



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

Ref: PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92)

Date 24/10/2019

NOTICE INVITING TENDER

NOTE: INTENDING BIDDER TO PARTICIPATE MAY DOWNLOAD FROM WEB SITES

Sealed offers in two part bid system are invited from reputed & experienced bidders (meeting [PRE QUALIFICATION CRITERIA](#) as mentioned in Annexure-1) through E-Procurement Portal <https://bhel.abcprocure.com> only, for the subject job by the undersigned on the behalf of BHARAT HEAVY ELECTRICALS LIMITED as per the tender document. Issue/ forwarding intimation regarding tender to any bidder shall not construe that the bidder is considered to be qualified. Following points relevant to the tender may please be noted and complied with.

1.0 Salient Features of NIT

SL NO	ISSUE	DESCRIPTION
i	TENDER NUMBER	PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019
ii	Broad Scope of job	DESIGN, ENGINEERING, MANUFACTURING, INSPECTION, SUPPLY/ DELIVERY, INSTALLATION, COMMISSIONING, TRIAL RUN, HANDING OVER ETC. OF 'CONTAINERIZED ELECTRICAL ROOM ALONG WITH VENTILATION SYSTEM FOR 4X210 MW UNITS AT NTPC KAHALGAON STPP, BIHAR.
iii	DETAILS OF TENDER DOCUMENT	
a	Volume-IA	General conditions of contract (Supply) <i>Applicable.</i>
B	Volume-IB	General conditions of contract (Service) <i>Applicable.</i>
C	Volume-IC & ID	Special conditions of contract (Supply & Service-Common) <i>Applicable.</i>
D	Volume-IC	Special conditions of contract (Supply) <i>Not Applicable.</i>
E	Volume-ID	Special conditions of contract (Service) <i>Not Applicable.</i>
F	Volume-IE	Forms & Procedures <i>Applicable.</i>
G	Volume-II	Technical Conditions of Contract (TCC) <i>Applicable.</i>
H	Volume-III	Price Schedule (Absolute value) – Rev-0 <i>Applicable.</i>
iv	ISSUE OF TENDER DOCUMENTS	a) Online through e-procurement platform at https://bhel.abcprocure.com. Offers are invited in two-parts only. b) In BHEL website (www.bhel.com & CPP Portal) : For tender view purpose only. Start date of the tender : 24/10/2019 a) <i>Applicable</i> b) <i>Applicable</i>
v	DUE DATE & TIME OF OFFER SUBMISSION	Date: 28/10/2019, Time: 15:00 Hrs. IST The bidder should respond by submitting their offer online in our e-Procurement platform at https://bhel.abcprocure.com only. Offers are invited in two-parts only. Hard copy bid or bids through email/fax shall not be accepted. <i>Applicable.</i>

vi	OPENING OF TENDER	Date: 28/10/2019, Time: 16:00 Hrs. IST Note(s): (1) In case the due date of opening of tender becomes a non-working day, tenders shall be opened on next working day at the same time.	Applicable.
vii	EMD AMOUNT	Not Applicable	Not Applicable
viii	COST OF TENDER	Not Applicable	Not Applicable
ix	LAST DATE FOR SEEKING CLARIFICATION	Date: 25/10/2019, Time: 15:00 Hrs. IST Along with soft version also, addressing to undersigned & to others as per contact address given below	Applicable.
x	SCHEDULE OF PRE BID DISCUSSION (PBD)	Not Applicable (In case BHEL decides to conduct PBD, date, time & venue of PBD will be intimated suitably thru TCN).	Not Applicable
xi	INTEGRITY PACT & DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM)	Not Applicable	Not Applicable
xii	Latest updates	Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted in BHEL webpage (www.bhel.com) ; CPP portal & E-Procurement Site https://bhel.abcprocure.com only. Bidders to keep themselves updated with all such information.	Shall be intimated to bidder

- 2.0 The offer shall be submitted as per the instructions of tender document and as detailed in this NIT. Bidders to note specifically that all pages of tender document, including these NIT pages of this particular tender together with subsequent correspondences shall be submitted by them, duly digitally signed & stamped on each page, as part of offer. **Rates/Price including discounts/rebates, if any, mentioned anywhere/ in any form in the techno-commercial offer other than the Price Bid, shall not be entertained.**
- 3.0 Unless specifically stated otherwise, bidder shall remit cost of tender (non-refundable) and courier charges if applicable, in the form of Demand Draft drawn in favour of Bharat Heavy Electricals Ltd, payable at Kolkata, issuing the Tender, along with techno-commercial offer.
- 4.0 Unless specifically stated otherwise, bidder shall have to deposit EMD through Demand Draft/Pay Order in favour of Bharat Heavy Electricals Ltd, payable at Kolkata. For other details please refer General Conditions of Contract.
- 5.0 **Procedure for Submission of Tenders:** The Tenderers must submit their Tenders as detailed below:
This is an E-tender floated online through our E-Procurement Site <https://bhel.abcprocure.com>. The bidder should respond by submitting their offer online only in our e-Procurement platform at <https://bhel.abcprocure.com>. Offers are invited in two-parts only. No Hard copy bid or bids through email/ fax shall be accepted. Bids are invited in two parts & shall be submitted as described below:

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POWER SECTOR EASTERN REGION, DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

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DOCUMENTS TO BE UPLOADED & MODALITY OF UPLOADING

Sl. No.	Description	Remarks
PART-I A	(TECHNO COMMERCIAL BID)	
	CONTAINING THE FOLLOWING:-	
i.	Covering letter/Offer forwarding letter of Tenderer. (To be attached in relevant Attachment section)	
ii.	Duly filled-in 'No Deviation Certificate' as per prescribed format. (To be attached in relevant Attachment section) Note: a. In case of any deviation, the same should be submitted separately for technical & commercial parts, indicating respective clauses of tender against which deviation is taken by bidder. The list of such deviation shall be attached in relevant attachment section of the e –procurement portal . It shall be specifically noted that deviation recorded elsewhere shall not be entertained. b. BHEL reserves the right to accept/reject the deviations without assigning any reasons, and BHEL decision is final and binding. i). In case of acceptance of the deviations, appropriate loading shall be done by BHEL ii). In case of unacceptable deviations, BHEL reserves the right to reject the tender	
iii.	Supporting documents/ annexures / schedules/ drawing etc as required in line with Pre-Qualification criteria. It shall be specifically noted that all documents as per above shall be attached in relevant attachment section and credential certificates issued by clients shall distinctly bear the name of organization, contact ph no, FAX no, etc.	
iv.	All Amendments/Correspondences/Corrigenda/Clarifications/Changes/ Errata etc pertinent to this NIT. (To be attached in relevant Attachment section)	
v.	Duly filled-in annexures, formats etc as required under this Tender Specification/NIT (To be attached in relevant Attachment section)	
vi.	Notice inviting Tender (NIT) (To be attached in relevant Attachment section)	
vii.	Volume – II : Technical Conditions of Contract / Scope of Work (TCC) (To be attached in relevant Attachment section)	
viii.	Volume – IC & ID : Special conditions of contract (Supply & Service-Common) (To be attached in relevant Attachment section)	
ix.	Volume – IA : General conditions of contract (Supply) (To be attached in relevant Attachment section)	
x.	Volume – IB : General conditions of contract (Service) (To be attached in relevant Attachment section)	
xi.	Volume – IE : Annexures, Formats, etc. (To be attached in relevant Attachment section)	
xii.	Volume–III – (UNPRICED – without disclosing rates/price, but mentioning only 'QUOTED' or 'UNQUOTED' against each item. (To be attached in Unpriced Bid Attachment section)	
xiii.	Any other details preferred by bidder with proper indexing. (To be attached in relevant Attachment section)	

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PART-I B	COST OF TENDER	
	CONTAINING THE FOLLOWING:-	
i.	1. Earnest Money Deposit (EMD) in the form as indicated in this Tender 2. Cost of Tender (Demand Draft or copy of Cash Receipt as the case may be)	1. Not Applicable 2. Not Applicable

PART-II	PRICE BID (TO BE ATTACHED IN PRICE BID ATTACHMENT SECTION)	
	CONTAINING THE FOLLOWING:-	
i	Covering letter/Offer forwarding letter of Tenderer enclosed in Part-I	
ii	Volume III – PRICE BID (Duly Filled in Schedule of Rates – rate/price to be entered in words as well as figures) Any other document uploaded in the price bid, apart from above tender format, shall not be taken into cognizance for evaluation of offer.	

SPECIAL NOTE:

- A) Your offer & documents submitted along with offer shall be digitally signed & stamped in each page by your authorized representative. No overwriting/ correction in tender documents by bidders shall be allowed. However, if correction is unavoidable, the same may be signed by authorized signatory.
- B) The credentials/documents submitted towards compliance of Pre-qualification requirement shall be physically signed by the authorized signatory & stamped before uploading/submission with the offer in the e-procurement portal.
- C) **All documents/ annexures submitted with the offer shall be properly attached in the respective sections.** BHEL shall not be responsible for any missing documents.
- 6.0 No Deviation with respect to tender clauses and no additional clauses/ suggestions/ in Techno-commercial bid/ Price bid shall normally be considered by BHEL. Bidders are requested to positively comply with the same. Offers with deviation are liable for rejection.
- 7.0 BHEL reserves the right to accept or reject any or all Offers without assigning any reasons thereof. BHEL also reserves the right to cancel the Tender wholly or partly without assigning any reason thereof. Also BHEL shall not entertain any correspondence from bidders in this matter (except for the refund of EMD, as applicable). However, BHEL may communicate rejection to the unsuccessful bidder after award of work and acceptance by the successful bidder.
- 8.0 Since the job shall be executed at site, bidders must visit site/ work area and study the job content, facilities available, availability of materials, prevailing site conditions including law & order situation, applicable wage structure, wage rules, etc before quoting for this tender. They may also consult this office before submitting their offers, for any clarifications regarding scope of work, facilities available at sites or on terms and conditions. No additional claim shall be entertained by BHEL in future, on account of non-acquaintance of above.
- 9.0 For any clarification on the tender document, the bidder may seek the same in writing, through e-mail or through **E-Procurement Site <https://bhel.abcprocure.com>**, as per specified format, within the scheduled date for seeking clarification, from the office of the undersigned. BHEL shall not be responsible for receipt of queries after due date of seeking clarification due to any delay. Any clarification / query received after last date for seeking clarification may not be normally entertained by BHEL and no time extension will be given.
- 10.0 BHEL may decide holding of pre-bid discussion [PBD] with all intending bidders as per date indicated in the NIT. The bidder shall ensure participation for the same at the appointed time, date and place as may be decided by BHEL. Bidders shall plan their visit accordingly. The outcome of pre-bid discussion (PBD) shall also form part of tender.

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- 11.0 In case of absence of any queries from bidder(s), their quoted price will be PRESUMED to be final and complete with reference to the tender documents (including Tender change notes (TCNs), clarifications, corrigendum issued by BHEL, if any). Bidders are requested to study the tender documents in detail and prepare their queries/clarifications accordingly. All such queries / clarifications shall be cleared/replied by BHEL. Such clarification letters, corrigendum and/or Tender change notes (TCNs), if issued by BHEL, shall form part of tender document.
- 12.0 In the event of any conflict between requirement of any clause of this specification/ documents/drawings/data sheets etc or requirements of different codes/standards specified, the same to be brought to the knowledge of BHEL in writing for clarification before due date of seeking clarification (whichever is applicable), otherwise, interpretation by BHEL shall prevail. Any typing error/missing pages/ other clerical errors in the tender documents, noticed must be pointed out before pre-bid meeting/submission of offer else BHEL's interpretation shall prevail & binding on you.
- 13.0 Unless specifically mentioned otherwise, bidder's quoted price shall deemed to be in compliance with tender along with TCNs including PBD, if any.
- 14.0 Bidders shall submit Integrity Pact Agreement (If applicable) (Duly signed by authorized signatory who signs in the offer), along with techno - commercial bid. This pact shall be considered as a preliminary qualification for further participation. The names and other details of Independent External Monitor (IEM) for the subject tender is as given at point (xi) of 1 above.
- 15.0 The Bidder has to satisfy the Pre Qualifying Requirements stipulated for this Tender in order to be qualified. The Price Bids of only those bidders will be opened who will be qualified for the subject job on the basis of satisfying the Pre Qualification Criteria specified in this NIT as per Annexure-1 (as applicable), past performance etc. and date of opening of price bids shall be intimated to only such bidders. BHEL reserves the right not to consider offers of parties under HOLD. BHEL's decision in this regard shall be final & binding.
- 16.0 While BHEL reserve the right to open the price bid of the offers in camera, the date & time to open the PRICE BID, tender opening shall be intimated to the bidders in case BHEL decides it to be 'Public opening' and in such a case, **price bid (Volume-III) uploaded in E-Procurement Site <https://bhel.abcprocure.com> will be opened.**
- 17.0 Validity of the offer shall be for **six months** from the latest due date of offer submission (including extension, if any) unless specified otherwise.
- 18.0 **Bidders are required to submit their BEST price as per tender Price Schedule format in e-procurement portal/platform in the form & manner as mentioned in tender.**
- 19.0 BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on www.bhel.com) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

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

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

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

- 20.0 However, if Reverse Auction process is not adopted or Reverse Auction is unsuccessful as defined in the RA rules/procedures, or for whatsoever reason, then the 'PRICE BID' and price impacts (if any), already submitted in e-procurement portal/platform, submitted by the bidder shall be opened for deciding the successful bidder, as per BHEL's standard practice. BHEL's decision in this regard will be final and binding on bidder.
- 21.0 On submission of offer, further consideration will be subject to compliance to tender & qualifying requirement and customer's acceptance, as applicable.
- 22.0 In case the bidder is an "Indian Agent of Foreign Principals", 'Agency agreement has to be submitted along with Bid, detailing the role of the agent along with the terms of payment for agency commission in INR, along with supporting documents.
- 23.0 The bidders shall not enter into any undisclosed M.O.U. or any understanding amongst themselves with respect to tender.
- 24.0 The bidder shall submit documents in support of possession of 'Qualifying Requirements' duly self-certified and stamped/ digitally signed (as applicable) by the authorized signatory, indexed and properly linked in the format for PQR. In case BHEL requires any other documents/proofs, these shall be submitted immediately.
- 25.0 The bidder may have to produce original document for verification if so decided by BHEL.
- 26.0 The offers of the bidders who are on the banned list as also the offer of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL Website (www.bhel.com).

i. Integrity commitment, performance of the contract and punitive action thereof:

a) 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(s) in a transparent and fair manner, and with equity.

b) Commitment by Bidder/ Supplier/ Contractor:

b.i) The bidder/ supplier/ contractor commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India.

b.ii) The bidder/ supplier/ contractor 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 relevant guidelines issued from time to time by Govt. of India/ BHEL.

b.iii) The bidder/ supplier/ contractor will perform/ execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/ money/ reputation, to BHEL.

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If any bidder/ supplier/ contractor during pre-tendering/ tendering/ post tendering/ award/ execution/ post-execution stage includes in mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal code, 1860 or any other law in force in India, then, action may be taken against such bidder/ supplier/ contractor as per extant guidelines of the company available on www.bhel.com and/ or under applicable legal provisions.

- 27.0 Corrigendum/ corrigendum/ extension/ addendum, if any, pertaining to this tender will be published in the web sites CPP Portal, www.bhel.com, <https://bhel.abcpurchase.com> etc. or will be issued directly to you, as applicable.
- 28.0 Unsolicited discounts received after opening of techno commercial bid shall not be considered for evaluation. However, if the party who has submitted the unsolicited discount/rebate becomes the L-1 party, then the awarded price shall be after considering the discount.
- 29.0 It may please be noted that applicable Guidelines/Rules in respect of Suspension of business dealings, Vendor Evaluation formats, quality, safety and HSE guidelines, standard T&P hire charges of BHEL etc. may undergo change from time to time and the latest one shall be followed. Latest applicable "Guidelines for Vendor Evaluation" is web based, quality, safety & HSE"; standard T&P hire charges shall be available at site and shall be given to the successful vendors/ subcontractors during execution.
- 30.0 Bidders are requested to note that the accepted / agreed tender terms (technical, commercial or on Reverse Auction) in their original offer can not be altered / withdrawn by their own during the processing of tender.
- 31.0 The Bidder along with its associate/collaborators/sub-contractors/sub-vendors/consultants/service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice.
- 32.0 Suspension of Business dealings with Suppliers/ Contractors: BHEL reserves the right to take action against contractors who fail to perform or indulge in malpractices, by suspending business dealings with them as detailed in Annexure-A.
- 33.0 "For this procurement, Public Procurement (Preference to Make in India), Order 2017 dated 15/06/2017, 28/05/2018, 29/05/2019 and subsequent Orders issued by respective Nodal Ministry shall be applicable even if issued after issue of this NIT but before finalization of contract/PO/WO against this NIT. In the event of any Nodal Ministry prescribing higher or lower percentage of purchase preference and/ or local content in respect of this procurement, same shall be applicable".
- 34.0 Indian suppliers, falling under the purview of Public procurement (preference to make in India) order 2017 by Govt. of India, vide order no. P-45021/2/2017-B.E.-II dated 15th June-2017, & all subsequent clarifications can avail the intended benefits, as per provisions of the order subject to minimum local content shall be 50%, margin of Purchase preference shall be 20% & modality of preference to Make in India shall be as per aforesaid order.

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

- 35.0
- Cost of Tender: Not Applicable
 - Earnest Money Deposit (EMD): Not Applicable
 - Security Deposit (SD): Not Applicable
 - Performance Bank Guarantee (PBG): Not Applicable
 - Performance Bond: Not Applicable
 - Additional Security Deposit: Not Applicable

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- 36.0 "MSE suppliers can avail the intended benefits in respect of the procurements related to the Goods and Services only (Definition of Goods and Services as enumerated by Govt. of India vide Office Memorandum F. No. 21(8)/2011-MA dtd. 09/11/2016 office of AS & DC, MSME) if they submit along with the offer, attested copies of either EM II certificate having deemed validity (five years from the date of issue of acknowledgement in EM II) /Udyog Aadhar Memorandum (UAM) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed at Annexure-B where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer."

Any Bidder falling under MSME category, shall furnish the following details & submit documentary evidence/Govt. Certificate etc. in support of the same along with their techno-commercial offer: -

Type under MSME	SC/ST owned	Women owned	Others
Micro			
Small			
Medium			

Note: - If the bidder does not furnish the above, offer shall be processed construing that the bidder is not falling under MSME category.

- 37.0 Annexure-B – Terms & conditions of Reverse Auction is enclosed herewith.
- 38.0 Annexure-E – State wise GST Registration nos. is enclosed herewith.
- 39.0 Duly filled & signed Annexure- CPP/I to be submitted by bidders along with their techno-commercial offer.
- 40.0 **Integrity Pact (IP) – Not Applicable**
- 41.0 **Rights of BHEL:**
- 41.1 To withdraw any portion of work and/or to restrict / alter the quantum of work as indicated in the contract during the progress of work and get it done through other agency and/or by departmental labour to suit BHEL's commitment to its customer or in case BHEL decides to advance the date of completion due to other emergency reasons / BHEL's obligation to its customer.
- 41.2 To terminate the contract or withdraw portion of work and get it done through other agency, at the risk and cost of the contractor after due notice of a period of 14 days' by BHEL in any of the following cases:
- Contractor's poor progress of the work vis-à-vis execution timeline as stipulated in the Contract, backlog attributable to contractor including unexecuted portion of work does not appear to be executable within balance available (#) period considering its performance of execution.
 - Withdrawal from or abandonment of the work by contractor before completion of the work as per contract.
 - Non-completion of work by the Contractor within scheduled completion period as per Contract or as extended from time to time, for the reasons attributable to the contractor.
 - Termination of Contract on account of any other reason (s) attributable to Contractor.
 - Assignment, transfer, subletting of Contract without BHEL's written permission.
 - Non-compliance to any contractual condition or any other default attributable to Contractor.

(#) In-case inputs from BHEL/Customer are likely to be delayed or are actually delayed, this delay may also be taken into account while considering balance period available for execution of Contract.

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Risk & Cost Amount against Balance Work:

Risk & Cost amount against balance work shall be calculated as follows:

Risk & Cost Amount= $[(A-B) + (A \times H/100)]$

Where,

A= Value of Balance scope of Work (*) as per rates of new contract

B= Value of Balance scope of Work (*) as per rates of old contract being paid to the contractor at the time of termination of contract i.e. inclusive of PVC & ORC, if any.

H = Overhead Factor to be taken as 5

In case (A-B) is less than 0 (zero), value of (A-B) shall be taken as 0 (zero).

(*) Balance scope of work (in case of termination of contract):

Difference of Contract Quantities and Executed Quantities as on the date of issue of Letter for 'Termination of Contract', shall be taken as balance scope of Work for calculating risk & cost amount. Contract quantities are the quantities as per original contract. If, Contract has been amended, quantities as per amended Contract shall be considered as Contract Quantities.

Items for which total quantities to be executed have exceeded the Contract Quantities based on drawings issued to contractor from time to time till issue of Termination letter, then for these items total Quantities as per issued drawings would be deemed to be contract quantities.

Substitute/ extra items whose rates have already been approved would form part of contract quantities for this purpose. Substitute/ extra items which have been executed but rates have not been approved, would also form part of contract quantities for this purpose and rates of such items shall be determined in line with contractual provisions.

However, increase in quantities on account of additional scope in new tender shall not be considered for this purpose.

NOTE: In-case portion of work is being withdrawn at risk & cost of contractor instead of termination of contract, contract quantities pertaining to portion of work withdrawn shall be considered as 'Balance scope of work' for calculating Risk & Cost amount.

LD against delay in executed work in case of Termination of Contract:

LD against delay in executed work shall be calculated in line with LD clause as per GCC/SCC/TCC/Special note/any other annexure of tender document (in compliance with order of precedence), for the delay attributable to contractor. For limiting the maximum value of LD, contract value shall be taken as Executed Value of work till termination of contract.

Method for calculation of "LD against delay in executed work in case of termination of contract" is given below.

- i) Let the time period from scheduled date of start of work till termination of contract excluding the period of Hold (if any) not attributable to contractor = T1
- ii) Let the value of executed work till the time of termination of contract= X
- iii) Let the Total Executable Value of work for which inputs/fronts were made available to contractor and were planned for execution till termination of contract = Y
- iv) Delay in executed work attributable to contractor i.e. $T2 = [1 - (X/Y)] \times T1$
- v) LD shall be calculated in line with LD clause [as per GCC/SCC/TCC/Special note/any other annexure of tender document (in compliance with order of precedence)] of the Contract for the delay attributable to contractor taking "X" as Contract Value and "T2" as period of delay attributable to contractor.

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41.3 Recoveries arising out of Risk & Cost and LD or any other recoveries due from Contractor

Following sequence shall be applicable for recoveries from contractor:

- a) Dues available in the form of Bills payable to contractor, SD, BGs against the same contract.
- b) Demand notice for deposit of balance recovery amount shall be sent to contractor, if funds are insufficient to effect complete recovery against dues indicated in (a) above.
- c) If contractor fails to deposit the balance amount to be recovered within the period as prescribed in demand notice, following action shall be taken for balance recovery:
 - i) Dues payable to contractor against other contracts in the same Region shall be considered for recovery.
 - ii) If recovery cannot be made out of dues payable to the contractor as above, balance amount to be recovered, shall be informed to other Regions/Units for making recovery from the Unpaid Bills/Running Bills/SD/BGs/Final Bills of contractor.
 - iii) In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against contractor.

41.4 To terminate the contract or to restrict the quantum of work and pay for the portion of work executed in case BHEL's contract with their customers are terminated for any reason.

42.0 ARBITRATION & CONCILIATION:**42.1 ARBITRATION:**

42.1.1 Except as provided elsewhere in this Contract, in case Parties are unable to reach amicable settlement (whether by Conciliation to be conducted as provided in Clause 2.14.2 herein below or otherwise) in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract (hereinafter referred to as the 'Dispute'), then, either Party may, commence arbitration in respect of such Dispute by issuance of a notice in terms of section 21 of the Arbitration & Conciliation Act, 1996 (hereinafter referred to as the 'Notice'). The Notice shall contain the particulars of all claims to be referred to arbitration in sufficient detail and shall also indicate the monetary amount of such claim. The arbitration shall be conducted by a sole arbitrator to be appointed by the Head of the BHEL Power Sector Region issuing the Contract within 60 days of receipt of the complete Notice. The language of arbitration shall be English.

The Arbitrator shall pass a reasoned award.

Subject as aforesaid, the provisions of Arbitration and Conciliation Act 1996 (India) or statutory modifications or re-enactments thereof and the rules made thereunder as in force from time to time shall apply to the arbitration proceedings under this clause. The seat of arbitration shall be Kolkata (the place from where the contract is Issued). The Contract shall be governed by and be construed as per provisions of the laws of India. Subject to this provision 42.1.1 regarding ARBITRATION, the principal civil court exercising ordinary civil jurisdiction over the area where the seat of arbitration is located shall have exclusive jurisdiction over any DISPUTE to the exclusion of any other court.

42.1.2 In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:

In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/ Port Trusts inter se and also between CPSEs and Government Departments/Organizations (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD (Administrative Mechanism for Resolution of CPSEs Disputes) as mentioned in DPE OM No. 4(1)/2013-DPE(GM)/FTS-1835 dated 22-05-2018 as amended from time to time.

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- 42.1.3 The cost of arbitration shall initially be borne equally by the Parties subject to the final allocation thereof as per the award/order passed by the Arbitrator.
- 42.1.4 Notwithstanding the existence of any dispute or differences and/or reference for the arbitration, the Contractor shall proceed with and continue without hindrance the performance of its obligations under this Contract with due diligence and expedition in a professional manner unless the dispute inter-alia relates to cancellation, termination or short-closure of the Contract by BHEL.

42.2 **CONCILIATION:**

If at any time (whether before, during or after the arbitral or judicial proceedings), any Disputes (which term shall mean and include any dispute, difference, question or disagreement arising in connection with construction, meaning, operation effect, interpretation or breach of the agreement, contract), which the Parties are unable to settle mutually, arise inter-se the Parties, the same may, be referred by either party to Conciliation to be conducted through Independent Experts Committee (IEC) to be appointed by competent authority of BHEL from the BHEL Panel of Conciliators.

Notes:

1. No serving or a retired employee of BHEL/Administrative Ministry of BHEL shall be included in the BHEL Panel of Conciliators.
2. Any other person(s) can be appointed as Conciliator(s) who is/are mutually agreeable to both the parties from outside the BHEL Panel of Conciliators.

The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in Procedure 2.3 : "Procedure for conduct of conciliation proceedings" (as available in www.bhel.com). The Procedure 2.3: "Procedure for conduct of conciliation proceedings" (as available in www.bhel.com) together with its Formats (as available in www.bhel.com) will be treated as if the same is part and parcel hereof and shall be as effectual as if set out herein in this GCC.

The Contractor hereby agrees that BHEL may make any amendments or modifications to the provisions stipulated in the Procedure 2.3 : "Procedure for conduct of conciliation proceedings" (as available in www.bhel.com) from time to time and confirms that it shall be bound by such amended or modified provisions of the Procedure 2.3 : "Procedure for conduct of conciliation proceedings" (as available in www.bhel.com) with effect from the date as intimated by BHEL to it.

42.3 **NO INTEREST PAYABLE TO CONTRACTOR:**

Notwithstanding anything to the contrary contained in any other document comprising in the Contract, no interest shall be payable by BHEL to Contractor on any moneys or balances including but not limited to the Security Deposit, EMD, Retention Money, RA Bills or the Final Bill, or any amount withheld and/or appropriated by BHEL etc., which becomes or as the case may be, is adjudged to be due from BHEL to Contractor whether under the Contract or otherwise.

- 43.0 It may please be noted that 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.

All overwriting/ cutting, etc. will be numbered by bid opening officials and announced during bid opening.

44.0 Order of Precedence

In the event of any ambiguity or conflict between the Tender Documents, the order of precedence shall be in the order below:

- Amendments/Clarifications/Corrigenda/Errata etc issued in respect of the tender documents by BHEL
- Notice Inviting Tender (NIT)
- Price Bid/Schedule – Volume-III
- Technical Conditions of Contract (TCC) – Volume-II
- Special conditions of contract (Supply & Service- Common) – Volume- IC & ID
- General conditions of contract (Supply) – Volume- IA & General conditions of contract (Service) – Volume- IB
- Forms and Procedures – Volume-IE

for BHARAT HEAVY ELECTRICALS LTD.

ABHIJIT DE

Dy. Manager (Purchase)

Digitally signed by ABHIJIT DE
DN: c=IN, o=BHARAT HEAVY ELECTRICALS LIMITED,
postalCode=700091, st=West Bengal,
2.5.4.20=c6270d8a727751827685f1e5a8bd57cea1e7e5
e38a754d018da9dd82d4629,
serialNumber=98086400111de9253be8817ab79c51dcdd
263452746e2319e1f1a464c353746, cn=ABHIJIT DE
Date: 2019.10.24 14:38:17 +0530'

Agency	Contact details
BHEL, PSER, Kolkata	Address BHARAT HEAVY ELECTRICALS LIMITED, POWER SECTOR – EASTERN REGION 2ND FLOOR, BLOCK-DJ, PLOT- 9/1, SECTOR, SALT LAKE CITY, KOLKATA – 700 091
	Phone no. 033-23398222, 23398220, 23211690
	FAX no. 033-23211960
	E-mail ID rajabali@bhel.in , abhijitd@bhel.in , sukhen@bhel.in
M/s E-PROCUREMENT TECHNOLOGIES LIMITED	For E-PROCUREMENT ASSISTANCE & TRAINING, M/s E-PROCUREMENT TECHNOLOGIES LIMITED HELPDESK PERSONS AS PER FOLLOWING: - - Mr. Swapnil Hamilton, Support Executive, Ph: +91 7968136867, e-mail ID: swapnil.h@eptl.in - Ms. Himanshi Kumari, Support Executive, Ph: +91 (79)68136809, e-mail ID: himanshi.k@eptl.in - Mr. Ankur Bhatt, Support Executive, Ph: +91 (79)68136823, e-mail ID: ankur.bhatt@eptl.in - Mr. Prashant Rajyaguru, Asst. Manager - Implementation & Support, Ph: +91 (79)68136872 / 08160087732 / 09016859416, e-mail ID: prashant@eptl.in

Enclosure:

- Annexure-1: Pre-Qualification Criteria.
- Annexure-2: Format for No Deviation Certificate.
- Annexure-3: Format for seeking clarification.
- Annexure-4: Check List.
- Annexure-A: Suspension of Business dealings with Suppliers/ Contractors.
- Annexure-B: Terms & conditions of Reverse Auction.
- Annexure-C: CA certificate Format.
- Annexure-E: State wise GST Registration nos.
- Annexure-CPP-GST/I: State wise GST Registration nos.
- Other Tender documents as per this NIT.

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ANNEXURE – 1**PRE QUALIFICATION CRITERIA**

JOB	DESIGN, ENGINEERING, MANUFACTURING, INSPECTION, SUPPLY/ DELIVERY, INSTALLATION, COMMISSIONING, TRIAL RUN, HANDING OVER ETC. OF 'CONTAINERIZED ELECTRICAL ROOM ALONG WITH VENTILATION SYSTEM FOR 4X210 MW UNITS AT NTPC KAHALGAON STPP, BIHAR
TENDER NO	PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

SL NO	CRITERIA
	FINANCIAL
1.0	
(a)	BIDDER SHOULD HAVE AVERAGE ANNUAL TURNOVER OF MINIMUM Rs. 22.50 LAKHS DURING LAST 3 (THREE) FINANCIAL YEARS, ENDING ON 31-03-2019.
(b)	AUDITED BALANCE SHEET AND PROFIT & LOSS ACCOUNT OF THE COMPANY FOR LAST 3 (THREE) FINANCIAL YEARS, ENDING ON 31-03-2019 NEED TO BE SUBMITTED IN SUPPORT OF ABOVE.
(c)	IN CASE AUDITED BALANCE SHEET AND PROFIT & LOSS ACCOUNT HAS NOT BEEN SUBMITTED FOR ALL THREE YEARS INDICATED ABOVE (AS PER 1(b) above) THEN APPLICABLE FINANCIAL AUDITED STATEMENTS SUBMITTED BY THE BIDDER AGAINST THE REQUISITE THREE YEARS WILL BE AVERAGED FOR THREE YEARS.
(d)	IF FINANCIAL STATEMENTS ARE NOT REQUIRED TO BE AUDITED STATUTORILY, THEN INSTEAD OF AUDITED FINANCIAL STATEMENTS, FINANCIAL STATEMENTS ARE REQUIRED TO BE CERTIFIED BY CHARTERED ACCOUNTANT.
	TECHNICAL
2.0	THE BIDDER SHOULD HAVE SUPPLIED CONTAINERISED ELECTRICAL HOUSE (E-HOUSE)/ CONTAINERISED HOUSE WITHIN LAST THREE (03) YEARS AS ON LATEST DUE DATE OF OFFER SUBMISSION NECESSARY SUPPORTING DOCUMENTS NEED TO BE SUBMITTED BY BIDDER FOR MEETING THE ABOVE QUALIFYING CRITERION.
3.0	BIDDER SHOULD HAVE VALID PAN RELEVANT SUPPORTING DOCUMENTS SHALL BE SUBMITTED.
4.0	NO CONSORTIUM / JV BIDDING IS ALLOWED FOR THIS TENDER.

NOTE	
A	AFTER SATISFACTORY FULFILLMENT OF ALL THE ABOVE CRITERIA, OFFER SHALL BE CONSIDERED FOR FURTHER EVALUATION AS PER NIT AND ALL OTHER TERMS OF THE TENDER
B	BIDDER SHALL SUBMIT ABOVE PRE-QUALIFICATION CRITERIA FORMAT, DULY FILLED-IN, SPECIFYING RESPECTIVE ANNEXURE NUMBER AGAINST EACH CRITERIA AND FURNISH RELEVANT DOCUMENT IN THE RESPECTIVE ANNEXURES IN THEIR OFFER.
C	BIDDER MUST NOT BE UNDER BANKRUPTCY CODE PROCEEDINGS (IBC) BY NCLT OR UNDER LIQUIDATION / BIFR, WHICH WILL RENDER HIM INELIGIBLE FOR PARTICIPATION IN THIS TENDER, AND SHALL SUBMIT UNDERTAKING TO THIS EFFECT.

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ANNEXURE - 2**FORMAT FOR NO DEVIATION CERTIFICATE**
(To be submitted in the bidder's letter head)

To,
BHARAT HEAVY ELECTRICALS LIMITED,
Power Sector - Eastern Region,
Plot no 9/1, DJ Block, Sector – II, Salt Lake City,
Kolkata – 700 091

SUB	NO DEVIATION CERTIFICATE.	
JOB	DESIGN, ENGINEERING, MANUFACTURING, INSPECTION, SUPPLY/ DELIVERY, INSTALLATION, COMMISSIONING, TRIAL RUN, HANDING OVER ETC. OF 'CONTAINERIZED ELECTRICAL ROOM ALONG WITH VENTILATION SYSTEM FOR 4X210 MW UNITS AT NTPC KAHALGAON STPP, BIHAR.	
REF	1.0	TENDER NO. PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019
	2.0	ALL OTHER PERTINENT ISSUES TILL DATE.

Dear Sir/Madam,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ issued by you and in case of such observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact (if applicable) and acceptance to reverse auctioning process.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted/uploaded offer/documents in accordance with tender instructions with acceptance of the terms & conditions of the tender by us and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized
representative of the bidder)

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ANNEXURE - 3**FORMAT FOR SEEKING CLARIFICATION**

JOB	DESIGN, ENGINEERING, MANUFACTURING, INSPECTION, SUPPLY/ DELIVERY, INSTALLATION, COMMISSIONING, TRIAL RUN, HANDING OVER ETC. OF 'CONTAINERIZED ELECTRICAL ROOM ALONG WITH VENTILATION SYSTEM FOR 4X210 MW UNITS AT NTPC KAHALGAON STPP, BIHAR.
TENDER NO.	PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

Sl no	Reference clause of tender document	Existing provision	Bidder's query	BHEL's clarification

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ANNEXURE - 4**CHECK LIST****NOTE:- Tenderers are required to fill in the following details and no column should be left blank**

1	Name and Address of the Tenderer		
2	Details about type of the Firm/Company		
3.a	Details of Contact person for this Tender	Name : Mr/Ms Designation: Telephone No: Mobile No: Email ID: Fax No:	
3.b	Details of alternate Contact person for this Tender	Name : Mr/Ms Designation: Telephone No: Mobile No: Email ID: Fax No:	
4	EMD DETAILS	DD No: Date : Bank : Amount: <u>Please tick (✓) whichever applicable:-</u> ONE TIME EMD / ONLY FOR THIS TENDER	
5	Validity of Offer	TO BE VALID FOR SIX MONTHS FROM DUE DATE	
		APPLICABILITY(BY BHEL)	ENCLOSED BY BIDDER
6	Whether the format for compliance with PRE QUALIFICATION CRITERIA (ANNEXURE-I) is understood and filled with proper supporting documents referenced in the specified format	Applicable	YES / NO
7	Audited profit and Loss Account for the last three years	Applicable/Not Applicable	YES/NO
8	Copy of PAN Card	Applicable/Not Applicable	YES/NO
9	Whether all pages of the Tender documents including annexures, appendices etc are read understood and signed	Applicable/Not Applicable	YES/NO
10	Integrity Pact	Applicable/Not Applicable	YES/NO
11	Declaration by Authorised Signatory	Applicable/Not Applicable	YES/NO
12	No Deviation Certificate	Applicable/Not Applicable	YES/NO
13	Declaration confirming knowledge about Site Conditions	Applicable/Not Applicable	YES/NO
14	Declaration for relation in BHEL	Applicable/Not Applicable	YES/NO
15	Non Disclosure Certificate	Applicable/Not Applicable	YES/NO
16	Bank Account Details for E-Payment	Applicable/Not Applicable	YES/NO
17	Capacity Evaluation of Bidder for current Tender	Applicable/Not Applicable	YES/NO
18	Tie Ups/Consortium Agreement are submitted as per format	Applicable/Not Applicable	YES/NO
19	Power of Attorney for Submission of Tender/Signing Contract Agreement	Applicable/Not Applicable	YES/NO
20	Analysis of Unit rates	Applicable/Not Applicable	YES/NO
21	Annexure-D – Exim bank Undertaking.	Applicable/Not Applicable	YES/NO

NOTE: STRIKE OFF 'YES' OR 'NO', AS APPLICABLE. TENDER NOT ACCOMPANIED BY THE PRESCRIBED **ABOVE APPLICABLE DOCUMENTS** ARE LIABLE TO BE SUMMARILY REJECTED.

DATE :

AUTHORISED SIGNATORY
(With Name, Designation and Company seal)

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय) POWER SECTOR EASTERN REGION, DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091 फैक्स/Fax : +91 33 23211960 फोन/Phone : बोर्ड/EPABX : +91 33 23398000, Dir: +91 33 23211690

ANNEXURE-A

1.0	<u>Suspension of Business dealings with Suppliers/ Contractors</u>
1.1	BHEL reserves the right to take action against Suppliers/ Contractors who fail to perform or indulge in malpractices, by suspending business dealings with them.
1.2	Suspension of business dealings with Suppliers/ Contractors could be in the form of following: -- a) Hold within the unit for specific item(s)/ material category(ies)/ type of work(s) for one year. b) Hold within the unit for all item(s)/ material category(ies)/ type of work(s) for two years c) Banning across BHEL for all items/ material category(ies)/ type of work(s) for three years. The Supplier may be either put on hold or banned, as detailed hereinafter on the basis of one or more of the category wise reasons as enumerated hereunder.
1.3	1.3.1 Hold within the unit for a specific item(s)/ material category(ies)/ type of work(s) shall be imposed in the following cases, if i) In the last three consecutive supplies of a specific material category, average quality rating, as provided in the supplier performance rating (SPR) as per SEARP, falls below 80% of the quality weightage. This is irrespective of supplies against PO(s) having single/ multiple delivery schedules. Note: Not applicable in cases for erection works of Power Sector Regions, where separate guidelines for evaluation of capacity of bidders is being followed. ii) Two consecutive delays, for reasons of delay attributed to the Supplier, in execution of the contracts where delay occurred is such that a) prescribed maximum LD time limits of the contracts is exceeded or b) delay period has equaled/ exceeded half the original delivery period specified in the contracts whichever among the above is earlier. iii) a) Overall SPR (Supplier Performance Rating) in that particular Unit in line with SEARP falls below 60% of the specific material category. b) Bids of contractors (in PS-MSX portal) shall not be considered (if average score of last six months falls 60% or below as per guidelines for evaluation of capacity of bidders formula).
1.3.1	

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1.3.2	Hold within the unit for all item(s)/material category(ies)/ type of work(s) shall be put in the following cases, if i) Supplier tampers with tendering procedure affecting ordering process. ii) Supplier has misused BHEL documents/ drawings/ technical information or has breached the confidentiality agreement with BHEL. iii) after placement of order, Supplier fails to execute the contract. iv) within warranty period as per contract, Supplier continues to supply low/ less/ non-performing equipment/ services, repetitive failures, remains non-responsive. v) Wherever risk purchase clause (amounting to more than 5% of contract value) has been invoked.
1.4	Banning across BHEL shall be imposed in following cases, if
1.4.1	i) After price bid opening but before placement of order, Supplier withdraws his offer or varies it in any manner within the validity period. ii) "Supplier is found to be responsible for submitting fake/ false/ forged documents, certificates, or information or misrepresentation/ willful suppression of facts, or has resorted to unethical, illegal means or has forged BHEL documents, certificates etc. for securing business, meeting PQR or for enlistment in BHEL or with customers other than BHEL." iii) In spite of warnings, the Supplier persistently violates or circumvents the provisions of labour laws/ regulations/ rules or other statutory requirements. iv) Supplier is found to be involved in cartel formation or in any other act so as to influence the bidding process or influence the price. v) The Supplier has indulged in malpractices or misconduct such as bribery, corruption and fraud, pilferage, coercion etc. vi) The Supplier is found guilty by any court of law for criminal activity/ offences involving moral turpitude in relation to business dealings. vii) Supplier is found to have obtained any internal information/ documentation of BHEL by unauthorized means. viii) The foreign Principals along with the representing Agent shall be banned together if information submitted by them about their precise relationship, commission/ remuneration etc. payable/ receivable and other particulars as asked by BHEL, as per the extant guidelines regarding dealing with Agents of Foreign Suppliers is found false/ incorrect, at any stage. ix) Supplier has substituted, damaged, failed to return, or unauthorizedly disposed off free issue materials/ tools etc. of BHEL.
1.4.2	A Supplier can also be banned with the approval of Director (E, R&D) provided a direction to this effect has been received from the administrative ministry of the Government.

Note: Above shall be applicable along with **Guidelines for "Suspension of Business dealings with Suppliers/ Contractors"** available in BHEL website <http://www.bhel.com>. These shall form part of tender documents.

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Annexure -B**Terms & Conditions of Reverse Auction**

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

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit 'online sealed bid' in the Reverse Auction. Non-submission of 'online sealed bid' by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
3. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
4. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
5. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
6. Bidders have to fax the Process Compliance form (**Annexure-III of Business Rule Document of Reverse Auction – shall be shared to bidders along with intimation of RA schedule**) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
7. In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, GST and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
8. Reverse auction will be conducted on scheduled date & time.
9. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.
10. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (**as per Annexure-IV of Business Rule Document of Reverse Auction**) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL's standard practice.
12. Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the 'Business Rules of Reverse Auction', which will be communicated before the Reverse Auction.
13. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant BHEL guidelines, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
15. In case BHEL decides to go for reverse auction, the H1 bidder (whose quote is highest in online sealed bid) will not be allowed to participate in further RA process provided minimum three bidders are left after removal of H1 bidder. In case of tie for H1 bid (identical online sealed bids), 15 minutes' additional time shall be provided and all the participating bidders shall be informed by mail/message on bidding screen to enable bidders submit revised online sealed bids so as to break the tie.
16. In case H1 bidder happen to be MSE and was removed from further bidding but is within L1 + 15% band, then this bid shall also be considered and to be processed in line with 'Public Procurement Policy for Micro & Small Enterprises (MSEs) order, 2012'.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : +91 33 23211960

फोन/Phone : बोर्ड/EPABX : +91 33 23398000, Dir: +91 33 23211690

Annexure -C**Certificate by Chartered Accountant on letter head**

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

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

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

(Strike off whichever is not applicable)

The above investment of Rs.....Lacs is within permissible limit of Rs.....Lacs 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

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

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ANNEXURE-E

<u>State wise GST Registration nos.</u>		
Sl. No.	State / UT	GST Reg. No.
1	Andhra Pradesh	37AAACB4146P7Z8
2	Assam	18AAACB4146P1ZE
3	Bihar	10AAACB4146P1ZU
4	Chandigarh	04AAACB4146P1ZN
5	Chattishgarh	22AAACB4146P1ZP
6	Daman & Diu	25AAACB4146P1ZJ
7	Delhi	07AAACB4146P1ZH
8	Gujarat	24AAACB4146P1ZL
9	Haryana	06AAACB4146P1ZJ
10	HP	02AAACB4146P1ZR
11	Jharkhand	20AAACB4146P5ZP
12	Karnataka	29AAACB4146P1ZB
13	Kerala	32AAACB4146P1ZO
14	Maharashtra	27AAACB4146P1ZF
15	MP	23AAACB4146P1ZN
16	Punjab	03AAACB4146P2ZO
17	Rajasthan	08AAACB4146P1ZF
18	Tamil Nadu	33AAACB4146P2ZL
19	Telangana	36AAACB4146P1ZG
20	Tripura	16AAACB4146P1ZI
21	UP	09AAACB4146P2ZC
22	Uttarakhand	05AAACB4146P1ZL
23	West Bangal	19AAACB4146P1ZC
24	Mizoram	15AAACB4146P1ZK
25	Orissa	21AAACB4146P1ZR
26	Arunachal Pradesh	12AAACB4146P1ZQ

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

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[Annexure- CPP-GST/II](#)**Please arrange to submit this filled-up format along with Tender**

Name of the Company	
Address of Company*	
Company Registration Number*	
Name of Partners / Directors	
ALL THE STATES WHERE BIDDER HAS A PLACE OF BUSINESS*	
ALL ADDRESS OF VENDOR MENTIONING THEIR PIN AS PER THE LATEST GST REGISTRATION*	
GSTN OF ALL THE ABOVE NOTED PLACES OF VENDOR*	
Bidder Type: Indian/ Foreign*	
City*	
State*	
Country*	
Postal Code*	
PAN/TAN Number*	
Company's Establishment Year	
Company's Nature of Business*	
Company's Legal Status* {limited /undertaking/joint venture/partnership/other}	
Company Category* {micro unit as per MSME/small unit as per MSME/medium unit as per MSME/Ancillary unit/project affected person of this company/ssi/ other}	
Enter Company's Contact Person Details	
Title(Mr. / Mrs. / Ms. / Dr. / Shri)*	
Contact Name*	
Date Of Birth*	
Correspondence Email*	
(Correspondence Email ID can be same as your Login ID. All the mail correspondence will be sent only to the Correspondence Email ID.)	
Designation	
Phone*	
Fax*	
Mobile*	

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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PRICE SCHEDULE (UNPRICED)- VOLUME-III

PLEASE REFER

E-PROCUREMENT PORTAL <https://bhel.abcprocure.com>

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PRICE SCHEDULE - VOLUME-III

PLEASE REFER

E-PROCUREMENT PORTAL <https://bhel.abcprocure.com>

**ABOVE TO BE READ ALONG WITH SCHEDULE-2
(WEIGHTAGE) OF PRICE SCHEDULE (VOLUME-III)**

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

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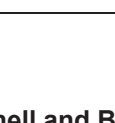
REV. 00

SL. NO.	TITLE	PAGE NO.
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3.	SCOPE OF SUPPLY AND SERVICES	05
4.	DETAILED SPECIFICATION	06
5.	TERMINAL POINTS & EXCLUSIONS	11
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d534875348196, S=West Bengal, PostalCode=700091, OU=BHEL
PSER-HQ, O=BHARAT HEAVY ELECTRICALS LIMITED, C=IN

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 BHOPAL	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW) TECHNICAL SPECIFICATION – CONTAINERISED ELECTRICAL ROOM	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 5 of 97 REV. 00
2.13.00	For items/equipments required for containerised electrical room but details specification is not available in the tender. Bidder to ask for the detailed technical specification during enquiry or engineering stage. These items shall be supplied as per detailed specification provided by BHEL/NTPC.	
2.14.00	The contractor shall make a visit to the site to see the existing facilities and understand the layout completely and collect all necessary data/drawings at site which are needed as an input to the engineering. The bidder has to carry out all the works with in the layout and other constraints existing at site. the complete work shall be carried out with minimum disturbance to the existing plant and equipment.	
2.15.00	Complete design/engineering of containerised electrical room is in bidder's scope. <i>Civil foundation work including design of civil foundation required for installation of containerised electrical room will be done by BHEL.</i> Bidder has to provide load data as required so that civil foundation designing can be done by BHEL for foundation of containerised electrical room based on the bidder/approved drawings.	
Detailed structural,fabrication drawings or any other drawings/datasheets as applicable shall be submitted by the bidder for approval by BHEL/NTPC. If any rework/modification required after completion of civil work due to wrong civil input by bidder, same shall be corrected by the bidder.		
3.00.00	SCOPE OF SUPPLY AND SERVICES	
3.01.00	Supply of four (04) nos. of containerised electrical room including equipments/accessories as per this speceification.All material required for containersided electrical room including accessories will be in scope of bidder.	
3.02.00	Engineering and design of containerised electrical room inline with tender specification and drawings provided with this specification.	
3.03.00	Preparation of drawings/datasheets including fabrication drawings of containersied electrical room.Drawings/datasheets of sub-items installed in container for illumination,fire fighting, ventilation, etc also needs to be submitted by bidder for approval.	
3.04.00	All drawings/datasheets will be approved by BHEL/NTPC and any observations/corrections marked needs to be corrected by successful bidder inline with specification.	
3.05.00	Assembly/deassmbeby of containerised electrical room as required for successful installation at site will be in bidders scope.	
3.06.00	Complete installation of containerised electrical room at site.	
Certification signature by SANJOY ADHIKARY <asanjoy@bhel.in> Value Unknown  SANJOY ADHIKARY C=IN;SANJOY ADHIKARY SERIALNUMBER=101134407090230001070065106768016942 2666473268385679202 Phone=961924697;cn=Sanjoy Adhikary, o=POWER ENGINEERING & TECHNICALS LIMITED, c=IN 634819348276, S=West Bengal, st=700093, O=POWER PSER HQ, O=BHARAT HEAVY ELECTRICALS LIMITED, C=IN 23.10.2019 12:33		

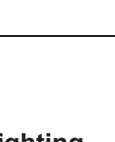
 BHOPAL	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW)	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 8 of 97
	TECHNICAL SPECIFICATION – CONTAINERISED ELECTRICAL ROOM	REV. 00
4.03.02 Shell and Base frame	The outer shell of the containerised electrical room shall be manufactured with 1.6mm sheet. The main load bearing members such as posts, base members, bottom and top side rails, end rails headers are selected based on approved structural analysis. Lifting hooks shall be provided at minimum at corners. The adequacy of the same shall be verified by structural analysis. Adequate number of doors with reinforced framework and locking device shall be provided as per requirement. The door has to be effectively sealed against water ingress in closed condition. The shell structure is to be rigid enough to withstand rough handling rigorous transportation hazards etc. and able to stand flexing/distortion even when placed on uneven ground. Base members are to be made from press formed steel sections of appropriate Geometry of required thickness. Base frame design shall be accommodating the panels provided inside the room. Panel mounting structure shall be fabricated and drilled with holes for fixing bolts for the site erection panel during site erection. 16 gauge galvanized sheet for cable protection at the bottom sheeting plate.	
4.03.03 Side & End Walls	External walls are to be vertically corrugated 1.6 mm thick GI/CRCA conforming to IS 2062/IS 513. The corrugated panels shall form entire side wall and the assembled side wall shall be assembled with the peripheral frame members.	
4.03.04 Roof	The roof has to be manufactured from 1.6 mm thick GI/CRCA conforming to IS 2062. The roof will have sloping arrangement for effective drainage.	
4.03.05 Flooring System	Floor plating shall be covered with a non-skid surface. The exposed floor shall be covered with a insulating material as per statutory requirement.	
4.03.06 Insulation	Containerised electrical room will be insulated on sides, end walls, roof & doors with 50mm thick Glass Wool/Rockwool insulation. Densities should be 48 kg/m³.	
4.03.07 Inner Paneling	Interiors of the containerised electrical room shall be aesthetically finished so as to give a pleasing appearance with high quality workmanship. All joints shall be neatly finished. For side, roof and end walls paneling will be done with 1.6mm thick Galvanized sheet.	

 BHOPAL	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW) TECHNICAL SPECIFICATION – CONTAINERISED ELECTRICAL ROOM	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 9 of 97 REV. 00
4.03.08	Doors All exterior doors shall be of weather-proof construction with four sided frames. All exterior hardware shall be stainless steel, including, but not limited to hinges. Hinges shall be concealed type. If non concealed type then the hinge should be tamper proof arrangement Doors shall be fabricated from aluminum with SS panic hardware. Doors shall be lockable with one key for all doors. Provide four keys total. Two doors of Aluminum shall be provided unless otherwise specified. One equipment door and one personnel door shall be provided. The size of equipment door shall be as per equipment sizing. One personnel door minimum 1.2M x 2.5M shall be provided. Doors shall be of 4 hours fire rated.	
4.03.09	Protective Coating Procedure All steel structure members shall be cleaned prior to finishing. Standard interior finish shall be white. After welding do abrasive blast – SA 2 ½ thereafter below process to be adapted. (A) Internal Panels Painting (Walls & Roof) :- Powder Paint Sheet # Surface Preparation/Primer :Intercure 200HS Min 150 um # Finish : Interthane 990 Min 50 um # Total Minimum DFT shall be 200 um (B) Exterior Panels Painting (Walls, Roof & Base structure) : Powder Paint Sheet # Surface Preparation/Primer : Interzinc 52 Min 75 um # Coating : Interguard 475HS Min 200 um # Finish : Interthane 990 Min 50 um # Total Minimum DFT shall be 325 um Both Interior and exterior panels, roof and base frame will be painted in colour shade of RAL 5012.	
4.03.10	Grounding Internal Earthing inside enclosure with suitable cross sectional GI flats.The building/container shall be furnished complete with ground pads which shall bond of electrical equipment enclosure frames and ground buses to the building frame at the exterior base in two locations and at opposite ends of the building so as to provide a continuous path to ground. The Grounding system shall connect to each end of the ground bus in each assembly of installed equipment.	

Certification signature by SANJOY ADHIKARY
<asanjoy@bhel.in>, Validity Unknown

SANJOY ADHIKARY
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Phone: 9678254674496200000775900007759610037140001795
PSER: 473358303e783030
PSER: HQ, D-BHARAT HEAVY ELECTRICALS LIMITED, C-IN

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 BHOPAL	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW) TECHNICAL SPECIFICATION – CONTAINERISED ELECTRICAL ROOM	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 10 of 97 REV. 00
4.03.11 Lighting	The lighting system shall maintain minimum levels as given below: Lux level shall be 200 inside the containerised electrical room and outside platforms/ stairs shall be 100 Lux. All luminaries shall be suitable for industrial duty and provided with IP65 housings for outdoor enclosures and IP54 for indoor enclosures. All fittings shall be weatherproof and able to withstand direct hosing. The wiring for lighting shall be routed through GI conduits either concealed or the wall of the enclosure External light around E House only shall be considered. All Light Fixtures shall be high efficiency LED type only.	
4.03.12 Fire Detection & Alarm system	A Fire Detection and alarming system shall be installed by contractor consisting of fire alarm control panel with display utilizing a detection system suitable for multi-area detection and control. The fire detection and alarm system shall include multi sensor smoke detectors suitable for the intended service, break glass type manual call points, indoor and outdoor alarm hooters Fire Extinguishers (5 Kg) shall be placed nearer to entrance door. The wiring for fire alarm panel to smoke detectors shall be done through separate conduits and shall not be mixed with any other circuits.	
4.03.13 Ventilation	Supporting Thermal Exchange Calculations to determine heating and ventilation requirements shall be furnished by contractor for pre-fabricated enclosure(s). The Equipment building shall be equipped with ventilation system sized to meet the conditions as specified in the Data Sheets. Purpose of ventilation is to maintain a min. temp within enclosure for operation of electrical panels. Refer Annexure-V for detail.	
4.03.14 Lifting Tools and Tackles	Suitable lifting system shall be designed and furnished. The system will consist of a spreader bar, slings, shackles and other tools to lift the equipment building in one piece A lifting system installation & operational diagram shall accompany all shipping documents.	
4.03.15 Identification & Labels	All signs shall be made out of painted steel or non-flammable material. All equipments including junction boxes, safety switches, switchgears, circuit breakers, control devices, communication equipment, marshalling panel etc shall be labeled.All operating instruction fire exit route etc shall also be marked.	

 BHEL BHOPAL <td> RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW) </td> <td> Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 12 of 97 </td>	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW)	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 12 of 97
	TECHNICAL SPECIFICATION – CONTAINERISED ELECTRICAL ROOM	REV. 00

further distribution arrangement and shall maintain a minimum drawal power factor of 0.8, and all such devices for maintaining power factor of 0.8 or better shall be under the scope of Contractor. For further distribution, contractor shall make his own arrangements. Electricity for all other facilities if required by the Contractor shall be on chargeable as per NTPC norms.

The free supply of power will not be provided for the use in the labour and staff colony. Power supply for labour and staff colony shall be provided at one point and Contractor shall be charged at rates prevalent at the site.

6.03.00

Water

Free supply of service water will be made available for construction and drinking purposes at a single point at works site to be decided by the NTPC.

6.04.00

Service Air

6.04.01 Service air shall be provided at one point for each ESP near boiler area.

6.04.02 All tools & tackles including cranes and any other special tools and tackles shall be arranged by the Contractor at his own cost. However, as a back up service, crane may be provided by the Owner at his discretion depending upon the availability on chargeable basis. The contractor shall have no claims, whatsoever in case of non-availability of the construction equipment being provided by NTPC as back up service and the work shall be carried out by the Contractor as per Schedule.

6.05.00

Accommodation for the contractor's personnel may be provided by Owner on chargeable basis as per availability.

6.06.00

Area lighting shall be provided by Owner as per his own scheme. However, any additional lighting required for the safe execution of the work shall be arranged by the Contractor. Any damage caused due to inadequate lighting shall be made good by the Contractor at his own cost.

7.00.00

CODES AND STANDARDS

Latest Codes as applicable for various equipment/items to be followed.

Abbreviations have been used for denoting international and National Standardization Organisation.

Reference Abbreviation	Name & Address
ASME	American Society of Testing & Materials 1916, Race Street, Philadelphia Pennsylvania-19103,USA
BS	British Standards Institution 101, Pentonville Road London N 19 ND, UK
DIN	Deutscher Normenausschuss Beuth Verlag GmbH, Auslieferung, Burggra Fenstrape, 4-7, 1000 Berlin 30.

Certification Signature of Sanjay Achary

<sanjay@bhel.com> Validity Unknown

SANJOY ACHARY

CHIEF SANJOY ACHARY

SERIALNUMBER:1013440799325000

 BHOPAL	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW)	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 13 of 97
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Germany IEC International Electrotechnical Commission Burequ Central De la Commission Electrotechnique, Internationals, 1, rue, de Varembe Geneva, Switzerland. ISO International Organisation for Standardisation Danish Road for Standardisation DANSK TANDARDISERING SRAAT AUREHOEGVEJ-12 DK-2 900 HELLPRUP DENMARK NFPA National Fire Protection Association Battery March Park, Quincy MA 02269 EPA Environmental Protection Agency, USA VDE German Standards VDE, Verlag GmbH, 1000 Berlin 12 Bisskarc-Ketrabe-33, West Germany IGCI International Gas Cleaning Institute IS Indian Standards, Manak Bhawan, 9 Bahadur Shah Zafar Marg. New Delhi-110001 IS-325-1970 Three phase induction motor IEC Document-2(Central Office) 432 VDE 0530 Part-1.66 IS:900 Code of practice of installation & Maintenance of induction motors single phase small AC and Universal electric motor. IS:996-1964 A58.1:1955(Issued BY ASA) IS:1026-1966 Flexible trailing cable for use in quarries and metallicferrous mines BS:1116-1956 IS:1231 Dimensions of three phase foot mounted induction motor IEC-72-1 IS:1554-1964 PVC insulated heavy duty electric cables. IS:2147-1962 Degree of protection provided by enclosures for low voltage switchgear and control gear IEC Document 17B IS:2148 Flame proof enclosure for electric apparatus IEC Pub.-79-1 IS:2223 Dimensions of flange mounted AC induction motors IEC72-2		
Certification signature by SANJOY ADHIKARY <asanjoy@ihel.in>, Validity Unknown  SANJOY ADHIKARY CHS-SANJOY ADHIKARY SERIALNUMBER:-10134447170190360177ee63bb7c8b2d942 22e8f4732028baebcfcc97 Phone:+91782940709ec380000770500119506102371480107792 #334975461480, G-Wind Street, Sector 10, Noida-201301, U.P., INDIA PSER-HQ, C-BHARAT HEAVY ELECTRICALS LIMITED, C-IN 23.10.2019 12:33		

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	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW)	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 15 of 97
BHOPAL	TECHNICAL SPECIFICATION – CONTAINERISED ELECTRICAL ROOM	REV. 00

Annexure-I

SITE SPECIFIC SEISMIC PARAMETERS FOR DESIGN OF STRUCTURES AND EQUIPMENT

The various site specific seismic parameters for the project site shall be as follows:

1)	Peak ground horizontal acceleration	0.28g
2)	Multiplying factor to be applied to the site specific horizontal acceleration spectral coefficients (in units of gravity acceleration 'g') to obtain the design acceleration spectra	
a)	for moment resisting steel frames designed and detailed as per 18:800 and moment resisting RC frames designed and detailed as per IS:456	:0.07
b)	for braced steel frames designed and detailed as per 18:800	:0.053
c)	for moment resisting RC frames designed and detailed as per 18:456 and IS: 13920	:0.042
d)	for design of structures not covered under 2 (a) to 2 (c) above and under 3 below	:0.07
3)	Multiplying factor to be applied to the site specific horizontal acceleration spectral coefficients (in units of gravity acceleration 'g') for design of equipment and structures	:0.14 where inelastic action is not relevant or not permitted

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PSENER=3d79728196747096361797590a17959610237f1a109
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PSENER=HQ, O=BARHAT HEAVY ELECTRICALS LIMITED, C=IN

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Notes:

1. g = Acceleration due to gravity

The horizontal seismic acceleration spectral coefficients are furnished in subsequent pages.

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PSER-HQ,O=BHARAT HEAVY ELECTRICALS LIMITED,C=IN

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TECHNICAL SPECIFICATION – CONTAINERISED ELECTRICAL ROOM

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Period (Sec)	Damping Factor (as a percentage of critical damping)					
	0.80%	1%	150%	2%	3%	5%
0.000	1.000	1.000	1.000	1.000	1.000	1.000
0.030	1.000	1.000	1.000	1.000	1.000	1.000
0.050	1.796	1.760	1.686	1.626	1.537	1.416
0.050	1.796	1.760	1.686	1.626	1.537	1.416
0.100	3.974	3.792	3.427	3.146	2.753	2.270
0.100	3.974	3.792	3.427	3.146	2.753	2.270
0.119	4.842	4.597	4.094	3.713	3.186	2.556
0.120	4.842	4.627	4.130	3.742	3.209	2.570
0.122	4.842	4.627	4.206	3.802	3.254	2.600
0.125	4.842	4.627	4.206	3.879	3.321	2.643
0.129	4.842	4.627	4.206	3.879	3.340	2.700
0.134	4.842	4.627	4.206	3.879	3.340	2.776
0.150	4.842	4.627	4.206	3.879	3.340	2.776
0.200	4.842	4.627	4.206	3.879	3.340	2.776
0.250	4.842	4.627	4.206	3.879	3.340	2.776
0.300	4.842	4.627	4.206	3.879	3.340	2.776
0.350	4.842	4.627	4.206	3.879	3.340	2.776
0.400	4.842	4.627	4.206	3.879	3.340	2.776
0.450	4.842	4.627	4.206	3.879	3.340	2.776
0.500	4.842	4.627	4.206	3.879	3.340	2.776
0.550	4.842	4.627	4.206	3.879	3.340	2.776
0.594	4.842	4.627	4.206	3.879	3.340	2.776
0.598	4.806	4.627	4.206	3.879	3.340	2.776
0.600	4.793	4.615	4.206	3.879	3.340	2.776
0.611	4.707	4.532	4.205	3.879	3.340	2.776
0.632	4.551	4.381	4.065	3.878	3.340	2.776
0.654	4.395	4.231	3.926	3.745	3.340	2.776
0.671	4.286	4.127	3.829	3.653	3.258	2.776
0.700	4.109	3.956	3.670	3.501	3.123	2.661
0.750	3.835	3.692	3.425	3.268	2.915	2.484
0.800	3.595	3.461	3.211	3.064	2.733	2.329
0.850	3.384	3.258	3.022	2.884	2.572	2.192
0.900	3.196	3.077	2.854	2.723	2.429	2.070
0.950	3.027	2.915	2.704	2.580	2.301	1.961
1.000	2.876	2.769	2.569	2.451	2.186	1.863
1.050	2.739	2.637	2.447	2.334	2.082	1.774

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 SERIALNUMBER=101344c6f7999ed3ced3e2f7ee61b87c8b1d94:
 25688d73355833ced92b21,
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 PSRF=0,OU=BPAPAT,HFAPV=BPAPAT,MAILS=LIMITED,C=IN

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Period (Sec)	Damping Factor (as a percentage of critical damping)					
	0.80%	1%	1.50%	2%	3%	5%
1.100	2.615	2.517	2.335	2.228	1.987	1.694
1.150	2.501	2.408	2.234	2.131	1.901	1.620
1.200	2.397	2.308	2.141	2.043	1.822	1.553
1.250	2.301	2.215	2.055	1.961	1.749	1.490
1.300	2.212	2.130	1.976	1.885	1.682	1.433
1.350	2.130	2.051	1.903	1.816	1.619	1.380
1.400	2.054	1.978	1.835	1.751	1.561	1.331
1.450	1.983	1.910	1.772	1.690	1.508	1.285
1.500	1.917	1.846	1.713	1.634	1.457	1.242
1.550	1.855	1.786	1.657	1.581	1.410	1.202
1.600	1.798	1.731	1.606	1.532	1.366	1.164
1.650	1.743	1.678	1.557	1.485	1.325	1.129
1.700	1.692	1.629	1.511	1.442	1.286	1.096
1.750	1.643	1.582	1.468	1.401	1.249	1.065
1.800	1.598	1.538	1.427	1.362	1.214	1.035
1.850	1.555	1.497	1.389	1.325	1.182	1.007
1.900	1.514	1.457	1.352	1.290	1.151	0.981
1.950	1.475	1.420	1.317	1.257	1.121	0.955
2.000	1.438	1.385	1.285	1.226	1.093	0.932
2.050	1.403	1.351	1.253	1.196	1.066	0.909
2.100	1.370	1.319	1.223	1.167	1.041	0.887
2.150	1.338	1.288	1.195	1.140	1.017	0.867
2.200	1.307	1.259	1.168	1.114	0.994	0.847
2.250	1.278	1.231	1.142	1.089	0.972	0.828
2.300	1.250	1.204	1.117	1.066	0.950	0.810
2.350	1.224	1.178	1.093	1.043	0.930	0.793
2.400	1.198	1.154	1.070	1.021	0.911	0.776
2.450	1.174	1.130	1.049	1.000	0.892	0.760
2.500	1.150	1.108	1.028	0.980	0.874	0.745
2.550	1.128	1.086	1.007	0.961	0.857	0.731
2.600	1.106	1.065	0.988	0.943	0.841	0.717
2.650	1.085	1.045	0.969	0.925	0.825	0.703
2.700	1.065	1.026	0.951	0.908	0.810	0.690
2.750	1.046	1.007	0.934	0.891	0.795	0.677
2.800	1.027	0.989	0.918	0.875	0.781	0.665
2.850	1.009	0.972	0.901	0.860	0.767	0.654

0.654
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 SANJOY ADHIKARY
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 SERIALNUMBER=1011344c5679901d3e0c7d7fe61b1878b1b194
 25668;cf335833d9cf92b7,
 PSENR=3d7252d49d7c09f63b7d79590a17f596102371a100c
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Period (Sec)	Damping Factor (as a percentage of critical damping)					
	0.80%	1%	1.50%	2%	3%	5%
2.900	0.992	0.955	0.886	0.845	0.754	0.642
2.950	0.975	0.939	0.871	0.831	0.741	0.632
3.000	0.959	0.923	0.856	0.817	0.729	0.621
3.050	0.943	0.908	0.842	0.804	0.717	0.611
3.100	0.928	0.893	0.829	0.791	0.705	0.601
3.150	0.913	0.879	0.816	0.778	0.694	0.591
3.200	0.899	0.865	0.803	0.766	0.683	0.582
3.250	0.885	0.852	0.790	0.754	0.673	0.573
3.300	0.872	0.839	0.778	0.743	0.662	0.565
3.350	0.859	0.827	0.767	0.732	0.653	0.556
3.400	0.846	0.814	0.756	0.721	0.643	0.548
3.450	0.834	0.803	0.745	0.710	0.634	0.540
3.500	0.822	0.791	0.734	0.700	0.625	0.532
3.550	0.810	0.780	0.724	0.690	0.616	0.525
3.600	0.799	0.769	0.714	0.681	0.607	0.518
3.650	0.788	0.759	0.704	0.672	0.599	0.510
3.700	0.777	0.748	0.694	0.662	0.591	0.504
3.750	0.767	0.738	0.685	0.654	0.583	0.497
3.800	0.757	0.729	0.676	0.645	0.575	0.490
3.850	0.747	0.717	0.666	0.637	0.568	0.484
3.900	0.737	0.699	0.649	0.628	0.561	0.478
3.950	0.728	0.681	0.633	0.604	0.553	0.472
4.000	0.719	0.664	0.617	0.589	0.547	0.466

Certification signature by SANJOY ADHKARY
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	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW)	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 20 of 97
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ANNEXURE – II: LIST OF DEVIATIONS (TECHNICAL)

NOTE:- Bidder to note that Deviation in the specification is not allowed. Bidder's have to take clarification before bid submission on any of the technical issues if required. Moreover if it necessary to take deviation from technical specification/price schedule bidder has to clearly mention the cost of withdrawal of the same as specified in special condition of contract of the tender.

Name of Firm : _____

Signature of Bidder : _____

Name of Bidder : _____

Designation : _____

Date :

Seal of the Company

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LIST OF DRAWINGS PROVIDED WITH TECHNICAL SPECIFICATION

SI No.	Drawing No.	Rev. No	Drawing Title
1.	4210-104A-01-PVM-002	03	PLOT PLAN & LAYOUT OF ESP & DUCTING
2.	4210-104A-01-PVM-044	04	ESP Control room layout
3.	4210-104-PVE-B-096	03	Cable Routing from ESP control room to ESP with cut section details
4.	4210-104A-01-PVE-005	01	ACP Panel (only GA drawings attached)
5.	KH-TENDER-CER-01	00	New Containerised control room

1.The above drawings are for reference only.

3. The height of container may be referred from drg. sl no. 05 above. Any minor changes in dimensions either positive or negative needs to be acceptable to bidder.

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5348753481f56,S-West Bengal,PostOffice=700091,OU=BHEL-
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	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW)	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 23 of 97
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<u>ANNEXURE-V</u> SPECIFICATION FOR MECHANICAL VENTILATION SYSTEM 1.00.00 GENERAL This specification covers the design, manufacture, construction feature, erection, testing & commissioning at site of ventilation fans and other equipments for containerised room ventilation system. 1.01.00 CODES & STANDARD 1.01.01 The design, manufacture and performance of equipment shall comply with all currently applicable statues, regulations and safety codes in the locality where the equipments will be installed. Nothing in this specifications shall be considered to relieve the Contractor of the required statutors responsibility. Unless otherwise specified, equipments shall conform to the latest applicable Indian or IEC standard. Equipments complying with any authoritative standards such as British, USA ASHRAE etc. will also be considered if it ensure performance equipment or superior to Indian Standards. 1.01.02 In case of any conflict in the standard and this specification, the decision of Employer shall be final and binding. 1.02.00 Design & Construction Requirement of Fans 1.02.01 Axial Flow Fans a) These fans shall have single piece cast aluminium impeller with blades of aero foil design. It shall be finished all over and balanced dynamically as per AMCA standard. Impeller shall be mounted directly on the motor shaft. b) The fan casing shall be of heavy gauge construction, properly reinforced for rigidity. It shall be provided with suitable supports. Access door shall be provided in the casing for easy access to motor and impeller Suitable arrangement for mounting the motor shall be provided. c) Rain protection cowls will be designed to suit wall mounted air supply fans for protecting fans/motors from rain. It shall be provided with bird screen. d) Inlet cone or bell & outlet cone shall be provided. e) Accessories such as bird protection screen, inlet louvers vibration, isolators, back draft dampers etc. shall be provided as per requirement. f) Motors shall be totally enclosed type, complying with the electrical specification (Chapter E1). g)The speed of the fan shall not exceed 960 rpm for fan with impeller diameter above 450 mm and 1440 rpm for fan with impeller diameter 450 mm and less. However, for fans having static pressure of 30 mm wc or above the speed of the fan shall not exceed 1440 rpm for fan with impeller dia. above 450 mm and 2800 rpm for fan with impeller dia 450 mm and less. The first critical speed of rotating assembly shall be at least 25% (percent) above design speed.		

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ANNEXURE-VI

TECHNICAL QUALIFYING REQUIREMENTS FOR CONTAINERISED ELECTRICAL ROOM

Qualifying requirement of bidder is mentioned below in *italic font*. The bidder meeting the qualifying requirement mentioned below shall participate in the tender. The bidders have to submit "Sub-Vendor Questionnaire and attachment 3K" with all the relevant documents along with the bid. **The bidder's approved by BHEL / NTPC shall only be considered for evaluation.**

"The bidder should have supplied containerised electrical house (E-house)/ containerised house within last three (03) years as on latest due date of offer submission".
Necessary supporting documents need to be submitted by bidder for meeting the above qualifying criterion.

Note: The E-house for NTPC-Kahalgaon project shall have provision of installation of electrical panels in it. The electrical panels in this project are being supplied by BHEL. These panels shall be installed by BHEL at site in the E-House to be supplied by the bidder.

Note:- Documents provided for qualification criterion by bidder should be in English. Necessary documents shall be submitted as per attached "Sub-Vendor Questionnaire and attachment-3k". During approval of vendor if BHEL/NTPC insist for submission of further documents, same shall be provided by the vendor without any delay. Vendor factory visit and project site visit where vendor supplied equipment has been installed shall be co-ordinated by vendor if required by BHEL/NTPC.

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 2506/47/3/02/BHEL/DSPD,
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required between various portions of equipment and any other information specifically requested in the drawing schedules. (iii) Each drawing submitted by the Contractor (including those of sub vendors) shall bear a title block at the right hand bottom corner with clear mention of the name of the Employer, the system designation, the specifications title, the specification number, the name of the Project, drawing number and revisions. If standard catalogue pages are submitted the applicable items shall be indicated therein. All titles, notings, markings and writings on the drawing shall be in English. All the dimensions should be in metric units. (iv) The drawings submitted by the Contractor (or their sub vendors) shall bear Employer's drawing number in addition to contractor's (their sub-vendor's) own drawing number. Employer's drawing numbering system shall be made available to the successful bidder so as to enable him to assign Employer's drawing numbers to the drawings to be submitted by him during the course of execution of the Contract. (v) The Contractor shall also furnish a "Master Drawing List" which shall be a comprehensive list of all drawings/ documents/ calculations envisaged to be furnished by him during the detailed engineering to the Employer. Such list should clearly indicate the purpose of submission of these drawings i.e. "FOR APPROVAL" or "FOR INFORMATION ONLY". Each drawing/ document submitted by the Contractor shall clearly indicate on the drawing the scheduled date of submission of the drawing as agreed in the engineering information submission schedule. (vi) Similarly, all the drawings/ documents submitted by the Contractor during detailed engineering stage shall be marked "FOR APPROVAL" or "FOR INFORMATION" prior to submission. Further space shall be identified on each drawing for approval stamp and electronic signature. (vii) The furnishing of detailed engineering data and drawings by the Contractor shall be in accordance with the time schedule for the project. The review of these documents/ data/ drawings by the Employer will cover only general conformance of the data/ drawings/ documents to the specifications and contract, interfaces with the equipment provided by others and external connections & dimensions which might affect plant layout. The review by the Employer should not be construed to be a thorough review of all dimensions, quantities and details of the equipment, materials, any devices or items indicated or the accuracy of the information submitted. The review and/ or approval by the Employer / Project Manager shall not relieve the Contractor of any of his responsibilities and liabilities under this contract. (viii) After the approval of the drawings, further work by the Contractor shall be in strict accordance with these approved drawings and no deviation shall be permitted without the written approval of the Employer. (ix) All manufacturing, fabrication and execution of work in connection with the equipment / system, prior to the approval of the drawings, shall be at the Contractor's risk. The Contractor is expected not to make any changes in the design of the equipment /system, once they are approved by the Employer. However, if some changes are necessitated in the design of the equipment/system at a later date, the Contractor may do so, but such changes shall promptly be brought to the notice of the Employer indicating the reasons for the change and get the revised drawing approved again in strict conformance to the provisions of the Technical Specification.		

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5.06.00 INSTRUCTION MANUALS

The Contractor shall make First submission of Instruction Manuals for all the equipment/covered under the Contract.The Instruction manuals shall contain full details required for erection, commissioning, operation and maintenance of each equipment. The manual shall be specifically compiled for this project. After finalization and approval of the Employer the Instruction Manuals shall be submitted as indicated in Annexure-VI of general technical conditions. The Contract shall not be considered to be completed for purposes of taking over until the final Instructions manuals have been supplied to the Employer. The Instruction Manuals shall comprise of the following.

(a) Erection Manuals

The erection manuals shall be submitted at least three (3) months prior to the commencement of erection activities of particular equipment/system. The erection manual should contain the following as a minimum.

- Erection strategy.
- Sequence of erection.
- Erection instructions.
- Critical checks and permissible deviation/tolerances.
- List of tool, tackles, heavy equipment like cranes, dozers, etc.
- Bill of Materials
- Procedure for erection.
- General safety procedures to be followed during erection/installation.
- Procedure for initial checking after erection.
- Procedure for testing and acceptance norms.
- Procedure / Check list for pre-commissioning activities.
- Procedure / Check list for commissioning of the system.
- Safety precautions to be followed in electrical supply distribution during erection

(b) Commissioning Manuals

- Commissioning Strategy
- Sequence of commissioning
- Commissioning Instructions
- Critical checks list for all equipment
- Commissioning Procedures

(c) Operation & Maintenance :

The operating and maintenance instructions together with drawings (other than shop drawings) of the equipment, as completed, shall be in sufficient detail to enable the Employer to operate, maintain, dismantle, reassemble and adjust all parts of the equipment. They shall give a step by step procedure for all operations likely to be carried out during the life of the plant / equipment including, operation, maintenance, dismantling and repair etc. Each manual shall also include a complete set of drawings together with performance/rating curves of the equipment and test

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 BHOPAL	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW)	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 35 of 97
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	certificates wherever applicable. The contract shall not be considered to be completed for purposes for taking over until these manuals have been supplied to the Employer. If after the commissioning and initial operation of the equipment/system, the manuals require any modification / additions / changes, the same shall be incorporated and the updated final instruction manuals shall be submitted to the Employer for records. A separate section of the manual shall be for each size/ type of equipment and shall contain a detailed description of construction and operation, together with all relevant pamphlets and drawings. 6.00.00 ENGINEERING INFORMATION SUBMISSION SCHEDULE Prior to award to contract, a Detailed Engineering Information Submission Schedule/master drawing list duly integrated with approved L2 schedule shall be tied up with the Employer. For this, the bidder shall furnish a detailed list of engineering information alongwith the proposed submission schedule. This list would be a comprehensive one including all engineering data / drawings / information for all bought out items and manufactured items. The information shall be categorised into the following parts. (a) Information that shall be submitted for the approval to the Employer before proceeding further, and (b) Information that would be submitted for Employer's information only. The Master Drawing List (MDL) shall be updated periodically and submitted to the Employer, highlighting the change made in the MDL. The schedule should allow adequate time for proper review and incorporation of hanges/modifications, if any, to meet the contract without affecting the equipment delivery schedule and overall project schedule. The early submission of drawings and data is as important as the manufacture and delivery of equipment and hardware and this shall be duly considered while determining the overall performance and progress. 6.01.00 ENGINEERING PROGRESS AND EXCEPTION REPORT 6.01.01 The Contractor shall submit every month engineering progress and exception report giving the status of each engineering information including:- (a) A list of drawings/engineering information which remains unapproved for more than four (4) weeks after the date of first submission with reasons thereof. (b) Drawings which were not submitted as per agreed schedule. 6.01.02 The draft format for this report shall be furnished to the Employer within four (4) weeks of the award of the contract, which shall then be discussed and finalised with the Employer.	

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7.00.00		TECHNICAL CO-ORDINATION MEETING	
7.01.00		The Contractor shall be called upon to organise and attend monthly Design/Technical Co-ordination Meetings (TCMs) with the Employer/Employer's representatives and other Contractors of the Employer during the period of contract. The Contractor shall attend such meetings at his own cost at NEW DELHI / NOIDA or at mutually agreed venue as and when required and fully co-operate with such persons and agencies involved during the discussions.	
7.02.00		The Contractor should note that Time is the essence of the contract. In order to expedite the early completion of engineering activities, the Contractor shall submit all drawings as per the agreed Engineering Information Submission Schedule. The drawings submitted by the Contractor will be reviewed by the Employer as far as practicable within three (3) weeks from the date of receipt of the drawing .The comments of the Employer shall then be discussed across the table during the above Technical Co-ordination Meeting (s) wherein best efforts shall be made by both sides to ensure the approval of the drawing.	
7.03.00		The Contractor shall ensure availability of the concerned experts / consultants/ personnel and representatives of his sub-vendors who are empowered to take necessary decisions during these meetings. The Contractor shall be equipped with necessary tools and facilities so that the drawings/documents can be resubmitted after incorporating necessary changes and approved during the meeting itself.	
7.04.00		Should any drawing remain unapproved for more than six (6) weeks after it's first submission, this shall be brought out in the monthly Engineering Progress and Exception Report with reasons thereof.	
7.05.00		Any delays arising out of failure by the Contractor to incorporate Employer's comments and resubmit the same during the TCM shall be considered as a default and in no case shall entitle the Contractor to alter the Contract completion date.	
8.00.00		NOT USED	
09.00.00		QUALITY ASSURANCE PROGRAMME	
09.01.00		To ensure that the equipments and services under the scope of this Contract whether manufactured or performed within the Contractor's Work's or at his subcontractor's premises or at the Owner's site or at any other place of Work are in accordance with the specifications, the Contractor shall adopt suitable quality assurance programme to control such activities at all points, necessary. Such programmes shall be outlined by the Contractor and shall be finally accepted by the Engineer after discussions before the award of contract. A quality assurance programme of the Contractor shall generally cover the following:	
		(a) His organization structure for the management and implementation of the proposed quality assurance programme; (b) Quality System Manual; (c) Design Control System;	

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 BHOPAL	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW) TECHNICAL SPECIFICATION – CONTAINERISED ELECTRICAL ROOM	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 37 of 97 REV. 00
	(d) Documentation Control System. (e) Qualification data for Bidder's key Personnel; (f) The procedure for purchase of materials, parts, components and selection of sub-contractor's services including vendor analysis, source inspection, incoming raw-material inspection, verification of materials purchased etc.; (g) System for shop manufacturing and site erection control including process controls and fabrication and assembly controls; (h) Control of non-conforming items and system for corrective actions. (i) Inspection and test procedure both for manufacture and field activities. (j) Control of calibration and testing of measuring testing equipment. (k) System for Quality Audits. (l) System for indication and appraisal of inspection status. (m) System for authorizing release of manufactured product to the Employer; (n) System for maintenance of records, and. (o) Furnishing of quality plans for manufacturing and field activities detailing out the specific quality control procedure adopted for controlling the quality characteristics relevant to each item of equipment/component as per formats enclosed as Annexure-I and Annexure-II respectively of general technical conditions.	
09.02.00	GENERAL REQUIREMENT – QUALITY ASSURANCE	
09.02.01	All materials, components and equipment covered under this specification shall be procured, manufactured, erected, commissioned and tested at all the stages, as per a comprehensive Quality Assurance Programme. An indicative programme of inspection/tests to be carried out by the contractor for some of the major items is given in the respective technical specification. This is, however, not intended to form a comprehensive programme as it is the contractor's responsibility to draw up and implement such programme duly approved by the Employer. The detailed Quality Plans for manufacturing and field activities shall be drawn up by the Bidder and will be submitted to Employer for approval. Schedule of finalization of such quality plans will be finalized before award on enclosed format No. QS-01-QAI-P-1/F3-R0. Monthly progress reports as per MQP/FQP submission/approval shall be furnished as per enclosed format no..QS-1-QAI-P-02/F1-R0.	
09.02.02	Manufacturing Quality Plan will detail out for all the components and equipment, various tests/inspection, to be carried out as per the requirements of this specification and standards mentioned therein and quality practices and procedures followed by Contractor's/ Sub-contractor's/ sub-supplier's Quality Control Organization , the relevant reference documents and standards, acceptance norms, inspection documents raised etc., during all stages of materials procurement, manufacture, assembly and final testing/performance testing. The Quality Plan shall be submitted on electronic media through C-folders, a web based system of NTPC ERP in addition to hard copy, for review and approval. After approval the same shall be submitted in compiled form on CD-ROM (As per format at Annexure-I of general technical conditions).	
09.02.03	Field Quality Plans will detail out for all the equipment, the quality practices and procedures etc. to be followed by the Contractor's "Site Quality Control Organization", during various stages of site activities starting from receipt of materials/equipment at site (As per format at Annexure – II).	
09.02.04	The Bidder shall also furnish copies of the reference documents/plant standards/acceptance norms/tests and inspection procedure etc., as referred in Quality Plans along with Quality Plans.	

