the L-1 bidder shall be decided by a toss/draw of lots, in the presence of the respective L-1 bidder(s) or their representative(s).
Ranking will be done accordingly. BHEL's decision in such situations shall be final and binding.

9. 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.

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

E. <u>INFORMATION ON PAYMENT TERMS:</u>

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

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

   B. TDS deduction as per section 51 of CGST Act,2017 shall be applicable as per Gazette Notification No. 50/2018-Central Tax, Dated: 13th September 2018 and subsequent notification/s, as and when released by Govt. authorities.
4. Incomplete documentation will not be accepted. Delayed submission of invoice / documents may result in corresponding delay in payment. In this connection, request to also refer clause: G about invoicing & payment formalities under GST regime. Applicable documents shall be submitted to the purchaser at the time of execution of supplies/services for availing GST input credits.

F. STANDARD PAYMENT TERMS OF BHEL-EDN:

PURCHASE ORDERS FOR:	**SUPPLY WITH SERVICE(S)**	**SUPPLY ONLY**
INDIGENOUS PROCUREMENT	a. 100% of basic value with taxes and freight will be paid in 45 days from the date of dispatch or 15 days from the date of submission of complete set of documentation, whichever is later. Note: In case PBG is not furnished, only 90% payment will be released against 100% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice & Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.	b. 100% of PO value with taxes and freight will be paid in 45 days from the date of dispatch or 15 days from the date of submission of complete set of documentation, whichever is later.
IMPORT PROCUREMENT	c. 100% of basic value will be paid against usance draft of 45 days from the date of AWB/BOL on submission of complete set of documents. Note: In case PBG is not furnished, only 90% payment will be released against 100% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice & Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.	d. 100% of PO value will be paid against usance draft of 45 days from the date of AWB/BOL on submission of complete set of documents.
HIGH-SEA SALES PROCUREMENT	e. 100% of basic value will be paid in 45 days from the date of signing of High Sea Sale agreement or 15 days from the date of submission of complete set of documentation, whichever is later Note: In case PBG is not furnished, only 90% payment will be released against 100% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice & Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.	f. 100% of basic value will be paid in 45 days from the date of signing of High Sea Sale agreement or 15 days from the date of submission of complete set of documentation, whichever is later.

g. Erection and Commissioning:

Evaluation methodology: Unless and otherwise specified in SCC, E&C charges should not be less than 10% of the main supply value. In case the quoted total E&C value is less than 10% of the main supply value, BHEL shall evaluate Bidders Price deducting differential amount from main supply price proportionally from all items and apportioning towards E&C charges.
Payment term: 100% E&C charges along with tax as applicable, will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of E&C.

h. Erection Supervision and Commissioning:

Evaluation methodology: Unless and otherwise specified in SCC, E&C charges should not be less than 5% of the main supply value. In case the quoted total E&C value is less than 5% of the main supply value, BHEL shall evaluate Bidders Price deducting differential amount from main supply price proportionally from all items and apportioning towards E&C charges.
Payment term: 100% E&C charges along with tax as applicable, will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of E&C.

i. Comprehensive Annual Maintenance Contract:

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

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

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

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

1) For offers received with Sight draft payment term in place of Usance draft, loading applicable will be 1.0% of basic value.

2) For offers received with Letter of Credit payment term with Usance of 45 days, loading applicable will be 2.5% of basic value.
   Additional loading of 2% will be applicable for payment term as Letter of Credit at Sight.

k. Any payment term with credit period of less than 45 days for indigenous supply/HSS and any other variation of payment terms are liable for rejection.

l. Standard payment terms indicated in Clauses: F (a), (b), (c), (d), (e), (f), (g), (h), (i) & (j) will not attract any loading.

Note 1: Basic value of Purchase Order mentioned above will include all components of the purchase order and will exclude only taxes, duties, freight, training charges, E&C and AMC charges (wherever applicable). Wherever the Purchase Order is split into import portion and indigenous portion of supply, minimum % to be quoted for Services, wherever mentioned, will be of both purchase order values put together.

Note 2: In case of multiple packages/units in a power plant, payment of E&C charges will be processed on pro-rata basis.

Note 3: No deviation will be permitted from the duration of Guarantee/Warranty and/or Comprehensive Annual Maintenance Contract period specified in SCC.

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

1. All invoices to contain BHEL-EDN (buyer) GSTIN number: 29AAACB4146P1ZB. However for CGST +SGST/UGST billing outside the state of Karnataka, invoice has to be generated with BHEL's Nodal Agency GSTIN number. Address of Nodal Agency along with GSTIN number will be provided by BHEL at the time of issuing dispatch clearance.

2. The Bidder shall mention Bidder's GSTIN number in all quotations and Invoices submitted.

3. The Bidder shall also mention HSN (Harmonized System of Nomenclature) / SAC (Services Accounting Code) mandatorily in all quotations and invoices submitted.

4. Invoice submitted should be in the format as specified under GST Laws viz., all details as mentioned in Invoice Rules like GST registration number(GSTIN), invoice number with date of issue, quantity, rate, value, taxes with nomenclature – CGST, SGST, UGST,IGST mentioned separately, HSN Code / SAC Code etc. Invoice should be submitted in original for buyer plus duplicate for credit availment.

5. Payment of GST to Vendor will be made only if it is matching with data uploaded by the Vendor in GST portal.

6. For invoices paid on Reverse charge basis – "Tax payable on reverse charge basis" to be mentioned on the invoice.

7. In case GST credit is delayed/denied to BHEL due to non/delayed receipt of goods and/or tax invoice or expiry of timeline prescribed in GST law for availing such ITC, or any other reasons not attributable to BHEL, GST amount will be recoverable from vendor along with interest levied/ leviable on BHEL.

8. In case vendor delays declaring such invoice in his return and GST credit availed by BHEL is denied or reversed subsequently as per GST law, GST amount paid by BHEL towards such ITC reversal as per GST law will be recoverable from vendor/contractor along with interest levied/ leviable on BHEL.

9. Vendor should intimate BHEL immediately on the same date of invoicing without any delay.

10. In case of discrepancy in the data uploaded by supplier in the GSTN portal or in case of any shortages or rejection in the supply, then BHEL will not be able to avail the tax credit and will notify the supplier of the same. Supplier has to rectify the data discrepancy in the GSTN portal or issue credit note (details to be uploaded in GSTN portal) for the shortages or rejections in the supplies, within the calendar month notified by BHEL.

11. Bidders to note that Rules & Regulations pertaining to E-way bill system are to be strictly adhered to, as and when notified by Govt. authorities.

H. Performance bank guarantee (PBG):

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

1. The BG issued in Indian Rupees by Banks in India is to be executed on Non-Judicial Stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the State(s) where the BG is submitted or is to be acted upon or the rate prevailing in the State where the BG was executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Vendor/Bank issuing the guarantee.
2. No deviation for the duration and value of PBG will be permitted.
3. PBG shall be from any of the BHEL consortium of bankers **(refer Annexure VI)**.
4. PBGs from nationalized banks are also acceptable.
5. PBG should be sent directly by the bank to the dealing executive mentioned in the purchase order located at the address mentioned in the purchase order.
6. PBG should be in the format specified **(refer Annexure VII)**. No deviation to this format will be allowed. However in case BHEL changes the PBG format, bidder shall honor the same.
7. Bank Guarantee should be enforceable in Bangalore.
8. In Case of Bank Guarantees submitted by Foreign Vendors-

   a. From Nationalized/Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India) can be accepted subject to the condition that the Bank Guarantee should be enforceable in Bangalore.

   b. From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)

   b.1 Please note that Bank Guarantee issued by any of the Consortium Banks only will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter-Guarantee by Foreign Bank in favour of the Indian Bank's (BHEL's Consortium Bank) branch in India. It shall be noted that all charges for issuance of Bank Guarantee/ counter- Guarantee should be borne by the Foreign Vendor.

   b.2 In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at sl.no. b.1 is required to be followed.

   b.3 The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time).
9. Expired PBGs will be returned only after expiry of the claim period.
10. PBG shall not be applicable for spares.

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

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

Vendors who qualify as MSE vendors are requested to submit applicable certificates (as specified by the Ministry of Micro, Small and Medium Enterprises) at the time of vendor registration. Vendors have to submit the Udyog Aadhaar/Udyam Registration certificate along with attested copy of a CA certificate (Annexure VIII) applicable for the relevant financial year (latest audited) along with the tender documents in the Part-I bid to avail the applicable benefits.

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

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

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

PURCHASE PREFERENCE FOR MSE VENDORS:

MSE vendors quoting within a price band of L1 + 15% shall be allowed to supply up to 25% of the requirement against this tender provided

1. The MSE vendor matches the L1 price.
2. L1 price is from a non MSE vendor.
3. L1 price will be offered to the vendor nearest to L1 in terms of price ranking (L2 - nearest to L1). In case of non-acceptance by the MSE vendor (L2), next ranking MSE vendor will be offered who is within the L1 + 15% band (if L3 is also within 15% band).
4. 3% of the 25% will be earmarked for women owned MSEs.
5. 25% of the 25% (i.e., 6.25% of the total enquired quantity) will be earmarked for SC/ST owned MSE firms provided conditions as mentioned in (1) & (2) are fulfilled.
6. In case where no SC/ST category firms are meeting the conditions mentioned in (1) and (2) or have not participated in the tender, the 6.25% of earmarked quantity for SC/ST owned MSE firms will be distributed among the other eligible MSE vendors who have participated in the tender.
7. In case after the bid opening it is seen that no MSE has become L1, then depending on the nature of the item, if it is not possible to split the tendered items/quantities on account of reasons like customer contract requirements of supplying one make for a given project or technical reasons like the tendered item being a system etc., then BHEL would not counter offer the L1 prices even though there may be MSE bidders within the +15% band of L1. Such information that tendered quantity will not be split shall be indicated in the SCC.

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

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

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

   a. The Bidder(s)/ Contractor(s) commit(s) to take all measures to prevent corruption and will not directly or indirectly try to influence any decision or benefit which he is not legally entitled to.
   b. The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding or any actions to restrict competition.

c. The Bidder(s)/ Contractor(s) will not commit any offence under the relevant Acts. The Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain or pass on to others, any information or document provided by BHEL as part of business relationship.
d. The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to the relevant guidelines issued from time to time by Government of India/ BHEL.

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

K. <u>Integrity Pact (IP):</u>

a) IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors are handled in a fair, transparent and corruption free manner.
A panel of independent External Monitors (IEMs) have been appointed to oversee implementation of IP in BHEL.
The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory who signs in the offer) along with techno-commercial bid. Only those Bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.
b) Please refer Section-8 of the IP for Role and Responsibilities of IEMs (Annexure IX). In case of any complaint arising out of the tendering process, the matter may be referred to the IEM mentioned in the tender.

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

Annexure

Annexure I

Guidelines for Indian Agents

- **Definition of Indian Agent**: An Indian Agent of foreign prinicipal is an individual, a partnership, an association of persons, a private or pubile company, that carries our 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.

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Vendor's Signature with Seal

Annexure-A

Guidelines for Indian Agents of Foreign Suppliers

1.0 There shall be compulsory registration of agents for all Global (Open) Tender and Limited Tender. An agent who is not registered with BHEL shall apply for registration in the registration form in line with SEARP.

1.1 Registered agents will file an authenticated Photostat copy duly attested by a Notary Public/Original certificate of the Principal confirming the agency agreement and giving the status being enjoyed by the agent and the commission/ remuneration/ salary/ retainership being paid by the principal to the agent before the placement of order by BHEL.

1.2 Wherever the Indian representatives have communicated on behalf of their principals and the foreign parties have stated that they are not paying any commission to the Indian agents, and the Indian representative is working on the basis of salary or as retainer, a written declaration to this effect should be submitted by the party (i.e. Principal) before finalizing the order.

2.0 Disclosure of particulars of agents/ representatives in India, if any.

2.1 Tenderers of Foreign nationality shall furnish the following details in their offers:

2.1.1 The Bidder(s)/ Contractor(s) of foreign origin shall disclose the name and address of the agents/ representatives in India if any and the extent of authorization and authority given to commit the Principals. In case the agent/ representative be a foreign Company, it shall be confirmed whether it is existing Company and details of the same shall be furnished.

2.1.2 The amount of commission/ remuneration included in the quoted price(s) for such agents/ representatives in India.

2.1.3 Confirmation of the Tenderer that the commission/ remuneration, if any, payable to his agents/ representatives in India, may be paid by BHEL in Indian Rupees only.

2.2 Tenderers of Indian Nationality shall furnish the following details in their offers:

2.2.1 The Bidder(s)/ Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any, indicating their nationality as well as their status, i.e. whether manufacturer or agents of manufacturer holding the Letter of Authority of the Principal specifically authorizing the agent to make an offer in India in response to tender either directly or through the agents/ representatives.

2.2.2 The amount of commission/ remuneration included in the price (s) quoted by the Tenderer for himself.

2.2.3 Confirmation of the foreign principals of the Tenderer that the commission/ remuneration, if any, reserved for the Tenderer in the quoted price(s), may be paid by BHEL in India in equivalent Indian Rupees on satisfactory completion of the Project or supplies of Stores and Spares in case of operation items.

2.3 In either case, in the event of contract materializing, the terms of payment will provide for payment of the commission/ remuneration, if any payable to the agents/ representatives in India in Indian Rupees on expiry of 90 days after the discharge of the obligations under the contract.

2.4 Failure to furnish correct and detailed information as called for in paragraph 2.0 above will render the concerned tender liable to rejection or in the event of a contract materializing, the same liable to termination by BHEL. Besides this there would be a penalty of banning business dealings with BHEL or damage or payment of a named sum.