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	 BHOPAL	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW) TECHNICAL SPECIFICATION – CONTAINERISED ELECTRICAL ROOM	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 40 of 97 REV. 00
09.02.19 09.02.20 09.02.21 09.02.22 09.02.23	The contractor shall provide all necessary assistance to enable the Employer carry out such audit and surveillance. The Contractor shall carry out an inspection and testing programme during manufacture in his work and that of his sub-contractor's and at site to ensure the mechanical accuracy of components, compliance with drawings, conformance to functional and performance requirements, identity and acceptability of all materials parts and equipment. Contractor shall carry out all tests/inspection required to establish that the items/equipment conform to requirements of the specification and the relevant codes/standards specified in the specification, in addition to carrying out tests as per the approved quality plan. Quality audit/surveillance/approval of the results of the tests and inspection will not, however, prejudice the right of the Employer to reject the equipment if it does not comply with the specification when erected or does not give complete satisfaction in service and the above shall in no way limit the liabilities and responsibilities of the Contractor in ensuring complete conformance of the materials/equipment supplied to relevant specification, standard, data sheets, drawings, etc. For all spares and replacement items, the quality requirements as agreed for the main equipment supply shall be applicable. Repair/rectification procedures to be adopted to make the job acceptable shall be subject to the approval of the Employer/ authorized representative. Environmental Stress Screening All solid state electronic system / equipment / sub assembly shall be free from infant mortile components. For establishing the compliance to this requirement, the contractor / sub – contractor should meet the following. 1) The Contractor / Sub – contractor shall furnish the established procedure being followed for eliminating infant mortile components. The procedure followed by the Contractor / Sub – contractor should be substantiated along with the statistical figures to validate the procedure being followed. The necessary details as required under this clause shall be furnished at the stage of QP finalization. Or In case the Contractor / Sub – contractor do not have any established procedure to eliminate infant mortile components then two or 10% whichever is less, most densely populated Panels shall be tested for Elevated Temperature Cycle Test as per the following procedure. Elevated Temperature Test Cycle During the elevated temperature test which shall be for 48 hours, the ambient temperature shall be maintained at 50° C. The equipment shall be interconnected with devices and kept under energized conditions so as to repeatedly perform all operations it is expected to perform in actual service with load on various components being equal to those which will be experienced in actual service. During the elevated temperature test the cubicle doors shall be closed (or shall be in the position same as they are supposed to be in the field) and inside temperature in the zone of highest heat Certification signature by SANJOY ADHIKARY Sanjoy Adhikary, Vaiditya Engineer SANJOY ADHIKARY CIN-SANJOY ADHIKARY SERIALNUMBER=101134427199 230647035836361021 Phone=967829487094651021 JSDM7534181, S-Office Phone=967829487094651021 PSER-HQ, Q-BHARAT HEAVY TECHNICALS LIMITED, C-IN 23.10.2019 12:33		

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dissipating components / modules shall be monitored. The temperature rise inside the cubicle should not exceed 10° C above the ambient temperature at 50° C.

In case of any failure during the test cycle, the further course of action should be mutually discussed for demonstrating the intent of the above requirement.

2) Burn in Test Cycle

The test shall be conducted on all the panels fully assembled and wired including the panels having undergone the above mentioned elevated temperature test.

The period of Burn in Test Cycle shall be 120 hrs and process shall be similar to the elevated temperature test as above except that the temperature shall be reduced to the ambient temperature prevalent at that time.

During the above tests, the process I/O and other load on the system shall be simulated by simulated inputs and in the case of control systems; the process which is to be controlled shall also be simulated. Testing of individual components or modules shall not be acceptable.

During the Burn in Test the cubicle doors shall be closed (or shall be in the position same as they are supposed to be in the field) and inside temperature in the zone of highest heat dissipating components / modules shall be monitored. The temperature rise inside the cubicle should not exceed 10° C above the ambient temperature.

09.02.24 The Contractor / Sub-contractor shall carry out routine test on 100% item at contractor / sub-contractor's works. The quantum of check / test for routine & acceptance test by employer shall be generally as per criteria / sampling plan defined in referred standards. Wherever standards have not been mentioned quantum of check / test for routine / acceptance test shall be as agreed during detailed engineering stage.

09.03.00 QUALITY ASSURANCE DOCUMENTS

09.03.01 The Contractor shall be required to submit the QA Documentation in two hard copies and two CD ROMs, as identified in respective quality plan with tick (✓) mark.

Each QA Documentation shall have a project specific Cover Sheet bearing name & identification number of equipment and including an index of its contents with page control on each document.

The QA Documentation file shall be progressively completed by the Supplier's subsupplier to allow regular reviews by all parties during the manufacturing.

The final quality document will be compiled and issued at the final assembly place of equipment before dispatch. However CD-Rom may be issued not later than three weeks.

09.03.02 Typical contents of QA Documentation is as below:-

(a.) Quality Plan

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	09.03.00 Project Manager's Supervision 09.04.01 To eliminate delays and avoid disputes and litigation, it is agreed between the parties to the Contract that all matters and questions shall be referred to the Project Manager and without prejudice to the provisions of 'Arbitration' clause in Section GCC, the Contractor shall proceed to comply with the Project Manager's decision. 09.04.02 The work shall be performed under the supervision of the Project Manager. The scope of the duties of the Project Manager pursuant to the Contract, will include but not be limited to the following: - Interpretation of all the terms and conditions of these documents and specifications: - Review and interpretation of all the Contractor's drawing, engineering data, etc: - Witness or authorize his representative to witness tests and trials either at the manufacturer's works or at site, or at any place where work is performed under the contract : - Inspect, accept or reject any equipment, material and work under the contract: - Issue certificate of acceptance and/or progressive payment and final payment certificates - Review and suggest modifications and improvement in completion schedules from time to time : and - Supervise Quality Assurance Programme implementation at all stages of the works. 09.05.00 INSPECTION, TESTING AND INSPECTION CERTIFICATES 09.05.01 The word 'Inspector' shall mean the Project Manager and/or his authorised representative and/or an outside inspection agency acting on behalf of the Owner to inspect and examine the materials and workmanship of the works during its manufacture or erection. 09.05.02 The Project Manager, his duly authorized representative and/or an outside inspection agency acting on behalf of the Owner shall have access at all reasonable times to inspect and examine the materials and workmanship of the works during its manufacture or erection and if part of the works is being manufactured or assembled on other premises or works, the Contractor shall obtain for the Engineer and for his duly authorised representative permission to inspect as if the works were manufactured or assembled on the Contractor's own premises or works. 09.05.03 The Contractor shall give the Project Manager/Inspector fifteen (15) days written notice of any material being ready for testing. Such tests shall be to the Contractor's account except for the expenses of the Inspector's. The Engineer/Inspector, unless the witnessing of the tests is virtually waived, will attend such tests within fifteen (15) days of the date on which the equipment is noticed as being ready for test/inspection failing which the contractor may proceed with test which shall be deemed to have been made in the inspector's presence and he shall forthwith forward to the inspector duly certified copies of test reports in two (2) copies.	
	Certification signature by SANJOY ADHIKARY <asanjoy@bhel.com>  SANJOY ADHIKARY CHIEF SANJOY ADHIKARY SERIAL NUMBER-1013442 2066-47308388007020 Phone=9670294877 03487034870, S/West Bengal PSER HQ, CHHARAT HEAVY TECHNICALS LIMITED, C-IN 23.10.2019 12:33	

 BHOPAL	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW)	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 46 of 97
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	(a)The equipment shall be on Trial Operation, during which period all necessary adjustments shall be made while operating over the full load range enabling the plant to be made ready for Performance and Guarantee Tests. (b)The duration of Trial Operation of the complete equipment shall be fourteen (14) days out of which at least seventy two (72) hours shall be continuous operation on full load or any other duration as may be agreed to between the Engineer and the Contractor. The Trial Operation shall be considered successful, provided that each item of the equipment can operate continuously at the specified operating characteristics, for the period of Trial Operation with all operating parameters within the specified limits and at or near the predicted performance of the equipment. (c)For the period of Trial Operation, the time of operation with any load shall be counted. Minor interruptions not exceeding four (4) hours at a time caused during the 14 days trial operation period shall not effect the total duration of Trial Operation. If in the opinion of the Engineer the interruption is long, the Trial Operation shall be prolonged for the period of interruption. However, the seventy two (72) hours continuous operation at full load, as mentioned earlier shall be considered a mandatory requirement. (d)A Trial Operation report comprising of observations and recordings of various parameters to be measured in respect of the above Trial Operation shall be prepared by the Contractor. This report, besides recording the details of the various observations during trial run shall also include the dates of start and finish of the Trial Operation and shall be signed by the representatives of both the parties. The report shall have sheets, recording all the details of interruptions occurred, adjustments made and any minor repairs done during the Trial Operation. Based on the observations, necessary modifications / repairs to the plant shall be carried out by the Contractor to the full satisfaction of the Engineer to enable the latter to accord permission to carry out performance and Guarantee tests on the Plant. However, minor defects which do not endanger the safe operation of the equipment, shall not be considered as reasons for with holding the aforesaid permission.	
13.00.00	PACKAGING AND TRANSPORTATION	
13.01.00	All the equipments shall be suitably protected, coated, covered or boxed and crated to prevent damage or deterioration during transit, handling and storage at Site till the time of erection. While packing all the materials, the limitation from the point of view of availability of railway wagon sizes in India should be taken account of. The Contractor shall be responsible for any loss or damage during transportation, handling and storage due to improper packing.	
14.00.00	PROTECTION	
	All coated surfaces shall be protected against abrasion, impact, discoloration and any other damages. All exposed threaded portions shall be suitably protected with either a metallic or a non-metallic protecting device. All ends of all valves and piping and conduit equipment connections shall be properly sealed with suitable devices to protect them from damage. The parts which are likely to get rusted, due to exposure to weather should also be properly treated and protected in a suitable manner.	

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31.02.00	Crating / Packing	

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bolting them to the floor. Adjacent enclosures shall be shimmed to maintain mutually level appearance before they are attached to floor. Vibration dampening mounts shall be installed between supporting structures and panels when specified. h) Non-free Standing Equipment i) Non-free standing local enclosures and cabinets shall be mounted in accessible locations on columns, walls, or stands in locations as indicated on the Owner existing Plant Arrangement Drawings. Bracket and stands shall be fabricated as required to install the local enclosures and cabinets in a workman like manner. ii) Rough edges and welds on all fabricated supports shall be ground smooth. The supports shall be finished with two coats of primer and two coats of paint as specified in this section. j) Equipment Location All individual items of equipment not located in cabinets or on panels and racks are located approximately according to the floor elevation and the nearest building column designated by the Owner. Solenoid valves not located in enclosures or mounted on valves shall be mounted in easily accessible protected locations near the components with which they are associated. All brackets, stands, supports and other miscellaneous hardware required for mounting devices shall be furnished and installed. k) Equipment Checkout All equipment which are replaced / repaired shall be cleaned after installation. Equipment subject to pressure differentials shall be checked for leakage. After erection, all equipment having moving parts, having electrical apparatus, or subject to pressure differentials shall be trial operated. l) Defects All defects in erection shall be corrected to the satisfaction of the Owner and the Engineer. The dismantling and re-assembly of Contractor furnished equipment to remove defective parts, replace parts, or make adjustments shall be included as a part of the work under these specifications. The removal of control and instrument equipment in order to allow bench calibration, if required, and the re-installation of the said equipment after calibration shall also be included as a part of the work under these specifications. Certification signature by SANJOY ADHIKARY <asanjoy@bhel.in> Validity Unknown SANJOY ADHIKARY CIN:SANJOY ADHIKARY SERIALNUMBER=101344271995 PSER-473258363492501 Phone=917029487024631422759361 PSER-HQ, O-BHARAT HEAVY TECHNICALS LIMITED, C-IN 23.10.2019 12:33		

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(List of items requiring quality plan and sub supplier approval)

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SYSTEM SUPPLIER/SUB-SUPPLIER APPROVAL STATUS CATEGORY (SHALL BE FILLED BY NTPC)

A – For these items proposed vendor is acceptable to NTPC. To be indicated with letter “A” in the list alongwith the condition of approval, if any.

DR – For these items “Detailed required” for NTPC review. To be identified with letter “DR” in the list.

NOTED – For these items vendors are approved by Main Supplier and accepted by NTPC without specific vendor approval from NTPC. To be identified with “NOTED.”

QP/INSPN CATEGORY:

CAT-I : For these items the Quality Plans are approved by NTPC and the final acceptance will be on physical inspection witness by NTPC.

CAT-II : For these items the Quality Plans approved by NTPC. However no physical inspection shall be done by NTPC. The final acceptance by NTPC shall be on the basis review of documents as per approved QP.

CAT-III : For these items Main Supplier approves the Quality Plans. The final acceptance by NTPC shall be on the basis certificate of conformance by the main supplier.

UNITS/WORKS : Place of manufacturing Place of Main Supplier of multi units/works.

ENGG. DIV. QA&I

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PROJECT : STAGE: PACKAGE : SUPPLIER : CONTRACTO NO.:	FIELD WELDING SCHEDULE (To be raised by the contractor) Weld Code.....	DOC. NO.:
		REV. NO.:
		DATE:
		PAGE: OF

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SIGNATURE

FORMATE

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Engg. Div. / QA&I

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S. No.	DESCRIPTION OF MANUAL	NO OF PRINTOUTS	NO. OF CD-ROMs
1.	Layout/GA drawings/P&IDS	6	2 CD-ROMs
2.	Other drawings	6 2	2 CD-ROMs
3.	Drawings "FOR INFORMATION"	2	2 CD&FLOPPIES
4.	Drawings "FINAL DRAWING"	15	4 CD-ROMs
5.	Drawings "AS BUILT "	15	4 CD-ROMs
6.	Datasheets, Design Calculations, Purchase Specifications, etc. and Other type of documents i) For Approval ii) FINAL iii) Analysis reports of equipments/ piping/ structures components/ systems employing software packages as detailed in the specifications	2 15 2	2 CD-ROMs 4 CD-ROMs 2 CD-ROMs
7.	Erection manual "DRAFT"	4 Sets	2 CD-ROMs
8.	Erection manual "FINAL"	4 Sets	4 CD-ROMs
9.	Operation & Maintenance manual "IST SUBMITTIOM"	4 Sets	2 CD-ROMs
10.	Operation & Maintenance manual "FINAL"	4 Sets	4 CD-ROMs
11.	Plant/equipment Hand Book "IST SUBMITTIOM"	4 Sets	2 CD-ROMs
12.	Plant/equipment Hand Book "FINAL"	4 Sets	4 CD-ROMs

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	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW)	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 62 of 97
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13.	Commissioning and Performance "IST SUBMITTIOM"	4 Sets	2 CD-ROMs
14.	Commissioning and Performance "FINAL"	4 Sets	4 CD-ROMs
15.	Performance and Functional guarantees test report	4 Sets	4 CD-ROMs
16.	Project completion report	15	4 CD-ROMs
17.	QA programme including Organization for implementation and QA system manual (with revision-servicing)	1	1 CD-ROM
18.	Vendor details in respect of proposed vendors including contractor's evaluation report.	2	1 CD-ROM
19.	Manufacturing QPs, Field QPs, Field welding schedules and their reference documents like test procedures, WPS, PQR etc. i) For review/comment ii) For final approval	2	2 CD-ROMs
		2	2 CD-ROMs
20.	Welding Manual, Heat Treatment Manuals, Storage & preservation manuals i) 1st submission ii) Final	4 Sets	2 CD-ROMs
		4 Sets	4 CD-ROMs
21.	QA Documentation Package for items / equipment manufactured and dispatched to site	2 Sets	4 CD-ROMs
22	QA Documentation Package for field activities on equipment / systems at site	2 Sets	4 CD-ROMs

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 BHOPAL	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW) TECHNICAL SPECIFICATION – CONTAINERISED ELECTRICAL ROOM	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 63 of 97 REV. 00
ERECTION CONDITIONS OF CONTRACT		
1.00.0 GENERAL		
1.01.00	The following provisions shall supplement the conditions already contained in the other parts of these specifications and documents and shall govern that portion of the work of this contract which is to be performed at site. The erection requirements and procedures not specified in these documents shall be in accordance with the recommendations of the equipment manufacturer, or as mutually agreed to between the Employer and the Contractor prior to commencement of erection work. These conditions are to be read under scope in this specifications.	
1.02.00	The Contractor upon signing of the Contract shall, in addition to a Project Coordinator, nominate another responsible officer as his representative at Site suitably designated for the purpose of overall responsibility and co-ordination of the Works to be performed at Site. Such person shall function from the Site office of the Contractor during the pendency of Contract.	
2.00.00 REGULATION OF LOCAL AUTHORITIES AND STATUTES		
2.01.00	In addition to the local laws and regulations, the Contractor shall also comply with the Minimum Wages Act. 1948 and the Payment of Wages Act both of Government of India and the rules made there under in respect of its labour and the labour of its sub-Contractors currently employed on or connected with the contract.	
2.02.00	All registration and statutory inspection fees, if any, in respect of his work pursuant to this Contract shall be to the account of the Contractor. However, any registration, statutory inspection fees lawfully payable under the provisions of the Indian Boiler Regulations and any other statutory laws and its amendments from time to time during erection in respect of the plant equipment ultimately to be owned by the Owner, shall be to the account of the Owner. Should any such inspection or registration need to be re-arranged due to the fault of the Contractor or his Subcontractor, the additional fees to such inspection and/or registration shall be borne by the Contractor.	
3.00.00 WELDING REQUIREMENTS		
	The welding of various area including high pressure parts shall be in accordance with the following requirements :	
3.01.00	Qualification of Weld Procedures Only qualified welding procedures as per ASME Section IX shall be used by Contractor at site. Procedure qualification records along with WPS shall be submitted to NTPC for review. Welding procedure shall indicate all essential and non-essential parameters as per ASME Section IX. Makes of welding consumables shall be subject to employer's approval.	
3.02.00	Welder's Qualification Certification signature by SANJOY ADHIKARY <asanjoy@bhel>, Voluntary Unknown SANJOY ADHIKARY CHIEF SANJOY ADHIKARY SERIALNUMBER=101344277681268708216942 2586AFTSSESSORID=25 Phone=9678254977tothe... GSARFCSMTR6, S'West ... PSER HQ, O-BHARAT HEAVY TECHNICALS LIMITED, CHIN 23.10.2019 12:33	

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3.05.02			After setting up the weld joint for heat treatment operation, the Employer's signature shall be obtained on the strips chart of the recorder prior to starting of heat treatment cycle. The right hand corner of the strip chart at the starting point of the heat treatment cycle shall contain details like the weld number, material, diameter and thickness, method of heating adopted, prescribed ranges of heat treatment temperatures, date of heat treatment, reference to item number of the Field welding Schedule (as specified at reference clause of this chapter) etc.
3.06.00		WELD EDGE PREPARATION Preparation at site of weld joint shall be in accordance with details acceptable to the Employer. Wherever possible, machining or automatic flame cutting shall be used for edge preparation. Hand flame cutting will be permitted only where edge preparation otherwise is impractical. All slag shall be removed from cuts and all the hand cuts shall be ground smooth to the satisfaction of the Employer. Flame cutting of alloy steel pipe shall be avoided. Wherever such cutting is done, a 200mm length at the cut face shall be removed by machining. Pneumatic hand tools such as edge preparation, tube cutting machine can be used.	
3.07.00		FIELD WELDING SCHEDULE The Contractor shall submit to the Employer, a certified and complete field welding schedule for all the field welding activities to be carried out in respect of the pressure parts involved in the equipment furnished and erected by him, at least 90 days prior to the scheduled start of erection work at site. Such schedule will be strictly followed by the Contractor during the process of erection. The above field-welding schedule to be issued by the Contractor shall contain the following: (a) Drawing No (s) (b) Location of the weld (c) Size of the weld (outside diameter and thickness) (d) Type of joints (e) Material specifications (f) Size of fillet on backing ring, when the type of joint is with backing ring (g) Electrode/ filler metal specifications (h) Number of welds per unit (i) Quantity of filler metal per weld (j) Indication of required Non-destructive Examination (NDE) for each weld (k) Pre-heat temperatures for welding (l) Process of welding (m) Post-welding heat treatment temperature ranges, duration, under as specified clause of this chapter entitled "Heat Treatment". (n) Qualification details of weld procedures to be adopted as specified at clause of this chapter entitled 'Qualification of Weld Procedures'.	
4.00.00		OWNER'S LIEN ON EQUIPMENT The Owner shall have lien on all equipment including those of the Contractor brought to the Site for the purpose of erection, testing and commissioning of the plant. The Owner shall continue to hold the lien on all such equipment throughout the period of Contract. No material brought to the	Notification signature by SANJOY ADHIKARY Sanjoy Adhikary, Validation Engineer  SANJOY ADHIKARY CH-SANJOY ADHIKARY SERIALNUMBER:101344C7370123020177e6287c8b3d942 PSER-47370353636e902021 PSER-527829487c8e6c58040775904187595032371a40015795 PSER-7048158, C-SWEEPS, PSER-47370353636e902021, PSER-HQ, C-BHARAT HEAVY ELECTRICALS LIMITED, C-IN

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Site shall be removed from the Site by the Contractor and/or his Sub-contractors without the prior written approval of the Engineer.		
5.00.00	INSPECTION, TESTING AND INSPECTION CERTIFICATES	
The Provisions of the Clause entitled Inspection, Testing and Inspection Certificates under Technical Specification shall also be applicable to the erection portion of the Works. The Engineer shall have the right to re-inspect any equipment though previously inspected and approved by him at the Contractor's works, before and after the same are erected at Site. If by the above inspection, the Engineer rejects any equipment, the Contractor shall make good for such rejections either by replacement or modification/ repairs as may be necessary to the satisfaction of the Engineer. Such replacements will also include the replacements or re-execution of such of those works of other Contractors and/or agencies, which might have got damaged or affected by the replacement or re-work done to the Contractor's work.		
6.00.00	ACCESS TO SITE WORKS ON SITE	
6.01.00	Suitable access to and possession of the Site shall be afforded to the Contractor by the Owner in reasonable time. The Owner shall provide access roads as per the agreed schedule.	
6.02.00	The Contractor is required to dismantle the existing foundation and cast new foundation if necessary for the new equipment supplied.	
6.03.00	The works so far as it is carried out on the Owner's premises, shall be carried out at such time as the Owner may approve and the Owner shall give the Contractor reasonable facilities for carrying out the works.	
6.04.00	In the execution of the Works, no person other than the Contractor or his duly appointed representative, Sub-contractor and workmen, shall be allowed to do work on the Site, except by the special permission, in writing of the Engineer or his representative.	
7.00.00	CONTRACTOR'S SITE OFFICE ESTABLISHMENT	
The Contractor shall establish a Site Office at the Site and keep posted an authorised representative for the purpose of the Contract. Any written order or instruction of the Engineer or his duly authorised representative, shall be communicated to the said authorised resident representative of the Contractor and the same shall be deemed to have been communicated to the Contractor at his legal address.		
8.00.00	CO-OPERATION WITH OTHER CONTRACTORS	
8.01.00	The Contractor shall co-operate with all other contractors or tradesmen of the Owner, who may be performing other works on behalf of the Owner and the workmen who may be employed by the Owner and doing work in the vicinity of the Works under the Contract. The Contractor shall also arrange to perform his work so as to minimise, to the maximum extent possible, interference with the work of other contractors and their workmen. Any injury or damage that may be sustained by the employees of the other Contractors and the Owner, due to the Contractor's work shall promptly be made good at his own expense. The Engineer shall determine the situation of any	
 SANJOY ACHARYA CHIEF SANJOY ACHARYA SERIAL NUMBER: 10113440 / 0709 / 202001 / 070e51d87c8b1d8942 26864f7358838bc9f202f Phone: +91 929469700603 / 9793003 / 979060227148501795 GS&PS 348106, S/West Bengal, INDIA PSEH HQ, CHHARAT HEAVY TECHNICALS LIMITED, C-IN		

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			have no claims, whatsoever in case of non-availability of the construction equipment being provided by NTPC as back up service and the work shall be carried out by the Contractor as per Schedule.
15.07.00			Area lighting shall be provided by Owner as per his own scheme. However, any additional lighting required for the safe execution of the work shall be arranged by the Contractor. Any damage caused due to inadequate lighting shall be made good by the Contractor at his own cost.
16.00.00			FACILITIES TO BE PROVIDED BY THE CONTRACTOR
16.01.00			Contractor's site office Establishment
			The Contractor shall establish a site office at the site and keep posted an authorized representative for the purpose of the contract, pursuant to GCC.
16.02.00			Tools, tackles and scaffoldings
			The Contractor shall provide all the construction equipments, tools, tackles and scaffoldings required for pre-assembly, erection, testing and commissioning of the requirements covered under the Contractor. He shall submit a list of all such materials to the Engineer before the commencement of pre-assembly at Site. These tools and tackles shall not be removed from the Site without the written permission of the Owner. The Contractor shall arrange Dozer, Hydra, Cranes, Trailer, etc. for the purpose of fabrication, erection and commissioning.
16.03.00			Testing Equipment and Facilities
			The Contractor shall provide the necessary testing, equipment and facilities.
16.04.00			NOT USED.
16.05.00			First-aid
16.05.01			The Contractor shall provide necessary first-aid for all his employees, representatives and workmen working at the Site. Sufficient number of Contractor's personnel shall be trained in administering first-aid.
16.05.02			The Owner will provide the Contractor, in case of any emergency, the services of an ambulance for transportation to the nearest hospital.
16.06.00			Cleanliness
16.06.01			The Contractor shall be responsible for keeping the entire area allotted to him clean and free from rubbish, debris etc. during the period of Contract. The Contractor shall employ enough number of special personnel to thoroughly clean of Contract. The contractor shall employ enough number of special personnel to thoroughly clean his work-area at least once in a day. All such rubbish and scrap material shall be stacked or disposed in a place to be identified by the Engineer. Materials and stores shall be so arranged to permit easy cleaning of the area. In areas where equipment

Sanjay Adhikary
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19.00.00 SECURITY	The Contractor shall have total responsibility for all equipment and materials in his custody stores, loose, semi-assembled and/or erected by him at Site. The Contractor shall make suitable security arrangements including employment of security personnel to ensure the protection of all materials, equipment and works from theft, fire, pilferage and any other damages and loss. All materials of the Contractor shall enter and leave the project Site only with the written permission of the Engineer in the prescribed manner.	
20.00.00 CONTRACTOR'S AREA LIMITS	The Engineer will mark-out the boundary limits of access roads, parking spaces, storage and construction areas for the Contractor and the Contractor shall not trespass the areas not so marked out for him. The Contractor shall be responsible to ensure that none of his personnel move out of the areas marked out for his operations. In case of such a need for the Contractor's personnel to work out of the areas marked out for him the same shall be done only with the written permission of the Engineer.	
21.00.00 CONTRACTOR'S CO-OPERATION WITH THE OWNER	In case where the performance of the erection work by the Contractor affects the operation of the system facilities of the Owner, such erection work of the Contractor shall be scheduled to be performed only in the manner stipulated by the Engineer and the same shall be acceptable at all times to the Contractor. The Engineer may impose such restrictions on the facilities provided to the Contractor such as electricity, water etc. as he may think fit in the interest of the Owner and the Contractor shall strictly adhere to such restrictions and co-operate with the Engineer. It will be the responsibility of the Contractor to provide all necessary temporary instrumentation and other measuring devices required during start-up and operation of the equipment systems which are erected by him. The Contractor shall also be responsible for flushing and initial filling of all the oil and lubricants required for the equipment furnished and erected by him, so as to make such equipment ready for operation. The Contractor shall be responsible for supplying such flushing oil and other lubricants unless otherwise specified elsewhere in documents and specifications.	
22.00.00 PRE-COMMISSIONING AND COMMISSIONING ACTIVITIES		
22.01.00 General		
22.01.01 The Contractor upon completion of installation of equipment and systems, shall conduct pre-commissioning and commissioning activities, to make the equipment/systems ready for safe, reliable and efficient operation on sustained basis. All pre-commissioning/ commissioning activities considered essential for such readiness of the equipment/systems including those mutually agreed and included in the Contractor's quality assurance programme as well as those indicated in clauses elsewhere in the technical specifications shall be performed by the Contractor.		
22.01.02 The pre-commissioning and commissioning activities including Guarantee tests, checks and trial operations of the equipment/systems furnished and installed by the Contractor shall be the responsibility of the Contractor as detailed in relevant clauses in Technical Specification. The Contractor shall provide, in addition, test instruments, calibrating devices etc. as required		

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23.02.00	Contractor shall be responsible for examining all the shipment and notify the Engineer immediately of any damage, shortage, discrepancy etc. for the purpose of Engineer's information only. The Contractor shall submit to the Engineer every week a report detailing all the receipts during the week. However, the Contractor shall be solely responsible for any shortages or damage in transit, handling and/or in storage and erection of the equipment at Site. Any demurrage, warfare and other such charges claimed by the transporters, railways etc. shall be to the account of the Contractor.	
23.03.00	The Contractor shall maintain an accurate and exhaustive record detailing out the list of all equipment received by him for the purpose of erection and keep such record open for the inspection of the Owner.	
23.04.00	All equipment shall be handled very carefully to prevent any damage or loss. No bare wire ropes, slings, etc. shall be used for unloading and/or handling of the equipment without the specific written permission of the Owner. The equipment stored shall be properly protected to prevent damage either to the equipment or to the floor where they are store. The equipment from the store shall be moved to the actual location at the appropriate time so as to avoid damage of such equipment at Site.	
23.05.00	All electrical panels, control gears, motors and such other devices supplied under the scope of this specification shall be properly dried by heating they are installed and energised. Motor bearings, slip rings, commutators and other exposed parts shall be protected against moisture ingress and corrosion during storage and periodically inspected. Heavy rotating parts in assembled conditions shall be periodically rotated to prevent corrosion due to prolonged storage.	
23.06.00	All the electrical equipment supplied new shall be tested for insulation resistance at least once in three months from the date of receipt till the date of commissioning and a record of such measured insulation values maintained by the Contractor. Such records shall be open for inspection by the Owner.	
23.07.00	The Contractor shall ensure that all the packing materials and protection devices used for the various equipments during transit and storage are removed before the equipment are installed.	
23.08.00	The consumables and other supplies likely to deteriorate due to storage must be thoroughly protected and stored in a suitable manner to prevent damage or deterioration in quality by storage.	
23.09.00	All the materials stored in the open or dusty location must be covered with suitable weatherproof and flameproof covering material wherever applicable.	
23.10.00	If the materials belonging to the Contractor are stored in areas other than those earmarked for him, the Owner will have the right to get it moved to the area earmarked for the Contractor at the Contractor's cost.	
23.11.00	The Contractor shall be responsible for making suitable indoor storage facilities to store all equipment which require indoor storage. Normally, all the electrical equipments such as motors, control gear, and consumables like electrodes, lubricants etc. shall be stored in the closed storage space. The Engineer, in addition, may direct the Contractor to move certain other materials, which	

Certification signature by SANJOY ADHIKARY
 <asanjoy@bhel.in>, Validity Unknown
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 2506473585836791202
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24.00.00	CONSTRUCTION MANAGEMENT	
24.01.00	The field activities of the Contractors working at Site, will be coordinated by the Owner and the Owner's decision shall be final in resolving any disputes or conflicts between the Contractor and other Contractors and tradesmen of the Owner regarding scheduling and coordination of work. Such decision by the Owner shall not be a cause for extra compensation or extension of time for the Contractor.	
24.02.00	The Owner shall hold weekly meetings of all the Contractors working at Site, at a time and place to be designated by the Owner. The contractor shall attend such meetings and take notes of discussions during the meeting and the decisions of the Owner and shall strictly adhere to those decisions in performing his Works. In addition to the above weekly meeting, the Owner may call for any other meeting either with individual contractors or with selected number of contractor and in such a case the Contractor if called, will also attend such meetings.	
24.03.00	Time is the essence of the Contract and the Contractor shall be responsible for performance of his works in accordance with the specified construction schedule. If at any time, the Contractor is falling behind the schedule, he shall take necessary action to make good for such delays by increasing his work force or by working overtime accelerate the progress of the work comply with the schedule and shall communicate such actions in writing to the Owner, satisfying that his action will compensate for the delay. The Contractor shall not be allowed any extra compensation for such action.	
24.04.00	The Owner shall however not be responsible for provision of additional labor and/or materials or supply or any other service to the Contractor except for the co-ordination work between various Contractors as set out earlier.	
25.00.00	FIELD OFFICE RECORDS	
	The Contractor shall maintain at his Site Office up-to-date copies of all drawings, specifications and other Contract Documents and any other supplementary data complete with all the latest revisions. The Contractor shall also maintain in addition the continuous record of all changes to the above Contract Documents, drawings, specifications, supplementary data, etc. effected at the field and on completion of his total assignment under the Contract shall incorporate all such changes on the drawings and other engineering data to indicate as installed conditions of the equipment furnished and erected under the Contract. Such drawings and engineering data shall be submitted to the Owner in required number of copies.	
26.00.00	CONTRACTOR'S MATERIALS BROUGHT ON TO SITE	
26.01.00	The Contractor shall bring to Site all equipment, components, parts, materials, including construction equipment, tools and tackles for the purpose of the Works under intimation to the Engineer. All such goods shall, from the time of their being brought vest in the Owner, but may be used for the purpose of the Works only and shall not on any account be removed or taken away by the Contractor without the written permission of the Engineer. The Contractors shall	

Certified signature by SANJOY ADHIKARY
 -sanjoy.adhikary, Validity: 365 days
 SANJOY ADHIKARY
 C/O: SANJOY ADHIKARY
 SERIAL NUMBER: 101134457790102301017005106708010942
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			nevertheless be solely liable and responsible for any loss or destruction thereof and damage thereto.
26.02.00			The Owner shall have a lien on such goods for any sum or sums which may at any time be due or owing to him by the Contractor, under, in respect of or by reasons of the Contract. After giving a fifteen (15) days notice in writing of his intention to do so, the Owner shall be at liberty to sell and dispose off any such goods, in such manner as he shall think fit including public auction or private treaty and to apply the proceeds in or towards the satisfaction of such sum or sums due as aforesaid.
26.03.00			After the completion of the Works, the Contractor shall remove from the Site under the direction of the Owner the materials such as construction equipment, erection tools and tackles, scaffolding etc. with the written permission of the Owner. If the Contractor fails to remove such materials, within fifteen (15) days of issue of a notice by the Owner to do so then the Owner shall have the liberty to dispose off such materials as detailed under this tender specification and credit the proceeds thereto the account of the Contractor.
27.00.00			PROTECTION OF PROPERTY AND CONTRACTOR'S LIABILITY
27.01.00			The Contractor shall be responsible for any damage resulting from his operations. He shall also be responsible for protection of all persons including members of public and employees of the Owner and the employees of other Contractors and Sub-contractor and all public and private property including structure, building, other plants and equipments and utilities either above or below the ground.
27.02.00			The Contractor will ensure provision of necessary safety equipment such as barriers, signboards, warning lights and alarms, etc. to provide adequate protection to persons and property. The Contractor shall be responsible to give reasonable notice to the Owner and the owners of public or private property and utilities when such property and utilities are likely to get damaged or injured during the execution of his Works and shall make all necessary arrangements with such owners, related to removal and/or replacement or protection of such property and utilities.
28.00.00			PAINTING Painting for Mechanical, Electrical, C&I equipment/ systems, Civil and Structure shall conform to the painting specification given in various subsections of Technical Specifications.
29.00.00			INSURANCE
29.01.00			In addition to the conditions covered under the entitled "Insurance" in Section Clause GCC, Conditions of Contract, the following provisions will also apply to the portion of works to be done beyond the Contractor's own or his Sub-contractor's manufacturing Works.
29.02.00			Workmen's Compensation Insurance
			This insurance shall protect the Contractor against all claims applicable under the Workmen's Compensation Act, 1948 (Government of India). This policy shall also cover the Contractor against claims for injury, disability, disease or death of his or his Sub-contractor's employees, which for  Certification signature by SANJOY ADHIKARY CH-SANJOY ADHIKARY SERIAL NUMBER:10134447370 PSER-HQ, C-BHARAT HEAVY ELECTRICALS LIMITED, C-IN 23.10.2019 12:33

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31.00.00	PROTECTION OF MONUMENTS AND REFERENCE POINTS	
	The Contractor shall ensure that any finds such as relic, antiquity, coins, fossils, etc. which he may come across during the course of performance of his Works either during excavation or elsewhere, are properly protected and handed over to the Owner. Similarly the Contractor shall ensure that the bench marks, reference points, etc., which are marked either with the help of Owner or by his representative shall not be disturbed in any way during the performance of his Works. If, any work is to be performed which disturb such reference, the same shall be done only after these are transferred to other suitable locations under the direction of the Owner. The Contractor shall provide all necessary materials and assistance for such relocation of reference points etc.	
32.00.00	WORK & SAFETY REGULATIONS	
32.01.00	General	
	i) The Contractor shall comply with all the requirements of “<i>The Building and Other Construction Workers (Regulation of Employment & Conditions of Service) Act,</i>” 1996 and its Central Rule 1998 / State Rules and any other statutory requirements as applicable. ii) The Contractor shall follow NTPC Safety Rules as issued from time to time with respect to safety in construction & erection. iii) The Contractor shall have the approved Safety, <i>Health and Environment (SHE)</i> Policy in respect of Safety and health of Building Workers and it shall be circulated widely and displayed at conspicuous place in Hindi and local language understood by the majority of the workers. A copy of the safety policy should be submitted to Owner in charge. iv) The Contractor shall prepare the safety plan comprising of methods to implement the Safety Policy/ Rules, Risk assessment and ensuring Safety at work areas, Safety audits, inspections and its compliance, Supervision and responsibility to ensure Safety at various levels, Safety training to employees, review of Safety and accident analysis, ensure Health and Safety Procedures to prevent accidents and submit to Engineer I/C for approval as per the format of Safety plan as annexed with this tender specification. (v) The Contractor shall ensure proper safety of all the workmen, materials, plant and equipment belonging to him or to the Owner or to others, working at the Site. vi) All equipments used in construction and erection by the Contractor shall meet BIS / International Standards and where such standards do not exist, the Contractor shall ensure these to be absolutely safe. All equipments shall be strictly operated and maintained by the Contractor in accordance with manufacturer's operation manual. The Contractor should also follow Guidelines / Rules of the Owner in this regard. vii) The Contractor will make available minimum quantity of all Safety equipment & Safety Personal Protective Equipment (PPEs) of required specifications as per suggestive list	

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as per attached Annexure, as part of list of minimum T&Ps. Further, Contractor will ensure availability of additional requirement for individual worker and safety equipment as per site requirement during execution of the contract till its completion. The Contractors shall provide suitable latest PPEs of prescribed standard to all their employees and workmen according to the need. The Engineer I/c shall have the right to examine these safety equipments to determine their suitability, reliability, acceptability and adaptability. The Contractor should also ensure these before their use at worksite. viii) The Contractor shall provide safe working conditions to all workmen and employees at his workplace including safe means of access, railings, stairs, and ladders, scaffolding, work platforms, toe boards etc. The scaffoldings shall be erected under the control and supervision of an experienced and competent person. For erection of scaffolds, access, work platforms etc. shall be good and the Contractor shall use standard quality of material. ix) The Contractor shall follow and comply with all the Safety Rules, standards, code of practices of NTPC and relevant provisions of applicable laws pertaining to the safety of workmen, employees, plant and equipment as may be prescribed from time to time without any protest or contest or reservation. In case of any unconformity between statutory requirement and the Safety Rules of the Owner referred above, the latter shall be binding on the Contractor unless the statutory provisions are more stringent. As and when required he can refer / obtain copy of NTPC safety documents as stated above. x) The Contractor shall have his own arrangements with nearby hospitals for shifting and treatment of sick and injured. The <i>medical examination of the workers</i> employed in hazardous areas shall be conducted as per Rule 223 of The Building and Other Construction Worker (Regulation of Employment and Condition of Service) Central Rule 1998 Their health records shall be maintained accordingly and to be submitted to Engineer I/c when asked for. If any worker found suffering from occupational health hazard, the worker should be shifted to suitable place of working and properly treated under intimation to Engineer I/c. The medical fitness certificate to be submitted to Engineer (I/c). xi) <i>First Aid boxes</i> equipped with requisite articles as specified in the Rule 231 of The Building and Other Construction Worker (Regulation of Employment and Condition of Service) Central Rule 1998 shall be provided at construction sites for the use of workers. Training has to be provided on first aid to workmen & office bearers working at site.		
32.01.01 Emergency Action Plan The Contractor shall prepare an emergency action plan approved by his competent authority to handle any emergency occurred during construction work. Regular mock drills shall be organized to practice this emergency plan. The Emergency Action Plan shall be widely		

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32.01.02 Flood Monitoring (Hydro Projects) 32.01.03 Scaffolding 32.01.04 Opening 32.01.05 Explosives 32.02.00 Coffor Dam and Caissons	circulated to all the employees and suitable infrastructure shall be provided to handle the emergencies. The Contractor shall take necessary measures for monitoring of flood / water levels and develop a forewarning system to evacuate people to safer places well before the flood occurs. For this purpose he may maintain liaison with meteorological department and NTPC. The Contractor shall make suitable communication and transporting system to rescue the workers to safer places. The Contractor shall provide suitable shelters, food, drinking water and other requisite facilities till they are brought back to their colonies and normalcy is restored. The Contractor shall take all precautions to prevent any accidental collapse of scaffolding or fall of persons from scaffolding. The Contractor should ensure that scaffolding are designed by a competent person and its erection and repairs should be done under the expert supervision. The scaffolding shall meet the required strength and other requirements for the purpose for which the scaffold is erected. The material used for scaffold should conform to the BIS / International standards. The Contractor shall ensure that there is no opening in any working platform/any floor of the building, which may cause fall of workers or material. When ever an opening on a platform/any floor of the building is unavoidable, the opening should be suitably fenced and necessary measures for protection against falling objects or building workers from such platform are taken by providing suitable safety nets, safety belts or other similar means. The Contractor shall take all precautions while handling, using, storing or transporting of all explosives. Before usage of any explosive necessary warning / danger signals be erected at conspicuous places to warn the workers and general public. The Contractor should strictly ensure all measures and precautions required to be complied for use, handling, storing or transportation of explosives under the rules framed under the Explosives Act, 1884. The Contractor shall ensure that the cofferdam and caissons are of good construction and adequate strength. The cofferdam and caissons should be provided with adequate means for workers to reach safely at the top of such dams in the event of an in rush of water. The workers should be allowed to work in a cofferdam or caisson only after inspection and found safe by Owner (I/c). Such inspection report is to be maintained in a Register.		
	Certification signature by SANJOY ADHIKARY <asanjoy@bhel.in>, Value not known  SANJOY ADHIKARY CH-SANJOY ADHIKARY SERIALNUMBER1101344C73701230C1377E62B7C8B1B942 PSER-473553636902021 Phone=9278294897@bhel.in PSER-HQ, CH-BHARAT HEAVY ELECTRICALS LIMITED, C-IN 23.10.2019 12:33		

	 BHOPAL	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW) TECHNICAL SPECIFICATION – CONTAINERISED ELECTRICAL ROOM	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 84 of 97 REV. 00
			The Contractor shall be fully responsible for the safe storage of his and his Sub-Contractor's radio-active sources in accordance with BARC/DAE (Bhabha Atomic Research Centre/ Department of Atomic Energy, Govt. of India) Rules and other applicable provisions. All precautionary measures stipulated by BARC/DAE in connection with use, storage and handling of such material, will be taken by the contractor. The Contractor shall provide suitable personal protective equipments to the workers who are handling the hazardous and corrosive substances including alkalis and acids. As a precautionary measure the Contractor should keep the bottles filled with distilled water in cupboard / Boxes near work place for emergency eye wash by worker exposed to such hazardous chemicals.
32.09.00	Eye Protection	The Contractor shall provide suitable personal protective equipment to his workmen depending upon the nature of hazards and ensure their usage by the workers engaged in operations like welding, cutting, chipping, grinding or similar operations which may cause injuries to his eyes.	
32.10.00	Excavation	The Contractor shall take all necessary measures during excavation to prevent the hazards of falling or sliding material or article from any bank or side of such excavation which is more than one and a half meter above his footing by providing adequate piling, shoring, bracing etc. against such bank or sides. Adequate and suitable warning signs shall be put up at conspicuous places at the excavation work to prevent any persons or vehicles falling into the excavation trench. No worker should be allowed to work where he may be stuck or endangered by excavation machinery or collapse of excavations or trenches.	
32.11.00	Electrical Hazards	The Contractor should ensure that all electrical installations at the construction work comply with the requirements of latest electricity acts / rules. The Contractor shall take all adequate measures to prevent any worker from coming into physical contact with any electrical equipment or apparatus, machines or live electrical circuits which may cause electrical hazards during the construction work. The Contractor shall provide the sufficient ELCBs / RCCBs for all the portable equipments, electrical switchboards, distribution panels etc. to prevent electrical shocks. The Contractor should ensure use of single / double insulated hand tools or low voltage i.e., 110 volts hand tools. The Contractor should also ensure that all temporary electrical installations at the construction works are provided with earth leakage circuit breakers.	
32.12.00	Vehicular Traffic	The Contractor should employ vehicle drivers who hold a valid driving license under the Motor Vehicles Act, 1988.	Certification signature by SANJOY ADHIKARY <asanjoy@bhel.in>, Validity Unknown SANJOY ADHIKARY CH-SANJOY ADHIKARY SERIALNUMBER:10134AC73767236C1377E62B7C83B942 PSER:470303040600020 Phone:9278294897,06862834000,0977590243,095865032371,400187955 PSER:HQ, CH-BHARAT HEAVY ELECTRICALS LIMITED, C-IN 23.10.2019 12:33

	 BHOPAL	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW) TECHNICAL SPECIFICATION – CONTAINERISED ELECTRICAL ROOM	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 87 of 97 REV. 00
32.19.00	Fire Protection	The Contractor shall provide sufficient fire extinguishers at place /s of work. The fire extinguishers shall be properly maintained as per relevant BIS Standards. The employees shall be trained to operate the fire extinguishers / equipment.	
32.20.00	Penalties	(i) If the Contractor fails in providing safe working environment as per the Safety Rules of NTPC or continues the work even after being instructed to stop the work by the Engineer I/C as provided in specification above, the Contractor shall be penalized at the rate of Rs. 25,000/- per day or part thereof till the instructions are complied with and so certified by the Engineer I/C. However, in case of accident, the provisions contained in respective Sub-Clause shall also apply in addition to the penalties mentioned in this sub-clause. (ii) If the Contractor does not take all safety precautions and / or fails to comply with the Safety Rules as prescribed by the Owner or under the applicable law for the safety of the plant and equipment and for the safety of personnel and the Contractor does not prevent hazardous conditions which cause injury to his own employees or employees of other Contractors, or NTPC's employees or any other person who are at the Site or adjacent thereto, the Contractor shall be responsible for payment of penalty to NTPC as per the following schedule:- a) Fatal injury or accident causing death: Penalty @10% of contract value or Rs. 5,00,000/- per person, which ever is less. b) Major injuries or accident causing 25% or more permanent disablement to workmen or employees: Penalty @2.5% of contract value or Rs. 1,00,000/- per person which ever is less Permanent disablement shall have the same meaning as indicated in The Workmen's Compensation Act' 1923. The penalty mentioned above shall be in addition to the compensation payable to the workmen / employees under the relevant provisions of the Workmen's Compensation Act' 1923 and rules framed there under or any other applicable laws as applicable from time to time. (iii) If any Contractor worker found working without using the safety equipment like safety helmet, safety shoes, safety belts, etc. or without anchoring the safety belts while working at height, the Engineer I/c / Safety Officer of NTPC shall have the right to penalize the Contractor for Rs. 200/- per person per day and such worker shall be sent out of the workplace immediately and shall not be allowed to work on that day. Engineer I/c / Safety Officer of NTPC will also issue a notice in this regard to the Contractor. (iv) If two or more fatal accidents occur at same NTPC site under the control of Contractor during the period of contract and he has - not complied with keeping adequate PPEs in stock or - defaulted in providing PPEs to his workmen - not followed statutory requirements / NTPC safety rules	

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 BHOPAL	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW)	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 88 of 97
	TECHNICAL SPECIFICATION – CONTAINERISED ELECTRICAL ROOM	REV. 00

(4) been issued warning notice/s by NTPC head of the project on non observance of safety norms

(5) not provided safety training to all his workmen, the Contractor can be debarred from getting tender documents in NTPC for two years from the date of last accident.

The safety performance will also be one of the overriding criteria for evaluation of overall performance of the Contractors by NTPC. The Contractor shall submit the accident data including fatal / non-fatal accidents for the last 3 years where he has undertaken the construction activities Projects-wise along with the tender documents. This will also be considered for evaluation of tender documents. If the information given by the Contractor is found incorrect, his contract will be liable to be terminated.

32.21.00 Award

If the Contractor's performance on safety front is found satisfactory i.e. without any fatal/reportable accident in the year of consideration; he may be considered for suitable award "ACCIDENT FREE SAFETY MERITORIOUS AWARD" as per scheme of the Owner.

33.00.00 FOREIGN PERSONNEL

33.01.00 The Contractor shall submit to the Owner data on all personnel he proposes to bring into India for the performance of the Works under the Contract, at least sixty (60) days prior to their departure to India. Such data will include for each person the name, his present address, his assignment and responsibility in connection with the works, and a short resume of his qualification, experience etc. in relation to the work to be performed by him.

33.02.00 Any person unsuitable and unacceptable to the Owner shall not be brought to India. Any person brought to India, if found unsuitable or unacceptable by the Owner, the Contractor shall within a reasonable time make alternate arrangements for providing a suitable replacement and repatriation of such unsuitable personnel.

33.03.00 No person brought to India for the purpose of the works shall be repatriated without the consent of the Owner in writing, based on a written request from the Contractor for such repatriation giving reasons for such an action to the Engineer. The Owner may give permission for such repatriation provided he is satisfied that the progress of work will not suffer due to such repatriation.

33.04.00 The cost of passports, visas and all other travel expenses to and from India, incurred by the Contractor shall be to his account. The Owner will not provide any residential accommodation and/or furniture for any of the Contractor's personnel including foreign personnel and Contractor shall make his own arrangements for such facilities in the area allotted at Site, to him by the Owner for that purpose.

33.05.00 The Contractor and his expatriate personnel shall respect all Indian Acts, Laws, rules and regulations and shall not in any way interfere with Indian political and religious affairs and shall conform to any other rules and regulations which the Government of India, the Owner and the Engineer may establish from time to time on them. The Contractor's expatriate personnel shall work and live in close co-operation and coordinate with their co-workers and the community and shall not engage themselves in any other employment neither part-time or full-time nor shall they take part in any local politics.

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 BHOPAL	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW) TECHNICAL SPECIFICATION – CONTAINERISED ELECTRICAL ROOM	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 90 of 97 REV. 00
40.03.00 40.04.00 40.05.00 40.06.00 41.00.00 41.01.00	Sharp bending and kinking of cables shall be avoided. The minimum radii for PVC insulated cables 1100V grade shall be 15 D where D is the overall diameter of the cable. Installation of other cables like high voltage, coaxial, screened, compensating, mineral insulated shall be in accordance with the cable manufacturer's recommendations. Wherever cables cross roads and water, oil, sewage or gaslines, special care should be taken for the protection of the cables in designing the cable channels. In each cable run some extra length shall be kept at a suitable point to enable one or two straight through joint to be made, should the cable develop fault at a later date. Control cable terminations shall be made in accordance with wiring diagrams, using identifying codes subject to Engineer's approval. Multicore control jackets shall be removed as required to train and terminate the conductors. The cable jacket shall be left on the cable, as far as possible, to the point of the first conductor branch. The insulated conductors from which the jacket is removed shall be neatly twined un bundles and terminated. The bundles shall be firmly but not tightly tied utilising plastic or nylon ties or specifically treated fungus protected cord made for this purpose. Control cable conductor insulation shall be securely and evenly out. The connectors for control cables shall be covered with a transparent insulating sleeve so as to prevent accidental contact with ground or adjacent terminals and shall preferably terminate in Elmex terminals and washers. The insulating sleeve shall be fire resistant and shall be long enough to over pass the conductor insulation. All control cables shall be fanned out and connection made to terminal blocks and test equipment for proper operation before cables are corded together. EQUIPMENT DELIVERY AND ERECTION General Requirements (a) This part covers Contractor's responsibilities for packing, shipping, warehousing and the installation of all equipment and materials furnished and installed under this specification. (b) The Contractor shall submit for Employer's approval draft manual for Equipment Delivery and Erection (EDE Manual) covering detailed instructions, write up, technical data, drawings, check-lists, documentation formats for all activities after equipment manufacture upto installation of equipment. This manual shall cover general instructions for all equipment and specific instructions for individual equipment wherever required and shall include at least the following : (1) Instructions for packing, shipping, receiving handling, warehousing and storage. (2) Instructions for location and installation of equipment furnished by this specification. (3) Installation drawings for field mounted equipment, panels, cubicles and other equipment covered under this specification. (4) Instruction relating installation of piping/ tubing, support and routing drawings of impulse pipes/signal tubes and tube/cable trays. (5) Check lists and quality assurance hold points. (6) Format for all related documentation.	Certification signature by SANJOY ADHIKARY <asanjoy@bhel.com> Value Unknown  SANJOY ADHIKARY CHIEF SANJOY ADHIKARY SERIAL NUMBER-10113440 2686473268838679202 Phone-9619244897 6348934819P, S-West Bengal PSER-HQ, CHHARAT HEAVY TECHNICALS LIMITED, C-1N 23.10.2019 12:33

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 BHOPAL	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW) TECHNICAL SPECIFICATION – CONTAINERISED ELECTRICAL ROOM	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 92 of 97 REV. 00
#Gross weight and net weight in Kilograms #Dimensions in centimeters #Complete description of material Packaging or shipping units shall be designed within the limitations of unloading facilities and the equipment which will be used for transport. Complications involved with ocean shipment and the limitations of ports, railways and roads shall be considered. It shall be the Contractor's responsibility to investigate these limitations and to provide suitable packaging to permit safe handling during transit and at the job site. Electrical equipment, control and instrumentation shall be protected against moisture and water damage. All external gasket surfaces and flange faces,couplings, motor pump shafts, bearing and like items shall be thoroughly cleaned and coated with rust preventive compound as specified above and protected with suitable wood, metal or other substantial type covering to ensure their full protection. Equipment having antifriction or sleeve bearings shall be protected by weather tight enclosures. Coated surfaces shall be protected against impact, abrasion, discolouration and other damage. Surfaces which are damaged shall be repaired. All exposed threaded parts shall be greased and protected with metallic or other substantial type protectors. All female threaded openings shall be closed with forged steel plugs. All piping, tubing, and conduit equipment and other equipment openings shall be sealed with metallic or other rough usage covers and tapped to seal the interior of the equipment piping, tubing, or conduit. Provisions shall be made to ensure that water does not enter any equipment during shipment or in storage at the plant site. Returnable containers and special shipping devices shall be returned by the manufacturer's field representative at the Contractor's expense. While packaging the material, care shall be taken for the limitation from the point of view of availability of railway wagon sizes in India.		
41.03.00	Factory Assembly Instrument enclosures shall be supplied and erected completely in the factory with instrument, air supply and blow down piping with necessary valves, fittings, etc. and also all electrical wiring between the instruments and the enclosure terminal blocks. Control panel and cubicles shall also be fully wired in the factory. Control panel mounted equipments are to be dismantled from the panels before shipment and individually packed for shipment. Electronic control modules of the plug-in type are to be removed from equipment racks after factory checkout are individually packed for shipment. Other equipment shall be fully assembled at the factory, except for necessary shipping splits in panels	

 BHOPAL	RENOVATION & RETROFITTING OF ESP NTPC KAHALGAON STAGE-I (4X210MW)	Tech Spec No. RMSG 05 749 Issue Dt. 22.02.2019 Page 95 of 97
	TECHNICAL SPECIFICATION – CONTAINERISED ELECTRICAL ROOM	REV. 00
Thermometers shall be installed in the process lines and ducts as required and adjusted for ease in reading. Permanent temperature wells on the main steam, hot reheat and cold reheat piping shall not be installed until steam blowing has been completed. Temporary temperature wells shall be installed in the main and reheat steam piping during steam blow and discarded after completion. Any required adapting hardware such as pipe bushings, nipples, drilled caps and the like shall be provided for complete installation of control devices into process connections. For location of C&I related equipment/devices, the requirements specified elsewhere in the technical specification may be referred. Installation of Field Mounted Instruments and Devices The Contractor shall submit installation drawings for all field mounted equipment furnished under this specification for Employer's approval. These drawings shall meet the requirements of this specification, installation drawings, applicable codes and standards and recommendations of manufacturers of instruments/devices. All installation work under this specification shall be strictly as per installation drawings approved by the Employer during detailed engineering stage. In addition to above relevant Portion as specified elsewhere in technical specification may be referred. Piping Connections All equipment having piping connections shall be levelled, aligned and wedged in place but shall not be grouted or bolted prior to the initial fitting and alignment of connecting piping. All equipment shall, however, be grouted or bolted to its foundation prior to final bolting or welding of the connection piping. All flanged joints shall be checked and retightened after approximately 10 days of operation at normal operating temperature. Equipment Checkout All equipment shall be cleaned after installation. Equipment subject to pressure differentials shall be checked for leakage. After erection, all equipment having moving parts, having electrical apparatus, or subject to pressure differentials shall be trial-operated. Defects All defects in erection shall be corrected to the satisfaction of the Employer and the Project Manager. The dismantling and reassembly of Contractor furnished equipment to remove defective parts, replace parts, or make adjustments shall be included as a part of the work under these specifications.		

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23.10.2019 12:33

	CORPORATE QUALITY ASSURANCE SUB-VENDOR QUESTIONNAIRE

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

Project		KAHALGAON-II (4 x 210 MW)		STATUS OF ITEM REQUIRING QP& SUB-SUPPLIER APPROVAL		DOC NO. CS-4210-104A(R&M)-2				
Package Contractor		R&M for ESP		SUB-SUPPLIER APPROVAL		REV. NO. : 0				
Contractor No.		BHIL		ESP R&M - ELECTRICAL		DATE : 18.05.2017				
Contractor No.		CS-4210-104A(R&M)-2								
S.No	Item Services	QP Insp. Cat.	QP Sub. Schedule Approval	Date of sub-mission	Status Code C/II	Proposed Sub Supplier	Place of manufacturing works	Approval Status	Sub-supplier detail submission schedule	Remarks
1	HFTS SET (Power Plus)	I				NVL	USA	A		SUB QR ITEM
2	HVR Transformer & EC Panel	I				Kraft Powercon	Sweden	A		SUB QR ITEM
		I				ADOR Powertron	Pune	A		SUB QR ITEM
		I				Hind Rectifier	Mumbai	A*		* - TO BE CONSIDERED ONLY AFTER SATISFACTORY RESOLUTION OF HVR TRF FAILURE AT FGUTPP - SUB QR ITEM
		I				BHEL	Jhansi	A		SUB QR ITEM
3	Oil Filled LT Transformer (6.6 / 415 KV)	I				Kraft Powercon	Pune	DR		SUB QR ITEM
		I				EMCO	Thane / Jalgaon	A		SUB QR ITEM
		I				VOLTAMP	Makarpura	A		SUB QR ITEM
		I				Transformer & rectifier	Ahmedabad	A		SUB QR ITEM
		I				Kanohar	Meerut	A		SUB QR ITEM
		I				Tesla	Bhopal	A		SUB QR ITEM
		I				Kirloskar Electric	Pune	A		SUB QR ITEM
		I				Andrew Yule	Chennai	A		SUB QR ITEM
		I				CGL	Malanpur	A		SUB QR ITEM
		I				ECE	Sonepat	A		SUB QR ITEM
		I				Vilay Electrical	Hyderabad	A		SUB QR ITEM
		I				Schneider	Naini/Vadodara	A		SUB QR ITEM
		I				Sudhir Intradivdyut	Bangalore	DR		SUB QR ITEM
4	LT Motor (See Note-1)	I				Jyoti	Vadodara	A		SUB QR ITEM
		I				Bharat Biljee	Mumbai	A		UPTO 180 KW/RQP
		I				CGL	Ahmednagar	A		RQP
		I				ABB	Fardabad*/Bangalore**	A		*UPTO 55 KW**ABOVE 55& UPTO 200 KW/RQP
		I				SIEMENS	Mumbai	A		RQP
		I				NGEF	Bangalore	A		UPTO 15 KW
		I				LHP	Solapur	A		UPTO 120 KW
		I				KEC	Bangalore/Hubli*	A		*UPTO 90 KW/RQP
		I				MARATHON	Calcutta	A		RQP
5	LT MCC / ACP	I				SCHNEIDER	Nasik	A		
		I				L&T	Mumbai/Coimbatore	A		
		I				C&S	Noida/Hardwar	A		
		I				UNILEC	Gurgaon	A		
		I				GEI	Bangalore	A		
		I				SIEMENS	Mumbai	A		
		I				Control Schematics	Hyderabad	A		
		I				ABB	Bangalore	DR		
	DCDB, ACDB, MLD, ACFB, DCFB, LIGHTING PANEL, LOCAL CONTROL PANEL, (NON PLC), PB STATION, JB	I				Sources at Sl No. 5 are also acceptable.				For lighting transformer Refer sl no 16

Project		KAHALGAON-II (4 x 210 MW)		STATUS OF ITEM REQUIRING QP & SUB-SUPPLIER APPROVAL		DOC NO. CS-4210-104A(R&M)-2					
Package Contractor		R&M for ESP BHEL		SUB-SUPPLIER APPROVAL ESP R&M - ELECTRICAL		REV. NO. : 0					
Contractor No.		CS-4210-104A(R&M)-2				DATE : 18.05.2017					
S.No	Item Services	QP/Insp. Cat.	QP Sub-Schedule Approval schedule	Date of sub-mission	Date of commit Appl.	Status Code C/III	Proposed Sub Supplier	Place of manufacturing works	Approval Status	Sub-supplier detail submission schedule	Remarks
							Pyrotech	Udaipur	A		
							Jackson	G. Noida	A		
							Control Devices	Calcutta	A		
							Posttronics	Baroda	A		
							Switching Circult	Calcutta	A		
							Jolly Engg	Calcutta	A		
							KGS Engg	Chennai	A		
							Spaceage	Gurgaon	A		
							G&S	Noida/Haridwar	A		RQP
							Unilec	Gurgaon	A		
							REEP	Chennai	A		
							INCAB	Pune	A		
							UCL	Satna	A		
							KEI	Bhiwadi	A		
							NICCO	Shyamnagar	A		
							HAVELLS	Alwar	A		
							SHRIRAM CABLES	Bhiwadi	A		
							TORRENT	Nadiad	A		
							POLYCAB	Daman	A		
							KEI	Bhiwadi	A		
							CORDS	Bhiwadi	A		
							Dellon	Fardabad	A		Armoured Cables up to 3.5 X 240 SQMM.
							Paramount Cable	Khushkhera	A		
							Railson	Bhiwadi	A		
							Universal Cable	Satna	A		
							INCAB	Pune	A		
							HAVELLS	Alwar	A		
							Radiant	Hyderabad	A		
							HVPL	Fardabad	A		
							Polycab	Daman	A		
							TORRENT	Nadiad	A		
							Nicco	Shyamnagar	A		
							Gemscab	Bhiwadi	A		
							KEC International	Vadodara	DR		
							Ravin Cable	Pune	A		
							Thermocables	Hyderabad	A		
							Suyog Cables	Vadodara	A		
							Sri Ram Cables	Bhiwadi	A		
							Shree Cables	Bengaluru	A		
							Tinupati Plasmatronics	Jaipur	A		
							Advance Cable	Bengaluru	A		

Project Package Contractor		KAHALGAON-II (4 x 210 MW) R&M for ESP BHEL				STATUS OF ITEM REQUIRING QP& SUB-SUPPLIER APPROVAL ESP R&M - ELECTRICAL				DOC NO. CS-4210-104A(R&M)-2	
Contractor No.		CS-4210-104A(R&M)-2						REV. NO. : 0		DATE : 18.05.2017	
S.No	Item Services	QP/ Insp. Cat.	QP Sub. Schedule Approval	Date of sub-mission	Date of comnt Appl.	Status Code Cn/I	Proposed Sub Supplier	Place of manufacturing works	Approval Status	Sub-supplier detail submission schedule	Remarks
							Finolex Cable	Pune	A		
							Gupta Power	Bhubaneswar	A		
							STEP Industries	Alwar	A*		*. Subject to CIP clearance for points raised for Daripali.
							Scott Innovation Wires and Cables	Baddi	A		
10	1.1 KV PVC Power Cable						Cords	Bhiwadi	A		
							Paramount	Khushkhera	A		
							Universal Cable	Salna	A		
							TORRENT	Nadiad	A		
							Railson	Bhiwadi	A		
							Polycab	Daman	A		
							Nico	Shyamnagar	A		
							Radiant Cable	Hyderabad	A		
							KEI	Bhiwadi	A		
							Geniscab	Bhiwadi	A		
							INCAB	Pune	A		
							HAVELLS	Alwar	A		
							HVPL	Faridabad	A		
							Delton	Faridabad	A		ARMOURED CABLE UPTO 3.6 C X 240 SQM
							TORRENT	Nadiad	A		
							INCAB	Pune	A		
							R.R. Kabla	Silveta	DR		
							Elkay Tealink	Faridabad	DR		
							KEC International	Vadodara	DR		
							Ravin Cable	Pune	A		
							Thermocables	Hyderabad	A		
							Suyog Cables	Vadodara	A		
							Sri Ram Cables	Bhiwadi	A		
							Shree Cables	Bengaluru	A		
							Tripathi Plasomatics	Jalpur	A		
							Advance Cable	Bengaluru	A		
							Finolex Cable	Pune	A		
							Gupta Power	Bhubaneswar	A		
							STEP Industries	Alwar	A*		*. Subject to CIP clearance for points raised for Daripali.
							Scott Innovation Wires and Cables	Baddi	A		
							CORDS Cable	Bhiwadi	A		
							HVPL	Faridabad	A		
							Geniscab	Bhiwadi	A		
							KEI	Bhiwadi	A		
							Radiant	Hyderabad	A		

Project		KAHALGAON-II (4 x 210 MW)		STATUS OF ITEM REQUIRING QP & SUB-SUPPLIER APPROVAL		DOC NO. CS-4210-104A(R&M)-2					
Package Contractor		R&M for ESP		SUB-SUPPLIER APPROVAL		REV. NO. : 0					
Contractor No.		BH&L		ESP R&M - ELECTRICAL		DATE : 18.05.2017					
Contractor No.		CS-4210-104A(R&M)-2									
S.No	Item Services	QP/Insp. Cat.	QP Sub. Schedule Approval schedule	Date of sub-mission	Date of commt Appl.	Status Code C/I/I	Proposed Sub Supplier	Place of manufacturing works	Approval Status	Sub-supplier detail submission schedule	Remarks
		I					Rallison	Bhivadi	A		
		I					Elkay Telelink	Faridabad	A		
		I					POLYCA8	Daman	A		
		I					NICCO	Shyamnagar	A		
		I					TORRENT	Nadiad	A		
		I					Universal Cable	Satna	A		
		I					Dellon	Faridabad	A		
		I					R.R. Kable	Silvassa	A		
		I					Paramount Cable	Alwar	A		
		I					HAVELLS	Alwar	A		
		I					Gupta Power	Bhubaneswar	A		
		I					SPM cables	Hyderabad	A		
		I					Ravin Cables	Pune	A		
		I					Suyog Cables	Vadodara	A		
		I					Incab	Pune	A		
		I					RR Kabel	Silvassa	A		
		I					Thermocables	Hyderabad	A		
		I					Triupati Plasomastics	Jaipur	A		
		I					Advance Cable	Bengaluru	A		
		I					Finclux	Pune	A		
		I					KEC International	Vadodara	DR		
		I					Shee Cables	Bengaluru	A		
		I					STEP Industries	Alwar	A*		* Subject to CMC clearance for polystyrene raised for Duripoli.
		I					Elkay Telelink	Faridabad	A		
		I					Scott Innovation Wires and Cables	Baddi	A		
		I					BHEL EPD	Bangalore	A		
		III					BHEL Approved Sources				
12	Insulators (Bushings, Support, Shaft)	I					Steelite	Mumbai	A		Insulator make shall be BHEL/WSU/JSUCE/ Aditya Birla SQP
13	Disconnecting Switch	II					Inar Profiles Ltd	Ankapatly	A		GALVANISING AT VISAKHA STEEL ANAKAPALLI
14	Flexible Cable Tray Supporting System	II					Indiana Gratings	Puna	A		SQP GALVANISING AT POONA GALVANISER-PUNE
		II					Valco	Mumbai	A		SQP GALVANISING AT SIGMA MUMBAI
		II					Antech	Pune	A		SQP GALVANISING AT NITFC APPROVED SOURCES
		II					Ind mark Formtech	Pune	A		Galvanising at NEHA
		II					Premier Power	Kolkata	A		SQP
		II					Industrial Perforation	Calcutta	A		SQP, NITFC approved galvanizing source
		II					Ratan	Bhagatpur			SQP GALVANISING AT NITFC APPROVED SOURCES
	Cable Tray	III					Ratan Engg	Calcutta	A		

Project		KAHALGAON-II (4 x 210 MW)		STATUS OF ITEM REQUIRING QP& SUB-SUPPLIER APPROVAL		DOC NO. CS-4210-104A(R&M)-2					
Package		R&M for ESP		SUB-SUPPLIER APPROVAL		REV. NO. : 0					
Contractor		BHEL		ESP R&M - ELECTRICAL		DATE : 18.05.2017					
Contractor No.		CS-4210-104A(R&M)-2									
S.No	Item Services	QP/Insp. Cat.	QP Sub. Schedule Approval	Date of sub-mission	Date of comit Appl.	Status Code C/I/I	Proposed Sub-Supplier	Place of manufacturing works	Approval Status	Sub-supplier detail submission schedule	Remarks
		III					Steelite	Mumbai	A		SQP
		III					Indiana Gratings	Pune	A		SQP GALVANISING AT POONA GALVANISER-PUNE
		III					MJ Engg	Delhi/Bhivadi	A		SQP
		III					India Electric Syndicate	Calcutta	A		SQP GALVANISING AT NTPC APPROVED SOURCES
		III					Velco	Mumbai	A		SQP GALVANISING AT SIGMA MUMBAI
		III					Inar Profiles Ltd	Ankarpally	A		GALVANISING AT VISAKHA STEEL
		III					Janna Metals	Delhi/Sonept	A		ANAKAPALLI
		III					Indiana	Mumbai	A		SQP GALVANISING AT KARAMTARA
		III					Techno Engg	Chandigarh	A		SQP
		III					Anad udvog	Thane	A		SQP
		III					Industrial Perforation	Calcutta	A		SQP
		III					Calcutta Mfg	Calcutta	DR		SQP
		III					Ind mark Formtech	Pune	A		SQP
		III					Premier Power	Kolkata	A		Galvanizing at NEHA
		III					AV Engg	Kolkata	A		SQP
		III					Ratan	Bhagbalpur	A		SQP, NTPC approved galvanizing source
		III					Antech	Pune	A		SQP, Galvanizing at BG Shikha
		III					Rukmani	Rajpur	A		
		III					Patny	Hyderabad	A		
		III					Unitech Fabricators & Engineers	Howrah/Hoogly (Kolkata)	A		
		III					Passive Infra	Ashsargah (Rohitak)	A		
		III					Rabi Engg	Kolkata	A		SQP, NTPC approved galvanizing source
		III					T.R.G	Chennai	A		Galvanizing at TN Radhakrishna Shetty & Co
		III					Indiana Cable trays	Mumbai	A		Galvanizing at Karantamara
		II					Gujarat Plug In	Vadodara	A		SQP
16	Lighting Transformer (Epoxy Insulated)	II					Prayog	Pune	A		SQP
		II					Indcoil	Mumbai	A		SQP
		II					Pragati	Thane	A		SQP
		II					Southern Elect	Chennai	A		SQP
		II					Pactifi	Thane	A		SQP
		II					AE	Mumbai	A		SQP
		II					RPCL	Pune	A		SQP
		III					KEC	Solapur	A		SQP
		III					LHP	Solapur	A		SQP
		III					New Allenbury Works	Calcutta	A		SQP
		III					PBL	V V Nagar	A		SQP
		III					Internal Combustion	Aurangabad	A		SQP
17	Geared Motor for ESP										

Project		KARHAGAON-II (4 x 210 MW)		STATUS OF ITEM REQUIRING QP& SUB-SUPPLIER APPROVAL		DOC NO. CS-4210-104A(R&M)-2				
Package		R&M for ESP		ESP R&M - ELECTRICAL		REV. NO. : 0				
Contractor		BHEL				DATE : 18.05.2017				
Contractor No.		CS-4210-104A(R&M)-2								
S.No	Item Services	Q.P. Insp. Cat.	QP Sub-Schedule Approval	Date of sub-mission	Status Code C/I/I	Proposed Sub-Supplier	Place of manufacturing works	Approval Status	Sub-supplier detail submission schedule	Remarks
18	Panel Type Hopper Heater	III				Bongitoli	Chennai	DR		
		II				HTD	USA	A		
		II				Hofoli EHS	USA	A		
		I				HTD HEAT TRACE(I) Pvt Ltd	Hyderabad	A		
		II				Thermon	USA	A		
		I				Thermopads(Uni-II)	Hyderabad	DR		
		I				Thermon	Pune	A		
19	Tubular Type Heater	III				BHEL Approved Sources				
20	Lighting Fixtures & Luminaries	III				Wipro	Pune	A		
		III				Crompton	Mumbai	A		
		III				Phillips	Pune	A		
		III				Bajaj	Mumbai	A		
21	Welding Receptacles	III				SCHEINDER	Nasik	A		
		III				AJMER	Mumbai	A		
		III				Best & Crompton	Chennai	A		
		III				BCH	Faridabad	A		
22	Lighting Wires / GI Conduit	III				BIS Licence		A		Any make with VDE or CE or UL or CSA marking or BIS approved with valid CML number.
23	Cable Gland	III				Anup Engg	Kolkata			Any other make with VDE or CE or UL or CSA marking or BIS approved with valid CML number.
		III				Sunil & Co	Kolkata	A		
		III				Quality Precision	Kolkata	A		
		III				Comet	Mumbai	A		
24	Lugs	III				Dowells	Mumbai	A		Any other make with VDE or CE or UL or CSA marking or BIS approved with valid CML number.
		III				Chetna	Nasik	A		
		III				3D	Umbergaon	A		
25	Emergency Light, Trefoil Clamps, Ceiling Fans	III				BHEL Approved Sources				
26	M.S. ROD, G.I. Flat, G.I. Wire, Earth Wire	III				BHEL Approved Sources				
27	Local Motor Starter Panels	III				SIEMENS	Mumbai			
		III				L&T	Mumbai			
28	Limit Switches	III				KAKU BHILLAI	Chennai	N		Any other make with VDE or CE or UL or CSA marking or BIS approved with valid CML number.
		III				Jai Balaji	Chennai	N		
		III				AG System	Mumbai	N		
		III				Electromag	Mumbai	N		
		III				BCH	Faridabad	N		
		III				3M	Pune	A		
29	HT Termination & Joining Kits	III				Raychem	Pune	A		
30	Fire sealing system - Type A Material supplier	III				3M India	Bangalore	A		
		III				GE Silicon	USA	A		

PROJECT : R & M of Kahalgaon - I (2 x 210 MW)		LIST OF ITEMS REQUIRING QP				REF. NO : 4210-104A-R & M-2					
PACKAGE : R & M of Kahalgaon - Stage - I		APPROVAL & ACCEPTABLE				REVISION NO : 00					
CONTRACTOR : M/s BHEL		VENDOR AS APPROVED BY				DATE : 19/05/2017					
CONTRACT NO : 4210-104A-R & M-2											
No.	Major Equipment	QP Inspection Category	QP No. 4210 104A-QVI-Q	QP Submission SCH	QP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Remark
1	Instrument Cables (Screened)	I				Paramount	Khushkhera	A			PVC,FRLS type SQP
		I				Polycab	Daman	A			PVC,FRLS type SQP
		I				Dellon	Faridabad	A			PVC,FRLS type SQP
		I				KEI	Bhiwadi	A			PVC,FRLS type SQP
		I				Elkey Telelinks	Faridabad	A			PVC,FRLS type SQP
		I				CORDS	Bhiwadi	A			PVC,FRLS type SQP
		I				Nicco	Kaharani	A			PVC,FRLS type SQP
		I				Universal Cable	Kolkata	A			PVC,FRLS type SQP
		I				Thermocables	Salna	A			PVC,FRLS type SQP
		I				CMI	Hyderabad	A			NTPC SQP
		I				Reliance Engrs Ltd	Faridabad	A			NTPC SQP
		I				Incab	Bengaluru	DR**			
		I				Gupta Power Infra Structure Limited	Pune	DR**			
		I				Advance Cables	KHURDA (Bhuvneshwar)	A			NTPC SQP
		I				TC Communications	Bangalore	DR			
		I				Elkay Telelinks	Ghaziabad	A			NTPC SQP
		I				Suyog Cables	Faridabad	A			PVC,FRLS type SQP
		I				Special Cables	Vadodra	DR			
		I				Mansfield	Rudrapur	A			NTPC SQP
		I				KEC International	Noida	DR			
		I				BHEL Ranipatna Approved Sources	Vadodra	DR			
2	ESP Controllers (ARECA / INTELURAP / STATCON (As applicable))	III						Noted			
3	IOS Panel (Without Controller)	III				BHEL-EPD	Bangalore	A			
		III				Chemlin Controls	Pondicherry	A			
		III				Controls & Schematics	Hyderabad	A			
		III				Sajas Electricals	Tiruchy	DR			
		III				Prammen Industries	Pudukottai	A			
		III				Industrial Control & Appliances	Mumbai	A			

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NTPC		PROJECT : R & M of Kahalgaon - I (2 x 210 MW)				LIST OF ITEMS REQUIRING QP				REF. NO : 4210-104A-R & M.2	
		PACKAGE : R & M of Kahalgaon - Stage - I				APPROVAL & ACCEPTABLE				REVISION NO : 00	
		CONTRACTOR : M/s BHEL				VENDOR AS APPROVED BY				DATE : 19/05/2017	
		CONTRACT NO : 4210-104A-R & M-2									
No.	Major Equipment	Qp Inspection Category	Qp No. 4210 104A-QVI-Q	Qp Submittal SCH	Qp Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub.SCH	SS Approval SCH	Remark
4	Electronic transmitters (pressure, DP & flow)	III				EMERSON (Rosemount)	USA/ Pawane	A			
		III				Fuji Electric	China	A			
		III				YOKOGAWA	Bangalore	A			
		III				ABB	FARIDABAD	A			
		III				Siemens	France / Kalwa	A			
		III				Honeywell	Pune	A			
		III				Wika	Pune	A			
5	Thermocouples, RTD & Thermowell	III				Deliv Instrumentation & Electronics Ltd	Mumbai	A			
		III				EMERSON (Rosemount)	Pawane	A			
		III				GOA Instrument Industries	GOA	A			
		III				Minco	USA	A			
		III				OKAZAKI	JAPAN	A			
		III				Pyroelectric	Goa	A			
		III				Techno Instruments	Ahmadabad	A			
		III				Tempsons	Udaipur	A			
		III				Thermal Instruments(GIC)	Savantwadi	A			
		III				Gauges Burden	Panvel	A			
		III				BHEL	Ranipet	A			
		III				SBEM	Pune	DR			
		III				EIP Technologies	Noida	DR			
		III				EIP Enviro Controls	Noida	A			NTPC RQP
		III				Flow Star	Faridabad	A			NTPC RQP
		III				Mivo controls	Indore	A			
		III				Jaystree Electron	Pune	A			

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NTPC		PROJECT : R & M of Kahalgaon - I (2 x 210 MW)		LIST OF ITEMS REQUIRING QP			REF. NO : 4210-104A-R & M-2				
		PACKAGE : R & M of Kahalgaon - Stage - I		APPROVAL & ACCEPTABLE			REVISION NO : 00				
		CONTRACTOR : M/s BHEL		VENDOR AS APPROVED BY			DATE : 19/05/2017				
		CONTRACT NO : 4210-104A-R & M-2									
No.	Major Equipment	QP Inspection Category	QP No. 4210-104A-QV1-Q	QP Submission SCH	QP Approval SCH	Proposed Sub Supplier	Country	SS Approval Status	SS Detail Sub SCH	SS Approval SCH	Remark
7	Dust Emission Monitor (Opacity)	III				Land Combustion	UK	A			Minor items like canopy etc manufactured in India and supplied Indian Representative
		III				Durgu	Germany	A			
		III				Sick Mahlak	Germany	A			
		III				Emerson Process Management	Ireland	A			
		III				Codel	UK	A			Through Forbes Marshall-pure
											Minor items like canopy etc manufactured in India and supplied Indian Representative
											Main kit from M/s Codel, UK
8	PLC Based control system for Ash handling system	I				Forbes Marshall	Pune	A			
		I				Forbes Marshall	Pune	A			
		I				GE Intelligent platforms	Bangalore	A			
		I				ABB	Bangalore	A			
		I				Schneider	Nasik	A			
		I				Rockwell	Sahibabad	A			
		I				Siemens	Nasik	A			
9	PC Monitor Printer for ESP	III				BHEL Approved Vendors					
10	Any other items like PC termination box, PC Add on Cards, Simulator for Areca, Comicon Interface Module etc	III				BHEL Approved Vendors					
	FOP for C and I items covering EPMS Controller, EPMS, Ash level Integrator etc					BHEL					

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NTPC	PROJECT : R & M of Kahalgaon - I (2 x 210 MW)		LIST OF ITEMS REQUIRING QP		REF. NO : 4210-104A-R & M-2
	PACKAGE : R & M of Kahalgaon - Stage - I		APPROVAL & ACCEPTABLE		REVISION NO : 00
	CONTRACTOR : M/s BHEL		VENDOR AS APPROVED BY		DATE : 19/05/2017
	CONTRACT NO : 4210-104A-R & M-2				
Major Equipment	Proposed Sub Supplier				
	QP Inspection Category	QP QP No. 4210-Subm ission 104A-QV1-Q	QP Approval SCH	SS Approval Status	SS Approval SCH	Remark

LEGENDS:

1.0 SYSTEM SUPPLIER / SUB SUPPLIER APPROVAL STATUS CATEGORY (SHALL BE FILLED BY NTPC)

A - For those items proposed vendor is acceptable to NTPC. To be indicated with letter "A" in the list alongwith the condition of approval, if any.
DR - For those items "Detailed Required" for NTPC review. To be identified with letter "DR" in the list.
DR - Proposed sub-contractor have been approved in the past but have not supplied to NTPC in last five years. To be identified with letter "DR" in the list.

2.0 QP INSPECTION CATEGORY:

CAT - I : For those items the Quality Plans are approved by NTPC and final acceptance will be on physical inspection witness by NTPC

CAT - II - For those items the Quality Plans are approved by NTPC. However no physical inspection shall be done by NTPC. The final acceptance by NTPC shall be on the basis of review of documents.

NOTE: The final acceptance by APEC shall be on the basis of Certificates of Conformity by member states.

UNITSAWORKS : Place of manufacturing- Place of main supplier of multi units/works.

Inspection category will be decided during vendor evaluation.

NOTE - 1 : For the items not appearing in the preaward list, bidder and NTPC will mutually discussed in future.

QWAKAT NO.: QS-01-QA1-P-
1FS-RO

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Page 4 of 4

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(GUREET SINGH)

Quality Assurance Annexure

CLAUSE NO.		QUALITY ASSURANCE															
S N	Tests/Checks Items / Components	Material Test	WPS/ WQS/PQR	DPT/MPI	Ultrasonic Test	Radiographic Test	PWHT	Assembly / Fit up	Dimensions	Hydraulic	Pneumatic Test	Balancing	Functional/operational Test	Performance Test	Other Tests	All Tests as per relevant Std	
1	Pipes & Fittings	Y ^a							Y	Y ²⁰						Y	
2	Diaphragm Valves	Y ^a							Y	Y ⁵			Y		Y ⁶	Y	
3a	Cast Butterfly Valves (Low Pressure)	Y ^a		Y ³	Y ^b			Y	Y	Y ⁵			Y		Y ⁷	Y	
3b	Fabricated Butterfly Valves (Low Pressure)	Y ^a	Y	Y ³	Y ^{12a}	Y ^{12b}	Y ^{12c}	Y	Y	Y ⁵			Y		Y ⁷	Y	
4	Gate/ Globe/ Check Valves	Y ^a		Y ³	Y ^b			Y	Y	Y ⁵	Y		Y		Y ⁸	Y	
5	Dual Plate Check Valves	Y ^a		Y ³	Y ^b			Y	Y	Y ⁵	Y		Y		Y ⁴	Y	
6	Plug / Ball Valves	Y ^a		Y ³	Y ^b			Y	Y	Y ⁵	Y		Y			Y	
7	Rolled & Welded Pipes / Mitre fittings	Y ^a	Y	Y ³		Y ¹			Y	Y ²⁰							
8	Coating & Wrapping of Pipes	Y ^a							Y							Y ²	
9	Strainers	Y ^a		Y ³					Y	Y ²⁰					Y ⁹		
10	Rubber Expansion Joints	Y ^a						Y	Y	Y ¹⁰					Y ¹¹		
11	Site Welding		Y	Y ³		Y ¹				Y ²⁰							
12	Submersible Pump	Y ^a							Y	Y ¹⁷		Y		Y		Y	
13	Horizontal Centrifugal Pumps/ Sump Pumps	Y ^a		Y ³	Y ^b			Y	Y	Y ¹⁷		Y		Y ¹⁶	Y ¹⁵	Y	
14	Compressors/ Blowers / vacuum Pumps	Y ^a		Y ³	Y ^b			Y	Y	Y ²⁰		Y		Y ¹⁸	Y ¹⁹	Y	
15	Atmospheric Storage Tanks/Mixing Tanks	Y ^a	Y	Y ³				Y	Y	Y ²⁰					Y ¹³	Y	
16	Pressure vessels & Heat exchangers	Y ^a	Y	Y ³		Y ²¹	Y ²²	Y	Y	Y ²⁰					Y ²³	Y	
17	Air Drying Plant	Y ^a	Y	Y ³		Y ²¹	Y ²²	Y	Y	Y ²⁰	Y		Y		Y ²⁴		
18	Mixers	Y ^a		Y ³	Y ^b			Y	Y				Y		Y ²⁵		
19	Fans	Y ^a		Y ³	Y ^b			Y	Y			Y		Y	Y ¹⁴	Y	
NOTES																	
a	One per heat/heat treatment batch/lot.																
b	For shaft/spindles/forgings diameter □ 50 mm																
Certification signature by SANJOY ADHIKARY sanjoy@bharatheavy.com																	
KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)		BIDDING DOC. NO.: CS-4210-104A(R&M)-2		TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP				SECTION-VI, PART-B SUB-SECTION-V-CM-02 AHP				Page 3 of 5 23.10.2019 12:33					

CLAUSE NO.	QUALITY ASSURANCE	एनडीपीसी NTPC	
1	Weld Joints not subjected to hydraulic test shall be subjected to 100% RT.		
2	Tests for primer and enamel / Coal Tar Tapes as per AWWA-C-203 / IS 15557		
3	On machined surfaces of castings/shaft/spindles/forgings. DPT/MPI on root run (after back gouging/chipping – as applicable) for 100% and on finish butt & fillet welds for 10%.		
4	Dry Cycle Test on Dual Plate Check valve spring for one lakh (10 ⁵) Cycles shall be carried out as a type test.		
5	Valves shall be tested for Body, seat & back seat leakage as applicable. Hydraulic test pressure shall be as per relevant standard. & shall be done as per relevant standard. Seat Leakage Test for Actuator Operated Valves, shall be done with by closing the valves with actuator. Valves shall be offered for hydro test in unpainted condition		
6	Tests on rubber diaphragm such as hardness, bleed resistance test, rubber to fabric bond, flex test & type test for 50,000 cycles shall be carried out.		
7	In addition to Body & seat hydrotest, disc-strength shall be carried out as per relevant standard		
8	Blue matching for metal-seated valves, Wear travel for gate valves, pneumatic seat leakage test & reduced pressure test for check valves shall be done as per relevant standard. Maximum allowable vacuum loss is 0.5 mm of Hg absolute for valves to be tested for vacuum operation for internal pressure 25 mm of Hg absolute for a period of 15 minutes		
9	Pressure drop across the strainer for each type and size as a special test shall be carried out		
10	During hydraulic and vacuum tests in 3 positions, the change in the circumference of arch should not be more than 1.5%. 24 hrs after the test permanent set in dimension should not exceed 0.5%.		
11	Tests on rubber for tensile, elongation, hardness, hydraulic stability check as per ASTM D 471, ozone resistance test as per ASTM D 1149, ageing test and adhesion strength of rubber to fabric & rubber to metal shall be carried out.		
12	a) For fabricated butterfly valves: UT as per ASTM A-435 on plates for body and disc shall be carried out. b) 100% RT as per ASTM, Section-VIII, Division-I, on butt joins of body and disc c) Post Weld Heat Treatment (PWHT) as per ASME, Section-VIII, Division-I on butt joints of body and disc of thickness above 30mm shall be carried out.		
13	Rubber Lining Mix shall be subjected to Bleed Resistance Test on mould sample. Adhesion Test, Spark Test and Hardness Test for the Rubber lined jobs shall also be conducted.		
14	All fans shall be subjected to run test and Vibration, noise, temperature rise, and current drawn shall be measured during the run test. Performance test of one fan of each type and size shall be carried out as per applicable standard for air flow, static pressure, speed, Efficiency, power consumption.		
15	In case of diaphragm/plunger, only proven material shall be used and certificate in this regard shall be submitted for review.		
16	All pumps to be performance tested as per Hydraulic Institute Standard/Relevant standard. Performance test to include check for noise, vibration level and bearing temperature rise. NPSH test shall be carried out for pumps, if applicable.		
Certification signature by SANJOY ADHIKARY 			
KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)	BIDDING DOC. NO.: CS-4210(R&M)-104A-2	TECHNICAL SPECIFICATION FOR UPGRADEATION & RENOVATION OF ESP	SECTION-VI, PART-B SUB-SECTION-VI-Q-02 AHP

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23.10.2019 12:33

QUALITY ASSURANCE

LT Power Cables

Item / Components / Sub System Assembly	Make, Type & T.C as per relevant standard	Dimension/surface finish	Mechanical properties	Chemical Composition	Spark Test(as applicable)	Electrical properties	Hot Set Test/ Eccentricity & Ovality	Lay length & Sequence	Armour coverage, cross over, looseness, gap between two	Sequential marking/ Batch marking/ surface finish/ cable length	T.S & elongation before & after ageing on outer sheath & insulation	Thermal stability	Anti termite coating on wooden	Constructional requirements feature as per NTPC specification	Routine & Acceptance Tests as per relevant standard & NTPC specification	FRLS Tests
Aluminum (IS-8130)	Y	Y	Y	Y		Y										
XLPE Compound (IS-7098)	Y		Y			Y	Y				Y					
PVC insulation Compound (IS: 5831)	Y		Y			Y					Y	Y				
FRLS PVC Compound (IS-5831, ASTM-D2843, IS10810(Part 58), IEC-60754 Part-1)	Y		Y								Y	Y				Y
Extrusion & curing /Manufacturing of Core (PVC / XLPE)		Y			Y	Y						Y				
Core Laying								Y								
Armour wire/strip	Y	Y	Y													
Inner sheath	Y	Y														
Armouring		Y						Y								
Outer Sheathing		Y								Y						
Power Cable (Finished) (IS-5831, ASTM-D2843, IS10810(Part 58), IEC-60754 Part-1, IEC 60332 part III cat B)								Y	Y	Y	Y	Y	Y		Y	Y
Wooden drum (IS-10418)/Steel Drum		Y											Y	Y		

Notes:

1. This is an indicative list of tests / checks. The manufacturer is to furnish a detailed Quality Plan indicating the practice and procedure along with relevant supporting documents.
2. Make of all major Bought out items will be subject to NTPC approval.

KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)	BID DOC. NO.: CS-4210-104A(R&M)-2	TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP	SECTION-VI, PART - B SUB-SECTION-V-QE-02 LT POWER CABLE	Page 1 of 4

QUALITY ASSURANCE			
ROUTINE TESTS	Following routine tests shall be carried out on each drum of finished cables for all types (PVC / XLPE insulated) & sizes.		
1)	Conductor Resistance test		
2)	High voltage test		
ACCEPTANCE TESTS	Following Acceptance tests shall be carried out on each size of each type (PVC / XLPE insulated) of cables, in the offered lot.		
A) For Conductor (as per sampling plan mentioned in IS: 1554 / 7098)			
	1)	Annealing test (Copper)	
	2)	Tensile Test (Aluminum)	
	3)	Wrapping Test (Aluminum)	
	4)	Resistance test	
B) For Armour Wires / Formed Wires (If applicable) (as per sampling plan mentioned in IS: 1554 / 7098)			
	1.	Measurement of Dimensions	
	2.	Tensile Tests	
	3.	Elongation Test	
	4.	Torsion Test For Round wires only	
	5.	Wrapping Test	
	6.	Resistance Test	
	7.	Mass of Zinc coating test For G S wires / Formed wires only	
	8.	Uniformity of Zinc coating For G S wires / Formed wires only	
	9.	Adhesion test For G S wires / Formed wires only	
	10.	Freedom from surface defects	
C) For PVC / XLPE insulation & PVC Sheath (as per sampling plan mentioned in IS: 1554 / 7098)			
	1)	Test for thickness	
	2)	Tensile strength & Elongation before ageing (for tests after ageing see "D")	
	3)	Hot set test (For XLPE insulation)	
KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)	BID DOC. NO.: CS-4210-104A(R&M)-2	TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP	SECTION-VI, PART - B SUB-SECTION-V-QE-02 LT POWER CABLE
			Page 2 of 4

QUALITY ASSURANCE

D) Ageing test:

	Criteria	Condition	Test Requirements	Remarks
PVC insulation & outer sheath:	Samples as per relevant IS, from each size of cables in the offered lot, shall be tested for tensile strength & elongation (before ageing). Tensile & elongation testing shall preferably be done with a computerized machine. The values will be compared with corresponding values mentioned in the Type Test report accepted by NTPC. These values of Tensile Strength & Elongation (before ageing) should be within +/- 15% of the corresponding values of Type Test report. (Please note that test values should be more than the minimum values indicated in relevant standard).	All sizes which meet the criteria	The size which has maximum negative deviation from type test report values will be put on accelerated ageing test. The samples shall be aged in air oven at temperature of 130°C +/- 2°C for 5 hours and tested for TS & elongation. Acceptance norms shall be as per IS.	In case the size does not meet the requirement in accelerated ageing test then all sizes (which had met the criteria) will be put on ageing test as per IS.
		Sizes which do not meet the criteria	Every size will be put on ageing test as per IS.	----
XLPE insulation	Samples as per relevant IS, from each size of cables in the offered lot, will be put on ageing test as per IS.			

E) Following tests will be carried out on completed cables as per IS on each size of each type (PVC / XLPE insulated)

1)	Insulation resistance test (Volume resistivity method)
2)	High voltage test

KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)

BID DOC. NO.: CS-4210-104A(R&M)-2

TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP

SECTION-VI, PART - B
SUB-SECTION-V-QE-02
LT POWER CABLE

Page 3 of 4



SUB-SECTION-V-QE-03

LT CONTROL CABLE

Certification signature by SANJOY ADHIKARY
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KAHALGAON SUPER THERMAL POWER STATION
 STAGE -I (4 x 210 MW)

TECHNICAL SPECIFICATION FOR
 RENOVATION & RETROFITTING OF ESP
 BIDDING DOC. NO.: CS-4210-104A(R&M)-2

23.10.2019 12:33

QUALITY ASSURANCE																
Control Cables																
Item / Components / Sub System Assembly	Attributes / Characteristics	Make, Type & T.C as per relevant standard	Dimension/surface finish	Mechanical properties	Chemical Composition	Spark Test(as applicable)	Electrical properties	Lay length & Sequence	Armour coverage, cross over, looseness, gap between two	Sequential marking/ Batch marking/ surface finish/ cable length	T.S & elongation before & after ageing on outer sheath & insulation	Thermal stability	Anti termite coating on wooden	Constructional requirements feature as per NTPC specification	Routine & Acceptance Tests as per relevant standard & NTPC specification	FRLS Tests
Copper (IS-8130)		Y	Y	Y	Y		Y									
PVC insulation Compound (IS: 5831)		Y		Y			Y				Y	Y				
FRLS PVC Compound (IS-5831, ASTM-D2843, IS10810(Part 58), IEC-60754 Part-1)		Y		Y							Y	Y				Y
Extrusion & curing /Manufacturing of Core			Y			Y						Y				
Core Laying								Y								
Armour wire/strip		Y	Y	Y												
Inner sheath		Y	Y													
Armouring			Y					Y								
Outer Sheathing			Y							Y						
Finished Cable (IS-5831, ASTM-D2843, IS10810(Part 58), IEC-60754 Part-1, IEC 60332 part III cat B)								Y	Y	Y	Y	Y	Y		Y	Y
Wooden drum(IS-10418) /Steel Drum			Y										Y	Y		

Notes:

1. This is an indicative list of tests / checks. The manufacturer is to furnish a detailed Quality Plan indicating the practice and procedure along with relevant supporting documents.

2. Make of all major Bought out items will be subject to NTPC approval.

KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)	BID DOC. NO.: CS-4210-104A(R&M)-2	TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP	SECTION-VI, PART - B SUB-SECTION-V-QE-03 LT CONTROL CABLE	Page 1 of 4

QUALITY ASSURANCE

D) Ageing test:

	Criteria	Condition	Test Requirements	Remarks
PVC insulation & outer sheath:	Samples as per relevant IS, from each size of cables in the offered lot, shall be tested for tensile strength & elongation (before ageing). Tensile & elongation testing shall preferably be done with a computerized machine. The values will be compared with corresponding values mentioned in the Type Test report accepted by NTPC. These values of Tensile Strength & Elongation (before ageing) should be within +/- 15% of the corresponding values of Type Test report. (Please note that test values should be more than the minimum values indicated in relevant standard).	All sizes which meet the criteria	The size which has maximum negative deviation from type test report values will be put on accelerated ageing test. The samples shall be aged in air oven at temperature of 130°C +/- 2°C for 5 hours and tested for TS & elongation. Acceptance norms shall be as per IS.	In case the size does not meet the requirement in accelerated ageing test then all sizes (which had met the criteria) will be put on ageing test as per IS.
		Sizes which do not meet the criteria	Every size will be put on ageing test as per IS.	----

E) Following tests will be carried out on completed cables as per IS on each size:

	1)	Insulation resistance test (Volume resistivity method)
	2)	High voltage test

F) Following tests shall be carried out on only one size of offered lot (comprising of all sizes):

	1)	Thermal stability test on PVC insulation and outer sheath
	2)	Oxygen index test on outer sheath
	3)	Smoke density rating test on outer sheath
	4)	Acid gas generation test on outer sheath

G) Flammability test as per IEC 60332 - Part- 3 (Category- B) on completed cable will be carried out as per following sampling plan:

		This test will be carried out using composite sampling i.e. irrespective of size; cables of one particular type (i.e. armoured, unarmoured) will be bunched together, as per calculations in line with the IEC. All sizes of armoured & unarmoured cables shall be covered.

KAHALGAON SUPER THERMAL POWER
STATION STAGE-I (4x210 MW)BID DOC. NO.:
CS-4210-104A(R&M)-2TECHNICAL SPECIFICATION FOR
RENOVATION & RETROFITTING OF ESPSECTION-VI, PART - B
SUB-SECTION-V-QE-03
LT CONTROL CABLE

Page 3 of 4

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Certification signature by SANJOY ADHIKARY
<asanjoy@bhel.in> Value: Unknown

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CLAUSE NO.		QUALITY ASSURANCE													
															
SQE 10															
LT SWITCHGEAR (MCC, PCC, ACDB, DCDB, FUSE BOARDS, LOCAL PUSH BUTTON STATION, LOCAL MOTOR STARTERS)															
ATTRIBUTES / CHARACTERIS-TICS  	ITEMS/ COMPONENTS/ SUB SYSTEM ASSEMBLY	Make, Model, Type, Rating & TC	Dimensions & Finish	Electrical properties	Mechanical Properties	Chemical properties	Functional & Operational Features as per NTPC Spec.	Item to conform to relevant Standards	Pretreatment as per IS 6005	Paint Shade, Adhesion, Thickness & Finish	Functional Checks	Milli-volt drop Test	IR – HV – IR Test	Degree of Protection Routine test as per NTPC spec	All Routine tests as per NTPC spec. & IS
	Sheet Steel (IS : 513)	Y	Y		Y	Y		Y							
	Aluminum Bus bar Material (IS : 5082)	Y	Y	Y	Y	Y		Y							
	Copper Bus bar Material (IS : 613)	Y	Y	Y	Y	Y		Y							
	Support Insulator	Y	Y	Y	Y			Y							
	Air Circuit Breaker (IS: 13947)	Y	Y				Y	Y			Y	Y			Y
	Energy Meters (IS : 13010, 13779)	Y	Y				Y	Y			Y				Y
	Power & Aux. Contactors (IS : 13947)	Y	Y				Y	Y			Y				
	Protection & Aux. Relays (IS : 3231) (IEC 60255 / IEC 61850)	Y	Y				Y	Y			Y				Y
	Control & Selector Switches (IS : 13947)	Y	Y				Y	Y			Y				
	CT's & PT's (IS 2705 / 3156)	Y	Y					Y							Y
	MCCB (IS : 13947)	Y	Y					Y			Y				
	Indicating Meters (IS : 1248)	Y	Y				Y	Y			Y				Y
	Indicating Lamps (IS : 13947)	Y	Y				Y	Y			Y				
	Air Break Switches (IS : 13947)	Y	Y				Y	Y			Y				
	Control Terminal Blocks	Y	Y				Y	Y							
Certification signature by SANJOY ADHIKARY <asanjoy@bhel.in> Voluntary Unknown															
KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)	BID DOC. NO.: CS-4210-104A(R&M)-2	TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP				SECTION-VI, PART-B SUB-SECTION-VI-B-06 LT SWITCHGEAR & BUSDUCT									

CLAUSE NO.	QUALITY ASSURANCE													
LT SWITCHGEAR (MCC, PCC, ACDB, DCDB, FUSE BOARDS, LOCAL PUSH BUTTON STATION, LOCAL MOTOR STARTERS)														
ATTRIBUTES / CHARACTERISTICS → ↓ ITEMS/ COMPONENTS/ SUB SYSTEM ASSEMBLY	Make, Model, Type, Rating & TC	Dimensions & Finish	Electrical properties	Mechanical Properties	Chemical properties	Functional & Operational Features as per NTPC Spec.	Item to conform to relevant Standards	Pretreatment as per IS 6005	Paint Shade, Adhesion, Thickness & Finish	Functional Checks	Milli-volt drop Test	IR – HV – IR Test	Degree of Protection Routine test as per NTPC spec	All Routine tests as per NTPC spec. & IS
Fuse (IS 13703)	Y	Y				Y	Y							
Control Transformer (IS : 12021)	Y	Y				Y	Y			Y				Y
Push Buttons (IS : 4794)	Y	Y				Y	Y			Y				
Transducer (IEC : 60688)	Y	Y				Y	Y			Y				Y
MCB (IS : 8828)	Y	Y				Y	Y			Y				
Breaker Handling Trolley	Y	Y				Y			Y	Y				Y
Synthetic Rubber Gasket (IS : 11149)	Y	Y		Y	Y		Y							
LT SWITCHGEAR (IS : 8623)	Y	Y				Y	Y	Y	Y	Y		Y	Y	Y
Notes: 1. This is an indicative list of tests / checks. The manufacturer is to furnish a detailed Quality Plan indicating the practice and procedure along with relevant supporting documents. 2. Makes of all major Bought Out Items will be subject to NTPC approval.														
Certification signature by SANJOY ADHIKARY <asanjoy@bhel.in> Value unknown														
KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)	BID DOC. NO.: CS-4210-104A(R&M)-2		TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP				SECTION-VI, PART-4 SUB-SECTION-VI-4-1 LT SWITCHGEAR & BUSDUCT							



SUB-SECTION-V-QI

CONTROL & INSTRUMENTATION

Certification signature by SANJOY ADHIKARY
<asanjoy@bhel.in> Value: unknown

SANJOY ADHIKARY
CHIEF ENGINEER
TECHNICAL DEPT. (E&I)
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KAHALGAON SUPER THERMAL POWER STATION
STAGE -I (4 x 210 MW)

TECHNICAL SPECIFICATION FOR
RENOVATION & RETROFITTING OF ESP
BIDDING DOC. NO.: CS-4210-104A(R&M)-2



SUB-SECTION-V-QI-01

MEASURING INSTRUMENTS (PRIMARY & SECONDARY)

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SANJOY ADHIKARY
CHIEF SANJOY ADHIKARY
OFFICE NO. 101/102, 103/104, 105/106, 107/108, 109/110, 111/112, 113/114, 115/116, 117/118, 119/120, 121/122, 123/124, 125/126, 127/128, 129/130, 131/132, 133/134, 135/136, 137/138, 139/140, 141/142, 143/144, 145/146, 147/148, 149/150, 151/152, 153/154, 155/156, 157/158, 159/160, 161/162, 163/164, 165/166, 167/168, 169/170, 171/172, 173/174, 175/176, 177/178, 179/180, 181/182, 183/184, 185/186, 187/188, 189/190, 191/192, 193/194, 195/196, 197/198, 199/200, 201/202, 203/204, 205/206, 207/208, 209/210, 211/212, 213/214, 215/216, 217/218, 219/220, 221/222, 223/224, 225/226, 227/228, 229/230, 231/232, 233/234, 235/236, 237/238, 239/240, 241/242, 243/244, 245/246, 247/248, 249/250, 251/252, 253/254, 255/256, 257/258, 259/260, 261/262, 263/264, 265/266, 267/268, 269/270, 271/272, 273/274, 275/276, 277/278, 279/280, 281/282, 283/284, 285/286, 287/288, 289/290, 291/292, 293/294, 295/296, 297/298, 299/300, 301/302, 303/304, 305/306, 307/308, 309/310, 311/312, 313/314, 315/316, 317/318, 319/320, 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2445/2446, 2447/2448, 2449/2450, 2451/2452, 2453/2454, 2455/2456, 2457/2458, 2459/2460, 2461

CLAUSE NO.	QUALITY ASSURANCE									
एनटीपीसी NTPC										
MEASURING INSTRUMENTS (PRIMARY AND SECONDARY)										
TESTS										
ITEMS	Dimensions (R)	Make, Model, Type, Rating (R)	Process / Electrical connection (R)	Calibration (R)	Test as per standard(R)	Insulation Resistance (R)	IBR Certification (if applicable)(R)	Hydro Test(R)	Material Test certificate ®	
1. PR Gauge (IS-3624)	Y	Y	Y	Y	Y					
2. Temp. Gauge (BS-5235)	Y	Y	Y	Y	Y					
3. Pr./D.P.Switch(BS-6134)	Y	Y	Y	Y	Y	Y				
4. Electronic Transmitter(IEC-770)	Y	Y	Y	Y	Y	Y				
5. Temp. Switch	Y	Y	Y	Y	Y	Y				
6. Recorder(IS-9319/ANSI C-39.4)	Y	Y	Y	Y	Y	Y				
7. Vertical indicators	Y	Y	Y	Y		Y				
8. Digital Indicators	Y	Y	Y	Y		Y				
9. Integrators	Y	Y	Y	Y						
10. Electrical Metering Instrument (IS-1248)	Y	Y	Y	Y	Y	Y				
11. Transducer (IEC-688)	Y	Y	Y	Y	Y	Y				
12. Thermocouples (IEC – 754 / ANSI-MC-96.1)	Y	Y	Y	Y	Y	Y				
13. RTD(IEC-751)	Y	Y	Y	Y	Y	Y				
14. Thermowell	Y		Y				Y	Y	Y	
R-Routine Test A- Acceptance Test Y – Test applicable										
: Note: 1) Detailed procedure of Environmental Stress Screening shall be as per Quality Assurance Programme in General Technical Conditions. Requirement of test and procedure (if required) finalized during QP finalization 2) This is an indicative list of tests/checks. The manufacturer is to furnish a detailed quality plan indicating the Practices and Procedure adopted alongwith relevant supporting documents.										
Certification signature by SANJOY ADHIKARY <asanjoy@bhel.in>, Validity Unknown										
 SANJOY ADHIKARY CHIEF SANJOY ADHIKARY SERIAL NUMBER- 1013447 PHONE-9876543210 EMAIL-9876543210@bhel.in 23.10.2019 12:35										
KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)	BIDDING DOC. NO.: CS-4210-104A(R&M)--2	TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP			PART – B SUB-SECTION-V-Q1-01 MEASURING INSTRUMENTS			Page 1 of 2		



SUB-SECTION-V-QI-02

INSTRUMENTATION CABLE

Certification signature by SANJOY ADHIKARY
<asanjoy@bhel.in> Value: unknown

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KAHALGAON SUPER THERMAL POWER STATION
STAGE -I (4 x 210 MW)

TECHNICAL SPECIFICATION FOR
RENOVATION & RETROFITTING OF ESP
BIDDING DOC. NO.: CS-4210-104A(R&M)-2



SUB-SECTION-V-QI-03

PROCESS CONNECTION & PIPING

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23.10.2019 12:33
BIDDER: CS-4210-104A(R&M)-2

KAHALGAON SUPER THERMAL POWER STATION
STAGE -I (4 x 210 MW)

TECHNICAL SPECIFICATION FOR
RENOVATION & RETROFITTING OF ESP
BIDDING DOC. NO.: CS-4210-104A(R&M)-2

QUALITY ASSURANCE

PROCESS CONNECTION & PIPING

ITEMS	Visual ®	GA, BOM, Layout of component & construction feature®	Dimension ®	Paint Shade/thickness ®	Flattening,flaring,hydrotest,hardness check as per ASTM standard (A)	Component Ratings ®	Wiring ®	Make, Model, Type, Rating®	IR & HV ®	Review of TC for instrument/devices (R)	Accessibility of TBs/Devices ®	Illumination,grounding ®	Tubing ®	Leak/Hydro test(A)	Chemical/physical properties of material (A)	Proof pressure test,Dismantling & reassembly test,Hydraulic impulse and vibration test (R)	Tests as per standards & specification
Local Instrument enclosure	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y			
Local instruments racks	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y			
Junction Box	Y	Y	Y	Y*		Y		Y	Y		Y	Y	Y	Y			
Gauge Board	Y	Y	Y	Y		Y		Y		Y			Y	Y			
Impulse pipes and tubes	Y		Y		Y			Y							Y		
Socket weld fittings ANSI B-16.11	Y		Y					Y							Y		Y
Compression fittings	Y		Y					Y						Y	Y	Y	
Instrument valves & Valve manifolds	Y		Y					Y						Y	Y		
Copper tubings ASTM B75	Y							Y									Y

*-applicable for painted junction boxes.

Note: R-Routine Test A- Acceptance Test Y – Test applicable

Note: This is an indicative list of tests/checks. The manufacturer is to furnish a detailed quality plan indicating the Practices and Procedure adopted alongwith relevant supporting documents.

KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)	BID DOC. NO.: CS-4210-104A(R&M)-2	TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP	SECTION-VI, PART - B SUB-SECTION-V-QI-03 PROCESS CONNECTION & PIPING	Page 1 of 1



SUB-SECTION-V-QC-01

CIVIL WORKS

Refer Architectural&structural portion
as applicable

Certification signature by SANJOY ADHIKARY
<asanjoy@bhel.in> Volant Unknown

SANJOY ADHIKARY
CS-4210-104A(R&M)-2
TECHNICALS LIMITED, CH

KAHALGAON SUPER THERMAL POWER STATION
STAGE -I (4 x 210 MW)

TECHNICAL SPECIFICATION FOR
RENOVATION & RETROFITTING OF ESP
BIDDING DOC. NO.: CS-4210-104A(R&M)-2

CLAUSE NO.	QUALITY ASSURANCE			
	relevant formats for information/ clarification for manufacturers / sub-vendors approval to the Contractor at the time of post bid discussions (Main supplier's evaluation report Format No: QA-01-QAI-P-04/F1-R0 and Sub supplier questionnaire Format no: QA-01-QAI-P-04/F2-R0). Such manufacturers / sub-vendors approval shall not relieve the Contractor from any obligation, duty or responsibility under the contract.			
1.8.0	Structural / Reinforcement steel supply if in the scope of the contractor shall be procured from Main Steel Producers like SAIL, TISCO, RINL, Essar Steel Ltd, Ispat Industries Ltd, JSW Steel Ltd, Indian Iron & Steel Co. Ltd, Jai Balaji Industries Ltd at Durgapur (for 8 to 40mm reinforcement steel only), Uttam Value Steels Ltd, Jindal Steel & Power.			
1.9.0	The Field Quality Plans shall detail out all the equipment, the quality practices and procedures etc. to be followed by the Contractor's "Site Quality Control Organisation", during various stages of site activities starting from receipt of materials/equipment at site. The contractor shall furnish complete QA & QC programme (QAP) for the work envisaged which may include the following:- • The organisation structure for the management and implementation of the proposed Quality Assurance Programme. • Documentation Control System • The procedure for procurement of materials and source inspection. • System for site controls including process controls. • Control of non-conforming items and systems for corrective action • Inspection and test procedures for site activities • System for indication and appraisal of inspection status • System for maintenance of records • System for handling, storage and delivery. • Quality Plan detailing out quality practices and procedures, relevant standards and acceptance levels for all types of work under the scope of this contract. The Contractor shall appoint a dedicated, experienced and competent quality management representative on site, preferably directly reporting to the Project Manager, supported by experienced personnel, to ensure the effective implementation of the approved quality assurance programme. The onsite quality management representative shall have the organisational freedom and authority to implement the requirements of these quality assurance arrangements, free from commercial and programme restraints. The QA & QC setup of the contractor shall consist of qualified and experienced engineers, with their supporting staff. The QA&QC set up in addition to requisite mechanical & electrical engineers shall consist sufficient graduate civil engineers & supervisors to take care of quality assurance activities of both site & laboratory. The deployment of man power for QA & QC set up shall be affected on the basis of agreed manpower deployment schedule, which shall be prepared by the contractor based on the L-2 network and the same shall be submitted to the Engineer-in-charge for acceptance.			
KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)	BIDDING DOC. NO.: CS-4210-104A(R&M)-2	TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP	SECTION-VI, PART-1 SUB-SECTION-VI.1 CIVIL Certification signature by SANJOY ADHIKARY "sanjoy@bharatnagar.com"  23.10.2019 12:33	

CLAUSE NO.	QUALITY ASSURANCE	
	Based on the schedule of work agreed with the Engineer-in-charge and the approved FQP, the Contractor shall prepare a schedule of tests and submit them to the Engineer-in-charge and organize to carry out the tests as scheduled/ agreed. The QA&QC laboratory shall have all necessary equipment, instruments and shall be managed by a qualified / experienced person. An indicative list of test equipment is attached at Annexure-II. All these testing equipment shall be provided by the contractor at his own cost. The contractor shall maintain the equipment in good working condition along with valid calibration certificates, for the duration of the contract. Any other equipment though required for testing but not listed in the equipment list shall be provided / arranged by the contractor at his own cost. QA&QC laboratory building shall be constructed by the Contractor at their own cost. The laboratory building shall be constructed and installed with the appropriate facilities. Temperature and humidity controls shall be available wherever necessary during testing of samples	एनटीपीसी NTPC
1.10.0	The Contractor shall prepare and obtain approval of the Owner of the Field Quality Plan (FQP) well before the start of the work. This FQP shall cover for all the items / activities covered in the contract/schedule of items and required for completion of the work.	
1.11.0	All materials / components and equipment covered under the scope of work which are to be manufactured at shop/ factory of the vendor/subvendor shall be covered under a comprehensive quality assurance programme. The detailed quality plan for manufacturing shall be drawn up by the contractor and will be submitted to the owner for approval in the prescribed format for manufacturing quality plan.	
	Manufacturing Quality Plan (MQP) shall detail out all the components and equipment, various test/inspection, to be carried out as per the requirements of this specification and standards mentioned therein. The quality practices and procedures followed by Bidder's/Sub-Bidder's/ sub-supplier's Quality Control Organization shall include , the relevant reference documents and standards, acceptance norms, inspection documents raised etc., during all stages of material procurement, manufacture, assembly and final testing / performance testing . The quality plan shall be submitted in electronic media e.g. CD or E-mail in addition to hard copy, for review and approval. After approval the same shall be finally submitted in compiled form on CD.	
1.12.0	The Contractor shall store and handle the materials as per the requirements of the relevant standards at his own cost.	
1.13.0	All the equipment shall be duly calibrated by NABL/ NPL accredited laboratories/accreditation agencies.	
1.14.0	The Contractor shall submit to the NTPC Field Welding Schedule for field welding activities in the format No.: QS-01-CQA-W11/F1, this format shall be furnished to the Contractor at pre-award stage. The field-welding schedule shall be submitted to the NTPC along with all supporting documents, like welding procedures, heat treatment procedures, NDT procedures etc. at least ninety days before schedule start of erection work at site. The Contractor shall submit Welding Procedure Specification (WPS) in the format No: QS-01-QAI-W-06/F1 for NTPC approval/	
KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)	BIDDING DOC. NO.: CS-4210-104A(R&M)-2	TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP
SECTION-VI, PART-1 SUB-SECTION-VI-1 CIVIL		
23.10.2019 12:33 Sanjoy Adhikary 23.10.2019 12:33 23.10.		

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1.15.0	acceptance, this format shall be furnished to the Contractor during post bid discussion stage. All welding and brazing shall be carried out as per procedure drawn and qualified in accordance with requirements of ASME Section IX/BS-4870 or other International equivalent standard acceptable to the NTPC. All welding/brazing procedures shall be submitted to the NTPC or its authorized representative for approval prior to carrying out the welding/brazing. All brazers, welders and welding operators employed on any part of the contract either in the Contractor's/ sub-Contractor's works or at site or elsewhere shall be qualified as per AWS D1.1/ASME Section-IX or BS-4871 or other equivalent International Standards acceptable to the NTPC. Welding procedure qualification and Welder qualification test results shall be furnished to the NTPC for approval. However, where required by the NTPC, tests shall be conducted in presence of NTPC/authorized representative. No welding shall be carried out on cast iron components for repair. All the heat treatment results shall be recorded on time temperature charts and verified with recommended regimes. All Non-destructive examination shall be performed in accordance with written procedures as per International Standards and as mentioned elsewhere in the technical specification; The NDT operator shall be qualified as per SNT-TC-1A (of the American Society of non-destructive examination). NDT shall be recorded in a report, which includes details of methods and equipment used, result/evaluation, job data and identification of personnel employed and details of co-relation of the test report with the job. The records of RT (Films) and UT (inspection records or printed reports if possible) shall be documented and produced to NTPC.			
	The Contractor shall associate themselves with the reputed specialized blasting agency such as CMRI, NIRM for trials blasts, design blasts, blasting pattern, monitoring of blast during the blasting operations at site. The blasting operation shall remain in charge of a responsible, competent, authorized and experienced supervisor (Man-In-Charge) and thoroughly acquainted workmen. All blasting work shall be done as per approved blasting scheme/ design/ pattern in line with the technical specification requirements and all statutory laws, rules, regulations, relevant standards pertaining to the acquisition, transport, storage, handling along with use of explosives shall be strictly followed by the Contractor.			
	The Contractor shall install and operate equipment (such as tri-axial seismograph) for continuous monitoring and control of blast induced vibrations, noise level/ air pressure, dust, silica and noxious gases during all blasting operations in line with the Technical Specification requirements in association with the specialized blasting agency.			
	The Contractor shall submit the un-priced copy of the award on the specialized blasting agencies to NTPC, highlighting the scope of services/ work awarded to them by Contractor. The services of such specialized blasting agency shall be available throughout the period in which the blasting work is undertaken at site			
	Certification signature by SANJOY ADHIKARY 23.10.2019 12:33 			
KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)	BIDDING DOC. NO.: CS-4210-104A(R&M)-2	TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP	SECTION-VI, PART-B SUB-SECTION-VI-B-1 CIVIL	

CLAUSE NO.	QUALITY ASSURANCE			एन टी पी सी NTPC
1.16.0	ASSOCIATED DOCUMENT FOR QUALITY ASSURANCE PROGRAMME: i. Field Quality Plan Format No.: QS-01-QAI-P-09/F2-R1 ii. Indicative list of major bought out items for civil works (Annexure-I) iii. Indicative list of Field Quality Laboratory and Survey equipment list (Annexure-II) iv. Indicative QA&QC Manpower requirements (Annexure-III) v. Indicative Field Quality Plan for Civil Works (Annexure-IV) vi. Indicative Field Quality Plan for Structural Steel Works (Annexure-V) (Note: The field quality plan attached is indicative and the contractor shall prepare the field Quality plan covering the entire scope of work in the contract and submit the same to corporate QA for acceptance/approval. However any addition or deletion in the scope of work, during detailed engineering shall be accordingly added/ deducted from the Field Quality Plan)			
2.0.0	GENERAL QA REQUIREMENTS			
2.1.0	STORAGE AND HANDLING OF COMMON BUILDING MATERIALS All materials shall be stacked and stored by the Contractor as per IS-4082 and as per the requirements specified in NTPC Technical Specification.			
2.2.0	EXCAVATION AND FILLING WORKS The contractor shall submit a work methodology covering various items of works for all stages of excavation and filling works. This methodology shall broadly include the quantity wise and classification wise identification of source of excavation and filling, suitability tests as per specification requirements, method of stockpiling, transportation, placement, spreading , compaction, equipment, list of protocols, in-situ tests, third party lab test if required, acceptance checks for final clearance. For blasting work at site if required, the contractor shall associate themselves with the reputed specialized blasting agency such as CMRI, NIRM for trials blasts, design blasts, blasting pattern, monitoring of blast during the blasting operations at site. The contractor shall install and operate equipment (such as tri-axial seismograph) for continuous monitoring and control of blast induced vibrations, noise level/ air pressure, dust, silica and noxious gases during all blasting operations in line with the technical specification requirements in association with the specialized blasting agency. The contractor shall submit the un-priced copy of the award on the specialized blasting agencies to NTPC, highlighting the scope of services / work awarded to them by contractor. The services of such specialized blasting agency shall be available throughout the period in which the blasting work is undertaken at site. The blasting operation shall remain in charge of a responsible, competent, authorized and experienced supervisor (man-in-charge) and thoroughly acquainted workmen. All blasting work shall be done as per approved blasting scheme/ design/ pattern in line with the technical specification requirements and all statutory laws, rules, regulations, relevant standards pertaining to the acquisition, transport, storage, handling along with use of explosives shall be strictly followed by the contractor. Tolerance for finished surface level shall be within 20 mm of the level shown in the drawing. For an unimportant area, tolerance up to +75mm shall be acceptable at the discretion of the engineer. However, these tolerances shall be applicable for localized areas only.			
KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)	BIDDING DOC. NO.: CS-4210-104A(R&M)-2	TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP	SECTION-VI, PART-1 SUB-SECTION-VI.1 CIVIL	Certification signature by SANJOY ADHIKARY sanjoy@nptcl.com 23.10.2019 12:33 Page 6 of 17

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2.3.0	Acceptance criteria shall be			
	a) When only one set of sample is tested, then all individual samples collected and tested should pass without any deviation			
	b) For retest of any sample two additional samples shall be collected and tested, and both should pass without any deviation.			
	c) Where a large number of samples are tested for a particular test then 9 samples out of every 10 consecutive samples tested shall meet the specification requirement			
	MASONRY AND ALLIED WORKS			
	The execution, finishing, testing and acceptance of masonry related works shall be as per the provisions of technical specifications / relevant practices IS code. Local depressions on account of faulty workmanship, broken / chipped edges shall not be acceptable.			
	All masonry shall be built true and plumb within the tolerances prescribed as below. Care shall be taken to keep the perpends properly aligned. Unless specified otherwise the tolerances in construction of masonry works shall be as below:			
	Sl. No.	Type of Check	Tolerance	
		Deviation in verticality in total height of any wall of a building	Shall not exceed $\pm 12.5\text{mm}$ (more than one storey) $\pm 6\text{mm}$ per 3m height (within a storey)	
		Deviation from the position shown on the plan of any brickwork	Shall not exceed 12.5mm (more than one storey)	
	Relative displacement between load bearing walls in adjacent storeys intended to be in vertical alignment	Shall not exceed 6mm		
	Deviation of bed joint from horizontal in any length, and it	Shall not exceed 6mm (upto 12m) Shall not exceed 12.5mm total (in any length over 12m)		
	Deviation from the specified thickness of bed-joints, cross-joints or perpends	Shall not exceed $\pm 3\text{mm}$		
	Finished plastered surface	Deviation not more than 4 mm when checked with a straight edge of 2 m length placed against the surface		
	The average thickness of plaster	Not be less than the specified thickness		
	The minimum thickness over any portion of the surface	Not less than the specified thickness by more than 3 mm for plaster thickness above 12mm and 1 mm for ceiling plaster		
Certification signature by SANJOY ADHIKARY  SANJOY ADHIKARY, PSER HQ, O-BHARAT HEAVY TECHNICALS LIMITED, C-IN				
KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)		BIDDING DOC. NO.: CS-4210-104A(R&M)-2	TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP	SECTION-VI, PART-B SUB-SECTION-VI-1 CIVIL

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2.4.0	CONCRETE WORKS			
	For concreting works provisions of technical specifications and IS: 456 shall apply. A detailed methodology for concrete works shall be submitted by the contractor to NTPC for approval. The methodology may require change / modification based on the site conditions, for which suitable revisions shall be submitted.			
	The methodology for concrete works shall broadly contain the suitability of source of aggregates, cement, admixture, water and reinforcement steel, etc. The available concrete mix design recommended from a specialist institute, results of trial mix carried out at site, method / control of batching, mixing, transportation, layer wise placement, compaction, fixing / removal of form work, staging, fixing of water stops at appropriate locations along with specials, expansion joints, contraction joints and construction joints, cover blocks and method of curing, methodology of repair of newly placed hardened concrete, testing and sampling of concrete during production and placement and acceptance checks for final clearance.			
	The equipment, deployment of manpower and machinery shall arranged by the contractor to ensure the continuous rate of placement of specified grade of concrete so as to prevent segregation, bleeding, formation of cold joints, temperature control for concreting in extreme weather conditions and for mass concreting works.			
	Exposed surfaces of concrete shall be kept continuously in a damp or wet condition for at least seven days from the date of placing concrete in case of ordinary Portland cement, not be less than 10 days for concrete exposed to dry and hot weather conditions, at least 10 days or period may be extended to 14 days where mineral admixtures or blended cements are used. Approved curing compounds may be used in lieu of moist curing with the permission of engineer-in-charge.			
	Reinforcement steel shall conform to relevant IS codes. Lapping / spacing of reinforcement shall be so staggered that under no circumstances more than 50% of bars at any cross section shall be lapped. Corrosion resistance Steel shall be used for the foundations wherever specified in the technical specification. Sample test for 3% of the number of mechanical bars grips subject to a minimum of three, shall be carried out up to the yield strength of reinforcement of bars.			
	Test shall be conducted for the water tightness of the liquid retaining structures as per technical specifications, IS 3370 and IS 6494.			
	All the materials, equipment, processes used in pre cast concrete work shall conform to the requirements for the cast-in-situ concrete.			
	If fly ash is used in concrete, source of supply shall be checked for suitability as per IS 3812 (Part-I). Routine tests for retention of particles on 45µ sieve and loss on ignition shall be carried out on each lot of fly ash before its use. The storage of fly ash shall be similar to that of cement. Separate Silo for fly ash shall be provided in the batching plant. Validation of Mix design using fly ash shall be carried out by an approved specialist agency, before start of concrete production.			
	The acceptance criteria of concrete shall be in accordance with clause no.16 of IS 456. However in exceptional circumstances and that too in non-critical areas, the engineer may accept concrete work which is marginally unacceptable as per the criteria laid down in IS 456. For such accepted work, payment shall be made at a reduced rate pro rata to the concrete cube strength obtained, against that stipulated.			
Certification signature by SANJOY ADHIKARY  KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW) BIDDING DOC. NO.: CS-4210-104A(R&M)-2 TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP SECTION-VI, PART-1 SUB-SECTION-VI.1 CIVIL 23.10.2019 12:33 Page 8 of 17 Sanjoy Adhikary				

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	All records of concreting, reinforcement, testing of materials, as-built dimensions, the details of the rectification, etc, shall be maintained as given below. Four copies of such record in a bound form shall be submitted to owner for their record and future reference. i. Testing data / report of aggregates including petrographic examination & potential reactivity of aggregate and repeated temperature cycle tests wherever specified ii. Mix design details and record of trial mixes carried out at site iii. Testing records of admixture as per IS-9103 / ASTM C494 including third party test reports. iv. Approved scheme for concreting v. Hourly records of concreting including pour card vi. Protocol indicating the dimensional tolerance and details of inserts vii. Records giving the details of rectification giving the location of grouting, the quantity of grout used at each location, type of grout used viii. Bar bending schedule ix. Location and details of mechanical anchoring used for reinforcement x. Protocol giving the details of checking of reinforcements before concreting and conformance to the reinforcement details as shown in the construction drawings xi. Photographs showing the areas where rectification works have been carried out. Photographs should be taken before and after rectification xii. Temperature control record of concrete at the time of placement if applicable. xiii. Details of curing, staging and fixing / removal of formwork, checklist for formwork as per Clause 9.9 and Annexure-C of IS 14687 including all machine foundations xiv. Batching Plant shall be calibrated regularly at least once in a 3 months. Computerized output shall be taken for each batch of production of concrete. For concreting works of ash pipe pedestals, mixer with weight batcher may be used. Production and supply of concrete from batching plant shall conform to the provisions of IS 4926 xv. Dimensions (length, cross sectional dimensions, straightness, squareness, and flatness) and tolerances for pre cast members as per NTPC Technical Specification. Load test on Pre cast members (except pre- cast tiles to be laid in the reservoir) shall be carried out @ 1% up to 1000 nos., @0.5% from more than 1000 nos. precast members of one type. The load test shall be carried out as per the provisions of IS-456 and relevant IS code.																											
<table><tr><th colspan="4">TOLERANCES</th></tr><tr><th colspan="2">Description of Item/ Structural Element</th><th>Max (mm)</th><th>Min (mm)</th></tr><tr><td colspan="4">Cast In Situ Concrete</td></tr><tr><td>1.</td><td>Faces of concrete in foundations and structural members against which back fill is placed</td><td>+25</td><td>-10</td></tr><tr><td>2.</td><td>Eccentricity of footing as percentage of footing width in the direction of placement</td><td colspan="2">2% but limited to 50mm</td></tr><tr><td>3.</td><td>Top surfaces of slabs and of concrete to receive base</td><td>+5</td><td>-5</td></tr></table>					TOLERANCES				Description of Item/ Structural Element		Max (mm)	Min (mm)	Cast In Situ Concrete				1.	Faces of concrete in foundations and structural members against which back fill is placed	+25	-10	2.	Eccentricity of footing as percentage of footing width in the direction of placement	2% but limited to 50mm		3.	Top surfaces of slabs and of concrete to receive base	+5	-5
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KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)	BIDDING DOC. NO.: CS-4210-104A(R&M)-2	TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP	SECTION-VI, PART-B SUB-SECTION-VI-B-1 CIVIL Sanjoy Adhikari 23.10.2019 12:33 23.10.2019 12:33 23.10.2019 12:33																									

CLAUSE NO.	QUALITY ASSURANCE			एनटीपीसी NTPC	
	TOLERANCES				
	Description of Item/ Structural Element		Max (mm)	Min (mm)	
		plates to be grouted			
	4.	Alignment of beams, lintels, columns, walls, slabs and similar structural elements	+5	-5	
	5.	Cross sectional dimensions of walls, slabs and similar structural elements	+5	-5	
	6.	Deviation from specified dimensions of cross-section of columns and beams	+12	-6	
	7.	Alignment of holding down bolts without sleeves	+1.5	-1.5	
	8.	Alignment of holding down bolts with sleeves	+5	-5	
	9.	Level of holding down bolt assemblies	+10	-10	
	10.	Embedded Parts (in any direction).	+5	-5	
	11.	Level of embedment for equipment support	+1.5	0	
	12.	Level of embedment for other embedded parts	+5	-5	
	13.	Centers of pockets or holes with greatest lateral dimension not exceeding 150mm	+10	-10	
	14.	Variation in steps - Riser - Tread	+1.5 +3.0	-1.5 -3.0	
	Pre- Cast Concrete				
	15.	Length:	+/- 0.1 percent	+/- 5	+ 10
	16.	Straightness or Bow	1/750 of the length	+/- 5	+/- 10
	17.	Cross-sectional dimensions	+/- 3 mm or +/- 0.1 percent whichever is greater		
	18.	Squareness:	When considering the squareness of the corner the length of the two adjacent sides being checked shall be taken as the base line. The shorter side shall not vary in length from the perpendicular by more than 5 mm.		
	19.	Flatness:	The maximum deviation from a 1.5m straight edge placed in any position on a nominal plant surface shall not exceed 5 mm.		
	Placing of reinforcement and for cover (Cover blocks shall be of same grade of concrete in which these would be embedded)			Clause 12.3.1 and 12.3.2 of IS 456	
	Formwork			Clause 9.6 of IS 14687 and 11.1 of IS 456	
	Batching			Clause 10.2.2 of IS 456	
	2.5.0	STRUCTURAL STEEL WORK			
		For structural steel works provisions of technical specifications and IS: 800 shall apply. A detailed methodology for structural steel works shall be submitted by the contractor to NTPC for approval. The methodology may require change / modification based on the site conditions, for which suitable revisions shall be submitted.			
KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)	BIDDING DOC. NO.: CS-4210-104A(R&M)-2	TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP	SECTION-VI, PART-1 SUB-SECTION-VI-1 CIVIL	Certification signature by SANJOY ADHIKARY sanjoy@bhel.com, Validity Unknown 24/10/17 23.10.2019 12:33	

CLAUSE NO.	QUALITY ASSURANCE															
	The contractor shall submit the welding procedures specification (WPS), heat treatment procedures, NDT procedures etc. at least ninety days before scheduled start of erection work at site. All welding and brazing shall be submitted to the NTPC and carried out as per procedure drawn and qualified in accordance with requirements of ASME Section IX/BS-4870 or other International equivalent standard acceptable to the NTPC. All brazers, welders and welding operators employed on any part of the contract either in the contractor's / sub-contractor's works or at site or elsewhere shall be qualified as per AWS D1.1/ASME Section-IX or BS-4871 or other equivalent International Standards acceptable to the NTPC. The records of welding procedure qualification and welder qualification test results shall be furnished to the NTPC for approval. However, where required by the NTPC, the tests shall be conducted in presence of NTPC / authorized representative. No welding shall be carried out on cast iron components for repair. All the heat treatment results shall be recorded on time temperature charts and verified with recommended regimes. All Non-destructive examination shall be performed in accordance with written procedures as per International Standards and as mentioned elsewhere in the technical specification. The NDT operator shall be qualified as per SNT-TC-IA (of the American Society of non-destructive examination). NDT shall be recorded in a report, which includes details of methods and equipment used, result/evaluation, job data and identification of personnel employed and details of co-relation of the test report with the job. The records of RT (Films) and UT (inspection records or printed reports if possible) shall be documented and produced to NTPC. Low hydrogen electrode (AWS E-7018) for welding of High/Medium tensile steel, for M.S (IS 2062 Gr. A/Gr. B, IS 8500) sections thickness above 20mm shall be used. Preheating and Post weld heat treatment requirements shall be complied as specified in the technical specification / approved WPS. The requirements of pre-heating shall be <table><tr><th>Thickness of thickest part at the area of welding / heat affected zone</th><th>Welding using other than low hydrogen welding electrodes IS 2062</th><th>Welding using low hydrogen welding electrodes or submerged arc welding IS 2062</th></tr><tr><td>Up to 20 mm (including)</td><td>None</td><td>None</td></tr><tr><td>Over 20 mm to 40 mm (including)</td><td>Not allowed</td><td>200 C</td></tr><tr><td>Over 40 mm to 63 mm (including)</td><td>Not allowed</td><td>660 C</td></tr><tr><td>Over 63 mm</td><td>Not allowed</td><td>1100 C</td></tr></table>	Thickness of thickest part at the area of welding / heat affected zone	Welding using other than low hydrogen welding electrodes IS 2062	Welding using low hydrogen welding electrodes or submerged arc welding IS 2062	Up to 20 mm (including)	None	None	Over 20 mm to 40 mm (including)	Not allowed	200 C	Over 40 mm to 63 mm (including)	Not allowed	660 C	Over 63 mm	Not allowed	1100 C
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Up to 20 mm (including)	None	None														
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Over 40 mm to 63 mm (including)	Not allowed	660 C														
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KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)	BIDDING DOC. NO.: CS-4210-104A(R&M)-2	TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP	SECTION-VI, PART 2 SUB-SECTION-VI, PART 2 CIVIL													

CLAUSE NO.	QUALITY ASSURANCE	
2.6.0	PAINTING WORKS Painting works shall be carried out as per the provisions of technical specifications. A detailed methodology for painting works shall be submitted by the contractor to NTPC for approval. The methodology may require change / modification based on the site conditions, for which suitable revisions shall be submitted. The methodology for painting works shall broadly contain the source of approved brand of paints, shot / sand blasting as specified, minimum acceptable size of shot used for blasting, application of primer, intermediate coat and final coat, experience of applicator, etc. testing of painting work and acceptance checks for final clearance.	
2.7.0	SHEETING WORKS All bought out items shall be procured from the manufacturer's approved by engineer and tested as per relevant IS Codes/ Specification. Raw material of colour coated sheets shall meet the chemical & physical properties as per relevant standards / codes referred in the approved data sheet. It shall be tested for colour match, bare metal thickness, weight of Z/AZ coating, thickness of painting system, reverse impact, T-Bend adhesion, scratch resistance, salt spray test for 1000 Hrs and any other test / properties as specified in the technical specifications. Colour coated sheets shall be marked with video jet printing at the interval not more than 2m bearing manufacturer's name, date and time of manufacturing. Fasteners shall also be tested for 1000 hrs salt spray test as per the requirement of technical specifications. Bonded Mineral Wool Insulation shall meet the requirements of thickness, density, thermal Conductivity, all other tests as per the technical specifications and IS-8183. For sheet installation no gas cut opening shall be allowed at the site, whenever opening is specified these shall be properly cut in the factory and shall be filled with lipping / flashing for true shape / dimension etc. The sheets/ packets shall be stacked neatly clear off the ground at an angle to the ground, over a base pallet to provide drainage. Water / moisture should not be allowed to stagnate on surface, or in between layers. This can damage the coating, and cause corrosion.	
2.8.0	TILE WORKS The Contractor shall submit the work methodology which shall include the type, grade and make of materials along with their technical data sheets, details, etc, clearance from E-I-C regarding leak proofness and damp proofness of parent concrete surface, surface preparation, the procedure of application, curing, testing and acceptance. The agencies having adequate experience to execute the acid / alkali resistant lining works shall be engaged for executing the acid / alkali resistant lining works after obtaining the approval from the E-I-C. The execution, finishing, testing and acceptance of tile works shall be as per the provisions of technical specifications. The material for tile works shall be procured from the NTPC approved brand / source. Local depressions on account of faulty workmanship, tiles / natural stones with cracked or broken / chipped edges shall not be acceptable. The tests shall be carried out on acid resistant bricks / tile- water absorption, compressive strength, resistance to acid, flexural strength, dimensions and all other	
KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW)	BIDDING DOC. NO.: CS-4210-104A(R&M)-2 TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP	SECTION-VI, PART-2 SUB-SECTION-VI-2 CIVIL Certification signature by SANJOY ADHIKARY 23.10.2019 12:33 

CLAUSE NO.	QUALITY ASSURANCE	एनटीपीसी NTPC	
2.12.0	ARCHITECTURAL & MISC. WORKS Material used for sanitary and plumbing fittings and fixtures, floor finishes and allied work shall conform and tested as per the requirements of relevant IS Codes specified in NTPC technical specification. Fabricated item like metal doors, windows, ventilators, louvers, rolling shutters and grills etc. shall be checked for correctness of locations and smoothness of operation and fixtures. All controls and locking devices shall give fault free performance. Door and window shutters shall operate without jamming. The clearance at head and jamb for door shutters shall not exceed 1.5 mm. For double leaf doors, the gap at the meeting stiles shall not be more than 2.5 mm. Materials used in glass and glazing shall be procured from source approved by NTPC and shall conform to the requirements of the Technical Specification and IS Codes. False ceiling panels shall be best quality material in thickness and properties called for in the specification / schedule of items. Material Test Certificate to be submitted before bulk supply. All bought items covered in the scope of contract shall be procured from sources approved by NTPC and shall conform to the requirements of the technical specifications and referred standards /codes.		
2.13.0	PRE CAST CONCRETE WORKS 1. All the materials used in Pre cast Concrete work shall be tested and conform to the requirements of IS codes and NTPC Tech. Specification. 2. Concrete mix for Pre cast members shall conform to IS-456-2000. 3. All relevant QA requirements pertaining to cast insitu concrete shall be applicable. 4. Load test on Pre cast members shall be carried out for the type of members as decided by NTPC Engineer as per IS-456-2000. 5. Pre Cast Concrete member shall be checked for dimensions (length, cross sectional dimensions, straightness, squareness, and flatness) and tolerances shall be as per NTPC Technical Specification.		
KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4x210 MW) BIDDING DOC. NO.: CS-4210-104A(R&M)-2 TECHNICAL SPECIFICATION FOR RENOVATION & RETROFITTING OF ESP SECTION-VI, PART-B SUB-SECTION-VI-B-1 CIVIL 23.10.2019 12:33 15 of 17			

GENERAL ARRANGEMENT DIAGRAM

FOR AUXILIARY CONTROL PANEL (FOR OLD ESP)

(DRAWOUT TYPE, DOUBLE FRONT WITH FORM IVb TYPE-7)

(QTY.12NOS.)

FOR TENDER PURPOSE ONLY

PANEL	ESP DESIGNATION
ACP-B (4Nos.)	B (OLD ESP)
ACP-C (4Nos.)	C (OLD ESP)
ACP-D (4Nos.)	D (OLD ESP)

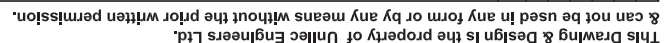
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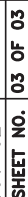
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एन टी पी सी लिमिटेड NTPC Limited A Govt. of India Enterprise (Formerly National Thermal Power Corporation Ltd.)		OWNER	एन टी पी सी लिमिटेड NTPC Limited A Govt. of India Enterprise (Formerly National Thermal Power Corporation Ltd.)					
PROJECT		NATIONAL THERMAL POWER CORPORATION LTD KAHALGAON THERMAL POWER PROJECT 4X210MW						
CONTRACTOR		BHARAT HEAVY ELECTRICALS LIMITED UNIT: BOILER AUXILIARIES PLANT, RANIPET :632406						
UNILEC		Manufacturer:- UNILEC ENGINEERS LIMITED UNIT-1 :-Begumpur Khatola Road, Behrampur Industrial Area,Gurgaon-122001 UNIT-2 :-Bawal, Distt.Rewari, Haryana-123501		DRN.	NAME	SIGN	DATE	
				PRPD.	YOGENDRA		06.08.18	
				CHKD.	AASID		06.08.18	
				APPD.	Y.C		06.08.18	
TITLE :-		GENERAL ARRANGEMENT DIAGRAM FOR AUXILIARY CONTROL PANEL (FOR OLD ESP)						
NTPC DRG.No.		4210-104A-01-PVE-005						
BHEL DRG.No.		---						
BHEL PO & DATE		4281814/DATE:03.08.2018						
UCL DRG.NO.		J-992-101-02						
APPD.		CHKD.	PRPD.	Date	DESCRIPTION OF CHANGE			Rev.
				</				





PANEL	BOILER DESIGNATION
ACP-E (NEW ESP)	1, 2, 3, 4

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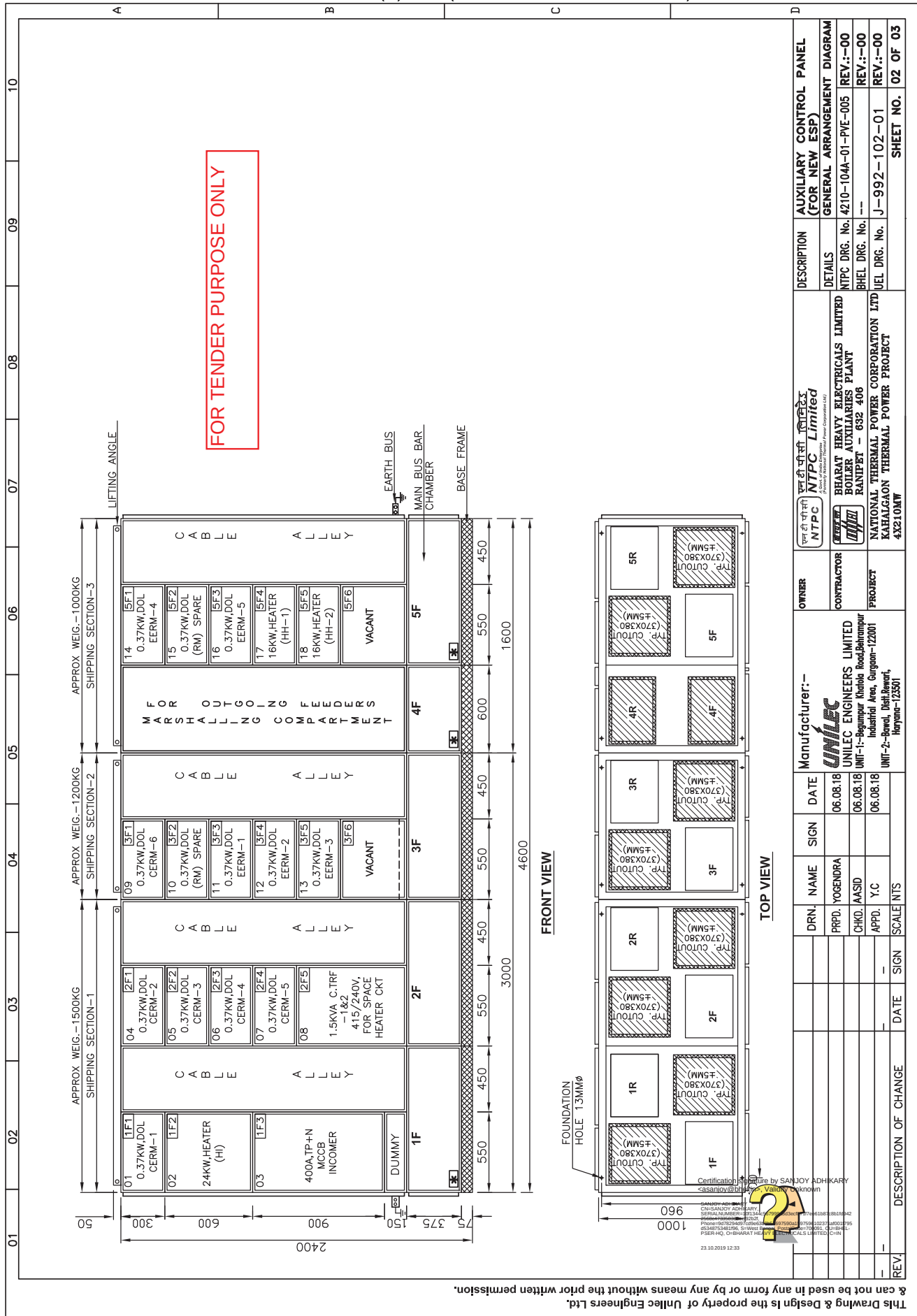
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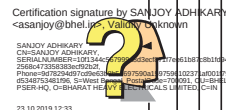
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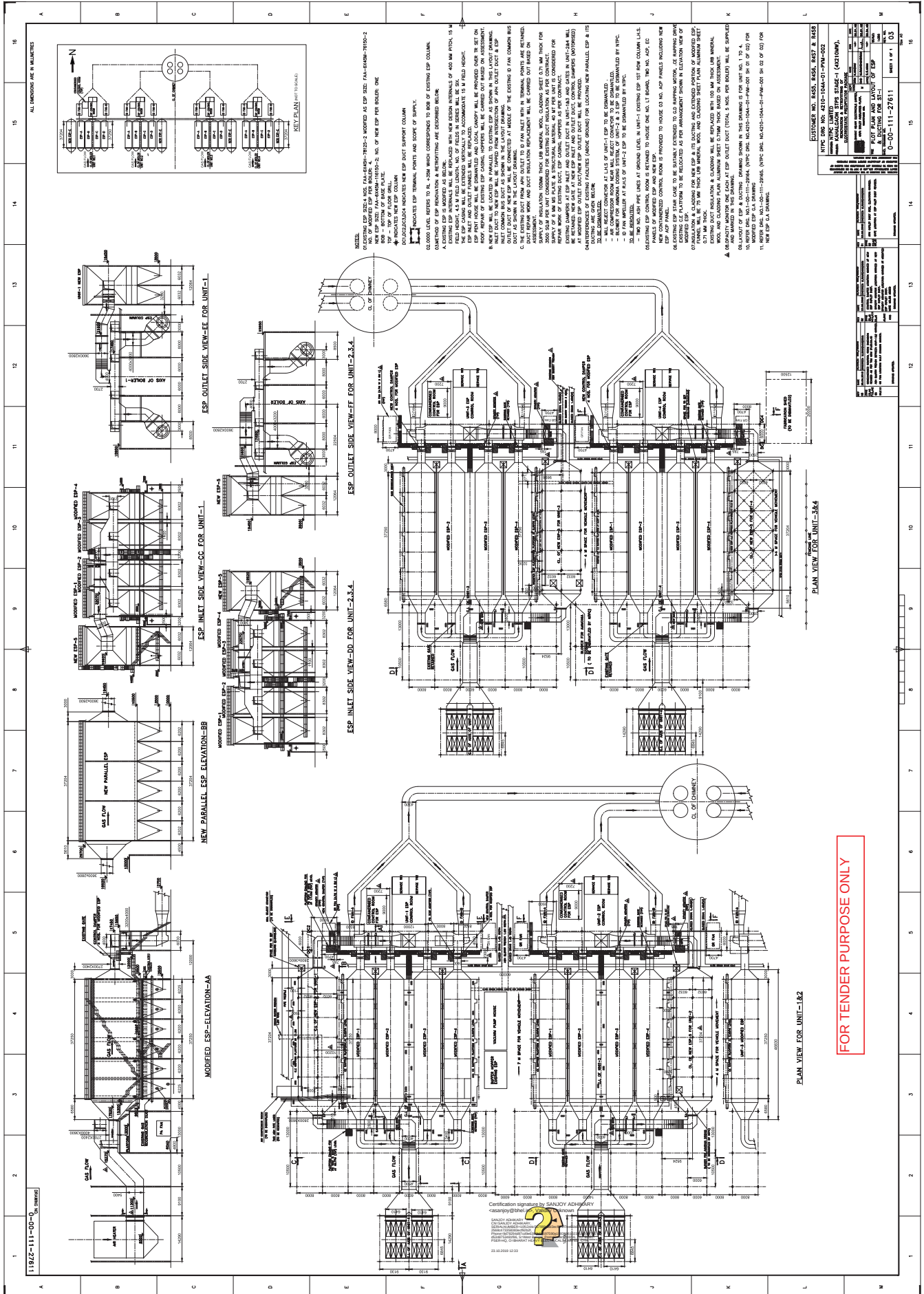
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FOR TENDER PURPOSE ONLY

Rev.	DESCRIPTION OF CHANGE	Date	PRPD.	CHKD.	APPD.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-







NOTE :-

01. EXISTING SERVICE TRANSFORMER (1.6 MVA 2 NOS) AND BUS DUCTS TO BE REPLACED WITH 2NOS.
02. 2.5MVA SERVICE TRANSFORMER & NEW LT BUS DUCT BY RMSG,BHOPAL.
03. MODIFICATION OF EXISTING CONTROL ROOM (IF REQUIRED) IS IN BHEL-RMSG BHOPAL/PSER SCOPE.
04. EXISTING LT MAIN SWITCHBOARD WILL BE REMOVED & REPLACED BY NEW LTMSB.
05. THIS NEW LTMSB WILL CATER POWER TO MODIFIED ESP A TO D & NEW ESP-E.
06. EXISTING ACP A,B,C,D WILL BE REMOVED. NEW ACP-B WILL BE PLACED IN THE EXISTING LOCATION OF ACP A.B. NEW ACP-A WILL BE PLACED IN THE EXISTING LOCATION OF ACP C.D.
07. NEW ACP FOR MODIFIED ESP C,D AND NEW ESP-E WILL BE PLACED IN CONTAINERISED CONTROL ROOM.
08. EC PANELS MEANT FOR MODIFIED ESP & NEW ESP WILL BE PLACED BY REMOVING THE EXISTING EC PANELS AVAILABLE IN THE FIRST FLOOR.
09. EXISTING LAYOUT & MODIFIED LAYOUT BOTH ARE SHOWN IN THE DRG.
10. AREA-II IS SUPPLIED FOR MODIFIED ESP & NEW ESP. HENCE RCP PANEL IS NOT APPLICABLE.
11. ALL EC PANELS ARE PROVIDED WITH BOTTOM ENTRY FOR CABLES. ACP SHALL BE PROVIDED WITH TOP ENTRY FOR CABLES. LTMSB PANELS ARE PROVIDED WITH BUS DUCT, TOP ENTRY.
12. ACP & LTMSB SUPPLIED WILL HAVE FORM IVB DESIGN OF 900MM WIDTH.
13. HEAT LOSS/PANEL : EC - 0.2KW/PANEL (APPROX.)
14. LTMSB - 10.0KW/PANEL (APPROX.)
15. THE CABLE TRAY SHALL BE SEALED PROPERLY SO THAT RAIN WATER AND DUST SHALL NOT ENTER INSIDE THE ROOM/TRENCH.
16. ALL KINDS OF CIVIL WORKS INVOLVED FOR OLD PANEL REMOVAL/HANDLING & NEW PANEL ERECTION, COMMISSIONING ETC SHALL BE DONE BY BHEL IN CONSULTATION WITH NTPC SITE ENGINEER.
17. MENTIONED DIMENSIONS ARE CLEAR DIMENSIONS FROM WALL/COLUMN EDGE.
18. WEIGHT OF THE PANELS: EC-300 KG (APPROX); LTMSB-14000 KG/PANEL, ACP-3700 KG/PANEL.
19. LOCATION OF DOORS/SHUTTER SHOWN FOR EXISTING CONTROL ROOM ARE EXISTING LOCATION.
20. NEW LOCATION IF REQUIRED SHALL BE DECIDED SUITABLY BY RMSG/PSER IN CONSULTATION WITH NTPC.
21. LOCATION OF DOORS/SHUTTER SHOWN FOR MODIFIED CONTROL ROOM ARE EXISTING LOCATION.
22. NEW LOCATION IF REQUIRED SHALL BE DECIDED SUITABLY IN CONSULTATION WITH NTPC.
23. EXISTING FALSE CEILING SHALL BE RETAINED IN EXISTING ESP CONTROL ROOM.
24. FOR LOCATION OF 2.5MVA ESP SERVICE TRANSFORMER, DRG-NO-4210-104A-01-PWM-002 SHALL BE REFERRED.
25. FOR LOCATION OF CONTAINERISED CONTROL ROOM, DRG-NO-4210-104A-01-PWM-002 SHALL BE REFERRED.

LEGEND :-

- EC - ELECTRONIC CONTROLLER (600X550X200)
- LTMSB - LTMSB PANEL (DOUBLE FRONT DRAW TYPE) ([1600MMX4700MM] X 1000MM/1400MM X 2450MM)
- ACP - ACP PANEL PANEL (DOUBLE FRONT TYPE) (4600 MM X 1000MM X 2450MM)
- ↑ - FRONT SIDE OF THE PANEL
- DCFB - DC FUSE BOARD (WALL MOUNTED) 800(L)X800(H)X200(D)
- ACFB - AC FUSE BOARD (WALL MOUNTED) 800(L)X800(H)X200(D)
- NEW LIGHTING TRANSFORMER PANEL=2000(L)X1500(D)X2300(H).

FOR TENDER PURPOSE ONLY

CUST NO: R4S5.R4S6.R4S7&R4S8

NTPC DRG.NO. 4210-104A-01-PWM-044

TYPE OF PRODUCT

OR NAME OF PROJECT

NTPC LTD
KAMALGANJ THERMAL POWER PROJECT
(4210 MW)

JOB NO.	STATUS	CONTRACT	DEPT	NAME	SIGN	DATE
1001	STATUS	CONTRACT	DEPT	NAME	SIGN	DATE
1002	STATUS	CONTRACT	DEPT	NAME	SIGN	DATE
1003	STATUS	CONTRACT	DEPT	NAME	SIGN	DATE
1004	STATUS	CONTRACT	DEPT	NAME	SIGN	DATE
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1008	STATUS	CONTRACT	DEPT	NAME	SIGN	DATE
1009	STATUS	CONTRACT	DEPT	NAME	SIGN	DATE
1010	STATUS	CONTRACT	DEPT	NAME	SIGN	DATE

TITLE: RECOMMENDED LAYOUT (EXISTING & NEW) OF ESP CONTROL ROOM, CONTAINERISED CONTROL ROOM.

SCALE : N.T.S

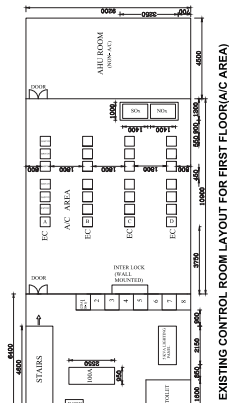
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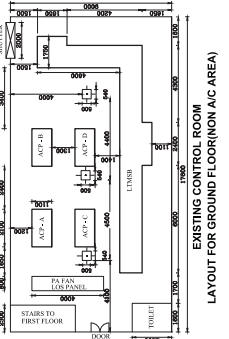
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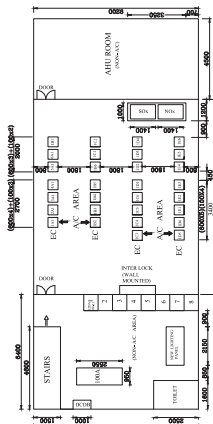
EXISTING CONTROL ROOM LAYOUT FOR FIRST FLOOR (AC AREA)



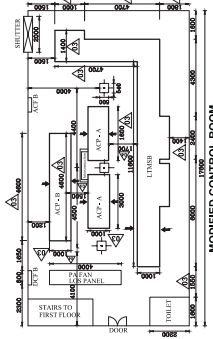
EXISTING CONTROL ROOM LAYOUT FOR GROUND FLOOR (NON AC AREA)



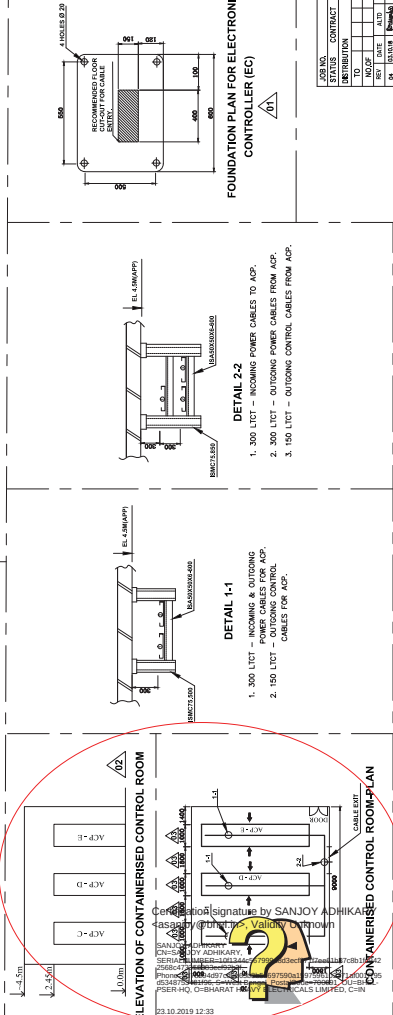
ELEVATION OF EXISTING MODIFIED CONTROL ROOM



MODIFIED CONTROL ROOM LAYOUT FOR FIRST FLOOR (AC AREA)



MODIFIED CONTROL ROOM LAYOUT FOR GROUND FLOOR (NON AC AREA)



ELEVATION OF CONTAINERISED CONTROL ROOM

FOUNDATION PLAN FOR ELECTRONIC CONTROLLER (EC)

CONTAINERISED CONTROL ROOM PLAN

DETAIL 1-1

DETAIL 2-2

1. 300 LIT - INCOMING POWER CABLES TO ACP.

2. 300 LIT - OUTGOING POWER CABLES FROM ACP.

3. 150 LIT - OUTGOING CONTROL CABLES FROM ACP.

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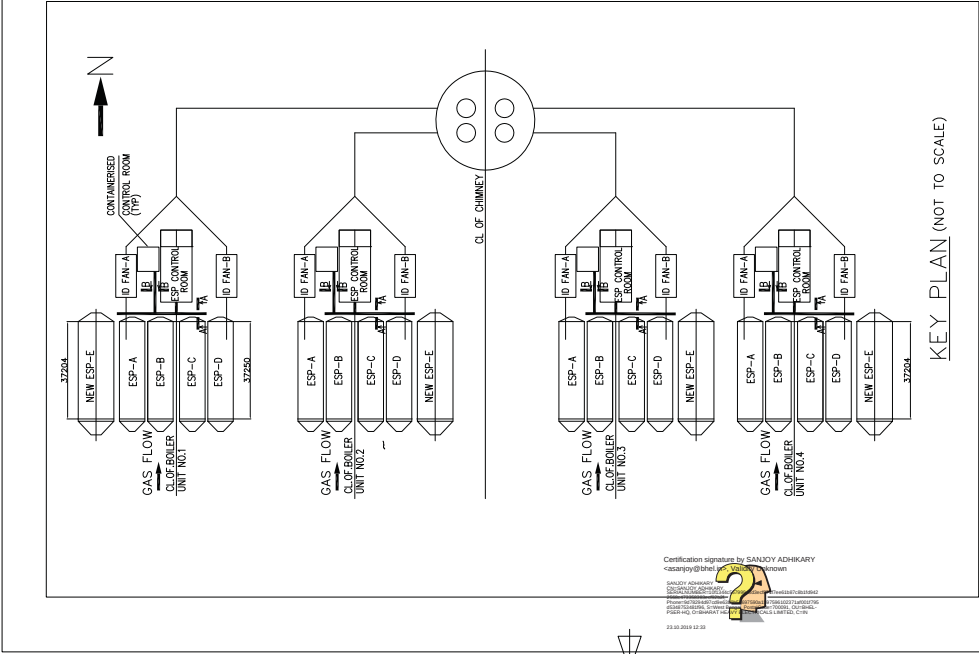
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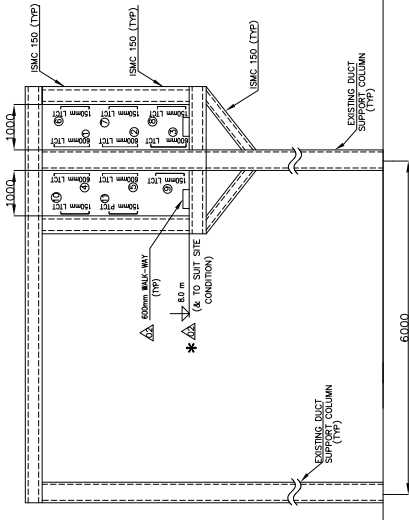
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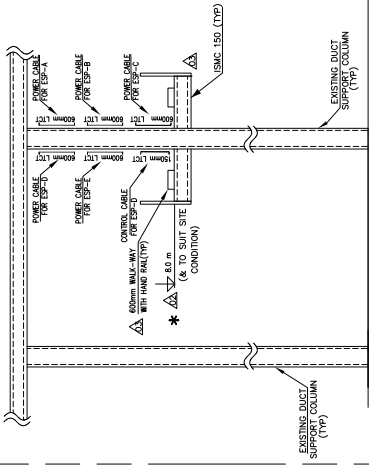
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sanjoay@bhel.com

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SECTION-AA



SECTION-BB



NO.	DESCRIPTION
1	POWER CABLE FOR ESP-A
2	POWER CABLE FOR ESP-B
3	POWER CABLE FOR ESP-C
4	POWER CABLE FOR ESP-D
5	POWER CABLE FOR ESP-E
6	CONTROL CABLE FOR ESP-A
7	CONTROL CABLE FOR ESP-B
8	CONTROL CABLE FOR ESP-C
9	CONTROL CABLE FOR ESP-D
10	CONTROL CABLE FOR ESP-E
11	PERFORATED CABLE FOR ESP-A TO E

* HOWEVER, THIS ELEVATION CAN BE MODIFIED BY SITE TO SUIT EXISTING ELEVATION COMING FROM ESP CONTROL ROOM

NOTE:

01. FOR EACH ESP, 1 Nos. OF 600mm LADDER TYPE CABLE TRAY IS PROVIDED FOR POWER CABLE & 1 No. OF 150mm LADDER TYPE CABLE TRAY IS PROVIDED FOR CONTROL CABLES.
02. 1 No. OF 150mm PERFORATED TYPE CABLE TRAY FOR SCREENED CABLE IS PROVIDED COMMON FOR ESP A,B,C,D,E & FOR UNIT-1
03. TOTAL 5 Nos. OF 600mm LTCT, 5 Nos. OF 150mm LTCT & 1 No 150 MM PTCT WILL BE PROVIDED BY BHEL FOR UNITS 1 TO 4.
04. ELEVATION LEVEL SHALL BE AS PER SITE REQUIREMENT
05. REQUIRED CABLES, CABLE TRAYS AND FLEXIBLE TRAY SUPPORTS FROM ESP CONTROL ROOM EXIT TO ESP WILL BE GIVEN BY BHEL.

FOR TENDER PURPOSE ONLY

KEY PLAN (NOT TO SCALE)

CUST. NO: R4S5, R4S6, R4S7 & R4S8

NTPC DRG.NO.		4210-104-PVE-B-096			
TYPE OF PRODUCT		NATIONAL THERMAL POWER CORPORATION LTD			
OR NAME OF PROJECT		KAHALGAON THERMAL POWER PROJECT (4x210 MW)			
	DEPT	NAME	SIGN	DATE	
	CODE	DRN	IPRIYANKA		16.08.18
		DESIN	R.V	P. Lakshmi	16.08.18
		CHD	R.V	P. Lakshmi	16.08.18
		APPRO	M. J. M	M. J. M	16.08.18
BHARAT HEAVY ELECTRICALS LIMITED, UNIT: BOILER AUXILIARIES PLANT, RANIPET-632 406.					
TITLE:		CABLE ROUTING FROM ESP CONTROL ROOM TO ESP WITH CUT SECTION DETAILS.			
BHEL/BAP DRG.NO.		SCALE : N.T.S		REV	
3-00-114-40647				03	

LEGEND:

- 600mm LTCT : 600mm WIDTH LADDER TYPE CABLE TRAY.
- 150mm LTCT : 150mm WIDTH LADDER TYPE CABLE TRAY.
- 150mm PTCT : 150mm WIDTH PERFORATED TYPE CABLE TRAY.

Bharat Heavy Electricals Limited Power Sector - Eastern Region, Kolkata	
TENDER NO. : PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019	
VOLUME – IC & ID	SPECIAL CONDITIONS OF CONTRACT (SUPPLY & SERVICES)

CONTENTS

CLAUSE NO	DESCRIPTION
1.0	PROJECT SYNOPSIS AND GENERAL INFORMATION
2.0	SITE VISIT
3.0	NAME OF WORK
4.0	BROAD SCOPE OF WORK
5.0	ENGINEERING SERVICES
6.0	SERVICES TO BE RENDERED BY THE VENDOR
7.0	GENERAL TECHNICAL REQUIREMENTS (CODES & STANDARDS)
8.0	QUALITY PLAN
9.0	QUALITY ASSURANCE PROGRAMME
10.0	GENERAL REQUIREMENTS - QUALITY ASSURANCE
11.0	QUALITY ASSURANCE DOCUMENTS
12.0	INSPECTION, TESTING AND INSPECTION CERTIFICATES
13.0	OPERATING MANUAL AND MAINTENANCE INSTRUCTIONS
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29.0	DIVISIBLE CONTRACT
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32.0	CONSIGNEE
33.0	DESPATCH
34.0	BANKER
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36.0	PAYING AUTHORITY
37.0	APPROVED MANUFACTURER/ SUB-VENDOR
38.0	INSPECTION & JOINT VERIFICATION (AT VENDOR'S WORKS)
39.0	INSPECTION & JOINT VERIFICATION (AT SITE)
40.0	SPARES
41.0	FACILITIES TO BE PROVIDED BY BHEL
42.0	FACILITIES TO BE PROVIDED BY THE CONTRACTOR
43.0	CONSUMABLE
44.0	IMTE
45.0	GENERAL TECHNICAL REQUIREMENTS (CODES AND STANDARDS)
46.0	TEST CERTIFICATE FOR T&P
47.0	ISSUE OF T&Ps
48.0	MANDATORY DOCUMENT FOR SUBMISSION OF TECHNICAL BID
49.0	PROTECTION

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50.0	ERECTION SERVICES
51.0	DEWATERING
52.0	AREA REQUIREMENT
53.0	CONSTRUCTION OF TEMPORARY OFFICE , STORES ETC.
54.0	RECONCILIATION OF MATERIALS
55.0	PRICE VARIATION CLAIM (PVC) / RATE REVISION / OVER RUN COMPENSATION (ORC)/ MOBILISATION ADVANCE/ INTEREST BEARING RECOVERABLE ADVANCE
56.0	TRAINING OF OWNER'S / PURCHASER'S PERSONNEL
57.0	WARRANTY & MAINTENANCE
58.0	WORK & SAFETY REGULATIONS
59.0	EXTENSION OF TIME FOR COMPLETION
60.0	OTHER TERMS

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This volume shall be construed as part of tender document and shall be read along-with others volumes of tender. Unless otherwise specified, in case of any conflict or inconsistency between the general and technical conditions, the same shall be brought out by the bidder in writing to BHEL for clarification or during pre-bid discussions, if applicable, failing which most stringent interpretation in favour of BHEL shall be adopted and the same shall be binding to the bidder.

CLAUSE NO	DESCRIPTION
1.0	PROJECT SYNOPSIS AND GENERAL INFORMATION Name of the Owner :NTPC LTD Address : KAHALGAON SUPER THERMAL POWER STATION STAGE-I (4X210 MW),NTPC Ltd., District-Bhagalpur, Bihar, India Nearest Railway Station: Kahalgaon Railway Station is situated about 7km from the plant site. Nearest Road : The Bhagalpur-Sahibganj State Highway runs parallel to the railway track. Bhagalpur, the nearest major town, is about 30-km southwest of project site. Nearest Airport :The nearest airport is at Patna which is about 255 Km from site
2.0	SITE VISIT The bidder must visit site, to acquaint themselves with the conditions prevailing at site and in & around the plant premises, together with all statutory, obligatory, mandatory requirements of various authorities before submission of bid.
3.0	NAME OF WORK The scope covers design, engineering, manufacturing, inspection, testing at manufacturer's/ vendor's/ sub-vendor's works proper packing, transportation to site including freight, delivery, installation, commissioning, trial run, handing over etc., supply of Spares, special tools & tackles for maintenance, start-up & commissioning spares, consumables, as required, for total scope defined in 'Technical specification- Containerized Electrical Room, Ref. No: RMSG-05749 issue dt.22.02.2019) along with other documents of 'Containerized Electrical Room along with ventilation system" for 4x210 MW units at NTPC Kahalgaon STPP, Bihar". List of Containerized Electrical Room along with ventilation system as per technical specification are to be supplied , installed and commissioned for ESP #1 to #4.
4.0	BROAD SCOPE OF WORK
4A	SUPPLY SCOPE
4.1	The work to be done as per Technical specification (No: RMSG-05749,issue dt.22.02.2019) under Volume-II and elsewhere in the tender documents
4.2	Splitting up of supply contract into two supply contracts one for Indian supply and other for the foreign supply would not be entertained.
4.3	The scope of work broadly covers as per specification (No: No: RMSG-05749, issue dt.22.02.2019) under Volume-II & elsewhere in the document but shall not be limited to the following.
4.3.1	Detail design of all equipments & sub-system and work as per specification.
4.3.2	Preparing the manufacturing quality plan.
4.3.3	Complete manufacturing of all equipments/ sub-system including shop, field testing and assembly as per specification.
4.3.4	Providing special tools & tackles and services necessary for the satisfactory execution of the contract.
4.3.5	Providing requisite sets (both hard & soft copy) of engineering drawings; RTF; data; operation & maintenance (O&M) manual; as-built drawing; plant handbook, storage, preservation & painting manual; erection manual etc. as specified elsewhere in the

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	tender.
4.3.6	Arranging inspection of equipments and accessories etc. at manufacturer's/ sub vendor's premises.
4.3.7	Packing & transportation of goods from manufacturer's works/ sub vendor's works.
4.3.8	Any equipments not specified here but required to make the equipments complete shall be under the scope of vendor.
4.3.9	Providing preventive routine maintenance schedule of the equipment/ sub-system.
4.3.10	Transportation of materials on FOR destination/ site basis & door delivery of materials at site.
4.3.11	Preparing schedules and furnishing progress report in requisite mode and number.
4.4	All other points shall be as per the terms & conditions and specification along with aforesaid references together with amendments incorporated thereto.
4B	SCOPE OF SERVICES.
4.5	The intent of the tender is to provide services as per Technical specification (No: RMSG-05749, issue dt.22.02.2019) under Volume-II and elsewhere in the tender documents. For execution of the project according to most modern & proven techniques & codes. Omission of specific reference to any method, equipment or material necessary for proper & efficient services towards installation of the plant shall not relieve the vendor of the responsibility of providing such services/ facilities to complete the work or portion of work awarded to them. The quoted/ accepted rates/ price shall deem to be inclusive of all such contingencies.
4.6	The work to be carried out under scope of the tender covers complete work of handling including storage, preservation, site handling/transportation , unloading, loading at site , installation/erection and commissioning of the supplied items required to complete installation /commission and hand over the whole system under vendor scope. all pre-commissioning tests, start-up & trial run of individual equipment, final commissioning including supply of erection & commissioning spares as required till handing over, and trial run and handing over of units to BHEL/ customer including successfully installation/trial run of supply item under this scope, The work shall conform to dimensions and tolerances given in various drawings & documents that will be provided during erection/installation. If any portion of works is found to be defective in workmanship & not conforming to drawings/ documents or other stipulations, the vendor shall dismantle and redo the work duly replacing the defective materials at their own cost, failing which recoveries, as determined by BHEL, shall be effected from vendor's bills.
4.7	It is not the intent of the tender to specify herein all the details of erection/installation & commissioning. However, the system shall conform in all respects to high standards of quality & workmanship for performing the required duties in a manner acceptable to purchaser who will interpret the meaning of drawings and specifications and shall be entitled to reject any work or material, which in their judgments is not in full accordance herewith.
4.8	Omission of specific reference to any fabrication/ erection method, equipment or material necessary for proper & efficient working of the plant shall not relieve the vendor of the responsibility of providing such facilities to complete the work at quoted rates. Any mismatch/ defect found due to mistake in fabrication/ erection shall have to be rectified by the vendor free of cost. Inspection by BHEL/ customer does not relieve vendor of their responsibility of executing quality erection.
4.9	Following shall be the responsibility of vendor and have to be provided within finally accepted rates/ prices.
4.9.1	Provision as required of all types of labour, supervisors, engineers, watch and ward, tools & tackles, calibrated IMTEs (Inspection, measuring and testing equipment) as specified and otherwise required for the work, consumables for erection, testing and commissioning including material handling.
4.9.2	Proper out-turn as per BHEL plan and commitment.
4.9.3	Completion of work as per BHEL schedule.
4.9.4	Good quality and accurate workmanship for proper performance of the equipment.
4.9.5	Repair and rectification.