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ANNEXURE - II
LIST OF INTERNATIONAL GATEWAY AIRPORTS

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

SCHEDULE NO	COUNTRY	CURRENCY CODE	AIRPORT
D01	UK	GBP	LONDON (HEATHROW)
D02	UK	GBP	NEW CASTLE
D03	UK	GBP	OXFORD. CHETLAM
D04	UK	GBP	BRISTOL. WELLINGBOROUGH
D05	UK	GBP	BIRMINGHAM
DO6	UK	GBP	EAST MIDLANDS
D07	UK	GBP	MANCHESTER
D08	UK	GBP	LEEDS
D09	UK	GBP	GLASGOW
D10	FRANCE	EURO	PARIS (ROISSY) & LYON
D11	SWEDEN	EURO	STOCKHOLM
D12	SWEDEN	EURO	GOTHENBERG & MALMO
D13	ITALY	EURO	ROMA, MILAN
D14	ITALY	EURO	TURIN, BOLOGNA, FLORENCE
D15	NETHERLANDS	EURO	AMSTERDAM, ROTTERDAM
D16	AUSTRIA	EURO	VIENNA, LINZ, GRAZ
D17	BELGIUM	EURO	ANTWERP, BRUSSELS
D18	DENMARK	DKK	COPENHAGEN
D19	JAPAN	JPY	TOKYO, OSAKA
D20	SINGAPORE	SGD	SINGAPORE
D21	CANADA	CAD	TORONTO
D22	CANADA	CAD	MONTREAL
D23	USA	USD	NEW YORK, BOSTON
D24	USA	USD	CHICAGO
D25	USA	USD	SAN FRANCISCO, LOS ANGELES
D26	USA	USD	ALANTA, HOUSTON
D27	GERMANY	EURO	MUNICH, KOLN, DUSSELDORF, HANNOVER, HAMBURG, STUTTGART, DAMSTADT, MANIHIEM, NURUMBERG
D28	GERMANY	EURO	FRANKFURT
D29	GERMANY	EURO	BERLIN
D30	SWITZERLAND	SFR	BASLE, ZURICH, GENEVA
D31	SPAIN	EURO	BARCELONA
D32	AUSTRALIA	AUD	SYDNEY
D33	AUSTRALIA	AUD	MELBOURNE
D34	AUSTRALIA	AUD	PERTH
D35	CZECH	EURO	PRAGUE
D36	HONG KONG	HKD	HONG KONG
D37	NEW ZELAND	NZD	AUCKLAND
D38	RUSSIA	USD	MOSCOW
D39	SOUTH KOREA	USD	KIMPO INTERNATIONAL, INCHEON
D40	FINLAND	EURO	HELSINKI
D41	ROMANIA	EURO	BUCHAREST
D42	NORWAY	EURO	OSLO
D43	IRELAND	EURO	DUBLIN
D44	ISRAEL	USD	TEL AVIV
D45	UAE	USD	DUBAI
D46	OMAN	USD	MUSCAT
D47	EGYPT	USD	CAIRO
D48	TAIWAN	USD	TAIPEI
D49	UKRAINE	USD	KIEV
D50	CHINA	USD	SHANGHAI, SHENZHEN
D51	PHILIPINES	USD	MANILA
D52	MALAYSIA	USD	KUALALUMPUR, PE NANG
D53	CYPRUS	USD	LARNACA
D54	SOUTH AFRICA	USD	JOHANNESBERG, DURBAN
D55	SLOVAKIA	EURO	BARTISLOVA
D56	SAUDI ARABIA	SAR	RIYADH
D57	TURKEY	EURO	ISTANBUL
D58	THAILAND	USD	BANGKOK
D59	BRAZIL	USD	SAO PAULO, RIO DE JANEIRO

ANNEXURE – III

DISCREPANCY IN WORDS & FIGURES – QUOTED IN PRICE BID

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

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

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

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

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

ANNEXURE - IV

Electronic Funds Transfer (EFT) OR Paylink Direct Credit Form

Please Fill up the form in **CAPITAL LETTERS** only.
TYPE OF REQUEST(Tick one): _____ CREATE _____ CHANGE

BHEL Vendor / Supplier Code:
Company Name :
Permanent Account Number(PAN):
Address

City: PINCODE STATE

Contact Person(s)
Telephone No:
Fax No:
e-mail id:

1 Bank Name:
2 Bank Address:

3 Bank Telephone No:
4 Bank Account No:
5 Account Type: Savings/Cash Credit
6 9 Digit Code Number of Bank and branch appearing on MICR cheque issued by Bank
7 Bank IFSC Code(applicable for NEFT)
8 Bank IFSC code(applicable for RTGS) (Indian Financial System Code)

A I hereby certify that the particulars given above are true, correct and complete and that I, as a representative for the above named Company, hereby authorise BHEL, EDN, Bangalore to electronically deposit payments to the designated bank account.
B If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold BHEL / transfering 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 Querry, please call concerned purchase executive.

ANNEXURE - V

PRESENT PROCEDURE FOR SALE IN TRANSIT (HIGH SEA SALES)

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

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

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

4. **ORIGINAL HOUSE AIR WAY BILL/ BILL OF LADING**
   - The sale agents should duly endorse House Air Way Bill (HAWB) for air shipments or original Bill of Lading (O.B.L.) for sea shipments and Foreign Currency Invoice in favour of BHEL-EDN.

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

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

7. **ORIGINAL PACKING LIST.**

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

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

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

ELECTRONICS DIVISION, BANGALORE

Annexure-VI

BHEL MEMBER BANKS (LIST OF CONSORTIUM BANKS)

Bank Guarantee (BG) shall be issued from the following banks only:

Sl. No.	Nationalised Banks	Sl. No.	Public Sector Banks
1	Allahabad Bank	18	IDBI
2	Andhra Bank		
3	Bank of Baroda	Sl. No.	**Foreign Banks**
4	Canara Bank	19	CITI Bank N.A
5	Corporation Bank	20	Deutsche Bank AG
6	Central Bank	21	The Hongkong and Shanghai Banking Corporation Ltd. (HSBC)
7	Indian Bank	22	Standard Chartered Bank
8	Indian Overseas Bank	23	J P Morgan
9	Oriental Bank of Commerce		
10	Punjab National Bank	**Sl. No.**	**Private Banks**
11	Punjab & Sindh Bank	24	Axis Bank
12	State Bank of India	25	The Federal Bank Limited
13	Syndicate Bank	26	HDFC Bank
14	UCO Bank	27	Kotak Mahindra Bank Ltd
15	Union Bank of India	28	ICICI Bank
16	United Bank of India	29	IndusInd Bank
17	Vijaya Bank	30	Yes Bank

Note:

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

Annexure-VII

BANK GUARANTEE FOR PERFORMANCE SECURITY

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

In consideration of Bharat Heavy Electricals Limited (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Companies Act, 1956 and having its registered office at _____[1] through its Unit at.....(name of the Unit) having awarded to (Name of the Vendor / Contractor / Supplier) with its registered office at_____[2] hereinafter referred to as the ' Vendor / Contractor / Supplier ', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No.....dated .....[3] valued at Rs.....[4] (Rupees ----------)/FC.....(in words.....) for .....[5] (hereinafter called the 'Contract') and the Vendor / Contractor / Supplier having agreed to provide a Contract Performance Bank Guarantee, equivalent to .....% (.... Percent) of the said value of the Contract to the Employer for the faithful performance of the Contract,

we, ..., (hereinafter referred to as the Bank), having registered/Head office at ..... and inter alia a branch at ..... being the Guarantor under this Guarantee, hereby, irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer any sum or sums upto a maximum amount of Rs -- ---------- [6] (Rupees ----------) without any demur, immediately on first demand from the Employer and without any reservation, protest, and recourse and without the Employer needing to prove or demonstrate reasons for its such demand.

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

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

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

We the .....bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Contract/satisfactory completion of the performance guarantee period as per the terms of the Contract and that it shall continue to be enforceable till

all the dues of the Employer under or by virtue of the said Contract have been fully paid and its claims satisfied or discharged.

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

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

This Guarantee shall remain in force upto and including..... [7] and shall be extended from time to time for such period as may be desired by Employer.

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

Unless a demand or claim under this guarantee is made on us in writing on or before the .....[8]we shall be discharged from all liabilities under this guarantee thereafter.

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

Notwithstanding anything to the contrary contained hereinabove:

a) The liability of the Bank under this Guarantee shall not exceed..... [6]
b) This Guarantee shall be valid up to .....[7]
c) Unless the Bank is served a written claim or demand on or before _____[8] 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] *CONTRACT VALUE*

[5] *PROJECT/SUPPLY DETAILS*

[6] *BG AMOUNT IN FIGURES AND WORDS*

[7] *VALIDITY DATE*

[8] *DATE OF EXPIRY OF CLAIM PERIOD*

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

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

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

1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No.S.O.1722 (E) dated October 5, 2006:
   Rs.....Lacs.

2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006:
   Rs. .....Lacs.

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

Or

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

Date:

(Signature)

Name:

Membership Number:

Seal of Chartered Accountant

Annexure-1

INTEGRITY PACT

Between

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

and

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

Preamble

The Principal intends to award, under laid-down organizational procedures, contract/s for CCTV SYSTEM for BHUSAWAL Project: Ref RFQ No: SGKNIC0017 Dt: 06.04.2021 . The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

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

Section 1- Commitments of the Principal

1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.

1.1.3 The Principal will exclude from the process all known prejudiced persons.

1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions:

Section 2 - Commitments of the Bidder(s)/ Contractor(s)

2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

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

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

2.1.4 Foreign Bidder(s)/ Contractor(s) shall disclose the name and address of agents and representatives in India and Indian Bidder(s)/ Contractor(s) to disclose their foreign principals or associates. The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

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

2.3 The Bidder(s)/ Contractor(s) shall not approach the Courts while representing the matters to IEMs and will await their decision in the matter.

Section 3 - Disqualification from tender process and exclusion from future contracts

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

Section 4 - Compensation for Damages

4.1 If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent Earnest Money Deposit/ Bid Security.

4.2 If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to

demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee, whichever is higher.

Section 5 - Previous Transgression

5.1 The Bidder declares that no previous transgressions occurred in the last 3 years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.

5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

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

6.1 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors. In case of sub-contracting, the Principal contractor shall be responsible for the adoption of IP by his sub-contractors and shall continue to remain responsible for any default by his sub-contractors.

6.2 The Principal will disqualify from the tender process all bidders who do not sign this pact or violate its provisions.

Section 7 - Criminal Charges against violating Bidders/ Contractors /Subcontractors

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

Section 8 - Independent External Monitor(s)

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

8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.

8.3 The Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the Principal including that provided by the Bidder(s)/ Contractor(s). The Bidder(s)/ Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-contractor(s). The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Sub-contractor(s) with confidentiality in line with Non- disclosure agreement.

8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

8.5 The role of IEMs is advisory, would not be legally binding and it is restricted to resolving issues raised by an intending bidder regarding any aspect of the tender which allegedly restricts competition or bias towards some bidders. At the same time, it must be understood that IEMs are not consultants to the Management. Their role is independent in nature and the advice once tendered would not be subject to review at the request of the organization.

8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process, the matter should be examined by the full panel of IEMs jointly as far as possible, who would look into the records, conduct an investigation, and submit their joint recommendations to the Management.

8.7 The IEMs would examine all complaints received by them and give their recommendations/ views to CMD, BHEL, at the earliest. They may also send their report directly to the CVO and the Commission, in case of suspicion of serious irregularities requiring legal/ administrative action. IEMs will tender their advice on the complaints within 10 days as far as possible.

8.8 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.

8.9 IEM should examine the process integrity, they are not expected to concern themselves with fixing of responsibility of officers. Complaints alleging mala fide on the part of any officer of the organization should be looked into by the CVO of the concerned organisation.

8.10 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant Indian Penal Code/ Prevention of Corruption Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.

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

8.12 The word `Monitor' would include both singular and plural.

Section 9 - Pact Duration

9.1 This Pact shall be operative from the date IP is signed by both the parties till the final completion of contract for successful bidder and for all other bidders 6 months after the contract has been awarded. Issues like warranty / guarantee etc. should be outside the purview of IEMs.

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

Section 10 - Other Provisions

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

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

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

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

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

Gautam 06/04/2021

For & On behalf of the Principal

ಸುಯಶ್ ಕುಮಾರ್ ಗೌತಮ್, ಹಿರಿಯ ಎಂಜಿನಿಯರ್/ಸಿ.ಇ.-ಎಂ.ಎಂ.-ಪಿ.ಆರ್.
सुयश कुमार गौतम, वरि. अभियंता/सी.ई.-एम.एम.-पी.आर.
SUYASH KUMAR GAUTAM, SR. ENGINEER/CE-MM-PR
BHEL-EDN, MYSURU ROAD, BENGALURU-560026

(Office Seal)

Place Bangalore

Date 06.04.2021

For & On behalf of the Bidder/ Contractor

(Office Seal)

Witness: Padmanabha 6/4/2021

(Name & Address) _____

ಎಂ. ಪದ್ಮನಾಭ, ಉಪ ಪ್ರಧಾನ ವ್ಯವಸ್ಥಾಪಕರು/ಸಿ.ಇ.-ಎಂ.ಎಂ.-ಪಿ.ಆರ್.
एम. पद्मनाभ, उप महाप्रबंधक/सी.ई.-एम.एम.-पी.आर.
M. PADMANABHA, DY. GENERAL MANAGER/CE-MM-PR
BHEL-EDN, MYSURU ROAD, BENGALURU-560026

Witness: _____

(Name & Address) _____

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PROJECT : BHUSAWAL 1x660MW

CUSTOMER : MAHAGENCO

CONSULTANT : DCPL, Mumbai

EQUIPMENT : IP CCTV SYSTEM

PREPARED BY:
AMIT KUMAR SHARMA

CHECKED & APPROVED BY
SHAILENDRA KUMAR KISAN

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REVISION HISTORY SHEET

REV No.	DATE	NATURE OF CHANGE	REASON	PREPARED BY	REVIEWED BY
00	11.03.2021	FIRST ISSUE	---	AKS	SKK

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SECTION- A

GENERAL INSTRUCTIONS TO BIDDERS:

Introduction: Bidders are required to submit technical offer for supply, installation and commissioning of IP based CCTV system for Bhusawal 1x660MW project. All required documents against this Tender/Specification shall be submitted in English only.