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4.9.6	Preservation/ re-conservation of all components during storage/ erection/ commissioning till handing over.
4.9.7	Drawings/ documents submitted along with tender are for guidance purpose only and no claim/ compensation, whatsoever, shall be entertained by BHEL on this account.
4.10	All other points shall be as per the terms & conditions and specification along with aforesaid references together with amendments incorporated thereto.
5.0	ENGINEERING SERVICES As part of the overall project management activity, the vendor shall be responsible for proper engineering and coordination activities during various phases of execution of the contract. The vendor shall identify one Engineering Manager with whom BHEL will interact on all matters on coordination between BHEL and the contractors. The Engineering Manager shall be the single point contact person on behalf of the vendor and shall be responsible for all engineering coordination.
6.0	SERVICES TO BE RENDERED BY THE VENDOR
6A	AGAINST SCOPE OF SUPPLY
6.1	Services for complete engineering, coordination and project management as detailed elsewhere in this tender.
6.2	Services for shop test, quality assurance, as detailed elsewhere in this tender.
6.3	Supply of main equipment along with other items as per specification maintaining sequential dispatch.
6.4	Supply of first fill of lubricants for all equipment including second fill/ replenishment as necessary after commissioning till handing over of the plant/ equipment
6.5	Furnishing of all document, drawing, design basis, reports, instruction manuals, etc including 'As-built drawing'.
6.6	Furnishing preservation schedule with all details of preservation method and preservatives required storing.
6.7	DOCUMENTS
6.7.1	The vendor shall furnish 15 (fifteen) sets of approved drawing & documents 1 week prior to commissioning.
6.7.2	The vendor shall furnish 15 (fifteen) sets of operation & maintenance (O&M) manuals 1 week prior to commissioning.
6.7.3	The vendor shall furnish 15 (fifteen) sets of plant handbook covering design, performance data, P&IDs, SLDs, flow charts, sequence, protection & interlock scheme, alarm & trip valves, performance curves, important Do's and Do not's' etc 1 week prior to commissioning.
6.7.4	The vendor shall furnish 15 (fifteen) sets of as-built drawing along with 4 copies of CD ROM.
6.7.5	The vendor shall furnish 15 (fifteen) sets of storage, preservation & painting manual.
6B	AGAINST SCOPE OF SERVICES
6.8	Services for construction, fabrication, equipment erection, testing as well as trial run & commissioning of various equipment and accessories under the contract shall include but not be limited to the following:
6.8.1	Unloading of materials at railway station/ transporter's godown/ railway siding/ inside or outside the project area, transportation to contractor's stores, assessment of lost/ damaged items in transit/ storage erection & commissioning, arranging the Insurance claims and replacement of lost/ damaged items. The contractor shall be responsible for making good the losses/ damages for cases for which BHEL is unable to lodge Insurance claim. BHEL is unable to recover the full cost from Insurance company against any claims, the balance including deductible franchise wherever applicable, will be recovered from the Contractor.
6.8.2	Issuing materials from store/open yard as specified earlier from time to time for erection as per the construction programme. The contractor shall be the custodian of all the materials issued till the plant/equipment is officially taken over by the owner/ BHEL after complete erection any successful trial run & commissioning.
6.8.3	Transport of material to their respective places of erection and erection of the complete plant & equipment as supplied under this specification.

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6.8.4	Trial run and commissioning of individual equipment/ sub-systems to the satisfaction of owner/ BHEL.
6.8.5	Deployment of all skilled and unskilled manpower required for erection, supervision of erection, watch & ward, commissioning and other services to be rendered under this specification.
6.8.6	Deployment of all erection tools & tackle, construction machinery, transportation vehicles and all other implements in adequate number and size, appropriate for the erection work to be handled under scope of this specification except otherwise specified.
6.8.7	Supply of all consumables, e.g. welding electrodes, cleaning agents, diesel oil, lubricant etc as well as materials required for temporary supports, scaffolding etc as necessary for such erection work, unless specified otherwise.
6.8.8	Providing support services for the contractor's erection staff e.g., Construction of site offices, temporary stores, residential accommodation and transport to work site for erection personnel, watch and ward for security and safety of the materials under the contractor's custody etc. as required.
6.8.9	Maintaining proper documentation of all the site activities undertaken by the Contractor as per the proforma mutually agreed with BHEL, Submitting monthly progress reports as also any such document as and when desired by BHEL/owner, taking approval of all statutory authorities, ie Boiler Inspector, Factory Inspector, Inspector of Explosives etc, as applicable for respective portions of work under the jurisdiction of such statutes of laws.
6.8.10	All the materials issued to the bidder by BHEL shall be reconciled by the bidder and the unused materials have to be returned back to BHEL stores/yard or any other place as specified by BHEL.
6.8.11	Supply and application of final paint on all the equipment to be erected is under the scope of the contractor.
6.8.12	After completion of the commissioning activity of equipment /systems, the contractor shall prepare the test Reports which shall include all the relevant information related to various commissioning checks, tests carried out, any deviations / commissioning noticed w.r.t. the intended design requirements, sequence of various commissioning activities as actually adopted vis-à-vis as recommended in the procedures, programme schedule achieved and any other such information as required. These Test Reports shall be submitted in requisite number of copies to BHEL/Owner /Contractor involved during the commissioning activities.
6.8.13	Any other service, although not specifically called for but required for a contract of the size and nature indicated in the specification.
7.0	GENERAL TECHNICAL REQUIREMENTS (CODES & STANDARDS)
7.1	Except where otherwise specified, the plant/ equipment shall comply with appropriate Indian Standard or an agreed internationally accepted standard specification as mentioned elsewhere in contract specifications, each incorporating the latest revisions at the time of tendering. Where no internationally accepted standard is applicable, the bidder shall give all particulars and details as necessary; to enable BHEL to identify all of the plant/ equipment in the same detail as would be possible had there been a standard specification.
7.2	In case bidder proposes alternative codes or standards in offer, they shall include one copy (in English) of each standard specification to which materials offered shall comply in their offer. In such case, the adopted alternative standard shall be equivalent or superior to the standards mentioned in the specification.
7.3	In the event of any conflict between the codes & standards referred above, and requirements of this specification, the requirements which are more stringent shall govern.
7.4	Wherever specified or required, the plant/ equipment shall conform to various statutory regulations such as Indian Boiler Regulation, Indian Electricity Rules, Indian

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	Explosive Act, Factories Act etc, wherever required. Obtaining approval for plant/ equipment supplied under the specification from statutory authorities shall be the responsibility of the vendor.
8.0	QUALITY PLAN
	The bidder shall furnish the quality assurance plan which would be approved by BHEL/ owner.
9.0	QUALITY ASSURANCE PROGRAMME
	To ensure that the equipment & services under the scope of the contract whether manufactured/ performed at vendor's works or at his sub-vendor's premises or at any other place of work are in accordance with the specifications the vendor shall adopt suitable quality assurance programme to control activities as necessary. Such programme shall be outlined by the vendor and shall be finally accepted by BHEL/ owner/ authorised representative. A quality assurance programme of the vendor shall generally cover the following.
9.1	The organization structure and qualification data of key personnel for the management and implementation of the proposed quality assurance programme.
9.2	System for site erection control including process controls, fabrication and assembly controls.
9.3	The procedure for purchase of materials, parts, components and selection of sub-vendor's service including vendor analysis, source inspection, incoming raw material inspection, verification of materials purchased etc.
9.4	System for shop manufacturing and site erection control including process control, fabrication and assembly controls.
9.5	Control of non-conforming items and system for corrective actions.
9.6	Inspection and test procedure for all site related works.
9.7	Control of calibration and testing of measuring and testing equipment.
9.8	System for quality audit.
9.9	System for indication and appraisal of inspection status.
9.10	System for authorizing release of manufactured product to BHEL.
9.11	System for handling storage and delivery.
9.12	System for maintenance of records.
9.13	Furnishing of quality plan for manufacturing and field activities detailing out the specific quality control procedures adopted for controlling the quality characteristics relevant to each item of equipment/ component.
10.0	GENERAL REQUIREMENTS - QUALITY ASSURANCE
10.1	All materials, components and equipment covered under this specification shall be procured, manufactured, and tested at all the stages, as per a comprehensive Quality Assurance Program. An indicative program of inspection/ tests to be carried out by the vendor for some of the major items is given in the respective technical specification. This is however not intended to form a comprehensive program as it is the responsibility of the vendor to draw up and implement such program duly approved by BHEL. The detailed quality plan for manufacturing should be drawn up by the bidder and will be submitted to BHEL for approval.
10.2	Manufacturing quality plans will detail out for all the equipment and components, various tests/ inspection to be carried out as per requirement of this specification and standards mentioned therein and the quality practices and procedures etc to be followed by vendor's quality control organization during various stages of materials procurement, manufacturing, assembly and final testing/ performance testing.
10.3	The bidder shall furnish the copies of the reference documents/ plant standards/ acceptance norms/ tests and inspection procedures etc as referred in quality plans along with quality plan. These quality plans and reference documents/ standards etc will be subject to BHEL/ owner's approval, without which manufactures will not proceed. These approved documents will form part of the contract. In these approved quality plans BHEL/ authorized representative shall identify customer hold points, test/ checks which shall be carried out in presence of BHEL/ owner's representative and beyond which work will not proceed without consent of BHEL/ owner. All deviations to the specifications, approved quality plan and applicable standards must be

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	documented and referred to BHEL for approval & disposition.
10.4	Quality audit/ approval of the results of tests and inspection will not prejudice the right of BHEL to reject equipment not giving the desired performance after erection and shall not in no way limit the liabilities and responsibilities of the vendor in earning satisfactory performance of equipment as per specification.
10.5	Repair/ rectification procedures to be adopted to make any job acceptable shall be subject to the approval of BHEL/ owner.
11.0	QUALITY ASSURANCE DOCUMENTS
11.1	The vendor shall be required to submit the following Quality Assurance Documents within 2 weeks after dispatch of the equipment.
11.1.1	Test report of components.
11.1.2	The inspection plan with verification, inspection plan check points, verification sketches, if used and methods used to verify that the inspection and testing points in the inspection plan were performed satisfactorily.
11.1.3	Non destructive examination results/ reports including radiography interpretation reports.
11.1.4	Welder identification list listing welder's and welding operator's qualification procedures and welding identification symbols.
11.1.5	Sketches and drawings used for indicating methods of traceability of the radiographs to the location of the equipment.
11.1.6	Stress relief time temperature charts.
11.1.7	Factory test results for testing required as per applicable codes and standards referred to in the specification.
11.1.8	Inspection report duly signed by QA personnel of BHEL and vendor for the agreed inspection hold points. During course of inspection the following will also be recorded.
11.1.8.1	When some important work repair work is involved to make the job acceptable.
11.1.8.2	The repair works remain part of the accepted product quality.
11.1.8.3	Letter of conformity certifying that requirement is in compliance with finalized specification requirements.
12.0	INSPECTION, TESTING AND INSPECTION CERTIFICATES
12.1	The engineer, his duly authorized representative and/ or an outside inspection agency acting on behalf of BHEL/ owner shall have access at all reasonable times to inspect & examine the materials & workmanship of the works during its manufacture and if part of the works is being manufactured or assembled on other premises or works, the vendor shall obtain for the engineer and for their duly authorized representative permission to inspect as if the works were manufactured or assembled on vendor's own premises or works. Necessary arrangement for carrying out inspection including supply of labour, IMTEs, area illumination and scaffolding, if required will be vendor's responsibility and same has to be carried out within the quoted price.
12.2	Before any plant/ equipment leaves the place of manufacture BHEL shall be given the option of witnessing inspections & tests for compliance with specifications & related standards. The vendor shall give the engineer/ inspector 1 week written notice of any material being ready for testing. Such test shall be to the vendor's account except for the expenses of the inspector. The engineer/ inspector, unless the inspection is waived will attend such tests within 10 days of the date on which the equipment is notified as being ready for test/ inspection, failing which the vendor may proceed with test which shall be deemed to have been made in the inspector's presence and he shall forthwith forward to the Inspector duly certified copies of test reports.
12.3	The engineer or inspector shall within 10 days from the date of inspection as defined herein give notice to the vendor of any objection w.r.t drawing/ equipment/ workmanship which in his opinion not in accordance with the specification/ contract. The vendor shall either make modification as may be necessary to meet the said objection or explain to the engineer/ inspector giving reasons that no modifications are necessary to comply with the contract.
12.4	When the factory tests have been completed at the vendor's or sub-vendor's works, the engineer or inspector shall issue a certificate to this effect within reasonable time after completion of tests but if the tests are not witnessed by the engineer or Inspector

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	the certificate shall be issued within 10 days of the receipt of vendor's test certificate by the engineer inspector. Completion of these tests or the issue of the certificates shall not bind BHEL to accept the equipment should it on further tests after erection be found not to comply with the contract.
12.5	In all cases where the vendor desires to perform the tests at the premises of the vendor or any sub-vendor, the vendor except where otherwise specified shall provide free of charge of all such items like: labour, materials, electricity, fuel, water, stores, apparatus and instruments as may be reasonably demanded by the engineer/ inspector to carry out effectively such tests on the equipment in accordance with the contract and shall give facilities to the engineer/ inspector to accomplish testing.
13.0	OPERATING MANUAL AND MAINTENANCE INSTRUCTIONS
13.1	The vendor shall provide at least 1 week before (or as per Technical specification – Containerized Electrical Room, No: RMSG-05749, issue dt.22.02.2019), the time of commissioning, all necessary operating & maintenance (O&M) manual as applicable. The O&M manual shall be submitted in the form of one reproducible original and 15 copy.
13.2	The information which shall be contained in loose stiff backed covers, shall include following in addition to whatever has been specified in Volume-II of this tender.
13.2.1	A complete inventory of all main items of plant/ equipment with identification details.
13.2.2	A complete set of all drawings, schematics, data sheets, schedules etc.
13.2.3	Service manuals for all plant and equipment giving full descriptions of the main items and auxiliary items.
13.2.4	A schedule of recommendations for routine maintenance of all equipment inspection point, information on detection, cause and rectification of troubles and faults.
13.2.5	A lubrication schedule with all necessary drawings.
13.2.6	Manufacturer's literature for all the self-manufactured and bought out items.
13.3	Acceptance of O&M manual is subject to approval of BHEL.
14.0	PROJECT MANAGEMENT
	FOR SCOPE OF SUPPLY
	To meet the need of project management, vendor shall provide the following services within quoted/ accepted prices.
14.1	PLANNING & MONITORING
14.1.1	The vendor shall prepare L1 schedule/ network of engineering, manufacturing, testing, and procurement of sub-vendor items, so as to meet overall project schedule as detailed below and as per completion schedule given in this document. This network must conform to the overall project schedule. Vendor should also ensure monitoring of these activities regularly and as required by BHEL.
14.1.2	Based on L1 network, the vendor will prepare L2 network which will indicate exhaustive list of activities of engineering, procurement of raw materials, manufacturing, testing, procurement of sub-vendor items, and dispatch as per completion schedule given in this document. This network must include all milestone and key activities for each subsystems/ components in the areas of engineering (wherever applicable), procurement, manufacture (wherever applicable), dispatch, erection/ commissioning.
14.1.3	Based on L2 network the vendor will develop L3 network, which will indicate micro details of each activity of L2 network and also show customer/ BHEL hold points, responsibility of the customers/ BHEL and vendor.
14.1.4	Above schedules are to be preferably made in PRIMAVERA, so that the same is compatible with BHEL's project management software.
14.1.5	Above schedules/ networks would be submitted to BHEL sequentially by the vendor within 15 days from date of LOI or as per Technical Specification- Containerized Electrical- Room (RMSG-05749, issue dt.22.02.2019).
14.2	PROGRESS REPORTING
14.2.1	The vendor shall prepare and submit to BHEL monthly progress report indicating progress on key activities, management summary for critical activities, list of actions requiring attention of BHEL in floppies/ CD (compatible to BHEL software) and also in

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	requisite number of hard copies. The input & output data for all such schedule shall be furnished to BHEL in a manner compatible with BHEL software available at site. A copy of the progress report must be submitted to Project Manager/ Kolkata latest by 7 th of every month covering the detailed progress achieved in the previous month. as per Technical Specification- Containerized Electrical- Room.(RMSG-05749,issue dt.22.02.2019).
14.2.2	The progress report shall indicate the progress achieved against planned with reasons indicating delays, if any, and shall give the remedial actions which the vendor intends to take to make good the slippage or lost time, so that further works again proceed as per the original program and the slippage's do not accumulate and effect the overall program.
14.2.3	Weekly progress review meetings will be held at site during which actual progress during the week vis-à-vis scheduled program shall be discussed or actions to be taken for achieving targets. The program of subsequent week shall also be presented by vendor for discussions. The vendor shall constantly update/ revise work program to meet the overall requirement.
14.2.4	Periodic progress reviews on the entire activities of execution in respect of supply and works in scope of bidder will be held once in a month at Kolkata/ site. These meetings will be attended by reasonably higher officials of the vendor and will be used as a forum for discussing all areas where progress needs to be speeded up. The vendor shall be further responsible for ensuring that suitable steps are taken to meet various targets decided upon such meetings.
14.2.5	During construction contractor shall take an average ten colour digital photograph / slides (indicating date) each month (not less than two per week) of the works during progress or damage to the machine parts, if any, as directed by BHEL site engineer. In case of failure in providing such photograph in each month, an amount of Rs. 1,000/- per month shall be deducted from contractor's RA bill.
14.2.6	Successful bidder has to provide electronic/ computerized storing and re-production/ printing/ plotting of various data, log sheets, protocols, measurements etc. These may be stored in virus free pen drive & handed over to BHEL as per requirement.
	FOR SCOPE OF SERVICES
14.3	The bidder shall prepare detail schedule L1/ (L-2) and submit within 15 days of LOI for BHEL approval, as per project milestone schedule. This schedule must include all milestone and key activities for each package/ subsystems/ components in their scope of work in the areas of mobilization, engineering, procurement, manufacture, inspection, dispatch, erection/ commissioning/ PG Test and handing over.
14.4	CONSTRUCTION SCHEDULE
14.4.1	The contractor shall furnish an offer stage Master network / Bar Chart (L1 schedule) in accordance with the Project milestone schedule. The Contract Master Bar Chart will be negotiated with the successful Bidder.
14.4.2	The successful contractor shall prepare and maintain the detailed Master Schedule (L2 network) during the course of the work.
14.4.3	Theses network must conform to the overall requirement of the project schedule. The bidder should also ensure monitoring of these activities at least on weekly basis to start with and on daily basis whenever required by BHEL.
14.4.4	GENERAL
14.4.4.1	The Contractor shall be responsible for planning and scheduling the work and reporting its progress in a manner, format and level of detail acceptable to BHEL. These plans shall be in accordance with the intermediate milestones and the completion dates as specified by and agreed in the Contract.
14.4.4.2	The contractor shall be responsible for reporting progress to purchaser on a weekly and monthly basis. Progress reports shall be presented in a clear and logical fashion preferably through a software disc and in PDS format mutually agreed between BHEL and Contractor.
14.4.5	DETAILED MASTER SCHEDULE (L2 NETWORK)
14.4.5.1	Within thirty (30) days of the letter of intent date, contractor shall submit to purchaser

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	the detailed Master Schedule (L2 schedule) along with summary network/ bar chart (L1 schedule) for approval. L2 schedule shall be the working level document demonstrating contractor's ability and methods of completing the work within the key milestones identified in the tender specification.
14.4.5.2	The CMS shall be based on a computerized logic network. The level of detail shall be sufficient to break down the work scope into manageable and measurable activities acceptable to Purchaser. All activities shall have durations in days.
14.4.5.3	The contractor shall provide a detailed activity bar chart based on the resource scheduled logic network. The bar chart shall contain activity descriptions, planned start and finish dates with the critical path activities clearly identified. The network / bar chart shall be updated weekly to indicate actual progress.
14.4.5.4	The CMS shall include the required dates of all external input required to execute the plan. In addition, the CMS shall clearly show all Sub-contract award dates and Sub-contractor activities right from preparation of specification & floating of tender.
14.5	PROGRESS MEASUREMENT AND MONITORING
14.5.1	The contractor shall measure progress of the work using its own methods and procedures preferably in prima-vera.
14.5.2	Weekly progress review meetings will be held at site during which actual progress during the week vis-à-vis scheduled program shall be discussed and action to be taken for achieving targets will be decided. For discussions, the contractor shall present program of subsequent week. The contractor shall constantly update/revise his work program to meet the overall requirement.
14.5.3	Periodic progress reviews on the entire activities of execution in respect of engineering, quality, procurement, supply and works in scope of bidder will be held once in a month at Kolkata/ site/ vendor's premise/ BHEL/ PEM, Noida or any other convenient premise. These meetings will be attended by reasonably higher officials of the vendor along with its sub-vendors & consultant as applicable and will be used as a forum for discussing all areas where progress needs to be speeded up. The contractor shall be further responsible for ensuring that suitable steps are taken to meet various targets decided in such meetings.
14.5.4	Contractor shall identify separate overall Project Manager, Construction Manager, Engineering Manager, Quality manager and selection of various Key personnel shall be subject to BHEL approval.
14.6	REPORTING
14.6.1	The contractor shall submit weekly progress reports to purchaser in the agreed formats submitted in adequate number of signed originals. The report shall include -
14.6.1.1	Brief narrative of work performed during the week.
14.6.1.2	CMS bar chart showing progress at activity level.
14.6.1.3	Updated progress 'S' Curves showing actual progress.
14.6.1.4	Milestones achieved and new activities started.
14.6.1.5	Status of critical activities.
14.6.2	The contractor shall submit monthly progress reports to Purchaser in the agreed formats submitted in adequate number of signed originals. The report shall include the weekly report content and shall be supplemented with the following.
14.6.2.1	Engineering status.
14.6.2.2	Procurement status.
14.6.2.3	Manufacturing status.
14.6.2.4	Inspection & despatch status.
14.6.2.5	Material in transit.
14.6.2.6	Erection & commissioning status.
14.6.2.7	Safety report.
14.6.2.8	Change order status.
14.6.2.9	Updated CMS(L1/L2 schedule)indicating status.
14.6.2.10	Executive summary, areas of concern etc.
14.6.2.11	Progress photographs.
14.6.3	Adequate numbers of color photographs, in triplicate, (matt paper, post card size for

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	each area per month of the contract execution period), depicting progress of the work or damage to the machine parts, if any, as directed by BHEL site engineer is to be arranged by the successful bidder at his own cost.
14.6.4	The progress report shall be compiled in computer and is required to be furnished over "E Mail, in addition to hard copies and summary report shall be made 'Web enabled' in agreed format.
15.0	COMMUNICATION The vendor shall be responsible for arranging all communication facilities for themselves at their office. The vendor has to establish independent internet/ e-mail facilities with mobile connection for all key site personnel and same shall have to be integrated with BHEL's voice/ data network and database systems at site. The vendor's office must have facilities of communications like fax, E-mail and telephone with STD facility etc.
16.0	INSURANCE
16.1	BHEL shall arrange comprehensive MCE (marine cum erection) insurance policy for total project supply & services including balance of plant package covering transit risks & loss, destruction or damage during handling at site, storage, civil works, erection, testing and commissioning up to trial operation completion of each unit including theft, sabotage, fire, lightning and other natural calamities.
16.2	Vendor shall timely intimate despatches to the underwriter. Name of the underwriter and Policy No shall be intimated in due course of time.
16.3	Vendor shall report to BHEL in writing any damages to equipments/ components on receipt, storing and during withdrawal of the materials from stores, in transit to site & unloading at place of work and during erection & commissioning till trial operation completion. The report shall be as prescribed by BHEL site. Any consequential loss arising out of non-compliance of this stipulation will be borne by vendor.
16.4	The vendor will take necessary precautions/ due care to protect the material at Project site, while in his custody from any damage/ loss till the same is taken over by BHEL or customer at Project site. For lodging/ processing of insurance claim the vendor will submit necessary documents. BHEL will reserve the right to recover the loss from the vendor as detailed below in case the damage/loss is due to negligence/ carelessness on the part of the vendor. Such cases will be analyzed / reviewed by a committee, comprising of members from BHEL's different functions, for taking final course of action. In case of theft of material under vendor's custody, the same shall be reported to police by the vendor immediately and copy of FIR and subsequently police investigation report shall be submitted to BHEL/ customer for taking up with insurance. However, this will not relieve the vendor of his contractual obligation for the material in his custody. Decision of BHEL in this regard shall be binding on vendor.
16.5	The vendor shall be responsible for timely submission of loss/ damage/ theft to the underwriter, assistance in lodging & settlement of claim for losses/ damages/ theft/ lodging of FIR with police. Any consequential loss arising out of non-compliance of this stipulation will be borne by vendor.
16.6	It is the entire responsibility of the vendor to insure their workmen against accident and injury while at work, as required by the relevant rules and to pay compensation, if any, to their workmen as per Workmen's Compensation Act. The vendor has also to insure their staff against accident/ injury. The vendor have to take insurance cover for their tools & plants, assets etc.
16.7	These insurance covers have to be taken prior to start of work at project and they shall make available the policy to Construction Manager, BHEL site for necessary verification before commencement of work. However, irrespective of such verification/ acceptance, the sole responsibility to maintain adequate insurance cover for their workmen, T&P, assets, etc at all times during the period of contract shall lie with the vendor. Regarding the aforesaid insurance cover, vendor shall directly deal with the Insurance Company for all matters regarding the insurance in their scope.
16.8	It will be responsibility of the vendor to replenish the items lost/ damaged in time without hampering the schedule of work and without waiting for settlement of

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	insurance claim. Amount received from the underwriters on settlement of insurance claim shall be passed on to the vendor as and when available.
16.9	While BHEL will take up suitably with underwriter for lodging & settlement of claim for losses/ damages/ theft/ lodging, the differential amount between amount claimed & settled by underwriter will be analysed/ reviewed by a committee, comprising of members from BHEL's different functions, for taking final decision. Decision of BHEL in this regard shall be binding on vendor.
16.10	In case the damage/loss/theft of materials are attributable to negligence/failure in discharging the duties and obligations of the vendor, the expenses incurred for repair/replacement of such components in excess of the amount realized from the underwriters, limited to Normal Excess (Deductible Franchise) shall be recovered from the vendor.
16.11	In case the claim is summarily rejected by the underwriters due to WILFUL NEGLIGENCE of the contractor and contractor's failure to replenish the items lost/ damaged, the entire cost of repair/ replacement will be recovered from contractor.
17.0	TAXES AND DUTIES FOR SCOPE OF SUPPLY & SERVICES
17.1	All taxes excluding GST & BOCW Cess (as specified elsewhere in the tender) but including, Charges, Royalties, any State or Central Levy and other taxes for materials if any obtained for the work and for execution of the contract shall be borne by successful bidder and shall not be payable extra by BHEL. Any increase of above at any stage during execution of contract, including extension of the contract, shall have to be borne by successful bidder contractor. Bidder's quoted/ accepted rates/ price shall be inclusive of all such requirements.
17.2	GST along with Cess (as applicable) legally leviable & payable by successful bidder as per GST Law, shall be paid by BHEL, extra. Hence, bidder shall not include GST along with Cess (as applicable) in their quoted rates/ price.
17.3	Successful bidder shall furnish proof of GST registration with GSTN Portal covering the services under this contract. Registration should also bear endorsement for the premises from where the billing shall be done by successful bidder on BHEL for this project/ work.
17.4	Since GST on output will be paid by BHEL separately as enumerated above, bidder's your quoted rates/ price should be after considering the Input Credit under GST law at bidder's end.
17.5	TDS under Income Tax shall be deducted at prevailing rates on gross invoice value from the running bills (RA bills) unless exemption certificate from the appropriate authority/ authorities is furnished.
17.6	TDS under GST shall be deducted at applicable rates on gross invoice value from the running bills.
17.7	Bidder shall note that GST Tax Invoice complying with GST Invoice Rules (Section 31 of GST Act & Rules referred thereunder) wherein the 'Bill To' details shall encompass following. BHEL GSTN – 10AAACB4146P1ZU NAME - BHARAT HEAVY ELECTRICALS LIMITED ADDRESS – BHEL SITE OFFICE, R&M OF ESP, KAHALGAON SUPER THERMAL POWER STATION, STAGE-I (4X210 MW),NTPC LTD., DISTRICT-BHAGALPUR, BIHAR, INDIA Any change to above shall be notified by BHEL at appropriate juncture..
17.8	Successful bidder to intimate immediately on the day of removal of goods (in case of any supply of goods) to BHEL along with all relevant details and send a scanned copy of Tax Invoice to BHEL through following communication mode for enabling BHEL to meet its GST related compliances. Portal address. Shall be intimated later.

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	and Email address – Shall be intimated later. Specific details of above shall be notified by BHEL at appropriate juncture.
17.9	In case of delay in submission of above mentioned documents on the date of despatch, BHEL may incur penalty/ interest for not adhering to Invoicing Rules under GST Law. The same will be liable to be recovered from successful bidder, in case such delay is not attributable to BHEL.
17.10	In case of raising any Supplementary Tax Invoice (Debit/ Credit Note), successful bidder shall issue the same containing all the details as referred to in Section 34 read with Section 31 of GST Act & Rules referred there under.
17.11	Successful bidder shall comply with the Time Limit prescribed under the GST Law and rules thereof for raising of the Tax Invoice. If any supply of goods is applicable, successful bidder shall also ensure prompt delivery of goods after despatch.
17.12	Bidder shall note that in case GST credit is delayed/ denied to BHEL due to delayed/ non receipt of goods and/ or Tax Invoice or expiry of the timeline prescribed in GST Law for availing such ITC, or any other reasons, not attributable to BHEL, GST amount shall be recoverable from successful bidder along with interest levied/ leviable on BHEL, as the case may be.
17.13	Successful bidder shall upload the invoices raised on BHEL in GSTR-1 within the prescribed time as given in the GST Act. Bidder shall note that in case of delay in declaring such invoice in your 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 shall be recoverable from the successful bidder along with interest levied/ leviable on BHEL.
17.14	Way Bill: Successful bidder to arrange for way bill/ e-waybill for any transfer of goods for the execution of the contract. Successful bidder has to make their own arrangement at their cost for completing the formalities, if required, with Issuing Authorities, for bringing materials, plants & machinery at site for execution of the works under this contract, Road Permit/ Way Bill, if required, shall be arranged by successful bidder and BHEL will not supply any Road Permit/ Way Bill for this purpose.
17.15	Any new taxes & duties, if imposed subsequent to due date of offer submission as per NIT & TCN, by statutory authority during contract period (including extension, if the same is not attributable to you), shall be reimbursed by BHEL on production of relevant supporting document to the satisfaction of BHEL. However, you shall obtain prior approval from BHEL before depositing new taxes and duties.
17.16	Benefits and/ or abolition of all existing taxes must be passed on to BHEL against new taxes, if any, proposed to be introduced at a later date.
18.0	COMPLETION PERIOD The contractor shall supply entire materials of the package in such manner that supply gets completed within 18 weeks from the date of LOI. The contractor shall execute the works in such manner that erection, testing, commissioning including trial run and handing over of 'Containerized Electrical Room along with ventilation system" of the respective unit is to be completed within 2 weeks of intimation by BHEL on the basis of front availability at site.
19.0	SCHEDULE OF SUPPLY & EXECUTION The vendor shall furnish the L-1, L-2/ L-3 schedule indicating break-up of supply of various items under this specification matching with project schedule as referred in the tender within the stipulated completion period. The vendor shall furnish the L-1, L-2/ L-3 schedule indicating break-up of start & finish of erection, testing, commissioning, PG test, etc matching with project schedule, within the stipulated completion period, for approval of BHEL. The vendor should also ensure monitoring of these activities at least weekly basis to start with and on daily basis whenever required by BHEL. The project schedule might undergo revision/

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	modification periodically, for which the vendor may have to prepare/ modify schedule periodically in consultation with BHEL, so as to match with revised project milestones.
20.0	ESCALATION/ PVC Not applicable for this tender.
21.0	OVER RUN COMPENSATION (ORC)/ RATE REVISION Not applicable for this tender.
22.0	MOBILISATION ADVANCE/ INTERST BEARING RECOVERABLE ADVANCE Mobilization advance /IBRA is not applicable for this contract.
23.0	SECURITY DEPOSIT Not applicable
24.0	PERFORMANCE BOND Not applicable.
25.0	PAYMENT TERMS
	FOR SUPPLY SCOPE
25.1	Successful bidder shall submit their running bill (RA bill) once in a month, at the end of the month, as per billing break-up, based on billing schedule.
25.2	Progressive payment shall be made by BHEL against successful bidder's RA bill, complete & correct in all respects, accompanied by BHEL engineer's certified/ measurement sheet, jointly signed; requisite statutory certificates.
25.3	Measurement will be taken as specified in terms & conditions of the contract and certified by BHEL engineer of actual work.
25.4	Subject to any deduction which BHEL may be authorized to make under the contract, successful bidder shall on the certification of BHEL engineer at site, be entitled to progressive payment as per billing break-up, based on billing schedule.
25.5	Progressive payment shall be made as per following break-up, based on billing schedule. Percent allocation against each stage of following break-up shall be as per allocation in billing break-up of this tender.
25.5.1	DESIGN/ ENGINEERING Allocated percent of basic price will be released on the basis of agreed master drawing/ document list (MDL) together with agreed allocation thereto or otherwise, as may be jointly decided at a later date. Note: 1) Vendor shall submit GA drawings along with load data sheet to BHEL within 8 weeks from LOI for readiness of foundation by BHEL 2) If vendor can't transport E-house as a single assembly, vendor may transport E-house in dismantled condition and may assemble at site. 3) The E-house should be suitable for external use in all weather condition.
25.5.2	DESPATCH Allocated percent of basic price will be released after dispatch of materials on pro-rata dispatch of material. Documents (required sets), as applicable, for such payment are as follows.
25.5.2.1	Invoice/ excisable invoice in original.
25.5.2.2	LR/ RR (consignee copy).
25.5.2.3	Packing list.
25.5.2.4	BHEL/ customer material despatch clearance certificate (MDCC) enclosing QS note, inspection & test certificate, wherever applicable.
25.5.2.5	Copy of letter, addressed to insurance company intimating dispatch.
25.5.3	RECEIPT AT SITE

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	Allocated percent, will be released after receipt of materials, its proper & safe storage, and physical verification at site on pro-rata basis. Documents (required sets), as applicable, for such payment are as follows.
25.5.3.1	Material Receipt Certificate (MRC). Collection of MRC from the site and its submission for claiming the payment shall be successful bidder's responsibility.
25.5.4	SUPPLY COMPLETION Allocated percent of basic price shall be released against entire supply completion of Unit wise.
25.5.5	TOTAL COMPLETION Allocated percent of basic price will be released on fulfilment of following (Unit Wise).
25.5.5.1	After successfully completion of warranty period.
25.5.5.2	Submission of final documents, eg as-built drawings, O&M manual etc as applicable.
25.5.5.3	Confirmation of full GST credit to BHEL. Any Interest if levied thereon for reasons elaborated in taxes, duties clause of the tender, which is not attributable to BHEL, will be recovered from final payment/ retention/ securities.
25.5.5.4	Fulfillment of all formalities for final billing/ contract closing and certification of completion of all supplies.
25.6	GST can be claimed at any point of contract and payment shall be released upon compliance with following.
25.6.1	Declaration of successful bidder that such billing/ invoicing in their GSTR-1.
25.6.2	Receipt of goods/ services and tax invoice by BHEL
25.6.3	Confirmation of payment of GST thereon by vendor on GSTN Portal
25.6.4	Above is subject to receipt of goods/ service and tax invoice thereof along with successful bidder declaring invoice in their return and paying GST within timeline prescribed for availing ITC by BHEL.
25.7	Unless otherwise directed by PEM, BHEL, Kolkata or CM, BHEL site, successful bidder shall submit jointly signed L2 schedule for supply vs actual status with each RA bill.
25.8	No extra payment shall be made in the event of deferment in payment.
25.9	All admissible recovery/ adjustment, etc shall be made from progressive payment.
25.10	BHEL site/ HQ at their discretion may further split up percentages of above stages & billing break-up and effect payment to suit site condition, cash flow requirement and according to the progress of work.
	FOR SERVICE SCOPE
25.11	Successful bidder shall submit their running bill (RA bill) once in a month, at the end of the month, as per billing break-up, based on billing schedule.
25.12	Progressive payment shall be made by BHEL against successful bidder's RA bill, complete & correct in all respects, accompanied by BHEL engineer's certified/ measurement sheet, jointly signed; requisite statutory certificates.
25.13	Measurement will be taken as specified in terms & conditions of the contract and certified by BHEL engineer of actual work.
25.14	Subject to any deduction which BHEL may be authorized to make under the contract, successful bidder shall on the certification of BHEL engineer at site, be entitled to progressive payment as per billing break-up, based on billing schedule.
25.15	Progressive payment shall be made as per following break-up, based on billing schedule. Percent allocation against each stage of following break-up shall be

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	as per allocation in billing break-up of this tender.
25.15.1	ERECTION/INSTALATION (Unit wise) Allocated percent of basic price will be released after after successfully completion of erection/installation of item/ material, on submission of protocol, duly signed by BHEL site/ customer, on pro-rata basis.
25.15.2	COMMISSIONING Allocated percent of basic price will be released after commissioning of item/ material, on submission of protocol, duly signed by BHEL site/ customer, on pro-rata basis.
25.15.3	SYSTEM COMMISSIONING Allocated percent of basic price will be released after commissioning of all items/ materials/ system along with ventilation system, on submission of protocol, duly signed by BHEL site official/ customer.
25.15.4	TRIAL RUN Allocated percent of basic price shall be released after completion of trail run of ventilation system/ package.
25.15.5	TOTAL COMPLETION Allocated percent of basic price will be released on fulfilment of following.
25.15.5.1	After successfully completion of warranty period.
25.15.5.2	Submission of final documents, eg as-built drawings, O&M manual etc.
25.15.5.3	Material reconciliation, liquidation of pending points, etc.
25.15.5.4	Handing over of the system/ package to BHEL/ owner.
25.15.5.5	Confirmation of full GST credit to BHEL. Any Interest if levied thereon for reasons elaborated in taxes, duties clause of the tender, which is not attributable to BHEL, will be recovered from final payment/ retention/ securities.
25.15.5.6	Successful bidder shall fulfill all formalities for final billing/ contract closing and certification of completion of all service activities.
25.16	GST can be claimed at any point of contract and payment shall be released upon compliance with following.
25.16.1	Declaration of successful bidder that such billing/ invoicing in their GSTR-1.
25.16.2	Receipt of goods/ services and tax invoice by BHEL
25.16.3	Confirmation of payment of GST thereon by vendor on GSTN Portal
25.16.4	Above is subject to receipt of goods/ service and tax invoice thereof along with successful bidder declaring invoice in their return and paying GST within timeline prescribed for availing ITC by BHEL.
25.17	Unless otherwise directed by PM, BHEL, Kolkata or CM, BHEL site, successful bidder shall submit jointly signed L2 schedule for service vs actual status with each RA bill.
25.18	No extra payment shall be made in the event of deferment in payment.
25.19	All admissible recovery/ adjustment, etc shall be made from progressive payment.
25.20	BHEL site at their discretion, may further split up percentages of above stages & billing break-up and effect payment to suit site condition, cash flow requirement and according to the progress of work.
25.21	Payment shall be made within 45 days-60 days of submission of appropriate Invoice with all supporting documents.
25A	BILLING BREAK-UP (UNIT WISE)
	FOR SUPPLY SCOPE FOR 'CONTAINERIZED ELECTRICAL ROOM ALONG WITH VENTILATION SYSTEM" (Refer- Price schedule, SCH-2, SI no-1.1)
25A.1	Successful bidder shall submit detail billing schedule to BHEL for review & approval to facilitate progressive payment.

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25A.2	Progressive payment shall be made as per following allocation and terms of payment, based on billing schedule.		
	STAGES	REF NO OF TOP	PERCENT (%) ALLOCATION
25A.2.1	DESIGN/ ENGINEERING	25.5.1	10
25A.2.2	DESPATCH	25.5.2	70
25A.2.3	RECEIPT AT SITE	25.5.3	10
25A.2.4	SUPPLY COMPLETION	25.5.4	5
25A.2.5	TOTAL COMPLETION	25.5.5	5
	TOTAL		100
	FOR SERVICE SCOPE ‘CONTAINERIZED ELECTRICAL ROOM ALONG WITH VENTILATION SYSTEM’ (Refer- Price schedule, SCH-2, SI no-1.2)		
25A.3	Successful bidder shall submit detail billing schedule to BHEL for review & approval to facilitate progressive payment.		
25A.4	Progressive payment shall be made as per following allocation and terms of payment, based on billing schedule.		
	STAGES	REF NO OF TOP	PERCENT (%) ALLOCATION
25A.4.1	ERECTION / INSTALLATION	25.15.1	70
25A.4.2	COMMISSIONING	25.15.2	10
25A.4.3	SYSTEM COMMISSIONING	25.15.3	10
25A.4.4	TRIAL RUN	25.15.4	5
25A.4.5	TOTAL COMPLETION	25.15.5	5
	TOTAL		100
26.0	GUARANTEE, WARRANTY & MAINTENANCE (UNIT WISE)		
26.1	The vendor shall warrant that the equipment will be new and in accordance with the contract documents and free from defects arising due to deficiencies in design and engineering and from defects in material and workmanship for a period of twelve (12) calendar months commencing immediately upon the satisfactory completion of operational acceptance as per technical specification and handing over. The equipment shall operate satisfactorily and reliably and the performance and efficiency of the equipment (s) shall not be less than the respective guaranteed values as per technical specification.		
26.2	The vendor shall be liable to replace/ upgrade with specific consent of owner, any defective parts that may develop in the plant of his own manufacture or those his sub suppliers under the conditions provided for by the contract and under proper use and arising solely from faulty design, materials and/ or workmanship. Any defect removal at site by repair/ up-gradation of the installed equipment/ component/ material will be permitted by the owner only when up-gradation in the meantime, is not detrimental to the commercial use of the plant. All replaced defective parts shall be returned to the vendor unless otherwise arranged. No repairs or replacement shall normally be carried out by the engineer when the plant is under the supervision of the vendor's supervisory engineers.		
26.3	The vendor's obligations against the above clause shall be limited to replacing with all incidental charges from site to the vendor's work and/ or his sub-supplier's works and back to site. In case of defective parts not repairable at site but, essential in the meantime for the commercial operation of the equipment, the vendor and the purchaser/ owner shall mutually agree to a program of replacement or renewal which will minimize to the maximum extent interruption in the operation of the equipment.		
26.4	The acceptance of the equipment by the engineer shall in no way relieve the vendor of his obligation under this clause.		
26.5	In the event of any emergency where, in the judgment of the engineer, delay would cause serious loss or damages, repairs or adjustment may be made by the engineer or a third party chosen by the engineer without advance notice to the vendor and the cost of such work shall be paid by the vendor. In the event such action is taken by the engineer, the vendor will be notified promptly and he shall assist wherever possible in		

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	making necessary corrections. This shall not relieve the vendor's liability under the terms and conditions of the contract.
26.6	If the replacement or renewals are of such character as may affect the efficiency of the plant, the purchaser/ owner shall have the right to give to the vendor within one month of such replacement or renewal, notice in writing that 'acceptance tests on completion' be made, in which case such tests shall be carried out as per approved QAP/ BHEL guidelines.
26.7	The repaired or new parts will be furnished and erected free of cost by the vendor. If any repair is carried out on his behalf at the site, the vendor shall bear the cost of such repairs.
26.8	The cost of any special or general overhaul rendered necessary during the maintenance period due to defects in the plant or defective work carried out by the vendor shall be borne by the vendor.
26.9	In respect of goods supplied by sub-vendors to the vendor where a longer guarantee (more than 12 months) is provided by such sub-vendors, the owner shall be entitled to the benefit of such longer guarantee.
27.0	LIQUIDATED DAMAGES
27.1	If successful bidder fails to complete the job within the tender specified completion period (as per relevant clause of tender), BHEL shall have the right to recover as liquidated damages (LD) a sum equivalent to 0.5% of undelivered portion for delay of each week or part thereof. The liability for delay shall not in any case exceed 10.0% (Ten percent) of the contract price. In case of LD recovery, the applicable GST shall also be recovered from vendor.
27.2	BHEL shall deduct the amount of such compensation from any money due or which may become due to successful bidder and/ or recover such compensation from successful bidder's bank guarantees/ security deposit. To be entitled to impose such compensation, BHEL will not be required to prove that they have incurred such amount as actual damage.
27.3	BHEL reserve the right to purchase from elsewhere on account of and at the risk & cost of successful bidder, without notice to successful bidder of the equipment/ materials not so delivered, without canceling the order/ contract in respect of the equipment/ materials not yet due for delivery.
27.4	BHEL reserve the right to cancel the order/ contract or a portion thereof for the stores not so delivered at your risk & cost and successful bidder shall be liable to BHEL for any excess costs thereof.
27.5	Successful bidder shall continue performance of the order/ contract under all circumstances, to the extent not cancelled.
27.6	Where action is taken as per above, successful bidder shall be liable for any loss, which BHEL may sustain on that account. Successful bidder shall not be entitled to any gain on such purchase and the manner and the method of such purchase shall be at the discretion of BHEL. It shall not be obligatory on any part of BHEL to serve a notice of such purchase on successful bidder.
28.0	CONTRACT PRICE
28.1	Bidder shall quote their rates/ prices strictly as per Volume-III, Price Schedule (latest revision) only.
28.2	Total price (Supply & Service parts together) shall be considered for evaluation and awarding.
29.0	DIVISIBLE CONTRACT
	DELETED
30.0	MATERIAL DESPATCH CLEARANCE CERIFICATE (MDCC)
30.1	MDCC shall be issued by NTPC/BHEL or their authorized representative prior to dispatch. In case the tests are not witnessed by BHEL/ owner's representative, the test certificates shall be submitted to owner through BHEL and MDCC will be issued thereafter.
30.2	Copy of MDCC and other dispatch document shall accompany with every dispatch,

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	failing which the consignment shall not be allowed to enter the project premises.
31.0	MATERIAL RECEIPT CERTIFICATE (MRC) MRC shall be issued by BHEL/ owner or their authorized representative after the material is received at site in good condition.
32.0	CONSIGNEE Consignee for material shall be intimated on a later date.
33.0	DESPATCH
33.1	All materials/ plants/ equipments shall be transported by road including ODC consignment. Dispatch shall only be made after inspection and issue of MDCC by BHEL/ owner. Advance information by fax/ courier of dispatch details shall be sent to Construction Manager, BHEL.
33.2	No consignment shall be dispatched on SELF basis. Material shall be dispatched prepaid, door delivery basis, else ensure the clearance and collection of goods from lorry go down and arrangement to transport the same to site store shall be in the scope of vendor.
33.3	Each package should carry the packing slip/ details of contents and should be put inside a metal enclosure, properly fixed to the packing from outside. The packing shall be such as to ensure prevention of damage, corrosion, pilferage, deterioration, loss in transit or storage and road-worthy.
33.4	The title of the ownership of goods to be supplied shall pass on to the owner on dispatch ex works/ FOR destination. However till the scope is completed in all respect and the plant/ equipment is taken over by the owner the goods shall remain with the custody of the bidder.
34.0	BANKER The address of banker for negotiation of documents is. State Bank of India Kolkata Or shall be as per intimation given by BHEL on a later date.
35.0	BANK CHARGES No interest, whatsoever, shall be payable by purchaser on the security deposit, any bank guarantee submitted or any amount due to the seller/ vendor.
36.0	PAYING AUTHORITY Construction Manager, BHEL site office KAHALGAON SUPER THERMAL POWER STATION R&M of STAGE-I (4X210 MW)
37.0	APPROVED MANUFACTURER/ SUB-VENDOR For bought out items, bidder have to adhere to the list of sub-vendors, indicated elsewhere in the technical specification, Volume-II and as approved by BHEL/ CUSTOMER.
38.0	INSPECTION & JOINT VERIFICATION (AT VENDOR'S WORKS) Prior to dispatch, the materials would be offered by the vendor for joint inspection at the vendor's works as detailed in this tender specification for which the vendor would serve the advance notice of 15 days for inspection call to BHEL.
39.0	INSPECTION & JOINT VERIFICATION (AT SITE) The vendor shall be intimated within 7 days from the date of receipt of each consignment at site to depute their representative for joint inspection and verification of the equipment/materials received at site. The vendor shall depute their representative within 7 days from receipt of such intimation failing which BHEL shall proceed with the inspection and verification of equipment/ materials and BHEL's decision in this regard shall be final and binding to the vendor.
40.0	SPARES
40.1	The scope of supply of any spares shall be governed as per specification (No: No: RMSG-05749, issue dt.22.02.2019)
40.2	However, as general guideline, following points shall be governing.
40.2.1	The purchaser may place orders for supply of spares on the contractor separately on

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	receipt of detailed quotation categorizing the spares as (1) fast moving, (2) medium moving and (3) slow moving spare parts. The unit prices of such individual parts shall be valid till completion of guarantee period.
40.2.2	The contractor shall give warranty that before going out of production of the spare-parts, he will give advance notice to purchaser/ owner so that purchaser/ owner order his requirement of spares in one lot if he so desires. The contractor shall further give guarantee that if he goes out of production of spare parts, then he will make available blue prints/ drawings of spare parts and specifications of materials at no cost to the purchaser/ owner, if required, by purchaser/ owner to enable him to fabricate or procure spare parts from other sources.
40.2.3	Commissioning/ start up spares which are required at any time during the equipment installation till commercial operation of the unit are included in the contract & shall be handed over by the supplier to the purchaser.
40.2.4	Each sub-supplier for bought out items shall provide a full spare parts package showing information for each part, component, assembly and consumable item for each parent equipment item. The package shall also include detailed drawings together with complete spare parts lists giving sizes, materials rating etc.
40.2.5	Spare parts data package – each parent equipment item shall be listed by name, service, sub-suppliers sales order number, equipment plant tag no, manufacturer, model, size, serial no and contractors purchase order no. A full spare parts data package shall be submitted for each parent equipment item and shall clearly state which parent equipment it supports. Four hard as well as two soft copies of the complete spare parts data package for contractors manufactured items/ plant/ equipment as well as sub-suppliers bought out items shall be furnished to the purchaser at least 3 months before the commissioning of the unit.
41.0	FACILITIES TO BE PROVIDED BY BHEL
41.1	LAND
41.1.1	Area shall be handed over to the vendor. Micro finishing (± 700 mm) has to be done by the vendor before start of any work.
41.1.2	The successful bidder shall furnish the estimated area showing layout plan/ sketch required for the construction of his office, stores, fabrication yard etc. The same will be reviewed by BHEL and allotted to the extent possible, depending upon the area availability.
41.1.3	Minimum land will be provided free of cost for construction of temporary office, stores, fabrication area etc.
41.1.4	No land will be provided for labour colony inside/ outside the project premises. The vendor to construct labour colony/ hutment, if required, only after obtaining permission from NTPC and all statutory bodies.
41.1.5	The vendor will be responsible for handing back all lands, as handed over to him for his temporary use to BHEL, as per the instruction of BHEL Engineer.
41.2	WATER
41.2.1	BHEL will provide construction water free of cost at one point within project premise.
41.2.2	BHEL will provide free of cost drinking water at one point within project premise.
41.2.3	Further distribution beyond above mentioned points to be arranged by the vendor at his own cost.
41.2.4	Vendor should arrange on their own drinking water in their labour colony.
41.2.5	Vendor will have to arrange for storage of water to meet the day to day requirement. BHEL, will however, arrange for adequate supply of construction water to meet the requirement of water during major concreting.
41.2.6	The availability of water (construction as well as drinking) is limited. Vendor shall ensure that no water is wasted. In this regard the vendor shall take all necessary measure towards preservation of water.
41.2.7	BHEL shall not be responsible for any inconvenience or delay caused due to any interruption of water supply and the vendor shall claim no compensation for delay in work for such interruption. Vendor may make standby arrangement for water for which no separate payment shall be made by BHEL.
41.3	ELECTRICITY

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41.3.1	BHEL will provide construction power on free of charge basis at LT voltage level at one point within project premise. Further distribution (including laying of cables/ installation of DBs and maintenance of the same) beyond this point to be arranged by the vendor at his own cost. Any other voltage as required shall be arranged by the vendor from power supply as above. Vendor will have to provide necessary calibrated meters (tamper proof, suitably housed in a weather proof box with lock & key arrangement) at point of power supply along with calibration certificate from authorized/ accredited agency for working out power consumption at his own cost. In case of recalibration required for any reason, necessary charges including replacement is to be borne by the vendor. Supply of electricity shall be governed by Indian Electricity Act and Installation Rules and other Rules and Regulation as applicable. The vendor shall ensure usage of electricity in an efficient manner and the same may be audited by BHEL time to time. In case of any major deviation from normally accepted norms is observed, BHEL will reserve the right to impose penalty as deemed fit for such cases.
41.3.2	The bidder shall have to provide earth leakage breaker at each point wherever human operated electrical drives/ T&Ps are deployed.
41.3.3	The power supply will be from the available grid. BHEL shall not be responsible for any inconvenience or delay caused due to any interruption of power supply and no compensation for delay in work can be claimed by the vendor due to such non-supply on the grounds of idle labour, machinery or any other grounds.
41.3.4	The vendor should ensure that the work in critical areas is not held up in the event of power breakdown and shall make all necessary arrangements for uninterrupted supply, at his cost. As a part of the bid, a specific proposal in this regard has to be submitted by the vendor. In the event of breakdown in the electric supply, if the progress of work is hampered, it will be the responsibility of the contractor to step up the progress of work after restoration of electric supply so that overall progress of work is not affected.
41.3.5	The contractor shall have to make arrangement at their own cost for illumination that will be required in the working area for execution of the work & safety of workmen.
41.3.6	Bidders have to make their arrangement for electricity at their own cost for labour colony.
42.0	FACILITIES TO BE PROVIDED BY THE CONTRACTOR
42.1	TOOLS, TACKLES AND SCAFFOLDINGS The contractor shall provide all the construction equipments, tools, tackles & scaffoldings required for civil works, pre-assembly, erection, testing and commissioning of the equipments covered under the contract. He shall submit a list of all such materials to BHEL/ Customer before the commencement of pre-assembly at site. These tools & tackles shall not be removed from the site without the written permission of BHEL/Customer. The T&Ps to be arranged by the contractor shall be in proper working condition.
42.2	COMMUNICATION The contractor shall be responsible for arranging all communication facilities for himself at site. The contractor has to establish independent internet/e-mail facilities with mobile connection for all key site personnel and same shall have to be integrated with BHEL's voice/data network and database systems at site.
42.3	FIRST-AID The Vendor shall provide necessary first-aid facilities for all his employees, representatives and workmen working at the Site. First-aid centre with Ambulance facility shall be established and maintained at site by the main construction vendor. All other bidders of BHEL are expected to contribute towards establishing and maintaining the facility and the sum of contributions should be proportionate to their respective contract prices. This may be treated as mandatory stipulation and the bidder should carryout due liasioning work with the main construction vendor directly for smooth running of the first-aid centre. In the event of non-compliance of this, BHEL shall be constrained to pay the contribution and recover the cost with 30% overhead from the bill of the vendor.

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42.4	CLEANLINESS
42.4.1	The contractor shall be responsible for keeping the entire area allotted to him clean and free from rubbish, debris etc. during the period of Contract. The Contractor shall employ enough number of special personnel to thoroughly clean his work-area at least once in a day. All such rubbish and scrap material shall be stacked or disposed in a place to be identified by BHEL/BRBCL. Materials and stores shall be so arranged to permit easy cleaning of the area. In areas where equipment might drip oil and cause damage to the floor surface, a suitable protective cover of a flame resistant, oil proof sheet shall be provided to protect the floor from such damage.
42.4.2	Similarly, the labor colony, the offices and the residential areas of the contractor's employees and workmen shall be kept clean and neat to the entire satisfaction of BHEL/ Customer. Proper sanitary arrangements shall be provided by the Contractor, in the work-areas, office and residential areas of the Contractor.
42.4.3	Bidders to note that following.
42.4.3.1	No medical facility within / near the site shall be provided by BHEL.
42.4.3.2	No staff quarter shall be provided by BHEL.
42.4.3.3	All site execution approaches required for movement of cranes, trailers, trucks, dumpers, etc shall be provided by BHEL. However, if any minor work like: filling/leveling is required to be done, that shall arranged by the vendor at his own cost.
42.4.3.4	The contractor shall solely be responsible for the safety, quality, & quantity of material after it is handed over and issued to contractor by the BHEL.
42.5	ILLUMINATION
	BHEL shall provide illumination on common erection approaches on a progressive basis; however, the bidder will have to arrange sufficient illumination at their individual work areas that will be required for execution of work & safety of workmen, till BHEL's permanent lighting system/fixtures are put.
43.0	CONSUMABLE
43.1	All consumables, like gas, electrodes, chemicals, lubricants, erection & commissioning spares etc required for the job shall be arranged by the contractor at his cost unless otherwise specifically mentioned in the contract.
43.2	All consumables to be used for the job shall be approved by BHEL prior to use.
43.3	In the event of failure of contractor to bring necessary and sufficient consumables, BHEL may arrange for the same at the risk and cost of the contractor. The entire cost towards this along-with overhead shall be paid by the contractor or deducted from the contractor's bills.
44.0	IMTE
	The vendor shall ensure deployment of reliable and calibrated instrument, measuring and test equipments (IMTE). The IMTE shall have test/calibration certificate from authorised/Govt approved agencies. The vendor shall also keep provision of alternate arrangement for such IMTE so that the work does not suffer when a particular IMTE is sent for calibration. Re-testing/re-calibration shall also be arranged by the vendor at their own cost at regular interval during the period of use as advised by BHEL.
45.0	GENERAL TECHNICAL REQUIREMENTS (CODES AND STANDARDS)
45.1	Except where otherwise specified, the plant/equipment shall comply with the appropriate Indian Standard or an agreed internationally accepted Standard Specification as mentioned elsewhere in contract specifications, each incorporating the latest revisions at the time of tendering. Where no internationally accepted standard is applicable, the Bidder shall give all particulars and details as necessary; to enable BHEL to identify all of the plant/equipment in the same detail as would be possible had there been a Standard Specification.
45.2	Where the Bidder proposes alternative codes or standards he shall include in his tender one copy (in English) of each Standard Specification to which materials offered shall comply. In such case, the adopted alternative standard shall be equivalent or superior to the standards mentioned in the specification.
45.3	In the event of any conflict between the codes & standards referred above, and the requirements of this specification, the requirements which are more stringent shall

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	govern.
45.4	Tools used during erection and commissioning shall not be accepted except with the specific approval of the Engineer.
45.5	Wherever specified or required the plant/ equipment shall conform to various statutory regulation such as Indian Boiler Regulation, Indian Electricity Rules, Indian Explosive Act, Factories Act etc. wherever required, obtaining approval for Plant / Equipment supplied under the specification from statutory authorities shall be the responsibility of the contractor.
46.0	TEST CERTIFICATE FOR T&P
46.1	All T&P, lifting tackles and pulling devices to be deployed by the vendor must bear valid/ latest test certificates for their suitability, and the documents shall be preserved at site.
46.2	In case of expiry of validity of any such test certificate during construction, the vendor shall arrange for revalidation of the same well in advance, so that the construction activities do not suffer on account of non-availability of such Test certificates.
46.3	The vendor should also submit to BHEL for approval a list of T&Ps along with their fitness certificates. The tools & tackles shall not be removed from site without written permission of BHEL.
47.0	ISSUE OF T&Ps
47.1	Deployment of all T&Ps for this tender shall be contractor's responsibility. However, if BHEL issues any T&Ps, the same shall be on chargeable basis as per BHEL norms.
47.2	In the event of BHEL issued T&Ps, measuring instruments etc, vendor and BHEL shall maintain joint protocol about the condition of all T&P, instruments etc taken from BHEL's custody and return to BHEL after use. The vendor shall not use these equipment for purposes other than the scope of work given in this tender document.
47.3	It is the responsibility of vendor to keep these equipment always in working condition and ensure their safe return in working condition to BHEL's store subject to normal wear & tear.
47.4	After use of T&P items issued by BHEL the same shall be returned to BHEL in good working condition subject to normal wear & tear failing which recoveries at the book value of the item or the market rate prevailing at the time of returning the items, whichever is higher shall be made from the payments due to the vendor from BHEL from this contract or from any other contract.
48.0	MANDATORY DOCUMENT FOR SUBMISSION OF TECHNICAL BID
	Bidder shall furnish the following documents mandatorily during tender stage as a part of technical bid. - Signed and stamped copy of electrical load list for each item. - Signed and stamped copy of Deviation schedule (if any) - Signed and stamped copy of Compliance cum confirmation sheet. Note: In case bidder fails to furnish any document specified above, bidder's offer shall be treated as incomplete and shall liable to be rejected.
49.0	PROTECTION
49.1	Equipment having anti-friction or sleeve bearings shall be protected by weather tight enclosures. Coated surfaces shall be protected against impact, abrasion, discoloration and other damages. Surfaces which are damaged shall be repainted.
49.2	Electrical equipment, controls and instrumentations shall be protected against moisture and water damages. All external gasket surfaces and flange faces, couplings, rotating equipment shafts, bearings and like items shall be thoroughly cleaned and coated with rust preventive compound and protected with suitable wood, metal or other substantial type covering to ensure their full protection. All exposed threaded parts shall be greased and protected with metallic or other substantial type protectors.
49.3	All piping, tubing and conduit connections on equipment and equipment openings shall be closed with rough usage covers or plugs. Female threaded openings shall be closed with rough usage covers or plugs or forged steel plugs. The closures shall be taped to seal the interior of the equipment. Open ends of piping, tubing and conduit

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	shall be sealed and taped.
49.4	All erected equipment/ components to be preserved as per the preservation recommendation of BHEL. For this type of preservation, contractor shall engage an exclusive team of persons for meeting the continuous requirement. However, the required preservatives will be supplied to the contractor free of cost. All other consumables including wire brush, emery papers, painting brush etc to be supplied by the contractor within the quoted rate.
50.0	ERECTION SERVICES / INSTALLATION
50.1	As part of the overall project management activity, the contractor shall be responsible for proper co-ordination of erection activities during various phases of execution of the contract. The contractor shall identify a person designated as construction manager, with whom BHEL shall interact on matters related to execution of the contract. The construction manager shall be the single point contact person on behalf of the contractor. BHEL shall interact with the construction manager only on all matters on co-ordination between BHEL and the contractor.
50.2	The contractor shall confine all his field operations to those works which can be reformed without subjecting the equipment and materials to adverse effects, during inclement weather conditions, like monsoon, storms etc. and during other unfavorable construction conditions. No field activities shall be performed by the contractor under conditions which might adversely effect the quality and efficiency thereof, unless special precautions or measures are taken by the contractor in proper and satisfactory manner in the performance of such works and with the concurrence of the engineer. Such unfavorable construction conditions in no way relieve the contractor of his responsibility to perform the works as per the schedule.
50.3	The contractor shall supply all skilled workmen HP welders, gas cutters, electricians, riggers, sarangs, erectors, carpenters, fitters, masons, ladders, tin-smiths, instrument machines etc. in addition to other skilled, semi-skilled and unskilled workmen required for all the works of handling and transportation from site store to erection site, erection, testing and commissioning contemplated under this specification. Only fully trained and competent men with previous experience on the job shall be employed. They shall hold valid certificates wherever necessary. BHEL reserves the right to decide on the suitability of the workers and the other personnel who will be employed by the contractor. BHEL reserves the right to insist on removal of any employee of the contractor at any time, if they find him unsuitable and the contractor shall forthwith remove him.
50.4	The supervisory staff employed by the contractor shall be technically qualified and experienced in the area of work. They shall ensure proper out turn of work and discipline on the part of labour put on the job by the contractor and in general see that the works are carried out in a safe and proper manner and in coordination with other labour and staff employed directly by BHEL or other contractors of BHEL and BHEL's client/consultant.
50.5	The contractor shall also furnish daily labour report showing by classification the number of employees engaged in various categories of work a progress report of work as required by BHEL Engineer.
50.6	The work shall be executed under the usual conditions affecting major power plant construction and in conjunction with numerous other operations at site. The contractor and his personnel shall co-operate with other personnel, and other contractors, coordinating his work with others and proceed in a manner that shall not delay or hinder the progress of work as a whole.
50.7	The contractor's supervisory staff shall execute the work in the most substantial and workman like manner in the stipulated time. Accuracy of work and aesthetic finish are essential part of this contract. The contractor shall be responsible to ensure that assembly and workmanship conform to the dimensions and tolerance given in the drawing/ instruction given by BHEL Engineer from time to time.
50.8	It is the responsibility of the contractor to engage his workman in shifts or on overtime basis for achieving the target set by BHEL during erection, commissioning and testing period. Contractor's quoted rate shall include all these contingencies.

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50.9	For rendering commissioning assistance during running of the unit till handing over of the set, a dedicated gang along with an exclusive supervisor need to be deployed by the vendor to attend the incidental works of commissioning as per the instruction of BHEL commissioning engineer. The gang need to be provided during night shift also whenever required by BHEL commissioning engineer. They shall be equipped with all necessary hand-tools to attend all the incidental works during commissioning.
51.0	DEWATERING
	Contractor shall ensure at all times that his work area & approach/access roads are free from accumulation of water, so that the materials are safe and the erection/progress schedule are not affected. No separate claim in this regard shall be admitted by BHEL. No separate payments for dewatering of subsoil, surface water or catchment water, if required, at any time during execution of the work including monsoon period shall be considered by BHEL.
52.0	AREA REQUIREMENT
	The contractor shall furnish the estimated area required for the construction of his office, stores, etc separately. The same will be reviewed by BHEL and allotted to the extent available/considered necessary, depending upon the area availability.
53.0	CONSTRUCTION OF TEMPORARY OFFICE , STORES ETC.
	The contractor shall arrange at his own cost the construction of his temporary office, stores, fabrication yards, labour colony etc and also the watch & ward of all above.
	RECONCILIATION OF MATERIALS
54.0	Not applicable
55.0	PRICE VARIATION CLAIM (PVC) / RATE REVISION / OVER RUN COMPENSATION (ORC)/ MOBILISATION ADVANCE/ INTEREST BEARING RECOVERABLE ADVANCE
55.1	PRICE VARIATION CLAIM (PVC)
	Not applicable
55.2	RATE REVISION
	No rate revision is admissible.
55.3	OVER RUN COMPENSATION (ORC)
	Not applicable for this tender.
55.4	MOBILISATION ADVANCE/ INTEREST BEARING RECOVERABLE ADVANCE
	Not applicable for this tender.
56.0	TRAINING OF OWNER'S / PURCHASER'S PERSONNEL
	The contractor shall undertake to train free of cost personnel selected and sent by the owner/ purchaser to the works of contractor. The period and nature of training and number of individual personnel shall be agreed upon mutually between the contractor and Owner/purchaser. These engineers shall be given special training in the shops where the equipment shall be manufactured either in India or abroad and where possible in any other Power Plant where manufactured equipment is under installation or test to enable them to become familiar with the equipment being supplied to the Purchaser. In the event of the Owner/purchaser for any reason failing to avail of the training facilities, purchaser shall not be entitled to any rebate whatsoever on this account.
57.0	WARRANTY & MAINTENANCE
	Included in point no 26.
58.0	WORK & SAFETY REGULATIONS
58.1	The contractor shall ensure the safety of all workmen, materials and equipment either belonging to him or to others working at site. He shall observe safety rules and codes applied by the owner / BHEL at site without exception.
58.2	Passenger lift should have safety cage with multiple rope, i.e. with safety rope & limit switch.
58.3	Safety nets with hand railings must be provided on all both inside & outside hanging platform of slip-form equipment & hanging platform from brickwork.
58.4	Emergency vehicle must be provided.

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58.5	Non-conformity of safety rules and safety appliances will be viewed seriously and BHEL has right to impose fines on the contractor on each incident/each non-conformity as per details given below:	
	Safety measure	Fine (Rs)
58.5.1	Not wearing safety helmet.	5/workmen
58.5.2	Not wearing safety belt.	50/workmen
58.5.3	Grinding without goggles.	100/workmen
58.5.4	Not using 24V supply for internal work.	500/case
58.5.5	Electrical plugs not used for hand machines.	200/case
58.5.6	Welding cables, electrical wires using insulated with proper/standard.	50/joint
58.5.7	Not removing scrap from platform.	Actual cost for removal plus 30 %
58.5.8	Gas cutting without taking proper precaution/not using sheet below per Incidence.	100/case
58.5.9	Electrical winches having no guards earthed properly etc.	500/case
58.5.10	Improper earthing of electrical T&P.	200/ equipment
58.5.11	Not protecting/locating the gas cylinder to avoid catching of fire.	100/cylinder
58.5.12	Not providing earth leakage circuit breaker as per direction of BHEL.	1000/point
58.5.13	Lifting cylinders without cage	500/Case
58.5.14	Gas cutting without taking proper precautions or not using sheet below	200/Case
58.5.15	Not maintaining electrical winches properly	500/Case
58.5.16	Shorting of fuse links by thick wire	500/Case
58.5.17	Over speeding of vehicles within in site premise	200/Vehicle
58.5.18	Not having valid driving license for type of vehicle being driven	500/person
58.5.19	Not having valid registration for the vehicle	500/Vehicle
58.5.20	Not providing proper barricades/ caution boards	200/Case
58.5.21	Not displaying SWL on the lifting equipment	200/Case
58.5.22	Sub-contractor not attending safety meeting	1000/Meeting
58.5.23	Improper ladder for climbing up	500/Ladder
58.5.24	Improper scaffolding arrangement	500/Set
58.5.25	Engaging child labour for construction work	1000/Child labour
58.5.26	Not wearing safety helmet at site.	50/workmen
58.5.27	Using domestic LPG cylinder for gas cutting/ welding operations	500/Cylinder
58.5.28	Not maintaining first aid box	500/Case
58.5.29	Working without work permit/ clearance	5000/Case
58.5.30	Working at height without full body harness, using non-standard/ rejected scaffolding and not arranging fall protection arrangement as required like safety rules.	3000/Person
58.5.31	Unsafe handling of compressed gas cylinders (No trolley, jubilee clips double gauge regulator, improper storage/ handling etc.)	100/Case
58.5.32	Non-fencing of/ barricading excavated areas.	1000/Area
58.5.33	Not providing shoring/ strutting/ proper slope and not keeping the excavated earth at least 1.5 mtr away from excavated area.	5000/Area
58.5.34	Non display of caution board, list of hospitals, emergency services available at work locations.	500/Case
58.5.35	Traffic rules violation like over-speeding of vehicle, rash driving, not using seat belts, and vehicle not fitted with	1000/Case

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	reverse warning alarms.	
58.5.36	Absence of contractor's concerned representative at site safety meeting, whenever called by BHEL/ owner.	5000/Meeting
58.5.37	Failure to maintain safety records.	1000/Case
58.5.38	Failure to conduct daily safety site inspection. HSE meeting and HSE audit at predefined frequencies.	1000/Case
58.5.39	Failure to submit monthly HSE report as per stipulated schedule to BHEL.	5000/Month
58.5.40	Degradation of environment (Not confining toxic spills, spilling oil/ lubricants onto ground.	1000/Case
58.5.41	Not medically examining workers before allowing them to work at height, not providing ear muffs while allowing them to work in noise polluted areas, made them to work in air polluted areas without respiratory protective devices, etc.	1000/worker
58.5.42	Welding cables, electrical wires using insulated with proper/standard.	50/joint
58.5.43	Not removing scrap from platform.	Actual cost for removal plus 30%
58.5.44	Gas cutting without taking proper precaution/not using sheet below per Incidence.	100/case
58.5.45	Electrical winches having no guards earthed properly etc.	500/case
58.5.46	Improper earthing of electrical T&P.	200/ equipment
58.5.47	Not protecting/locating the gas cylinder to avoid catching of fire.	100/cylinder
58.5.48	Not providing earth leakage circuit breaker as per direction of BHEL.	1000/point
58.6	Any other nonconformity noticed not listed above will also be fined. The decision of BHEL engineer is final on the above. The amount will be deducted from running bills of the contractor. The amount collected on the above will be utilised for giving award to the employee who could avoid accidents by following safety rules. Also, the amount will be spent for improving the safety at site. In case of imposition of any penalty on BHEL by NTPC for reasons attributable to the contractor, the same shall be deducted on Back to back basis from the successful bidder.	
58.7	The successful bidder shall also be responsible for provision of all safety notices and safety equipment required both by the relevant legislation and BHEL, as he may deem necessary.	
58.8	The successful bidder will notify well in advance to BHEL of their intention to bring to BHEL any container filled with liquid or gaseous fuel or explosive or petroleum substance or such chemicals, which may involve hazards. BHEL shall have the right to prescribe the conditions, under which such container is to be stored, handled and used during the performance of the works and the successful bidder shall strictly adhere to and comply with such instructions. BHEL shall have the right at their sole discretion to inspect any such container or such construction plant/ equipment for which material in the container is required to be used and if in their opinion, its use is not safe, they may forbid its use. BHEL shall entertain no claim due to such prohibition and BHEL shall not entertain any claim of the successful bidder towards additional safety provisions/ conditions to be provided for/ constructed as per BHEL's instructions.	
58.9	Further, any such decision of the BHEL shall not, in any way, absolve the successful bidder of his responsibilities and in case, use of such a container or entry thereof into the site area is forbidden by the BHEL, the successful bidder shall use alternative methods with the approval of the BHEL without any cost implication to BHEL or extension of work schedule.	
58.10	Where it is necessary to provide and/or store petroleum products or petroleum mixtures and explosives, the successful bidder shall be responsible for carrying-out	

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	such provision and/or storage in accordance with the rules and regulations laid down in Petroleum Act 1934, Explosives Act, 1948, and Petroleum and Carbide of Calcium Manual published by the Chief Inspector of Explosives of India. All such storage shall have prior approval of the BHEL. In case, any approvals are necessary from the Chief Inspector (Explosives) or any statutory authorities, the successful bidder shall be responsible for obtaining the same.
58.11	All equipment used in construction and erection by successful bidder shall meet Indian/ International Standards and where such standards do not exist, the successful bidder shall ensure these to be absolutely safe. All equipment shall be strictly operated and maintained by the successful bidder in accordance with manufacturer's operation Manual & Safety instructions and as per guidelines/ rules of BHEL in this regard.
58.12	Periodical examinations and all tests for all lifting/ hoisting equipment & tackles shall be carried-out in accordance with relevant provisions of Factories Act 1948, Indian Electricity Act 1910 and associated laws/ rules in force from time to time. A register of such examinations & tests shall be properly maintained by successful bidder and will be promptly produced as & when desired by BHEL or by the person authorized.
58.13	Successful bidder shall be fully responsible for safe storage of their and their sub-contractor's radioactive sources in accordance with BARC/ DAE (Bhabha Atomic Research Centre/ Department of Atomic Energy, Govt. of India) rules and other applicable provisions. All precautionary measures stipulated by BARC/ DAE in connection with use, successful bidder would take storage and handling of such material.
58.14	Successful bidder shall provide suitable safety equipment of prescribed standard to all employees and workmen according to the need, as may be directed by BHEL who will also have right to examine these safety equipment to determine their suitability, reliability, acceptability and adaptability.
58.15	Where explosives are to be used, the same shall be used under the direct control and supervision of an expert, experienced, qualified and competent person strictly in accordance with the Code of Practices/ Rules framed under Indian Explosives Act pertaining to handling, storage and use of explosives.
58.16	The successful bidder shall provide safe working conditions to all workmen and employees at the Site including safe means of access, railings, stairs, ladders, scaffoldings etc. The scaffoldings shall be erected under the control and supervision of an experienced and competent person. For erection, the successful bidder only shall use good and standard quality of material.
58.17	The successful bidder shall not interfere or disturb electric fuses, wiring and other electrical equipment belonging to BHEL or other successful bidders under any circumstances, whatsoever, unless expressly permitted in writing by BHEL to handle such fuses, wiring or electrical equipment.
58.18	Before the successful bidder connects any electrical appliances to any plug or socket belonging to the other contractor or BHEL, he shall comply with following.
58.18.1	Satisfy BHEL that the appliance is in good working condition.
58.18.2	Inform BHEL of the maximum current rating, voltage and phases of the appliances.
58.18.3	Obtain BHEL's permission detailing sockets to which appliances may be connected.
58.18.4	Satisfy BHEL that the appliance is in good working condition.
58.18.5	Inform BHEL of the maximum current rating, voltage and phases of the appliances.
58.18.6	Obtain BHEL's permission detailing sockets to which appliances may be connected.
58.18.7	Satisfy BHEL that the appliance is in good working condition.
58.18.8	Inform BHEL of the maximum current rating, voltage and phases of the appliances.
58.19	The successful bidders shall employ necessary number of qualified electricians/ electrical supervisors to maintain temporary electrical installations.
58.20	The contractor shall employ a qualified Safety Officer under approval of BHEL site-in-charge at site before submission of first RA bill to supervise day to day safety aspects of the equipment and workmen, who will co- ordinate with BHEL/ owner Safety Officer. In case of work being carried out through sub-contractors, the sub-contractor's workmen/ employees will also be considered as the contractor's

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	employees/ workmen for the above purpose.	
58.21	Name & address of safety officer of successful bidder will be promptly informed in writing to BHEL/ owner with a copy to safety officer-In charge before he starts work or immediately after any change of the incumbent is made during currency of contract.	
58.22	In case any accident occurs during the construction/ erection or other associated activities undertaken by the successful bidder thereby causing any minor or major or fatal injury to his employees due to any reason, whatsoever, it shall be the responsibility of the successful bidder to promptly inform the same to BHEL/ owner in prescribed form and also to all the authorities envisaged under the applicable laws.	
58.23	BHEL/owner shall have the right at his sole discretion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and/ or property, and/ or equipment. In such cases, the successful bidder shall be informed in writing about the nature of hazards and possible injury/ accident and he shall comply to remove shortcomings promptly.	
58.24	The successful bidder shall not be entitled for any damages/ compensation for stoppage of work due to safety reasons above and the period of such stoppage of work will not be taken as an extension of time for completion of the facilities and will not be the ground for waiver of levy of penalty.	
58.25	The successful bidder shall follow and comply with all safety rules of BHEL/ owner, relevant provisions of applicable laws pertaining to the safety of workmen, employees plant and equipment as may be prescribed from time to time without any demur, protest or contest or reservation. In case of any inconformity between statutory requirement and Safety Rules of BHEL/owner referred above, the later shall be binding on successful bidder unless the statutory provisions are more stringent.	
58.26	If the contractor fails in providing safe working environment as per the owner's Safety Rules or continues the work even after being instructed to stop work by BHEL/ owner as provided above, the contractor shall promptly pay to BHEL/ owner, on demand by the BHEL/owner compensation at the rate of Rs 5,000.00 per day or part thereof till the instructions are complied with and so certified by BHEL/ owner. However, in case of accident taking place-causing injury, to any individual, the provisions contained in relevant paragraph shall also apply in addition to compensation mentioned in this paragraph.	
58.27	If the successful bidder do not take all safety precautions and/or fails to comply with the Safety Rules as prescribed by BHEL/ customer or under the applicable law for the safety of the equipment & plant and for the safety of personnel and the successful bidder do not prevent hazardous conditions which cause injury to their employees or employees of other contractors, or BHEL's employees or any other person who are at site or adjacent thereto, the successful bidder shall be responsible for payment of compensation to employer as per following schedule.	
58.27.1	Fatal injury or accident causing death	Rs.2,00,000 per person
58.27.2	Major injuries or accident causing 25% or more permanent disablement to workmen or employees.	Rs 50,000 per person
58.28	Permanent disablement shall have same meaning as indicated in Workmen's Compensation Act. The compensation mentioned above shall be in addition to the compensation payable to the workmen/employees under the relevant provisions of the Workmen's Compensation Act and rules framed there under or any other applicable laws as applicable from time to time. In case the BHEL/ owner is made to pay such Compensation then the contractor is liable to reimburse BHEL/ owner such amount in addition to the compensation indicated above.	
58.29	These insurance covers have to be taken prior to start of his work at the subject project and he shall make available the Policy to BHEL Construction Manager for necessary verification before commencement of work. However, irrespective of such verification/ acceptance, the sole responsibility to maintain adequate insurance cover for his workmen, T&P, assets etc. at all times during the period of contract shall lie with the contractor. Regarding the aforesaid insurance cover, the contractor shall directly deal with the Insurance Company for all matters regarding the insurance in his	

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	scope.
58.30	The vendor will follow HSE policy of BHEL/ PSER and work as per the safety guidelines which is in line with ISO:14001 and OHSAS:18001 standards. A list of the guidelines which should be strictly followed by the vendor is as follows. The scope of vendor shall not be limited to the followings only but shall be guided by the HSE related policies/ guidelines of BHEL as revised to suit the requirement of the standards and statutory requirements.
58.30.1	Nominate a safety officer who will supervise all the HSE aspects.
58.30.2	The safety officer will participate in all safety meeting conducted by BHEL.
58.30.3	Submit site safety plan indicating safety measures to be taken, firefighting equipment & PPE to be deployed.
58.30.4	Report every near miss incident to BHEL.
58.30.5	Report accident report immediately after the occurrence.
58.30.6	Obtain operation control procedures (OCPs) from BHEL for the work to be executed
58.30.7	Follow factory act.
58.30.8	Every worker should use PPE as per his trade. All PPE should confirm to IS.
58.30.9	Conduct tool box meeting with workers every day before start of work instructing about the use of PPE. The outcome of the meeting to be recorded in a register.
58.30.10	Check fitness of the PPE and lifting tackles weekly and record in a register which will be verified by BHEL.
58.30.11	No person below 18 years will be employed.
58.30.12	Deploy fire-fighting equipment and refill before expiry.
58.30.13	Keep fire extinguishers of adequate type near the hot job and near the electrical machines.
58.30.14	Copy of valid Test certificates of all T&Ps should be given to BHEL as soon as the item enters the project, without which the T&P cannot be allowed to be used.
58.30.15	Nobody will be allowed to work above 2 meters without safety belt/ harness with lifeline secured to a fixed member.
58.30.16	Good housekeeping has to be maintained. All debris shall be removed from workplace within shortest possible time.
58.30.17	Approach roads should not be blocked with cables, materials or debris.
58.30.18	First aid boxes have to be kept and maintained with all requisite materials as per factory act.
58.30.19	Trained person has to be kept for giving first aid.
58.30.20	Adequate illumination shall be provided where working.
58.30.21	All vehicles should have backlight, reverse horn and reversing light.
58.30.22	Crane operator shall have proper license.'
58.30.23	Crane should have reverse horn.
58.30.24	Only skilled person maintain and operate electrical items.
58.30.25	ELCB has to be used. No temporary connection shall be allowed.
58.30.26	All fuses shall have standard rating and capacity.
58.30.27	All power supply cables should be laid above 3 meter level or underground.
58.30.28	All hand lamps should be powered by 24 volts.
58.30.29	Water-logging of working area shall be removed.
58.30.30	For operating portable machines 3 pin plugs shall be used.
58.30.31	Oxygen and DA cylinders shall be separated labeling full or empty. Full cylinders shall be kept upright.
58.30.32	Cylinders are not transported by rolling.
58.30.33	All oil drums shall be kept horizontal.
58.30.34	Excavated area shall be barricaded off with red-& white tape.
58.30.35	Proper slope of excavation shall be maintained.
58.30.36	Proper sign board and illumination shall be maintained at excavated area.
58.30.37	Wherever possible safety net shall be provided.
58.30.38	Proper platform and hand rail has to be provided at the work place.
58.30.39	All electrical equipments shall be earthed at two points.
58.30.40	Temporary platform should be strong enough, have proper approach and

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	hand rails
58.31	The above clauses are indicative only and not exhaustive. The other activities to maintain strong HSE conditions at site which may be beyond the above list of guidelines shall have to be done by the vendor.
59.0	EXTENSION OF TIME FOR COMPLETION
59.1	If the completion of work as detailed in the scope of work gets delayed beyond the contract/ completion period, the contractor shall request for an extension of the contract and BHEL at its discretion may extend the contract.
59.2	Based on the reviews jointly signed, the works balance at the end of original contract period less the backlog attributable to the contractor shall be quantified, and the number of months of 'Time extension' required for completion of the same shall be jointly worked out. Within this period of 'Time extension', the contractor is bound to complete the portion of backlog attributable to the contractor. Any further 'Time extension' or 'Time extensions' at the end of the previous extension shall be worked out similarly.
59.3	However, if any 'Time extension' is granted to the contractor to facilitate continuation of work and completion of contract, due to backlog attributable to the contractor alone, then it shall be without prejudice to the rights of BHEL to impose penalty/ LD for the delays attributable to the contractor, in addition to any other actions BHEL may wish to take at the risk and cost of contractor.
59.4	A joint program shall be drawn for the balance amount of work to be completed during the period of 'Time Extension', along with matching resources to be deployed by the contractor as per specified format. Review of the program and record of shortfall shall be done.
59.5	During the period of 'Time extension', contractor shall maintain their resources as per mutually agreed program
59.6	At the end of total work completion as certified by BHEL engineer, and upon analysis of the total delay, the portion of time extensions attributable to (i) Contractor, (ii) Force majeure conditions, and (iii) BHEL, shall be worked out and shall be considered to be exhausted in the same order. The total period of time extensions shall be the sum of (i), (ii) and (iii) above and shall be equal to period between the scheduled date of completion and the actual date of completion of contract. LD shall be imposed/ levied for the portion of time extensions attributable to contractor and recoverable from the dues payable to the contractor.
60.0	OTHER TERMS
	As per GCC

ANNEXURE – BOCWSpecific clause wrt BOCW Act & Cess Act

1. It shall be the sole responsibility of the contractor as employer to ensure compliance of all the statutory obligations under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.
2. It shall be sole responsibility of the contractor engaging Building Workers in connection with the building or other construction works in the capacity of employer to apply and obtain registration certificate specifying the scope of work under the relevant provisions of the Building and Other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 from the appropriate Authorities.
3. It shall be responsibility of the contractor to furnish a copy of such Registration Certificate within a period of one month from the date of commencement of Work.
4. It is responsibility of the contractor to register under the Building and other Construction Workers' Welfare Cess Act, 1996 and deposit the required Cess for the purposes of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 at such rate as the Central Government may, by notification in the Official Gazette, from time to time specify. However, before registering and deposit of Cess under the Building and other Construction Workers' Welfare Cess Act, 1996, the contractor will seek written prior approval from the Construction Manager.
5. In case where the contractor has been accorded written approval by the Construction Manager and the contractor is required to furnish information in Form I and deposit the Cess under the Building and other Construction Workers' Welfare Cess Act, 1996, fails to do so, BHEL reserves right to impose penalty at the rate of 30% of Cess Amount.
6. It shall be sole responsibility of the contractor as employer to get registered every Building Worker, who is between the age of 18 to 60 years of age and who has been engaged in any building or other construction work for not less than ninety days during the preceding twelve months as Beneficiary under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996.
7. It shall be sole responsibility of the contractor as employer to maintain all the registers, records, notices and submit returns under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.
8. It shall be sole responsibility of the contractor as employer to provide notice of poisoning or occupation notifiable diseases, to report of accident and dangerous occurrences to the concerned authorities under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the rules made thereunder and to make payment of all statutory payments & compensation under the Employees' Compensation Act, 1923.
9. It shall be responsibility of the Contractor to furnish BHEL on monthly basis, Receipts/ Challans towards Deposit of the Cess under the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder along with following statistics :
 - (i) Number of Building Workers employed during preceding one month.
 - (ii) Number of Building workers registered as Beneficiary during preceding one month.
 - (iii) Disbursement of Wages made to the Building Workers for preceding wage month.
 - (iv) Remittance of Contribution of Beneficiaries made during the preceding month
10. BHEL shall reimburse the contractor the Cess amount deposited for the purposes of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 under the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder. However, BHEL shall not reimburse the Fee paid towards the registration of establishment, fees paid towards registration of Beneficiaries and Contribution of Beneficiaries remitted.
11. It shall be responsibility of the Building Worker engaged by the Contractor and registered as a beneficiary under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 to contribute to the Fund at such rate per mensem as may be specified by the State government by notification in the Official Gazette. Where such beneficiary authorizes the contractor being his employer to deduct his contribution from his monthly wages and to remit the same, the contractor shall remit such contribution to the Building and other construction Workers' Welfare Board in such manner as may be directed by the Board, within the fifteen days from such deduction.
12. If any point of time during the contract period, non-compliance of the provisions of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder is observed, BHEL reserves the right to withhold a reasonable amount from the payables to discharge any obligations on behalf of Contractors. The reasonable amount shall be decided by the Construction Manager in consultation with Resident Accounts Officer & Head HR and shall be final.
13. The contractor shall declare to undertake any liability or claim arising out of employment of building workers and shall indemnify BHEL from all consequences / liabilities / penalties in case of non compliance of the provisions of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.