Evaluation methodology:

a. Bidder's PQR document (submitted against PQR criteria mentioned in Section-B) will first be reviewed and evaluated by BHEL. In case, the bidders offer do not meet the PQR, then corresponding techno-commercial offer will not be considered for further evaluation in the tender and such offers will be rejected. Technical bids of only those bidders who meet PQR shall be reviewed and further considered.

b. Bidders declared qualified for meeting Pre Qualification Requirements mentioned in section B, their credential documents, as submitted by bidder under sl no 9 of this section shall be forwarded to M/s MAHANGENCO for approval. Offer of bidders not approved by M/s MAHAGENCO will be technically rejected and shall not be considered further in the tender. Technical bids of only those bidders who are approved by MAHAGENCO only shall be reviewed and further considered.

c. If required during evaluation of PQR and Technical offers/bids, vendor should be visit BHEL Electronic Division, Bangalore or be available for online meeting, for discussions. Further in the event of order, during approval of the Vendor documents by Customer, Vendor shall accompany BHEL representative for discussions with customer / consultant, if required.

d. This specification does not prohibit any vendor to submit their offer along with clause wise deviation from the specification. Changes in technical specification / Scope etc shall be informed to Participating bidders only.

e. If bidder's offered make of camera is not found meeting PQR criteria, offer of such bidders will be rejected and no change of make of camera shall be allowed. Therefore bidders are advised to quote most suitable make and model of CCTV SYSTEM which meets all PQR mentioned at Section-B and also technical specification requirements of the CCTV system mentioned in Section-C.

f. One bidder (as system integrator) can submit only one bid. If multiple bids of same make or different makes of CCTV system are submitted by a bidder, then both offer of bidder will be summarily rejected.

g. All bidders, irrespective of their existing approval with BHEL / other units of BHEL / MAHAGENCO, should submit all documents called in this specification

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h. Consolidated Pre-Bid queries must be sought by Bidders through email within 7days from floating the tender. Clarification sought within 7 days from due date of bid submission will not be entertained and replied.

i. Multiple make / model number are not acceptable for all major active components like camera, server etc. For passive components, bidder can offer maximum two makes / model no's within approved makes mentioned later in this specification.

j. Bidders can also quote any other make for various items called in BOM of this specification. However, acceptance of such makes in the tender shall be subject to approval by MAHANGECO. As per conditions of the Bhusawal power plant contract for which CCTV system is being procured through this tender, it is suggested to quote such make of items of CCTV system which has been earlier supplied and commissioned in a 500MW power plant. BHEL will submit make of all items including camera to MAHAGENCO for approval. For taking up approval, bidder should preferably submit following documents for all items quoted by them:

   i. Tabular List such makes already installed & commissioned, preferably in 500MW power plants. The list should mention name of project, year of supply /commissioning / handing over, contact details of user/owner etc.

   ii. Technical compliance

   In case, the offered makes are not approved by MAHAGENCO, bidder will have to offer other MAHAGENCO approved make without any cost implication to BHEL.

k. Approval of bidders (system Integrators) by MAHAGENCO is also required for acceptance of such bidder's offer in the tender. Bidder must furnish following documents for taking up with customer their approval as system integrator:

   i. Company Profile of the bidder

   ii. Tabular List of IP CCTV system already executed / orders in hand of bidder (especially in power plants, cement plants, petroleum refinery, steel plant, coal mines) clearly mentioning name of project, year of supply /commissioning / handing over, make of camera and contact details of user/owner etc.

   iii. Unpriced Copy of Purchase order / Performance certificates / handing over protocols of IP CCTV system supplied commissioned by bidder.

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SECTION- B

Pre-Qualification Requirements (PQR)

All of the following Pre-qualification requirements are to be met by all bidders. Bidders should submit tabular compliance on how they are meeting these PQR criteria and shall also submit all documents mentioned against each PQR:

a) The bidder should be a system Integrator having designed, engineered, supplied and fully commissioned an IP CCTV system to power plants / Oil & Gas industry / process industry.

Following supporting documents shall be submitted for meeting above requirements:

i) Purchase Order Copies in name of bidder
ii) Bill of material or any other document to ascertain IP CCTV system
iii) Commissioning MOM or letter by user to substantiate commissioning of CCTV system.

b) Make of camera offered by bidder should have a 2 year satisfactory performance in at least 2nos of different power plants of not less than 500MW

Bidder should submit performance certificate issued by user of such IP CCTV system. If the make of the camera is not mentioned in the performance certificate, then bidder has to submit other supporting document to establish the make of camera for which performance certificates are submitted.

c) Bidders should submit colour scanned pdf file of Manufacturer Authorisation Letter issued by the OEM for their consent to participate in this tender and confirmation following

a. OEM shall provide support / troubleshooting during commissioning and operation of the systems within warranty period.
b. OEMs offered products are new (not refurbished) and not in an existing End of Life product list
c. Spares (both finished product and spare parts) of their products shall be available for 5 years from dispatch of the CCTV system by their system integrator.

d) 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. Bidder should submit a declaration for this on their letter head duly signed by competent authority of the organization.

e) **The bidder should have an average financial turnover of more than Rs 60 Lakhs for last three financial years viz 2019-20, 2018-19 & 2017-18.**

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SECTION- C

2.01.00 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, crating in road / sea worthy packing, freight, insurance, all taxes & duties and other charges as applicable for the items and all accessories specified in the scope of supply and as required for safe and trouble free operation of CLOSE CIRCUIT TELEVISION (CCTV) 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 MAHAGENCO/BHEL the equipment.

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.

2.01.04 ABBREVIATIONS

BOQ - Bill of Quantities
CCB - Central Control Building
CCTV - Close Circuit Tele Vision
CCR - Central Control Room
DCS - Distributed Control System
DVSP - Digital Voice Storage Playback
GCC - General Conditions of Contract
LED - Light Emitting Diode
LOI - Letter Of Intent
MDF - Main Distribution Frame
MTTR - Mean Time To Repair
PC - Personal Computer QAP - Quality Assurance Plan
RH - Relative Humidity RMS - Root Mean Square
SPL - Sound Pressure Level
UCR - Utilities Control Room
UHF - Ultra High Frequency
UPS - Uninterruptible Power Supplies

2.02.00 SCOPE OF WORK AND EXCLUSIONS

2.02.00 **GENERAL**

2.02.01 The scope of work in this document specifies the technical & contractual requirements for the design, supply, erection, testing and commissioning of CCTV System and all accessories.

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2.02.02 Bidder shall be fully responsible for compliance of the system to be supplied in line with the requirements of this specification.

2.02.03 Provisions included in the specification will not be limitative to the scope of work and **bidder shall be responsible for design, fabrication, procurement, manufacturing, assembly, inspection, shop testing, supply, installation, erection including all civil and masonary works, commissioning and handing over of the complete system, on as required basis**.

2.02.04 Bidder shall provide supply/services for any further activities which will improve the quality & performance of the system offered.

2.02.05 Tentative list of distribution of cameras are provided in the Annexure-I of this specification. Plot plan of the project is also provided as Annexure-II. Bidders are required to go through the camera location as well as plot plan in detail for calculating, considering and offering quantity of all items called in lots in the BOM as all items called in lots in BOM are to be offered, supplied, installed, erected and commissioned on as required basis.

2.02.05 INCLUSION IN SUPPLY: This system is for the entire BTG Plant and Balance of Plants (BOP) like Coal Handling Plant, Ash Handling Plant, Plant Water System, CW, ACW System etc and also along the plant boundary.

2.02.07 **SCOPE OF SERVICE**

Following service shall also be provided by Bidder for equipment & systems supplied under this specification:-

a) Carrying out detail engineering, preparation and submission of all drawings as specified elsewhere in this specification including preparation and submission of bill of materials, layout and erection drawings showing location of all system equipment and components, cable schedule, cable tray/rack and conduit routing.

b) Inspection and testing at Bidder's works as per the approved Quality Assurance Plan.

c) **Packing and forwarding of all equipment (except cable drums, cable tray, conduits and poles) 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 entire duration of erection and commissioning of the systems till the system is fully commissioned and handed over.

d) Installation and Commissioning of the CCTV system shall involve deploying labour (skilled and unskilled), supervisory personnel, engineer and also erection tools and tackles, testing equipment, consumables & hardware, transport and storage in container for timely and efficient execution of the contract work.

e) The complete erection, installation and commissioning of the complete CCTV system will be in bidder scope of services. This will include but not limited to storage in weather proof container, cable laying on trays/conduits, fixing of camera using suitable camera mount as per site requirement etc, digging/trenching, etc installation and commissioning of all items supplied under CCTV system on as required basis.

g) Bidder will visit Site after ordering to finalise the grouping of cameras and preparation of cable schedule. The cable schedule along with survery report

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for camera grouping should be submitted before commencing E&C of the system.

h) Training to be provided to MAHAGENCO/BHEL's personnel for operation and maintenance of the CCTV system.

i) Site modification and preparation of "as-built" documentation".

j) Securing certification from relevant authorities, wherever applicable.

k) Project management and scheduling including micro-planning in specific work area and reporting progress periodically.

l) 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.

m) **The complete erection and commissioning of CCTV system shall be done as per availability of fronts in the project and would have to be done spreading over a period of approximately 24months 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, camera mounting, sever installation and commissioning and camera commissioning and bidders should include the same in their offer for E&C.**

n) Redundant 240 VAC UPS feeder from main plant UPS shall be provided at Central Control room for CCTV System. Further distribution and conversion to other voltage level for complete CCTV and Perimeter Intruder Detection System shall be suitably done by bidder.

2.02.08 EXCLUSIONS from scope of services:

a) Lifting of CCTV 42U panel from stores to CCTV control room.

a) Unloading of material on delivery.

2.03.00 PERFORMANCE GUARANTEE

The Systems / Equipment to be supplied under this specification shall meet the guaranteed performance specified in the data sheet, specification sheet and technical attachment sheet when operating at the rated / specified conditions. The acceptance of the System / Equipment shall be subject to satisfying these parameters during FAT at Bidder's works and at site installation in complete commissioned condition.

2.04.00 REFERENCE DOCUMENTS' CODES AND STANDARDS

2.04.01 The entire system and accessories materials shall conform to the requirements of the latest issues and most recent revisions and amendments of the standards listed below and to the local laws and regulations applicable to the Project.

2.04.02 This Specification shall be read in conjunction with material Standards, codes, practices and regulations.

2.05.00 PROJECT INFORMATION

2.05.01 Environment specified as 'Indoor' shall be air-conditioned, where mentioned, having temperature between 20-25 degrees C and RH of about 40%. Outdoor location shall follow 'site condition' data given below.

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Mean of daily max temp	: 48.25 °C
Mean of daily min temp	: 18 °C
Highest temp recorded	: 48.7 °C
Lowest temp recorded	: 13 °C
Wet bulb temperature	: 27°C

2.05.02 **All outdoor equipment shall be exposed to high humidity & oil/water vapor, coal dust and fly ash laden environment, vibration and electromagnetic interference generally encountered in similar industrial environment.**

2.05.03 All outdoor equipment shall be mechanically or environmentally protect with sunshade or canopy wherever necessary.

Project Location: The proposed power plant will be set in Dipanagar (Near Bhusawal), Maharashtra. Dipanagar is well connected by rail and road, The nearest railway station is Bhusawal and nearest airport is Aurangabad. The project is located on Mumbai-Nagpur highway.

2.06.00 Technical specification of Accessories

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.

Full Function Keyboard:

Interface	USB 1.1/2.0 Complaint.*(USB extender device for length upto 150 ft to be provided, as required)*
Power	USB interface.
System requirements	Windows 7 or above, Vista, XP, 2000, 2003 Server
Keypad jog dial	Required

Alarm I/O Device:

Input ports	As required
Output ports	As required
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 and environmental conditions mentioned in this specification.

Cat 6 UTP Patch Cable: UTP Patch Cable – 3 Meters Length minimum

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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
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

Cat6 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.

Industrial Panel:

Floor standing Panel (Frame)	Basic frame consists of separate height; width and depth channels made from 2mm thick sheet steel and then welded together using a solid steel corner block to provide exceptional rigidity.

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Front door	2mm thick single front door, with partial glass 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 2067 height in mm 800 depth in mm (The above dimension are tentative and shall be finalized during detailed engineering)
Material	Steel
Powder coating	Both exterior &Interior RAL 9002- paint shade shall be finalized during detailed engineering)
Accessories • 1U fan tray • Cooling fans • Equipment shelf • Cable manager • Earth continuity kit • Earthing bar	1.2mm thick tray with 4 fans position (as required) 230v AC, 50 Hz, 90 cfm 1.2mm thick, 1U, 100kg load bearing capacity 1U cable manager for horizontal cable routings Full length vertical managers for vertical cable routings Cables for connecting equipment to main earthing point Vertical and horizontal copper bars for earthing.

Industrial Wall Mount Enclosure:
Industrial Wall Mount Enclosure for housing Edge switch, LIU and Power distribution arrangement to camera.

Wall mount rack	Overall structural construction of 1.2mm thickness
Front door	1.2mm thick, front glass door with lock
Rear panel	1.2mm thick, rear wall mounted section hinged to the front section with a pair of 19” rails
Top panel	1.2mm thick panel with cable entry facility, fan

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	mounting option and vents at the front.
Bottom panel	1.2mm thick panel with cable entry facility
19” rails	Adjustable 19” rails at the front to mount 19” equipment.
Load bearing capacity	Load rating of 20Kgs
Dimensions • Width • Height • Depth	 600 width in mm 12U / 6U 500 depth in mm (400mm + 100mm)
Material	Steel
Powder coating	Light grey (RAL 7035)
Accessories • 1U fan tray • Cooling fans • Cantilever shelf • Cable manager • • Earth continuity kit	 1.2mm thick tray with 2 fans position (as required) 230v AC, 50 Hz, 90 cfm. 1.2mm thick, 1U, 20kg load bearing capacity 1U cable manager for horizontal cable routings Cables for connecting equipment to main earthing point

1 inch Flexible GI Conduit:
Galvanized steel, helically wound, Flexible Conduit System

Mini UPS:
Mini UPS with 30 minutes battery backup for around 10 cameras with 1-2 network switch and media converters.

	Input voltage : 140 – 270 VAC Frequency 47 – 53HZ.
	Output : 1 KVA Rated voltage: 230V AC 50HZ. Power factor : >= 0.7 Overall efficiency >= 85 % Automatic switch over time :< 5 millisecond or better. With overload, short circuit, over & under voltage protections. Battery : SMF

Junction Box

a) Material- min 4mm thick FRP or CRCA
b) Type- Screwed at four corners of door, door gasket shall be synthetic rubber
c) 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.
d) Protection Type : IP55 of indoor and IP65 for outdoor
e) Grounding: To be provided, as required

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HDPE pipe

The HDPE pipe shall be used for laying OFC / STP / Power cables while laid underground. HDPE pipe shall be permanently lubricated type with ISI marked. The internal diameter of the HDPE pipe shall be suitably selected so that 50% free space is maintained during cable drawing. The pipe shall conform to DOT standard GR/CDS-08/02 Nov. 2004 with latest

RIGID STEEL CONDUIT

Conduits up to and including 25 mm shall be of 16 SWG and conduits above 25 mm shall be of 14 SWG. Minimum size of conduits shall be 19 mm. Each piece of conduit shall be straight, free from blister and other defects and covered with capped bushing at both ends. All rigid conduit couplings and elbows shall be hot dip galvanized rigid mild steel in accordance with IS:9537 Part-I (1980) and Part-II(1981). The conduit interior and exterior surfaces shall have a continuous zinc coating with an over coat of transparent enamel lacquer or zinc chromate. Conduits shall be furnished in standard length of 3 meters, threaded at both ends. All rigid conduit fittings shall conform to requirements of IS:2667,1976. Galvanised steel fittings shall be used with steel conduit. All flexible conduit fittings shall be liquid tight, galvanized steel. The end fitting shall be compatible with the flexible conduit supplied.

SPECIAL FITTINGS

All rigid conduit fittings shall conform to requirements of IS: 2667, 1976. Galvanised steel fittings shall be used with steel conduit. All flexible conduit fittings shall be liquid tight, galvanized steel. The end fitting shall be compatible with the flexible conduit supplied.

FO cable specification

Sl no	Attribute	Value
1	Cladding diameter	125 + 1 µm
2	Cladding non-circulatory	<1%
3	Attenuation coefficient at 1290nm to 1340nm 1525nm to 1675nm	 <0.36 dB/Km <0.25 dB/Km
4	Chromatic dispersion coefficient at 1310nm 1550nm	 <3.5ps/nm <18ps/nm
5	Polarisation mode Dispersion	<0.5 ps/Km
6	Mode Field diameter 1310nm 1550nm	 9.2 + 0.4 µm 10.5 + 1 µm
7	Mode field concentricity error	<0.5 µm
8	Proof test	>1%
9	Fiber curl (RoC)	>4.0 m
10	Macro bend test on fiber at 1550nm	< 1dB

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Following tests are to be conducted on the FO cable before supplying

1. Attenuation and dispersion characteristic test
2. Proof test
3. Macro bend resistance test
4. Mechanical test
5. Low and high cable bend test
6. Impact resistance test
7. Compressive strength test
8. Cable twist test
9. Cable cyclic flexing test
10. Environmental characteristic test
11. Temperature cycling test
12. Colour permanence test
13. Cable ageing test
14. Water penetration test
15. Lightning test
16. Routine test / sample test
17. Site test (continuity / attenuation)

Power cable specification:

The insulation and sheath material shall be resistant to oil, acid and alkali. Armouring shall be single round wire of galvanized steel. The inner and outer sheath shall have FRLSH characteristics. Core identification shall be by colour coding. Following details shall be embossed at every meter on outer sheath

a) MSPGCL
b) Manufacturer name or trade mark
c) Voltage grade
d) Year of Manufacture
e) Type of Insulation
f) No of core and size of cable
g) Type of fire performance (FR/FR-LSH/FS)
h) IS number
i) ISI mark

Cable shall be subject to shop test in accordance to relevant IS/IEC/ASTM/IEEE /SS standard and as per approved QAP. Routine test shall be carried out on each drum of cable. Acceptance test shall be carried out on 10% of drums of each lot/type. Type test as per relevant IS, on each type of cable shall be carried out on one sample drum including measurement of armour DC resistance. Following test shall be performed on each type of cable

a) Oxygen index test
b) Temperature index test
c) Flame retardant test
d) Halogen acid gas evolution test
e) Smoke density test
f) Optical density of smoke test
g) Test for rodent and termite repulsion property
h) Flammability test – Swedish chimney test

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1.1	Rating : 1.1kV grade 85° C continuous rating under normal condition and 160°C under short circuit condition rating HRPVC Control cable (YWY) conforming to following requirement and in line with IS:1554, IS:8130, IS:5831 and IS:3975.		
1.1.1	Conductor		Stranded, non-compacted & circular, high conductivity annealed plain copper, generally conforming to IS: 8130.
1.1.2	Insulation		Extruded HRPVC type-C compound conforming to IS: 5831. The minimum volume resistivity of insulation shall be 3.5 x 10^{14} ohm-cm at 27°C and 3.5 X 10^{11} OHM-CM at 85°C.
1.1.3	Core Identification		By color coding and numbering at interval of 100mm or less.
1.1.4	Inner Sheath		Extruded HRPVC compound conforming to type ST2 FRLS of IS: 5831 for multicore cables. Single core cables shall have no inner sheath. Filler shall be of same material as of inner sheath i.e. ST2.
1.1.5	Armour		Galvanised single round steel wire for twin and multicore cables.
1.1.6	Overall Sheath		Extruded FRLSH HRPVC compound conforming to type ST2 of IS: 5831.
1.1.7	Drum		Conforming to IS: 10418 (Wooden drum).

2.07.00 DOCUMENTATION

2.07.00.01 Details of documentation to be supplied as part of the System shall be submitted to MAHAGENCO/BHEL for approval prior to execution of the contract.
2.07.00.02 Each documentation deliverable shall be an integral part of Bidder's Project schedule and shall be identified by date for delivery.
2.07.00.03 Bidder shall supply final approved sets of documentation in soft copies on DVD.

2.07.01.00 ENGINEERING DESIGN DOCUMENTATION

2.07.01.01 Bidder will produce drawings of complete system to be submitted to MAHAGENCO/BHEL for approval, indicating upon each the following :
a) Overall dimensional drawing of system cabinet, console and its accessories.

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Block diagram of system offered with a brief write-up on operation including hook-up arrangement with existing system.

b) Data sheets.

c) Bill of Materials.

d) Typical general arrangement drawings of various handset and speaker stations.

e) Schematic diagram of each type of station.

f) Mounting details.

g) Cable connection diagram for various type of stations, clearly indicating cable size, number of pairs/cores etc.

h) Total power consumption details.

i) Heat load details of panel equipments.

j) Technical leaflets on each piece of equipment viz handset, speaker etc.

2.07.01.02 The Systems Design Manual shall contain all relevant information pertaining to the design and operation of the delivered equipment.

2.07.01.03 This is intended to provide MAHAGENCO/BHEL with an understanding of the operational and design parameters of the equipment and to resolve System operational problems.

2.07.01.04 This documentation shall typically include the following items, presented in a Systems Design Manual:

Equipment design calculations and selection basis.

Equipment construction and assembly drawings.

Parts list and drawings with manufacturer's identification codes.

Systems connection diagrams.

Accessories list and drawings with manufacturer's identification codes.

2.07.02.01 **OPERATION & MAINTENANCE DRAWINGS AND DOCUMENTATION**

2.07.02.01 The O&M Drawings and Documentation shall typically include the following items:

- Assembly drawings.
- Parts list and drawings with manufacturer's identification codes.
- Accessories list and drawings with manufacturer's identification codes.
- O&M schedules.
- Maintenance guidelines including lapping instructions.
- Troubleshooting guides.

2.07.02.02 The O&M manuals shall be submitted in the form of handy, hard bound books which can be easily handled and transported to site.

2.07.03.00 **DRAWING/ DOCUMENT SUBMISSION REQUIREMENTS**

2.07.03.01 Bid shall contain at least the following documents:

SL. NO.	DOCUMENT TYPE
1	Data sheets / catalogs of all items
2.	Main and Mandatory spare BOM with make and model number of all items
3.	Proposed System schematic diagram.
4.	Write up on architecture and operation of proposed system

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5.	Deviation list. If no deviation, then NIL deviation declaration
6.	Bidders to submit Manufacturer Authorisation Letter (MAF) from camera OEM mentioning all of the following: a. OEM's authorization to participate in this tender on their behalf b. That the bidder is their trained system integrator c. That OEM will give all Technical support / troubleshooting assistance during commissioning and operation of the CCTV system. d. That the quoted products are brand new, are not in End of Life list product and support for supply of Spare camera as well as spare parts for 5 years from the date of supply. e. That OEM will continue their technical Support for commissioning, supply of spare / spare part and repair through their other authorized system integrator (SI), if BHEL terminates the contract with present SI or their tie up with present SI ceases till complete commissioning
7.	Clause wise technical compliance indicating each parameter value of w.r.t specification. A printout of this specification may be taken and "COMPLIED" to be mentioned against each clause with signature and seal on each page. Any deviation should be marked up at relevant clause.

2.07.04 **AS-BUILT DRAWINGS**

Upon completion of the final acceptance of the System by MAHAGENCO/BHEL, all construction drawings shall be updated by Bidder to an as-built status to reflect the equipment and System configurations as actually installed.**2.08.00.00 TESTING**

2.08.01.00**FACTORY ACCEPTANCE TEST (FAT)**

2.08.01.01 Factory Acceptance Test procedure shall be prepared by Bidder along with Quality Assurance Plan. The document shall be subject to MAHAGENCO/BHEL's approval.

2.08.01.02 All items that are offered in the BOM shall be duly tested by manufacturer at their factory and test certificate of same shall be furnished to BHEL / MAHAGENCO for review and approval.

2.08.01.03 The entire CCTV system items (as called in BOM) shall be made available at bidder's work for inspection (FAT) which will include complete integrated test for checking that the equipment offered is meeting the design standards and functional requirements mentioned in this specification. As a minimum, BOM verification, physical verification, integrated test shall be performed on true sample of items selected by BHEL shall be part of FAT. BHEL reserves right to check power ON functionality of entire active components of CCTV system BOM. QAP and FAT procedure shall be subject to MAHAGENCO/BHEL approval.

2.08.01.04 One month prior to the FAT, Bidder shall submit a test procedure and QAP to BHEL for approval.

2.08.01.05 MAHAGENCO/BHEL's representative may, at MAHAGENCO/BHEL's sole discretion, attend the FAT. In this event, Bidder shall ensure all tests are carried out in the presence of MAHAGENCO/BHEL's personnel. If MAHAGENCO/BHEL declines to attend the FAT, Bidder shall carry out these tests and submit the results to MAHAGENCO/BHEL for review.

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2.08.01.06 Factory Acceptance Tests (FATs) result shall be documented and the test results shall be submitted to MAHAGENCO/BHEL prior to clearance by MAHAGENCO/BHEL for dispatch.

2.09.01.01 **COMMISSIONING**

2.09.01.01 Bidder is responsible for delivering a fully functional equipment that meets all the requirements of the Specification and applicable standards.

2.09.01.02 The Commissioning processes will demonstrate the above to MAHAGENCO/BHEL, before handing over of the System.

2.09.01.03 System Commissioning shall comprise of a number of different activities culminating in the acceptance of the operational System by MAHAGENCO/BHEL. These activities are detailed in the following sections.

2.09.01.04 Bidder shall provide all necessary test equipment required to carry out the Commissioning and acceptance testing.

2.10.01.00 CLEANING, PROTECTION AND PAINTING

2.10.01.01 All equipment shall be shipped in properly cleaned condition. All the equipment
shall be thoroughly cleaned to remove mill scales, rust etc. and properly painted with anti rust primer, where applicable

2.10.01.02 Some of the equipment and accessories, after arrival at site, are likely to be in storage for long periods before they are taken up for erection. Bidder may provide adequate protection for preventing damage due to corrosion, dust / dirt ingress, ageing etc.