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PART – I

INSTRUCTION TO TENDERER

CLAUSE NO	DESCRIPTION
1.0	SUBMISSION OF TENDERS
	The tenderers must submit their tenders in two parts in separate sealed covers as detailed below and as per instructions of NIT.
	PART – I (TECHNO-COMMERCIAL PART).
	PART – II (PRICE PART).
1.1	PART – I (TECHNO-COMMERCIAL PART)
1.1.1	This shall include the following.
1.1.1.1	Covering letter of tenderer.
1.1.1.2	Volume-IA/IB/IC/ID – General and Special Conditions of Contract.
1.1.1.3	Volume-II – Technical specification including drawings, if any.
1.1.1.4	Volume-III – ‘Price schedule’, (No rate shall be entered in the rate column. Only write ‘quote’ against each rate of the schedule).
1.1.1.5	Drawings.
1.1.1.6	Schedules, annexures, proformas and other documents as indicated in the tender document and as specified in the tender enquiry letter.
1.1.1.7	The above documents shall form one set of the Part –I tender. Tenderers shall submit requisite sets of Part-I tender, i.e. original and duplicate sets as specified in the tender enquiry letter. All the sets shall be sealed and marked ‘Original Part – I tender’ and ‘Copies of Part – I tender’ on the respective sets and superscribed as : PART – I (TECNHO-COMMERCIAL PART). TENDER DOCUMENT NO. NAME OF WORK AND PROJECT. SUE DATE OF SUBMISSION.
1.2	PART –II (PRICE PART)
	This shall include following:
1.2.1	Copy of the covering letter enclosed in Part-I tender.
1.2.2	Volume III – Schedule of item of work (in the rate /price column the rate / price figures should be entered in words as well as in figures).
1.2.3	Tenderer shall submit requisite sets of Part-II tender duly sealed in one cover, superscribed as: PART – I (PRICE PART). TENDER DOCUMENT NO. NAME OF WORK AND PROJECT. SUE DATE OF SUBMISSION.
1.3	PART – III (EMD)
	Earnest Money Deposit should be made in the form as indicated in tender document and shall be submitted inside a sealed envelope superscribing the following. PART – III (EMD). TENDER DOCUMENT NO. NAME OF WORK AND PROJECT. SUE DATE OF SUBMISSION.
1.4	MAIN COVER
	Duly sealed and superscribed, as detailed above of Part – I, Part- II and Part – III tenders shall be enclosed in one main cover duly sealed and superscribed as: PART – IV (TECNHO-COMMERCIAL PART, PRICE PART AND EMD). TENDER DOCUMENT NO. NAME OF WORK AND PROJECT. SUE DATE OF SUBMISSION.
2.0	OPENING OF TENDERS
2.1	Unless otherwise specified, techno-commercial bids will be opened one day after latest due date of submission of offer at 15-00 hrs for which bidder may depute representative.
2.2	While BHEL reserve the right to open the price bid (Cover-II) of the offers in camera, the

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	date & time to open to Cover-II tender opening shall be intimated to the bidders in case BHEL decides it to be 'Public opening' and in such a case, one representative of the bidder shall be allowed to attend.
2.3	Price bids of those bidders who will be qualified for the subject job on the basis of pre-bid discussions, evaluation of techno commercial bids etc will be opened on specified date. Bidders may depute their representatives to participate in opening of price bids. BHEL's decision in this regard is final & binding.
3.0	RATES TO BE IN FIGURES AND WORDS
3.1	The tenderer shall quote in English both in figures as well as in words the rates and amounts tendered by him in the priced schedule of items of work forming part of the tender in such a way that interpolation is not possible. The amount for each item shall be worked out and entered and requisite totals given of all items. The tendered amount for the work shall be entered in the tender and duly signed by the tenderer.
3.2	If some discrepancies are found between the rate given in words and figures or the amount shown in the tender the following procedure shall be followed.
3.2.1	When there is a difference between the rates in figures and words, the rates which correspond to the amount worked out by the tenderer shall be taken as correct.
3.2.2	When the rate quoted by the tenderer in figures and words tallies but the amount is incorrect, the rate quoted by the tenderer shall be taken as correct.
3.2.3	When it is not possible to ascertain the correct rate, in the manner prescribed above, the lesser of the two (ie between figures and words) will be treated as valid rate.
4.0	CORRECTIONS AND ALTERATIONS
	All entries in the tender shall either be typed or be in ink, erasures and over-writing are not permitted and may render such tenders liable to summary rejection. All corrections and alterations shall be duly attested by the tenderer with date.
5.0	ALL PAGES TO BE INITIALED
	All signatures in tender documents shall be dated as well. All pages of all volumes and sections including drawing of tender documents shall be initialed with seal at the lower right hand corner or signed with seal wherever required in the tender documents by the tenderer or by a person holding power of attorney (copy to be enclosed with Part-I of tender) authorizing him to sign on behalf of the tenderer before submission of tender.
6.0	ADDENDA
	Addenda to the tender documents may be issued prior to the date of opening of the tenders to clarify documents or to reflect modifications in the design or contract terms. All such addenda issued shall form part of tender documents.
7.0	RATES TO BE ALL INCLUSIVE
	The tenderer shall quote for the jobs on the basis of the items entered in the schedule of items of work and shall quote separately for each and every items entered in schedule of items of work. The rates and prices quoted shall be all inclusive as provided for in the schedule of items of work and any claim whatsoever for enhancement of rates or prices quoted on any account shall not be entertained.
8.0	INFORMATION
	The information given in the tender documents and the plans and drawings forming part thereof is merely intended as general information without undertaking on the part of BHEL as to their accuracy and without obligation relative thereto upon BHEL. Before tendering, the tenderers are advised to inspect the site of work and the environments and be well acquainted with the actual working and other prevalent conditions, facilities available, position of labour etc. No claim will be entertained later on the ground of lack of knowledge.
9.0	QUANTITIES
	The quantities indicated in the schedule of items of work with respect to the various items are only approximate and are intended merely as a general information without undertaking as to the correctness thereof and without any obligation relative thereto upon BHEL.
10.0	ENCLOSURES
	The enclosures to be enclosed alongwith Part-I of the tender shall include the following besides other such enclosures which may have been specified elsewhere in the tender documents.
10.1	Valid Income Tax Clearance Certificate and Sales Tax Clearance Certificate in original or true copies/ photocopies duly attested by a Gazetted Officer.
10.2	Solvency certificate from a nationalized scheduled bank.
10.3	In case of an proprietorship firm, full name of proprietor, address, place and nature of business shall be furnished. In case of partnership firm, names of all the partners and their address, attested copy of partnership deed, instrument of partnership duly certified by the

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	Notary Publics shall be enclosed. In case of company, date and place of registration including date of commencement – certificate, certified copies of Memorandum and Articles of Association, nature of business carried on by the company and provisions of the memorandum relating thereof, names and particulars including addresses of all the directors and their previous experiences etc shall be furnished.
10.4	Power of Attorney or other proof of authority of the person who has signed the tender.
10.5	Provident Fund Account No through which PF of the Employees are deposited including supporting document for the same.
10.6	In case of a consortium arrangement consisting of prime bidder and his associate, the prime bidder to furnish as exclusive undertaking jointly executed by him and his associate for the successful performance of the entire contract. At the time of contract finalisation, a legal document on the formation of such group has to be submitted to BHEL which will be a part of the contract document.
10.7	Any other documents required in terms of this notice.
11.0	GENERAL
11.1	The tender shall be completely filled in all respects and shall be tendered together with requisite information in the manner detailed above. Any tender incomplete in any respect and violating any of the instructions shall be liable to be rejected. If the space in the tender or any schedule or proforma is insufficient pages shall be separately added and numbered.
11.2	The acceptance of tender will rest with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever :-
11.2.1	To reject any or all the tender.
11.2.2	To split up the work amongst two or more tenderers.
11.2.3	To award the work in part.
11.2.4	Either of the contingencies stated in 11.2.2 and 11.2.3 to modify the time for completion suitably.
11.3	Conditions and unwitnessed tenders, tenders containing absurd or unworkable rates and amounts and tenders which are incomplete and otherwise considered defective and not in accordance with the tender conditions, specification, etc are liable to be rejected.
11.4	If a tenderer expires after his submission of the tender or after the acceptance of his tender BHEL may at their discretion cancel such tender. If a partner of a firm expires after the submission of the tender or after the acceptance of the tender, BHEL may cancel such tender at their discretion unless the firm retains its character.
11.5	BHEL will not be bound by any power of attorney / granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the contract. They may however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor, concerned.
11.6	If the tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract, if awarded and forfeit Earnest money / Security Deposits.
11.7	Canvassing in any form in connection with the tenders is strictly prohibited and the tenders submitted by the contractor who resort to canvassing are liable to rejection.
11.8	Should a tenderer or contractor or in the case of a firm or Company one or more of its partners / shareholders / directors have a relation or relations employed in the capacity of an officer of BHEL, the authority inviting tender shall be informed of the fact alongwith detail of the officer. Failing this, BHEL may, at its sole discretion, reject the tender or cancel the contract and forfeit the Earnest Money /Security Deposit.
11.9	The tender submitted by a bidder shall become property of BHEL who shall have no obligation to return the same to the bidder.
11.10	BHEL shall not be liable for any expenses incurred by the bidder in the preparation of the tender irrespective of whether the tender is accepted or not.

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PART – II

GENERAL CONDITIONS OF CONTRACT

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CLAUSE NO	DESCRIPTION
1.0	APPLICATION Unless otherwise provided in the contract documents, these general conditions shall govern the works of the accompanying technical specifications. special conditions of this volume shall be read in conjunction with these general condition and these conditions will from a part of the contract documents.
2.0	DEFINITION OF TERMS : In construing these General Conditions, Special conditions and accompanying Specification the following words shall have the meaning herein assigned to them except where the context otherwise requires.
2.1	The owner/ purchaser shall mean CUSTOMER and shall include its successor in office, legal representative and permitted assigns.
2.2	Purchaser/ vendee/ BHEL shall mean Bharat Heavy Electricity Limited a Company registered under the Indian Companies Act 1956, with its Registered Office at BHEL House, Siri Fort, New Delhi. Power Sector Eastern Region, Kolkata or its Administrative Officers or its engineer or other employees are authorised to deal with any matter with which these persons are concerned on its behalf.
2.3	EXECUTIVE DIRECTOR/ GENERAL MANAGER shall mean the officer in administrative charge of BHEL, Power Sector - Eastern Region or their other regional offices
2.4	The bidder/ tenderer shall mean well established reputed organisations, manufacturer etc having requisite financial and technical capability and experience participating in the Tender invited by BHEL for supply and delivery, erection, testing and commissioning or plant equipment and status including associated civil structural and architectural works complete as per applicable technical specifications.
2.5	The contractor shall mean the successful bidder/ tenderer who is awarded the contract and shall be deemed to include the contractor's successors assigns, heirs executors, administrators of representatives approved by the BHEL.
2.6	The sub-contractor shall mean individual or firm to whom any part of the work has been subletted by the contractor with the consent in writing of BHEL and shall include his/its heirs, executors, administrators, legal representative and permitted assigns.
2.7	The Engineer shall mean an Officer of BHEL as may be duly appointed and authorised in writing by BHEL to act as Engineer on his behalf for the purpose of the Contract, to perform the duty set forth in this General Condition of Contract and other Contract Documents.
2.8	The Consulting Engineer shall mean any firm or person as may be duly appointed and authorised in writing by BHEL/Purchaser from time to time to review plant and equipment, works and services under the Contract.
2.9	The "Review Consulutant" shall mean any firm or person as may be duly appointed and authorised in writing by BHEL/Purchaser from time to time for final review of the plant and equipment, works and services under the Contract.
2.10	The "Inspector" shall mean any firm or person as may be duly appointed and authorised in writing by BHEL/Purchaser from time to time to inspect plant and equipment, works and services under the Contract.
2.11	'Acceptance of Tender" shall mean Telegraphic/ Telex/ Tele-fax Letter of Intent or Notification communicating to the Contractor the acceptance by BHEL of his tender.
2.12	"Contract Price" shall mean the agreed sum of money stated in the Contract to be paid to the Contractor for the successful fulfilment of the Works in accordance with the terms of the Contract Documents.
2.13	"Contract" shall mean the Agreement between the Contractor and BHEL for execution of and payment for the works as defined in the Contract Documents.
2.14	The "Contract Documents" shall mean and includes the General Conditions of Contract. Specifications and Schedules. Drawings, Form of Tender, Covering Letters, Schedule of Prices and Quantities submitted by the successful Bidder, Letter of Interest of BHEL, Drawings, subsequent amendments mutually agreed upon and the Agreement to be entered in to between BHEL and the Contractor duly signed by them under the Clause – Contract" of these General Conditions and other documents that may form part (s) of the Contract Documents.
2.15	"Work or Works" shall mean the plant / equipment to be supplied and / or works to be done by the Contractor under the contract Documents.
2.16	"Plant" shall mean the portion of the work (under the scope of this contract) which includes

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	permanent equipment, machinery, apparatus, materials, articles and civil, structural and architectural works and things of all kinds to be provided under the contract documents.
2.17	“Test” shall mean such test as is prescribed or considered necessary by BHEL / purchaser whether performed or made by the Engineer or any Agency acting under the direction of the Engineer.
2.18	“Constructional Plant” means all appliances or things of whatsoever nature required in or about the execution completion or maintenance of the works or temporary works by the contractor at his own cost and risk (as hereinafter defined) but does not include materials or other things intended to form or forming part of the permanent work.
2.19	“Goods” shall mean plants, equipment or materials to be supplied under the Contract Documents.
2.20	“Temporary Work” shall mean all temporary works of every kind required in or about the execution, completion or maintenance of the work by the contractor at their cost and risk.
2.21	“Completion Time” shall mean the period by date/month specified in the acceptance of tender for handing over of the intended scope of work, erected equipment / plant, which are found acceptable by the engineer being of required standard and conforming to the specifications of the contract.
2.22	“Consignee” shall mean the authorised representative or officer of the Purchaser / BHEL to whom the plant, equipment and materials are required to be delivered in the manner indicated in the Contract Documents.
2.23	The “Specification” or Specification / Technical Specifications” shall mean all Specifications including technical specifications of the Works and the Tender Drawings and schedules attached thereto and any modification made thereof.
2.24	“Drawings” shall mean drawings referred to in the Contract Documents including modifications if any and such other drawings as may be from time to time furnished by the Contractor and approved by BHEL / purchaser.
2.25	“Site” shall mean the land and other places including existing roads, paths etc., put at the disposal of the Contractor by BHEL / purchaser in connection with the execution of the Contract.
2.26	“Tests on Completion” shall mean such tests as are prescribed in the specifications and/or other tests as mutually agreed upon by BHEL/ Purchaser and the Contract to be carried out by the Contractor on erection of the plant to prove satisfactory performance as per Specification.
2.27	“Acceptance Test / Performance Guarantee Test” shall mean such test as are required to determine and demonstrate guaranteed capacity, efficiency and operating characteristics of the Plant as stipulated in the contract Documents.
2.28	“Commissioning” shall mean the successful completion of trial operations and readiness of the contracted / ordered plant and materials for commercial use. This will include all consumables and inputs required for pre-commissioning.
2.29	“Initial Operation”, “Reliability Run” or “Trial Run” shall mean the first continuous operation of the plant by the Contractor covered under the Contract with sub-systems under varying loads to demonstrate satisfactory operation for a specified period which shall not be less than fifteen (15) days.
2.30	“Commercial Operation” shall mean the conditions of operation in which all the equipment covered under the Contract are officially declared by BHEL/ purchaser, to be available for continuous operation at different loads and including rated capacity. Such declaration by BHEL / purchaser will be issued within thirty days after successful trial run made by the Contractor.
2.31	“Service” shall mean furnishing of labour and services as per specifications and supervision of complete erection, testing and putting equipment and materials to be supplied into satisfactory operation, supervision of inland transportation, loading and unloading and storage at the site as defined in the Contract Documents.
2.32	“Warranty Period” shall mean the period during which the Contractor shall remain liable for repair or replacement of any defective part of the plant supplied, works done and services rendered under the Contract.
2.33	“Code” shall mean the applicable International and Indian standards as on the date of letter of intent and any subsequent modification thereof.
2.34	“Month” shall mean calendar month. “Day” or “Days” unless herein otherwise expressly defined shall mean calendar day or days of twenty four (24) hours each. A week shall mean continuous period of seven (7) days.
2.3	“Letter of Intent” / “Purchaser Order” shall mean BHEL’s letter or notification conveying his acceptance of the Tender subject to such conditions as may have been stated therein.

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2.36	“Writing” shall include any manuscript typed or handwritten or printed statement, including Telex, Cable and facsimile transmission under or over signature or seal as the case may be.
2.37	“Approved” or “Approval” shall mean as approved by or approval of the Purchaser/ BHEL.
2.38	Words incorporating “Persons” shall include firms, companies, corporations and other bodies whether incorporated or not.
2.39	“Words” incorporating the singular only shall also include the plural and vice-versa where the context requires.
2.40	“F.O.B” shall mean delivery free of expenses to the Purchaser / BHEL on board the vessel at the port of shipment.
2.41	“CIF Price” shall mean delivery free of expenses to the purchaser / BHEL on board the vessel at the port of entry including the insurance coverage.
2.42	“F.O.R. “ Destination” shall mean delivery free of expenses to the Purchaser / BHEL on rail wagons at destination Railway Station or the purchaser’s siding as may be named or / and by road transport at customer’s destination.
2.43	“F.O.R. Works” shall mean loaded and stowed or trimmed free of expenses to the purchaser / BHEL on board rail wagons at the Contractor’s Works siding or the nearest Railway station for transportation.
2.44	“Tonne” shall mean 1000 Kilogram weight. “Gallon” shall mean Imperial gallon, unless otherwise mentioned specifically.
2.45	“Final Acceptances” mean the BHEL’s/ purchaser’s acceptance of the work/plant completed in every respect as per terms of the contract Documents on expiry of the Warranty / guarantee / maintenance period.
2.46	Terms and conditions not herein defined shall have the same meaning as are assigned to them in the latest edition of Indian Sale of Goods Act/Indian Contract Act as applicable.
2.47	SINGULAR AND PLURAL Words importing the masculine gender or singular number shall also include the feminine gender and plural and vice versa where the context so requires.
2.48	HEADINGS OR NOTES The headings or notes in these conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.
2.49	LANGUAGE All documentations and correspondence regarding the contract shall be in English language.
2.50	DOCUMENTS MUTUALLY EXPLANATORY Except if and to the extent otherwise provided by the contract the provisions of special Conditions of contract shall prevail over General Conditions of Contract and over those of any other documents forming part of the Contract. Subject to the foregoing the several documents forming the Contract are to be taken as mutually explanatory of one another but in case of ambiguities or discrepancies the same shall be explained and adjusted by the Engineer who shall thereupon issue to the contractor instructions directing in what manner the work is to be carried out.
3.0	SCOPE ON CONTRACT The scope of work, if not otherwise mentioned in the contract, shall be on the basis of a single contractor’s responsibility, completely covering all Technical Specifications under the accompanying Technical Specification. Some of the salient features are hereunder.
3.1	Detailed design of all the equipment and subsystem and work as per specification.
3.2	Complete, manufacture of all the equipment / subsystem including shop, field testing and assembly as per specification.
3.3	Providing of special tools and tackles and services necessary for satisfactory execution of the contract.
3.4	Providing engineering drawings, data operation manual, etc.
3.5	Packing and transportations of the Goods from the manufacturer’s works to the site.
3.6	Receipt, storage, preservation and conservation of the Goods at the site as applicable.
3.7	Supply of spares.
4.0	CONTRACT PRICE (UNLESS SPECIFIED OTHERWISE IN SPECIAL CONDITION OF CONTRACT)
4.1	The contract price is the agreed sum of money stated in the contract documents to be paid to the contractor for the successful completion of the works in accordance with the terms of the contract documents. The contract price shall be for the entire scope of the work with the break-ups as specified.

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4.2	The individual item rates or lumpsum price as the case may be, in the schedule of this contract shall be deemed to be firm for the entire period of the Contract or extended period of contract and no escalation in the rates or price shall be permissible for any reason whatsoever unless otherwise specified.
4.3	The contract price shall not be varied in respect of the fluctuations in rate of wages or allowances payable to the labour or in the cost of materials, consumables, water, fuel, power or for anticipated profit or alleged losses or for any reason whatsoever,
5.0	TAXES AND DUTIES (UNLESS SPECIFIED OTHERWISE IN SPECIAL CONDITION OF CONTRACT)
5.1	EXCISE DUTY
5.1.1	Excise duty actually incurred by contractor against the despatch made from his factory constituting sale under the contract alone shall be reimbursed at actuals against requisite documentary evidence like clean invoice cum excise duty gate pass in original or certificate copy, if separately indicated in the prices bid. If excise duty is included in the price quoted by the contractor then he is not eligible for reimbursement of excise duty or statutory variation of excise duty.
5.1.2	The invoice cum excise duty gate pass should show the name of ultimate consignee as specified in the contract. If excise duty is paid under protest or dispute it shall not be eligible for reimbursement until the dispute is settled.
5.1.3	No excise duty shall be payable by BHEL on inputs bought out items, raw materials and components consigned directly to site from sources other than contractor's factory.
5.1.4	The contractor is required to ensure that excise duty is properly calculated and paid and available exemption and benefits are fully availed.
5.1.5	If required by BHEL the contractor will provide certificate, if modvat benefit has been availed on his inputs and have been passed on to BHEL.
5.1.6	If the contractor claims / obtains any refund of the excise duty paid and got reimbursed, the same shall be refunded to BHEL.
5.1.7	Excise duty shall be restricted to the amount and percentage shown in the price format. BHEL is not liable to reimburse if the excise duty shown by the contractor in his offer is incorrect.
5.1.8	The excise duty on self manufactured items of the contractor alone shall be reimbursed against submission of clean original excise duty invoice or true copy thereof duly attested by excise authorities. The payment of excise duty shall however be limited to the amount indicated in the price in the schedule. Statutory variation shall be limited to change in the tariff within the delivery specified in the order/contract only. Provisional / Conditional gate passes / excise duty invoices are not acceptable for reimbursement.
5.1.9	Contractors are required to ensure that excise duty including surcharge , if any, quoted are as per the existing tariff on the date of the offer and have availed all benefits as per existing rules.
5.1.10	EXCISE DUTY (IN CASE OF DEEMED EXPORT) In case of deemed export and order placed under similar financing arrangement, contractors are required to ensure that original gate passes and document to claim draw backs are made available to BHEL alongwith disclaimer certificate. In the absence of above the offer is liable to be loaded. In these cases, excise duty shall be billed separately with the above documents.
5.1.11	No statutory variation during extended period shall be allowed.
5.2	SALES TAX
5.2.1	Sales tax can be reimbursed only if the same is payable by the contractor to the respective authorities. In case any concessional provisions are applicable the same shall be availed by the bidder/ contractor.
5.2.2	Contractors are expected to meet all statutory requirements and ensure that the Sales Tax charged are not exempted under the respective Sales Tax Act. The bid/offer should clearly indicate the percentage and total amount. Concessional forms required should be clearly indicated in the bid/offer.
5.2.3	BHEL is registered in Kolkata vide registration number WB Sales Tax No - PS/2214, dated 14-12-1998.
5.2.4	Tenderers are to ensure that their offer includes all applicable taxes. In case of Intra-state sales tax. The same shall be specified.
5.2.5	Sales tax on direct sales by the contractor to BHEL shall be reimbursed, as per tariff applicable to the approved items but restricted to the amount shown in the price bid separately. If it is shown as included in the quoted price. Then it shall not be eligible for

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	reimbursement by BHEL.
5.2.6	BHEL proposed to make sale-in-transit "C" form shall be issued / exchanged against E1/E2 forms "C" form shall be issued based on financial year transaction. Contractors are required to submit their request for issue of "C" forms in the format enclosed.
5.2.7	Form "C" will be issued after the financial year against the issue of E-1/E-2 form. Contractors are required to give the details for claiming "C" form.
5.2.8	If documents are submitted through bank. Form-C shall not be insisted for retirement.
5.2.9	Contractors are expected to avail taxation benefit. The bid/offer should clearly indicate the percentage and total amount. Concessional forms requirement should be clearly indicated in the bid/offer.
5.3	OTHER TAXES Bidder/tenderer are required to include all other taxes applicable on the date of the offer/bid over and above ED. ST. This will include but not limited to Octroi, turnover, works contract tax, entry tax, consignment tax, income tax, etc as applicable.
5.4	CUSTOMS DUTY Contractor shall arrange for their own import licence if required since BHEL will not provide any import licence. The custom duty element for imported items shall be included in the basic price. No. variation in customs duty / exchange rate for imported items shall be payable by BHEL.
5.5	FREIGHT CHARGES Contractor shall be required to transport the items through transport contractor of repute and with due consent / approval of BHEL. Freight charges shall be payable by the contractor. However, all documents in proof of payment of freight charges are to be submitted along with the bills to BHEL.
6.0	PRICE VARIATION (UNLESS SPECIFIED OTHERWISE IN SPECIAL CONDITION OF CONTRACT)
6.1	The price shall remain firm, for any increase or decrease in order value upto +/- 30% BHEL shall have the right to increase / decrease quantity upto the above order value and tenderer shall be bound to accept the same at the same price without any escalation.
6.2	Transport: If for any reason, the contractor has to resort to a mode of transport other than what was contemplated by him at the time of tendering to keep up the completion schedule and consequently has to incur more expenditure, BHEL will not under any circumstances reimburse such extra expenditure and price will not exceed the firm contract / order price.
7.0	STATURORY VARIATIONS (UNLESS SPECIFIED OTHERWISE IN SPECIAL CONDITION OF CONTRACT)
7.1	It is the responsibility of the tenderer to inform himself of the correct rates of customs or other duties or taxes leviable on the on the materials at the time of tendering. If the rates assumed by the tenderer are less than the correct rates prevailing at the time of tendering the tenderer will be responsible for such errors.
7.2	If the rates assumed are higher than the correct rates prevailing at the time of tendering, the difference will be to the credit of BHEL.
7.3	Should, however, any statutory alternation be made based on the rate prevailing at the time of tendering, the difference for excise duty & sales tax only, either up or down, will be to the account of BHEL. No variations on customs duty / exchange rate / minimum wages, prices of controlled commodities or any other input shall be payable by BHEL.
7.4	Notwithstanding the above, where the actual completion of the supply occurs beyond the period stipulated in the order/contract, variations above referred to will be limited to the rates prevailing on the dates of the stipulated completion period only and for variations after the agreed completion period the tenderer alone shall bear the impact if it is upward revision and if it is downward revision BHEL shall be given credit to the extent. This will be without prejudice to the levy of penalty for delay in completion.
8.0	TERMS OF PAYMENT (UNLESS SPECIFIED OTHERWISE IN SPECIAL CONDITION OF CONTRACT)
8.1	SUPPLY
8.1.1	Ninety (90%) percent value of equipment supplied alongwith applicable 100% taxes and duties etc. for the consignment shall be paid against despatch documents on pro-rata basis. All bank charges shall be to the account of the contractor.
8.1.2	Balance ten (10%) percent payment shall be made after receipt and physical verification of materials at site by site engineer on pro-rata basis (against material receipt certificate (MRC) from site office) and on availability of extended security bank guarantee to cover the guarantee period.
8.1.3	No advance payments shall be made.

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8.2	SUPERVISION, ERECTION AND COMMISSIONING / SUPERVISION OF ERECTION & COMMISSIONING Hundred (100%) percent payment shall be made only after commissioning of the equipment, final acceptance and receipt of bank guarantee to cover guarantee period.
8.3	Recommended/ Mandatory Spares. Same as clause no 8.1 above.
9.0	DOCUMENTS FOR CLAIMING SUPPLY PAYMENT (FOR INDIGENOUS SUPPLIERS ONLY) (UNLESS SPECIFIED OTHERWISE IN SPECIAL CONDITION OF CONTRACT) Following documents shall be submitted for claiming supply payments in required number of sets.
9.1	Invoice.
9.2	LR/RR/GR
9.3	Delivery challan.
9.4	Packing list showing item-wise details, size, quantity/ number, net & gross weight, number of packages and their identification.
9.5	BHEL MDCC (Material Despatch Clearance Certificate).
9.6	QS note issued by BHEL inspection agency.
9.7	Copy of letter to Insurance company to cover items despatched under insurance policy.
9.8	Original material receipt certificate (MRC) from site office shall be required for claiming payment against receipt of material at site.
10.0	BANK CHARGES
10.1	All bank charges for documents through bank shall be to the account of contractor.
10.2	The address of BHEL banker is STATE BANK OF INDIA, N. S.ROAD BRANCH,KOLKATA
11.0	TIME (THE ESSENCE OF CONTRACT)
11.1	The time and date of completion of the work as stipulated in the contract Documents shall be deemed to be the essence of the Contract. The contractor shall commence the works and shall proceed with the same with due expedition and without delay except as may be expressly sanctioned or ordered by the Engineer. If the contractor fails to commence the work within the stipulated time. BHEL at his sole discretion will have the right to cancel the contract. In such an event the contractor's security deposit with BHEL will stand forfeited without any further reference to the contractor, without prejudice to any and all of the BHEL's other rights and remedies in this regard. The Contractor shall so organise his resources and perform so as to complete the work not later than the aforesaid date of completion.
11.2	The contractor shall submit a PERT Network showing various key phases of the work such as design, procurement, manufacturing, shipment, etc. within thirty (30) days after the date of Letter of intent/purchase order. This network shall also indicate the interface facilities to be provided by the owner / BHEL and the dates by which such facilities are needed by the contractor and also the programme for phase wise release of work site for construction work as may be needed by the contractor, as applicable.
11.3	The Contractor shall discuss the network so submitted with BHEL. The agreed network may be in the form as submitted or in revised form in line with the outcome of discussion and shall form a part of the contract documents.
11.4	The above PERT Network shall be reviewed and periodic review reports shall be submitted by the Contractor to BHEL as directed by him.
11.5	The Contractor shall make available to BHEL detailed manufacturing, erection, testing and commissioning and construction programmes, as applicable, in line with the agreed PERT Network in the form of PERT or Bar Chart as desired by BHEL within 30 days from the date of receipt of LO1/PO. During performance of the contract, such programmes shall be renewed, updated and submitted to BHEL as and when needed by him or periodically as specified by him. If in the opinion of BHEL proper progress is not maintained suitable changes shall be made in the Contractor's operation to ensure proper progress.
11.6	PROGRESS REPORTS AND PHOTOGRAPHS
11.6.1	The Contractor shall furnish eight(8) prints each of monthly progress reports as approved by BHEL and photographs of the work done. Photographs shall be taken when and where indicated by the Engineer or his representative. Photographs shall be approximately 100mm x 125mm in size including margin of 5 mm side for fixing. Adequate number of photographs shall be submitted indicating various stages of manufacture and / or installation as applicable. Each photograph shall contain the date, the name of the contractor and the title of the view taken.

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11.6.2	Monthly progress report shall be submitted. These shall detail the status of design, drawings, procurement of raw materials and manufacture of the equipment and delivery of the equipment. BHEL shall advise the contractor about the progress schedule and photographs he has to submit each month together with the names and address of persons to whom they are to be sent. The contractor shall also furnish actual progress against schedule and such other information as BHEL may require to satisfy himself about the timely manufacture and delivery of equipment and timely construction and erection work to suit the commissioning date. The report shall also indicate the reasons for the variance between the scheduled and actual progress and the action proposed for corrective measure wherever necessary.
11.6.3	The submission and acceptance of the photographs and / or reports shall not prejudice the rights of BHEL in any manner.
11.6.4	In the event of contractor's continued poor progress of work, BHEL shall at his option treat this as breach of the contract by the contractor. In such an event it shall be open to BHEL to have the work completed through any other agency or agencies and claim the difference in cost in addition to damages from the contractor without prejudice to any other right or remedy of BHEL under this contract.
11.6.5	The contractor shall be responsible, wherever applicable, for developing detail drawings to adopt equipment and materials to be supplied to the requirement indicated in the specification and shall submit a list of such drawings and programme for submission of these drawings and programme within 30 days from the date of LO1.
11.6.6	Within a reasonable time not exceeding 30 days from the date of LO1 the contractor shall also provide BHEL with the following drawings and data as applicable :
11.6.6.1	Eight (8) marked up copies of technical particulars conforming to the specification.
11.6.6.2	Outline drawings of all equipment together with weights and sufficient overall dimensions.
11.6.6.3	Other drawings and data as indicated in different sections of the tender documents.
11.6.6.4	The contractor shall within 3 weeks from the date of LO1 submit for approval of BHEL the original copies of Codes and Standards which shall govern the design, manufacture, construction, erection, testing, commissioning and trial operation of the plant as applicable under scope of contract.
11.7	MISTAKE IN DRAWINGS
	The Engineer shall have the right at all reasonable times to inspect at the office / premises of contractor all shop and / or detailed drawings of the works or any portion of the works. The Contractor shall be responsible for and shall pay for any alternations of the work due to any discrepancies, errors or omission in the drawings or other particulars supplied by him whether such drawings or particulars have been approved by the Engineer or not. Provided that such discrepancies, errors or omissions be not due to inaccurate information or particulars furnished to the contractor by the Engineer, in which event BHEL shall pay for any alternations of work necessitated by reason of inaccurate information supplied by the Engineer to the Contractor.
12.0	DELIVERY FAILURE TERMINATION/ LIQUIDATED DAMAGES (UNLESS SPECIFIED OTHERWISE IN SPECIAL CONDITION OF CONTRACT)
12.1	It should be clearly understood by the Contractor that time and the date of delivery of despatch stipulated in the order/contract is the essence of the contract, If the contractor fails to complete the order / contract within the time fixed in the order / contract, or within any extension of time granted by BHEL, it shall be lawful for BHEL to recover damages for breach of order / contract without prejudice to any other rights and / or remedies provided for, in the order / contract and hereunder. To be entitled to impose such damage, BHEL will not be required to prove that he has incurred such amount as actual damage.
12.2	DELAYED DELIVERY
12.2.1	This being a turnkey BOP package, if vendor fail to complete the total job of (supply & service parts) as per the completion period for the service part (as per of Vol-1D), BHEL shall have the right to recover from the contractor, as agreed liquidated damages a sum equivalent to half percent (1/2%) of the executed contract price (for the supply part) for the delayed portion per week or part thereof subject to a maximum of ten percent (10%) of the total executed contract price (i.e. sum total of supply & service part) if the contractor fails to install any part of equipment /item within the period fixed for installation of the same (as per Vol-1D). Note: 1. The cumulative LD for the supply & service part shall be limited to 10% of the executed contract value (for the supply & service parts).

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	2. (applicable for supply of the Mandatory spares, if ordered separately only): Recovery shall be done as agreed liquidated damages a sum equivalent to half percent (1/2%) of the order /contract price (only for mandatory spares) for the delayed portion per week or part thereof subject to a maximum of ten percent (10%) of total order/contract price (for mandatory spares only) if the contractor has fails to deliver any part of equipment /item within the period fixed for delivery of the same as per Vol-1C.	
12.2.2	Purchase from elsewhere on account and at the risk of the contractor of the equipment /item not so delivered or others of a similar description without cancelling the order / contract in respect of the instalment not yet due for delivery or	
12.2.3	Cancel the order / contract or a portion thereof and if so desired purchase the equipment/item not so delivered at the risk and cost of the contractor and the contractor shall be liable to BHEL for any excess costs provided that the contractor shall continue the performance of the contract to the extent not cancelled under the provisions of this clause.	
12.2.4	Where action is taken under clause mentioned above at b & c, contractor shall be liable for any loss which BHEL may sustain on that account. The contractor shall not be entitled to any gain on such purchase and the manner and the method of such purchase shall be at the entire discretion of BHEL. It shall not be necessary for BHEL to serve a notice of such purchase on the contractor.	
13.0	COMPETENCE AND GUARANTEES	
13.1	Contractor shall have sound technical and financial capabilities and possess recognised experience in executing the works of similar kind and magnitude. The contractor shall properly fill in the various schedules and proforma prescribed in the tender documents. Non submission of the information in the prescribed schedules and proforma may lead to rejection of the bid.	
13.2	SECURITY DEPOSIT (SD)	
13.2.1	Upon acceptance of tender, the successful tenderer within the time specified in the letter of intent must deposit required amount as security deposit for satisfactory completion of work and shall not commence work under the contract before remitting security deposit except as directed by BHEL.	
13.2.2	The amount of Security Deposit shall be as follows.	
	a) In the case of work upto ten lakh	10%
	b) In the case of work costing above Rs. 10 lakh upto Rs. 50 lakhs	Rs. 1[One] lakh plus 7.5% of the the amount exceeding Rs 10 lakhs.
	c) Above Rs 50 lakhs	Rs. 4 [Four] lakh plus 5% of the the amount exceeding Rs 50 lakhs.
13.2.3	The Security deposit may be deposited in any of the following form.	
13.2.3.1	The security deposit as indicated in letter of intent can be paid in the form of bank guarantee/cash (as permissible under the Income Tax Act)/Pay Order or Demand Draft (in favour of Bharat Heavy Electricals Limited payable at Kolkata)/ local cheques of Scheduled Banks (subject to realization) to BHEL, Power Sector, Eastern Region, Kolkata within the time limit stipulated in the letter of intent. The bank guarantee shall be from Scheduled Banks/ Public Financial Institutions as defined in the Companies Act in the prescribed proforma, validity being upto completion of work as stipulated in letter of intent or stipulated otherwise in the proforma, whichever is later. The bank guarantee furnished towards security deposit should be kept valid by proper renewal till said work is actually completed	
13.2.3.2	50% of Security Deposit as indicated in the letter of intent can either be paid in the form of Bank Guarantee from Scheduled Banks/Public Financial institutions as defined in the Companies Act in the prescribed proforma, the validity being upto completion of work as stipulated in the letter of intent and balance 50% of the security deposit can paid either in cash/ other form of security or may be recovered by deduction from running bills @ 10% of the value of each running bills till the full Security Deposit is made up. The Bank Guarantee furnished towards Security Deposit should be kept valid by proper renewal till the said work is actually completed.	
13.2.3.3	The security deposit may be submitted through securities from Post Offices such as National Savings Certificates/Kisan Vikas Patras etc (certificates should be held in the name of the contractor furnishing the security and duly pledged in favour of Bharat Heavy Electricals Limited, Power Sector, Eastern Region, Kolkata and discharged on the back).	
13.2.3.4	The security deposit may be submitted by Fixed Deposit Receipt issued by Scheduled Banks/Public Financial Institutions as defined in the Companies Act. The FDR should be in the name of the contractor, A/C Bharat Heavy Electricals Limited, Power Sector, Eastern Region, Kolkata, duly discharged on the back.	

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13.2.4	Acceptance of security deposit against sl. No. 13.2.3.3 & 13.2.3.4 above will be subject to hypothecation or endorsement on the documents in favour of BHEL. However, BHEL will not be liable or responsible in any manner for collection of interest or renewal of the documents or in any other matter connected therewith.
13.2.5	If the value of the work done at any time exceeds accepted agreement value, the security deposit shall be correspondingly enhanced and the extra security deposit shall be immediately deposited by the contractor or recovered from payments due to him.
13.2.6	Regarding adjustment of Earnest Money deposit towards part of Security Deposit, refer clause under EMD above.
13.2.7	Failure to deposit security money within stipulated time may lead to forfeiture of Earnest Money and cancellation of award of work.
13.2.8	If any parts of security deposit of the contractor is held in the form of approved securities it shall be kept transferred in the name of Bharat Heavy Electricals Limited, Power Sector, Eastern Region, Kolkata in such a manner the BHEL can realize it fully without reference to the contractor. BHEL shall not be responsible for any depreciation in the value of the security while in BHEL's custody or for any loss of interest thereon.
13.2.9	BHEL reserve the right of forfeiture of security deposit in addition to other claims and penalties in the event of the contractor's failure to fulfil any of the contractual obligations (including liquidation or bankruptcy of the contractor, non-payment of money payable by means of arbitration award in favour of BHEL) or in the event of termination of contract as per terms and conditions of contract. BHEL reserve the right to set off these security deposit, against any claims of any other contract with BHEL.
13.2.10	"If the final price of successful bidder is lesser by 'more than 30%' of BHEL's estimate and the difference between the price of L-1 & L-2 is more than 10% of BHEL's estimate then only, 'Additional Security Deposit' will be required to be submitted by the successful bidder with value as follows: Additional Security Deposit = "30 % of (A-B)" limited to minimum 5% & maximum 10% of the 'Total Price/Contract Value', where, A = 80% of BHEL estimate B = The final offered price of successful bidder through RA (In case of RA) OR Sealed paper price bid of successful bidder (in case of paper bid) This 'Additional Security Deposit' shall have the same validity as that of the 'Security Deposit' and shall be revalidated/released in the manner as spelt out for the 'Security Deposit' as per relevant clause of GCC. The BHEL's estimated value shall be disclosed to the successful bidder (on their request) at appropriate juncture in case 'Additional Security Deposit' is applicable."
13.2.11	RETURN OF SECURITY DEPOSIT
	If the contractor duly performs and completes the contract in all respects to the entire satisfaction of BHEL and presents an absolute no Demand Certificate in the prescribed form and returns properties belonging to BHEL taken / borrowed or hired by him for carrying out the said works, half of the amount of Security Deposit will be released to the contractor after deducting all costs of expenses or other amounts that are to be paid to BHEL under this or other contracts entered into with the contractor. It may be noted that in no case the Security Deposit shall be refunded/released prior to passing of final bill. Balance half of the amount of Security Deposit will be released only after the satisfactory completion of Warranty / Guarantee Period as per terms of specification.
13.3	PERFORMANCE BOND
13.3.1	In addition to the security deposit the contractor shall provide to BHEL guarantee of an approved nationalised bank for an amount equal to 5% of the awarded/executed contract price (as per LOI/RA bills) as Performance Bond (under the terms of a bond) within 30 days from the date of LOI (Letter of Intent) and terms of the said bond shall be such as shall be approved by BHEL. The bond shall remain valid until 6 (SIX) month after the expiry of warranty / guarantee period. The obtaining of such guarantee and the cost of bond to be so entered into shall be at the expense in all respects to the contractor.
13.3.2	BHEL reserve the right of forfeiture of the above bond in addition to other claims and damages in the event of the contractor's failure to fulfil any of the contractual obligations or in the event of termination of contract as per terms and conditions of contract. BHEL reserve the right to set off this bond against any claims of any other contract with BHEL.

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14.0	DELIVERY TERMS
	When the goods are ready for shipment BHEL / owner should be notified by the contractor through Fax or Telex. Notification of delivery or despatch in regard to each and every consignment shall be made to the owner/BHEL immediately after despatch or delivery ensuring arrangements for its receipt at the site at least 48 hours ahead of actual delivery. The contractor shall further supply to the consignee a priced invoice and packing list of all goods delivered or despatched by him and other shipping particulars. All packages, containers, bundles and loose materials forming part of each and every consignment shall be described fully in the packing list, and full details of the contents of packages and quantity of goods shall be submitted to enable the consignee to check the goods on arrival at destination.
15.0	SHOP ASSEMBLY AND INSPECTION
15.1	Shop assembly to the largest extent feasible shall be performed by the contractor to assure proper fitting of the various parts and for checking the correctness of clearances and dimensions. Parts thus assembled shall be match – marked for reassembly at the site. Prior to be dismantled for shipment. A detailed description of the intended shop assemblies shall be submitted along with the Quality Assurance Plan.
15.2	No Goods shall be shipped before all tests and inspection have been carried out according to the approved Quality Assurance Plan unless otherwise instructed by BHEL.
15.3	The acceptance of any Goods prior to shipment shall in no way relieve the contractor of any of his responsibilities for meeting all the requirement of the specification and shall not prevent subsequent rejection if such Goods are found to be defective.
15.4	BHEL/ owner and his duly authorized representative shall have the power at all reasonable times to inspect drawings of any portion of the work or examine the materials and workmanship of the equipments/ items during its manufacture
15.5	Such inspection, examination and testing shall not relieve the contractor from any obligation under the contract.
15.6	BHEL engineer shall on giving seven (7) days notice in writing to the contractor setting out any ground of objection which he may have in respect of the plant/equipment /work, be at liberty to reject any drawings and all or any plant or workmanship, subject to any of the said ground of objection, which in his opinion are not in accordance with the contract / order. The contractor shall give due consideration to such objection and shall either make the modifications that may be necessary to meet the said objections or shall satisfy the engineer that no modifications are necessary to comply with the contract/order.
15.6	The contractor shall give the engineer and his duly authorized representatives notice of any material being ready for testing, and the engineer or the said representative shall (unless the inspection of tests voluntarily waived) on giving reasonable previous notice in writing to the contractor attend at the contractor's premises (as the case may be) within twenty (20) days of the date on which the material is notified as being ready, failing which the contractor may proceed with the tests which shall be deemed to have been made in the engineer's presence. All standard shop tests physical and chemical tests required by the standards or as may be prescribed or approved by the engineer reserves the right to waive any of the above tests requirement and to prescribe new tests required if fours necessary to expedite the work or to confirm to the latest and best practice. Definition, method of measurement, calibration of inspection, measuring and test equipments and required procedure as referred in the above standard and / or those approved by the engineer and equivalent shall be followed. The contractor shall forthwith forward to the engineer duly certified copies of the test certificates in quadruplicate for approval. Further copies of the shop test certificate shall be bound will the instruction manuals.
15.7	In all cases where the order/ contract provided for tests/ inspections whether at the premises or works of the contractor or any sub-contractor the contractor, except where otherwise specified shall provide free of charge to BHEL such labour, materials, electricity, fuel, water, stores, apparatus, inspection measuring and test equipments as may reasonably be required to carry out efficiently such tests of the equipment/ plant, in accordance with the order/ contract and shall give facilities to the engineer or his authorised representative to accomplish such testing.
15.8	The contractor shall maintain & ensure necessary safety measures as required for inspection and tests like HV test, Pneumatic test, Hydraulic test, Loan test Spring test, Bend test etc, of his/his subcontractors works to enable inspection Agency for performing inspections. If any test equipment is found not complying with proper safety requirements, then the inspection agency may withheld inspection, till such time desired safety requirements are met.
15.9	INSPECTION MEASURING AND TEST EQUIPMENTS (IMTE)/ MMD

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15.9.1	Inspection measuring and test equipments (IMTE) whether used by the contractor or his sub-contractor shall be calibrated, maintained and controlled. Calibration shall be valid and IMTE shall be in sound condition during usage.
15.9.2	In addition to above, contractor shall ensure the following.
15.9.2.1	Measurement uncertainty is known and consistent with required measurement capability of the IMTE.
15.9.2.2	Selection of IMTEs is compatible with the necessary accuracy precision of required measurement.
15.9.2.3	IMTEs are calibrated at the required interval against certified equipments having known valid relationship to nationality recognised standard/ recognised calibration labs.
15.9.2.4	Calibration records are available and traceable to the particular IMTE.
15.9.2.5	In case during recalibration the IMTE is found out of calibration, report on action taken to validate the previous results along with both calibration records of the IMTE should be furnished to BHEL. NOTE: BHEL decision on acceptability of the product in such case shall be binding.
15.9.2.6	IMTEs are stored, handled and preserved such that accuracy and fitness are maintained and safeguarded from adjustments.
15.9.2.7	Responsibility of usage of valid and calibrated IMTEs by sub-contractors shall be of the contractor.
15.9.2.8	In case calibration records are required by owner/ BHEL, copies of the same shall be furnished.
16.0	MATERIALS AND WORKMANSHIP
16.1	All Goods to be supplied and all works to be done by the Contractor under Contract shall be manufactured and executed in the manner stipulated in the specification or where not specified, to the satisfaction of the Engineer.
16.2	All materials used in the manufacture of the plant/equipment/system shall be selected from the best available for the purpose considering strength, durability and best engineering practice, free from defects and imperfection of recent manufacture and unused. Liberal factors of safety shall be used throughout the design and specially in the design of all parts subject to alternating stresses or shocks.
16.3	All the work shall be performed and completed in a thorough work-man like manner and shall follow the best modern practice in the manufacture of high grade equipment notwithstanding any omission in the Specification.
16.4	Castings shall be free from blow holes, flaws, cracks or other defects and shall be smooth, close – grained and of true forms and dimensions. No plugged or filled –up holes or other defects will be allowed. Such castings are liable to be rejected. However, the Contractor may rectify minor casting defects by welding or other method in accordance with the standard manufacturing practice provided such rectifications does not affect the strength of the casting or impair with the efficient working of the Plant and prior approval of BHEL is obtained for the same.
17.0	COMPLETENESS OF EQUIPMENT
17.1	The equipment shall be completely installed in every respect with all mountings, fixtures and standard accessories which are normally supplied even though not specifically detailed in the Specification. The Contractor shall not be eligible for any extra payment in respect of such mountings, fittings, fixtures and accessories if needed for safe operation of the equipment as require as per applicable codes of the country through they may not have been included in the Contract.
17.2	Parts of all similar equipment supplied shall be interchangeable with on another.
17.3	All the equipment supplied under this contract shall be subject to BHEL/owner's approval according to applicable stipulations set-forth in the specifications.
18.0	REJECTION OF DEFECTIVE PLANT
18.1	If the completed plant or any portion thereof before it is taken over under clause taking over or during the guarantee / warranty period, be found defective or fails to fulfil the requirements of the contract, the Engineer shall give the contractor notice setting forth particulars of such defects or failure, and the contractor shall forthwith make the defective plant good or alter the same to make it comply with the requirements of the contract. Should he fail to do so within a reasonable time, BHEL after giving seven (7) days written notice may reject and replace at the cost of the contractor the whole or any portion of the plant, as the case may be, which is defective or fails to fulfil the requirements of the contract. The contractor's full and extreme liability under this clause shall be satisfied by the payment to BHEL of erection plus difference, if any between the replacement price of the equipment including charges for erection and supervision of erection and the original

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	contract price including charges for erection and supervision of erection in respect of such defective plant.
18.2	In the event of such rejection, BHEL shall have the right to operate any and all equipment as long as it is in operating condition, whether or not, such equipment has been accepted as complete and satisfactory to enable him to obtain necessary replacement except that this shall not be constructed to permit operation of any equipment which may become damaged by such operation before any required alterations or repairs and /or replacements have been made. All repairs or alterations or replacements required of the contractor shall be made by the contractor at such times as directed and in such a manner as will cause the minimum interruption in the use of the equipment. Should the contractor not so replace the rejected plant within the time frame as directed by the engineer upto the requirement of the specification, the contractor's full and extreme liability under this clause will be satisfied by the repayment of all money paid by BHEL to him in respect of such plants.
18.3	Nothing in this clause shall be deemed to deprive BHEL or, effect any right under the contract which he may otherwise have in respect of such defects or deficiencies or in any way relieve the contractor or his obligation under the contract.
19.0	TAKING OVER Upon successful completion of all the tests to be performed at the site on equipment, systems and material furnished and erected by the contractor and on completion of successful trial run, BHEL shall issue to the contractor a taking over certificate. Issuance of such certificate shall not be reasonably withheld on account of minor omissions or defects which do not affect the satisfactory operation and / or causes any serious risk to the equipment and systems provided the contractor gives an undertaking to rectify such defects / omissions within a reasonable period time. However until a final acceptance certificate is issued on completion of warranty / guarantee period by BHEL/owner, the contractor shall not be relieved of any of his obligations, duties, responsibilities under the terms and conditions of the contract including insurance as specified elsewhere in the contract documents. The taking over by BHEL / the owner may be for each unit completed in all respects for satisfactory operation at the discretion of BHEL/ the owner.
20.0	GUARANTEE/ WARRANTY
20.1	The contractor shall warrant that the equipment / item supplied shall be free from all defects and faults in design, material, workmanship and manufacture and shall be of the highest rate and consistent with the established and generally accepted standards for stores of the type ordered in full conformity with the order/contract, specifications, drawings or samples, if any Contractor shall be responsible for the quality of products supplied by its sub-contractors.
20.2	The contractor shall provide guarantee / warranty in respect of the equipment, materials and services furnished by him as enumerated in section "Special Condition of Contract" of this tender document.
20.3	The contractor shall, if required, replace, or repair the equipment/item of such portion thereof, as is rejected by BHEL free of cost at the site or at the option of BHEL the contractor shall pay to BHEL value thereof at the order/contract price and such other expenditure and damages, as may arise by reason of the breach of the condition therein specified.
20.4	All replacements and repairs that BHEL shall call upon the contractor to deliver or perform under the guarantee shall be delivered free cost and performed promptly and satisfactorily by the contractor within three months. If the contractor so desires and BHEL agrees subject to import control regulation, the replaced parts can be taken over by him or his representative or the same can be arranged to be despatched by the contractor or his representative at contractor's cost as he deems fit within a period of three months from the date of replacement of equipment/ item/ parts.
20.5	The cost of any special or general overhaul rendered necessary during guarantee / warranty period due to defects in the plant or, defective work carried out by the contractor the same shall be borne by the contractor.
20.6	If for rectification or replacement of any part of equipment or work due to defective materials, manufacture or design or workmanship, the services of the contractor's personal are requisitioned within the guarantee/ warranty period, these services shall be made available free any cost to BHEL/ owner.
20.7	All the replaced equipment/ item shall also be guaranteed as per provision of guarantee/ warranty.
21.0	INSURANCE
21.1	BHEL shall arrange for insuring the materials / properties of BHEL/Customer covering the

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	risks during transit, storage, erection and commissioning.
21.2	It is the sole responsibility of the contractor to insure the workmen, his properties including tools and plants against accident and injury while work as required by relevant rules and to pay compensation, if any, to workmen as per workmen's compensation Act. This policy shall also cover the contractor against claims for injury, disability, disease or death of his or his sub-contractor's employee, which for any reasons are not covered under the Workmen's Compensation Act & Employee's liability, the liability of which shall not be less than statutory provisions.
21.3	All the rules and regulations of the purchaser/ BHEL in the area of project which are in force from time to time will have to be followed by the contractor.
21.4	If due to negligence and / or non-observance of safety and other precautions and accident/ injury occurs to any other person/ public, the contractor shall have to pay necessary compensation and other expenses. If so decided by the appropriate authorities.
21.5	If due to contractor's carelessness, negligence or non-observance of safety precautions damage to BHEL's/ owner's property and personnel should occur, and if BHEL is unable to recover, in full cost from the insurance company, the balance will be recovered from the contractor. The damage is to be reported within 48 hours of occurrence along with Engineers report. In the event of loss/ theft of BHEL's/ purchaser's property while in the custody of the contractor, it will be the responsibility of the contractor to lodge an FIR with responsibility of the contractor to lodge an FIR with local police authorities and furnish the details of FIR and Engineer's investigation report about loss/ theft within 48 hours of occurrence. This is for the purpose of lodging insurance claim. If BHEL is unable to recover full cost from Insurance Company, the balance including deductible franchise wherever applicable will be recovered from the contractor.
21.6	The contractor shall be responsible for furnishing all the despatch details including invoice value, plant / components despatched, packing slip, LR/RR/CR copy, shipping details etc. to underwriter and BHEL, to cover no. to be intimated to the contractor afterwards.
21.7	Failure to comply the above on time and in case any loss / damage occurs in transit, the contractor shall be responsible for making good such loss / damage.
21.8	Save provisions as stated above the contractor at his cost shall arrange, secure and maintain insurance as may be necessary to protect his interests and the interests of BHEL against all risk and the responsibility to maintain such insurance coverage at all times during the period of contract shall be that of the contractor alone. Contractor's failure in this regard shall not relieve him of any of his contractual responsibilities and obligations.
22.0	NO WAIVER OF RIGHTS Neither the inspection by the BHEL or any other official, employee or agent nor any order by BHEL for payment of money or any payment for or acceptance of the whole or any part of the scope under this contract by BHEL, nor any extension of time, nor any possession taken by BHEL shall operate as a waiver, of any provision of the contract or of any power herein reserved to BHEL or any right to damages herein provided nor shall any waiver of any breach in the contract / order be held to be a waiver or any other subsequent breach.
23.0	MATERIAL DESPATCH CLEARANCE CERTIFICATE (MDCC) When the tests have been satisfactorily completed at the contractor's work, the Engineer shall issue a certificate to that effect within fifteen (15) days after completion of test, but if the tests were not witnessed by the engineer or his representative, the certificate would be issued within fifteen (15) days of the receipt of the test certificates by the Engineer. No plant / equipment shall be transported before such a certificate has been issued. The satisfactory completion of these tests or the issue of this certificate, shall not bind BHEL to accept the plant / equipment should it, on further test after erection, be found not to comply with the order / contract provisions.
24.0	PACKING
24.1	The packing shall be in conformity with specification and shall be such as to ensure prevention of damages, corrosion, deterioration, shortages, pilferage and loss in transit or storage.
24.2	The packing shall be capable of withstanding the rigours of transit and handling at various points / ports.
24.3	In case of shipment by sea the packing shall be sea worthy of international standard.
24.4	Packing list shall also be submitted along with advance set of documents for claiming payment indicating following. Packing size. Gross weight and set weight of each package.
25.0	SHORTAGE/ DAMAGE

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25.1	In case of shortages/ damages noticed on receipt of materials at site, the contractor should replenish the same immediately. Replenishment of damages arising out of faulty and insufficient packing will be to the cost of contractor and shortages out of sound cases, if not accepted by under writer, will have to be replenished free of cost by the contractor.
25.2	In case of faults, deficiencies in materials, components assemblies, subassemblies etc, these are to be supplied free of cost to enable the equipment to be put in order.
26.0	INTER-CHANGEABILITY
26.1	All similar components / parts of similar equipment supplied shall be interchangeable with one another.
26.2	Even though all the work and materials necessary to the satisfactory completion of the works may not be detailed in the specifications and schedules, their cost will be considered to be within the order / contract and no extra charges will be accepted.
27.0	DEFAULT BREACH OF CONTACT, INSOLVENCY AND RISK PURCHASE
27.1	If the contractor fails to deliver the equipment / plant or any instalment thereof within the period (s) fixed for such delivery or at any time repudiates or otherwise abandons the order /contract before expiry of such period or otherwise fails to perform the order/contract or commits any breach of the order / contract not herein specifically provided for or if the contractor being an individual or if a firm on a partner thereof, shall at any time, be adjudged insolvent or shall have a receiving order for administration of his estate made against him or shall take any proceeding for composition under any insolvency Act for the time composition under any insolvency Act for the time being in force or make any assignment of the order / contract or enter into any assignment of the order/contract or enter into any arrangement or composition with his creditors or suspend payment or if the firm dissolved under the partnership Act or if the contractor being a company is wound up voluntarily or by order of a court or a Receiver. Liquidator or Manager on behalf of the debenture holders/ creditors is appointed or circumstances shall have arisen which entitles the Court of debenture holder / creditors to appoint a receiver, liquidator or manager, BHEL without prejudice to his right to recover any expenses, losses or damages to which BHEL may be put to incur or sustain by reason of the contract shall be entitled to cancel the order/contract on whole or portion thereof without compensation to contractor and if so desires, he may procure upon such terms and in such manner as he deems appropriate items not so delivered or others of a similar description where items exactly complying with particulars are not, in the opinion of BHEL, which shall be final, readily procurable, at the risk and cost of the contractor and the contractor shall be liable to BHEL for any excess costs provided that the contractor shall continue the performance of the order/contract to the extent not cancelled under the provisions of this clause. Provided also that the contractor shall not be entitled to any gain on repurchase etc.
27.2	NEGLIGENCE
	If the Contractor shall neglect to execute the work with due diligence and expedition or such refuse or neglect to comply with any reasonable orders given to him in writing by BHEL in connection with the work, or shall contravention the provisions of the contract BHEL may give notice in writing to the Contractor calling upon him to make good the failure, neglect or contravention complained of, Should the Contractor fail so comply with such notice within a period considered reasonable by BHEL from the date of such notice service thereof, in the case of a failure, neglect or contravention capable of being made good within that time, or otherwise within such time as may be in the opinion of BHEL be reasonably necessary for making it good, then and in such cash BHEL shall the option and be at liberty to take the work wholly or in part, out of the Contractor's hand and may carry on the work envisaged in the Contract either by himself or his agents or may re-contract with any other person or person to execute the same or any part thereof and provide, as applicable, any other materials, tools, tackle or labour for the purpose or completing the works or any parts thereof. In such event BHEL shall without being responsible to the Contractor for normal wear and tear or the same, be entitled to seize and take possession and have free use of all materials, tools, tackle, or other things which may be on the Site, for use at any time in connection with the work to the exclusion of any right of the Contractor over the same and BHEL shall be entitled to retain and apply any balance sum which may otherwise be then due on the contract by him to the contractor or such part thereof as may be necessary to the payment of the cost of execution of such work as aforesaid . If the cost of completing the works or executing a part thereof as aforesaid shall exceed the balance due to the contractor, the contractor shall pay such excess.
28.0	FORECLOSURE OF CONTRACT
	If at any time after acceptance of the Tender the owner/BHEL shall decide to abandon or

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	reduce the scope of the work for any reason whatsoever and hence not require the whole or any part of the work to be carried out, BHEL shall give notice in writing to that effect to contract and the Contractor shall have no claim to any payment of compensation or otherwise, whatsoever, on account of any profit or advance which he might have derived from the execution of the works in full but which he could not derive in consequence of the foreclosure of the whole or part of the work. The contractor shall have no claim for compensation against certificate vouchers or explanations, to enable the contractor to properly identify such claims. Such claims shall be paid by the contractor within fifteen (15) days of the receipt of the corresponding bills and if not paid by the contractor within the said period. BHEL may then deduct the amount from any money due or becoming due by him to the contractor under the contract or may be recovered by actions of law or otherwise, if the contractor fails to satisfy BHEL of such claims.
30.0	ASSIGNMENT AND SUB-CONTRACTING
30.1	ASSIGNMENT
	The Contract shall not assign or transfer the Contract or any part thereof or any benefit or any obligation thereof or interest therein or there under (otherwise than by a charge in favour of the Contractor's Bankers of and moneys due to become due under this contract) without the prior written consent of BHEL.
30.2	SUB-CONTRACTING
	Subcontracting of work, normally should not be permitted. However in case of unavoidable instances, the contractor may, after informing BHEL and getting his written approval along with approval of the owner, assign or subcontract any part of the contract other than for raw materials, for minor details or any part of the plant for which details or any part of the plant for which makes are identified in the contract. BHEL shall not be liable in any way, in case such approval for sub-contracting is not permitted by the owner. Sub-contractor of the equipment not identified in the contract or any change in the identified sub-contractor shall be subject to approval by BHEL and the owner. The experience list of the equipment sub-contractor under consideration by the contractor for this contract shall be furnished to BHEL, for approval prior to procurement of all such items / equipment such assignments/ subcontracting shall not relieve the contractor from any obligation, duty or responsibility under the contract. Any assignment as above without prior written approval of BHEL and the purchaser shall be null and void. For components/equipments procured by the contractor for the purposes of the contract after obtaining written approval of BHEL/ the owner, the contractor's purchase specifications and enquiries shall call for quality plans to be submitted by his subcontractor alongwith their proposals. The quality plans called for from the subcontractor shall set out during the various stages of manufacture and installation, the quality practices and procedures followed by the sub-contractor quality control organisation, the relevant reference documents, standards used, acceptance levels inspection of documentation raised, etc. Such quality plans of the sub-contractor shall be discussed and finalised in consultation with BHEL and shall form a part of the contract between the contractor and the sub-contractor, The contractor along with the subcontractor and BHEL shall furnish a joint undertaking to the owner for guaranteed performance or the equipment and subsystems. The contractor should desist from seeking approval for two-tier sub-contracting which may not be permitted by BHEL/the owner.
31.0	FORCE MAJEURE
	The Following shall amount to force majeure.
31.1	Acts of God, acts of any Government, war, sabotage, riots civil commotion, police action, revolution, flood, fire, cyclone, earthquake, epidemic and other similar causes over which the contractor has no control.
31.2	If the contractor suffers delay in the due execution of the contractual obligation due to delays caused for force majeure as defined above the agreed time of completion of the job covered by this contract or the obligations of the contract shall be extended by a period or time equal to the period of delay provided that on the occurrence of any such contingency the contractor immediately reports of BHEL in writing the causes or delay and contractor shall not be eligible for any compensation.
32.0	RISK IN STORES
	The contractor shall perform the order / contract in all respects in accordance with the terms and conditions thereof. The equipment / plant and every constituent part thereof, whether in the possession or control of the contractor his agents or servants or a carrier, or in the joint possession of the contractor his agent or servants and BHEL, his agents or servants shall remain in every respect at the risk of the contractor until their actual delivery to the consignee at the stipulated place or destination or where so provided in the acceptance of offer until their delivery to a person specified by the BHEL as inter in

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	consignee for the purpose of despatch to the consignee. The contractor shall be solely responsible for all loss destruction damage or deterioration of or to the plants / equipment / items from any cause whatsoever while the same, after approval by the engineer, are awaiting despatch or delivery or are in the course or transit from the seller / contractor to the consignee or interim consignee as the case may be.
33.0	CONSIGNEE'S RIGHT OF REJECTION Notwithstanding any approval which BHEL or the engineer may have given in respect of the plants / equipment / items or any materials or other particulars or the work or workmanship involved in the performance of the order / contract (whether with or without any test carried out by contractor or the engineer or under the direction of the engineer), and notwithstanding delivery of the same where so provided to the interim consignee, it is shall be lawful for the consignee, on behalf of BHEL, to reject the plants / equipments / items or any part, portion or consignment thereof within thirty (30) days after actual delivery, thereof to him at the stipulated place or destination, if such plants / equipment or part, portion of consignment thereof is not in all respects in conformity with the terms and conditions of order / contract whether on account of any loss, storage, deterioration or damage before despatch or delivery or during transit or otherwise, howsoever.
34.0	SETTLEMENT OF DISPUTE AND ARBITRATION
34.1	If any dispute or differences of any kind whatsoever shall arise between BHEL and the contractor, arising out of the contract for the performance of the work whether during the progress of termination, abandonment or breach of the contract, it shall in the first place be referred to and settled by the Designated Engineer (nominated by BHEL for settlement of the disputes arising out of this contract) who within a reasonable period after being requested shall give written notice of his decision to the contractor. Save as hereinafter provided, such decision in respect of every matter so referred shall forthwith be given effect to by the contractor who shall proceed with the work with all due diligence, whether he or BHEL required arbitration as hereinafter provided or not.
34.2	If after the Designated Engineer has given written notice of this decision to the party, no claim to arbitration has been communicated to him by the party within 30 days from the receipt of such notice, the said decision shall become final and binding on the parties. In the event the contractor being dissatisfied with any such decision or if amicable settlement can not be reached then all such disputed issues shall be referred to the sole arbitration of the person appointed by BHEL.
34.3	Except as provided elsewhere in this Contract, in case amicable settlement is not reached between the Parties, in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract, 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 Power Sector Region issuing the Contract. It shall not be open to the Contractor to object to such arbitrator only on the ground that such arbitrator is an employee/ex-employee of BHEL or has dealt with or has expressed any opinion on any issue touching upon the Contract. The Arbitrator shall pass a reasoned award and the award of the Arbitrator 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 Kolkata (the place from where the contract is issued)
34.4	In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable: 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

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	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.
34.5	The cost of arbitration shall be borne equally by the Parties.
34.6	Notwithstanding the existence or any dispute or differences and/or reference for the arbitration, the Contractor shall proceed with and continue without hindrance the performance of its obligations under this Contract with due diligence and expedition in a professional manner.
35.0	CONTRACT AGREEMENT, EFFECT AND JURISDICTION
35.1	The contractor shall within 60 days from the date of LOI/P.O. but in any case before submitting his first bill for payment enter into and execute a contract agreement (to be prepared at the cost of the contractor). In the event of the failure of the contractor to execute the contract agreement within the time specified above, BHEL may cancel the LOI and forfeit his SD unless this period is extended by BHEL.
35.2	The agreement will be signed in seven (7) originals and the contractor shall be provided with one (1) signed original and the rest will be retained by BHEL. These General conditions together with the specifications, tenders drawings and technical particulars, tender data with subsequent agreed modification thereof. Tender, all correspondences with BHEL and signed agreement and other supporting documents shall constitute the contract document(s). No variation or modification of terms and conditions of the contract documents or waiver of any of these terms and conditions shall be deemed valid unless agreed in writing and signed by the BHEL and the Contractor.
35.3	The failure of either party to endorse at any time of the provisions of the contract or any right thereto or to an option herein provided shall in no way be construed to be a waiver of such provisions, rights or option or in any way to affect the validity of the Contract. The exercise by either party of either his rights herein shall not preclude or prejudice either party from exercising the same or any other right in may have hereunder.
35.4	The contract shall in all respects be deemed to be and shall be construed and shall operate as an Indian contract as defined in the Indian Contract Act 1972 and all payments there under shall be made in Indian Rupees unless otherwise specified.
35.5	The Contract shall be considered to come into force on the date of notification of Award by the BHEL to the Contractor which may be in the form of a Fax. of Award or Letter of Intent / purchase order.
35.6	The law applicable to the Contract, shall be the law in force in India. The Courts of Kolkata under this contract shall have exclusive Jurisdiction in all matters arising under this contract, including Arbitration Awards.
36.0	DIRECT TAX
36.1	BHEL shall not be liable towards income tax of whatever nature including variations thereof arising out of this order/contract as well as tax liability of the contractor and his personnel.
36.2	Deductions of tax at source at the prevailing rate shall be effected by BHEL before payment as a statutory obligation.
37.0	PATENT RIGHTS
37.1	The Contractor shall defend any claim which alleges in a suit of proceeding against BHEL that equipment or any part thereof constitutes an infringement of any patent, if notified promptly in writing and given authority, information and assistance for the defence and the Contractor shall pay all damage and costs awarded against BHEL in such suit or proceeding for the patent infringement and the use of equipment or part is prohibited, the contractor shall, at his own expenses either procure for BHEL the right to continue using the equipment or replace the same with a non-infringing equipment, or modify it so that it becomes non-infringing, or move the equipment and refund the Contract Price plus the transportation and installation costs thereof.
37.2	The contractor shall indemnify BHEL from and against all claims and proceeding for or on account of infringement or alleged infringement of any patent rights, design trade mark or name or other protected rights in respect of execution of the contract.
38.0	INDEMNIFICATION OF BHEL
	The Contractor shall insure all his personnel, tools and tackles, drawings etc. and shall also take a third party liability cover to indemnify BHEL of all liabilities such may come up due to any act or omission on the part of Contractor, his agent, representative, or sub-contractor(s) and cause harm/damage to other contractor / representatives of the owner / BHEL or all or anybody rendering service to the owner/BHEL or is connected with the owner's /BHEL's work in any manner whatsoever. The Contractor shall necessarily indemnify BHEL in all these respects and the indemnification and insurance policy shall be

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	subject to approval of the owner / BHEL.
39.0	PREVENTION OF EXTRAORDINARY TRAFFIC AND PROTECTION OF HIGHWAY The Contractor shall use every reasonable means to prevent any of the highways or bridges communicating with or on the routes to the Site from being damaged or injured by any traffic of the contractor or any or his sub-contractors and in particulars shall select routes, choose and use vehicles and restrict and distribute loads so that any such extraordinary traffic as will inevitably arise from the moving of Plant and material from and to the site shall be limited as far as reasonably possible and so that no damage or injury may be occasioned to such highways and bridges. Should it be found necessary for the Contractor to move one of more loads or construction plant machinery or reconstructed units or parts of units or work as applicable over part of a highway or bridge and that the moving or such load must in all probability damage the highway or bridge unless means of protection or strengthening are carried out then the contractor shall before moving the load on to such highway or bridge. Carryout such protection or strengthening at his own cost. If during the execution of the works or at anytime thereafter BHEL or purchaser shall receive any claim arising out of the execution of the works in respect or damage or injury to highways or bridges, he shall immediately notify the same to the contractor and thereafter the contractor shall negotiate the settlement of and pay all sum due in respect of such claim and shall indemnify BHEL in respect thereof and in respect or all claims demands, cost charges and expenses in relation thereto.
40.0	MEMBERS OF STAFF ETC NOT PERSONALLY LIABLE Neither any member of BHEL's staff nor the Engineer, nor the Engineer's representative shall be in any way personally liable for the acts or obligations under the contract or answerable for any default or omission on the part of BHEL in the observance or performance of any of the acts, matters, or things which are herein contained.
41.0	POWER TO VARY OR OMIT WORK
41.1	No alternations, amendments, omissions, additions, suspensions or variation of the work (hereinafter referred as "variations") under the contract shall be made by the contractor except as directed in writing by BHEL. But BHEL shall have full power, subject to the provision hereinafter contained from time to time during the execution of the contract by notice in writing to instruct the contractor to make such variation without prejudice to the contract and the contractor shall carry out such variations and be bound by the same conditions as far as applicable, as though the said variations occurred in the contract Documents.
41.2	If any suggested variations would in the opinion of the contractor, if carried out, prevent him from fulfilling any of his obligations or guarantee under the contract he shall notify BHEL thereof in writing and BHEL shall decide forthwith whether or not the same shall be carried out and if BHEL confirms his instruction, the contractor's obligations and guarantee shall be modified to such and extent as may be justified.
42.0	SUSPENSION OF WORK
42.1	BHEL reserves the right to suspend and reinstate execution of the whole or any part of the work without invalidating the provision of the contract. Orders for suspension or reinstatement of the work will be issued by BHEL to the contractor in writing. The time for completion of the work be extended for a period equal to duration of the suspension.
42.2	Any necessary demonstrable costs incurred by the contractor as a result of such suspension of the work will be paid by BHEL, provided such costs are substantiated to the satisfaction of BHEL/owner. BHEL shall not be responsible for any liabilities is suspension or delay is due to some default on the part of the contractor or his sub-contractor.
43.0	LIST OF STANDARDS FOR REFERENCE
43.1	International Standards Organisation (ISO).
43.2	International Electro-technical Commission (IEC).
43.3	American Society of Mechanical Engineers (ASME).
43.4	American National Standards Institute (ANSI).
43.5	American Society for Testing and Materials (ASTM).
43.6	American Institute of Steel Construction (AISC).
43.7	American Wilding Society (AWS).
43.8	Architecture Institute of Japan (AIJ).
43.9	National Fire Protection Association (NFPA).
43.10	National Electrical Manufacturer's Association (NEMA).
43.11	Japanese Electro-Technical Committee (JEC).
43.12	Institute of Electrical and Electronics Engineers (IEEE).
43.13	Federal Occupation Safety and Health Regulations (FOSHA).

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43.14	Instrument Society of America (ISA).
43.15	National Electric Code (NEC).
43.16	Heat Exchanger Institute (HEI).
43.17	Tubular Exchanger Manufacturer's Association (TEMA).
43.18	Hydraulic Institute (HIS).
43.19	International Electro-Technical Commission Publications.
43.20	Power Test Code for Steam Turbines (PTC).
43.21	Application German Standards (AGS).
43.22	Application British Standards (ABS).
43.23	Application Japanese Standards (AJS).
43.24	Electric Power Research Institute (EPRI).
43.25	Standard of Manufacturer's Standardisation Society (MSS).
43.26	Bureau of Indian Standards Institute (BIS).
43.27	Indian Electricity Rules.
43.28	Indian Boiler Regulations (IBR).
43.29	Indian Explosives Act.
43.30	Indian Factories Act.
43.31	Tariff Advisory Committee (TAC) Rules.
43.32	Emission regulation of Central Pollution Control board (CPCB).
43.33	Pollution Control regulations of Dept of Environment Govt of India.
43.34	Central Board of Irrigation and Power (CBIP) Publications.
43.35	Any other statutory Codes/ Standards/ Regulations.

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PART – I

INSTRUCTION TO TENDERER

CLAUSE NO	DESCRIPTION
1.0	SUBMISSION OF TENDERS
	The tenderers must submit their tenders in two parts in separate sealed covers as detailed below and as per instructions of NIT.
	PART-I (TECHNO-COMMERCIAL PART).
	PART-II (PRICE PART).
1.1	PART-III (TECHNO-COMMERCIAL PART)
1.1.1	This shall includes the following :
1.1.1.1	Covering letter of Tenderer.
1.1.1.2	Volume-IA/IB/IC/ID – General and Special Conditions of Contract.
1.1.1.3	Volume-II – Technical specification including drawings, if any.
1.1.1.4	Volume-III – ‘Price schedule’, (No rate shall be entered in the rate column. Only write ‘quote’ against each rate of the schedule).
1.1.1.5	Drawings.
1.1.1.6	Schedules, annexures, proformas and other documents as indicated in the tender document and as specified in the tender enquiry letter.
1.1.1.7	The above documents shall form one set of the Part-I tender. Tenderers shall submit requisits sets of Part-I tender, i.e. original and duplicate sets as specified in the tender enquiry letter. All the sets shall be sealed and marked ‘Original Part-I tender’ and ‘Copies of Part-I tender’ on the respective sets and superscribed as : PART – I (TECNHO-COMMERCIAL PART). TENDER DOCUMENT NO. NAME OF WORK AND PROJECT. SUE DATE OF SUBMISSION.
1.2	PART –II (PRICE PART)
	This shall include following:
1.2.1	Copy of the covering letter enclosed in Part – I tender.
1.2.2	Volume III – Schedule of item of work (in the rate /price column the rate / price figures should be entered in words as well as in figures).
1.2.3	Tenderer shall submit requisite sets of Part – II tender duly sealed in one cover, superscribed as: PART – I (PRICE PART). TENDER DOCUMENT NO. NAME OF WORK AND PROJECT. SUE DATE OF SUBMISSION.
1.3	PART – III (EMD)
	Earnest Money Deposit should be made in the form as indicated in tender document and shall be submitted inside a sealed envelope superscribing the following. PART – III (EMD). TENDER DOCUMENT NO. NAME OF WORK AND PROJECT. SUE DATE OF SUBMISSION.
1.4	MAIN COVER
	Duly sealed and superscribed, as detailed above of Part – I, Part- II and Part – III tenders shall be enclosed in one main cover duly sealed and superscribed as: PART-IV (TECNHO-COMMERCIAL PART, PRICE PART AND EMD). TENDER DOCUMENT NO. NAME OF WORK AND PROJECT. SUE DATE OF SUBMISSION.
1.5	Tenders submitted by post shall be sent by ‘REGISTERED POST ACKNOWLEDGEMENT DUE’/ by courier and shall be posted with due allowance for any postal delay. BHEL takes no responsibility for delay, loss or non-receipt of tenders sent by post. The tenders received

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	after the due date and time of submission is liable to be rejected. Telegraphic offers and offers received by telex/ fax may not be considered unless confirmed in writing by a detailed offer.
2.0	OPENING OF TENDERS
2.1	Unless otherwise specified, techno-commercial bids will be opened one day after latest due date of submission of offer at 15-00 hrs for which bidder may depute representative.
2.2	While BHEL reserve the right to open the price bid (Cover –II) of the offers in camera, the date & time to open to Cover–II tender opening shall be intimated to the bidders in case BHEL decides it to be 'Public opening' and in such a case, one representative of the bidder shall be allowed to attend.
2.3	Price bids of those bidders who will be qualified for the subject job on the basis of pre-bid discussions, evaluation of techno commercial bids etc will be opened on specified date. Bidders may depute their representatives to participate in opening of price bids. BHEL's decision in this regard is final & binding.
3.0	RATES TO BE IN FIGURES AND WORDS
3.1	The tenderer shall quote in English both in figures as well as in words the rates and amounts tendered by him in the priced schedule of items of work forming part of the tender in such a way that interpolation is not possible. The amount for each item shall be worked out and entered and requisite totals given of all items. The tendered amount for the work shall be entered in the tender and duly signed by the tenderer.
3.2	If some discrepancies are found between the rate given in words and figures or the amount shown in the tender the following procedure shall be followed.
3.2.1	When there is a difference between the rates in figures and words, the rates which correspond to the amount worked out by the tenderer shall be taken as correct.
3.2.2	When the rate quoted by the tenderer in figures and words tallies but the amount is incorrect, the rate quoted by the tenderer shall be taken as correct.
3.2.3	When it is not possible to ascertain the correct rate, in the manner prescribed above, THE LESSER OF THE TWO (ie between figures and words) will be treated as valid rate.
4.0	CORRECTIONS AND ALTERATIONS
	All entries in the tender shall either be typed or be in ink, erasures and over-writing are not permitted and may render such tenders liable to summary rejection. All corrections and alterations shall be duly attested by the tenderer with date.
5.0	ALL PAGES TO BE INITIALLED
	All signatures in tender documents shall be dated as well. All pages of all volumes and sections including drawing of tender documents shall be initialed with seal at the lower right hand corner or signed with seal wherever required in the tender documents by the tenderer or by a person holding power of attorney (copy to be enclosed with Part-I of tender) authorizing him to sign on behalf of the tenderer before submission of tender.
6.0	ADDENDA
	Addenda to the tender documents may be issued prior to the date of opening of the tenders to clarify documents or to reflect modifications in the design or contract terms. All such addenda issued shall form part of tender documents.
7.0	RATES TO BE ALL INCLUSIVE
	The tenderer shall quote for the jobs on the basis of the items entered in the schedule of items of work and shall quote separately for each and every items entered in schedule of items of work. The rates and prices quoted shall be all inclusive as provided for in the schedule of items of work and any claim whatsoever for enhancement of rates or prices quoted on any account shall not be entertained.
8.0	INFORMATION
	The information given in the tender documents and the plans and drawings forming part thereof is merely intended as general information without undertaking on the part of BHEL as to their accuracy and without obligation relative thereto upon BHEL. Before tendering, the tenderers are advised to inspect the site of work and the environments and be well acquainted with the actual working and other prevalent conditions, facilities available, position of labour etc. No claim will be entertained later on the ground of lack of knowledge.
9.0	QUANTITIES
	The quantities indicated in the schedule of items of work with respect to the various items are only approximate and are intended merely as general information without undertaking as to the correctness thereof and without any obligation relative thereto upon BHEL.
10.0	ENCLOSURES
	The enclosures to be enclosed alongwith Part-I of the tender shall include the following

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	besides other such enclosures which may have been specified elsewhere in the tender documents.
10.1	Valid Income Tax Clearance Certificate and Sales Tax Clearance Certificate in original or true copies/ photocopies duly attested by a Gazetted Officer.
10.2	Solvency certificate from a nationalized scheduled bank.
10.3	In case of a proprietorship firm, full name of proprietor, address, place and nature of business shall be furnished. In case of partnership firm, names of all the partners and their address, attested copy of partnership deed, instrument of partnership duly certified by the Notary Publics shall be enclosed. In case of company, date and place of registration including date of commencement – certificate, certified copies of Memorandum and Articles of Association, nature of business carried on by the company and provisions of the memorandum relating thereof, names and particulars including addresses of all the directors and their previous experiences etc shall be furnished.
10.4	Power of Attorney or other proof of authority of the person who has signed the tender.
10.5	Provident Fund Account No through which PF of the Employees are deposited including supporting document for the same.
10.6	In case of a consortium arrangement consisting of prime bidder and his associate, the prime bidder to furnish as exclusive undertaking jointly executed by him and his associate for the successful performance of the entire contract. At the time of contract finalisation, a legal document on the formation of such group has to be submitted to BHEL which will be a part of the contract document.
10.7	Any other documents required in terms of this notice.
11.0	GENERAL
11.1	The tender shall be completely filled in all respects and shall be tendered together with requisite information in the manner detailed above. Any tender incomplete in any respect and violating any of the instructions shall be liable to be rejected. If the space in the tender or any schedule or proforma is insufficient pages shall be separately added and numbered.
11.2	The acceptance of tender will rest with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever.
11.2.1	To reject any or all the tender.
11.2.2	To split up the work amongst two or more tenderers.
11.2.3	To award the work in part.
11.2.4	Either of the contingencies stated in 11.2.2 and 11.2.3 to modify the time for completion suitably.
11.3	Conditions and unwitnessed tenders, tenders containing absurd or unworkable rates and amounts and tenders which are incomplete and otherwise considered defective and not in accordance with the tender conditions, specification, etc are liable to be rejected.
11.4	If a tenderer expires after his submission of the tender or after the acceptance of his tender BHEL may at their discretion cancel such tender. If a partner of a firm expires after the submission of the tender or after the acceptance of the tender, BHEL may cancel such tender at their discretion unless the firm retains its character.
11.5	BHEL will not be bound by any power of attorney/ granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the contract. They may however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor, concerned.
11.6	If the tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract, if awarded and forfeit Earnest Money Deposit/ Security Deposits.
11.7	Canvassing in any form in connection with the tenders is strictly prohibited and the tenders submitted by the contractor who resort to canvassing are liable to rejection.
11.8	Should a tenderer or contractor or in the case of a firm or Company one or more of its partners / shareholders / directors have a relation or relations employed in the capacity of an officer of BHEL, the authority inviting tender shall be informed of the fact alongwith detail of the officer. Failing this, BHEL may, at its sole discretion, reject the tender or cancel the contract and forfeit the Earnest Money /Security Deposit.
11.9	The tender submitted by a bidder shall become property of BHEL who shall have no obligation to return the same to the bidder.
11.10	BHEL shall not be liable for any expenses incurred by the bidder in the preparation of the tender irrespective of whether the tender is accepted or not.
11.11	In the event of any contradiction between the terms and conditions stipulated in the different

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	volumes forming the tender documents, the order or precedence shall be Volume-II Technical specifications (for technical aspects); Special conditions of contract followed by General condition of contract (for commercial aspects).
11.12	Any submission of tender by the bidder shall be deemed to have done after careful study and examination of the tender papers with the full understanding of the implications thereof. The specifications and terms & conditions shall be deemed to have been accepted unless otherwise specifically commented upon by the tenderer in his officer. Non compliance of any tender instructions may result in the rejection of the tender offer.
11.13	The bidder shall closely peruse all the clauses, specifications and drawings indicated in the tender documents before quoting. Should the tenderer have any doubt about the meaning of any portion of the tender specification or find discrepancies or omissions in the drawings or the tender documents issued are incomplete or shall require clarifications on any of the technical aspect, scope of work etc, he shall at once contract the authority inviting the tender for clarification before the submission of the tender.
11.14	The bidder shall make independent enquiry as to the conditions and circumstance affecting his tender estimate and to the possibility of executing the supplies/ works as described. In assessing the tender it will be deemed that the bidder has inspected and examined the site and its surroundings and to have satisfied for the completion of the work and the means of transport and access to the site. The accommodation he may require, the general labour position at the site and to have fixed his prices taking into consideration the risk, contingencies and other circumstances which may influence or affect the execution of the contract.
11.15	Deviations from specifications technical as well as commercial will not normally be allowed. In case the bidder offers an alternative/ nearest equivalent equipment/ specifications, the bidder shall guarantee the performance of the same for the same conditions and ensure as specified in the technical specifications.
11.16	List of the deviations shall be given separately for technical and commercial aspects with specific mention to the clause of tender documents.
11.17	Reasons for such deviations are to be furnished.
11.18	If the proposal submitted has any assumption while making technical specification and scope the same shall be listed separately.
11.19	Deviation from terms and conditions contained in the tender document is not acceptable. However if it is must for the bidder to take deviations, the same shall be loaded while evaluating their offer.
11.20	Penalty for technical deviations/ power consumption etc. shall be twice the rate used for loading. This shall be over and above liquidated damages.
11.21	Tender will be evaluated taking into consideration financial advantages as available including those available from the ultimate owner.
11.22	Conditions and unwitnesses tenderers, tenders containing absurd or unworkable rates and amounts and tenders which are incomplete and otherwise considered defective and not in accordance with the tender conditions, specification, etc. are liable to be rejected.
11.23	BHEL will be not be bound by any power of attorney granted by the bidder or by changes in the composition of the firm made subsequent to the execution of the contract. They may however, recognise such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.
11.24	No correspondence shall be entertained from the bidder after the opening of Part-II price part of the tender.
11.25	Offer submitted by any bidder other than to whom the tender is issued shall be treated as unsolicited offer.
11.26	Tender when finalised shall be in the name of the bidder only and change of name during tender evaluation and after submission of the tender is liable to make his offer ineligible for participation.