2.10.01.03 Plugs shall be provided at cable entry holes/adapters to avoid entry of dust and foreign particles. Paper cap will not be acceptable.

2.11.00 IDENTIFICATION, MARKING, PACKING AND STORING

2.11.01 Each equipment shall be individually packed, tagged and protected.

2.11.02 Inscription on equipment (labels) shall be in English.

2.11.03 Packing must be such to protect all goods from possible impacts and foreign matters; moreover, it must limit the influence of both the climate and the environment, and be suitable for the kind of shipping provided for.

2.11.04 In packing the equipment and accessories, all necessary precautions will have to be taken to avoid any damage during transport and delivery.

2.11.05 All items supplied shall be packed for long term storage under the climatic conditions prevailing at the site in a weather proof container. Small items shall be packed in sealed transparent plastic bags with desiccator packs as necessary. Each item shall be clearly marked with its description, purpose and plant designation code as applicable. When more than one item is packed in a single case a general description of the contents is to be shown on the outside of each case and a detailed list enclosed. All cases and other packages must be suitably marked and numbered for identification purposes.

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2.12.00 SHIPMENT

2.12.01 Bidder shall be responsible for ensuring that all equipment are carefully and/or suitably packed for shipment, so that they arrive at site in good condition and remain so during storage at site. Before dispatch, all exposed surface shall be protected by applying anti rust primer (two coats) and suitable cover shall be provided for the equipment to be supplied.

2.12.02 Bidder will be responsible for all damages due to improper packing of the goods for shipment and shall replace all such damaged items without cost implication to BHEL

2.13.00 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 between the two shall be considered and offered. However, the technical specification of the CCTV system as furnished in Annexure-I shall supersede any conflict in information given in this specification.

16.00.00 Bill of materials

Sl. No.	ITEM	Unit	Tender Qty.	Reference Qty
1	VMS software of adequate capacity including spare capacity as mentioned in technical specification for both plant and perimeter cameras.	SET	1	
2	Video Content Analytics Software (as required) for meeting specification requirement including spare capacity as mentioned in technical specification for both plant and perimeter cameras	SET	1	
3	Camera/Database Server - Primary server (CCTV) with 24” monitor	SET	1	
4	Camera/Database Server - Standby secondary server (CCTV) with 24” monitor	SET	2	
5	OWS or Server (as required) for controlling camera and storing video of all camera installed along perimeter of the plant	SET	1	
6	Camera View Work Station (CMWS) with 24” Monitor, Keyboard and Joystick for Plant CCTV	NOS	2	

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7	Camera View Work Station (CMWS) with 24" Monitor, Keyboard and Joystick in Security room – one for monitoring Plant cameras and other for **perimeter cameras.**	NOS	2	
8	KVM Console with 8 port Switch	NOS	1	
9 (a)	PTZ Dome Colour Camera with wall/pole mount and power supply for plant area	NOS	74	
9 (b)	PTZ Explosion proof camera with wall/pole mount and power supply for Fuel oil areas	NOS	6	
10	PTZ Dome Colour Camera with wall/pole mount and power supply along perimeter wall of the plant area at every 500mtrs	LOT	1	12nos
11	Fixed Camera with wall/pole mount and power supply along perimeter wall of the plant area at every 100mtrs	LOT	1	60nos
12	Alarm I/O Device having 24 PFC for integration to fire alarm system of the power plant	NOS	2	
13	Type-I Switch (Core Switch)- Layer-III Switch for interconnection to station LAN	NOS	1	
14	Type-II Switch (Distribution Switch with suitable no of each types of ports required for each zone for establishing redundancy as per tender specification)	LOT	1	3nos
15	Type-III Switch (Edge Switch)	LOT	1	55nos
16	2/4 Pair Control Cable for Alarms	LOT	1	4000mtrs
17	Cat 6 shielded Twisted Pair Cable (STP)	LOT	1	6000mtrs
18	4F (minimum) armoured SM FO cable	LOT	1	35000mtrs
19	3C 2.5Sqmm armoured power cable for connecting camera and switches from CCTV panel	LOT	1	30000mrs
20	3C 1.5Sqmm un-armoured power cable for connecting camera to nearest JB (if armoured 2.5Sqmm cable can not be terminated in camera)	LOT	1	3000mtrs
21	Pair of Single Mode Media Converters -10/100 MBPS speed, suitable **for connecting cameras**	LOT	1	40 pairs
22	Pair of Single Mode Media Converters -1000 MBPS speed, suitable for **connecting workstation**	LOT	1	2 pairs
23	Industrial Panel	LOT	1	2nos
24	Industrial Wall Mount Enclosure and JB	LOT	1	55nos
25	Cable Trays / Flexible conduits / Rigid Conduits / HDPE pipes along with necessary mounting accessories for laying various types of cable depending on the site condition.	LOT	1	Cable tray-2000mtrs Flexible conduit-1000mtrs Rigid Conduit-1000mtrs HDPE pipe-5000mtrs
26	1KVA or as required rating mini UPS for powering remote located cameras along with other associated devices like switch and media converters	LOT	1	10 nos
27	Antivirus / End Point protection for servers and OWS	SET	1	
28	All types of licence for Camera View Work Stations (CMWS) with lifetime validity	LOT	1	
29	LVS interface system (refer technical spec for details)	LOT	1	
30	Fringe Miscellaneous items a) Electrical items such as Terminal Blocks (TBs),	LOT	1	

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	Miniature Circuit Breakers (MCB), cable coverings, cable managers, panel lamp (for Panel & Enclosure) and RJ45 connectors and crimping tool etc. b) Mechanical items such as G / C channels and DIN Rail, camera JBs, cable glands, mounting brackets, bolts & nuts etc. c) Fiber optic accessories like Fiber Patch Cable, LIUs, Pigtails etc required for completion of the splicing and termination of FOC d) Cat-6 cable accessories like UTP Patch Cable, patch panel, etc for termination of all CAT5e cables			
31	Camera poles made of MS / GI of minimum 6mtr height above ground after fixing. Poles shall be corrosion resistant, durable finish and high tensile steel.	LOT	1	40nos
32	Any other item mentioned in technical specification or required for functional completion of CCTV system as per technical specification and but specifically mentioned above.	LOT	1	
33	Container of suitable size and quantity as required for each project with lock and key for storing CCTV components except cable and poles	LOT	1	
34	Erection (including necessary civil and masonry works), Installation and commissioning of full CCTV package as per services scope mentioned in technical specification.	Lot	1	
35	**MANDATORY SPARES**			
A	Each type of CCTV lenses	%	10	
B	Each type of CCTV filter adapters	%	10	
C	Each type of Filters	%	10	
D	Each type of Each type of Camera and Monitors	%	10	
E	Each type of Electronic Crosshair generator	%	10	
F	Each type of Fiber optic ring illuminator	%	10	
G	Each type of Coaxial illuminator	%	10	
H	Gooseneck halogen illuminator	%	10	
I	Each type of CCTV camera mounts	%	10	
J	Each type of PTZ unit for cameras	No	1	

Note:

1. The bidder must quote unit price of supply and service cost of all items in above BOM for indisputable calculations of total prices for any change in quantity of any item called in nos.
2. The quantity mentioned under column "Reference qty" are just an indicative quantity which may be required for the CCTV system in the Bhusawal Power plant. These quantities are neither minimum nor maximum quantity to be considered/offered/supplied by bidders. Bidder should refer the plot plan & location list of cameras provided in this specification to "estimate & offer" quantities on as required basis, for all items which are called in lots/sets in above BOM, without any cost implication to BHEL.

ANNEXURE-I

VOLUME V

SECTION - 7 B

CLOSED CIRCUIT TELEVISION

CONSULTANT : PROCON ENGINEERS

1.0 CLOSED CIRCUIT TELEVISION SYSTEM

1.1 CLOSED CIRCUIT TELEVISION SYSTEM

1.1.1 Closed Circuit Television System (CCTV) with all equipment and accessories shall be installed for the purpose of surveillance of major plant areas. Also, cameras shall be installed at the Main Gate and other common auxiliary plants.

1.1.2 The CCTV system shall meet the specific functional & design requirements towards collecting live video information from the various areas of the plant and displaying that information at monitors.

1.1.3 Bidder shall include Digital Server based Video Manager, Camera unit, Video Streamer, Optical fiber network cables, Network hard wares & all other accessories including design/engineering, testing, erection & commissioning etc. for complete functioning of the system.

1.1.4 Bidder shall consider licensed version of all application and system software required for the system.

1.1.5 System shall be of proven design in dust laden atmosphere and of reputed make.

1.1.6 Bidder shall submit block schematic of Power distribution and wiring diagram, CCTV network architecture drawing, hardware & software detail and other information as necessary.

1.1.7 Requirement for minimum number of camera units and their tentative locations are listed below. CCTV system shall include industrially ruggedized high resolution colour day/night CCD camera, motorized zoom lenses, PAN & TILT mechanism, Transmitter/Receiver units & video Streamer integrated to a Digital Video Management Server for video switching, control and recording functions. Bidder shall furnish unit rate of each camera system. These unit rate shall be applicable for any addition /deletion in the quantities.

LIST OF CAMERAS TO BE PROVIDED

SR. NO.	TYPE OF CAMERA	ENCLOSURE CLASS	LOCATION	NO. OF CAMERAS
1.0	CCD camera (Dome Type)	IP 54	TG Hall	01
2.0	CCD camera	IP 54	TG Hall	02
3.0	CCD camera	IP 54	Turbine oil room	01
4.0	CCD camera	IP 54	Boiler Feed Pumps	03
5.0	CCD camera	IP 54	Condensate Extraction Pumps	01
6.0	CCD camera	IP 54	Generator seal oil system	01
7.0	CCD camera	IP 54	Compressor room	01
8.0	CCD camera	IP 54	Switchgear Room	01
9.0	CCD camera	IP 65	Boiler Firing Floor	01
10.0	CCD camera	IP 54	Boiler circulation water pumps	02
11.0	CCD camera	IP 65	Coal mill area	06
12.0	CCD camera	IP 65	Coal Feeder area	06
13.0	CCD camera	IP 65	ID Fan	02
14.0	CCD camera	IP 65	FD Fan	02
15.0	CCD camera	IP 65	PA Fan	02
16.0	CCD camera	IP 54	AHP control room	01
17.0	CCD camera	IP 65	Ash water pump house	01
18.0	CCD camera	IP 65	Air heater area	01
19.0	CCD camera	IP 65	ESP field area	02

SR. NO.	TYPE OF CAMERA	ENCLOSURE CLASS	LOCATION	NO. OF CAMERAS
20.0	CCD camera	IP 65	Generator Transformer Bay	02
21.0	CCD camera	IP 65	To be decided during detailed engineering	04
				Total - 43nos

LIST OF CAMERAS TO BE PROVIDED AT COMMON PLANT AREA

SR. NO.	TYPE OF CAMERA (DOME TYPE)	ENCLOSURE CLASS	LOCATION	NO. OF CAMERAS
1.0	CCD camera	IP 65	Ash slurry Pump House area	02
2.0	CCD camera	IP 65	CW Pumps	02
3.0	CCD camera	IP 65	ACW Pumps	01
4.0	CCD camera	IP 65	Fire Water Pump House	01
5.0	CCD camera	IP 65	Fuel oil Pressurizing Pump House	01
6.0	CCD camera	IP 65	Fuel oil unloading bay	02
7.0	CCD camera	IP 65	Fuel oil unloading pump house	01
8.0	CCD camera	IP 65	Fuel oil tank area	01
9.0	CCD camera	IP 65	Unloading Bay of Unit	01
10.0	CCD camera	IP 65	Main entry gate	01
11.0	CCD camera	IP 65	CHP area	08
12.0	CCD camera	IP 65	Switchyard	01
13.0	CCD camera	IP 65	DM plant	01
14.0	CCD camera	IP 65	Chimney	01
15.0	CCD camera	IP 65	Cooling Tower	01
16.0	CCD camera	IP 65	Train entry and exit point	01
17.0	CCD camera	IP 65	ETP plant	01
18.0	CCD camera	IP 65	Cable gallery	05

SR. NO.	TYPE OF CAMERA (DOME TYPE)	ENCLOSURE CLASS	LOCATION	NO. OF CAMERAS
19.0	CCD camera	IP 54	CCR	02
20.0	CCD camera	IP 54	Control equipment room	03

Total - 37nos

1.1.8 Pan Tilt and Zoom camera (PTZ) shall be installed after every 500 meter intervals inside the perimeter wall/fence. The fixed camera shall be installed after every 100 meter intervals insides the fence.

1.1.9 CCTV system shall be powered from UPS

1.1.10 System shall be time synchronized with the GPS master clock. **NTP Format**

1.1.11 Design and Technical Requirements

(a) CCTV system envisaged shall have a Primary Digital Video Server along with 2 (two) off Secondary Digital Video Servers, (one for main plant, one for off site plants). The prime application program shall reside at Primary Digital Video Server and shall interface Secondary Digital Video Servers & Cameras for video and audio switching and control of the system. The Primary Server shall have the capability to add future secondary servers to support future expansion.

(b) 2 (two) 24" TFT monitoring stations shall be provided for monitoring of the plant. The system elements shall be able to communicate on Ethernet network.

(c) System shall store alarm and event activated recording. Features shall be provided only to capture most needed videos. It shall also have pre-recording feature so that videos prior to the event occurring can also be stored. The system operation shall cover the complete view of the areas by control of pan, tilt & zoom of the cameras. Modification of the system parameters shall be possible from any of the above stations.

(d) The system shall have following minimum controlling capability:

(i) PTZ control with Iris level control, pre-positioning control for at least 128 cameras.