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PART – II

GENERAL CONDITIONS OF CONTRACT

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GENERAL CONDITIONS OF CONTRACT

1.0	APPLICATION Unless otherwise provided in the Contract Documents, these General Conditions shall govern the works of the accompanying Technical Specifications. Special conditions of this volume shall be read in conjunction with these General Conditions and these conditions will form a part of the Contract Documents.
2.0	DEFINITION OF TERMS
2.1	In construing these General Conditions, Special conditions and accompanying Specifications the following words shall have the meaning herein assigned to them except where the context otherwise requires.
2.1.1	The “Owner / purchaser” shall mean _____, _____, _____, and shall include its successor in office, legal representative and permitted assigns.
2.1.2	“Vendee / BHEL” shall mean Bharat Heavy Electricals Limited, a Company registered under the Indian Companies Act 1956, with its Registered Office at BHEL House, Siri Fort, New Delhi, Power Sector, Eastern Region, Kolkata – 01, or its Administrative Officers or its engineer or other employees authorised to deal with any matter with which these persons are concerned on its behalf.
2.1.3	EXECUTIVE DIRECTOR / GENERAL MANAGER shall mean the officer in administrative charge of BHEL, Power Sector, Eastern Region or their other regional offices.
2.1.4	The “Bidder / Tenderer” shall mean well – established reputed Organizations, manufacturers, etc. having requisite financial and technical capability and experience participating in the Tender invited by BHEL for supply and delivery, erection, testing and commissioning of plant, equipment and strikes including associated civil, structural and architectural works complete as per applicable technical specifications.
2.1.5	The “Contractor” shall mean the successful Bidder / Tenderer who is awarded the Contract and shall be deemed to include the Contractor's successors, assigns, heirs, executors, administrators of representatives approved by the BHEL.
2.1.6	The “Sub-contractor” shall mean individual or firm to whom any part of the work has been Subletted by the Contractor with the consent in writing of BHEL & shall include his /its heirs, executors, administrators, legal representative and permitted assigns.
2.1.7	The “Engineer” shall mean an Officer of BHEL as may be duly appointed and authorised in writing by BHEL to act as “Engineer” on his behalf for the purpose of the Contract, to perform the duty set forth in this General Condition of Contract and other Contract Documents. Site incharge is empowered for such appointment.
2.1.8	The “Inspector” shall mean any firm or person as may be duly appointed and authorised in writing by BHEL / Purchaser from time to time to inspect plant and equipment, works and services under the Contract.
2.1.9	“Acceptance of Tender” shall mean Telegraph / Telex / Telefax Letter of Intent or Notification communicating to the Contractor the acceptance by BHEL of his tender.
2.1.10	“Contract Price” means the sum named in the tender subject to such additions thereto or deductions therefrom as may be made under the provisions hereinafter contained.
2.1.11	“Contract” shall mean the Agreement between the Contractor and BHEL for execution of the payment for the Work as defined in the Contract Documents.
2.1.12	The “Contract Documents” shall mean and include the General Conditions of Contract, Specifications and Schedules, Drawings. Form of Tender, Covering Letters, Schedule of Prices and Quantities submitted by the successful Bidder, Letter of Intent of BHEL, Drawings, subsequent amendments mutually agreed upon and the Agreement to be entered in to between BHEL and the Contractor duly signed by them under the Clauses “Contract” of these General Conditions and other documents that may form part(s) of the Contract Documents.
2.1.13	“Work or Works” shall mean the plant / equipment to be supplied and /or works to be done by the Contractor under the contract Documents.
2.1.14	“Plant” shall mean the portion of the Coal-fired Thermal Power Plant comprising of Unit no. with an installed capacity of MW each (including some other common facilities) being installed at, West Bengal (under the scope of this contract) which includes permanent equipment, machinery, apparatus, materials, articles and civil, structural and architectural works and things of all kinds to be provided under the contract documents.

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2.1.15	“Test” shall mean such test as is prescribed or considered necessary by BHEL/ purchaser whether performed or made by the Engineer or any Agency acting under the direction of the Engineer.
2.1.16	“Constructional Plant” means all appliances or things of what so ever nature required in or about the execution, completion or maintenance of the works or temporary works by the contractor at his own cost and risk (as hereinafter defined) but does not include materials or other things intended to form or forming part of the permanent work.
2.1.17	“Goods” shall mean plants, equipment or materials to be supplied under the Contract Documents.
2.1.18	“Temporary Work” shall mean all temporary works of every kind required in or about the execution, completion or maintenance of the work by the contractor at their cost and risk.
2.1.19	“Completion Time” shall mean the period by date/month specified in the acceptance of tender for handing over of the intended scope of work, erected equipment /plant, which are found acceptable by the engineer being of required standard, and conforming to the specifications of the contract.
2.1.20	“Consignees” shall mean the authorised representative or officer of the Purchaser / BHEL to whom the plant, equipment and materials are required to be delivered in the manner indicated in the Contract Documents.
2.1.21	The “Specification” or Specifications / Technical Specification shall mean all Specifications including technical specifications of, the Works and the Tender Drawings and schedules attached thereto and any modification made thereof.
2.1.2	“Drawings” shall mean drawings referred to in the contract Documents including modifications if any and such other drawings as may be from time to time furnished by the Contractor and approved by BHEL/purchaser.
2.1.23	“Site” shall mean the land and other places including existing roads, paths, etc put at the disposal of the contractor by BHEL/purchaser in connection with the execution of the Contract.
2.1.24	“Tests on Completion” Shall mean tests as are prescribed in the specifications and/or other tests as mutually agreed upon by BHEL/purchaser and the Contract to be carried out by the Contractor on erection of the plant to prove satisfactory performance as per Specification.
2.1.25	“Acceptance Test / Performance Guarantee Test” shall mean such test as are required to determine and demonstrate guaranteed capacity, efficiency and operating characteristics of the Plant as stipulated in the contract Documents.
2.1.26	“Commissioning” shall mean the first successful operation of the plant by the Contractor after all initial adjustments, Trials, Cleaning and reassembly required on completion of installation at the Site, if any, have been completed.
2.1.27	“Initial Operation”, “Reliability Run” or “Trial Run” shall mean the first continuous operation of the plant by the Contractor covered under the Contract with sub-systems under varying loads to demonstrate satisfactory operation for a specified period which shall not be less than fifteen (15) days.
2.1.28	“Commercial Operation” shall mean the conditions of operation in which all the equipment covered under the Contract are officially declared by BHEL / Purchaser, to be available for continuous operation at different loads and including rated capacity. Such declaration by BHEL/ Purchaser will be issued within thirty days after successful trial run made by the Contractor.
2.1.29	“Service” shall mean furnishing of labour and services as per specifications & supervision of complete erection, testing and putting equipment and materials to be supplied into satisfactory operation, supervision of inland transportation, loading, unloading & storage at the site as defined in the Contract Documents.
2.1.30	“Warranty Period” shall mean the period during which the Contractor shall remain liable for repair or replacement of any defective part of the plant supplied, Works done and services rendered under the Contract.
2.1.31	“Codes” shall mean the applicable International and Indian standards as on the date of letter of Intent and any subsequent modification thereof.
2.1.32	“Month” shall mean calendar month. ‘Day’ or ‘Days’ unless herein otherwise expressly defined shall mean calendar day or days of twenty four (24) hours each. A week shall mean continuous period of seven (7) days.
2.1.33	“Letter of Intent” shall mean BHEL’s letter or notification conveying his acceptance of the Tender subject to such conditions as may have been stated therein.
2.1.34	“Writing shall include any manuscript type or handwritten or printed statement, including Telex, Cable and facsimile transmission under or over signature or seal as the case may be.

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2.1.35	“Approved” or “Approval” shall include firms, companies, corporations and other bodies whether incorporated or not.
2.1.36	Words incorporating “Persons” shall include firms, companies, corporations and other bodies whether incorporated or not.
2.1.37	“Words” incorporating the singular only shall also include the plural and vice-versa where the context requires.
2.1.38	“F.O.B.” shall mean delivery free of expenses to the Purchaser / BHEL on board the vessel at the port of shipment.
2.1.39	“CIF price” shall mean delivery free of expenses to the purchaser /BHEL on board the vessel at the port of entry including the insurance coverage.
2.1.40	“F.O.R. Destination” shall mean delivery free of expenses to the Purchaser / BHEL on rail wagons at destination Railway Station or the purchaser’s siding as may be named.
2.1.41	“F.O.R. Works” shall mean loaded and stowed or trimmed free of expenses to the purchaser / BHEL on board rail wagons at the Contractor’s Works siding or the nearest Railway station for transportation.
2.1.42	“Tonne” shall mean 1000 Kilogram weight. “Gallon” shall mean Imperial gallon, unless otherwise mentioned specifically.
2.1.43	“Final Acceptance” mean the BHEL’s /purchaser’s acceptance of the work / plant completed in every respect as per terms of Contract Documents on expiry of the Warranty / guarantee / maintenance period.
2.1.44	Terms and conditions not herein defined shall have the same meanings as are assigned to them in the latest edition of Indian Sales of Goods Act / Indian Contract Act as applicable.
2.2	SINGULAR AND PLURAL Words importing the masculine gender or singular number shall also include the feminine gender and plural and vice versa where the context so requires.
2.3	HEADING OR NOTES The headings or notes in these conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or of the Contract.
2.4	LANGUAGE All documentation and correspondence regarding the Contract shall be in English language.
2.5	DOCUMENTS MUTUALLY EXPLANATORY Except if and to the extent otherwise provided by the Contract the provisions of Special Conditions of Contract shall prevail over General Conditions of Contract and over those of any other document forming part of the Contract. Subject to the foregoing the several documents forming the Contract are to be taken as mutually explanatory of one another but in case of ambiguities or discrepancies the same shall be explained and adjusted by the Engineer who shall thereupon issue to the Contractor instructions directing in what manner the Work is to be carried out.
3.0	SCOPE OF CONTRACT
3.1	The scope of work, if no otherwise mentioned in the Contract Document, shall be on the basis of a single contractor’s responsibility, completely covering all the equipment / work specified under the accompanying Technical Specification. Some of the salient features are detailed hereunder :-
3.1.1	Detailed design of all the equipment and sub-systems and work as per specification if specifically mentioned in “Special Conditions of contract Vol. II” / Technical specification.
3.1.2	Complete manufactures of all the equipment /subsystem including shop /field testing and assembly as per specification. Providing of special tools and tackles and services necessary for satisfactory execution of the contract.
3.1.3	Pre- assembly, if any, erection, testing & commissioning, trial run of all the equipment / subsystems at the site, test on completion, putting into commercial operation and maintenance during warranty period as specified etc.
3.1.4	Providing services including manpower assistance for performance guarantee tests on completion of commissioning as specified.
3.1.5	Planning construction, completion and maintenance of the Works and except in so far as the contract otherwise provides the provision of all labour, materials, supervision, storage, Constructional Plant, equipments, supplies, transportation to or from the site, fuel, electricity, Temporary works and everything whether of a temporary or permanent nature including civil, structural and architectural works as required in and for such construction, completion, maintenance and handing over of the Works except items specified to be furnished by BHEL or others, all in accordance with the stipulations laid down in the

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	Contract and additional drawings as may be provided by the engineer during execution of the works.
3.1.6	Even though all the work and materials necessary to the satisfactory completion of the Works may not be detailed in the Specifications and Schedule, their costs will be considered to be within the Contract and no extra charge will be accepted.
3.1.7	Except where otherwise specified the contractor shall at his own expenses supply and provide all the constructional plant, temporary works, materials, both for temporary and for permanent works, labour (including the supervision thereof) transport to or from the site and in an about the works and other things of every kind required for the construction, completion and maintenance of the works.
3.1.8	The contractor shall provide and maintain adequate portable fire fighting equipment on the site during the performance of the contract to the approval of the Engineer and the local fire authority. The work shall be executed in such a manner so as to minimize fire hazards.
3.2	ENABLING WORKS
3.2.1	The contractor shall, during the progress of the work, provide, erect and maintain at his own expenses all necessary temporary workshops, stores, site offices, roads, and access for the movements of his personnel and equipment, partitioning, temporary civil works, testing facilities required at site, temporary segregation within the site during the tenure of the contract, distribution of water and power, drainage etc and other temporary facilities which would be required including those required for fulfilling statutory provisions and any other requirements required for the proper and efficient execution of the work. The planning, sitting and erection of these buildings shall have the approval of the engineer and the contractor shall at all times keep them tidy and in a clean and sanitary condition to the entire satisfaction of the Engineer.
3.2.2	The contractor shall at his own cost provide office and other temporary accommodation for his staff and workmen including canteen facilities and sanitary accommodation, distribution of electricity and water etc.
3.2.3	If the contractor wishes to provide temporary housing and / or camp accommodation for his labour the contractor shall submit for prior approval by the Engineer plan of all accommodation he proposes to erect before any construction commences, the contractor will be responsible for all the costs associated with any temporary housing and/or camp accommodation provided by him.
3.2.4	On the completion of the works the contractor shall clear away and remove from the site all contractor's equipment, construction plant, surplus materials, rubbish and temporary works etc. of every kind and leave the whole of the site and works clean as a workman like condition to satisfaction of Engineer. All roads constructed and used under the contract including the access road shall be repaired and resurfaced where necessary and brought up to a condition satisfactory to the Engineer. The cost of carrying out such work shall be borne by the contractor and such work shall be completed in all respects within a period of 4 weeks from the date of completion of the works.
3.2.5	The contractor shall allow in his tender and provide at his cost all water and electricity required for the work of his employees of the work, together with all pipes, wiring and fittings or other means that may be necessary or required to ensure a proper and ample supply of water and electricity for all purposes connected with the work.
3.2.6	In the event of a provision existing in the tender documents for supply of water and electricity either free or on payment basis, the water and electricity will be supplied from the purchaser's/BHEL's supply system, or other sources at any point fixed by the Engineer on the site of work. The contractor shall make necessary arrangement for lifting, pumping, carrying or conveying the water and distribution of electricity in safe and sound manner as required at his own cost.
3.2.7	The contractor shall be responsible for the true and proper setting out of the works in relation to original points, lines and levels of reference given by the Engineer in writing and for the correctness (subject as above mentioned) of the position levels, dimension and alignment of all parts of the works and for the provision of all necessary survey, grid, pillars and bench marks, instruments, appliances and labour in connection therewith. If at any time during the progress of the work any error shall appear or arise in the position level dimensions or alignment of any part of the works, the contractor on being required to do so by the Engineer shall at his own expense rectified such error to satisfaction of Engineer. The checking of any setting out or of any line or level by the Engineer shall not in any way relieve the contractor of his responsibility for correctness thereof and the contractor shall carefully protect and preserve all survey grid pillars, bench marks, sight rails, pegs and other things used in setting out the works.

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4.0	CONTRACT PRICE
4.1	The Contract Price is the agreed sum of money stated in the Contract Documents to be paid to the Contractor for the successful completion of the Works in accordance with the terms of the Contract Documents. The Contract Price shall be for the entire scope of the Work with the break ups as specified. The individual item rates or lump sum price as the case may be in the schedule of this Contract shall be deemed to be firm for the entire period of the Contract or extended period of Contract and no escalation in the rates or price shall be permissible for any reason whatsoever unless otherwise specified. The Contract price shall not be varied in respect of the fluctuations in rate of wages or allowances payable to the labour in the cost of materials, consumables, water, fuel, power or freight rates or for the soil conditions subsequently discovered at site or for anticipated profit or alleged losses or for any reason whatsoever unless otherwise specifically mentioned.
4.2	NOTICES, FEES, STATUTES, REGULATIONS ETC
4.2.1	The contractor shall give notices and pay all taxes, fees, royalties etc required to be given or paid under any National or State Statute, Ordinance, other law or any regulation or bye-law of any local or other duly constituted authority in relation to the execution of the works or of any temporary works and by the rules and regulations of all public bodies and companies whose property or rights are affected or may be affected in any way by the works or any temporary works. In case BHEL is forced to pay any of such taxes and fees etc, BHEL shall have the right to recover the same from the money due to the contractor or other wise as deemed fit by BHEL.
4.2.2	The contractor shall conform in all respects with the provisions of any such statutes, ordinance or law as aforesaid and the regulations or bye-laws of any local or other duly constituted authority which may be applicable to the works or to any temporary works and with such rules and regulations of public and companies as aforesaid and shall keep BHEL indemnified against all penalties and liability of every kind for breach of any such statute, ordinance or law regulation or bye-law.
4.2.3	If the cost of the contractor of the performance of the contract shall be increased or reduced by reason of the making at any stage after the date of his tender of any statute, ordinance or law, regulation, bye-laws of the Govt. or any local or other duly constituted authority, the amount of such increase /decrease shall be borne by the contractor alone & No compensation on this account be entertained by BHEL except otherwise expressly provided.
4.2.4	While BHEL could pay the inspection fees, of the Boiler Inspectorate (wherever applicable), all other arrangement for the visits periodically by Boiler Inspector to site, inspection certificates etc. will have to be made by the contractor.
4.2.5	For specific consideration regarding Notices, Fees, statutes, Regulations etc, Special Condition of Contract shall be referred.
5.0	VARIATIONS AND VALUATIONS
5.1	QUANTITIES The quantities set out in the tender are the estimated quantities of the work but they are not to be taken as the actual and correct quantities of the works to be executed by the contractor in fulfillment of his obligations under the contract.
5.2	VARIATIONS The Engineer shall have power to make any variation in the form, quantity of the works or any part thereof that to in his opinion be necessary and for that purpose or if for any other reason it shall in his opinion be desirable shall have power to order the contractor to do and contractor shall do any of the following:
5.2.1	Increase or decrease the quantity of any work included in the contract.
5.2.2	Omit any such work.
5.2.3	Change the character or quality or kind of any each work.
5.2.4	Change the levels, lines, position and dimensions of any part of the works.
5.2.5	Execute additional work of any kind necessary for the completion of works.
5.2.6	No such variations shall in any way vitiate or invalidate the contract but the value (if any) of all such variations shall be taken into account in ascertaining the amount of contract price.
5.2.7	No such variations shall be made by the contractor without an order in writing of the Engineer. Provided that no order in writing shall be required for increase or decrease in the quantity of any work where such increase or decrease is not the result of an order given

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	under this clause but is the result of the quantities exceeding or being less than those stated in the bill of quantities. Provided also that if for any reason the Engineer shall consider it desirable to give any such order verbally the contractor shall comply with such order and any confirmation in writing of such verbal order given by the Engineer whether before or after the carrying out of the order shall be deemed to be an order in writing within the meaning of this clause. Provided further that if the contractor shall confirm in writing to the engineer any verbal order of the Engineer and such confirmation shall not be contradicted in writing by Engineer it shall be deemed to be an order in writing by the Engineer.
5.3	VALUATION OF VARIATION
5.3.1	If the rates for the additional, altered or substituted work are specified in the contract for the work, the contractor is bound to carry out the additional altered or substituted work at the same rates as are specified in the contract for the work.
5.3.2	If the rates for the additional, altered or substituted work are not specifically provided in the contract for the work, the rates will be derived from the rates for a similar class of work as specified in the contract for the work.
5.3.3	If the rates for altered, additional or substituted work cannot be determined in the manner specified in sub-clause 5.3.1 & 5.3.2 above, then the contractor shall within 7 days of the date of receipt of order to carry out inform the engineer on the basis of prevailing market rates when the work is done and the decision given in this behalf shall be final and binding on the contractor. Rate analysis will be worked on CPWD manual of rate analysis as guidance.
5.3.4	If the rates for the altered, additional or substituted work cannot be determined in the manner specified in also clauses 5.3.1 to 5.3.3 above, then the contractor shall within 7 days of the date of receipt of order to carry out the work inform the engineer of the rate at which it is his intention to charge for such class of work, supported by analysis of rate or rates claimed, and the engineer shall determine the rate or rates on the basis of prevailing market rates and pay the contractor accordingly.
5.3.5	However, the engineer, by notice in writing, will be at liberty to cancel his order to carry out such class of items of work and arrange to carry it out in such manner as he may consider advisable. But under no circumstances the contractor shall suspend the work on the plea of non-settlement falling under the clause or claim any compensation on this account.
5.3.6	VARIATION EXCEEDING SPECIFIED PERCENT If the net effect of all variations (other than those arising by reason of any clause relating to variations in price of materials and/or labour) shall be found on completion of the whole of the works to result in a reduction or an addition greater than 30 percent of the sum named in the tender the amount of contract price shall be amended by such sum as shall be agreed upon between the Engineer and the contractor. In the event of disagreement, the Engineer shall fix such sum as shall in his opinion be reasonable & proper regard being had to all material and relevant factors including the contractor's cost & overhead. The contractor shall be obliged to accept such sum as fixed by the Engineer.
5.4	DAY WORK
5.4.1	The Engineer may if in his opinion it is necessary or desirable order in writing that any additional or substituted work shall be executed on a day work basis. The Contractor shall then be paid for such work under the conditions set out in the day work schedule including in the bill of quantities and at the rates and prices affixed thereto by him in his tender.
5.4.2	The contractor shall furnish to the Engineer receipts or other vouchers as may be necessary to prove the amount paid and before ordering materials shall submit to the Engineer quotations for the same for his approval.
5.4.3	In respect of all work executed on a day work basis the contractor shall during the continuance of such work deliver each day to the Engineer an exact list in duplicate of the names, occupation and time of all workmen employed on such work and a statement also in duplicate showing the description and quantity of all materials and plant used thereon or therefore (other than plant which is included in the percentage addition in accordance with the schedule here-in-before referred to). One copy of each list and statement will if correct or when agreed be signed by the Engineer and returned to the contractor.
5.4.4	At the end of each month the contractor shall send to the Engineer a priced statement of labour, material and plant (except as aforesaid) used and the contractor shall not be entitled to any payment unless such lists and statements have been fully and punctually rendered. Provided always that if the Engineer shall consider that for any reason the sending of such list or statement by the contractor in accordance with the foregoing provision was impracticable he shall nevertheless be entitled to authorize payment for such work either as

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	day work (on being satisfied to the time employed and plant and materials used on such work) or at such value therefore as shall in his opinion be fair and reasonable.
5.4.5	The contractor shall send to the Engineer once in every month an account giving full and detailed particulars of all claims for any additional expenses to which the contractor may consider himself entitled and all extra or additional work ordered by the Engineer which he has executed during the preceding month and no claim for any such work will be considered which has not been included in such particulars. Provided always that if the Engineer shall be entitled to authorize payment to be made for any such work notwithstanding the contractor's failure to comply with this condition if the contractor has at the earliest practicable opportunity notified the Engineer in writing that he intends to make claim for such work.
6.0	COMMENCEMENT OF WORK, COMPLETION TIME, PROGRESS AND COMPLETION OF WORK
6.1	The time and date of completion of the work as stipulated in the contract document shall deemed to be the essence of the Contract. The contractor shall commence the works on site within the period named in the letter of intent issued by BHEL and shall proceed with the same with due expedition and without delay except as may be expressly sanctioned or ordered by the Engineer. If the contractor fails to commence the work within the stipulated time, BHEL at his sole discretion will have the right to cancel the contract. In such an event the contractor's earnest money and security deposit with BHEL will stand forfeited without any further reference to the contractor, without prejudice to any and all of the BHEL's other rights and remedies in this regard. The contractor shall so organize his resources and perform so as to complete the work not later than the aforesaid date of completion. The time for completion shall always be reckoned from the effective date of contract.
6.1.1	The Contractor shall submit a PERT Network showing various key phases of the work such as design, procurement, manufacturing, shipment, field erection and construction activities within thirty (30) days after the date of Letter of intent. This network shall also indicate the interface facilities to be provided by the purchaser /BHEL and the dates by which such facilities are needed by the contractor and also the programme for phase wise release of work site for construction work as may be needed by the contractor.
6.1.2	The Contractor shall discuss the network so submitted with BHEL. The agreed network may be in the form as submitted or in revised form in line with the outcome of discussions any shall form a part of the contract documents.
6.1.3	The above PERT network shall be reviewed periodic review reports shall be submitted by the Contractor to BHEL as directed by him.
6.1.4	The Contractor shall make available to BHEL detailed manufacturing, erection, testing and commissioning and construction programmes in line with the agreed PERT Network in the form of PERT or Bar Chart as desired by BHEL within 30 days from the date of receipt of LOI During performance of the contract, such programmes shall be renewed, updated and submitted to BHEL as and when needed by him or periodically as specified by him. If in the opinion of BHEL proper progress is not maintained, suitable changes shall be made in the Contractor's operation to ensure proper progress.
6.2	Should the amount of extra or additional work of any kind or other special circumstances of any kind whatsoever which may occur be such as fairly to entitle the contractor to an extension of time for the completion of the work the Engineer shall determine the period of such extension. The contractor shall have no claim against BHEL in respect of revision in delay and disorganization of work even if the extension of time is granted, except where such claim is expressly allowed in the Contract.
6.3	NIGHT AND HOLIDAY WORK Subject to any provision to the contrary contained in the Contract, none of the permanent work shall, save as hereinafter provided, be carried on during the night or on Sundays or other holidays without the permission in writing of the Engineer save when the work is unavoidable or absolutely necessary for the saving of life or property or for the safety of the works in which case the contractor shall immediately advise the Engineer or Engineer's representative. Provided always that the provisions of this clause shall not be applicable in the case to any work which it is customary to carry out by rotation of double shifts. The whole of the materials, plant and labour to be provided by the contractor in night and holiday work under this clause and the mode, manner and speed of execution and maintenance of the works are to be of a kind and conducted in manner approved by the Engineer. Should the rate of progress of the works or any part thereof be at any time in the opinion of the Engineer is too slow to ensure the completion of the work by the prescribed time for completion. If the work is not being carried on by day described and by night and

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	the contractor shall request permission to work by night and on Sundays and other holidays as well as by day, then, if the Engineer shall grant such permission the contractor shall not be entitled to any additional payment for doing so. All work at night shall be carried out without reasonable noise and disturbance. The contractor shall indemnify BHEL from and against any liability for damages on account of noise or disturbance created while carrying out the work and from against all claims, demands, proceedings, damages, costs, charges and expenses what so ever in regard or in relation to such liability.
6.4	PROGRESS REPORTS AND PHOTOGRAPHS
6.4.1	The Contractor shall furnish eight (8) prints each of monthly progress reports as approved by BHEL and photographs of the work done. Photographs shall be taken when and where indicated by the Engineer or his representative. Photographs shall be approximately 100mm × 125mm in size including margin of for fixing. Adequate number of photographs shall be submitted indicating various stages of manufacture and/or installation as applicable. Each photograph shall contain the date, the name of the Contractor and the title of the view taken.
6.4.2	Monthly progress report shall be submitted. These shall detail the status of design, drawings, procurement of raw materials and manufacture of the equipment and delivery of the equipment and also status of erection, testing and commissioning work as applicable. BHEL shall advise the Contractor about the progress schedule and photographs he has to submit each together with the names and addresses of persons to whom they are to be sent. The Contractor shall also furnish actual progress against schedule and such other information as BHEL may require to satisfy himself about the timely manufacture and delivery of equipment and timely construction and erection work to suit the commissioning date. The report shall also indicate the reasons for the variance between the schedule and actual progress and the action proposed for corrective measure wherever necessary.
6.4.3	The submission and acceptance of the photograph and/or reports shall not prejudice the rights of BHEL in any manner.
6.4.4	In the event of contractor's continued poor work progress, BHEL shall at his option treat it as breach of contract by the contractor. In such case it shall be open to BHEL to have the work completed through any other agency / agencies & claim the difference in cost in addition to damages from the contractor without prejudice to any other right / remedy of BHEL under this contract.
6.5	COMPENSATION FOR DELAY
6.5.1	Time and scope are the essence of the Contract. If the contractor fails to maintain the required progress of work as per contract or to complete the work and clear the site within the time prescribed by the Contract (Contractual Completion period), he shall without prejudice to any other right or remedy of BHEL on account of such breach, the contractor agrees to pay compensation (penalty) to BHEL. The above agreed compensation shall be a penalty equivalent to 1/2 % (half percent) of the total executed contract price for service part (irrespective of lump sum or item-rate contract or others) per week or part thereof of the delay subject to a maximum of 10% (ten percent) of the total executed contract price (for the supply & service parts). Note-1 : The cumulative LD for the supply & service part shall be limited to 10% of the executed contract value (for the supply & service parts).
6.5.2	BHEL shall deduct the amount of such compensation from any money due or which may become due to the contractor and/or recover such compensation from the bank guarantees / security deposit of the contractor. To be entitled to impose such compensation, BHEL will not be required to prove that he has incurred such amount as actual damage.
6.5.3	REDUCTION OF COMPENSATION FOR DELAY If before the completion of the whole of the works any part of the works has been certified by the Engineer as completed pursuant to clause "completion certificate" hereof and occupied or used by BHEL the compensation for delay shall for any period of delay after such certification be reduced at the discretion of BHEL in proportion which the value of the part so certified bears to the value of the whole of the works.
6.6	TEST ON COMPLETION
6.6.1	Tests on completion at site will be undertaken by the contractor in accordance with the detailed requirements of the contract. The contractor shall after consulting the engineer give to the engineer in writing 21 days notice after which he will be ready to make the test on completion. Unless other wise agreed the tests shall take place within 10 days after the said date on such day or days as the engineer shall in writing notify the contractor.
6.6.2	If the engineer fails to appoint a time after having been asked so to do or attend at any time

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	or place duly appointed for making the said tests the contractor shall be entitled to proceed in his absence and the said tests shall be deemed to have been made in the presence of the Engineer.
6.6.3	If in the opinion of the engineer the tests are being unduly delayed he may, by notice in writing call upon the contractor to make such tests within 10 days from the receipt of the said notice, and the contractor shall make the said tests on such days written the said 10 days as the contractor may fix and of which he shall give notice to the Engineer. If the contractor fails to make such tests within the time aforesaid the Engineer may himself proceed to make the tests. All tests so made by the Engineer shall be at the risk and expense of the contractor.
6.6.4	The contractor shall provide such assistance, labour, materials, electricity, fuel, storage, instruments and apparatus as are required to complete the tests. If it is not possible to carry out these tests prior to taking over, then BHEL reserves the right to call for these tests prior to taking over and the procedure to carry out the tests shall be subject to mutual agreement between BHEL and the contractor.
6.6.5	The necessary tests shall be repeated for any repaired or replaced portions of the work. If any portion of the works fails to pass the tests, tests of the said portion, shall if required by the Engineer, or contractor be repeated within a reasonable time upon the same terms and conditions.
6.7	COMPLETION CERTIFICATE As soon as in the opinion of the Engineer the works shall have been substantially completed and shall have satisfactorily passed any final tests that may be prescribed under the contract the Engineer shall on receiving a written undertaking by the contractor to finish any outstanding work within six months issue a certificate of completion in respect of the works. Provided that the Engineer may give such a certificate with respect to any part of the works before the completion of the whole of the works and shall upon the written application of the contractor give such certificate with respect to any substantial part of the works which has been both completed to the satisfaction of the Engineer and occupied or used by BHEL and when any each certificate is given in respect of a part of the works such parts shall be considered as completed. Provided also that a certificate of completion given in accordance with the foregoing provisions of any part of the works occupied and used as aforesaid shall not be deemed to certify completion of any ground or surfaces requiring reinstatement unless such certificate shall expressly so state. Provided however, the issue of a certificate of completion of works shall not absolve the contractor of his responsibility in respect of any defect discovered subsequent to the completion of the work and the commissioning of the project.
6.8	USE BEFORE COMPLETION CERTIFICATE
6.8.1	If, by reason of any default on the part of contractor, a completion certificate has not been issued in respect of every portion of the works as mentioned above within one month after the time for 'completion or extended time as the case may be, BHEL shall be at liberty to use the works or any portion thereof in respect of which a completion certificate has not been issued, provided that the works or the portion so used as aforesaid shall be reasonably capable of being used and that the contractor shall be afforded the earliest opportunity of taking such steps as may be necessary to permit the issue of the certificate of completion.
6.8.2	BHEL shall be at liberty from time to time or at any time before the completion of the work to take possession of and use any part of the sites or of incomplete works and in such case the contractor shall completely finish the said incomplete parts or part of the works as and when the Engineer shall direct whether before or after the respective prescribed time or extended time or times (if any) for the completion of the works and if required by the Engineer while BHEL is in possession of the said part or parts of the site or works.
6.9	REJECTION OF DEFECTIVE PLANT
6.9.1	If the completed plant or any portion thereof, before it is taken over under clause "taking over" or during the guarantee / warranty period, be found defective or fails to fulfil the requirement of the contract, the Engineer shall give the contractor notice setting forth particulars of such defects or failure, and the contractor shall forthwith make the defective plant good or after the same to make. It comply with the requirements of the contract. Should he fail to do so within a reasonable time, BHEL after giving seven (7) days written notice may reject and replace at lost of the contractor the whole or any portion of the plant, as the case may be, which is defective or fails to fulfil the requirements of the contract. The contractor's full and extreme liability under this clause shall be satisfied by the payment to BHEL of erection plus difference, if any between the replacement price of the equipment

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	including charges for erection and supervision of erection and the original contract price including charges for erection and supervision of erection in respect of such defective plant.
6.9.2	In the event of such rejection, BHEL shall have the right to operate any and all equipment as long as it is in operating condition, whether or not, such equipment has been accepted as complete and satisfactory, to enable him to obtain necessary replacement except that this shall not be construed to permit operation of any equipment which may become damaged by such operation before any required alterations or repairs and/or replacements have been made. All repairs or alternations or replacement required of the contractor shall be made by the contractor at such times as directed and in such a manner as will cause the minimum interruption in the time of the equipment. Should the contractor not so replace the rejected plant within the time frame as directed by the Engineer, upto the requirements of the specification, the contractor's full and extreme liability under this clause will be satisfied by the payment of all money paid by BHEL to him in respect of such plant.
6.9.3	Nothing in this clause shall be deemed to deprive BHEL or, effect any right under the contract which he may otherwise have in respect of such defects or deficiencies or in any way relieve the contractor of his obligation under the contract.
6.10	TAKING OVER
6.10.1	Upon successful completion of all the tests to be performed at the site on equipment, system and material furnished and erected by the contractor and on completion of successful trial run, BHEL shall issue to the contractor a taking over certificate. Issuance of such much certificate shall not be reasonably with held on account of minor omission or defects which do not affect the commercial operation and/or causes any serious risk to the equipment and system provided the contractor gives an undertaking to rectify such defects /omission within a reasonable period of time. Unless until a final acceptance certificate is issued on completion of warranty / guarantee period by BHEL /purchaser, the contractor shall not be relieved of any of his obligations, duties, responsibilities under the terms and conditions of the contract including insurance as specified elsewhere in the contract documents. The taking over by BHEL / the purchaser may be for each unit completed in all respects for commercial operation at the discretion of BHEL/ the purchaser.
6.10.2	BHEL reserves the right of taking over such buildings as the administrative building, ware house, garages, machine shop etc constructed by the contractor and ready for the use by BHEL / the purchaser prior to taking over certificate of any, plant.
7.0	COMPETENCE AND GUARANTEES
7.1	Contractor shall have sound technical and financial capabilities and possess recognized experience in executing the works of similar kind and magnitude. The contractor shall properly fill in the various schedules and proformas prescribed in the tender document. Non submission of the information in the prescribed schedules and proformas may lead to rejection of the bid.
7.2	EARNEST MONEY DEPOSIT (EMD)
7.2.1	Every tender must be accompanied by the prescribed amount of Earnest Money Deposit as indicated in the tender enquiry letter, in any of the following forms. (All securities are to be discharged and pledged in favour of BHEL). Note: Cheque, Money order, postal order or bank guarantee will not be accepted.
7.2.2	The amount shall be remitted by the bidder in cash (as permissible under Income Tax Act) to the cashier of Bharat Heavy Electricals Limited, Power Section, Eastern Region. Kolkata and cash receipt issued by BHEL shall be enclosed alongwith the tender.
7.2.3	Pay orders, demand draft payable at Kolkata duly pledged in favour of Bharat Heavy Electricals Limited .
7.2.4	Tenders received without earnest money in full in the manner prescribed above are liable to be rejected.
7.2.5	The Earnest money deposit of the successful tenderer paid in cash /DD/pay order shall be retained towards part of Security Deposit.
7.2.6	In the case of unsuccessful tenderers, the Earnest Money shall be refunded within a reasonable time after acceptance of award of work by the successful tenderer.
7.2.7	BHEL reserves the right of forfeiture of earnest money deposit in case the tenderer:
7.2.7.1	After opening of the tender, the tenderer revokes his tender within the validity period or increases his earlier quoted rates .
7.2.7.2	Fails to commence work within the period as specified in Letter of Intent or communicate the unqualified acceptance of Letter of Intent within 15 days of date of the Letter of Intent.
7.3	SECURITY DEPOSIT (SD)
7.3.1	Upon acceptance of tender, the successful tenderer within the time specified in the letter of intent must deposit required amount as security deposit for satisfactory completion of work

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	and shall not commence work under the contract before remitting security deposit except as directed by BHEL.	
7.3.2	The amount of Security Deposit shall be as follows:	
	a) In the case of work upto ten lakhs	10%
	b) In the case of work costing above Rs. 10 lakhs upto Rs. 50 lakhs	Rs. 1 [One] lakh plus 7.5% of the the amount exceeding Rs 10 lakhs.
	c) Above Rs 50 lakhs	Rs. 4 [Four] lakhs plus 5% of the the amount exceeding Rs 50 lakhs.
7.3.3	The Security deposit may be deposited in any of the following form:	
7.3.3.1	The total Security Deposit as indicated in the letter of intent can be paid in cash(as permissible under the Income Tax Act)/Pay Order or Demand Draft (in favour of Bharat Heavy Electricals Limited payable at Kolkata)/local cheques of Scheduled Banks (subject to realization) to BHEL, Power Sector, Eastern Region, Kolkata within the time limit stipulated in the letter of intent.	
7.3.3.2	The security deposit as indicated in letter of intent can be paid in the form of bank guarantee from Scheduled Banks/ Public Financial Institutions as defined in the Companies Act in the prescribed proforma, validity being upto completion of work as stipulated in letter of intent or stipulated otherwise in the proforma, whichever is later. The bank guarantee furnished towards security deposit should be kept valid by proper renewal till said work is actually completed.	
7.3.3.3	The security deposit may be submitted through securities from Post Offices such as National Savings Certificates/Kisan Vikas Patras etc. (certificates should be held in the name of the contractor furnishing the security and duly pledged in favour of Bharat Heavy Electricals Limited, Power Sector, Eastern Region, Kolkata and discharged on the back).	
7.3.3.4	The security deposit may be submitted by Fixed Deposit Receipt issued by Scheduled Banks/Public Financial Institutions as defined in the Companies Act. The FDR should be in the name of the contractor, A/C Bharat Heavy Electricals Limited, Power Sector, Eastern Region, Kolkata, duly discharged on the back.	
7.3.3.5	The security deposit can be recovered by deduction from running bills @ 10% of the value of each running bills till the full Security Deposit is made up. However, in such cases at least 50% of the Security Deposit should be deposited before start of work and the balance may be recovered from RA bills.	
7.3.3.6	Acceptance of security deposit against sl. No. 7.3.3.3 & 7.3.3.4 above will be subject to hypothecation or endorsement on the documents in favour of BHEL. However, BHEL will not be liable or responsible in any manner for collection of interest or renewal of the documents or in any other matter connected therewith.	
7.3.3.7	If the value of the work done at any time exceeds accepted agreement value, the security deposit shall be correspondingly enhanced and the extra security deposit shall be immediately deposited by the contractor or recovered from payments due to him.	
7.3.3.8	Earnest Money deposit of the successful tenderer can be converted and adjusted against the Security Deposit.	
7.3.3.9	Failure to deposit security money within stipulated time may lead to forfeiture of Earnest Money and cancellation of award of work.	
7.3.3.10	If any parts of security deposit of the contractor is held in the form of approved securities, it shall be kept transferred in the name of Bharat Heavy Electricals Limited, Power Sector, Eastern Region, Kolkata in such a manner the BHEL can realize it fully without reference to the contractor. BHEL shall not be responsible for any depreciation in the value of the security while in BHEL's custody or for any loss of interest thereon.	
7.3.3.11	BHEL reserve the right of forfeiture of security deposit in addition to other claims and penalties in the event of the contractor's failure to fulfil any of the contractual obligations (including liquidation or bankruptcy of the contractor, non-payment of money payable by means of arbitration award in favour of BHEL) or in the event of termination of contract as per terms and conditions of contract. BHEL reserve the right to set off these security deposit, against any claims of any other contract with BHEL.	
7.3.3.12	In case of small value contracts not exceeding Rs.10 lakhs and all SAS jobs, work can be started before Security Deposit is collected. However, payment can be released only after collection / recovery of initial 50% Security Deposit.	
7.3.3.13	If the final price of successful bidder is lesser by 'more than 30%' of BHEL's estimate and the difference between the price of L-1 & L-2 is more than 10% of BHEL's estimate then only, 'Additional Security Deposit' will be required to be submitted by the successful bidder with value as follows:	

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	Additional Security Deposit = “30 % of (A-B)” limited to minimum 5% & maximum 10% of the ‘Total Price/Contract Value’, where, A = 80% of BHEL estimate B = The final offered price of successful bidder through RA (In case of RA) OR Sealed paper price bid of successful bidder (in case of paper bid) This ‘Additional Security Deposit’ shall have the same validity as that of the ‘Security Deposit’ and shall be revalidated/released in the manner as spelt out for the ‘Security Deposit’ as per relevant clause of GCC. The BHEL’s estimated value shall be disclosed to the successful bidder (on their request) at appropriate juncture in case ‘Additional Security Deposit’ is applicable.
7.3.4	Return of Security Deposit If the contractor duly performs and completes the contract in all respects to the entire satisfaction of BHEL and presents an absolute no Demand Certificate in the prescribed form and returns properties belonging to BHEL taken / borrowed or hired by him for carrying out the said works, half of the amount of Security Deposit will be released to the contractor after deducting all costs of expenses or other amounts that are to be paid to BHEL under this or other contracts entered into with the contractor. It may be noted that in no case the Security Deposit shall be refunded/released prior to passing of final bill. Balance half of the amount of Security Deposit will be released only after the satisfactory completion of Warranty / Guarantee Period as per terms of specification.
7.3.5	No interest shall be payable by BHEL on earnest money / security deposit or any money due to the contractor by BHEL.
7.4	PERFORMANCE BOND
7.4.1	In addition to the security deposit the contractor shall provide to BHEL bank guarantee of an approved nationalized bank for an amount equal to 5% of the contract price as performance bond (under the terms of a bond) within 30 days from the date of LOI and the terms of the said bond shall be such as shall be approved by BHEL. The bond shall remain valid until 6 month after the expiry of warranty / guarantee period. The obtaining of such guarantee and the cost of bond to be so entered into shall be at the expense in all respects to the contractor.
7.4.2	BHEL reserve the right of forfeiture of the above bond in addition to other claims and penalties in the event of the contractor’s failure to fulfil any of the contractual obligations or in the event of termination of contract as per terms and conditions of contract. BHEL reserve the right to set off this bond against any claim of any other contract with BHEL.
7.4.3	However, this Performance Bond clause will not be applicable for works involving erection, testing & commissioning of BHEL supplied equipment. This shall be applicable to the portion of the contract price for the contractor supplied equipment (including installation of the same, if applicable) which is installed in the main plant unless otherwise specified elsewhere.
8.0	DRAWING, DOCUMENTS AND INSTRUCTIONS
8.1	The contractor shall be responsible wherever applicable, for developing detail drawing to adopt equipment and materials to be supplied to the requirement, indicated in the specification and shall submit a list of such drawings and programme for submission of these drawings within 30 days from the date of LOI.
8.1	Within a reasonable time not exceeding 30 days from the date of LOI the contractor shall also provide BHEL with the following drawings and data as applicable.
8.2.1	Eight (8) marked up copies of technical particulars conforming to the specification.
8.2.2	Outline drawings of all equipment together with weights and sufficient overall dimensions.
8.2.3	Other drawings & data as indicated in different sections of the tender document.
8.2.4	The contractor shall within 3 weeks from the date of LOI submit for approval of BHEL the original copies of Codes and Standards which shall govern the design, manufacture, construction, erection, testing, commissioning and trial operation of the plant as applicable under scope of contract.
8.2.5	The contractor shall within 30 days from the data of LOI furnish inputs for civil packages, basic design data etc as applicable.
8.3	DRAWING SUPPLIED BY BHEL
8.3.1	The drawings supplied by BHEL shall remain in the sole custody of the Engineer but 2 copies thereof shall be furnished to the Contractor free of cost. The contractor shall provide

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	and make at his own expense any further copies required by him. At the completion of the Contract the Contractor shall return to the Engineer all drawings and specifications provided under the Contract.
8.3.2	One copy of the Drawings furnish to the Contractor and aforesaid shall be kept by the Contractor at the Site and the same shall at all reasonable times be available for inspection and use by the Engineer and the Engineer's Representative and by any other person authorised by the Engineer in writing.
8.3.3	The Engineer shall have full power and authority to supply to the Contractor from time to time during the progress of the works such further drawings and instructions as shall be necessary for the purpose of the proper and adequate execution and maintenance of the works and the Contractor shall carry out and be bound by the same.
8.3.4	The detailed drawings, specifications, instruction manual, if any, available with the Engineer will form part of tender specification. These documents will be made available for reference only to the contractor during execution of work.
8.3.5	Should any error or ambiguity be discovered in the specification or information, the contractor shall forthwith bring the same to the notice of BHEL before commencement of work. BHEL's interpretation in such cases shall be final and binding contractor.
8.4	MISTAKE IN DRAWINGS The Engineer shall have the right at all reasonable times to inspect at the office/premises of contractor all shop and/or details drawings of the works or any portion of the works. The contractor shall be responsible for and shall pay alterations of the work due to any discrepancies, errors or omission in the drawings or other particulars supplied by him whether such drawings or particulars has approved by the Engineer or not, provided that such discrepancies, errors or omissions be not due to inaccurate information or particulars furnished to the Contractor by the Engineer, in which event BHEL shall pay for any alternations of work necessitated by reason of inaccurate information supplied by the Engineer to the Contractor.
9.0	MATERIALS AND WORKMANSHIP
9.1	MATERIALS AND WORKMANSHIP FOR MANUFACTURER
9.1.1	All Good to be supplied and all works to be done by the contractor under the contract shall be manufactured and executed in the manner stipulated in the specification or where not specified, to the satisfaction of the Engineer. All materials used in the manufacture of the plant shall be selected from the best available for the purpose, considering strength, durability and best engineering practice, free from defects and imperfection and of recent manufacturer and unused. Liberal factors of safety shall be used throughout the design and specially in the design of all parts subject to alternating stresses or shorts.
9.1.2	All the works shall be performed and completed in a thorough workman like manner and shall follow the best modern practice in the manufacturer of high grade equipment notwithstanding any omission in the specification.
9.1.3	Casting shall be free from blow holes, claws, cracks or other defects and shall be smooth, close-grained and of true forms and dimensions. No plugged or filled-up holes or other defects will be allowed. Such casting are liable to be rejected. However, the contractor may rectify minor casting defects by welding or other method in accordance with the standing manufacturing practice provided such rectification does not affect the strength of the casting or impair with the efficient working of the plant and prior approval or BHEL is obtained for the same.
9.2	WORK MATERIALS, WORKMANSHIP AND TESTS
9.2.1	All materials including construction materials, structural steel and workmanship shall be of the respective kinds described in the contract documents and in accordance with the Engineer's instruction and shall be subjected to from time to time to such tests as stipulated in the approved quality assurance plan and as the Engineer may direct at the place of fabrication or on the site or at all or any of such places. The contractor shall provide such assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any materials used and shall supply samples of materials before incorporation in the work for testing as may be selected and required by the Engineer. The contractor shall establish at site testing facilities adequate for the above purpose. Collection of samples and testing as specified in the contract documents including special test, if any shall be carried out by the contractor at his cost.
9.2.2	The Contractor shall carry out tests of materials of finished work as stipulated in the Technical Specification as applicable and as the Engineer in writing may require and shall also supply samples necessary for this purpose.

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9.2.3	Cost of Tests The cost of making test including may supply if required shall be borne by the Contractor if such test is clearly intended by or provided for in the specification or bill of quantities and (in the cases only of a test under load or of a test to ascertain whether the design of any finished or partially finished work is appropriate for the purposes which it was intended to fulfill) is particularised in the specification or bill of quantities in sufficient detail to enable Contractor to price or allow for the same in his Tender.
9.2.4	Cost of tests not provided for etc If any test is ordered by the engineer which is either:
9.2.4.1	Not so intended by or provided for or
9.2.4.2	(in the cases above mentioned) is not so particularized or
9.2.4.3	Though so intended or provided for is ordered by the Engineer to be carried out by an independent person at any place other than the site or the place of manufacture or fabrication of the materials tested. Then the cost of such test shall be borne by the Contractor if the test shows the workmanship or materials not to be in accordance with the provisions of the contract or the Engineer's instructions but otherwise by BHEL.
9.2.5	EXAMINATION OF WORK BEFORE COVERING UP
9.2.5.1	No work shall be covered up or put out of view without the examination and approval of the Engineer or the Engineer's representative and the contractor shall afford full opportunity for the Engineer or the Engineer's representative to examine and measure any work which is about to be covered up or put out of view and to examine foundations before permanent work is placed thereon. The contractor shall give 15 days notice to the engineer's representative whenever any such work or foundation is or are ready or about to be ready for examination and the Engineer's representative shall without unreasonable delay, unless he considers it unnecessary and advises the contractor accordingly, attend for the purpose of examine and measuring such work or of examining such foundations. Provided, however, that such examination by the Engineer or his representative shall not absolve the contractor of his obligation in respect of the work so examined and notwithstanding such examination, the contractor shall remain wholly liable in the event of such foundation or work not being in accordance with specification.
9.2.5.2	The contractor shall uncover any part or parts of the works, make openings in or through the same as the Engineer may from time to time direct and shall reinstate and make good such part or parts to the satisfaction of the Engineer. If any such part or parts have been covered up or put out of view after compliance with the requirements of this sub-clause and are found to be executed in accordance with the contract, the expenses of uncovering, making opening in or through, reinstating and making good the same, shall be borne by BHEL as mutually agreed upon but in any other cases all such expenses shall be borne by the Contractor and shall be recoverable from him by BHEL or may be deducted by BHEL from any money due or which may become due to the contractor.
9.2.6	Improper Work and Material
	The Engineer shall during the progress of the works have power to order in writing from time to time.
9.2.6.1	The removal from the Site within such time or times as may be specified in the Contract Documents of any material which in the opinion of the Engineer are not in accordance with the Contract Documents.
9.2.6.2	The substitution of proper and suitable materials, and
9.2.6.3	The removal and proper re-execution (notwithstanding any previous test thereof or interim payment therefore) of any work which in respect of materials or workmanship is not the opinion of the Engineer in accordance with the Contract Documents. In case of default on the part of the Contractor in carrying out such order BHEL shall be entitled to employ and pay other persons to carry out the same and all expenses consequent thereon or incidental thereto shall be borne by the Contractor and shall be recoverable from him by BHEL or may be deducted by BHEL from any money due or which may become due to the contractor.
10.0	POSSESSION OF SITE Save in so far as the contract may prescribe the extent of portion of the site of which the contractor is to be given possession from time to time & the order in which such portions shall be made available him and subject to any requirement in the contract as to order in which the works shall be executed, BHEL or the purchaser will with the Engineer written order to commence the works give to the contractor possession of so much of the site as may be required to enable the contractor to commence & proceed with the construction of the works in accordance with the programme & otherwise in accordance with such

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	reasonable proposals of the contractor as he shall by notice in writing to the Engineer make and will from time to time as the works proceed give the contractor possession of such further portions of the site as may be required to enable the contractor to proceed with the construction of the works with due dispatch in accordance with the said programme or proposals (as the case may be). If the contractor suffers delay or incurs expenses from failure on the part of BHEL or the purchaser to give possession in accordance with the terms of this clause the Engineer shall grant an extension of time for the completion of works. No financial compensation whatsoever shall be payable by BHEL on this account.
10.1	WAYLEAVES The contractor shall bear all expenses and charges for special or temporary way leaves required by him in connection with access to site. The contractor shall also provide at his own cost any additional accommodation outside the site required by him for purposes of the works.
10.2	LAND BHEL/ the purchaser will provide the land required for the permanent works and contractor may, where approved by the Engineer, use the same for temporary purposes. In case of land required for temporary purposes, such as workshop, workyard, offices, storage of materials and the like, the Engineer will, on application being made, point out the area that can be used for these purposes. No land belonging to the purchaser or under temporary the possession of BHEL shall be occupied by the contractor without the written permission of BHEL. BHEL however reserves the right to ask the contractor to vacate the area/land earlier allowed for use or to shift to another area during the period of the contract, without assigning any reasons therefore and the contractor shall be bound to comply without demur and within the time limit specified by BHEL.
11.0	COMPLETENESS OF EQUIPMENT
11.1	The equipment shall be completely installed in every respect with all mountings, fixtures and standard accessories which are normally supplied even though not specifically detailed in the Specification. The Contractor shall not be eligible for any extra payment in respect of such mountings, fittings, fixtures and accessories if needed for safe operation of the equipment as required as per applicable codes through they may not have been included in the Contract.
11.2	Parts of all similar equipment supplied shall be interchangeable with one another.
11.3	ALL the equipment supplied under this contract shall be subject to BHEL/Purchaser's approval according to applicable stipulations set-forth in the specifications.
12.0	ISSUE OF CERTIFICATE
12.1	Certificate of BHEL
12.1.1	Every application to BHEL for a certificate must be accompanied by a details invoice (in quadruplicate) setting forth in the order of the schedule of quantities and prices as per approved billing breakups of the work executed and/or goods ready for dispatch to the date of claim and the certificate as to such goods and work as in the reasonable opinion of the Engineer in accordance with the specification shall be issued within thirty (30) days.
12.1.2	The Engineer, by any certificate, make any correction or modification in any previous certificates which may have been issued by him and payments against invoices under certification will be regulated and adjusted accordingly.
12.2	BHEL's decision In respect of all matters which are left to the decision of BHEL including the granting or withholding of certificates BHEL shall, if required to do so by the contractor, give in writing a decision thereon and his reasons for taking such decision. If in the opinion of the contractor a decision made by BHEL is not in accordance with the meaning and intent of the contract, the contractor may file with BHEL within 15 days after receipt of the decision, a written objection to the decision. Failure to file such an objection within the allotted time will be considered as accordance of BHEL's decision and the decision shall become final and binding. It is the intent of the contract that there shall be no delay in the execution of the work in such cases and the decision of BHEL as given shall be promptly observed.
12.3	No certificate of the Engineer on account, nor any sum paid on account by BHEL nor any extension of time for the execution of the work by the contractor shall affect or prejudice the rights of BHEL against the contractor or relieve the contractor of his obligations for the due performance of the contract and be interpreted as approval of the work done or of the goods supplied and no certificate shall create liability in BHEL to pay for alterations, amendments, variations or additional work and ordered in writing by BHEL or discharge the liability of the contractor for payment of damaged, whether due, ascertained certified or not or of any sum against the payment of which he is bound to indemnify BHEL, nor shall any

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	such certificate nor the acceptance by him or any sum paid on account or otherwise, affect or prejudice the right of BHEL against the contractor.
13.0	GUARANTEE / WARRANTY Even though the work will be carried under supervision of BHEL engineers, contractor will be responsible for the quality of the workmanship and shall guarantee the work done for a period of 12 [twelve] months from the date of start of guarantee period, as certified by the engineer for good workmanship and shall rectify free of cost all defects due to faulty work done. In case contractor fails to repair the defective works within the time specified by the engineer. BHEL may proceed to undertake the repairs of such defective works at contractor's risk and cost without prejudices to any other rights and recover the same from SD/other dues of contractor.
14.0	DEFAULTS, REMEDIES AND POWERS
14.1	Negligence If the Contractor shall neglect to execute the work with due diligence and expedition or such refuse or neglect to comply with any reasonable orders given to him in writing by BHEL in connection with the work, or shall contravenes the provisions of the Contract, BHEL may give notice in writing to the Contractor calling upon to make good the failure, neglect or contravention complained of. Should the Contractor fail to comply with such notice within a period considered reasonable by BHEL from the date of such notice service thereof, in the case of a failure, neglect or contravention capable of being made good within that time, or otherwise within such time as may be in the opinion of BHEL be reasonably necessary for making it good, then and in such case BHEL shall have the option and be at liberty to take the work wholly or in part, out of the Contractor's hand and may carry on the work envisaged in the Contract either by himself or his agents or may re-contract with any other person or persons to execute the same or any part thereof and provide any other materials, tools, tackle or labour for the purpose of completing the works or any parts thereof. In such event BHEL shall without being responsible to the Contractor for normal wear and tear of the same, be entitled to seize and take possession and have free use of all materials, tools, tackle, or other things which may be on the Site, for use at any time in connection with the Work to the exehision of any right of the contractor over the same and BHEL shall be entitled to retain and apply any balance sum which may otherwise be then due on the contract by him to the Contractor or such part thereof as may be necessary to the payment of the cost of execution of such work as aforesaid. If the cost of completing the works or executing a part thereof as aforesaid shall exceed the balance due to the contractor, the contractor shall pay such excess.
14.2	CHANGE IN CONSTITUTION
14.2.1	Where the Contractor is a partnership firm, the prior approval in writing of the engineer shall be obtained before any changes is made in constitution of the firm. Where the Contractor is an individual or a Hindu Undivided Family business concern such approval as aforesaid shall likewise be obtained before the Contractor enters into any partnership Agreement where under the partnership firm would have the right to carry out work hereby undertaken by the Contractor. If such approval as aforesaid is not obtained the Contract shall be deemed to have been assigned in contravention of Contract Conditions and the action may be taken, and the consequences shall cause as provided in the Contract.
14.2.2	The expression "change in constitution" shall include.
14.2.2.1	Any new partner coming in or any existing partner retiring.
14.2.2.2	Any change in the profit sharing ratio.
14.2.2.3	Any alteration in the mutual right of the partners.
14.2.3	It is an agreed term and the contract that all the partners of the Contractor shall continue to be jointly and liable to BHEL in respect of the obligation to the Contractor herein and notwithstanding the resignation or retirement of any partner, his liability hereunder shall continue unless he is relieved there from by BHEL in writing.
14.3	FORFEITURE
14.3.1	If the contractor shall become bankrupt or have a receiving order made against him or shall present his petition in bankruptcy or shall make an arrangement with or assignment in favour of his creditors or shall agree to carry out the Contract under a Committee of inspection of his creditors or (being a corporation) shall go into liquidation (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) or if the Contractor shall assign the Contract without the consent in writing of BHEL first obtained or shall have an execution levied on his goods or if the Engineer shall certify in writing to BHEL that in his opinion the Contractor:
14.3.1.1	Has abandoned the Contract, or

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14.3.1.2	Without reasonable excuse has failed to commence works or has suspended the progress of the works for 15 days after receiving from the Engineer written notice to proceed, or
14.3.1.3	Has failed to proceed with the works with due diligence or
14.3.1.4	Has failed to remove materials from the Site or to pull down and replace work for 15 days after receiving from the Engineer written notice that the said materials or work had been condemned and rejected by the Engineer under these conditions, or
14.3.1.5	Is not executing the works in accordance with the Contract or is persistently or flagrantly neglecting to carry out any of his obligations under the Contract, or
14.3.1.6	Has to be detriment of good workmanship or in defiance of the Engineer's instructions to the contrary Sub-contracted any part of the Contract.
14.3.1.7	Then the Employer may after giving 14 days notice in writing to the Contractor enter upon the site & the works and expel the Contractor therefrom without thereby releasing the Contractor from any of his obligations or liabilities under the Contract or affecting the rights and powers conferred on BHEL or the Engineer by the Contract and may him self complete the work may employ any other Contractor to complete the works and BHEL or such other contractor may use for such completion so much of the Constructional Plant, Temporary works, materials which have been deemed to be reserved exclusively for the construction and completion of the works under the provisions of the Contract as he or they may think proper and BHEL may at any time sell any of the said Constructional plant, temporary work & unused materials & apply the proceeds of sale in or towards the satisfaction of any sum due or which may become due to him from Contractor under the Contract.
14.3.2	Valuation at date of forfeiture The Engineer shall as soon as may be practicable after expulsion of this Contractor and such entry by BHEL fix and determine experts or by or after reference to the parties or after such investigations or enquiries as he may think fit to make or institute and shall certify what amount (if any) had at the time of such entry and expulsion been reasonably earned by or would reasonably accrue to the Contractor in respect of work then actually done by him under the Contract and what was the value of any of the said unused or partially used materials, any constructional plant and any Temporary Works upon the Site.
14.3.3	Payment After Forfeiture If BHEL shall enter and expel the Contractor under this clause he shall not be liable to pay to the Contractor any money on account of the Contract until the expiration of contractual period and until the costs of completion and compensation for delay in completion (if any) and all other expenses incurred by BHEL have been ascertained and the amount thereof certified by the Engineer. The Contractor shall then be entitled to receive only such sum of sums (if any) as the Engineer may certify would have been due to him upon due completion by him after deducting the said amount. But if such amount shall exceed the sum which would have been payable to the Contractor on due completion by him then the Contractor shall upon demand pay to BHEL the amount of such excess and it shall be deemed a debt due by the Contractor to BHEL and shall be recoverable accordingly.
14.4	SUSPENSION OF WORK The Contractor shall on the written order of the Engineer suspend the progress of the works or any part thereof for such time or times and in such manner as the Engineer may consider necessary and shall during such suspension properly protect and secure the work so far as is necessary in the opinion of the Engineer. The extra cost including all running wages to be paid on the Site, salaries, depreciation and maintenance of the plant at Site, on costs and general overhead costs of the Contract incurred by the Contractor in giving effect to the Engineer instructions under this clause shall be borne and paid by BHEL (provided such costs are substantiated by the contractor to the satisfaction of BHEL / the purchaser) unless such suspension is:
14.4.1	Otherwise provided for in the Contract, or
14.4.2	Necessary for the proper execution of the Work or by reason of weather conditions affecting the safety or quality of the Works or by some default on the part of the Contractor, or
14.4.3	Necessary for the safety of the Works or any part, thereof.
14.4.4	Provided that the Contractor shall not be entitled to recover any such extra cost unless he gives notice in writing of his intention to claim to the Engineer within 15 days of the Engineer's order. The Engineer shall settle and determine such extra payment to be made to the Contractor in respect of such claims as shall in the opinion of the Engineer be fair and reasonable. Provided always that BHEL shall not be liable for any claim of idle wages for men and/or equipment which are otherwise used by the Contractor during the period of suspension of work whether in the work of BHEL or otherwise. BHEL shall not be responsible for any liabilities if suspension or delay is due to some default on the part of the

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	contractor or his subcontractor.
14.5	REMEDY OF BHEL
14.5.1	The Engineer on behalf of BHEL without prejudice to his rights against the Contractor in respect of any delay or inferior workmanship or otherwise or to any claims for damage in respect of any breaches of any of the Terms and Conditions of the Contract and without prejudice to any right or remedies under any of the provisions of this Contract or otherwise and whether the date for completion has or has not elapsed by the notice in writing, absolutely determine the Contract in any of the following:
14.5.1.1	If the Contractor being a company shall pass a resolution or the court shall make an order that the company shall be wound up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstance shall arise which entitled the court or creditor to appoint a receiver or a manager or which entitle the court to make a winding up orders.
14.5.1.2	If the Contractor commits breach of any of the terms and conditions of the Contract.
14.5.2	When the Contractor has made himself liable for action under any of the cases as in sub-clause (i) above, the Engineer on behalf of BHEL shall have powers:
14.5.2.1	To determine or rescind the Contract as aforesaid (of which termination or rescission notice in writing to the Contractor under the hand of the Engineer shall be conclusive evidence). Upon such determination or rescission the Security Deposit of the Contractor shall be liable to be forfeited and shall be absolutely at the disposal of BHEL.
14.5.2.2	To employ labour and to supply materials to carry out the works or any part of the work debiting the contractor with the cost of the labour and the price of the materials (of the amount of which cost and price certified by the Engineer shall be final and conclusive against the contractor) and crediting him with the value of the work done in all respect in the same manner and at same rates as if it had been carried out by the contractor under the terms of the contract. The certificate of the Engineer as to the value of the work done shall be final and conclusive against the contractor providing always that action under this sub clause shall only be taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by BHEL are less then the amount payable to the contractor at the agreement rates, the difference shall not be paid to the contractor.
14.5.2.3	After giving notice to measure the work of the contractor and to take such part thereof as shall be executed out of his hands and to give it to another contractor to complete in which case any expenses which may be incurred in excess of sum which would have been paid to the original contractor if the whole work had been executed by him (of the amount of which excess the certificate in writing of the Engineer shall be final and conclusive) shall be borne and paid by the original contractor and maybe deducted from any money due to him by BHEL under this contract or any other account whatsoever or from his Security Deposit or the proceeds of sales thereof or a sufficient part thereof as the case may be. In the event of any one or more of the above courses being adopted by the Engineer the Contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advance on account or with a view to the execution of the work or the performance of Contract. And in case action is taken under any of the provision aforesaid, the Contractor shall not be entitled to recover or be paid any sum for any work thereto or actually performed under this contract unless and until the engineer has certified in writing the performance of such work and the value payable in respect thereto and he shall only be entitled to be paid the value as certified.
14.5.3	In any case in which any of the power conferred upon the Engineer under this clause, shall have become exercisable and the same shall not be exercised, the non-exercised thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the Contractor and the liability of the Contractor for compensation shall remain unaffected. In the event of the Engineer putting in force all or any of the powers vested in him under this clause he may, if he so desires, giving a notice in writing to the Contractor, take possession of or (at the sole discretion of the Engineer which shall be final) use on hire (the amount of the hire money being also in the final determination of the Engineer) all or any tools, plant, materials and stores, in or upon the works, or the Site thereof, belonging to the Contractor, or procured by the Contractor and intended to be used for the execution of the work or any part thereof, paying or allowing for the same in account at the Contract rates or in the case of these not being applicable, at current market rates to be certified by the Engineer, whose certificate thereof shall be final, otherwise the Engineer by notice in writing may order the Contractor, or his clerk of the works, foreman or other authorised agent to remove such tools, plant materials, or stores from the premises (within a time specified in such notice),

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	and in the event of the Contract failing to comply with any such requisition, the Engineer may remove them at the Contractor's expense or sell them by auction or private sale on account of the Contractor and at his risk in all respects and the Certificate of the Engineer as to the expense of any such removal and the amount of the proceeds and expense of any such sale shall be final and conclusive against the Contractor.
14.5.4	No claim will be entertained from the Contractor for idle labour, stoppage of work or damage on account of unprecedented rain, storm or any unforeseen circumstances which will be responsible for the same.
14.6	RIGHTS OF BHEL
14.6.1	Without prejudice to the right conferred by the various clauses under the Contract and of their right ensuring to BHEL in the terms of contract, BHEL reserves the following rights in respect of this contract without entitling the Contractor for any compensation. To withdraw any portion of work and/or to restrict, alter the quantum of work as indicated in the Contract during the progress of the erection and get it done through other agency and/or by departmental labour to suit BHEL's commitment to the purchaser or in case BHEL decides to advance the date of completion due to other emergency reasons of BHEL's obligation to the purchaser. To terminate the Contract after a notice of 14 days when served at the last known address of the principal office of the Contractor and forfeit Security Deposit and recover the loss sustained in getting the balance work done through other agencies in addition to "Compensation for Delay" in the event of:
14.6.1.1	Contractor's continued poor progress brought to notice from time to time.
14.6.1.2	Withdrawal from or abandonment of the Work by Contractor before completion of the Work.
14.6.1.3	Corrupt act of Contractor.
14.6.1.4	Insolvency of the Contractor.
14.6.1.5	Persistent disregard to the instruction in writing of BHEL.
14.6.1.6	Assignment, transfer, sub-contracting of the contract without BHEL's written permission.
14.6.1.7	Non-fulfillment of any contractual obligations. Any delay in works for reasons attributable to the contractor will have to be compensated by either increasing manpower and resources or by working extra hours and more than one shift without any extra cost. To recover any money due from the Contractor from the money which is due or which may become due to the Contractor under this Contract or any other Contract or from the Security Deposit or as debt payable by the Contract. To claim compensation for losses sustained by BHEL including BHEL's supervisions charges and overheads in completion or termination of Contract & to recover compensation for delay in completion of the work, from Security Deposit and/or from the money which is due or which may become due to the Contractor under this or any other Contract or as a debt payable by the Contractor. To terminate the Contract or to restrict the quantum of the work and pay for the portion of work executed in case BHEL's Contract with the purchaser are terminated for any reason. To effect recovery from any amounts due to the Contractor under this or any other Contract, the moneys BHEL is forced to pay to anybody, due to Contractor's failure to fulfil any of his obligations.
14.6.2	While every endeavor will be made by BHEL, BHEL can not guarantee uninterrupted work due to conditions beyond their control. Contractor will not be entitled for any compensation / extra payment on this account.
14.6.3	In the event of any dispute of any nature, the decision of BHEL shall be final and binding on the Contractor.
14.6.4	All safety rules and codes applied by the purchaser/ BHEL at the site shall be observed by the Contractor without exception. The Contractor shall be responsible for the safety of the equipment/ materials and work to be performed by him and shall maintain all light fencing, guards, signs etc or other protection necessary for the purpose. Contractor shall also take such additional precautions as may be indicated from time to time by the engineer with a view to prevent pilferage, accidents, fire hazards & atmospheric conditions. Suitable number of clerical staff, watch and ward, be posted at Site by the Contractor till the

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	completion of the Work under the Contract. The Contactor shall arrange for such safety device as are necessary for such type of work and carry out the requisite tests of handling equipment, lifting, tools, tackles etc, as per prescribed standards and practices.
14.6.5	Should any error or ambiguity be discovered in the specification or information, the Contractor shall forthwith bring the same to the notice of the Engineer before commencement of work. Engineer's interpretation in such cases shall be final and binding on the contractor.
14.6.6	No idle labour be admissible in the event of any case in the work resulting contractor's labour being rendered idle due to any case at any time.
14.6.7	No over run charges shall be paid in the event the completion period is extended for any reason whatsoever.
14.6.8	The quality and progress of work will be regularly reviewed. The schedule and programme of work will be given to the contractor in advance and it will be the obligation of the Contractor to achieve the desired quality and progress of work by suitably reinforcing their labour force and/or by working extra shifts at no extra costs. Workmen found unsuitable for the work will be replaced immediately by the Contractor on being informed by BHEL.
14.6.9	During the erection/ construction performing work under the Contract it is very essential that proper and adequate inspection should be made constantly to maintain the quality of workmanship so that any deviation from design dimension does not exceed permissible limits. The proper functioning of the power plant, while in operation, depends to a great extent of the above factors. For the details regarding alignment and permissible dimensioned deviation in the Work, Engineer may be consulted.
14.6.10	It is possible that some minor repair/ rectification/ modification may be needed on the equipment to be erected/ constructed/ work to be performed under this specification, for reasons not attributable to the contractor. All such repair/ rectification/ modification work which can be done with the available facilities at site shall be carried out by the contractor free of cost and no extra charges shall be paid to the contractor, unless stated otherwise elsewhere.
14.6.11	In the event of failure of the contractor to bring necessary, sufficient and proper manpower, consumables, Tools & Plants and any other input required to be brought by the contractor for proper and timely completion of the job, BHEL may arrange/ hire the same at the risk and cost of the contractor including all incidental charges for bringing these inputs from the source place. The entire cost towards these together with overhead charges as applicable or as decided by the engineer shall be paid by the contractor or deducted from the contractor's bills. BHEL may at his discretion terminate the contract or take out any part or whole of the contract from the scope of the contractor on these grounds.
14.7	CONSEQUENCES OF TERMINATION
14.7.1	Whenever BHEL exercises his authority to terminate the Contract / Withdraw a portion of work pursuant to the Contract, BHEL may complete the work by any means at the Contractor risk and cost and BHEL shall not be liable to pay the contractor's any money on account of the contract until the expiry of guarantee / warranty period and thereafter until the cost of completion including delay compensation and all other expenses incurred by BHEL have been ascertained. In the event of the cost of completion (as certified by the Engineer which shall be final and conclusive) being less than the Contract price, the advantage shall accrue to BHEL and that if cost of completion exceed the money due to the Contractor under the Contract, the Contractor shall either pay the excess amount as ordered by BHEL or the same shall be recovered from the Contractor by any other means as deemed (to be) fit by BHEL.
14.7.2	This will be in addition to the forfeitures of Security Deposit and recovery of "Compensation for Delay" and other dues payable under the Contract.
14.7.3	In case BHEL completes the work under the provisions of this clause, the cost of such completion to be taken into account in determining the excess cost to the charges to the Contract under this clause, shall consist of materials purchased and/or labour provided by BHEL with an addition of such percentage to cover supervision and overhead charges as may be decided by BHEL.
15.0	FORECLOSURE OF CONTRACT
	If at any time after acceptance of the Tender the Purchaser / BHEL shall decides to abandon or reduce the Scope of the Work for any reason whatsoever and hence not require the whole or any part of the work to be carried out, BHEL shall give notice in writing to that effect to Contractor and the Contractor shall have no claim to any payment of compensation or otherwise, whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he could not derive in consequence

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	of the foreclosure of the whole or part of the work. The contractor shall be paid at the contract rate full amount for work executed at site and in addition a reasonable amount as certified by BHEL for the items here in under mentioned which could not be utilized on the work to the full extent because of the foreclosure:
15.1	Proportionate value of the expenditure incurred on preliminary site work.
15.2	BHEL shall have the option to take over contractor's materials or any part thereof either brought to the site or of which the contractor is legally bound to accept delivery from suppliers (for incorporation in the incidental to the work), provided however, BHEL shall be bound to takeover the materials or such portion thereof as the contractor does not desire to retain. For materials taken over or to be taken over by BHEL cost of such materials shall, however, take into account purchase prices, cost of transportation and deterioration or damage which may have been caused to materials whilst in custody of the contractor. For the contractor's materials not retained by BHEL reasonable cost of transporting such materials from the site to contractor's permanent stores or to his other works, which ever is less. If materials are not transported to either of the said places, no cost of transportation shall be payable.
15.3	If any materials supplied by BHEL are rendered surplus, the same except normal wastage shall be returned by the contractor to BHEL at rates not exceeding those at which these were originally issued less allowance for any deterioration or damage which may have been caused whilst the materials were in the custody of the contractor. In addition, cost of transporting such materials from site to BHEL'S stores, if so required by BHEL may be included.
15.4	Reasonable compensation for transfer of tools and plants from the site to contractor's permanent stores or to his other works, whichever is less. If tools and plants are not transported to either of the said places, no cost of transportation shall be payable.
15.5	A sum to be certified by BHEL being the amount of any expenditure reasonably incurred by the contractor in expectation of completing the whole of the works in so far as such expenditure shall not have been covered by the payments in this sub clause before mentioned. Provided always that against any payments due from BHEL under the sub clause, BHEL shall be entitled to be credited with any outstanding balances due from the contractor for advances in respect of construction machinery and materials and any other sums which at the date of termination were recoverable by BHEL from the contractor under the terms of the contract. The contractor shall, if required by BHEL, furnish to him books of account, wage books, time sheets and other relevant documents as may be necessary to enable him to satisfy the reasonable amount payable under this condition.
16.0	CLAIMS
16.1	In the event of any claim made or being made against BHEL arising out of the matters referred to, in and in respect of which the contractor is liable under the contract, the contractor shall be promptly notified thereof and the contractor shall at his own expense conduct all negotiations for the settlement of the same and any litigation that may arise therefrom. BHEL shall not unless and until the contractor shall have failed to takeover the conduct of negotiations or litigation make nay admission which might be prejudicial thereto. The conduct by the contractor of such negotiation or litigation shall be conditional upon the contractor having first given to BHEL such reasonable security as shall from time to time be required by BHEL to cover the amount ascertained or agreed or estimated as case may be, of any compensation, damages, expenses, and costs on which BHEL may become liable. BHEL shall, at the request of the contractor, afford all available assistance for any such purpose and shall be paid any out of pocket expenses incurred in so doing.
16.2	In case, due to exigency or any other reason BHEL incurs costs, damages or expenses for which under the contract the contractor is liable, BHEL shall claim the same from the contractor. All such claims shall be billed by BHEL to the contractor as and when they fall due. Such bills shall be supported by appropriate and certified vouchers or explanations, to enable the contractor to properly identify such claims. Such claims shall be paid by the contractor within fifteen (15) days of the receipt of the corresponding bills and if not paid by

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	the contractor within the said period, BHEL may then deduct the amount from any money due or becoming due by him to the contractor under the contract or may be recovered by actions of law or otherwise, if the contractor fails to satisfy BHEL of such claims.
17.0	ASSIGNMENT AND SUB-CONTRACTING
17.1	Assignment The Contractor shall not assign or transfer the Contract or any part thereof or any benefit or any obligation thereof or interest therein or thereunder (otherwise than by a charge in favour of the Contractor's Bankers of any moneys due to become due under this contract) without the prior written consent of BHEL.
17.2	SUB – CONTRACTING
17.2.1	Equipment Subcontracting of work, normally should not be permitted. However, in case of unavoidable instances, the contractor may, after informing BHEL & getting his written approval along with approval of the purchaser, assign or subcontract any part of the contract other than for raw materials, for minor details or any part of the plant for which makes are identified in the contract. BHEL shall not be liable in any way, in case such approval for sub contracting is not permitted by the purchaser. Sub-contractor of the equipment not identified in the contract or any change in the identified sub-contractor shall be subject to approval by BHEL & the purchaser. The experience list of the equipment sub-contractor under consideration by the contractor for this contract shall be furnished to BHEL for approval prior to procurement of all such items /equipment. Such assignment /sub-contracting shall not relieve the contractor from any obligation, duty or responsibility under the contract. Any assignment as above without prior written approval of BHEL & the purchaser shall be null and void. For components / equipments procured by the contractor for the purposes of the contract, after obtaining written approval of BHEL/the purchaser, the contractor's purchase specifications and enquiries shall call for quality plans to be submitted by his sub-contractor alongwith their proposals. The quality plans called for from the subcontractor shall set out during the various stages of manufacture & installation the quality practices & procedures followed by the sub-contractor quality control organization, the relevant reference documents, standards used, acceptance levels, inspection of documentation raised, etc. Such quality plans of the sub-contractor shall be discussed and finalized in consultation with BHEL and shall form a part of the contract between the contractor and the sub contractor. The contractor along with the subcontractor and BHEL shall furnish a joint undertaking to the purchaser or guaranteed performance of the equipment and subsystems. The contractor should desist from seeking approval for two-tier sub-contracting which may not be permitted by BHEL/the purchaser.
17.2.2	Erection / Construction work When the job of erection/ construction is entrusted with the sub-contractor, the name of such sub-contractor should be brought to the notice of BHEL for his as well as the purchaser's approval. The credential and experience profile of such sub-contractor along with quality assurance plan are to be submitted by the contractor before starting work without which BHEL shall not entertain such proposal from the contractor. The procedure to be followed before assigning such contract are already elaborated above. Salient features of such assignment / sub-contracting are enumerated below:
17.2.2.1	The Contractor shall not sub-contract the whole of 'the works'. Except where otherwise provided by the Contract, the Contractor shall not sub-contract any part of the works without the prior written consent of BHEL/the purchaser and such consent if given shall not relieve the Contractor from any liability or obligation under the Contract and he shall be responsible for the acts, defaults and neglects of any sub contractor, his agents, servants or workman as fully as if they were the acts, defaults or neglects of the Contractor, his agents, servants or workman.
17.2.2.2	The contractor shall make available to the Engineer, at his request, any agreement in writing entered into by the Contractor with his Sub-contractor.
17.2.2.3	BHEL shall have the right to specify the brand name/s of the bought out materials required in connection with the contract and the Contractor shall procure and use only such branded items to the extent possible to the full satisfactions of the Engineer. This shall however, not relieve the Contractor of his obligations under the Contract.
17.2.2.4	Notwithstanding the consent given by BHEL/ the purchaser for Sub-contracting, it shall be obligatory on the part of the Contractor to provide the Engineer all drawings, technical data and all other details etc. concerning the portion of work sub-contracted. It shall also be obligatory on the part of the Contractor to exercise control over quality of materials and workmanship of the portion of work sub-contracted.

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18.0	FORCE MAJEURE The following shall amount to force majeure :
18.1	Acts of God, acts of any Government, war, sabotage, riots, civil commotion, police action, revolution, flood, fire, cyclone, earthquake, epidemic and other similar cause over which the contractor has not control.
18.2	If the contractor suffers delay in the due execution of the contractual obligation due to delays caused for force majeure as defined above the agreed time of completion of the job covered by this contract or the obligations of the contract shall be extended by a period of time equal to the period of delay provided that on the occurrence of any such contingency the contractor immediately reports to BHEL in writing the causes of delay and contractor shall not be eligible for any compensation.
19.0	PATENT RIGHTS The Contractor shall defend any claim which allege in a suit of proceeding against BHEL that equipment or any part thereof constitutes an infringement of any patent, if notified promptly in writing and given authority, information and assistance for the defence and the Contractor shall pay all damages and costs awarded against BHEL in such suit or proceeding for the patent infringement and the use of equipment or part is Prohibited, the contractor shall, at his own expenses either procure for BHEL the right to continue using the equipment or replace the same with a non-infringing, or move the equipment and refund the Contract Price plus the transportation and installation costs thereof. The contractor shall indemnify BHEL from and against all claims and proceeding for or on account of infringement or alleged infringement of any patent rights, design trade mark or name or other protected rights in respect of execution of the contract.
20.0	INDEMNIFICATION OF BHEL The Contractor shall insure all his personal, tools and tackles, drawings etc. and shall also take a third party liability cover to indemnify BHEL of all liabilities such may come up due to any act or omission on the part of Contractor, his agent, representative, or sub-contractor(s) and cause harm/damage to other contractor/representatives of the Purchaser / BHEL or all or anybody rendering service to the Purchaser / BHEL or is connected with the Purchaser's / BHEL's work in any manner whatsoever. The Contractor shall necessarily indemnify BHEL in all these respects and the indemnification and insurance policy shall be subject to approval of the Purchaser/BHEL.
21.0	CORRESPONDENCE Detailed correspondence procedure will be indicated at the time of finalization of the contract. All drawings and correspondence to BHEL shall be transmitted by the contractor via air mail or alternatively by means involving the minimum time of transit.
21.1	Service of notice on contractor Any notice to be given to the Contractor under the terms of the contract shall be served by sending the same by post to or leaving the same at the Contractor's last known address of the principal place of business (or in the event of the contractor being at company to or at its registered office). In case of change of address the notice shall be served at changed address as notified in writing by the contractor to BHEL. Such posting or leaving of the notice shall be deemed to be good service of such notice and the time mentioned to the condition for doing any act after notice shall be reckoned from the date so mentioned in such notice.
21.2	Service of notice on BHEL Any notice to be given to BHEL under the terms of the Contractor shall be served by sending the same by post to or leaving the same at BHEL address or changed address as notified in writing by BHEL to the Contractor.
22.0	SITE RECORD Following registers, as made available to the contractor by BHEL, is to be maintained at site in the manner as specified by the Engineer at site:
22.1	Cement Register.
22.2	Site Order Book.
22.3	Material at site account.
22.4	Hindrance Register.
22.5	Cube Test Register.
22.6	Test Check Statement.
22.7	Part Rate Statement.
23.0	CONTRACT AGREEMENT, EFFECT AND JURISDICTION

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23.1	The contractor shall within 60 days from the date of LDI but in any case before submitting his first bill for payment, enter into and execute a contract agreement (to be prepared at the cost of the contractor). In the event of the failure of the contractor to execute the contract agreement within the time specified above, BHEL may cancel the LOI and forfeit his EMD and/or SD unless this period is extended by BHEL. The agreement will be signed in seven (7) originals and the contractor shall be provided with one (1) signed original and the rest will be retained by BHEL. These General Conditions together with the specifications, tender drawings and technical particulars, tender date with subsequent agreed modification thereof, tender, all correspondences with BHEL and signed agreement and other supporting documents shall constitute the contract document(s). No variation or modification of terms and conditions of the contract documents or waiver of any of these terms and conditions shall be deemed valid unless agreed in writing and signed by the BHEL and the Contractor. The failure of either party to endorse at any time of the provisions of the contract or any right thereto or to an option herein provided shall in no way be construed to be a waiver of such provisions, rights or option or in any way to affect the validity of the Contract. The exercise by either party of any of his rights herein shall not preclude or prejudice either party from exercising the same or any other right in may have hereunder. The contract shall in all respects be deemed to be and shall be construed and shall operate as an Indian contract as defined in the Indian Contract Act 1872 and all payments thereunder shall be made in Indian Rupees unless otherwise specified.
23.2	The contract shall be considered to come into force on the date of notification of Award by the BHEL to the Contractor which may be in the form of a Fax of Award or Letter of INTENT. The law applicable to the Contract shall be the law in force in India. The Courts of Kolkata under this Contract shall have exclusive Jurisdiction in all matters arising under this Contract, including Arbitration Awards.
24.0	SETTLEMENT OF DISPUTE AND ARBITRATION
24.1	If any dispute or differences of any kind whatsoever shall arise between BHEL and the contractor, arising out of the contract for the performance of the work whether during the progress of termination, abandonment or breach of the contract, it shall in the first place be referred to and settled by the Designated Engineer (nominated by BHEL for settlement of the disputes arising out of this contract) who within a reasonable period after being requested shall give written notice of his decision to the contractor. Save as hereinafter provided, such decision in respect of every matter so referred shall forthwith be given effect to by the contractor who shall proceed with the work with all due diligence, whether he or BHEL required arbitration as hereinafter provided or not.
24.2	If after the Designated Engineer has given written notice of this decision to the party, no claim to arbitration has been communicated to him by the party within 30 days from the receipt of such notice, the said decision shall become final and binding on the parties. In the event the contractor being dissatisfied with any such decision or if amicable settlement can not be reached then all such disputed issues shall be referred to the sole arbitration of the person appointed by BHEL.
24.3	Except as provided elsewhere in this Contract, in case amicable settlement is not reached between the Parties, in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract, 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 Power Sector Region issuing the Contract. It shall not be open to the Contractor to object to such arbitrator only on the ground that such arbitrator is an employee/ex-employee of BHEL or has dealt with or has expressed any opinion on any issue touching upon the Contract. The Arbitrator shall pass a reasoned award and the award of the Arbitrator 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

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	the time being in force shall apply to the arbitration proceedings under this clause. The seat of arbitration shall be Kolkata (the place from where the contract is issued)
24.4	In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable: 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.
24.5	The cost of arbitration shall be borne equally by the Parties
24.6	Notwithstanding the existence or any dispute or differences and/or reference for the arbitration, the Contractor shall proceed with and continue without hindrance the performance of its obligations under this Contract with due diligence and expedition in a professional manner.
25.0	AS-BUILT DRAWINGS The Contractor shall provide and keep up to date "As Built" drawings of all structures constructed and all equipment and accessories and miscellaneous metal works erected or installed. These drawings shall show all changes and revisions from the original drawings and specifications, including the exact "As Built" locations, sizes and kinds of equipment and accessories, miscellaneous metal works, embedded piping and electrical systems and other concealed items of work. These drawings shall be kept in Contractor's field office but shall be made available at all times for review of the Engineer. At the end of every work, all entries, changes or revisions made in the drawings by the Contractor shall be checked and approved by the Engineer. Reproducible prints with requisite copies of all "As Built" drawings shall be progressively handed over to BHEL after taking over of the work by BHEL/ the Purchaser.
26.0	INSURANCE
26.1	BHEL shall arrange for insuring the materials/properties of BHEL/ Customer covering the risks during transit, storage, erection and commissioning.
26.2	It is the sole responsibility of the contractor to insure the workmen, his properties including tools and plants against accident and injury while at work as required by relevant rules and to pay compensation, if any, to workmen as per Workmen's Compensation Act. This policy shall also cover the contractor against claims for injury, disability, disease or death of his or his sub-contractor's employee, which for any reason are not covered under the Workmen's Compensation Act. The liabilities shall not be less than:
26.2.1	Workmen's Compensation :- As per statutory provisions Employee's liability : As per statutory provisions.
26.2.2	The work will be carried out in a protected area and all the rules and regulations of the purchaser / BHEL in the area of project which are in force from time to time will have to be followed by the contractor.
26.3	If due to negligence and/or non-observance of safety and other precautions any accident /injury occurs to any other persons/public, the contractor shall have to pay necessary compensation and other expenses, if so decided by the appropriate authorities.
26.4	If due to contractor's carelessness, negligence or non-observance of safety precautions damage to BHEL'S /purchaser's property and personnel should occur, and if BHEL is unable to recover, in full cost from the insurance company, the balance will be recovered from the contractor. The damage is to be-reported within 48 hours of occurrence alongwith Engineers report. In the event of loss/theft of BHEL's /purchaser's property while in the custody of the contractor, it will be the responsibility of the contractor to lodge FIR with local Police authorities and furnish the details of FIR and Engineer's investigation report about loss/theft within 48 hours of occurrence . This is for the purpose of lodging insurance claim. If BHEL is unable to recover full cost from Insurance Company, the balance including deductible franchise whereas applicable will be recovered from the contractor.
27.0	WORK AT SITE

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27.1	In the execution of the work, no persons other than the contractor, or his duly appointed representative, sub-contractors and workmen employed by him and his sub-contractors shall be allowed to do work at the Site, except by the special permission, in writing, of the Engineer or his representative, but access to the work at all times shall accorded to the Engineer and representative of the Purchaser.
27.2	Nevertheless, the Contractor shall not object to the execution of works under other Packages by other contractor(s) or tradesmen whose names shall have been previously communicated in writing to the Contractor by the Engineer, and accord them every facility for the execution of works under other Packages simultaneously with his own work.
27.3	The contractor shall provide, erect and maintain at the entrance to the site an approved painted sign-board of minimum size 2m×1m, giving the name of the project, Employer's name and contractor's name. The location and layout design of the signboard shall be such as shall be approved by the Engineer.
27.4	The contractor shall in connection with the works provide & maintain at his own cost all lights, guards, fencing & watching when & where necessary or required by the Engineer or by any duly constituted authority for the protection of the works or for the safety and convenience of the public or others. Adequate precautions against fire shall be taken by the Contractor. No naked light shall be used by the contractor on the site, otherwise than in the open air, without the permission of the Engineer.
27.5	The contractor shall have total responsibility for all plants and materials etc., in his custody, stores, loose or semifinished. The contractor shall make suitable security arrangements including employment of security personnel to ensure the protection of all materials, plant etc., and work from theft, fire, pilferage and any other damage and loss.
27.6	The contractor shall follow at site all security rules as may be framed by BHEL and/or the Purchaser from time to time regarding removal of materials from site, issue of identity cards, control of entry of personnel and all similar matters. The contractor and his personnel shall abide by all the security measures imposed by the Engineer of his duly authorised representative from time to time. The provision of the clause shall also apply to all Sub-contractors.
27.7	The work so far as it is carried out on BHEL's premises shall be carried out at such times as BHEL may approve but BHEL shall give the contractor all reasonable facilities for carrying out the work.
27.8	No female labour shall be allowed during dark hour.
27.9	The Contractor shall not employ for the purpose of executing any work under the Contract any person who is below the age of eighteen (18) years and shall pay to each labourer, for the work done by such labourer, wages, not less than the wages paid for similar work in the neighborhood. The Engineer shall have the right to enquire into and decide any complaint alleging that the wages paid by the Contractor to any labourer for the work done by such labourer is less than the wages paid for similar work in the neighborhood and to refuse giving Permission of appointment of any labourer less than eighteen (18) years of age.
27.10	The Contractor shall make regular and prompt payment of wages to the labourer engaged on the work and in no case the payment shall be delayed by more than seven (7) days following the period for which the wages are due. If it is found that workers are not paid regularly, the Contract is liable to be rescinded. The Contractor shall comply strictly with the provision of the prevailing Labour Laws.
27.11	The Contractor will be directly responsible for payment of wages to his workmen. A pay roll sheet giving all the payments given to the workers and duly signed by the Contractor's representatives should be furnished to BHEL site office for record purpose.
27.12	All the properties / equipment / components of BHEL/the purchaser loaned with or without deposit to the contractor in connection with the contract shall remain the properties of BHEL/purchaser. The Contractor shall use such properties for the purpose of executor of this contract. All such properties /equipment / components shall be deemed to be in good condition when received by the contractor unless he notifies within 48 hour to the contrary. The Contractor shall return them in good condition as and when require by BHEL/purchaser. In case of non-return, loss, damage repairs etc., the cost thereof, as may be fixed by he site Engineers, will be recovered from the Contractor.
27.13	It is not obligatory on the part of BHEL to supply any tools & tackles or materials other than those specifically agreed to do so by BHEL. However, depending upon the availability, BHEL's / purchaser's handling equipment and other plants may be made available to the contractor on payment of the hire charge as fixed, subject to the conditions laid down by BHEL/purchaser from time to time. Unless paid in advance such hire charges, if applicable shall be recovered from contractor's Bill /security deposit in ONE installment.