(ii) Simultaneously record and play back input from up to 128 cameras.

(iii) Both manual and automatic mode control.

(e) The system shall have capability not limited to the followings :

(i) It shall be possible to view live video from anywhere on the network, including over wide area network connections, through firewalls & routers. The live output from cameras shall be viewed through a series of displays.

(ii) Sequence view of camera preset position.

(iii) Modifying settings/record settings for a camera.

(iv) Adding and deleting camera from the system.

(v) Creating schedules for recording an video motion detection.

(vi) Video recording with features like Operator Activated Recordings, Alarm and Event Activated Recordings, Scheduled Recordings (including 24hr recording), Video Motion Detection & Recordings and Exporting of a Recorded video into Microsoft Windows Media Format file.

(vii) Video Server shall have video recorder with sufficient disk space for on-line video storage and access to archiving mechanisms for the removal of stored video to off-line media. Event shall be stored in the recorder at least for 30 days. Recorder shall have date & time search and can playback of recorded video.

(viii) Archiving of the recorded videos to archiving media like DVD.

(ix) Video features like Single camera viewing, Quad viewing and Sequence viewing.

(x) Pass word protected Security levels for the monitoring and control of cameras to authorized users.

The system should be completely compatible to be integrated to Fire Alarm System. When the fire is detected by a particular detector the camera assigned should automatically focus the site of the fire. For implementation of the same, 24 nos. potential free input contacts for main plant & 24 nos. potential free input contacts for auxiliary area shall be provided for Fire Detection system interfacing with CCTV system panel. Proper implementation of the same shall be in the scope of bidder.

1.1.12 Description of System Components

CCTV Management system for the plant shall be built upon industry-standard TCP/IP open networking. The components shall be public domain products. Bidder shall furnish latest proven model of components & accessories, not limited to the following, for completeness of the system.

(a) Primary Digital Video Server

(i) Request and receive live video from the streamers and the cameras.

(ii) Multicast or Unicast live video.

(iii) Receive camera control commands and send to the cameras.

(iv) Store live video (recordings) into hard drives.

(v) Transmit previously stored video recordings to monitors when requested.

(vi) Record video on request.

(vii) Record video upon alarm trigger.

(viii) Schedule recordings and video motion detection.

(ix) Provide search engines for recordings.

(x) Archive previously stored video to off-line storage media.

(xi) Retrieve archived video from off-line storage media.

(xii) Recording of both video and audio simultaneously for 128 channels.

(xiii) Recording 18~24 frames/second regardless of the number of streams.

(xiv) Report any camera failure or recording failure.

(xv) Time synchronization with the plant GPS.

(b) Secondary Digital Video Servers

Features of the server shall not be limited to the following :

(i) Limit and grant operator access to live and recorded video and audio.

(ii) Send request to video server to record video and audio.

(iii) Provide indication of any camera which has failed.

(iv) Configure PTZ access.

(v) Configure alarm and alarm access.
(vi) System configuration.

(vii) Video transmitter and receiver configuration.

(c) Server configuration

SR. NO.	FEATURE	REQUIRED PARAMETER
(i)	Operating system	Windows 2000 or latest version.
(ii)	Code Compression	To be specified by Bidder.
(iii)	Processor	2nd generation core i5 or better
(iv)	RAM	4 GB or better.
(v)	Hard disk	8 x 60 GB SCSI with facility of expanding.
(vi)	CD ROM Drive	52 X or better.
(vii)	DVD writer	CD Read &write DVD Read & write.
(viii)	Video output	SXGA
(ix)	Remote Control	Full control Via TCP/IP
(x)	DAT Drive	Ultrium back up drive with tape auto loader.
(xi)	Monitor	24" Colour TFT.
(xii)	Input voltage	240 V AC 50 Hz.
(xiii)	Mounting	19" rack mounting.
(xiv)	Additional software for the Primary/ Secondary Server	Microsoft SQL Server 2000 including Digital Video system.

(d) Cameras

The cameras shall be rugged 1/3 inch image format or better, full performance color CCD cameras. For Dome type camera imager may be 1/4" size. Cameras shall provide high resolution and high sensitivity , both in natural and artificially sighted areas. Features shall not be limited to the followings:

(i) Suitable for day & night time surveillance.

(ii) Manual or Automatic colour/infrared switching.

(iii) Automatic picture enhancement to give a balanced picture in too little/too much light.

(iv) Remote camera setup, with on screen menu display.

(v) Character generator giving up to 24 character text-in-pictures.

(vi) Backlight composition.

(vii) Automatic white balance, with mode selection options.

(viii) Contour correction and contrast compression control.

Technical requirements shall not be limited to the following :

COLOUR CCD CAMERA

SR. NO.	FEATURE	REQUIRED PARAMETERS
1.0	Imager	1/3" Color CCD.
2.0	Effective Pixels	752 (H) x 582 (V) PAL.
3.0	Television System	PAL.
4.0	Horizontal resolution	540 lines.
5.0	Focus / Iris	Automatic with manual override.

SR. NO.	FEATURE	REQUIRED PARAMETERS
6.0	Min. illumination	Color- 0.3 lux – 0.002 lux.
7.0	Lens Mount	CS/C with lens washer.
8.0	Aperture correction	Horizontal and vertical.
9.0	Shutter Speed	MFR standard.
10.0	Signal to Noise Ratio	More than 52dB.
11.0	Gain control	Automatic.
12.0	White Balance	2000K to 10000K.
13.0	BLC	On / Off switch.
14.0	Video Output	1.0V Pk-Pk, 75 Ohm.
15.0	Power Supply	AC 240V, 1Ph. 50Hz.
16.0	Operating Temperature	$-10^0 \sim 50^0$C.
17.0	Humidity	0-100%.
18.0	Accessories	(i) Outdoor type box for Power supply unit and fiber optic connectivity. (ii) Mounting accessories. (iii) PAN and TILT mechanism. (iv) Camera housing.
19.0	Preferred Certification	CE, FCC.

DOME COLOUR CCD CAMERA

SR. NO.	FEATURE	REQUIRED PARAMETERS
1.0	Imager	1/4" Color CCD.
2.0	Effective Pixels	752 (H) x 582. (V)
3.0	Television System	PAL.
4.0	Sync. system	Internal/External.
5.0	Horizontal resolution	460 TV Lines.
6.0	Focus	Automatic with manual override.
7.0	Iris	Automatic with manual override.
8.0	Field of view	2.7 Deg. to 48 Deg.
9.0	Sensitivity	For day & night surveillance 0.0005 lux in night mode slow shutter on 0.031 lux in night mode slow shutter off. 0.0033 lux in day mode slow shutter on. 0.25 lux in day mode slow shutter off.
10.0	Aperture correction	Horizontal and vertical.
11.0	Optical & digital Zoom	12X.
12.0	Signal to Noise Ratio	More than 50dB.
13.0	Gain control	Off/automatic.
14.0	White Balance	2000K to 10000K.

SR. NO.	FEATURE	REQUIRED PARAMETERS
15.0	BLC	On / Off switch.
16.0	Video Output	1.0V Pk-Pk, 75 Ohm.
17.0	Power Source	AC 240V, 1Ph. 50Hz.
18.0	Operating Temperature	$-10^0 \sim 50^0$C.
19.0	Humidity	0-100%.
20.0	Accessories	(i) Outdoor type box for Power supply unit and fiber optic connectivity.
		(ii) Mounting accessories.
		(iii) PAN and TILT mechanism.
		(iv) Camera housing.
21.0	Preferred Certification	CE, FCC.

(e) Lens

The lens shall be minimum Auto-iris lens of 1/3 inch. with zooms facility. Depending upon the system requirements bidder shall provide the exact zoom lens.

(i) LENS (Zoom Lens of 6-60mm)

SR. NO.	FEATURE	REQUIRED PARAMETERS
1.0	Zoom	6-60 mm. (10 X)
2.0	Lower focal distance	6 mm.
3.0	Size	1/3″ format.

SR. NO.	FEATURE	REQUIRED PARAMETERS
4.0	Iris	Auto-video drive.
5.0	Pre-set	Focus, Zoom.
6.0	Zoom Control	Motorized.
7.0	Focus Control	Motorized.
8.0	Connector to camera	"C" or "CS".
9.0	Iris control	Motorized and /or automatic.

(ii) LENS (Zoom Lens of 8--120mm)

SR. NO.	FEATURE	REQUIRED PARAMETERS
1.0	Zoom	8-120 mm. (15 X)
2.0	Lower focal distance	8 mm.
3.0	Size	1/3" format.
4.0	Iris	Auto-video drive.
5.0	Pre-set	Focus, Zoom and/or automatic.
6.0	Zoom Control	Motorized.
7.0	Focus Control	Motorized.
8.0	Connector to camera	"C" or "CS".
9.0	Iris control	Motorized and/or automatic.
10.0	Interchange ability	From same make with interchange ability/ compatibility with associated accessories.

(f) Camera Housing

All the cameras and accessories shall be housed in Weather proof environmental cases of aluminium.

The housing should also have thermostatically controlled heater kit, continuous duty blower kit, purge air arrangement, Window wipers etc. Features available shall be as follows :

SR. NO.	FEATURE	REQUIRED PARAMETERS
1.0	Construction Material	Extruded and die cast aluminium.
2.0	Protection Degree	IP65.
3.0	View window material	Fully tempered plate glass of 0.5" thick.
4.0	Finish	Grey Polyester Powder coated.
5.0	Accessories	Thermostatic heater, Defroster, Blower and sun shroud & Should have provision for washer and wiper for the dust prone areas.
6.0	Input Voltage	240V AC.
7.0	Camera compatibility	Enclosure dimension should provide sufficient space to house the offered camera and lens assembly.
8.0	Cabling (Housing with P/T)	Internal, through Pan/Tilt assembly.
9.0	Cabling (Fixed Housing)	Two entries for cabling with compression gland.

SR. NO.	FEATURE	REQUIRED PARAMETERS
10.0	Camera Mount	Removable with Sleds.
11.0	Certification	UL/CE.

(g) Pan & Tilt Unit :

The Pan & Tilt unit should be weather proof (IP-55) type and designed to meet harsh environment and should be constructed with corrosion resistant hardware and with 100% duty cycle motors to permit continuous operation.

Features available shall be as follows :

SR. NO.	FEATURE	REQUIRED PARAMETERS
1.0	Pan Range	0-355 Degrees.
2.0	Pan Speed	7 degree/Second or better.
3.0	Tilt Range	$\pm 90^0$ (in vertical plane)
4.0	Tilt Speed	3 Degrees/second or better.
5.0	Duty cycle	50%, 30 minute rating.
6.0	Connectors	Cables/glands to be supplied with P/T unit.
7.0	Construction	Aluminium plate. Internal & external parts corrosion resistant.
8.0	Presets	Should be available.
9.0	Limit Switches	Internally adjustable.
10.0	Input Power	24V AC, 50 Hz.

SR. NO.	FEATURE	REQUIRED PARAMETERS
11.0	Operating Temperature	0 to 50 degree centigrade.
12.0	Certifications	UL/CE.

(h) On-site Receiver/Driver Unit :

The on-site receiver/drive unit should be able to control the motor drives for pan/tilt and cameras for zoom and aux control. These would be used in conjunction with the Camera Streamer systems. Features available shall be as follows :

SR. NO.	FEATURE	REQUIRED PARAMETERS
1.0	Input/Output Signal	RS-422 or RS 232 or RS 485.
2.0	Pre-sets	Minimum 64.
3.0	Output	Pan, Tilt, Focus, Zoom, Wipe, Wash.
4.0	Output voltages	As required by lens and PTZ unit.
5.0	Diagnostics	Built in should be available.
6.0	Up Gradability	Should operate with any industry standard PTZ units.
7.0	Testing of Pan/Tilt functions	On site testing should be available.
8.0	Housing	Should be housed in weather proof or explosion proof housing as per locations.

SR. NO.	FEATURE	REQUIRED PARAMETERS
9.0	Input Voltage	240 Volts AC, 50 Hz.
10.0	Operating Temperature	0-50 Degrees centigrade.
11.0	Humidity	95%
12.0	Certifications	CE/UL.

(i) Video Streamers

Industry standard commercial video streamers to perform the following functions shall be used:

(i) Convert the analog camera video signal into a digital format.

(ii) Stream the digital video onto the Ethernet network.

(iii) Receives camera control commands from Digital Video Server and send these commands to the camera PTZ head using a serial connection.

SR. NO.	FEATURE	REQUIRED PARAMETERS
1.0	Video Input	1 input, 1V pp, 75 ohms, PAL.
2.0	Serial Port	RS 232 or RS422 or RS 485.
3.0	Video compression	MPEG. H.263.
4.0	Protocols	TCP / IP, UDP / IP, IGMP (Multicast) DHCP Client, HTTP.
5.0	Regulatory	EN55022,EN55024.

SR. NO.	FEATURE	REQUIRED PARAMETERS
6.0	Input/output ports	RJ 45 for 10/100 Mbps, RS 232/422/485 port. 4 opto isolated general inputs and 1 relay output. 1 video input (BNC) & 1 video output (BNC).
7.0	Resolution	704 x 576 (Single high resolution), 352 x 250 (Standard Size) or better
8.0	Video through put	Upto 25 fps or better.
9.0	Bit rate	User configurable bit rates from 8 Kbps to 2 Mbps. It should be able to send CIF size video at 18 ~24 fps at 400 Kbps.
10.0	Decoder	The Encoder should be usable as a decoder to give output to an analogue CCTV monitor if required.
11.0	Operating Temperature	0 to 50 degrees centigrade.
12.0	Input Power	240 V AC, 50 Hz.
13.0	Housing	Should be housed in dust & weather proof housing as per locations.

(j) Network Infrastructure & Cable

CCTV network configuration shall be built on the Stackable Managed Ethernet switches for better control of data traffic & performance and future expansion. Switch configuration shall be

redundant with seamless changeover without any upset in the CCTV operation. MTBF of the switch shall be more than 20 Years. Configuration shall be automatic.

1.1.13 Perimeter intruder detection system

1.1.13.1 Perimeter intruder detection system shall meet following requirements:

(a) The detection system shall be installed along the entire length of fence/boundary of the power plant and all entry & exit gates on the boundary. Pan Tilt and Zoom camera (PTZ) shall be installed after every 500 meter intervals inside the perimeter wall/fence. The fixed camera shall be installed after every 100 meter intervals insides the fence The system shall be capable of providing 24 hour continuous surveillance by means of a network of video cameras.

(b) The intruder detection system shall be based on video motion detection technology.

(c) The system shall be able to identify and distinguish between whether the intruder is a human being or an animal.

(d) Upon detection of intrusion, suitable alarms to be raised to security guards and corresponding camera image shall be displayed on a high resolution dedicated alarm screen.

(e) The system shall allow for the adjusting the sensitivity to reduce false alarms.

(f) When there is no intrusion, suitable alarms to be raised to security guards and corresponding camera image shall be displayed on a high resolution dedicated alarm screen.

(g) The intruder detection system shall be PC based system and will employ a hard disk based recording system.

1.1.13.2 The intruder detection system shall be complete in all respect and generally will comprise the following:

(a) Fixed cameras.and Dome cameras

(b) Video motion detection software

(c) Necessary camera poles, camera housing and related accessories, necessary civil & masonary works.

1.1.13.3 Perimeter camera requirements are as follows

(a) As many cameras as required for proper coverage of total perimeter length shall be provided. However, individual camera coverage shall not exceed 100 meter distance along the perimeter length.

(b) Cameras provided with auto IRIS lens, low lux density (0.1 lux) suitable for functioning in darkness (night shot capability) and infra red illuminator.

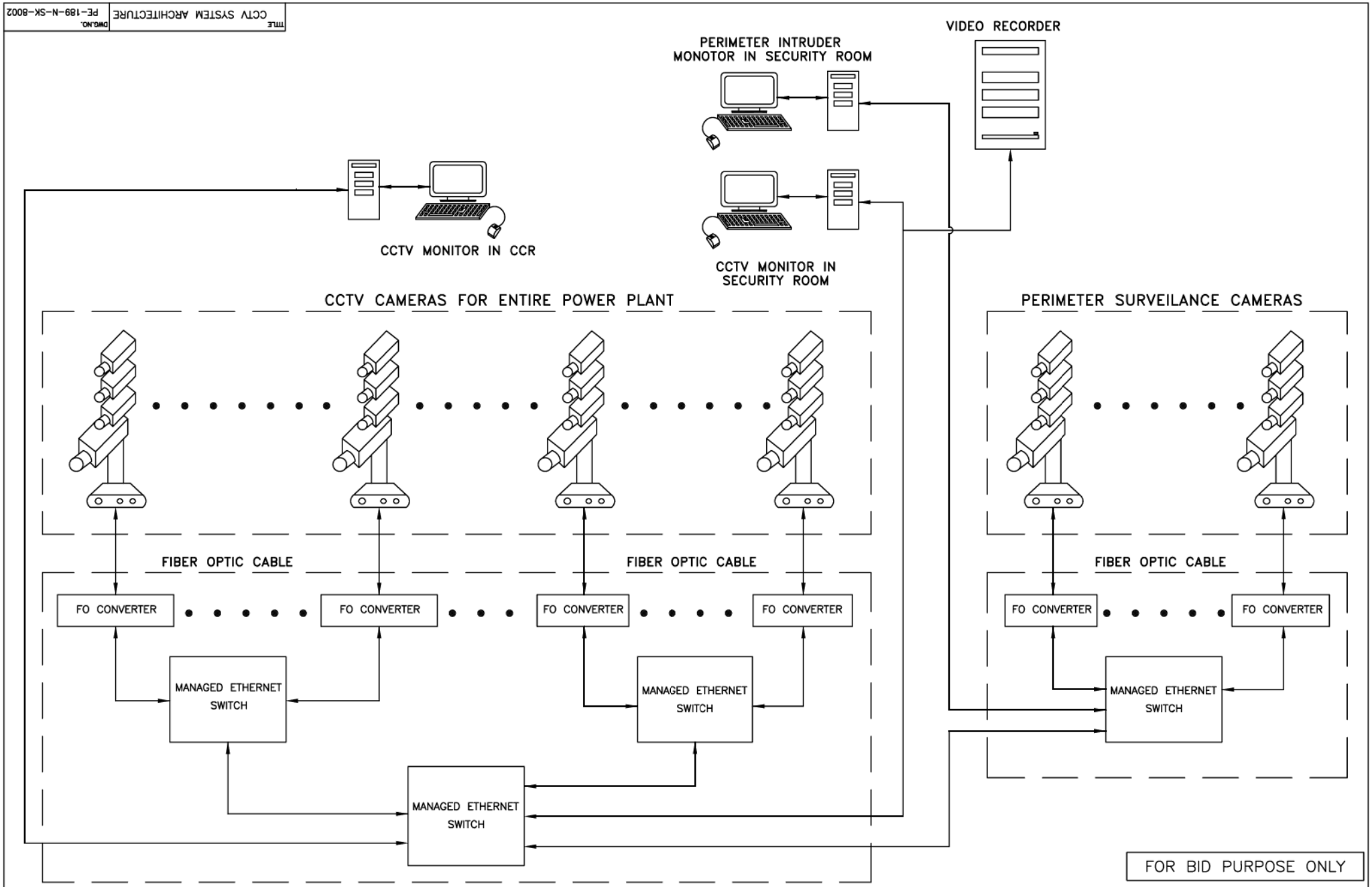
(c) Cameras provided with UPS power supply.

(d) Cameras shall be provided with IP65 enclosure and desired to be with remote controllable window cleaning facilities.

(e) Camera mounting pole height shall not be less than 6 meters.

1.1.13.4 Common requirement of CCTV and perimeter intruder detection system

All cameras for CCTV and perimeter detection system shall be grouped and connected to respective sever. Two number display unit shall be provided in security room in the service building (one for CCTV and one for perimeter intruder system). The security room shall house all network controller, video recorder, PTZ unit and associated accessory.PTZ unit for CCTV system shall be able to override the unit in CCR.



ISSUE	REVISIONS	BY	CLEARED CHEM	CIVIL	ELEC	I&C	MECH	APPD	DATE
P1	REVISED AS PER LETTER NO.DG/I&C/BSL/1x660MW/ 01/NO.4438 DATED 19-10-2011.	AVK				DJP		MV	24/10/2011

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MAHAGENCO

MAHARASHTRA STATE POWER GENERATION CO.LTD.
BHUSAWAL T.P.S. UNIT-6 : 1 X 660 MW PROJECT

CCTV SYSTEM ARCHITECTURE

PROCON ENGINEERS
(DIVISION OF NIMOTO CONSULTING ENGINEERS PVT.LTD.)

SCALE ~	APPROVED		DATE(RO ISSUE)
DIV. INST.			DATE(CURRENT ISSUE) 24-10-2011
DR. P.N.Z.			
CH. D.J.P.	DWG.NO. PE-189-IN-SK-8002		ISSUE P1

TITLE CCTV SYSTEM ARCHITECTURE
DWG.NO. PE-189-N-SK-8002

ANNEXURE-III (COMPONENT MAKE LIST)	
SERVER AND WORK STATION	**POWER CABLE**
IBM/LENOVO	DELTON, FARIDABAD
HP/COMPAQ	UNIVERSAL CABLE, SATNA
DELL	NICCO CABLE, KOLKATA
TFT MONITOR	POLYCAB, DAMAN
IBM/LENOVO	GOYOLENE, MUMBAI
HP/COMPAQ	RELIANCE ENGRS, BANGALORE
LG	CORDS CABLE, RAJASTHAN
SAMSUNG	PARAMOUNT CABLE, ALWAR
DELL	THERMOCABLE, BANGALORE
JB (FRP)	KEI INDUSTRIES, CHENNAI
DEVI POLYMERS, CHENNAI	CABLE CORP OF INDIA LTD, CHENNAI
SUCHITRA INDUSTRIES, BANGALORE	RPG CABLES, CHENNAI
RITTAL (BANGALORE)	FORT GLOSTER, KOLKATA
PYROTECH (UDAIPUR)	DECO CABLE, DELHI
L&T	KRISHNA CABLE, GWALIOR
HENSEL, SRIPERUMBUDUR	THERMAPADS
MINI UPS	ELKAY TELELINKS
HITACHI HIREL (GANDHINAGAR)	INCAB INDUSTRIES
APC (BANGALORE)	**ALARM CABLES**
EMERSON/TATA LIEBERT (MUMBAI)	DELTON, FARIDABAD
APLAB (India)	UNIVERSAL CABLE, SATNA
DB POWER (PUNE / SATARA)	NICCO CABLE, KOLKATA
DELTA (GURGAON)	POLYCAB, DAMAN
NETWORK SWITCH	GOYOLENE, MUMBAI
CISCO	RELIANCE ENGRS, BANGALORE
BROCADE (FOUNDARY)	CORDS CABLE, RAJASTHAN
HIRSHMANN (GERMANY)	PARAMOUNT CABLE, ALWAR
GARRET (USA)	THERMOCABLE, BANGALORE
NETGEAR	KEI INDUSTRIES, CHENNAI
JUNIPER (USA)	**FO cable:**
ALLIED TELESYS	Birla Erricson
42U PANEL / WALL MOUNTABLE PANELS	Aksh Fibre
PYROTECH (UDAIPUR)	Finolex (Pune / Goa)
RITTAL (BANGALORE)	Corning Cable System, USA
PENTAIR TECHNICAL PRODUCTS INDIA PVT LTS (HOFFMAN)- BANGALORE	HFCL, Goa
IL (KOTA)	R&M, Switzerland
SCHNEIDER ELECTRIC (BANGALORE)	D-Link
CAT6 ACCESSORIES	Molex, UK
AMP / DIGILINK / D-LINK / SYSTEMAX	**SINGLE MODE MEDIA CONVERTER**
FO ACCESSORIES	Avaya / Belden /D-Link / Digilink / Tyco/ CTC Union
Avaya / Belden /D-Link / Digilink / Tyco	

1. For all other items whose make are not mentioned above, the offered make shall be reputed and must have been supplied & commissioned earlier. Also refer note (i) of section-A of the technical specification.

2. Camera and Joystick should be of same make.

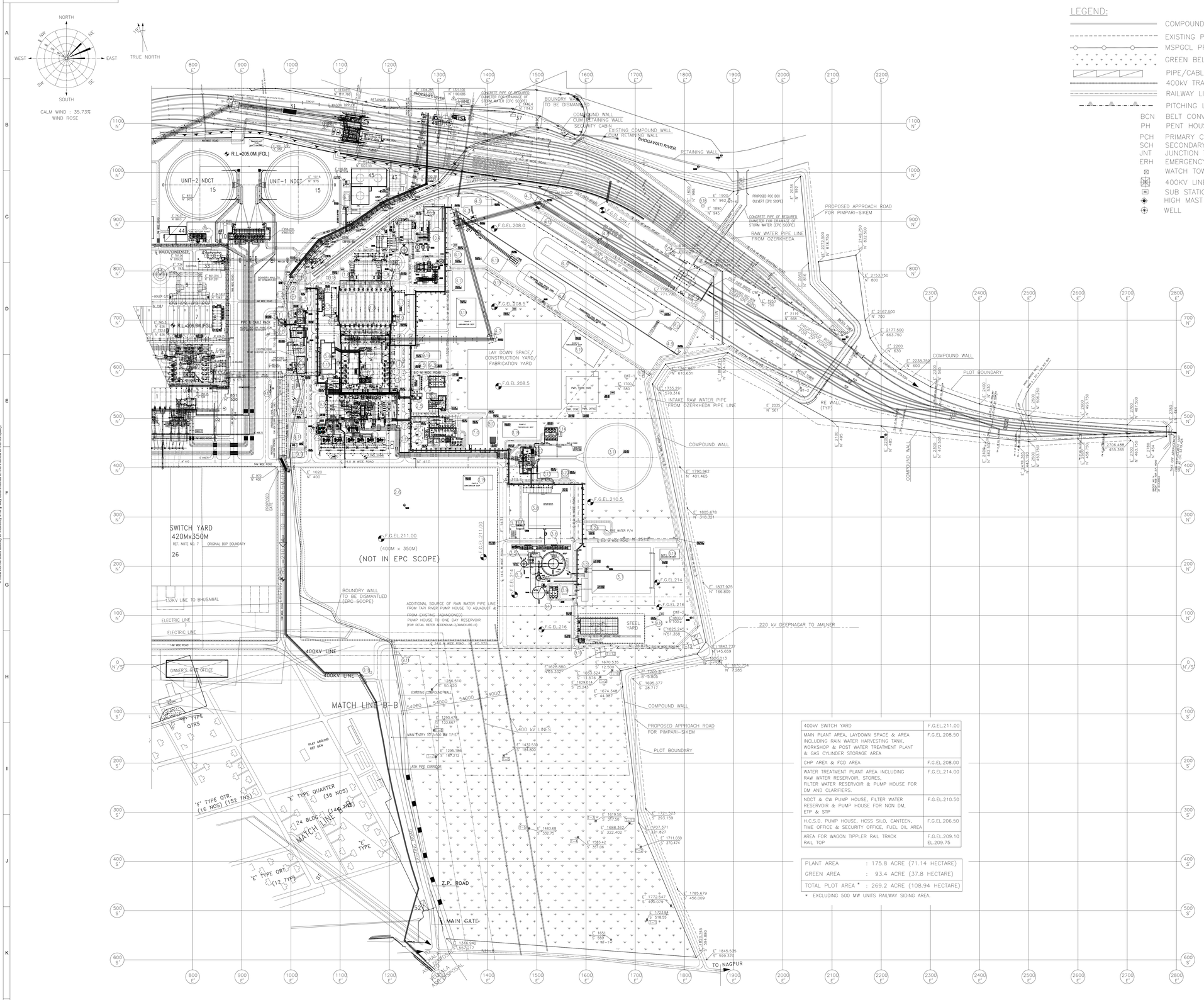
3. If make of offered VMS is not same as camera, then letter of from both camera & VMS OEMs to be submitted for compatibility of VMS & camera/joystick.