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28.0	MANUFACTURER'S SUPERVISION The Contractor may be required to work under the guidance of the manufacturer's technical personnel, as and when needed, where the Contractor is not the manufacturer. However, this will not relieve the Contractor of his responsibility of the correctness of work done or quality of workmanship.
29.0	CONTRACTOR'S SUPERINTENDENCE
29.1	The Contractor shall give or provide all necessary superintendence during the execution of works and as long thereafter as the Engineer may consider necessary for the proper fulfilling of the Contractor's obligations under the Contract.
29.2	The Contractor or a competent and authorised agent or representative approved of in writing by the Engineer (which approval may at any time be withdrawn) is to be constantly on the works and shall give his whole time to superintendence of the same. If such approval shall be withdrawn by the Engineer, the Contractor shall as soon as is practicable (having regard to the requirement of replacing him as hereafter mentioned) after receiving written notice of such withdrawal, remove the agent from the Site and shall not thereafter employ him again on the site in any capacity and shall replace him by another agent approved by the Engineer. Such authorised agent or Representative shall receive on behalf of the Contractor directions and instructions from the Engineer or the Engineer's Representative. Such directions and instructions given to the Contractor's agent or representative shall be considered to have the same force as if they had been given to the Contractor himself. The Contractor, his agent or representative shall attend when required and without making any claim for so doing, either the office of BHEL/ Engineer or the Site to receive the instructions. All the employees provided by the Contractor and employed on the site shall be the Contractor's employees and the Contractor shall be solely responsible for all liabilities in connection with their employment.
29.3	Any written orders or instruction which the engineer or his duly authorised representative may give to the said representative of the Contractor, shall be deemed to have been given to the Contractor.
29.4	The services of the Contractor's representative(s) shall be made available for such period as the Engineer may require and they shall work at all reasonable times as may be necessary to complete the work within the period specified in the Contract.
29.5	The Engineer shall be at liberty to object to and require the Contractor to remove forthwith from the works any person employed by the Contractor in or about the execution of the contract who in the opinion of the Engineer misconducts himself or is incompetent or negligent in the proper performance of his duties or whose employment is otherwise considered by the engineer to be undesirable and such person shall not be again employed upon the works without the written permission of the Engineer. Any person so removed from the works shall be replaced as soon as possible by a competent substitute approved by the Engineer.
30.0	ENGINEER'S SUPERVISION The work shall be performed under the direction of the Engineer. The scope of the duty of the Engineer, pursuant to this Contract shall include but not be limited to the following:
30.1	Interpretation of all the terms and conditions of the Contract Documents and Specification:
30.2	Review and interpretation of all drawings, engineering data etc.
30.3	Witness or authorize his representative to witness tests & trial run etc., either at the manufacturer's works or at site as applicable, or at any place where work is performed under the Contract.
30.4	Inspect, accept or reject any equipment, any component, materials and works under the Contract:
30.5	Issue certificate of acceptance and/or certificates for progressive payments and final payment;
30.6	Review and suggest modification and improvements in completion schedule from time to time; and
30.7	Supervise implementation of the quality assurance at all stages of the Works; The contractor shall take instruction and direction only from the Engineer or from the Engineer's representative. Any supervision by the purchaser shall be deemed to be that of the Engineer or his Representative and no extra claim can arise on this score. Provided however that if the Contractor shall be dissatisfied by reason of any instruction of the purchaser, he shall be entitled to refer the matter to the Engineer who shall thereupon confirm, reverse or vary such decision.

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	Any written instruction or approvals given by the Engineer's Representative to the contractor within the terms of the delegation by the Engineer (but not otherwise) bind the contractor and BHEL, as though it had been given by the Engineer Provided always as follows;
30.7.1	Failure of the Engineer's representative to disapprove any work or materials shall not pre-empt the power of the Engineer thereafter to disapprove such work or materials and to order the pulling down, removal or breaking up thereof.
30.7.2	If the contractor shall be dissatisfied by reason of any decision of the Engineer's representative he shall be entitled to refer the matter to the Engineer who shall thereupon confirm, reverse or vary such decision.
30.7.3	The Engineer may at any time revoke any such delegation and shall in the event of such revocation inform the contractor in writing.
31.0	PROGRAMME OF WORK AND PROGRESS REPORT
31.1	The Contractor shall submit at such times erection and construction schedules in the form of PERT network or Bar Chart as desired by BHEL showing the programme and order in which the Contractor proposes to carry out the work. Such schedules shall be approved by the Engineer, prior to starting the Work at the Site.
31.2	During the progress of the work, the Contractor shall submit required copies of monthly progress reports and photographs and such other reports on the erection and construction works and his site organisation, as the Engineer may direct. The format of the progress report shall be finalized by the Contractor with the approval of BHEL. If at any time BHEL desires to change the format or requires any additional information, the Contractor shall comply with the same. The Contractor shall also submit an anticipated one(1) month's programme at the beginning of each month describing in detail the anticipated progress for the following month. The Contractor shall also submit every week a list of various categories of employees working under him. Monthly progress reports shall be submitted within the fifty (5) day of the month following the reporting month. The submission to and approval by the Engineer or Engineer's representative of such programme or the furnishing of such particulars shall not relieve the contractor of any of his duties or responsibilities under the contract.
32.0	LIABILITY FOR ACCIDENT AND DAMAGE
	The Contractor shall, except if and so far as the Contract provides otherwise, indemnify BHEL against all losses and claims in respect of injuries or damage to any person or material or plant or physical damage to any property whatsoever which may arise out of or in consequence of the execution & maintenance of the Works and against all claims, proceedings, damage, costs, charges and expenses whatsoever in respect of or in relation thereto except any compensation or damages for or with respect to:
32.1	The permanent use or occupation of land by the Works or any part thereof.
32.2	The right of BHEL/the Purchaser to execute the works or any part thereof on, over, under, in or through any land.
32.3	Injuries or damage to persons or property resulting from any act or neglect of the Purchaser /BHEL, his agent, servants or other contractor(s) not being employed by the contractor, or for or in respect of any claims, proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or where the injury or damage was contributed to by the contractor, his servants or agents such part of the compensation as may be just and equitable having regard in the extent of the responsibility of the purchaser / BHEL, his servants or agents or other contractor(s) for the damage or injury.
33.0	PLANTS, TEMPORARY WORKS AND MATERIALS
33.1	All constructional plant, temporary works and materials provided by the contractor shall when brought on to the site be deemed to be exclusively intended for the construction and completion of the works and the contractor shall not remove the same or any part thereof (save for the purpose of moving it from one part of the site to another) without the consent in writing of the Engineer which shall not be unreasonably withheld. But BHEL will permit the contractor to use all such constructional plant temporary works and materials in and for the completion of the works until the happening of any event which gives right to BHEL to expel the contractor from the site and proceed with the completion of the works.

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33.2	During erection, the Contractor shall without any additional payment at all times keep the working and storage areas used by him and/or his subcontractor(s) free from accumulation of waste materials or rubbish. If these materials are not removed by the Contractor within a reasonable time as specified by the Engineer these will be removed by others and the cost of the same will be back charged to the Contractor. Any inflammable materials shall be removed forthwith on request by BHEL. Upon completion of the works the contractor shall remove from the site all the said constructional plants and temporary works remaining thereon and any unused materials provided by the contractor, packing cases, waste and debris and leave the premises in a condition satisfactory to the Engineer. In the event of failure on the part of the contractor to remove the constructional plant, temporary works or materials as aforesaid within a period of four weeks after the completion of the work, BHEL shall be at liberty to remove such plant, works or materials and claim the expenses therefore from the contractor. In case BHEL stores such plants, works or materials, he shall be entitled to such storage charges as he may claim from the contractor and in the event of failure on the part of contractor to clear the plants, works and materials after paying such expenses or charges BHEL shall sell by public auction such plants, works and materials and appropriate the proceeds towards the amount due to it and the balance if any, shall be paid to the contractor. BHEL shall be entitled to proceed against the contractor for the recovery of the deficit amount if the sale proceeds are not sufficient to cover his dues.
33.3	BHEL shall not at any time be liable for the loss of or damage to any of the said constructional plant, temporary works and materials.
33.4	TOOLS & PLANTS
33.4.1	All T&Ps including precision measuring and testing instruments, lifting devices etc. shall have to be arranged by the contractor unless otherwise specifically mentioned.
33.4.2	In the event of BHEL issue T&Ps, measuring instruments etc. the contractor and BHEL shall maintain joint protocol as per BHEL format about the condition of all T&Ps, instruments etc. taken from BHEL's custody and return to BHEL after use. The contractor shall not use these equipments for purposes other than the scope of work given in this tender document. It is the responsibility of contractor to keep these equipments always in working condition and ensure their safe return in working condition to BHEL's store subject to normal wear & tear. Non-compliance to this may entail BHEL to get the necessary repair done at the risk and cost of the contractor.
33.4.3	All the T&P, measuring instruments, etc must be mobilized at site in advance prior to actual start of the job. They must be in accordance with those recommended in the tender document, if any and must be got verified to that effect. Formal clearance in writing must be obtained from the Engineer before the contractor starts the job.
33.4.4	All T&Ps, lifting tackles and pulling devices to be used must bear valid/latest test certificates for their suitability, and the same to be furnished alongwith the offer or during execution. The contractor shall ensure deployment of reliable and calibrated Instrument, Measuring and Test Equipments (IMTE). The IMTE shall have test/calibration certificates from authorised /Govt. approved/ accredited agencies traceable to national/international standards. Retesting/ recalibration shall also be arranged by the contractor as advised by BHEL. The contractor shall also have alternate arrangement for such IMTEs so that the work does not suffer when the particular IMTE is sent for calibration. Also if any IMTE is found not fit for use, BHEL shall have the right to stop use of such IMTE and instruct the contractor to deploy proper IMTE and repeat the reading taken by the instrument failing which BHEL may deploy IMTEs and retake the readings at the contractor's cost.
33.4.5	T&P/instrument found defective /improper/insufficient or not having valid test / calibration certificate should be made good immediately as per instruction of the Engineer.
34.0	LABOUR AND LABOUR LAWS
34.1	Engagement of labours The Contractor shall employ labour in sufficient numbers to maintain the required rate of progress and of quality to ensure workmanship of the degree specified in the Contract and to the satisfaction of the Engineer. The Contractor shall save in, so far as the Contract otherwise provides shall provide for the transport, housing, canteen, and payments of wages etc thereof to the labourers in accordance with relevant Statutory Rules and Regulation etc. The Contractor shall not employ in connection with the works any persons

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	who has not completed eighteen years of age. Preference should be given to the local unskilled labourers and to the local land sufferers for employments. All labour engaged by the Contractor shall be and remain the employees of the Contractor and no claim shall lie against BHEL by them or the Contractor, or any person claiming on their behalf against BHEL in respect of any right or benefit due to them in their employment. The Contractor shall have to obtain labour license from the appropriate authority as per the law at his cost and shall indemnify BHEL about his financial and other obligation arising out of labourers / workers employed by him. On obtaining the labour license, the Contractor shall submit certified photocopy of the same to BHEL.
34.2	Return of labour compliance with rules etc
34.2.1	The contractor shall if required by the Engineer deliver to the Engineer's Representative or at his office a return in detail in such form and at such intervals as the Engineer may prescribe showing the supervisory staff and the numbers of the several classes of labour from time to time employed by the contractor on the site and such other information regarding contractor's equipment as the Engineer's representative may require.
34.2.2	The contractor shall pay to the labour, employed by him either directly or through sub-contractor, rates of wages and observe hours and conditions of labour not less favorable than those established for the trade or industry in the district where the works is carried or by machinery of negotiation or arbitration to which the parties are organisation of employers and trade union's representatives respectively of substantial proportion of the employers and workers engaged in the trade or industry in the district. In the absence of any rates of wages, hours or conditions of labour so established the contractor shall pay rates of wages and observe hours and conditions of labour which are not less favorable than general levels of wages and hours and condition observed by other contractor whose general circumstances in trade or industry in which he is engaged are similar.
34.2.3	The contractor shall in respect of labour employee by him either directly or through sub contractors comply with or cause to be complied with the provisions of the payment of wages Act, 1936; minimum wages Act, 1948; Employer's liability Act, 1938; workmen's compensation Act, 1923; Industrial disputes Act, 1947; Maternity benefit Act, 1961; Mines Act, 1952 employers provident fund scheme; Employer state insurance scheme; Contract labour (regulations and abolition) Act, 1970 and other Act, rules and regulations for labour as may be enacted by the Government during the tenure of contract or any modifications thereof or any other law relating thereto and rules made thereunder from time to time and having force or jurisdiction at site.
34.2.4	The Contractor shall be liable to pay his contribution and the employee's contribution to the state insurance scheme in respect of all labour employed by him for the execution of the contract, in accordance with the provision of "Employees state insurance Act, 1948" as amended from time to time. In case the contractor fails to submit full details of his account of labour employed and the contribution payable, the Engineer shall recover from the running bills of the contractor an amount of contribution as assessed by him. The amount so recovered shall be adjusted against the actual contribution payable for Employees state insurance.
34.2.5	The Engineer shall on a report having been made by the inspecting officer as defined in the contract labour (regulations and abolition) Act, 1970 have the power to deduct from the moneys due to the contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfillment of the conditions of the contract for the benefits of workers, non-payment of wages or of deductions made from his or their wages which are non-justified by the terms of the contract or non-observance of the said contract labour regulations.
34.2.6	The contractor shall indemnify BHEL against all or any payments to be made under and for observance of the regulations aforesaid without prejudice to his right to claim indemnify from his sub-contractors.
34.2.7	In the event of the contractor committing a default or breach of any of the provisions of aforesaid contract labour regulations, as amended from time to time or furnishing any information or submitting or filling any form /register/slip under the provisions of these regulations which is materially incorrect then on the report of the inspecting officers as defined in the contract labour regulation, the contractor shall without prejudice to any other liability pay to BHEL sum not exceeding Rs. 50.00 as liquidated damages for every default, breach or furnishing, making, submitting, filling materially incorrect statement as may fixed by the Engineer and in the event of the contractor's default continuing in this respect, the liquidated damages may be enhanced to Rs. 50.00 per day for each day of default subject to a maximum ten percent of the contract price.

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34.2.8	The Engineer shall deduct such amount from bills or security deposit of the contractor and credit the same to the welfare fund constituted under the same regulations. The decision of the Engineer in this respect shall be final and binding.
34.3	Labour welfare etc
34.3.1	First Aid Facility
	The contractor shall provide and maintain adequate first aid facilities on the site with the approval and to the satisfaction of concerned public health authority. At least one of his staff shall be fully qualified in the knowledge and administration of first aid. The contractor shall be responsible for and shall make all necessary arrangements and provisions for proper medical treatment of all persons employed by him for execution of the contract at his own cost and BHEL shall not have any liability on the account. Contractor shall within 24 hours of the occurrences of any accident on or about the site or in connection with the execution works, report such accident to the engineer and to the competent authorities, whenever such report is required under the law.
34.3.2	Supply of water
	The contractor shall have regard to local conditions provide on the site to the satisfaction of the Engineer's representative an adequate supply of drinking and other water for the use of his staff and "labour employed".
34.3.3	Alcoholic liquor or drugs
	The contractor shall not otherwise than in accordance with the statutes, ordinances and government regulations or orders for the time being in force import, give barter or otherwise dispose of any alcoholic liquor or permit or suffer any such importation, sale, gift, barter or disposal by his sub-contractors, agents or employers.
34.3.4	Arms and Ammunition
	The contractor shall not give barter or otherwise dispose of to any person or persons any arms or ammunition of the any kind or permit or suffer the same as aforesaid.
34.3.5	Festivals and religious Customs
	The contractor shall in all dealings with labour in his employ have due regard to all recognized festivals, date of rest and religious or other customs.
34.3.6	Epidemic
	In the event of any outbreak of illness of an epidemic nature the contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government or the local medical or sanitary authorities for the purpose of dealing with and overcoming the same.
34.3.7	The contractor shall at all times take all reasonable precautions to prevent any unlawful riotous or disorderly, conduct by or amongst his Employees and for the preservation of peace protection of persons and property in the neighborhood of the site against the same.
34.3.8	The contractor shall at his own expense fully comply with or cause to be complied with model rules for labour welfare as advised by Engineer or rules as framed by the government from time to time for the protection of health and for making sanitary arrangements for workers employed directly or indirectly on the works. In case the contractor fails to make arrangements as aforesaid, the Engineer shall be entitled to do so and recover the cost thereof from the contractor.
34.3.9	The contractor & his sub-contractor(s) shall followed the contract Labour Regulation.
34.3.10	The contractor shall be responsible for observance by his subcontractors of the foregoing clauses.
35.0	CARE OF WORKS
	From the commencement to the completion of the works, the Contractor shall take full responsibility for the care thereof and of all temporary works and in case any damage, loss or injury shall happen to the works or to any part thereof or to any temporary works from any cause whatsoever (save and except the Force Majeure" as defined earlier) he shall at his own cost repair and make good the same to the satisfaction of the Engineer so that at completion, the works shall be in good order and condition and in conformity in every respect with requirements of the Contract and the Engineer's instructions. The Contractor shall also be liable for any damage to the works occasioned by him in the course of any operations carried out by him for the purpose of complying with his obligations as provided for in the Contract Documents.
36.0	OWNERSHIP OF ARTICLES OF VALUE DISCOVERED AT SITE
	All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the Site shall as between BHEL and the contractor be deemed to be in the absolute property of BHEL and the Contractor shall take

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	reasonable precautions to prevent his workmen or any other persons from removing or damaging any such article or thing and shall immediately upon discovery thereof and before removal acquaint the Engineer of such discovery and carry out the Engineer's orders as to the disposal of the same.
37.0	CONVENIENCE OF PUBLIC All operation necessary for the execution of the works and for the Construction of any temporary work shall, so far as compliance with the requirements of the Contract permits, be carried on so as not to interfere unnecessarily or improperly with the public convenience or the access to use and occupation of public or private roads and foot paths or to use of properties whether in the possession of the Purchaser / BHEL or of any other person and the Contractor shall indemnify BHEL in respect of all claims, demands, proceedings, damage, costs, charges and expenses whatsoever arising out of or in relation to any such matter in so far as the contractor is responsible therefore.
38.0	PREVENTION OF EXTRAORDINARY TRAFFIC AND PROTECTION OF HIGHWAY The Contractor shall use every reasonable means to prevent any of the highways or bridges communicating with or on the routes to the Site from being damaged or injured by and traffic of the contractor or any of his sub-contractors and in particular shall select routes, choose and use vehicles and restrict and distribute loads so that any such extraordinary traffic as will inevitably arise from the moving of Plant and material from and to the Site shall be limited as far as reasonably possible and so that no damage or injury may be occasioned to such highways and bridges. Should it be found necessary for the Contractor to move one or more loads or construction plant machinery or preconstructed units or parts of units of work over part of a highway or bridge and that the moving of such load must in all probability damage – the highway or bridge unless means of protection of strengthening are carried out then the Contractor shall before moving the load on to such highway or bridge, carryout such protection or strengthening at his own cost. If during the execution of the works or at anytime thereafter BHEL or purchaser shall receive any claim arising out of the execution of the works in respect of damage or injury to highways or bridges, he shall immediately notify the same to the contractor and thereafter the contractor shall negotiate the settlement of and pay all sum due in respect of such claim and shall indemnify BHEL in respect thereof and in respect of all claims, demands, cost charges and expenses in relation thereto.
39.0	URGENT REPAIR WORK If by reason of any accident of failure or other event occurring to or in connection with the Works or any part thereof during the execution of the contract shall in the opinion of the Engineer be urgently necessary for safety and the Contractor is unable or unwilling at once to do such work or repair, BHEL may be his own or other workmen do such work or repair as the Engineer may consider necessary. If the work or repair so done by BHEL is Work which in the opinion of the Engineer the Contractor was liable to do at his own expense under the Contract all costs and charges properly incurred by BHEL in so doing shall on demand be paid by the Contractor to BHEL or may be deducted by BHEL from any money due or which may become due to the Contractor. Provided always that the Engineer shall as soon after the occurrence of any such emergency as may be reasonably practicable notify the Contractor thereof in writing.
40.0	STRIKES AND LOCKOUTS The contractor will be fully responsible for all the dispute, consequences and other issues connected with strikes, lockouts and his labour. In the event of the contractor resorting to lockout and if the strike by the contractor's labour or the lockout declared is not settled within a reasonable time, BHEL shall have the rights to get the work executed employing its own labour or through any other agencies or both and the cost so incurred by BHEL shall be deducted from the contractor's bills.
41.0	PAYMENTS AND RECOVERY
41.1	Billing Schedule The contractor shall prepare and submit to BHEL for approval phase-wise fund requirements and item-wise billing schedule (breakups of the contract price) interlinking agreed PERT network setting forth starting and completion dates for the various key phases of work within 1 month from the date of LOI. Payment under the contract excepting initial advance if any, shall be made only after the contractor's billing schedule is approved by BHEL.
41.2	Work To Measure The Engineer shall except as otherwise stated ascertain and determine by measurement the value in accordance with the contract of work done in accordance with the contract. He

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	shall when he requires any parts of the Works to be measured give notice to the Contractor's authorised agent or representative who shall forthwith attend or send a qualified agent to assist the Engineer or the Engineer's Representative in making such measurement and shall furnish all particulars required by either of them. Should the Contractor not attend or neglect or omit to send such agent then the measurement made by the Engineer or approved by him shall be taken to be the correct measurement of the work. For the purpose of measuring such permanent work as is to be measured by records and drawings the Engineer's Representatives shall prepare records and drawings month by month of such work and the Contractor as and when called upon to do so in writing shall within 14 days attend to examine and agree such records and drawings with the Engineer's Representatives and shall sign the same when so agreed and if the Contractor does not so attend to examine and agree any such records and drawings they shall be taken to be correct. If after examination of such records and drawings the Contractor does not agree to the same or does not sign the same as agreed they shall nevertheless be taken to be correct unless the Contractor shall within 14 days of such examination lodge with the Engineer's Representative, for decisions by the Engineer's a notice in writing of the respects in which such records and drawings are claimed by him to be incorrect.
41.3	Method of measurement The works shall be measured net according to the procedure set forth by the Engineer notwithstanding any general or local custom except where otherwise specifically described or prescribed in the contract.
41.4	PAYMENTS TO THE CONTRACTOR
41.4.1	Interim payments. A bill shall be submitted by the contractor each month on or before the date fixed by the Engineer for all works executed in the previous month for the purpose of interim payments, and the measurements for the purpose of having the same verify and the claim as far as possible before the expiry of 30 days from the presentation of the bill, complete in all respects. If the contractor does not submit the bill within the time fixed as aforesaid the Engineer may depute within 7 days of the date fixed as aforesaid a subordinate to measure on the said work in the presence of the contractor whose counter signature to the measurement list will be sufficient warrant and the Engineer may prepare a bill from such list. Before taking any measurement of any work as has been referred to in clauses hereinbefore the Engineer or a subordinate deputed by him shall give notice to the contractor as mentioned above. The contractor shall submit all bills in printed terms in six copies and the charges in the bills shall always be entered at the rate as specified in the tender or in case of any extra work ordered in pursuance of these conditions not mentioned or provided for in the tender at the rates provided for such work. Every interim payment certificate shall certify the contract value of the work executed up to the date mentioned in the application for the payment, provided that no sum shall be included in any inter in payment certificate in respect of the work that, according to the decision of the Engineer, does not comply with the contract specification or has been performed prematurely on the date of application. Whether the contract stipulates a lumpsum as payable for the work where a lumpsum rate is stipulated in the schedule of rate in respect of any particular work or a part thereof and the works are not in at any intervening stage capable of measurement BHEL may at discretion pay on a interim bill prepared by the contractor, a percentage of the lumpsum provided for the entirety of the work or item of the work as the case may be on the basis of value assessment of such certified for payment by the Engineer.

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	No interim payments shall be made and/ or certified for an amount less than Rs. 10,000/-. All interim payments shall be subject to deductions provided for in the contract and taxes and other money deductible within the provisions of 194-C of the income tax act or any other rule or regulations for the time being in force. All interim payments shall be recorded merely as advance payments against the amounts due to the contractor in terms of the contract and any such payment shall be without prejudice to the full rights of BHEL under the contract and the liabilities of the contractor thereunder and specifically shall not be regarded as an acceptance or completion of any work paid for in term of any interim payment or otherwise notwithstanding any verification or certification by the Engineer in respect thereof. Interim payments are only by the way of assistance to the contractor and nothing provided in the foregoing clause thereof shall in any way be deemed to confer any right or entitlement on the contractor to receive interim payment nor shall any failure or delay by BHEL to make any interim payment as herein envisaged or otherwise afford the contractor a ground or basis for extension for completion or otherwise relieve the contractor from any of his liabilities under the contract.
41.4.2	Final measurements If the contractor fails to apply to the Engineer for final measurement within a reasonable time the Engineer may of his own initiative notify the contractor of the date of taking the measurements as mention here in before.
41.4.3	Mode of measurement All measurement shall be in metric system except where expressly indicated to the contrary in the schedule of rates or other contract documents and shall be as per relevant Indian Standards.
41.4.4	Final Bill On the basis of final measurement entered in the Measurement Books / Sheets the Contractor shall prepare final bill in prescribed form with reference to the total work covered by the contract, such bill to be draw up by applying the applicable rate (s) specified in the schedule of rates to the relative measure quantity (ies). The final bill shall be submitted to BHEL for payment in sextuplicate accompanied by certificate of completion of works duly signed by Engineer or his Representative /owner's representative relating to works covered by the final bill. Final payment to the contractor may be withheld by BHEL while any claim, demand, proceedings, suits etc. for which under the Contract the Contractor is liable remains unsettled.
41.5	Payments due from contractor All costs, damages, penalties or expenses for which under the contract the contractor is liable to BHEL may be deducted by BHEL from any money due or becoming due to the contractor under this or any other contract with BHEL or from the security deposit or performance bond or bank guarantee (s) issued by the contractor or as debt due from the contractor or may be recovered by action at law or otherwise from the contractor. Such deduction or recovery affected by BHEL shall be without prejudice to any other right or remedy which BHEL may have under the contract.
41.6	Withholding of payment BHEL may withhold the whole or part of any payment due to the Contractor, which in the opinion of BHEL, is necessary to protect himself from loss on account of.
41.6.1	Defective work not remedied or guarantees not met.
41.6.2	Claim filed against the contractor.
41.6.3	Failure by the contractor to make due payment for materials or labour employed by him.
41.6.4	Damage to another contractor and
41.6.5	Damage to equipments, instruments and other materials issued to the Contractor. No levy or payment or charge made or imposed shall be impeached by reason of any clerical error or by reason of any mistake in the amount levied or demanded or charged.
41.7	Liens If at any time, there should be evidence of any lien or claim for which BHEL might have become liable and which is chargeable to the Contractor, BHEL shall have the right to retain out of any payment then due and thereafter to become due an amount sufficient to completely indemnify the Contractor against such lien and such claim be valid BHEL may

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	pay and discharge the same and deduct the amount so paid from any money which may be or may become due and payable to the Contractor. If any item or claim remains unsatisfied after all payments are made, the Contractor shall refund or pay to BHEL all moneys that the latter may be compelled to pay in discharging such lien or claim including all costs and reasonable expenses.
42.0	CONTRACTOR TO INFORM HIMSELF FULLY
42.1	Inspection of site before submission of offer. The Contractor shall inspect and examine the Site and its surroundings and shall satisfy himself before submitting the tender as to the form and nature of the Site, the quantities and nature of the work and materials necessary for the completion of the Works and the means of the site, the accommodation he may require, the labour position at the site, and in general shall himself obtain all necessary information as to the risks, contingencies and other circumstances which may influence or effect his tender.
42.2	Correctness and sufficiency of rates The Contractor by tendering shall be deemed to have satisfied himself as to all the condition and circumstances affecting the rates & prices stated in the priced schedule of items of work, as to the possibility of executing the works as shown and described in the Contract, as to the General circumstances at the Site and as to the General labour position at the Site, and to have fixed his rates and prices according to his own means to cover all his obligation under the Contract and all matters and things necessary for proper execution, completion of the contract as no additional allowance, except as otherwise expressly provided, will afterwards be made beyond the rates and prices stated in the price schedule of work. The Contractor alone shall be responsible for any misunderstanding or incorrect information however obtained except information given in writing by the Engineer.
43.0	DETAILS CONFIDENTIALS
43.1	The Contractor, his Employees and agents shall treat the Contract and everything contained therein as private and confidential. They shall not disclose any information or drawings or documents furnished to the Contractor by BHEL or Engineer or Engineer's Representative. All drawings reports and other information prepared by the Contractor or by BHEL or jointly by both for the execution of Contract shall not be disclosed without the prior written permission of the Engineer.
43.2	The Contractor shall not permit the drawings or other documents entrusted to the Contractor to be inspected copied or extracts taken there from by any person (other than is lawfully necessary for the performance of the Contract). No photographs of the Works or the plant within the Site premises shall be taken without the prior written permission of the Engineer. The Contractor shall not use the site for the purpose of advertising except with the prior written permission of the Engineer. Above such permission may if granted be subject to such conditions as the Engineer may prescribe. The provisions of this clause shall also apply to all the Sub-contractors.
44.0	EXPLOSIVE
	Explosive shall not be used on the work by Contractor except with permission in writing of the Engineer and the manner and to the extent to which he is prescribed, where explosive are used, the same shall be stored in the special magazine to be provided by and at the cost of the Contractor who shall be liable for all damages, loss and injury to any person or property and shall be responsible for complying with all statutory obligations, in these respects.
45.0	MEMBERS OF STAFF ETC NOT PERSONALLY LIABLE
	Neither any member of BHEL'S staff nor the Engineer, nor the Engineer's representative shall be in any way personally liable for the acts or obligations under the contract or answerable for any default or omission on the part of BHEL in the observance or performance of any of the acts, matters, or things which are herein contained.
46.0	POST TECHNICAL AUDIT OF WORK AND BILLS
	BHEL reserves the right to carry out the post payment audit and technical examination of the work and final bill including all supporting vouchers, abstracts etc., and to enforce recovery of any sums becoming due as a result thereof provided however that no such recovery shall be enforced after 4 years of passing and setting the final bill.
47.0	NON WAIVER OF DEFAULTS
	Failure of BHEL to insist upon strict performance of any terms and conditions of the contract will not be deemed a waiver of any rights or remedies that BHEL may have and will not be deemed a waiver of any subsequent default under the terms and conditions of the Contract. No right or remedy will be exclusive of any other right or remedy and BHEL will have all rights and remedies given under the Contract and now or hereafter existing in law or by

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	statute.
48.0	GENERAL GUIDELINES FOR FIELD ACTIVITIES
	The activities to be rendered by the contractor shall broadly include (except otherwise specified in the contract) but not limited to the following:
48.1	Arranging issue of materials from site store / open yard from time to time for erection as per the construction programme. The contractor shall be the custodian of all the materials issued till the plant is officially taken over the BHEL/purchaser after complete erection and successful trial run & commissioning etc. as applicable.
48.2	Transportation of materials to their respective places of erection and erection of the complete plant & equipment as supplied under this specification.
48.3	The contractor shall co-operate with BHEL/purchaser and other contractors working in site and arrange to perform his work in a manner so as to minimise interference with other contractor's works. The BHEL's engineer shall be notified promptly of any defect in other contractor's work that could affect the contractor's work. If rescheduling of contractor's work is requested by BHEL's Engineer in the interest of overall site activities, the same shall be complied with by the contractor. In all cases of controversy, the decision of BHEL shall be final and binding on the contractor without any commercial implication.
48.4	It may sometimes be necessary to remove some of the erected structural members to facilitate erection of bigger/pre-assembled equipment. In such case, the removal and re-erection of such members, which are essential, and if so agreed by the Engineer, will have to be done by the contractor at his cost.
48.5	Attachment welding of necessary instrumentation tapping points, thermocouple pads, root valves, condensing vessels, flow nozzles and control valves etc. Both for regular measurement and performance testing to be provided on equipment, its auxiliaries or pipelines covered within the scope of this tender, will also be the responsibility of the contractor and the same will be done as per the instructions of Engineer. The erection and welding of all above items will be the contractor's responsibility, even if :
48.5.1	Product groups under which these items are released are not covered in the scope of this tender.
48.5.2	Items are supplied by an agency other than the contractor.
48.6	Preservation of all materials / equipment under custody of the contractor during storage, pre-assembly & erection, commissioning etc, shall be the responsibility of the contractor. All necessary preservatives and consumables like paints, etc., shall be arranged by the contractor. Necessary touch up painting, periodic application of preservatives/paints on pressure parts/other equipment even after erection until completion of work shall be carried out by the contractor.
48.7	It is responsibility of the contractor to do the alignment etc., if necessary, repeatedly to satisfy Engineer, with all the necessary tools & tackles, manpower etc., The alignment will be complete only when jointly certified so, by the contractor's Engineer & BHEL. Also the contractor should ensure that the alignment is not disturbed afterwards.
48.8	Additional temporary platforms required for approaching different equipment as per site requirement, which may not be indicated in drawings, shall be fabricated and erected by the contractor. The materials required for these works shall be supplied by the contractor (except otherwise specified in the contract) and he will have to fabricate them to suit the requirement.
48.9	Before erection of any equipment on a foundation, the contractor shall check and undertake if necessary rectification of foundation bolts reaming of holes, drilling of dowels, matching of bolts and nuts, making new dowel pin etc.
48.10	Assistance for calibrating /testing the power cylinders, valves, gauges, instruments etc., and setting of actuators coming under various groups shall be provided by contractor.
48.11	It shall be the responsibility of the contractor to provide ladders on columns for initial works till such time stairways are complete. For this, the ladder should not be welded on the column and should be prefabricated clamping type. No temporary welding on any structural member is permitted except under special circumstances with the approval of BHEL.
48.12	Structural materials required for the supporting /operating platforms required for the valves at various levels for the same operation of valves will be arranged by BHEL (except otherwise specified in the contract). Fabrication and erection of the same is deemed to be in the scope of the contractor.
48.13	All empty containers, packing materials, gunny bags, transport frames as also surplus and unused materials shall be the property of BHEL/the purchaser and shall be returned to the purchaser's scrap yard/store as directed by BHEL from time to time within the plant boundary.

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48.14	Site welding & heat treatment. Welding shall be done in accordance with IS-813, IS-816, IS-9595 & other relevant IS/ International standards. Only those welders, who are qualified as per IS-817 for ordinary welds and as per IBR/ASME Section-IX for high pressure welds, shall be employed in job. All welders shall be tested and approved by Engineer before they are actually engaged on the work even though they may possess the requisite certificates. BHEL reserves the right to reject any welder without assigning any reason. The welder identification code as approved by the Engineer shall be stamped by the welder on each joint done by them. The contractor will be responsible for the periodic renewal, re-testing of the welders as demanded by BHEL. The Engineer is entitled to stop contractor's any welder from his work. If his work is unsatisfactory for any technical reason or there is a high percentage of the rejection of joints welded by him, which in the opinion of Engineer will adversely affect the quality of welding even though the welder has earlier passed the tests. The welders having passed the tests do not relieve the contractor from his contractual obligations, to check the performance of the welders. All charges for testing of welders including destructive and non-destructive tests if conducted by BHEL or by the inspection authority at site shall have to be borne by the contractor. The necessary test materials and consumables will have to be arranged by the contractor and all testing facility made available, as required. All welded joints shall be subject to acceptance by Engineer Inspection of welds shall be in accordance with IS-822 or equivalent code. Preheating/postheating and stress relieving after welding are part of fabrication and erection work and shall be performed by the contractor in accordance with the instruction of Engineer. Unless otherwise specified, contractor shall arrange to supply heating equipment with automatic recording devices. Also the contractor shall have to arrange for the labour, heating elements, thermocouples, compensating cables, isolations materials like mineral wools, asbestos cloth, ceramic bricks, asbestos rope, etc. required for the heat-treatment and stress relieving hours. During pre-heat/stress relieving operation, the temperature shall be measured at one or more points as required by attaching thermocouples and recorded on a continuous printing type recorder. All the record graphs for the heat treatment works carried out shall be got signed by the Engineer prior to the commencement of each cycle and handed over to Engineer on completion. The graphs will be the property of BHEL. Also, the contractor has to provide thermo-chalks temperature recorders, thermocouple attachments, units, graph sheets etc, required for the job & maintain them in good condition. All electrodes shall be backed and dried in the electric/ electrode drying oven to the required temperature and for the period specified by the Engineer before they are used in erection work. The electrodes used shall be as per IS-814, IS-815, IS-1442, IS-9200 and other codes as applicable, and shall be of approved by reputed manufacture. The electrodes shall meet the requirement of the pipe materials. No electrodes manufactured more than 12 months ago and the type covered under certificate issued after conducting tests more than 6 months ago shall be used. All electrodes shall be preserved at works and at site as per manufacturer's recommendations. Oxy-acetylene flame or Exo-thermic chemical heating for stress relieving is not permitted. Heating shall be by means, of electric induction coil or electric resistance coil. It may become necessary to adopt inter layer radiography /MPT/UT depending upon the site/technical requirement interruptions in continuation of the work and making necessary arrangement for carrying out the above work. Gas tungsten arc welding process (TIG) shall be adopted for all root pass welds except for structural works until 4.75 mm thickness is deposited. Subsequent welding after root pass can be carried out by manual metal arc welding with coated electrodes. For pipes of thickness less than 6 mm the entire welding has to be carried out by TIG welding. Fillet weld shall be made by shielded metal arc process as per applicable codes. However, the Engineer will have the option of changing the method of welding as per site requirement. The method adopted for manual arc welding shall be weaving technique are the width of weaving shall not exceed 1.5 times of the diameter of the electrode. In case of deviation from welding process and electrodes, the Contractor shall take approval of BHEL prior to adoption of same. The root pass for butt joints shall be such as to achieve full penetration with complete fusion of root edges. Each pass shall be cleared and freed of slag before the next pass is deposited. On completion of each run, craters, weld irregularities, slag etc shall be removed by

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	grinding or chipping. Each layer of welding shall have an even and smooth appearance. Welding sequence shall be adjusted in such a way that distortion due to welding shrinkage is minimised. Further any movement, shock or vibration during welding shall be avoided to prevent weld cracks. Proper protection of welders and the work shall be taken during periods of rain. No welding shall be carried out when surface to be welded are wet from any cause. Following will be stages of inspection during welding:
48.14.1	Two pieces to be joined shall be individually checked for the weld edge preparation and profile dimensionally and to the template. Dye penetrant check shall be carried out on edge prepared surfaces at random. The percentage will depend on criticality as specified by Engineer.
48.14.2	Joint fit up will be a stage of inspection. Misalignment after fit up may vary from 0.3 mm to 1.6 mm depending on outside diameter and thickness.
48.14.3	All joints shall be offered for visual inspection after root run. Subsequent welding should be made only after the approval of root run. All welded joints shall be painted with anti corrosive paint immediately on completion of radiography and stress relieving.
49.0	INSPECTION / QUALITY ASSURANCE/QUALITY CONTROL
49.1	The work covered under the specification shall be subject to stage wise inspection by BHEL/ the purchaser.
49.2	The contractor has to follow BHEL FQA checklists / Quality plan/ other documents, pertaining to the work covered under the specification, as per instruction of the Engineer.
49.3	Protocols between the contractor and BHEL/Purchaser shall be made by the contractor as per requirement of BHEL/ Purchaser. Preparation of quality assurance log sheets and other quality control and quality assurance documentation as per instruction of the Engineer is within scope of the contractor.
49.4	A daily log book shall be maintained by every supervisor /engineer of the contractor on the job in duplicate (one for BHEL and one for the contractor) for detailing and incorporating various inspection details. All important measurements shall be recorded in the daily log book with sketches based on drawings indicating readings /measurements actually taken and signed by BHEL's / purchaser's /contractor's representative. The contractor shall adopt suitable quality assurance programme to control all activities pertaining to the scope of work, as necessary. Such programmes shall be outlined by the contractor and shall be finally accepted by BHEL/ purchaser. A quality assurance programme of the contractor shall generally cover the following:
49.4.1	Organisation structure and qualification data of key personal of the contractor for the management and implementation of the proposed assurance programme.
49.4.2	The procedure for source inspection, incoming raw material in section, verification of materials purchased etc.
49.4.3	System for maintenance of records.
49.4.5	General requirement – quality assurance
49.5.1	All materials, components & equipment covered under this specification shall be procured, manufactured, erected, commissioned and tested, as applicable, at all the stages, as per a comprehensive Quality Assurance Programme. An indicative programme of inspection / tests to be carried out by the contractor for some of the major items is given in the respective technical specification.
49.5.2	Field Quality Plans will detail out the quality practices and procedures etc to be followed by the contractor's Site Quality Control organisation, during various stages of site activities from receipt of materials / equipments at site.
49.5.3	Castings and forgings used for construction shall be of tested quality. Details of results of chemical analysis, mechanical property test results, as necessary, shall be furnished.

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49.5.4	All welding shall be carried out as per procedure drawn and qualified in accordance with requirements of ASMC. Section IX/BS-4870 or other International equivalent standard acceptable to the purchaser / BHEL. All welders etc employed on any part of the contract at contractor's works or at site shall be qualified as per ASME Section IX or BS-4871 or equivalent international standard approved by the purchaser/ BHEL. Such qualification tests shall be conducted in presence of purchase's /BHEL's authorised representative.
49.5.5	All non destructive examination (NDT) shall be carried out in accordance with approved international standard. The NDT operator shall be qualified as per SNT-TC-IA (of American Society of non destructive examination). Results of NDT shall be properly recorded and submitted for approval.
49.5.6	All the purchase specifications for the major bought out items test of which shall be drawn up by the contractor and finalized with the purchaser/BHEL shall be furnished to the Purchaser/BHEL for comment and subsequent approval before orders are placed.
49.5.7	Purchaser /BHEL reserves the right to carryout quality audit and quality surveillance of the system and procedures of the contractor's quality management and control activities. The contractor shall provide all necessary assistance to enable the purchaser/BHEL to carryout such audit and surveillance.
49.5.8	Quality audit /approval of the results of tests and inspection will not prejudice the right of the purchaser /BHEL to reject an equipment / service not giving the desired performance and shall not in no way limit the liabilities and responsibilities of the contractor in earning satisfactory performance of equipment/ service as per specification.
49.5.9	Repair /rectification procedures to be adopted to make any job and acceptable shall be subject to the approval of the purchaser / BHEL.
49.6	It is further clarified to Cl. No. 10.6.VII of General Conditions of Contract – Instructions to Tenderers that the prime bidder in the Consortium Arrangement shall mean the bidder as applicable in terms of relevant clauses of GCC (definition of terms).
50.0	OCCUPATIONAL HEALTH, SAFETY & ENVIRONMENT MANAGEMENT/ QUALITY ASSURANCE PROGRAMME BHEL, Power Sector (ER) is ISO 9001:2000 certified company. Quality of work to customer's satisfaction and fulfillment of system requirements are the essence of ISO 9001 certification. BHEL, PSER is having HSE certification (ISO 14001 & OHSAS 18001) also Contractor will organise/ plan/ perform all their activities to meet with the applicable requirements of these standards.
50.1	HSE (Health, safety & Environment) Contractor will comply with HSE (Health, safety & Environment) requirements of BHEL. HSE requirements in brief, are given below :-
50.1.1	Contractor will nominate one of their qualified and experienced employees as safety officer, who will be responsible for all HSE related issues of contractors work area. Safety officer will have authority to stop any activity, in case he observes that the activity is not being carried out in safe manner. He will conduct surprise inspection as well as periodic inspection/drill (at least once in a month) and submit such reports to BHEL. He will conduct periodic meetings with supervisors of different working groups and explain HSE issues and use of PPEs to them. Reports of such meetings will be submitted to BHEL. Contractor will develop suitable work procedures based upon HSE guidelines and OCPs and implement it. Such work procedures will consist of Area of work, T&P Details, Work Procedure, PPE requirements etc.
50.1.2	The contractor shall ensure that proper job specific health check-up is done by medical professional for their employees during initial mobilization and thereafter if there is any change of job.
50.1.3	Following personnel protective equipments (PPEs), in adequate numbers, will be made available at site & their regular use by all concerned will be ensured :- - HELMET - SAFETY GOGGLES & WELDING FACE SHIELDS - SAFETY BELTS AND PROTECTIVE NET FOR WORKING AT HEIGHT - SAFETY SHOES - EAR PLUG - ANY OTHER SAFETY EQUIPMENT REQUIRED FOR SAFE COMPLETION OF THE WORK
50.1.4	Providing appropriate first aid facilities for prompt treatment of injuries and illness at work place. Arranging training to contractor workmen/ employees for giving first aid.

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50.1.5	Arranging ambulance in case of any emergency situation .
50.1.6	Identification of nearest hospital and health check-up of workmen/employees
50.1.7	Providing filtered drinking water at work place in cool container.
50.1.8	Providing Canteen, Rest Room, Washing facilities to the contracted employees as per provisions of Contract Labour Regulation Act 1970 (Chapter V).
50.1.9	Providing appropriate fire fighting equipment at designated work place and nominate a fire officer/warden adequately trained for his job.
50.1.10	Identification of nearest fire station and display contact telephone nos. / person's name around work places for cases of emergencies .
50.1.11	Providing adequate no. of 24 V sources and ensure that no hand lamps are operating at voltage level above 24 Volts.
50.1.12	Fulfilling safety requirements at all power tapping points.
50.1.13	Red & White caution tape of proper width(1.5 to 2 inch) to be used for cordoning unsafe area such as open trench, excavation area etc.
50.1.14	Providing contractors company logo on cloths /uniform/ proper identity cards with photographs, for correct identification of people working at project site .
50.1.15	High/ Low pressure welders to be identified with separate colour clothings. No welders will be deployed without passing appropriate tests and holding valid welding certificates. Approved welding procedure should be displayed at work place.
50.1.16	Displaying safe handling procedures for all chemicals such as lube oil, acid, alkali, sealing compounds etc , at work place .
50.1.17	All scaffolding/ platforms should be made from materials of appropriate quality/grade so that these are safe for use. It should be certified/declared safe for use by an experienced contractor person, before any scaffolding/platform is used.
50.1.18	All T&Ps/ IMTEs should be of reputed brand/appropriate quality & must have valid test/calibration certificates bearing endorsement from competent authority of BHEL.
50.1.19	Ensure that the regulatory requirement of excessive weight limit (to carry/lift/ move weights beyond prescribed limits) for male and female workers are complied with.
50.1.20	Safety slogan, Safety/ Caution boards , wherever required to be displayed in consultation with BHEL.
50.1.21	Take suitable measures for waste management and environment related laws/legislation as a part of normal construction activities. Compliance with the legal requirements on storage/ disposal of paint drums (including the empty ones), Lubricant containers, Chemical Containers, and transportation and storage of hazardous chemicals will be strictly maintained. Ensure proper cleanliness of work place, housekeeping and waste management (including proper waste disposal) on daily basis.
50.1.22	It is imperative on the part of the contractor to join and effectively contribute in joint measures such as tree plantation, environment protection, contributing towards social upliftment, conversion of packing woods to school furniture, keeping good relation with local populace etc.
50.1.23	The contractor shall carry out periodic air and water quality check and illumination level checking in his area of work place and take suitable control measure.
50.1.24	All applicable OCPs (Operational control procedures) will be followed by contractor as per BHEL instructions. This will be done as part of normal scope of work. List of such OCPs is given below . In case any other OCP is found to be applicable during the execution of work at site, then contractor will follow this as well, within quoted rate. These OCPs (applicable ones) will be made available to contractor during work execution at site. However for reference purpose, these are kept with sub-contracting officer of BHEL at PSERHQ/ Kolkata, which may be refereed by contractor, if they so desire. ■ OCP for safe handling of chemicals ■ OCP for Electrical safety ■ OCP for energy conservation ■ OCP for safe welding and gas cutting operation ■ OCP for fire safety ■ OCP for safety in use of hand tools ■ OCP for first aid ■ OCP for food safety at canteen ■ OCP for safety in use of cranes ■ OCP for storage and handing of gas cylinders ■ OCP for manual arc welding ■ OCP for safe use of helmets

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	■ OCP for good house keeping ■ OCP for working at height ■ OCP for safe excavation ■ OCP for safe filling of Hydrogen in cylinder ■ OCP for illumination ■ OCP for handling and erection of heavy metals ■ OCP for safe acid cleaning ■ OCP for safe alkali boil out ■ OCP for safe oil flushing ■ OCP for steam blowing ■ OCP for safe working in confined area ■ OCP for safe operation of passenger lift, material hoists & cages ■ OCP for Vehicle maintenance ■ OCP for safe radiography ■ OCP for waste disposal ■ OCP for working at night ■ OCP for blasting ■ OCP for DG Set ■ OCP for handling & storage of mineral wool ■ OCP for drilling, reaming and grinding(machining) etc. ■ OCP for hydraulic test ■ OCP for spray insulation ■ OCP for trial run of rotary equipment ■ OCP for stress relieving ■ OCP for material preservation ■ OCP for cable laying/tray work ■ OCP for electrical maintenance ■ OCP for transformer charging ■ OCP for safe handling of battery system ■ OCP for computer operation ■ OCP for storage in open yard ■ OCP for sanitary maintenance ■ OCP for batching ■ OCP for piling rig operation ■ OCP for gas distribution test ■ OCP for cleaning of hotwell / deaerator ■ OCP for electro-resistance heating ■ OCP for compressor operation ■ OCP for O&M of control of AC plant & system ■ OCP for air compressor ■ OCP for passivation ■ OCP for Safe EDTA Cleaning ■ OCP for Safe Chemical cleaning of Pre boiler system ■ OCP for Safe Boiler Light up ■ OCP for Safe Rolling and Synchronisation ■ OCP for Safe Loading of Unit
50.2	SAFETY AND CLEANLINESS The contractor shall take all necessary safety precautions and arrange for appropriate appliances as per discretion of BHEL or its authorised officials (Site Construction Manager) to prevent loss of human lives, injuries, to personnel engaged and damage to property. Before commencing the work, the contractor shall submit a “Safety Plan” to the above authorised BHEL official and obtain approval on the same. The safety plan shall indicate in detail the measures that would be taken by the contractor to ensure safety of men, equipment, materials and environment during execution of the work. This will also include an organization structure, role and responsibilities of the concerned key personnel, the safety practices that will be followed, PPEs deployed, plan for handling critical activities and emergencies.
50.3	If the contractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instructions issued by the authorised BHEL official, BHEL shall have the right to take corrective steps at the risk and cost of the contractor.

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50.4	During the course of construction, alternation or repairs, scrap with protruding nail, sharp edge etc and all other debris shall be kept clean from working areas, passage, ways and stairs in and around site.
50.5	Combustible scrap and debris shall be removed at regular intervals during the course of execution. Safe means shall be provided to facilitate such removal. The combustible scrap should be stored in safe place away from the plant materials to avoid fire accidents. The area shall be chosen in consultation with the Engineer and to be cordoned off.
50.6	Rigging equipment for materials handling shall be inspected prior to use in each shift and as necessary during its use to ensure that it is safe. Defective rigging equipment will be removed from service.
50.7	Rigging equipment shall not be loaded in excess of its recommended safe working load. Rigging equipment, when not in use, shall be removed from the original work area so as not to present a hazard to employees.
50.8	Contractor shall notify the engineer, of his intention to bring on to site any equipment or any container, with liquid or gaseous fuel or other substance which may create a hazard. The Engineer shall have the right to prescribe the condition under which such equipment or container may be handled and used during the performance of the works and the contractor shall strictly adhere to such instructions. The Engineer shall have the right to inspect any construction tool and to forbid its use, if in his opinion it is unsafe. No claim due to such prohibition will be entertained.
50.9	Where it is necessary to provide and/or store petroleum products or petroleum mixture & explosives, the contractor shall be responsible for carrying out such provision / storage in accordance with the rules & regulations laid down in the relevant petroleum act, explosive act and petroleum and carbide of calcium manual, published by the chief inspector of explosives of India. All such storage shall have prior approval if necessary from the chief inspector of explosives or any other statutory authority. The contractor shall be responsible for obtaining the same.
50.10	Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dragged, struck or permitted to strike each other violently.
50.11	When cylinders are transported by powered vehicle they shall be secured in a vertical position.
50.12	All workmen of the contractor working on construction area shall wear safety shoes, hand gloves, safety helmets and safety belt as applicable. The contractor shall provide to its workforce and ensure the use of following personnel protective equipment as found necessary and as directed by BHEL.
50.12.1	Safety Helmets conforming to IS-2965 : 1984
50.12.1	Safety Belts conforming to IS-3521:1983
50.12.3	Safety Shoes conforming to IS-1989 : 1978
50.12.4	Eye and face protection devices conforming to IS – 8620 : 1977 & IS – 8950 : 1978.
50.12.5	Hand and body protection devices conforming to IS – 2575 : 1975 and IS – 6994 : 1973, IS – 8907 : 1970 & 8619 : 1977. The contractor shall insure his workmen against all accidents and the policy shall be presented to BHEL Engineer on demand. Other wise, BHEL will arrange the same and the expenditure towards this will be debited to the contractor. In case of a fatal or disabling injury accident to any person at construction site due to lapses by the contractor, the victim and/or his/her dependants shall be compensated by the contractor as per statutory requirements. However, if considered necessary BHEL shall have the right to impose appropriate financial penalty on contractor and recover the same from payments due to the contractor for suitably compensating the victim and/or his/her dependence before imposing any such penalty. Appropriate enquiry shall be held by BHEL giving opportunity to the contractor for presenting his case. Above safety conditions are not exhaustive but gives an idea for the contractor and contractor shall adhere to all safety precaution given by the Engineer at site.
50.13	The contractor shall arrange at his cost adequate lighting facilities e.g. flood lighting, hand lamps, area lighting etc. at various levels for safe and proper working operations during night hours at the work spot as well as at the pre-assembly area.
50.14	The contractor shall be responsible for provision of all the safety notices and safety equipment as enjoined on him by the application of relevant statutory regulation / provisions and/or as called upon by BHEL from time to time. He shall be held responsible for any violation of statutory regulations (local, state or central) and BHEL instruction that may endanger safety of men, equipment and material.

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50.15	The contractor shall provide temporary fencing wherever required as a safety measure against accident and damage to properties. Suitable caution notices shall be displayed where access to any part is found to be unsafe and hazardous.
50.16	Contractor shall ensure safety of all the workmen, material and equipment either belonging to him or to others working at site. He shall observe safety rules and codes applied by BHEL without exception.
50.17	It will be the responsibility of the contractor to ensure safe lifting of the equipment, taking due precaution to avoid any accident and damage to other equipment and personnel. All requisite tests and inspection of handling equipment, tools & tackle shall be periodically done by the contractor. Defective equipment shall be removed from service. Any equipment shall not be loaded in excess of its recommended safe working load.
50.18	The contractor shall provide necessary first aid facilities for all his employees, representatives and workmen at site and BHEL shall have no obligation in this regard. The first aid boxes should be placed at various elevations so as to make them available within the reach and at the quickest possible time. The contractor should conduct periodical first – aid classes to keep his supervisor and Engineers properly trained for attending to any emergency.
50.19	All the contractor's supervisory personnel and sufficient number of workers shall be trained for fire protection systems. Enough number of such trained personnel must be available during the tenure of contract. Contractor should nominate his supervisor to coordinate and implement the safety measures.
50.20	Contractor shall provide enough fire protecting equipment of the types and numbers at his office, stores, temporary structure in labour colony etc. Such fire protection equipment shall be easy and kept open at all times. The fire extinguishers shall be properly refilled and kept ready which should be certified at periodic intervals. The date of changing should be marked on the Cylinders. All other fire safety measures as laid down in the "codes for fire safety at construction site" issued by safety coordinator of BHEL shall be followed. Non-compliance of the above requirement under fire protection shall in no way relieve the contractor of any of his responsibility and liabilities to fire accident occurring either to his materials or equipment or those of others.
50.21	The contractor shall at his cost, remove from vicinity of work at least once each day all combustible waste, scrap, painting materials, rubbish, unused or other materials and deposit them in places specified by BHEL to keep the work site clear and tidy. Use of undercoated canvas paper, corrugated paper, fabricated carton, plastic or other flammable materials shall be restricted to the minimum and promptly removed.
50.22	The contractor shall not use any hand lamp energized by Electric power with supply voltage of more than 24 volts in confined spaces like inside water boxes, turbine casings, condensers etc.
50.23	All portable electric tools used by the contractor shall have safe plugging system to source of power and be appropriately earthed. Only electricians licensed by appropriate statutory authority shall be employed by the contractor to carry out all types of electrical works.
50.24	In case of any delay in completion of a job due to mishaps attributable to lapses by the contractor, BHEL shall have the right to recover cost of such delay from the payments due to the contractor, after notifying the contractor suitably.
50.25	Valve protection caps shall be kept in place and secured.
50.26	The contractor shall be responsible for the safe storage and handling of his radio-active sources as per BARC rules and regulations.
50.27	Tarpaulin being inflammable should not be used (instead, only non infusible covering materials shall be used) as protective cover while preheating, welding, stress relieving etc. at site.
50.28	If the contractor fails to improve the standards of safety in its operation to the satisfaction of BHEL after being given reasonable opportunity to do so and/or if the contractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instruction regarding safety issued by BHEL, BHEL shall have the right to take corrective steps at the risk and cost of the contractor after giving a notice of not less than 7 days indicating the steps that would be taken by BHEL.
50.29	If the contractor succeeds in carrying out its job in time with out any fatal or disabling injury accident and without any damage to property BHEL may, at its sole discretion, favorably consider to reward the contractor suitably for the performance.
50.30	The contractor shall carefully follow the safety requirement of BHEL/ the purchaser with the regard to voltages used in critical areas.
50.31	The contractor shall use only properly insulated and armored cables which conform to the

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	requirement of Indian Electricity Act and Rules for all wiring, electrical applications at site. BHEL reserves the right to replace any unsafe electrical installations, wiring, cabling etc. at the cost of the contractor. All electrical appliances used in the work shall be in good working condition and shall be properly earthed. No maintenance work shall be carried out on live equipment. The contractor shall maintain adequate number of qualified electricians to maintain his temporary electrical installations.
50.32	The contractor shall arrange adequate number of persons specifically for clearing any debris and for house keeping of the erection area including restacking of components in the erection areas.
50.33	In case of any damage to property due to lapses by the contractor, BHEL shall have the right to recover the cost of such damages from the contractor after holding an appropriate enquiry.
50.34	The contractor shall submit report of all accidents, fires and property damage etc to the Engineer immediately after such occurrence, but in any case not later than 24 hours of the occurrence. Such reports shall be furnished in the manner prescribed by BHEL. In addition periodic reports on safety shall also be submitted by the contractor to BHEL from time to time as prescribed by the Engineer.
50.35	Before commencing the work, the contractor shall appoint/nominate a responsible person to supervise implementation of all safety measures and liaison with his counterpart of BHEL.
50.36	Suitable scaffolds shall be provided for workman for all works that cannot safely be done from the ground, or from solid construction except in the case of short duration of work which can be done safely from ladders. When a ladder is used, it shall be of rigid construction made of steel. The steps shall have a minimum width of 45 cm and a maximum rise of 30 cm. Suitable handholds of good quality wood or steel shall be provided and the ladder shall be given an inclination not steeper than ¼ horizontal and 1 vertical.
50.37	Scaffolding or staging more than 3.6 m above the ground floor, swung or suspended from an overhead support or erected with stationery support shall have a guard rail properly bolted, braced or otherwise secured, at least 90 cm above the floor or platform of such scaffolding or staging and extending along the entire length of the out side and ends thereof with only such openings as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from savor, from swaying, from the building or structure.
50.38	Working platforms, gangways and stairways shall be so constructed that they do not sag unduly or unequally and if the height of the platform gangways provided is more than 3.6 m above ground level or floor level, they shall be closely boarded and shall have adequate width which shall not be less than 750 mm and be suitably fenced as described above.
50.39	Every opening in the floor or a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 90 cm.
50.40	Wherever there are open excavation in ground, they shall be fenced off by suitable railing and danger signals installed at night so as to prevent persons slipping into the excavations.
50.41	Safe means of access shall be provided to all working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 m in the length while the width between side rails in rung ladder shall in no case be less than app. 29.2 cm for ladder upto and including 3 m in length. For longer ladders this width shall be increased at least ¼" for each additional foot of length.
50.42	A sketch of the ladders and scaffolds proposed to be used shall be prepared and approval of the Engineer obtained prior to Construction.
50.43	All personnel of the Contractor working within the plant site shall be provided with safety helmets. All welders shall wear welding goggles while doing welding work and all metal worker shall be provided with safety gloves. Persons employed on metal cutting and grinding shall wear safety glasses.
50.44	Adequate precautions shall be taken to prevent danger for electrical equipment. No materials on any of the sites of work shall be so stacked or placed as to cause danger or inconvenience to any person or the public.
50.45	All trenches, four feet or more in depth, shall at all times be supplied with at least one ladder for each 30 m in length or fraction thereof. The ladder shall be extended from bottom of the trench to at least 90 cm above the surface of the ground. Sides of the trenches which are 1.50 m or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5 m of the edges of the trench or half of the depth of the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances

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	undermining or undercutting shall be done.
50.46	The Contactor shall take all measures at the sites of the work to protect all persons from accidents and shall be bound to bear the expenses of defense of every suit, action or other proceeding at law that may be brought by any persons for injury sustained or death owing to neglect of the above precautions and to pay any such persons such compensation or which may with the consent of the Contractor be paid to compromise any claim by any such person should such claim proceeding be filed against BHEL, the Contractor hereby agrees to indemnify BHEL against the same.
50.47	Before any demolition work is commenced and also during the process of the work.
50.47.1	All roads and open areas adjacent to the work site shall either be closed or suitably protected.
50.47.2	No electric cable or apparatus which is liable to be a source of danger nor a cable or an apparatus used by the operator shall remain electrically charged.
50.47.3	All practical steps shall be taken to prevent danger to persons employed from the risks of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render them unsafe.
50.48	All necessary personnel safety equipment as considered adequate by the Engineer should be kept available for the use of the persons employed in the Site and maintained in a condition suitable for immediate use and the Contactor should take adequate steps to ensure proper use of equipment by those concerned.
50.48.1	Workers employed on mixing asphalted materials, cement and lime mortars shall be provided with protective foot wear and protective goggles.
50.48.2	Those engaged in white washing and mixing or stacking of cement bags or any materials which is injurious to the eyes shall be provided with protective goggles.
50.48.3	Those engaged in welding works shall be provided with welder's protective eyesight lids.
50.48.4	Stone breakers shall be provided with protective goggles and protective clothing and seated sufficient to safe intervals.
50.48.5	Where workers are employed in sewers and manholes, which are in use, the Contractor shall ensure that the manhole covers are opened and ventilated at least for an hour before the workers are allowed to get into manhole, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public.
50.48.6	The Contractor shall not employ men below the age of 18 years and women on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following precautions should be taken.
50.48.6.1	No paint containing lead or lead products shall be used except in the form of paste or ready made paint.
50.48.6.2	Suitably face masks should be supplied for use by the workers where paints are applied in the form of spray or a surface having lead paint dry rubbed and scrapped.
50.48.6.3	Overalls shall be supplied by the Contractor to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.
50.49	When the work is being done near any place where there is risk of drowning all necessary equipment should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision should be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.
50.50	Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safe guards. Hoisting appliance should be provided with such means as will reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers employed on electrical installations which are already energized, insulating mats, wearing apparel, such as gloves, sleeves and boots as may be necessary should be provided. The worker should not wear any rings, watches and carry keys or other materials which are good conductor of electricity.
50.51	All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near the places of work.
50.52	The contractor shall maintain and ensure necessary safety measures as required for inspection and tests HV test, Pneumatic test, Hydraulic test, Spring test, Bend test etc as applicable, to enable. inspection Agency for performing Inspection. If any test equipment is found not complying with proper safety requirements then the Inspection Agency may withhold inspection, till such time the desired safety requirements are met.
50.53	The Contractor shall notify BHEL of his intention to bring to site any equipment or material

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	which may create hazard. BHEL shall have the right to prescribe the conditions under which such equipment or materials may be handled and the contractor shall adhere to such instructions. BHEL may prohibit the use of any construction machinery, which according to him is unsafe. No claim for compensation due to such prohibition will be entertained by BHEL.
50.54	All safety precautions shall be taken for welding and cutting operations as per IS-818. All safety precautions shall be taken for foundation and other excavation marks as per IS-3764.
50.55	These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent, place at work spot. The persons responsible for compliance of the safety code shall be named therein by the Contractor.
50.56	To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangement made by the contract shall be open to inspection by the Engineer of the Engineer's Representative.
50.57	Keeping the work area clean/ free from debris, removed scaffoldings, scraps, insulation/sheeting wastage /cut pieces, temporary structures, packing woods etc. will be in the scope of the contractor. Such cleanings has to be done by contractor within quoted rate, on daily basis by an identified group. If such activity is not carried out by contractor / BHEL is not satisfied, then BHEL may get it done by other agency and actual cost alongwith BHEL overheads will be deducted from contractor's bill. Such decisions of BHEL shall be binding on the contractor.
50.58	Notwithstanding the above clauses there is nothing to exit the Contractor from the operations of any other Act or Rule in force in area of work in this respect. Provided always that all safety measures apart from those specifically provided in this agreement which are brought to the notice of the Contractor from time to time by the Engineer shall be complied by the Contractor. Provided further that all consequences, damages, or losses arising by reason of any safety code shall be met with by the Contractor.
50.59	GENERAL REQUIREMENTS OF QUALITY ASSURANCE Contractor's Engineers and supervisors shall be adequately qualified and also inclined to do a quality job. Contractor will designate one of their engineers as Quality Assurance Engineer. The Quality Assurance Engineer shall co-ordinate all aspects of quality control, inspection, implementation of quality assurance procedures laid down in Quality Plan and technical specification by BHEL. He shall fill up quality assurance logsheets / formats and submit to BHEL for joint inspection and acceptance.
50.59.1	The contractor shall adopt suitable quality assurance programme to control activities as necessary. Such programme shall be outlined by the contractor and shall be finally accepted by the BHEL/Owner. A quality assurance programme of the contractor shall generally cover the following:-
50.59.1.1	His organisation structure and qualification data of key personnel for the management and implementation of the proposed quality assurance programme.
50.59.1.2	System for site erection control including process controls and fabrication and assembly controls.
50.59.1.3	Control of non-conforming items and system for corrective actions.
50.59.1.4	Inspection and test procedure for all site related works.
50.59.1.5	Calibration and testing of Measuring and Monitoring Devices (MMDs) at appropriate intervals.
50.59.1.6	System for quality audit.
50.59.1.7	System for indication and appraisal of inspection status.
50.59.1.8	System for maintenance of records.
50.59.2	All materials, components and equipment covered under this specification shall be erected, commissioned and tested at all the stages, as per a comprehensive Quality Assurance Programme.
50.59.3	Quality audit/approval of the results of tests and inspection will not prejudice the right of BHEL to reject an equipment not giving the desired performance after erection and shall not in no way limit the liabilities and responsibilities of the Contractor in earning satisfactory performance of equipment as per specification.
50.59.4	Repair/rectification procedures to be adopted to make any job acceptable shall be subject to the approval of BHEL/ Owner.
50.59.5	Filling up of different quality log sheets as desired and directed by BHEL/owner at different stages of inspection of erection & commissioning activities after due checking by BHEL/owner and get the same signed by concerned engineers.

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51.0	LIST OF STANDARDS FOR REFERENCE
51.1	International Standards Organisation (ISO).
51.2	International Electro-technical Commission (IEC).
51.3	American Society of Mechanical Engineers (ASME).
51.4	American National Standards Institute (ANSI).
51.5	American Society for Testing and Materials (ASTM).
51.6	American Institute of Steel Construction (AISC).
51.7	American Welding Society (AWS).
51.8	Architecture Institute of Japan (AIJ).
51.9	National Fire Protection Association (NFPA).
51.10	National Electrical Manufacturer's Association (NEMA)
51.11	Japanese Electro-technical Committee (JEC).
51.12	Institute of Electrical and Electronics Engineer (IEEE).
51.13	Federal Occupational Safety and Health Regulations (FOSHR).
51.14	Instrument Society of America (ISA).
51.15	National Electric Code (NEC).
51.16	Heat Exchanger Institute (HEI).
51.17	Tubular Exchanger Manufacturer's Association (TEMA).
51.18	Hydraulic Institute (HIS).
51.19	International Electro Technical Commission Publications.
51.20	Test Code for Steam Turbines (PTC).
51.21	Applicable German Standards (DIN).
51.22	Applicable British Standards (BS).
51.23	Applicable Japanese Standards (JIS).
51.24	Electric Power Research Institute (EPRI).
51.25	Standard of Manufacturer's Standardization Society (MSS).
51.26	Bureau of Indian Standards Institution (BIS).
51.27	Indian Electricity Acts & Rules.
51.28	Indian Boiler Regulations (IBR).
51.29	Indian Explosives Act.
51.30	Indian Factories Act.
51.31	Tariff Advisory Committee (TAC) rules.
51.32	Emission regulation of Central Pollution Control board (CPCB).
51.33	Central Board of Irrigation and Power (CBIP) Publications.
51.34	Any other statutory Codes / Standards/Regulations.

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FORMS & PROCEDURES

FOR

**DESIGN, ENGINEERING, MANUFACTURING, INSPECTION,
SUPPLY/ DELIVERY, INSTALLATION, COMMISSIONING, TRIAL
RUN, HANDING OVER ETC. OF “CONTAINERIZED ELECTRICAL
ROOM ALONG WITH VENTILATION SYSTEM” FOR 4X210 MW
UNITS AT NTPC KAHALGAON STPP, BIHAR.**

BHARAT HEAVY ELECTRICALS LIMITED

(A GOVT. OF INDIA UNDERTAKING)

POWER SECTOR – EASTERN REGION

PLOT NO. – 9 / 1, DJ – BLOCK,

SECTOR – II, KARUNAMOYEE,

SALT LAKE CITY,

KOLKATA – 700091.

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- BANK GUARANTEE FORMATS FOR "RELEASE OF AMOUNTS WITHED/ LIQUIDATED DAMAGES AMOUNT", "SUPPLY FREE ISSUE MATERIAL" & "EARNEST MONEY" IS ALSO GIVEN.

: will be released later

FORMS & PROCEDURES

Form No: F-01 (Rev 00)

OFFER FORWARDING LETTER / TENDER SUBMISSION LETTER

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

Offer Reference No:

Date:

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub : Submission of Offer against Tender Specification No:

I/We hereby offer to carry out the work detailed in the Tender Specification issued by Bharat Heavy Electricals Limited, Power Sector-....., in accordance with the terms and conditions thereof.

I/We have carefully perused the following listed documents connected with the above work and agree to abide by the same.

1. Amendments/Clarifications/Corrigenda/Errata/etc issued in respect of the Tender documents by BHEL
2. Notice Inviting Tender (NIT)
3. Price Bid
4. Technical Conditions of Contract
5. Special Conditions of Contract
6. General Conditions of Contract
7. Forms and Procedures

Should our Offer be accepted by BHEL for Award, I/we further agree to furnish 'Security Deposit' for the work as provided for in the Tender Conditions within the stipulated time as may be indicated by BHEL.

I/We further agree to execute all the works referred to in the said Tender documents upon the terms and conditions contained or referred to therein and as detailed in the appendices annexed thereto.

I/We have deposited/depositing herewith the requisite Earnest Money Deposit (EMD) as per details furnished in the Check List.

Authorised Representative of Bidder

Signature :

Name :

Address :

Place:

Date:

FORMS & PROCEDURES

Form No: F-02 (Rev 00)

DECLARATION BY AUTHORISED SIGNATORY OF BIDDER

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub : **Declaration by Authorised Signatory**

Ref : 1) NIT/Tender Specification No:,

2) All other pertinent issues till date

I/We, hereby certify that all the information and data furnished by me with regard to the above Tender Specification are true and complete to the best of my knowledge. I have gone through the specifications, conditions, stipulations and all other pertinent issues till date, and agree to comply with the requirements and Intent of the specification.

I further certify that I am authorised to represent on behalf of my Company/Firm for the above mentioned tender and a valid Power of Attorney to this effect is also enclosed.

Yours faithfully,

(Signature, Date & Seal of Authorized
Signatory of the Bidder)

Date:

Enclosed : Power of Attorney

FORMS & PROCEDURES

Form No: F-03 (Rev 00)

NO DEVIATION CERTIFICATE

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub : **No Deviation Certificate**

Ref : 1) NIT/Tender Specification No:,

2) All other pertinent issues till date

We hereby confirm that we have not changed/ modified/materially altered any of the tender documents as downloaded from the website/ issued by BHEL and in case of such observance at any stage, it shall be treated as null and void.

We also hereby confirm that we have neither set any Terms and Conditions and nor have we taken any deviation from the Tender conditions together with other references applicable for the above referred NIT/Tender Specification.

We further confirm our unqualified acceptance to all Terms and Conditions, unqualified compliance to Tender Conditions, Integrity Pact (if applicable) and acceptance to Reverse Auctioning process.

We confirm to have submitted offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized
representative of the bidder)

FORMS & PROCEDURES

Form No: F-04 (Rev 00)

DECLARATION CONFIRMING KNOWLEDGE ABOUT SITE CONDITIONS (To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub : **Declaration confirming knowledge about Site conditions**

Ref : 1) NIT/Tender Specification No:,

2) All other pertinent issues till date

I/We, _____ hereby declare and confirm that we have visited the Project Site as referred in BHEL Tender Specifications and acquired full knowledge and information about the Site conditions including Wage structure, Industrial Climate, the Law & Order and other conditions prevalent at and around the Site. We further confirm that the above information is true and correct and we shall not raise any claim of any nature due to lack of knowledge of Site conditions.

I/We, hereby offer to carry out work as detailed in above mentioned Tender Specification, in accordance with Terms & Conditions thereof.

Yours faithfully,

(Signature, Date & Seal of Authorized
Representative of the Bidder)

Date :

Place:

FORMS & PROCEDURES

Form No: F-05 (Rev 00)

DECLARATION FOR RELATION IN BHEL

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder failing which the offer of Bidder is liable to be summarily rejected)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub : **Declaration for relation in BHEL**

Ref : 1) NIT/Tender Specification No:

I/We hereby submit the following information pertaining to relation/relatives of Proprietor/Partner(s)/Director(s) employed in BHEL

Tick(✓) any one as applicable:

1. The Proprietor, Partner(s), Director(s) of our Company/Firm DO NOT have any relation or relatives employed in BHEL

OR

2. The Proprietor, Partner(s), or Director(s) of our Company/Firm HAVE relation/relatives employed in BHEL and their particulars are as below:

(i)

(ii)

Signature of the Authorised Signatory

Note:

1. Attach separate sheet, if necessary.
2. If BHEL Management comes to know at a later date that the information furnished by the Bidder is false, BHEL reserves the right to take suitable action against the Bidder/Contractor.

FORMS & PROCEDURES

Form No: F-06 (Rev 00)

NON DISCLOSURE CERTIFICATE

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

NON DISCLOSURE CERTIFICATE

I/We understand that BHEL PS __ is committed to Information Security Management System as per their Information Security Policy.

Hence, I/We M/s.....
who are submitting offer for providing services to BHEL PS __ against
Tender Specification No: _____,
hereby undertake to comply with the following in line with Information
Security Policy of BHEL PS __, _____

- To maintain confidentiality of documents & information which shall be used during the execution of the Contract.
- The documents & information shall not be revealed to or shared with third party which shall not be in the business interest of BHEL PS__.

(Signature, date & seal of Authorized
Signatory of the bidder)

Date:

FORMS & PROCEDURES

Form No: F-07 (Rev 00)

BANK ACCOUNT DETAILS FOR E-PAYMENT

(To be given on Letter head of the Company /Firm of Bidder, and **ENDORSED (SIGNED & STAMPED) BY THE BANK** to enable BHEL release payments through Electronic Fund Transfer (EFT/RTGS))

1. Beneficiary Name :
2. Beneficiary Account No. :
3. Bank Name & Branch :
4. City/Place :
5. 9 digit MICR Code of Bank Branch :
6. IFSC Code of Bank Branch :
7. Beneficiary E-mail ID :
(for payment confirmation)

NOTE: In case Bank endorsed certificate regarding above has already been submitted earlier, Kindly submit photocopy of the same

FORMS & PROCEDURES

Form No: F-08 (Rev 00)

FORMAT FOR SEEKING CLARIFICATION

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub : **Request for Clarification**

Ref : 1) NIT/Tender Specification No:,

2) All other pertinent issues till date

Sl no	Reference clause of Tender Document	Existing provision	Bidder's query	BHEL's clarification
1				
2				
3				

Yours faithfully,

(Signature, date & seal of Authorized Representative of the Bidder)

FORMS & PROCEDURES

FORMS & PROCEDURES

Form No: F-09 (Rev 00)

CAPACITY EVALUATION OF BIDDERS FOR CURRENT TENDER

SL NO.	DESCRIPTION OF WORK (Similar to Tendered Scope)	WORK ORDER REF & DATE	CONTRACT VALUE (Rs. LACS)	CUSTOMER NAME & ADDRESS	CURRENT STATUS OF THE JOB ALONG WITH LATEST MILE STONE COMPLETED	%AGE OF WORK COMPLETED	VALUE OF BALANCE WORK (Rs. Lacs)
1							
2							
3							
4							
5							

NOTES:

1. BIDDERS ARE REQUIRED TO FURNISH ALL THE JOBS OF SIMILAR NATURE WHICH THEY ARE EXECUTING (IN PROGRESS) AT THE TIME OF SUBMISSION OF TENDER, AS PER ABOVE FORMAT.

2. BIDDERS HEREBY UNDERTAKE THAT THEY HAVE FURNISHED THE DETAILS SOUGHT AS PER POINT NO. 1 IN TOTALITY AND THAT THE DETAILS FURNISHED IS COMPLETE IN ALL RESPECT.

3. BHEL WILL TAKE APPROPRIATE ACTION AS DEEMED FIT, IN CASE, IT IS FOUND AT A LATER DATE THAT THE CONTRACTOR HAD SUPPRESSED THE FACTS AND HAVE NOT FURNISHED THE CORRECT & COMPLETE INFORMATIONS.

Signature

DATE :

PLACE:

Name, Designation & Seal of Bidder

FORMS & PROCEDURES

CONTRACT AGREEMENT

Form No: F-10 (Rev 00)

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

Power Sector – Region

CONTRACT AGREEMENT

AGREEMENT NO. _____

NAME OF WORK	
NAME OF THE CONTRACTOR WITH FULL ADDRESS	
VALUE OF WORK AWARDED	
LETTER OF INTENT NO.	
TIME ALLOTTED FOR COMPLETING THE WORK (DATE OF COMPLETION)	

SIGNATURE OF CONTRACTOR

(SIGNATURE OF BHEL OFFICER)

FORMS & PROCEDURES

CONTRACT AGREEMENT

THIS AGREEMENT MADE THIS _____ DAY OF _____ between BHARAT HEAVY ELECTRICALS LIMITED (A Government of India Enterprise) a Company incorporated under the Companies Act, 1956, having its Registered Office at BHEL House, Siri Fort New Delhi- 110049 (herein after called BHEL) of the ONE PART.

AND

M/S _____ (hereinafter called the 'Contractor') of the SECOND PART.

WHEREAS M/s -----state that they have acquired and possess extensive experience in the field of -----

And Whereas in response to an Invitation to Tender No. ----- issued by BHEL for execution of ----- the contractor submitted their offer No.- -----dated -----And whereas BHEL has accepted the offer of the Contractor on terms and conditions specified in the Letter of Intent No.-----dated -----read with the references cited therein.

THIS AGREEMENT WITNESSES AND it is hereby agreed by and between the parties as follows:

1. That the contractor shall execute the work of -----and more particularly described in Tender Specification No. -----including Drawings and Specifications (hereinafter called the said works) in accordance with and subject to terms and conditions contained in these presents, instructions to Tenderers, General Conditions of Contract, Special Conditions, Annexures, Letter of Intent dated -----and such other instructions, Drawings, Specifications given to him from time to time by BHEL.
2. The Contractor is required to furnish to BHEL Security deposit in the form of cash/ approved securities/ Bank Guarantee valid upto ----- for a sum of Rs.----- towards satisfactory performance and completion of the Contract.
3. The Contractor has furnished a Bank Guarantee bearing no.-----dated -----for a sum of Rs.-----executed by ----- in favour of BHEL towards Security Deposit valid upto -----

OR

The Contractor has furnished to BHEL an initial Security Deposit of Rs.-----in the form of cash / approved Securities/ B.G No.----- dated ----- for Rs.-----executed by ----- in favour of BHEL valid upto ----- and has agreed for recovery of the balance security deposit by BHEL @ 10% of the value of work done from each running bill till the entire Security Deposit is recovered.

OR

FORMS & PROCEDURES

The contractor has furnished to BHEL an initial Security Deposit of Rs.----- (Rs.----- vide Bank draft No.----- dated ----- and by adjusting EMD of Rs.----- submitted vide Bank draft No.----- dt.-----) and has agreed for recovery of balance Security Deposit by BHEL @ 10% of the value of work done from each running bill till the entire security deposit is recovered.

4. The Contractor hereby agrees to extend the validity of the Bank Guarantee for such further period or periods as may be required by BHEL and if the Contractor fails to obtain such extension(s) from the Bank, the Contractor, shall pay forthwith or accept recovery of Rs.----- from the bills in one installment and the contractor further agrees that failure to extend the validity of the Bank Guarantee or failure to pay the aforesaid amount in the manner specified above shall constitute breach of contract. In addition to above, BHEL shall be entitled to take such action as deemed fit and proper for recovering the said sum of Rs.-----

OR

In case the contractor furnishes the bank guarantee at a later date the contractor hereby agrees to extend the validity of bank guarantee for such further period or periods as may be required by BHEL and if the contractor fails to obtain such extension(s) from the bank, the contractor shall pay forthwith or accept recovery of the amount of bank guarantee given in lieu of security deposit from the bills in one installment and the contractor further agrees that failure to extend the validity of bank guarantee or failure to pay the aforesaid amount in the manner specified above shall constitute breach of contract. In addition to above, BHEL shall be entitled to take such action as deemed fit and proper for recovering the said sum.