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

DRAWING No. PE-DG-415-100-M001

CUSTOMERS DRAWING No.



LEGEND:

- COMPOUND WALL
- EXISTING PLANT BOUNDARY
- MSPGCL PROPERTY FENCING
- GREEN BELT
- PIPE/CABLE RACK
- 400kV TRANSMISSION LINE
- RAILWAY LINE
- PITCHING LINE FOR LEVEL DIFFRENCE
- BCN BELT CONVEYOR
- PH PENT HOUSE
- PCH PRIMARY CRUSHER HOUSE
- SCH SECONDARY CRUSHER HOUSE
- JNT JUNCTION TOWER
- ERH EMERGENCY RECLAIM HOPPER
- WATCH TOWER
- 400KV LINE TOWER
- SUB STATION FOR CONSTRUCTION POWER.
- HIGH MAST (HM)
- WELL

400kV SWITCH YARD	F.G.EL.211.00
MAIN PLANT AREA, LAYDOWN SPACE & AREA INCLUDING RAIN WATER HARVESTING TANK, WORKSHOP & POST WATER TREATMENT PLANT & GAS CYLINDER STORAGE AREA	F.G.EL.208.50
CHP AREA & FGD AREA	F.G.EL.208.00
WATER TREATMENT PLANT AREA INCLUDING RAW WATER RESERVOIR, STORES, FILTER WATER RESERVOIR & PUMP HOUSE FOR DM AND CLARIFIERS.	F.G.EL.214.00
NDCT & CW PUMP HOUSE, FILTER WATER RESERVOIR & PUMP HOUSE FOR NON DM, ETP & STP	F.G.EL.210.50
H.C.S.D. PUMP HOUSE, HCSS SILO, CANTEEN, TIME OFFICE & SECURITY OFFICE, FUEL OIL AREA	F.G.EL.206.50
AREA FOR WAGON TIPPLER RAIL TRACK RAIL TOP	F.G.EL.209.10 EL.209.75

PLANT AREA	: 175.8 ACRE (71.14 HECTARE)
GREEN AREA	: 93.4 ACRE (37.8 HECTARE)
TOTAL PLOT AREA *	: 269.2 ACRE (108.94 HECTARE)

* EXCLUDING 500 MW UNITS RAILWAY SIDING AREA.

FACILITY	DESCRIPTION OF FACILITIES	SIZES (M)
1.0	POWER BLOCK AREA	
1.1	TG BUILDING	139.5x48
1.2	TG CONTROL EQUIPMENT ROOM/PCR	21x33.85
1.3	BOILER	82x53
1.4	FD/PA FANS	2 No Each
1.5	MILLS & BUNKERS	8 Bunkers
1.6	ESP	–
1.7	ESP CONTROL ROOM	52.625x20.6
1.8	ID FANS	–
1.9	CHIMNEY	–
1.10	SPACE FOR FGD (REFER FACILITY No. 10)	–
1.11	MILL REJECT SILO	7.5x5.0
1.12	AIR COMPRESSOR BUILDING/MILL REJECT COMPRESSOR & CONTROL ROOM	14x48
1.13	CONDENSATE STORAGE TANK	ø10
1.14	CONDENSATE STORAGE TANK PUMP HOUSE	28x7.5
1.15	DG BUILDING/AIR WASHER BLDG.	22x16
2.0	ELECTRICAL FACILITIES	
2.1	GENERATOR TRANSFORMER	–
2.2	STATION TRANSFORMER	–
2.3	UNIT TRANSFORMER	–
2.4	UNIT AUXILARY TRANSFORMER	–
2.5	STATION AUXILARY TRANSFORMER	–
2.6	400kV SWITCH YARD (CUSTOMER SCOPE)	400x350
3.0	WATER SYSTEM	
3.1	RAW WATER & FIRE WATER STORAGE TANK	119x92
3.2	RAW WATER PUMP HOUSE	36x6.5
3.2a	FIRE WATER PUMP HOUSE	39x8
3.3	DM WATER CLARIFIER (PT PLANT)	–
3.4	NON-DM WATER CLARIFIER (PT PLANT)	–
3.5	GRAVITY FILTERS(FOR DM WATER) (PT PLANT)	–
3.6	GRAVITY FILTERS(FOR NON DM WATER) (PT PLANT)	–
3.7	FILTER WATER TANK & PUMP HOUSE FOR DM	15x15
3.8	CLARIFIED WATER TANK AND PUMP HOUSE (NON DM)	65x70+56.6x9
3.9	OZONIZATION PLANT(PRE-TREATMENT AREA)	19x16.5
3.10	CHEMICAL HOUSE/ELEC & CONTROL ROOM	–
3.11	N.D. COOLING TOWER	ø132
3.12	CW/ ACW PUMP HOUSE	13.5x28.5
3.13	OZONIZATION & CW TREATMENT AREA (C.W.SYSTEM)	36x10
3.14	CW SIDE STREAM FILTRATION PLANT	27x26.8
3.15	DM WATER STORAGE TANKS(2 NOS.)	ø12
3.16	POST WATER TREATMENT PLANT AREA (DM PLANT)	52x38
3.17	NEUTRALISING PIT	24.4x15
3.18	ACID/ALKALI STORAGE AREA	25x16.1
3.19	RAIN WATER HARVESTING POND	–
3.20	SULPHURIC ACID STORAGE AREA FOR CW TREATMENT	14x14.5
3.21	CHEMICAL LAB (PCRI-HWR)	30X20
3.22	CPU REGENRATION BUILDING	40x38.5
4.0	COAL HANDLING PLANT (ISG SCOPE)	
4.1	WAGON TIPPLER	–
4.2	CONTROL ROOM FOR WAGON TIPPLER	–
4.3	CRUSHER HOUSE	39x30
4.4	CRUSHED COAL STORAGE AREA	270x50x11(2nos.)
4.5	CHP MCC/CONTROL ROOM	62.5x22
4.6	STACKER RECLAIMER	–
4.7	TRANSFER POINTS	12x12
4.8	PENT HOUSE	–
4.9	DRIVE HOUSE FOR STACKER RECLAIMER	–
4.10	COAL PILE RUN-OFF POND	30x40
4.11	CHP MAINTENANCE BUILDING	25x40
4.12	AREA FOR GROUND UNLOADING OF COAL	650 M^2
4.13	CHP PUMP HOUSE	30x25
4.14	WAGON TIPPLER MCC ROOM	–
5.0	ASH HANDLING PLANT (ISG SCOPE)	
5.1	HCSD SILO	–
5.2	H.C.S.D. PUMP HOUSE & CONTROL ROOM	10x30
5.3	DELETED	–
5.4	MAIN FLY ASH SILO	–
5.5	SILO MCC CUM HCSD BFD ROOM	–
5.6	ASH WATER TANK & ASH SLURRY PUMP HOUSE	35x69
5.7	AHP COMPRESSORS & BLOWERS	15x30
5.8	TUBE SETTLER PLANT	20x35
5.9	FLY ASH COLLECTION SUMP-1&2	15x10
5.10	AHP MCC CUM CONTROL ROOM	45x15
6.0	FUEL OIL SYSTEM	
6.1	FUEL OIL TRANSFER PUMP HOUSE	9x25.5
6.2	HFO & LDO DAY TANK AREA	32x20
6.3	HFO & LDO PRESSURIZING PUMP HOUSE	26x15
6.4	ELECTRICAL ANNEXE FOR FOPH	9X25
7.0	EFFLUENT TREATMENT PLANT	56x30
8.0	SEWAGE TREATMENT PLANT	20x10
9.0	NON-PLANT BUILDING	
9.1	SERVICE BUILDING	12x42
9.2	WORKSHOP-DELETED	65x30
9.3	LUBE OIL STORAGE SHED WITH STORAGE YARD	15x15
9.4	FIRE STATION-DELETED	10x25
9.5	GAS CYLINDER STORAGE AREA	15x25
9.6	FOPH FOAM SHED	11.5x8.3
9.7	STORES	75x30
9.8	CANTEEN	17.5x17.5
9.9	TIME OFFICE & SECURITY OFFICE	25x10
9.10	SECURITY OFFICE FOR STORES	10x5
9.11	SECURITY CABIN	10x5
9.12	COAL SAMPLING & PROCESSING ROOM	15x25
9.13	WEIGH BRIDGE FOR DRY ASH SILO	–
9.14	PARKING SHEDS WITH GATE OFFICE	30x50
9.15	PAY LOADER SHED	12x66
9.16	STEEL YARD INCLUDING STORES & WEIGH BRIDGE	135x60
9.17	FIRE WATER BOOSTER PUMP HOUSE	9x6
9.18	AMBIENT AIR QUALITY MONITORING SYSTEM	4x5
9.19	AMMONIA UNLOADING AND STORAGE AREA (FOR SCR)	21x35
10.0	FGD	
10.1	FGD ABSORBER	–
10.2	FGD CONTROL ROOM	–
10.3	GYPSUM STORAGE SHED	–
10.4	GYPSUM DEWATERING BUILDING	–
10.5	WET BALL MILL BUILDING	–

NOTES:

1. ALL DIMENSIONS ARE IN MM AND ALL ELEVATIONS ARE IN METERS.
2. THE GRIDS AND CO-ORDINATES ARE SHOWN IN METERS.
3. BUILDINGS OUTER LINES SHOWN ARE COLUMNS GRID LINES.
4. ALL ELEVATIONS ARE REFERRED TO POWER HOUSE FINISHED GROUND FLOOR ELEVATION ± 0.00M, WHICH CORRESPONDS TO RL.(+)209.0M.
5. HIGH FLOOD LEVEL RL.198.20M
6. PROPOSED RCC BOX CULVERTS SHALL BE AS PER INDIAN RAILWAY STANDARD.
7. RAILWAY LAYOUT IS INDICATIVE AND THE SAME SHALL BE PROVIDED AS PER RAILWAY'S APPROVAL.
8. EXISTING FIRE STATION OF 2x500MW UNITS SHALL BE USED FOR 1x660MW. (CO-ORDINATES OF EXISTING FIRE STATION E'517.0 & N'352.6, SIZE 20.5M×10M)
9. LAYOUT/SIZE OF VARIOUS EQUIPMENTS/FACILITIES IS TENTATIVE ONLY AND SHALL BE FINALIZED DURING DETAIL ENGINEERING.

REFERENCE DRAWINGS:

1. CUSTOMER PLOT PLAN (GENERAL LAYOUT) — PE-189-GA-101-REV.09
2. PLOT PLAN BOUNDARY MARKING — DG/253-NEW-001/REV.0 (189-MAHAGENCO-05/R0)
3. LAYOUT OF INTAKE WATER PIPING SYSTEM — PE-DG-415-100-M049

REV	DATE	ALTD	CHD	APPD	REV	DATE	ALTD	CHD	APPD	REV	DATE	ALTD	CHD	APPD	REV	DATE	ALTD	CHD	APPD
04	10.07.20	AB	AB	PM	03	16.11.19	BS -sd/	AMT-sd/	PM -sd/	02	24.07.18	AK -sd/	AMT-sd/	PM -sd/	01	18.04.18	AK -sd/	AMT-sd/	RP -sd/
	1. PLOT PLAN REVISED AS PER CUSTOMER COMMENTS DTD. 05.12.19. 2. DRAWING IS UPDATED IN GENERAL FOR DETAILED ENGG PROGRESS.					1. PLOT PLAN REVISED AS PER CUSTOMER COMMENTS DTD. 04.09.18. 2. DRAWING IS UPDATED IN GENERAL.					PLOT PLAN REVISED AS PER CUSTOMER OBSERVATION VIDE MAIL DTD:21.06.2018					PLOT PLAN REVISED AS PER CUSTOMER OBSERVATION VIDE MAIL DTD:17.03.2018			

JOB No. 415

STATUS CONTRACT

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CONSULTANT: DEVELOPMENT CONSULTANTS PVT. LTD. CONSULTING ENGINEERS VASHI, NAVI MUMBAI

PROJECT: 1x660 MW BHUSAWAL TPS UNIT-6

CONTRACTOR: BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA

DEPT CODE		NAME	SIGN	DATE
–	DRN	AK	-sd/	19.02.2018
	DESN	AMT	-sd/	19.02.2018
	CHD	RP	-sd/	19.02.2018
	APPD	JJ	-sd/	19.02.2018

TITLE: PLOT PLAN

CUSTOMER PACKAGE CODE: –

SCALE 1:2750

DISCIPLINE: M C E I L

DRAWING No. PE-DG-415-100-M001

SHEET 01 OF 01 REV 04

SIZE-A0

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