5. That in consideration of the payments to be made to the Contractor by BHEL in accordance with this Agreement the Contractor hereby covenants and undertakes with BHEL that they shall execute, construct, complete the works in conformity, in all respects, with the terms and conditions specified in this Agreement and the documents governing the same.
6. That the Contractor shall be deemed to have carefully examined this Agreement and the documents governing the same and also to have satisfied himself as to the nature and character of the Works to be executed by him.
7. That the Contractor shall carry out and complete the execution of the said works to the entire satisfaction of the Engineer or such other officer authorised by BHEL, within the agreed time schedule, the time of completion being the essence of the Contract.
8. That BHEL shall, after proper scrutiny of the bills submitted by the Contractor, pay to him during the progress of the said works such sum as determined by BHEL in accordance with this Agreement.
9. That this Agreement shall be deemed to have come into force from ----- the date on which the letter of intent has been issued to the Contractor.

FORMS & PROCEDURES

10. That whenever under this contract or otherwise, any sum of money shall be recoverable from or payable by the Contractor, the same may be deducted in the manner as set out in the General Conditions of Contract or other conditions governing this Agreement.
11. That all charges on account of Octroi, Terminal and other taxes including sales tax or other duties on material obtained for execution of the said works shall be borne and paid by the Contractor.
12. That BHEL shall be entitled to deduct from the Contractor's running bills or otherwise Income Tax under Section 194 (C) of the Income Tax Act, 1961.
13. That BHEL shall be further entitled to recover from the running bills of the Contractor or otherwise such sum as may be determined by BHEL from time to time in respect of consumables supplied by BHEL, hire charges for tools and plants issued (Where applicable) and any other dues owed by the Contractor.
14. That it is hereby agreed by and between the parties that 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 and the liability of the Contractor with respect to compensation payable to BHEL or Contractor's obligations shall remain unaffected.
15. It is clearly understood by and between the parties that in the event of any conflict between the Letter of Intent and other documents governing this Agreement, the provisions in the Letter of Intent shall prevail.

16. The following documents

1. Invitation to Tender No-----
and the documents specified therein.
2. Contractor's Offer No-----
dated-----.
3. _____
4. _____
5. _____
6. Letter of Intent No _____ dated _____.
7. _____

shall also form part of and govern this Agreement.

IN WITNESS HEREOF, the parties hereto have respectively set their signatures in the presence of

WITNESS

(CONT

RACTOR)

FORMS & PROCEDURES

1. (to be signed by a person holding
a valid Power of Attorney)

2.

WITNESS (For and on behalf of BHEL)

1.

2.

PROFORMA OF BANK GUARANTEE (in lieu of SECURITY DEPOSIT)

In consideration of the 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 BHEL House, Siri Fort, Asiad, New Delhi – 110049 through its Unit at Bharat Heavy Electricals Limited, Power Sector Eastern Region, BHEL Bhawan, Plot No 9/1, DJ Block, Sector-II, Salt lake City, Kolkata – 700091 having agreed to exempt (Name of the Vendor / Contractor / Supplier) having its registered office at _____ ¹ (hereinafter called the said Contractor which term includes supplier), from demand under the terms and conditions of the Contract reference No. _____ ² dated _____ ² valued at Rs. ² (Rupees -----) ² for <Nature of the Work> ³ (hereinafter called the said Contract) of Security Deposit for the due fulfilment by the said contractor of the terms and conditions contained in the said Contract, on production of a Bank Guarantee for Rs. _____ ⁴ (Rupees _____ only), we _____ (indicate the name and address of the Bank) having its Head Office at _____ (address of the head Office) (hereinafter referred to as the Bank) at the request of _____ [Name of Contractor(s)] do hereby undertake to pay to the Employer an amount not exceeding Rs. _____ in the event of any breach by the said Contractor(s) of any of the terms and conditions contained in the said Contract.

We, _____ (indicate the name of the Bank), do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the Employer. Any such demand made on the bank, shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____.

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

The payment so made by us under this guarantee shall be a valid discharge of our liability for payment hereunder and the Contractor(s) shall have no claim against us for making such payment.

We, further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Contract and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said Contract have been fully paid and its claim satisfied or discharged or till _____⁵ or till the office/Department/Division of Bharat Heavy Electricals Limited certifies that the terms and conditions of the said Contract have been fully and properly carried out by the said contractor(s) and also including the satisfactory performance of the equipment during guarantee period and accordingly discharges this guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before the _____⁶, (3 months more than the present date of validity of Bank Guarantee) we shall be discharged from all the liability under this guarantee thereafter.

We, _____ (indicate the name of the Bank) _____ further agree with the Employer that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said contractor(s) 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 any reason of any such variation or extension being granted to the said contractor(s) or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said contractor(s) 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.

This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s).

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.....⁷
- b) This Guarantee shall be valid up to ⁸
- c) Unless the Bank is served a written claim or demand on or before _____⁹ (3 months more than the present date of validity of Bank Guarantee) 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, _____ (indicate the name of the Bank) _____ lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

Any claim or dispute arising under the terms of this document shall only be enforced or settled in the courts of at Kolkata only.

Date _____ Day of _____
for _____ (indicate the name of the Bank) _____

(Signature of Authorised signatory)

¹ NAME AND ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER .

² DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

³ PROJECT/SUPPLY DETAILS

⁴ BG AMOUNT IN FIGURES AND WORDS

⁵ VALIDITY DATE

⁶ DATE OF EXPIRY OF CLAIM PERIOD

⁷ BG AMOUNT IN FIGURES AND WORDS.

⁸ VALIDITY DATE

⁹ DATE OF EXPIRY OF CLAIM PERIOD

Note:

1. Units are advised that expiry of claim period may be kept 2/3 months after validity date.

2. In Case of Bank Guarantees submitted by Foreign Vendors-

- a. **From Nationalized/Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India)** can be accepted subject to the condition that the Bank Guarantee should be enforceable in the town/city or at nearest branch where the Unit is located i.e. Demand can be presented at the Branch located in the town/city or at nearest branch where the Unit is located.
- b. **From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)**
 - b.1 In such cases, in the Tender Enquiry/ Contract itself, it may be clearly specified that Bank Guarantee issued by **any of the Consortium Banks only** will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter-Guarantee by Foreign Bank in favour of the Indian Bank (BHEL's Consortium Bank). It is advisable that all charges for issuance of Bank Guarantee/ counter- Guarantee should be borne by the Foreign Vendor. The tender stipulation should clearly specify these requirements.

TENDER NO. PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

- b.2** In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at **sl.no. b.1** will required to be followed.
- b.3** The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time). In case, of Foreign Vendors, the BG Format provided to them should clearly specify the same.
- b.4** The BG should clearly specify that the demand or other document can be presented in electronic form.

BANK GUARANTEE FOR ADVANCE

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

In consideration of the 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 BHEL House, Siri Fort, Asiad, New Delhi – 110049 through its Unit at Bharat Heavy Electricals Limited, Power Sector Eastern Region, BHEL Bhawan, Plot No 9/1, DJ Block, Sector-II, Salt lake City, Kolkata – 700091 having awarded to (Name of the Vendor / Contractor / Supplier) having its registered office at _____ ¹ (hereinafter called "the Contractor" which expression shall include its successors and permitted assigns) a contract Ref No.....dated ²valued at Rs.....(Rupees -----) for <Nature of Work> ³(hereinafter called the 'Contract')

AND WHEREAS the Employer has agreed to advance to the Contractor, a sum of Rs..... (Rupees..... only), equivalent to _____% of the said value of the Contract (hereinafter called "the said Advance"), upon the condition, that the said Advance shall be secured by undertaking guarantee for Rs ----- (Rupees -----)⁴ from a Bank as hereinafter appearing.

We, ..., (hereinafter referred to as the Bank), having registered/Head office at and a branch at being the Guarantor under this Guarantee, hereby irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer without any demur, merely on your first demand any sum or sums upto a maximum amount but not exceeding Rs ----- (Rupees -----).

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

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

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

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

This Guarantee shall remain in force upto and including.....⁵ and shall be extended from time to time on the request of the Employer for such period as may be desired by the Employer.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Contractor/Supplier but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms hereof. However, unless a demand or claim under this Guarantee is made on us in writing on or before the ⁶ (3 months more than the present date of validity of Bank Guarantee) we shall be discharged from all liabilities under this Guarantee.

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.....⁷
- b) This Guarantee shall be valid up to ⁸
- c) Unless the Bank is served a written claim or demand on or before ⁹ (3 months more than the present date of validity of Bank Guarantee) 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.

Any claim or dispute arising under the terms of this document shall only be enforced or settled in the courts of at Kolkata only.

For and on behalf of
(Name of the Bank)

Date.....

Place of Issue.....

¹ NAME OF VENDOR /CONTRACTOR / SUPPLIER

² DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

³ PROJECT/SUPPLY DETAILS

⁴ BG AMOUNT IN FIGURES AND WORDS

⁵ VALIDITY DATE

⁶ DATE OF EXPIRY OF CLAIM PERIOD

⁷ BG AMOUNT IN FIGURES AND WORDS

⁸ VALIDITY DATE

⁹ DATE OF EXPIRY OF CLAIM PERIOD

Note:

TENDER NO. PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

1. Units are advised that expiry of claim period may be kept 2/3 months after validity date.
2. In Case of Bank Guarantees submitted by Foreign Vendors-
 - a. **From Nationalized/Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India)** can be accepted subject to the condition that the Bank Guarantee should be enforceable in the town/city or at nearest branch where the Unit is located i.e. Demand can be presented at the Branch located in the town/city or at nearest branch where the Unit is located.
 - b. **From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)**
 - b.1 In such cases, in the Tender Enquiry/ Contract itself, it may be clearly specified that Bank Guarantee issued by **any of the Consortium Banks only** will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter- Guarantee by Foreign Bank in favour of the Indian Bank (BHEL's Consortium Bank). It is advisable that all charges for issuance of Bank Guarantee/ counter- Guarantee should be borne by the Foreign Vendor. The tender stipulation should clearly specify these requirements.
 - b.2 **In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank** (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at **sl.no. b.1** will required to be followed.
 - b.3 The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time). In case, of Foreign Vendors, the BG Format provided to them should clearly specify the same.
 - b.4 The BG should clearly specify that the demand or other document can be presented in electronic form.

FORMS & PROCEDURES

Form No: F-13 (Rev 00)

FORM for EXTENSION OF VALIDITY OF BANK GUARANTEE

1. To be typed on non judicial Stamp Papers of value as applicable in the State of India from where the BG has been issued or the State of India where the BG shall be operated
2. The non judicial stamp papers shall be purchased in the name of the Party on whose behalf the BG is being issued or the BG issuing Bank

BANK GUARANTEE No:

Date:

To

(Write Designation and Address of Officer of BHEL inviting the Tender)

Dear Sir

Sub : Validity of Bank Guarantee No: Dated for
..... Rs in favour of yourself, expiry date, on
account of M/s in respect of Contract
Number....., (herein after called the Original bank Guarantee)

At the request of M/s....., we Bank, having its
branch Office at and having Head office at, do
hereby extend our liability under the above mentioned Bank Guarantee number..... dated
..... for a further period of Months/years from to expire on
.....

Except as provided above, all other terms and conditions of the Original Bank Guarantee No
..... Dated..... shall remain unaltered and binding on us.

Kindly treat this extension as an integral part of the original Bank Guarantee to which it would be attached.

Yours faithfully

Signature.....

Name & Designation.....

Power of Attorney/Signing Power No

Seal of Bank

TENDER NO. PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

Project		Vendor			Package/Unit	
Sl. No.	Parameter for Measurement	Classification	Max Score	Score Obtained	Measurement Key/Scheduled date	Supporting Documents
#1.01	Cumulative number of days in the month, the nominated Quality Officer or his authorised nominee was not available	QUALITY	1.5		Quality Officer or his authorised nominee should be available for all the days of working at site	Daily Log Book entry/Incident Registers/letter references
#1.02	Number of instances of non- compliance wrt FQP, Standard Drawings, Specifications, E&C Manuals etc.	QUALITY	1.5		No deviation from FQP, Standard Drawings, Specifications, E&C Manuals etc. is allowed without BHEL Engineer's approval.	Daily Log Book entry/Incident Registers/letter references
#1.03	Percentage submission of test certificates for batches of welding electrodes, cement, sand, aggregate, consumable, Paints etc. as applicable for this month OR In case of MM & MH package, monthly checks for Storage/Preservation of material.	QUALITY	1		Submission of 100% Test certificates for materials as per FQP is mandatory. MM & MH package: Storage/Preservation as per manual/procedure.	Daily Log Book entry/Incident Registers/letter references
#1.04	Number of incidences of improper storage & preservation (not in accordance to the guidelines of BHEL MUs or approved FQP) of materials, consumables (viz. gases, welding electrodes & fluxes, fuel etc.) & bought-out items (paints, fasteners etc.) under the custody of the contractor	QUALITY	1		Total number of non-compliances	Daily Log Book entry/Incident Registers/letter references
#1.05	Rework/ Rejection instances in a month necessitated due to deviation from Standard Drawings /Specifications /Manuals /E&C procedures /FQPs or due to Poor Workmanship by contractor	QUALITY	2		Reworks/ Rejection should be as minimum as possible. Total number of reworks/ rejections due to reasons attributable to contractor.	Daily Log Book entry/Incident Registers/letter references
#1.06	Delay in preparation & submission of signed protocols / log sheets / site register / NDT test reports as per approved FQP/ Qualified Welder List along with photocopies of Welder ID cards / Welder Performance Evaluation records etc. in the month OR in case of MM / MH package reconciliation statement / verification report.	QUALITY	1		Within 2 days of measurements taken or within first 3 working days of next month, as advised by BHEL Engineer	Daily Log Book entry/Incident Registers/letter references
#1.07	Number of instances for Major equipment/product failure due to negligence/improper work/poor workmanship by contractor	QUALITY	1		No such event should happen	Daily Log Book entry/Incident Registers/letter references
#1.08	Total number of complaints received in the month on the quality of finish / aesthetics	QUALITY	1		Total number of non-compliances	Daily Log Book entry/Incident Registers/letter references

Project		Vendor			Package/Unit	
Sl. No.	Parameter for Measurement	Classification	Max Score	Score Obtained	Measurement Key/Scheduled date	Supporting Documents
#2.01	Cumulative number of days of delay in submission of Plan FOR THE MONTH supported by deployment plan of Major T&Ps and Manpower (as per Form F-14) and relevant construction/layout drawings - like A4 plan / elevation views of plan status for structures / pressure parts/Civil Works, Piping isometrics for piping, Layout / PID / System reference sketch, Unloading / storage plans etc.as applicable.	PERFORMANCE	5		Number of days delayed from second working day of the month	Daily Log Book entry/Incident Registers/letter references
#2.02	Percentage of timely submission of Daily Reports for Progress of work, Resources, Consumables etc.	PERFORMANCE	1.5		Percentage of timely submission of daily reports/ Scheduled date is successive next day for each day	Daily Log Book entry/Incident Registers/letter references
#2.03	Number of days delayed for submission of FQP log sheets / protocols / Monthly Progress Reports for the work executed during the month under measurement	PERFORMANCE	1.5		Number of days delayed/Scheduled date is first 2 working days of next month	Daily Log Book entry/Incident Registers/letter references
#2.04	Percentage Shortfall attributable to contractor w.r.t. "Plan - Shortfall attributable to BHEL" for the month as per Form-14	PERFORMANCE	35		As per Part-A of Form-14	Progress review formats
#2.05	Number of days delayed in submission of Running bills with complete supporting documents (including updated reconciliation statement of BHEL issued material) for the month	PERFORMANCE	2		Number of days delayed / Scheduled date is 7th day of next month	Daily Log Book entry/Incident Registers/letter references
#2.06	Number of times the Top Management of contractor did not respond to critical issues of site, for the month	PERFORMANCE	1		Total number of instances	Daily Log Book entry/Incident Registers/letter references
#2.07	Cumulative number of days in the month the works were stopped / refused on interpretation of contract clauses/scope due to tendency of taking undue advantage by interpreting contract clauses in their favour	PERFORMANCE	2		Cumulative number of days lost	Daily Log Book entry/Incident Registers/letter references
#2.08	Number of times rework was refused by contractor	PERFORMANCE	1		Total number of non-compliances	Daily Log Book entry/Incident Registers/letter references

TENDER NO. PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

Project		Vendor			Package/Unit	
Sl. No.	Parameter for Measurement	Classification	Max Score	Score Obtained	Measurement Key/Scheduled date	Supporting Documents
#2.09	Cumulative number of days in the month recording / logging was not done in daily log / history register / hindrance register / soft form in a PC maintained at BHEL Site Office	PERFORMANCE	1		Cumulative number of days recording or logging was not done / all days of the month	Daily Log Book entry/Incident Registers/letter references
#3.01	Percentage of Manpower Deployed w.r.t. Plan for the month as per Form-14.	RESOURCES	7		As per Part-B2 of Form-14	Daily Log Book entry/Incident Registers/letter references
#3.02	Percentage of T&P Deployed w.r.t. Plan for the month as per Form-14.	RESOURCES	7		As per Part-B1 of Form-14	Daily Log Book entry/Incident Registers/letter references
#3.03	Cumulative number of major instances in the month hampering / affecting progress of work due to breakdown or non-availability of major T&P and MME for the work, under the scope of Contractor	RESOURCES	3		Cumulative number of instances	Daily Log Book entry/Incident Registers/letter references
#3.04	Cumulative number of major instances in the month hampering / affecting progress of work due to non-availability of Consumables/ use of improper consumables under the scope of contractor	RESOURCES	3		Cumulative number of instances	Daily Log Book entry/Incident Registers/letter references
#4.01	Number of non-compliances during the month for Statutory requirements like validity of Labour Licence, Insurance Policy, Labour Insurance, PF, BOCW Compliance etc. and any other applicable laws/ Regulation, Electrical Licence, T&P fitness certificate, Contractors' All Risk Policy etc. as applicable	SITE INFRASTRUCTURE & SERVICE	1		Total number of non-compliances	Daily Log Book entry/Incident Registers/letter references
#4.02	Cumulative number of days in a month poor illumination is reported at storage area, erection area, pre-assembly area and other designated areas by BHEL site.	SITE INFRASTRUCTURE & SERVICE	0.5		Total number of non-compliances/random checks	Daily Log Book entry/Incident Registers/letter references
#4.03	Cumulative number of days of non-availability of well-maintained toilets facilities for workers (separate for men and women) and non-availability of potable drinking water stations for workers in specified areas.	SITE INFRASTRUCTURE & SERVICE	1		Total number of non-compliances/random checks	Daily Log Book entry/Incident Registers/letter references

TENDER NO. PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

Project		Vendor			Package/Unit	
Sl. No.	Parameter for Measurement	Classification	Max Score	Score Obtained	Measurement Key/Scheduled date	Supporting Documents
#4.04	Total number of instances in the month, Housekeeping NOT attended to in spite of instructions by BHEL -i.e. removal / disposal of surplus earth / debris / scrap / unused / surplus cable drums / other electrical items / surplus steel items / packing materials, thrown out scrap like weld butts, cotton waste etc. from the working area to identified locations	SITE INFRASTRUCTURE & SERVICE	2		Total number of non-compliances/random checks	Daily Log Book entry/Incident Registers/letter references
#4.05	Total number of instances in a month, Site Office with reasonably good facilities including enough nos. of computers and printers etc. for use by office and supporting staff was not made available/maintained.	SITE INFRASTRUCTURE & SERVICE	0.5		No discrepancy during regular or surprise visits	Photograph and report of the Engineer
#5.01	Number of days delayed in making labour payments for the last month	SITE FINANCE	2		Number of days delayed / Scheduled date is 7th day of next month	Daily Log Book entry/Incident Registers/letter references
#5.02	Number of complaints from labour/ sub supplier/ sub-contractor for non-receipt of payments from contractor	SITE FINANCE	1.5		Total number of complaints or reporting	Daily Log Book entry/Incident Registers/letter references
#5.03	Number of times the site operations were hampered for want of funds at the disposal of site-in-charge.	SITE FINANCE	1.5		Total number of non-compliances	Daily Log Book entry/Incident Registers/letter references
#6.01	Cumulative number of days in a month the nominated Safety Officer was not available	HSE & SA	1		Safety Officer should be available for all the days	Daily Log Book entry/Incident Registers/letter references
#6.02	Shortfall in number of weekly safety meetings in the month conducted or attended by the Safety Officer	HSE & SA	0.5		Safety meetings to be held every week	Copy of Minutes of meeting
#6.03	Level of compliance w.r.t decisions taken in previous Safety meetings	HSE & SA	0.5		Number of consolidated issues discussed in Safety meetings	Copy of Minutes of meeting, Non-compliance intimation documents from BHEL site
#6.04	Delay in submission of monthly report on safety (including electrical safety for equipment & personnel etc.) in the prescribed form	HSE & SA	1		Number of days delayed/Scheduled date is third working day of next month	Daily Log Book entry/Incident Registers/letter references
#6.05	Number of days taken for lodging FIRs from date of occurrence/notice of incident of theft / accident etc.	HSE & SA	0.5		Number of days delayed/Scheduled date is within 24 Hrs of occurrence/notice of incidence	Copy of FIR lodged by Contractor

TENDER NO. PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

Project		Vendor			Package/Unit	
Sl. No.	Parameter for Measurement	Classification	Max Score	Score Obtained	Measurement Key/Scheduled date	Supporting Documents
#6.06	Number of times written(email, letters etc.) warning issued for non-availability/ use of improper Fall protection and rescue arrangement as lifeline, fall arrestors, safety net, hand-railings, covered floors, man-basket, rescue basket & kit etc. by the contractor	HSE & SA	2		Total number of non-compliances	Daily Log Book entry/Incident Registers/letter references
#6.07	Number of times punitive fines imposed for unsafe practices as per contract like non-availability/use of PPEs as safety shoes, helmets, goggles, gloves, lifeline, safety belts etc.	HSE & SA	1		Total number of non-compliances	Non-compliance intimation documents from BHEL site
#6.08	Percentage compliance to Emergency preparedness and response plan: Portable Fire-extinguishers, Buckets, Fire-wardens, display of emergency numbers, mock-drills, Hazard Identification and Risk Assessment(HIRA) etc.	HSE & SA	1		Compliance should be 100% as per HSE Plan or as finalized in Safety Meetings	Non-compliance intimation documents from BHEL site
#6.09	Number of times the agency has defaulted on display of safety posters / safety slogans / safety barriers/emergency numbers etc. in identified areas	HSE & SA	0.5		Total number of instances	Non-compliance intimation documents from BHEL site
#6.10	Non compliances observed during HSE and Safety Audit	HSE & SA	0.5		Total number of non-compliances	Non-compliance intimation documents from BHEL site, Audit Reports
#6.11	Cumulative number of days in the month, non-availability of First Aid Kit, First Aider & Emergency Vehicles/Ambulance.	HSE & SA	0.5		Cumulative number of days	Non-compliance intimation documents from BHEL site
#6.12	Number of days taken for submission of Root Cause analysis (RCA) for the accident from the cut-off date intimated by BHEL for submission of RCA	HSE & SA	0.5		Number of days delayed/Scheduled date is cut-off date intimated by BHEL	Daily Log Book entry/Incident Registers/letter references
#6.13	Non conductance of training (induction, job specific, height work etc.), tool box meeting and health check-up as per Contract requirements	HSE & SA	0.5		Number of incidences of non-conductance during the month	Daily Log Book entry/Incident Registers/letter references
Total			100			

TENDER NO. PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

Project		Vendor			Package/Unit	
Sl. No.	Parameter for Measurement	Classification	Max Score	Score Obtained	Measurement Key/Scheduled date	Supporting Documents
	Less Deduction in Score Due to Major Accidents (Fatal, Permanent Disability or bodily injury by which person injured is prevented to resume to work within 48 hours or more after accident,, Major Damage to Equipment etc.) attributable to the contractor @ 3 points/ accident					
	Less Deduction in Score Due to Minor Accidents attributable to the contractor @ 1 point/ accident					
	Less Deduction in Score Due to not Maintaining of Labour Colony (if applicable) as per BHEL HSE policy @2 points in a month on verification any day					
	Final Score					

Performance Score Summary for the Month	Total Score	Score Obtained
QUALITY	10	
PERFORMANCE	50	
RESOURCES	20	
SITE INFRASTRUCTURE & SERVICE	5	
SITE FINANCE	5	
HSE & SA	10	
OTHERS (deductions if any)	0	
TOTAL	100	

Note:

- 1) It is only indicative and shall be as per the online format issued by BHEL time to time.
- 2) No request will be entertained after specified date of current month w.r.t. changes requested in the scores of immediate previous month.

FORMS & PROCEDURES

Form No: F-19 (Rev 00)

MILESTONE COMPLETION CERTIFICATE (issued by BHEL on the specific request of Contractor)

Ref :

Date:

To,

(Name & address of Contractor)

Dear Sir,

References

1. Contract No:
2. Job Description:

This is to hereby confirm that the following Milestone Activity has been achieved in respect of the Contract /Job under reference

SI No	Milestone Activity	Remarks

This certificate is issued as per your request vide letter no
without any prejudice to the rights of BHEL in line with the terms and conditions of the
above referred Contract

Yours faithfully,

For and on behalf of Bharat Heavy Electricals Limited

Construction Manager/Head (Subcontracts)

FORMS & PROCEDURES

Form No: F-20 (Rev 01)

CONTRACT COMPLETION CERTIFICATE
(Issued by BHEL/HQ on the specific request of Contractor)

Ref :

Date:

To Whom so ever it may concern

1	DESCRIPTION OF WORK	
2	NAME AND ADDRESS OF THE CONTRACTOR	
3	CONTRACT NO	
4	CONTRACT VALUE	
5	LETTER OF INTENT NO & DATE	
6	CONTRACT PERIOD//CONTRACT DURATION	
7	DATE OF START/COMPLETION	
8	FINAL EXECUTED VALUE	
9	PERFORMANCE	GOOD SATISFACTORY UNSATISFACTORY

This certificate is issued as per your request vide letter no
without any prejudice to the rights of BHEL to use this certificate for evaluation of your offers for future tenders

Yours faithfully,

For and on behalf of Bharat Heavy Electricals Limited

Head (Subcontracts)

INDEMNITY BOND

(To be executed on a Non Judicial Stamp Paper of the requisite value as per Stamp Duty prevalent in the respective State)

This Indemnity Bond executed by <name of company> having their Registered Office at <xxxxxxxxxx> in favour of M/s Bharat Heavy Electricals Limited, a Company incorporated under the Companies Act, 1956, having its Registered Office at BH EL House, Siri Fort, Asiad, New Delhi - 110049 through its Unit at Power Sector _____ Region, _____ State.
(Hereinafter referred to as the Company)

And whereas the Company has entered into a Contract with M/s xxxxxxxxx, the executants of this Deed (hereinafter referred to as the Contractor) as its contractor in respect of the work of "xxxxxxxxxxxxxxxxxxxxxxxxxxxx".

AND WHEREAS under the provisions of G.C.C. further stipulates that the Contractor shall indemnify the Company against all claims of whatever nature arising during the course of execution of Contract including defects liability period of <xx Months> i.e till <xx xx xxxx>

Now this deed witnesses that in case the Company is made liable by any Authority including Court to pay any claim or compensation etc. in respect of all labourers or other matters at any stage under or relating to the Contract with the Contractor, the Contractor hereby covenants and agrees with the Company that they shall indemnify and reimburse the Company to the extent of such payments and for any fee, including litigation charges, lawyers' fees, etc, penalty or damages claimed against the Company by reason of the Contractor failing to comply with Central/States Laws, Rules etc, or his failure to comply with Contract (including all expenses and charges incurred by the Company).

The Contractor further indemnifies the Company for the amount which the Company may be liable to pay by way of penalty for not making deductions from the Bills of the Contractor towards such amount and depositing the same in the Government Treasury.

FORMS & PROCEDURES

The Contractor further agree that the Company shall be entitled to with hold and adjust the Security Deposit and/or with hold and adjust payment of Bills of Contractor pertaining to this Contract against any payment which the Company has made or is required to make for which the Contractor is liable under the Contract and that such amount can be withheld, adjusted by the Company till satisfactory and final settlement of all pending matters and the Contractor hereby gives his consent for the same.

The Contractor further agrees that the terms of indemnity shall survive the termination or completion of this contract.

The contractor further agrees that the liability of the contractor shall be extended on actual basis notwithstanding the limitations of liability clause, in respect of :

1. breach of terms of contract by the contractor
2. breach of laws by the contractor
3. breach of Intellectual property rights by the contractor
4. breach of confidentiality by the contractor

Nothing contained in this deed, shall be construed as absolving or limiting the liability of the Contractor under said Contract between the Company and the Contractor. That this Indemnity Bond is irrevocable and the condition of the bond is that the Contractor shall duly and punctually comply with the terms and the conditions of this deed and contractual provisions to the satisfaction of the Company.

In witness where of M/s xxxxxxxxxxxx these presents on the day, month and year first, above written at xxxxxxxx by the hand of its signatory Mr. xxxxxxxxxxxx.

Signed for and on behalf of
M/s xxxxxxxxxxxxxxxx

Witness:

1
2

FORMS & PROCEDURES

Form No: F-22 (Rev 00)

CONSORTIUM AGREEMENT

(To be executed on Rs. 50/- Non – Judicial Stamp Paper)

THIS AGREEMENT is made and executed on this _____ day of _____, by and between (1) M/s _____, (The First Party, i.e, the Bidder) a company incorporated under the Company's Act 1956, having its registered office at _____ (herein after called the "Bidder", which expression shall include its' successors, administrators, executors and permitted assigns) and (2) M/s _____, (The Second Party, i.e, the associates), a company incorporated under the Company's Act 1956, having its registered office at _____ (herein after called the "Associates", which expression shall include its' successors, administrators, executors and permitted assigns).

WHEAEAS the Owner, Bharat Heavy Electricals Ltd, a Government of India Undertaking, proposes to issue / issued an NIT (herein after referred to as the said NIT) inviting bids from the individual Bidders for undertaking the work _____ of _____ at _____ (herein after referred to as the said works).

WHEREAS the said NIT enables submission of a bid by a Consortium subject to fulfillment of the stipulations specified in the said NIT.

AND WHEREAS M/s _____ (The First Party, i.e, the Bidder) will submit its proposal in response to the aforesaid invitation to _____ bid by the Owner for _____ as detailed in the Bid doc. no. < TENDER REF----->

FORMS & PROCEDURES

AND WHEREAS M/s _____ (The First Party, i.e the Bidder) itself is meeting all the qualifying requirements except the qualifying requirements of _____ (as detailed in the NIT) and in order to fully meet the qualifying requirements of NIT, this tie-up agreement is being entered into with M/s _____ (The Second Party, the Associates) , who fully meet the balance part of the said works (_____).

WHEREAS the First Party and the Second Party are contractors engaged in the business of carrying out various items of works. WHEREAS the two parties have agreed to constitute themselves into a consortium for the purpose of carrying out the said works, and that the consortium will be continued till the completion of the works in all respects.

WHEREAS the parties have agreed to certain terms and conditions in this regard:

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS :

1. First and Second parties hereby constitute themselves into a Consortium for the purpose of bidding and undertaking the said works pursuant to the said NIT as hereinafter stated.
2. The First Party will be the leader (Lead Partner) and will be responsible for the entire works.

FORMS & PROCEDURES

CONSORTIUM AGREEMENT

3. The First Party shall undertake the following part(s) of work detailed in the NIT namely
- _____
- _____
-
4. The Second Party shall undertake the following part(s) of work detailed in the said NIT namely
- _____
- _____
-
5. The parties hereby declare and confirm that each of them will fulfill the required minimum qualifying requirements as prescribed in the said NIT for the works agreed to be undertaken by them as stated here-in-above.
6. It is also agreed between the parties hereto that all of them shall be individually and severally responsible for the completion of the said works as per the schedule. Further, if the Employer/Owner sustains any loss or damage on account of any breach of the Contracts, we the, Consortium partners individually and severally undertake to promptly indemnify and pay such losses / damages caused to the Employer/Owner on its written demand and without any demur, reservation, contest or protest in any manner whatsoever.
7. The parties hereby agree and undertake that they shall provide adequate finances, suitable Tools, Plants, Tractors, Trailers, other transportation equipment, other Tools & Plants, Measuring & Monitoring Equipments (MMEs), Men and Machinery etc. for the proper and effective execution of the works to be undertaken by them as specified here-in-above.

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8. It is agreed inter se between the parties hereto that all the consequences liabilities etc., arising out of any default in the due execution of the said works shall be borne by the party in default, that is by party in whose area of works default has occurred, provided however, so far as M/s Bharat Heavy Electricals Limited is concerned, all the parties shall be liable jointly and severally.

IN WITNESS HEREOF the parties above named have signed this agreement on the day month and year first above written at _____ (Place) .

WITNESS

For

1. NAME (FIRST PARTY)
2. OFFICIAL ADDRESS

WITNESS

For

1. NAME (SECOND PARTY)
2. OFFICIAL ADDRESS

[The successful bidder shall have to execute the " JOINT DEED OF UNDERTAKING " in the format to be made available by BHEL at the time of awarding].

FORMS & PROCEDURES

Form No: F-23 (Rev 00)

REFUND OF SECURITY DEPOSIT

To,
The Construction Manager
BHEL Site Office

Dear Sir,

Sub : **Refund of Security Deposit**

Ref : Contract No:

Work:

I/We have submitted Final Bill in respect of the above Contract/Work vide our letter no: dated In line with Tender conditions (GCC clause no 1.11), kindly arrange to release/refund the Security Deposit along with Final Bill payments.

The details of Security Deposit are as below:

1. Cash Portion :
2. BG Portion :

Thanking You

Date:

Authorised representative of Contractor

To be filled up by BHEL

1. Security Deposit to be refunded:
 - a. Cash Portion:
 - b. BG Portion :
2. Less
 - a. Amount spent by BHEL on behalf of Contractor:
 - b. Payments made by BHEL on behalf of Contractor:
 - c. Other recoveries for Services etc
 - d. Any other recoveries
 - e. Total of 'a' to 'd':
3. Net Amount to be released (1-2) :
4. Certified that
 - a. The payment recommended for release is in order and there are no demands other than those included in the claim outstanding from the Contractor
 - b. Contract Guarantee period of Months commenced wef :
 - c. All objections raised so far have been settled
 - d. A note for refund of Security Deposit has been made in the Measurement Book

Signature of BHEL Engineer

Construction Manager

Date:

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Form No: F-24 (Rev 00)

REFUND OF GUARANTEE MONEY

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR, _____ REGION

Ref No:

Date:

1. Name and Address of Contractor :
2. Contract Agreement/LOI No :
3. Date of Contract Agreement/LOI :
4. Name of the Work undertaken :
5. Date of commencement of the Work :
6. Date of Completion of the Work :
7. Period of Maintenance :
(Guarantee Period)
8. Date on which the Final Bill was paid :
9. Last date of making good the defect :
during Maintenance Period
10. Expenditure incurred by BHEL during :
Maintenance Period, if any, recoverable
11. Date on which Guarantee Money refund:
falls due as per Contract
12. Amount of Guarantee Money to be refunded:
13. Less Amounts recoverable (with details)
 - a. Amount spent by BHEL on maintenance :
 - b. Payments made by BHEL on behalf of Contractor:
 - c. Court dues/penalties/compensation :
 - d. Other recoveries for Services, etc :
 - e. Total of 'a' to 'd' :
14. Net Amount recommended for release (12-13) :

FORMS & PROCEDURES

Signature of BHEL Engineer

Date: _____

CERTIFICATE TO BE FURNISHED BY THE CONTRACTOR

I/We have no claim or demand outstanding against BHEL _____, for the work done or for labour or material supplied or any other account arising out of or connected with the Contract Agreement/LOI (No _____ dated _____) and the payment of this bill shall be in full and final settlement of all my/our claims and demands including the 'Deposits' of the Contract Agreement/LOI referred to.

Signature of Contractor

Date: _____

CERTIFICATE TO BE FURNISHED BY SENIOR ENGINEER/CONSTRUCTION MANAGER

1. Certified that
 - a. The payment recommended for release is in order and there are no demands other than those included in the claim outstanding from the Contractor
 - b. Maintenance period (Contract Guarantee period) is over and the Contractor has carried out the works required to be carried out by him during the period of maintenance (Guarantee) to our satisfaction, and all expenses incurred by the Company on carrying out such works have been included for adjustment
 - c. All objections raised so far have been settled
 - d. A note for refund of Guarantee Amount has been made in the Measurement Book and Contract Agreement/Work Order

Signature of BHEL Engineer

Construction Manager

Date: _____

FOR USE IN ACCOUNTS DEPARTMENT

Passed for Rs _____ (Rupees _____ only)

Accountant

Accounts Officer

ACKNOWLEDGE BY THE CONTRACTOR

Received Rs _____ in full and final settlement of my/our claim

Signature of Contractor

Date: _____

FORMS & PROCEDURES

Form No: F-25 (Rev 00)

POWER OF ATTORNEY for SUBMISSION OF TENDER/SIGNING CONTRACT AGREEMENT

(To be typed on non judicial Stamp Papers of appropriate value as applicable and Notarised)

KNOW ALL MEN BY THESE PRESENTS, that I/We do hereby make, nominate, constitute and appoint Mr, whose signature given below herewith to be true and lawful Attorney of M/s..... hereinafter called 'Company', for submitting Tender/entering into Contract and inter alia, sign, execute all papers and to do necessary lawful acts on behalf of Company with M/s Bharat Heavy Electricals Ltd, Power Sector _____ Region, _____, in connection with

.....
.....
..... vide Tender Specification No :
_____, dated _____.

And the Company do hereby agree to ratify and confirm all acts, deeds, things or proceedings as may be lawfully done by the said attorney and by or on behalf of the company and in the name of the company, by virtue of the powers conferred herein and the same shall be binding on the company and shall have full force and effect.

IN WITNESS WHEREOF the common seal of the company has been hereunto affixed in the manner hereinafter appearing on the document.

Dated at _____, this _____ day of _____

Director/CMD/Partner/Proprietor

Signature of Mr.....(Attorney)

Attested by: Director/CMD/Partner/Proprietor

Witness

Notary Public

FORMS & PROCEDURES

Form No: F-26 (Rev 00)

ANALYSIS OF UNIT RATES QUOTED

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

Offer Reference No:.....

Date:.....

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub : Analysis of Unit Rates Quoted

Ref : Tender Specification No:

Analysis of Unit Rates quoted by us in respect of above Tender is as detailed

SN	DESCRIPTION	% OF QUOTED RATE	REMARKS
01	SITE FACILITIES VIZ., ELECTRICITY, WATER OTHER INFRASTRUCTURE.		
02	SALARY AND WAGES + RETRENCHMENT BENEFITS		
03	CONSUMABLES		
04	T&P DEPRECIATION & MAINTENANCE		
05	ESTABLISHMENT & ADMINISTRATIVE EXPENSES		
06	OVERHEADS		
07	PROFIT		
	TOTAL	100%	

Yours faithfully,

(Signature, Date & Seal of Authorized
Representative of the Bidder)

FORMS & PROCEDURES

Form WAM 6

BHARAT HEAVY ELECTRICALS LIMITED

DIVISION.....

Running Account Bill

(Para 4.31.1 of Works Accounts Manual)

Name of the Contractor:

Name of the Work:

Sanctioned Estimate:

Code No:

Contract Agreement No :

Dated:

Departmental Bill no:

Division:

Date of written order to commence the work :

Date of commencement of the Work:

Due date of completion as per Agreement:

Date:

Sub-Division:

1. ACCOUNT OF WORK EXECUTED

On account payment for work not previously previously measured**			Item No of	Description of Work	Quantity as per agree- ment	Quantity executed up to date	Rate	Unit	Payment on the basis of actual measure- ment up to date	Quantity since last running account bill	Payment on the basis of actual measurement since last running account bill	Remarks
Total As per Running Account bill Rs.	since last running account bill Rs.	Total up to date Rs.										
1	2	3	4	5	6	7	8	9	10	11	12	13

* *1. Whenever payment is made on 'on account' basis without actual measurements the amount in whole rupees should be entered in columns 1 to 3 only and not in columns 7 to 12.

2. whenever there is an entry in column 12 on the basis of actual measurement, the whole of the amount previously paid without detailed measurement should be adjusted by a minus entry in column 2 equivalent to the amount shown in column 1, so that the total up to date in column 4 may become nil.

FORMS & PROCEDURES

Form WAM 6 (contd...)

1	2	3	4	5	6	7	8	9	10	11	12	13

Total value of work done up to date (A) ...

Running Account Bill Deduct value of work shown on the last (B) ...

Net value of work done since last (C) ...

Rupees (in words)

.....only.

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Form WAM 6 (contd...)

II. MEMORANDUM OF PAYMENTS

		Rs.	P.	I Rs.	P.	II Rs.	P.
1. Total value of work actually measured as per Account No. I. Column 10	(A)						
2. Total up to date 'on account' payment for work covered by approximate Or plan measurements as per Account No. I, Column 3	(B)	.....				.....	
3. Total up to date secured advances on security of materials as per column 8 Of the enclosed Account (Form WAM 10)	(C)	.....				.....	
4. Total up to date payments [(A) + (B) + (C)]	(D)	.....				.....	
5. Total amount of payments already made as per Entry (D) of last Running Account Bill No..... Dated.....forwarded to the Accounts Office on	(E)						
6. Balance [(D)-(E)]		.....					
7. Payments now to be made:							
a) by cash/cheque				.....			
b) by deduction for value of materials supplied							
c) by BHEL vide Annexure A attached				.....			
d) by deduction for hire of tools and plant vide							

TENDER NO. PSER: PUR: SAS: 63(II): 070 (ENQ: 19: PP: 0015: PUR: 92) Date 24/10/2019
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Annexure B attached	
e) by deduction for other charges vide Annexure C	
Attached	
f) by deduction on account of security deposit	.....
h) by deduction on account of Income Tax	.....

Note: Amounts relating to items 4 to 6 above should be entered in column II and those relating to item 7 in column I. The amount shown against item 6 and the total of item 7 should agree with each other.

III. CERTIFICATE OF THE ENGINEER IN CHARGE

Form WAM 6 (contd...)

1. The measurements on which the entries in column 7 to 12 of Part I of this Bill (Account of work executed) are based were made by and are recorded at pages of
(Name and Designation)

Measurement Book No

2. Certified that the methods of measurement are correct and the work has been carried out in accordance with the terms and conditions, schedules, specifications and drawings etc, forming part of the contract agreement, subject to deviations included in the deviation statement (Annexure D).
3. Certified that in addition to and quite apart from the quantities of work actually executed as shown in column 10 of Part I, some work has actually been done in connection with several items and the value of the such work is, in no case, less than 'on account' payments as per column 3 of Part I, made or proposed to be made, for the convenience of the contractor in anticipation of, and subject to the results of, detailed measurement which will be made as soon as possible.

Signature of Contractor

Signature of Engineer in charge

Date:

Designation:

Date:

FORMS & PROCEDURES

IV. CERTIFICATE OF THE SENIOR ENGINEER

1. _____ Certified that measurements have been check measured to the prescribed extent by _____ at site and also by the undersigned and the relevant entries have been intialled in the Measurement book. (vide pages.....)
(Name and Designation)
2. _____ Certified that all the measurements recorded in the measurement book have been correctly billed for
3. _____ Certified that all recoberable amounts in respect of materials tools and plant etc, and other charges have been correctly made vide Annexures A to C attached.
Certified for payment * of Rs. (Rupees.....only)
To be paid in cash/by cheque in the presence of

ALLOCATION

The expenditure is chargeable as under and to be included in the accounts for 20.....

Ledger Head	Debit (Gross amount)	Credit (Deductions)
	Rs. P.	Rs. P.

Total		

* Here specify the net amount payable.

Signature of Senior Engineer
Date:

Form WAM 6 (contd...)

V.ENTRIES TO BE MADE IN THE ACCOUNTS OFFICE

Accounts Bill No Dated.....
Entered in Journal Book vide entry No.....Dated.....
Passed for.....Rs.....
Less Deductions.....Rs.....
Net Amount Payable.....Rs.....
(Rupees.....only)
Payable to Shri/M/s.....by cheque/cash
Entered in Contractor's Ledger No.....Page.....

ALLOCATION

Estimate No: _____ Code no: _____
Name of the Work: _____

Ledger Head	Debit (Gross amount)	Credit (Deductions)
	Rs. P.	Rs. P.

FORMS & PROCEDURES

Assistant Date:	Accountant Date:	Account Officer Date:	Total _____

VI. Received Rs..... (Rupees.....only) as per
Memorandum of Payments on account of this work.

Signature of witness Address :	Revenue	Stamp Signature of Contractor Date:
Date:		

VII. ENTRIES TO BE MADE BY TREASURY SECTION

Cash Book entry No. and date:	Amount paid	Rs.....
	Amount unpaid	Rs.....
	Total	Rs.....
		Signature of Cashier Date:

Form WAM 6 (contd...)

ANNEXURE A

FORMS & PROCEDURES

Statement showing details of materials issued to the contractor Shri/M/s.....

In respect of Contract Agreement No Dated.....

Sl. No.	Stores issue Voucher No. and date	Issue voucher No. and date allotted by stores to the SIV	Description of material issued to the contractor	Quantity issued	Quantity actually incorporated in the work	Whether recoverable from the contractor or supplied free	If recoverable from the contractor				REMARKS
							Rate at which recoverable	Amount recoverable	Amount recovered up to previous bill	Balance now recovered	
							Rs. P.	Rs. P.	Rs. P.	Rs. P.	
1	2	3	4	5	6	7	8	9	10	11	12
Total											

Signature of contractor

Signature of Engineer in Charge

Signature of Senior Engineer

Date:

Date:

Date:

FORMS & PROCEDURES

Form WAM 6 (contd...)

ANNEXURE B

Statement showing tools and plant issued to the contractor Shri/M/s.....

In respect of Contract Agreement No Dated.....

Sl. No	Description of tools and plant issued	Period for which Issued	Rate at which recovery Is to be Made	Amount recover-able	Amount recovered upto previous bill	Balance now recovered	Remarks
			Rs. P.	Rs. P.	Rs. P.	Rs. P.	
1	2	3	4	5	6	7	8

Total

Signature of contractor

Signature of Engineer in Charge

Signature of Senior Engineer

Date:

Date:

Date:

FORMS & PROCEDURES

Form WAM 6 (contd...)

ANNEXURE C

Statement showing details of other recoveries to be made from the contractor Shri/M/s.....

In respect of Contract Agreement No Dated.....

Sl. No	Particulars	Unit	Quantity	Rate	Amount recover- able	Amount recovered upto pre- vious bill	Amount now recovered	Remarks
				Rs. P.	Rs. P.	Rs. P.	Rs. P.	
1	2	3	4	5	6	7	8	9

1. Water Charges
2. Electricity charges
3. Seignorage charges
4. Medical charges
5. Cost of empty gunny bags and
Empty containers not returned

- 6.
- 7.
- 8.
- 9.

FORMS & PROCEDURES

10.

Total -----		
Signature of contractor	Signature of Engineer in Charge	Signature of Senior Engineer
Date:	Date:	Date:

FORMS & PROCEDURES

Form WAM 6 (contd...)

ANNEXURE D

Name of the Contractor:
Name of the Work:Contract Agreement No:
Date:

Sl. No.	Description of item	Unit	Quantity as per Agreement	Quantity as executed	Quantity further anticipated	Total quantity anticipated on completion	Rate as per agreement Rs. P.
1	2	3	4	5	6	7	8

Rate as the executed with any Rs. P.	Amount as per agreement Rs. P.	Amount as executed Rs. P.	Amount further anticipated Rs. P.	Total amount anticipated on completion Rs. P.	Difference Excess savings Rs. P. Rs. P.	Reason for deviation authority, if
9	10	11	12	13	14 15	16

Signature of Engineer in Charge
Date:Signature of Senior Engineer
Date:

FORMS & PROCEDURES

TENDER NO. PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

[illegible]

TENDER NO. PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

[illegible]

TENDER NO. PSER: PUR: SAS:63(II):070 (ENQ:19:PP:0015: PUR:92) Date 24/10/2019

II MEMORANDUM OF PAYMENT												
										Rs.	P	
1	Total Value of work actually measured as per Account no I coloumn 10										(A)	
2	Deduct amount of paym,ents already made as per last running account bill No Dated..... Forwarded to the Accounts Office on										(B)	
3	Payments now to be made { (A) - (B)}										(C)	
4	Deduct ammounts recoverable from the contractor on account of :										Rs	P
	a	Material suplied by BHEL vide annexure A attached										
	b	Hire of Tools & Plants vide Annexure B attached										
	c	Other charges vide Annexure C attached										
	d	Income Tax										
	Total deduction											
5	Balance											
6	Refund of 50% of security deposite on completion of work											
7	Net amount to be paid to the Contractor											
III. CERTIFICATE OF THE ENGINEER IN CHARGE												
	The measurement on which the entries in coulms 7 to 12 of Part I of this bill (Account of work executed) are based were made by											
1	(Name and designation)											
2	A statement showing the quantities of stores issued to the contractor (whether free or on recovery basis) and their disposal is attached.											
	Date:									Signature of Engineer in charge		
										Designation		

[illegible]

V. ENTRIES TO BE MADE IN THE ACCOUNTS OFFICE											
Account Bill no..... Dated						ALLOCATION					
Entered in Journal book vide entry No.....Dated.....						Estimate No:			Code No		
Passed for.....Rs.....						Name of the Work					
Less Deductions.....Rs.....						Ledger Head			Debit		Credit
(Rupees.....Only)									(Gross Amount)		(Deduction)
Payable to Shri/M/s..... by cheque/cash									Rs	P	Rs
Entered in contractors' Ledger no..... Page											
Assistant		Accountant		Accounts officer		Total					
Date:		Date:		Date:							
VI. Received Rs.....(Rupees.....Only) in full and final settlement of all moneys due under this contract and I / we have no further claims of this contract.											
Signature of Witness Address											
Revenue Stamp Signature of Contractor Date:											
VII . ENTRIES TO BE MADE BY TREASURY SECTION											
Cash book entry no and date :						Amount Paid Rs.....					
						Amount unpaid Rs.....					
						Total Rs.....					
Signature of Cashier Date:											

TENDER NO. PSER: PUR: SAS: 63(II): 070 (ENQ: 19: PP: 0015: PUR: 92) Date 24/10/2019

ANNEXURE A

Part I

Statement showing details of material issued to the contractor Shri/M/s..... In respect of Contract Agreement/Work Order No..... Dated

[illegible]

TENDER NO. PSER: PUR: SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

ANNEXURE A

Part II

Statement showing details of material issued to the contractor Shri/M/s..... in respect of Contract Agreement/Work Order No..... Dated and not covered by the agreement

[illegible]

ANNEXURE B

Statement showing TOOLS & PLANTS issued to the contractor Shri/M/s..... in respect of Contract Agreement/Work Order No..... Dated and not covered by the agreement

[illegible]

TENDER NO. PSER: PUR:SAS:63(II):070 (ENQ:19:PP:0015: PUR:92) Date 24/10/2019

Showing detail of other recoveries to be made from the contractor Shri/M/s.....												
ent/Work Order No..... Dated.....												
Sr.No	Particulars	Unit	Quantity	Rate Rs. P.	Amount recoverable Rs. P	Amount recovered upto previous bill Rs. P.	Amount now recovered Rs. P.	Remarks				
1	2	3	4	5	6	7	8	9				
	1 Water Charges											
	2 Electricity Charges											
	3 Seignorage Charges											
	4 Medical Charges											
	Cost of empty gunny bags and empty containers not returned											
5												
6												
7												
8												
9												
10												
		Total										
	Signature of Contractor		Signature of Engineer Incharge			Signature of Sr. Engineer						
	Date		Date			Date						

TENDER NO. PSER: PUR: SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

[illegible]

TENDER NO. PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

BHARAT HEAVY ELECTRICALS LIMITED DIVISION..... And Final bill (Para 4.3.2 Of Works Accounts Manual)														
Name of Contractor							Departmental Bill no				Date			
Name of the Work							Division				Division			
Sanctioned Estimate							Date of written order to commence the work							
Contract Agreement/work Order No							Date of commencement of work							
							Due date of completion as per agreement							
							Date of actual completion of the work							
I. ACCOUNT OF WORK EXECUTED														
On Account payment for the work not previously measured **														
Total as per last running account bill Rs.	Since last running account bill Rs	Total up to date Rs	Item No of the agreement/work order	Descripti on of work	Quantity as per agreement	Quantity executed up to date	Rate Rs. P	Unit	Payment on the basis of actual measurement up to date Rs P	Quantity since last running account bill	Payment on the basis of actual measurement since last running account bill Rs P	Remarks		
1	2	3	4	5	6	7	8	9	10	11	12	13		

TENDER NO. PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

1	2	3	4	5	6	7	8	9	10	11	12	13

Total Value of Work Done up to date (A)	
Deduct Value of work shown on the last running account bill (B)	
Net value of work done since last running account bill (C)	

Rupees (In Words).....Only

TENDER NO. PSER: PUR:SAS:63(II):070 (ENQ:19:PP:0015: PUR:92) Date 24/10/2019

II MEMORANDUM OF PAYMENT

		Rs.	P
1	Total Value of work actually measured as per Account no I coloumn 10	(A)	
	Deduct amount of paym,ents already made as per last running account bill No Dated.....		
2	Forwarded to the Accounts Office on	(B)	
3	Payments now to be made { (A) - (B)}	(C)	
4	Deduct ammounts recoverable from the contractor on account of :	Rs	P
	a Material suplied by BHEL vide annexure A attached		
	b Hire of Tools & Plants vide Annexure B attached		
	c Other charges vide Annexure C attached		
	d Income Tax		
	Total deduction		
5	Balance		
6	Refund of 50% of security deposite on completion of work		
7	Net amount to be paid to the Contractor		

III. CERTIFICATE OF THE ENGINEER IN CHARGE

The measurement on which the entries in coulms 7 to 12 of Part I of this bill (Account of work executed) are based were made by

-
- (Name and designation)
 - A statement showing the quantities of stores issued to the contractor (whether free or on recovery basis) and their disposal is attached.

Date:

Signature of Engineer in charge
Designation

TENDER NO. PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

IV CERTIFICATE OF THE SENIOR ENGINEER

1 Certified that I have personally inspected the work and that the work has been physically completed on the due date in accordance with the terms and
 2 Certified that the measurements have been check measured to the prescribed extent by
 3 (Name & designation). And by the the undersigned at site and relevent entries have been initiated in the measurement book (vide
 4 pages.....)

5 Certified that the methods of measurement are correct

6 Certified that the measurements have been technically checked with reference to contract drawings, deviations etc

7 Certified that all the measurements recorded in the measurement book have been correctly billed for at the contract rates or approved rates.

8 Certified that all the recoverable amounts in respect of stores, tools and pallant, el\water, electricity charges etc, have been correctly made vide Annexures A

9 Certified that the issues of all stores as per statement atyached (whether charged to the contractor or direct to the work) have been technically checked and

Certified for payment of * Rs (Rupees.....) (Only). To be paid in
 cash/by cheque in the presence of

ALLOCATION

The expenditure as under and to be included in the accounts for 19

Ledger Head	Debit (Gross Amount)		Credit (Deduction)	
	Rs.	P	Rs.	P
.....				
Total				

* Here specify the net amount payable

Signature of Senior Engineer
 Date

TENDER NO. PSER: PUR:SAS:63(II):070 (ENQ:19:PP:0015: PUR:92) Date 24/10/2019

V. ENTRIES TO BE MADE IN THE ACCOUNTS OFFICE

Account Bill no..... Dated
 Entered in Journal book vide entry No.....Dated.....
 Passed for.....Rs.....
 Less Deductions.....Rs.....
 (Rupees.....Only)
 Payable to Shri/M/s..... by cheque/cash
 Entered in contractors' Ledger no..... Page

Assistant Accountant Accounts officer
 Date: Date: Date:

ALLOCATION		Code No
Estimate No:		
Name of the Work		
Ledger Head	Debit (Gross Amount) Rs P	Credit (Deduction) Rs
.....		
Total	.....	.....

VI. Received Rs.....(Rupees.....Only) in full and final settlement of all moneys due under this contract and I / we have no further claims of this contract.

Signature of Witness
 Address

Revenue Stamp
 Signature of Contractor
 Date:

VII . ENTRIES TO BE MADE BY TREASURY SECTION

Cash book entry no and date :

Amount Paid Rs.....
 Amount unpaid Rs.....
 Total Rs.....

Signature of Cashier
 Date:

TENDER NO. PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

ANNEXURE A

Part I

Statement showing details of material issued to the contractor Shri/M/s..... In respect of Contract Agreement/Work Order No..... Dated

SI No	Stores Issue voucher No and date	Issue voucher No and date alloted by stores to the SIV	description of material issued to the contractor	Quantity issued	Quantity actually incorporated in the work	Whether recoverabl e from the contractor or supplied free	Rate at		Amount Recoverabl e		Amount recoverable upto previous bill		Balance Now recovered		Remarks
							Rs	P	Rs	P	Rs	P	Rs	P	
1	2	3	4	5	6	7	8		9		10		11		12

Total

Signature of Contractor
Date

Signature of Engineer in charge
Date

Signature of Senior Engineer
Date

ANNEXURE A
Part II

Statement showing details of material issued to the contractor Shri/M/s..... in respect of Contract Agreement/Work Order No..... Dated and not covered by the agreement

SI No 1	Stores Issue voucher No and date 2	Issue voucher No and date alloted by stores to the SIV 3	description of material issued to the contractor 4	Quantity issued 5	Quantity actually incorporated in the work 6	Issue Rate		Amount Recoverabl e		Amount recoverable upto previous bill		Balance Now recovered		Remarks 11
						Rs	P	Rs	P	Rs	P	Rs	P	
						7		8		9		10		

Total

Add Departmental Charges

Add Sales Tax (wherever applicable)

Total

Signature of Contractor
Date

Signature of Engineer in charge
Date

Signature of Senior Engineer
Date

TENDER NO. PSER: PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

ANNEXURE B

Statement showing TOOLS & PLANTS issued to the contractor Shri/M/s..... in respect of Contract Agreement/Work Order No..... Dated and not covered by the agreement

SI No 1	Description of tools & plants issued 2	Period for which issued 3	Rate at which Recivry is to be made 4	Amount recoverabl e Rs P 5		Amount recoverable upto previous bill Rs P 6		Balance Now recovered Rs P 7		Remarks 8

Total

Signature of Contractor
Date

Signature of Engineer in charge
Date

Signature of Senior Engineer
Date

ANNEXURE C

showing detail of other recoveries to be made from the contractor Shri/M/s.....
 ment/Work Order No.....Dated.....

Sr.No	Particulars	Unit	Quantity	Rate Rs. P.	Amount recoverable Rs. P	Amount recovered upto previous bill Rs. P.	Amount now recovered Rs. P.	Remarks
1	2	3	4	5	6	7	8	9
	1 Water Charges							
	2 Electricity Charges							
	3 Seignorage Charges							
	4 Medical Charges							
	Cost of empty gunny bags and empty containers not 5 returned							
	6							
	7							
	8							
	9							
	10							
Total								
Signature of Contractor			Signature of Engineer Incharge			Signature of Sr. Engineer		
Date			Date			Date		

ANNEXURE D
DEVIATION STATEMENT :

Name of the Contractor :

Contract Agreement/Work Order No. :

Name of the Work :

Date :

Sl. No.	Description of item	Unit	Quantity as per agreement	Quantity as executed	Rate as per agreement Rs. P.	Rate as executed Rs. P.	Amount as per agreement Rs. P.	Amount as executed Rs. P.	Difference		Reason for the deviation with authority, if any
									Excess	Savings	
1	2	3	4	5	6	7	8	9	10	11	12

Signature of Engineer in Charge

Date :

Signature of Senior Engineer

Date :

ANNEXURE E

Statement showing the consumption of materials issued to the contractor Shri/M/s.....
in respect of Contract Agreement/Work Order No..... Dated.....

Name of the Work :

ON RECOVERY BASIS

Sl. No.	Description of material	Unit	Quantity actually issued	Quantity actually incorporated in the work	Balance	Particulars of disposal of balance	Quantity to be issued as per approved data for work actually done	Variation in consumption (Difference between column 5 and 8)		Rate chargeable for excess/short consumption, if any	Amount recoverable for excess/short consumption, including materials not returned	R M A R K S
								More	Less	Rs. P.	Rs. P.	
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Cement											
2.	Bricks											
3.	Wood.....											
4.	Asbestos Sheet											
5.	Iron Materials											
6.												
7.												
8.												
9.												
10.												

Signature of Contractor

Date :

Signature of Engineer in Charge

Date :

Signature of Senior Engineer

Date :

- Note : 1. The quantities shown in columns 4 and 5 above should tally with those shown in columns 5 and 6 respectively of Annexure A (Part I and II).
2. Data statement of theoretical consumption should be attached in support of quantity specified in column 8.

ANNEXURE F

Statement showing detail of materials issued to the contractor Shri/M/s.....

Contract of Contract Agreement/Work Order No.....Dated.....

Name of work;**FREE OF COST**

Sr.No	Stores issue voucher No.	Description of material	Unit	Quantity issued	Quantity required as per data	Quantity consumed in the work	Balance(If any)	Nature of disposal for the balance	Rate chargeable for material not returned Rs.P.	Amount recoverable for material not returned Rs. P	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
Total											
Signature of Contractor Date				Signature of Engineer Incharge Date				Signature of Sr. Engineer Date			
Note:Data statement of therotical consumption should be attached in support of the quantity specified in coloumn 6											

ANNEXURE C

QUESTIONNAIRE TO BE ANSWERED BY ENGINEER IN CHARGE AND SENIOR ENGINEER	
(Correct particulars and answers to be recorded)	
Name of the work :	
Name of the Contractor :	
Date of commencement of the work:	
Contract agreement/work ordered no. and date:	
Reference to supplementary agreement no,if any :	
Whether administrative approval and technical sanction has been accorded by the competent authority ? If so ,cite reference	
Whether sanction of the competent authority and financial concurrence of the Accounts Department for award of the work has been accorded ? If so,cite reference.	
Whether the work has been completed in time ? If not ,whether penalty has been levied or sanction of the competent authority for extension of time granted and communicated to the Accounts Department with reasons for grant of extension? (Due and actual date of completion of the work and reference to letter no. and date granting the extension of time should be given)	
(a) Whether the rates allowed in the bill have been checked with the contract agreement ? (b) Whether the rates for extra/supplemental items have been approved by the competent authority and the sanction communicated to the accounts Department together with rate analysis? If so,cite reference.	
Whether deviations have been approved by the competent authority? If yes, give reference to the approval; if not, give reasons.	
Whether the rates of recovery of stores issued to the contractor which are not provided for in the Contract Agreement have been settled in consultation with Finance?	
Whether discrepancies pointed out by the Accounts Department in the store statement have been reconciled and accepted by the Accounts Department?	

QUESTIONNAIRE TO BE ANSWERED BY ENGINEER IN CHARGE AND SENIOR ENGINEER	
(Correct particulars and answers to be recorded)	
Whether materials issued to the contractor in excess of the theoretical requirements have been returned to the Stores Department and the no. and date of such returned stores vouchers have been shown in stores statement? If not, whether the cost of such excess material has been recovered at the prescribed rate? Whether consumption statements in respect of materials chargeable to the work have been attached to the bill?	
Whether consumption of materials shown has been technically checked by Senior Engineer?	
Whether materials issued and used in the work is not less than that required for consumption in work according to our specification? If consumption is less, whether necessary recovery has been made in the bill?	
Whether measurements have been checked by the Engineer and Sr. Engineer to the extent required and certificates of check recorded in the measurement books?	
Whether contractor has signed the bill and the measurement books without reservations? If not; whether reasons have been intimated to the Accounts Department?	
Whether arithmetical calculations have been checked and certificate recorded in the measurement books by a person other than the one who calculated initially	
Whether any work was done at the risk and cost of the contractor and whether such cost has been recovered from him? Give particulars.	
Whether all advance payments on running Accounts have been recovered?	
Whether all the recoveries due to services given to the contractor like rent of accommodation, water charges, electricity charges etc. have been recovered and whether payments made by the company on behalf of the contractor have been adjusted?	
Whether the files containing abstracts from measurement books/ standard measurement books have been completed/ updated?	
Whether hire charges of tools and plant have been recovered and the statement of hire charges with full details attached?	

ANNEXURE G

QUESTIONNAIRE TO BE ANSWERED BY ENGINEER IN CHARGE AND SENIOR ENGINEER	
(Correct particulars and answers to be recorded)	
Whether the certificate of workmanship and completion of work according to specifications, drawings etc. is recorded by Engineer/ Sr. Engineer and whether recoveries have been made for defective works, if any?	
Whether all corrections in the bill/measurement books etc. have been neatly made and attested and there are no overwriting?	
Whether final measurements have been taken as soon as possible after completion of work and the certificate of completion issued? If not, whether reasons for delay have been recorded and communicated to Accounts?	
In respect of quantities reduced in the final bill as compared to the running payment, whether adequate reasons have been recorded and communicated to Accounts?	
Whether the expenditure has been classified correctly according to heads of Account recorded in the sanctioned estimate?	
Whether the work has been completed within the estimated cost? If not, what is the percentage of excess over the sanctioned estimate/ administrative approval? In case the excess is beyond the competency of Sr. Engineer, what action has been taken for the obtaining the approval of the authority competent to sanction the excess?	
(a) If the contractor has furnished bank guarantee in lieu of cash security deposit towards proper execution of works and guarantee against defects during the maintenance period, whether the period of currency of the bank guarantee covers the entire maintenance period? (b) If not, whether security deposit has been proposed to be recovered from the final bill?	
Whether all the previous audit objections raised on running Account bills have been settled? If so, cite reference.	
Signature of Engineer in Charge	Signature of Engineer in Charge
Date:	Date:

 PS-	MONTHLY PLAN & REVIEW WITH CONTRACTOR		Page 1 of 6

Name of Project		Contract No.	
Name of Work		Name of Contractor	

PART- A: PLAN/ REVIEW OF WORK FOR THE MONTH OF

Date of Plan/ Review.....

SN.	Description of Work	Unit of Measur- ement	Unit Rate	Planned		Cumulative Shortfall attributable to contractor upto last month (Refer Note 1)		Achieved		Shortfall attributable to BHEL w.r.t Plan (as per Col. 3 of Part- D)		Cumulative Shortfall attributable to Contractor upto & including this month		REMARKS (Reasons for Shortfall attributable to Contractor. Supporting documents to be kept as record.)
				(QTY Planned for the month as per Part –C of last month)										
(a)	(b)	(c)	(d)	A		B		C		D		E=A+B-C-D		
				Phy.	Financial	Phy	Financial	Phy.	Financial	Phy.	Financial	Phy.	Financial	
	Value of Other Items not mentioned above but planned to be executed in this month													
Total					ΣA		ΣB		ΣC		ΣD		ΣE	

BHEL
(Sign with name, designation and date)

CONTRACTOR
(Sign with name, designation and date)

 PS-	MONTHLY PLAN & REVIEW WITH CONTRACTOR	Page 2 of 6	
Name of Project		Contract No.	
Name of Work		Name of Contractor	

PART- A: Contd.....

Note 1: **In addition to the work planned as per Col. 'A', Contractor shall also make full efforts to minimize the 'Cumulative shortfall attributable to contractor upto the month' as mentioned in Col. 'B' by enhancing its resources, so as to achieve the completion of activities as per agreed schedule. In case contractor is not able to execute the entire shortfall, then BHEL 'Engineer in-charge', shall decide the priority of work to be executed and it shall be binding on the contractor.**

Note 2: Percentage Shortfall attributable to contractor w.r.t. "Plan - Shortfall attributable to BHEL" for the month = $[(\Sigma E - \Sigma B) / (\Sigma A - \Sigma D)] \times 100$
 In case, $(\Sigma E - \Sigma B)$ is negative, then it shall be treated as zero percent."

Note 3: Form 14 should include all items being planned in the current month, and all items against which shortfall was attributable to contractor till previous month. However, for practical reason, if it is not possible to mention some of the items in Form-14 being planned to be executed in this month, then also value of such items shall necessarily be included in calculation of Total Value.

Note 4: In case reason for shortfall attributable to contractor is w.r.t. T&P and Manpower, it should be in conformity with Part B1 and B2.

BHEL
 (Sign with name, designation and date)

CONTRACTOR
 (Sign with name, designation and date)

 PS-	MONTHLY PLAN & REVIEW WITH CONTRACTOR		Page 3 of 6

Name of Project		Contract No.	
Name of Work		Name of Contractor	

PART – B-1: PLAN/REVIEW OF DEPLOYMENT OF MAJOR T&Ps FOR THE MONTH OF

Date of Plan/ Review.....

CONTRACTOR'S SCOPE: -

SN.	PLAN				DEPLOYMENT STATUS			
	Major T&P to be deployed as per work planned for the month	QTY	Deployment Period (in days)	Weightage assigned to planned T&P (in fraction such that $\Sigma C = 1$)	Actual Deployed Quantity	Actual Deployment Period (in days)	Weighted T&P Deployed	REMARKS (Works affected due to non-deployment of T&Ps)
		A	B	C	D	E	$F = (C \times D \times E) / (A \times B)$	

Note: In case, $E > B$, it shall be considered as $E = B$. Similarly, in case $D > A$, it shall be considered as $D = A$.
 Percentage of T&P Deployed = $\Sigma F \times 100$

BHEL SCOPE: -

SN.	PLAN				DEPLOYMENT STATUS		
	Major T&P to be deployed as per work planned for the month	QTY	Deployment Period (in days)	Actual Deployed Quantity	Actual Deployment Period (in days)	REMARKS (Works affected due to non-deployment of T&Ps)	

BHEL
 (Sign with name, designation and date)

CONTRACTOR
 (Sign with name, designation and date)

 PS-	MONTHLY PLAN & REVIEW WITH CONTRACTOR	Page 4 of 6

Name of Project		Contract No.	
Name of Work		Name of Contractor	

PART – B-2: PLAN/ REVIEW OF DEPLOYMENT OF MANPOWER FOR THE MONTH OF

Date of Plan/ Review.....

CONTRACTOR'S SCOPE: -

SN.	Area of Work	Category of Labour	No. of Labour required as per category	Deployment Period (in days)	No. of Labour actually deployed	Actual Deployment Period (in days)	REMARKS (Works affected due to non-availability of labour)
			A	B	C	D	

 Percentage of Manpower Deployed= $100 \times \Sigma(C \times D) / \Sigma(A \times B)$

 BHEL
 (Sign with name, designation and date)

 CONTRACTOR
 (Sign with name, designation and date)

 PS-	MONTHLY PLAN & REVIEW WITH CONTRACTOR		Page 5 of 6

Name of Project		Contract No.	
Name of Work		Name of Contractor	

PART – C: PLAN(PHYSICAL) FOR THE NEXT MONTH i.e.

Date of Plan

PART - C: T&P (T&P) FOR THE NEXT MONTH (w.r.t.)											Date of Plan
SN.	Description of work	Original Planned Quantity	Planned Quantity (excluding shortfalls attributable to contractor till date)	Unit of Measurement	T&Ps Required				Manpower Required		REMARKS (Reasons for difference in Original Planned Quantity w.r.t. Planned quantity to be given)
					Contractor Scope		BHEL Scope		Category of Labour	No. of Labour required as per Category	
					Major T&P to be deployed as per work planned for the month	Quantity	Major T&P to be deployed as per work planned for the month	Quantity			

Note 1: Planned quantity should be based on available/ expected fronts/ inputs in the next month

Note 2: “Original Planned Quantity” shall be as per latest jointly agreed programme between BHEL and Contractor before commencement of work or at the time of latest Time Extension, as the case may be.

BHEL
(Sign with name, designation and date)

CONTRACTOR
(Sign with name, designation and date)

 PS-	MONTHLY PLAN & REVIEW WITH CONTRACTOR	Page 6 of 6

Name of Project		Contract No.	
Name of Work		Name of Contractor	

PART – D: REASONS FOR SHORTFALL ATTRIBUTABLE TO BHEL IN RESPECT OF PLAN FOR THE MONTH.....

SN.	Description of Work (from Part-A)	Quantities Affected		Reasons for Shortfall attributable to BHEL	Agency responsible for reasons for Shortfall	Remarks (Supporting Documents in respect of agency responsible)
		(Physical Quantity)	Unit of Measu- rement			
1	2	3	4	5	6	7

Note1: Reasons for shortfall shall include non-availability of fronts/ drawings/ materials/ T&P (BHEL Scope)/ clearances etc. and other hindrances for which contractor is not responsible.

Note2: Agency responsible may be BHEL Site/ MUs/ Design Centre/ BHEL Customer/ other Contractors etc.

BHEL
(Sign with name, designation and date)

BANK GUARANTEE FOR PERFORMANCE SECURITY

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

In consideration of the Bharat Heavy Electricals Limited (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 BHEL House, Siri Fort, Asiad, New Delhi – 110049 through its Unit at Bharat Heavy Electricals Limited, Power Sector Eastern Region, BHEL Bhawan, Plot No 9/1, DJ Block, Sector-II, Salt lake City, Kolkata – 700091 having awarded to (Name of the Vendor / Contractor / Supplier) having its registered office at _____¹ hereinafter referred to as the 'Contractor/Supplier', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No.....dated ² valued at Rs.....² (Rupees -----)for <Nature of Work>³ (hereinafter called the 'Contract') and the Contractor having agreed to provide a Contract Performance Guarantee, equivalent to% (.... Percent) of the said value of the Contract to the Employer for the faithful performance of the Contract,

we, ..., (hereinafter referred to as the Bank), having registered/Head office at and inter alia a branch at being the Guarantor under this Guarantee, hereby, irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer a maximum amount Rs ----- (Rupees -----)⁴ without any demur, immediately on a demand from the Employer, .

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

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

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

We 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 and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said Contract have been fully paid and its claims satisfied or discharged.

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

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

This Guarantee shall remain in force upto and including.....⁵ and shall be extended from time to time for such period as may be desired by Employer.

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

Unless a demand or claim under this guarantee is made on us in writing on or before the ⁶ (3 months more than the present date of validity of Bank Guarantee) 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.....⁷
- b) This Guarantee shall be valid up to ⁸
- c) Unless the Bank is served a written claim or demand on or before ⁹ (3 months more than the present date of validity of Bank Guarantee) 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.

Any claim or dispute arising under the terms of this document shall only be enforced or settled in the courts of at Kolkata only.

For and on behalf of
(Name of the Bank)

Dated.....

Place of Issue.....

¹ NAME AND ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER.

² DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

³ PROJECT/SUPPLY DETAILS

⁴ BG AMOUNT IN FIGURES AND WORDS

⁵ VALIDITY DATE

⁶ DATE OF EXPIRY OF CLAIM PERIOD

⁷ BG AMOUNT IN FIGURES AND WORDS.

⁸ VALIDITY DATE

⁹ DATE OF EXPIRY OF CLAIM PERIOD

Note:

1. Units are advised that expiry of claim period may be kept 2/3 months after validity date.

2. In Case of Bank Guarantees submitted by Foreign Vendors-

- a. **From Nationalized/Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India)** can be accepted subject to the condition that the Bank Guarantee should be enforceable in the town/city or at nearest branch where the Unit is located i.e. Demand can be presented at the Branch located in the town/city or at nearest branch where the Unit is located.

TENDER NO. PSER:PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

- b. From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)**
- b.1** In such cases, in the Tender Enquiry/ Contract itself, it may be clearly specified that Bank Guarantee issued by **any of the Consortium Banks only** will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter- Guarantee by Foreign Bank in favour of the Indian Bank (BHEL's Consortium Bank). It is advisable that all charges for issuance of Bank Guarantee/ counter- Guarantee should be borne by the Foreign Vendor. The tender stipulation should clearly specify these requirements.
- b.2** **In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank** (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at **sl.no. b.1** will required to be followed.
- b.3** The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time). In case, of Foreign Vendors, the BG Format provided to them should clearly specify the same.
- b.4** The BG should clearly specify that the demand or other document can be presented in electronic form.

TENDER NO. PSER: PUR: SAS: 63(II): 070 (ENQ: 19: PP: 0015: PUR: 92) Date 24/10/2019
**BANK GUARANTEE FOR SECURITY DEPOSIT CUM PERFORMANCE BANK GUARANTEE
BOND**

B.G. NO.

Date

This deed of Guarantee made this ----- day of -----two thousand ---- by <Name and Address of Bank> hereinafter called the "The Guarantor" (which expression shall unless repugnant to the context or meaning thereof be deemed to include its successors and assigns) in favour of M/s Bharat Heavy Electrical Limited (A Govt. of India Undertaking) a company incorporated under the Companies Act, 1956, having its registered office at BHEL House, Siri Fort, Asiad, New Delhi – 110049 through its unit at <Address of Power Sector Region¹> hereinafter called "The Company" (which expression shall unless repugnant to the context or meaning thereof be deemed to include its successors and assigns)

WHEREAS < Contractor's Name and Address> (hereinafter referred to as the Contractor) have entered into a contract arising out of Letter of Intent no. < LOI REF & Date > (hereinafter referred to as "the contract") for < Name of Work > with the company.

AND WHEREAS the contract inter-alia provides that the contractor shall furnish to the company a sum of Rs.----- (Rupees-----) towards security deposit for due and faithful performance of the contract in the form and manner specified therein.

AND WHEREAS the contractor has approached the Guarantor and in consideration of the arrangement arrived at between the contractor and the Guarantor, the Guarantor has agreed to give the Guarantee as hereinafter mentioned in favour of the company.

The Guarantor do hereby guarantee to the company the due and faithful performance, observance or discharge of the Contract by the contractor and further unconditionally and irrevocably undertake to pay to the Company without demur and merely on a demand, to the extent of Rs.----- (Rupees-----) against any claim by the company on them for any loss, damage, costs, charges and expenses caused to or suffered by the company by reasons of the contractor making any default in the performance, observance or discharge of the terms, conditions, stipulations or undertakings or any of them as contained in the contract.

The decision of the company whether any default has occurred or has been committed by the contractor in the performance, observance or discharge of any of the terms, conditions, stipulations or undertakings or any one of them as contained in the contract and / or as to the extent of loss, damage, costs, charges and expenses caused to or suffered by the company by reason of the contractor making any default in the performance, observance or discharge of any of the terms, conditions, stipulations or undertakings or any one of them shall be conclusive and binding on the Guarantor irrespective of the fact whether the contractor admits or denies the default or questions the correctness of any demand made by the company in any Court, Tribunal or Arbitration proceedings or before any other Authority.

The company shall have the fullest liberty without affecting in any way the liability of the Guarantor under this Guarantee, from time to time to vary any of the terms and conditions of the contract or extend time of performance by the contractor or to postpone for any time and from time to time any of the powers exercisable by it against the contractor and either enforce or forebear from enforcing any of the terms and conditions governing the contract or securities available to the company and the Guarantor shall not be released from its liability under these presents by any exercise by the company of the liberty with reference to the matters aforesaid or by reasons of time being given to the contractor or any other forbearance, act or commission on the part of the company or any indulgence by the company to the contractor or any other matter or thing whatsoever which under the law relating to sureties would, but for this provision have the effect of so releasing the Guarantor from its liability under this guarantee.

The Guarantor further agrees that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the contract and its claim satisfied or discharged and till the company certifies that the terms and conditions of the contract have been fully and properly carried out by the contractor and accordingly discharges this Guarantee, subject however, that the company shall have no claim under this Guarantee after -- ----- i.e. (3 months more than the present date of validity of Bank Guarantee unless the date of validity of this Bank Guarantee is further extended from time to time, as the case may be) unless a notice of the claim under this Guarantee has been served on the Guarantor before the expiry of the said period in which case the same shall be enforceable against the Guarantor notwithstanding the fact that the same is enforced after the expiry of the said period.

TENDER NO. PSER: PUR: SAS: 63(II): 070 (ENQ: 19: PP: 0015: PUR: 92) Date 24/10/2019
**BANK GUARANTEE FOR SECURITY DEPOSIT CUM PERFORMANCE BANK GUARANTEE
BOND**

The Guarantor undertakes not to revoke this Guarantee during the period it is in force except with the previous consent of the Company in writing and agrees that any liquidation or winding up or insolvency or dissolution or any change in the constitution of the contractor or the Guarantor shall not discharge the Guarantor's liability hereunder.

It shall not be necessary for the company to proceed against the contractor before proceeding against the Guarantor and the Guarantee herein contained shall be enforceable against them notwithstanding any security which the Company may have obtained or obtain from the Contractor shall at the time when proceedings are taken against the Guarantor hereunder be outstanding or unrealized.

Notwithstanding anything contained herein before, our liability under the Guarantee is restricted to Rs.-----
- (Rupees-----). Our guarantee shall remain in force until -----, i.e. (the present date of validity of Bank Guarantee unless the date of validity of this Bank Guarantee is further extended from time to time) unless a claim or demand under this guarantee is made against us on or before ----- (3 Months more than the validity date) we shall be discharged from our liabilities under this Guarantee thereafter.

Any claim or dispute arising under the terms of this documents shall only be enforced or settled in the courts of at < **Name of place**² > only.

The Guarantor hereby declares that it has power to execute this guarantee and the executant has full powers to do so on behalf of the Guarantor.

IN WITNESS whereof the ----- (Bank) has hereunto set and subscribed its hand the day, month and year first, above written.

(Name of the Bank)

Signed for and on behalf of the Bank
(Designation of the Authorized Person Signing the Guarantee)

(Signatory No.-----)

DATED:

SEAL

Notes :

1. **Address of Power Sector Regions (inviting the Tender)** is as below:
 - PSNR : Bharat Heavy Electricals Limited, Power Sector Northern Region, HRDI & PSNR Complex, Plot No 25, Sector 16-A, Noida – 201 301 (Uttar Pradesh)
 - PSER : Bharat Heavy Electricals Limited, Power Sector Eastern Region, BHEL Bhawan, Plot No 9/1, DJ Block, Sector-II, Salt lake City, Kolkata – 700 091
 - PSWR: Bharat Heavy Electricals Limited, Power Sector Western Region, Shree Mohini Complex, 345 Kingsway, Nagpur 440 001
 - PSSR: Bharat Heavy Electricals Limited, Power Sector Southern Region, 690, Anna Salai, Nandanam, Chennai 600 035
2. **Name of place (for jurisdiction of Courts)** is as below:
 - PSNR : Delhi
 - PSER : Kolkata
 - PSWR: Nagpur
 - PSSR : Chennai
3. The BG shall be executed on non-judicial stamp papers of adequate value procured in the name of the Bank in the State where the Bank is located.
4. The BG is required to be sent by the executing Bank directly to BHEL at the address where tender is submitted / accepted under sealed cover.

BANK GUARANTEE FOR RELEASE OF AMOUNTS WITHHELD/LIQUIDATED DAMAGES AMOUNT

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

In consideration of the Bharat Heavy Electricals Limited ¹(hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Companies Act, 1956 and having its registered office at BHEL House, Siri Fort, Asiad, New Delhi – 110049 through its Unit at Bharat Heavy Electricals Limited, Power Sector Eastern Region, BHEL Bhawan, Plot No 9/1, DJ Block, Sector-II, Salt lake City, Kolkata – 700091 having awarded to (Name of the Vendor / Contractor / Supplier) incorporated under the having its registered office at_____ ¹(hereinafter referred to as the 'Contractor', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No.....dated ²valued at Rs.....(Rupees -----) for <Nature of Work>³(hereinafter called the 'Contract')

The Contractor as per Contract should have completed the work/ supplies under the contract by.....(date). As per terms and conditions of the Contract, the Employer is entitled to levy Liquidated Damages (LD) for delays and the Employer has withheld an amount of Rs by way of LD as per the Contract. Now, on the request of the Contractor, the Employer having agreed to release the amount of Rs.....withheld from the Contractor's invoices as Liquidated damages under the terms and conditions of the Contract on production of a Bank Guarantee for Rs._____ (Rupees.....only) ⁴

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

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

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

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

We 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 and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said Contract have been fully paid and its claims satisfied or discharged.

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

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

This Guarantee shall remain in force upto and including.....⁵ and shall be extended from time to time for such period as may be desired by Employer.

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

Unless a demand or claim under this guarantee is made on us in writing on or before the ⁶ (3 months more than the present date of validity of Bank Guarantee) 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.....⁷
- b) This Guarantee shall be valid up to ⁸
- c) Unless the Bank is served a written claim or demand on or before ⁹ (3 months more than the present date of validity of Bank Guarantee) 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.

Any claim or dispute arising under the terms of this document shall only be enforced or settled in the courts of at Kolkata only.

For and on behalf of
(Name of the Bank)

Dated.....

Place of Issue.....

¹ NAME AND ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER.

² DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

³ PROJECT/SUPPLY DETAILS

⁴ BG AMOUNT IN FIGURES AND WORDS

⁵ VALIDITY DATE

⁶ *DATE OF EXPIRY OF CLAIM PERIOD*

⁷ *BG AMOUNT IN FIGURES AND WORDS.*

⁸ *VALIDITY DATE*

⁹ *DATE OF EXPIRY OF CLAIM PERIOD*

Note:

1. Units are advised that expiry of claim period may be kept 2/3 months after validity date.
2. In Case of Bank Guarantees submitted by Foreign Vendors-
 - a. **From Nationalized/Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India)** can be accepted subject to the condition that the Bank Guarantee should be enforceable in the town/city or at nearest branch where the Unit is located i.e. Demand can be presented at the Branch located in the town/city or at nearest branch where the Unit is located.
 - b. **From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)**
 - b.1 In such cases, in the Tender Enquiry/ Contract itself, it may be clearly specified that Bank Guarantee issued by **any of the Consortium Banks only** will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter- Guarantee by Foreign Bank in favour of the Indian Bank (BHEL's Consortium Bank). It is advisable that all charges for issuance of Bank Guarantee/ counter- Guarantee should be borne by the Foreign Vendor. The tender stipulation should clearly specify these requirements.
 - b.2 **In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at sl.no. b.1 will required to be followed.**
 - b.3 The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time). In case, of Foreign Vendors, the BG Format provided to them should clearly specify the same.
 - b.4 The BG should clearly specify that the demand or other document can be presented in electronic form.

BANK GUARANTEE FOR SUPPLY FREE ISSUE MATERIAL.

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

In consideration of the 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 BHEL House, Siri Fort, Asiad, New Delhi – 110049 through its Unit at Bharat Heavy Electricals Limited, Power Sector Eastern Region, BHEL Bhawan, Plot No 9/1, DJ Block, Sector-II, Salt lake City, Kolkata – 700091 having awarded to (Name of the Vendor / Contractor / Supplier).having its registered office at _____ ¹ (hereinafter referred to as the 'Contractor/Supplier/Fabricator' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref. No.....dated ² valued at Rs.....(Rupees -----) for <Nature of Work>³ (hereinafter called the 'Contract')

and, the Employer having agreed as per the terms and conditions of the Contract to supply free issue material costing Rs._____ for the manufacture/fabrication of the equipment at the Contractor's site on on furnishing a Bank Guarantee for Rs._____ (Rupees.....)⁴ in the manner hereinafter specified for the due safeguard of the free issue material,

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

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

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

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

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

This Guarantee shall remain in force upto and including.....⁵ and shall be extended from time to time for such period as may be desired by Employer.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Contractor/ Supplier/ Fabricator 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 ⁶ (3 months more than the present date of validity of Bank Guarantee) 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.....⁷
- b) This Guarantee shall be valid up to ⁸
- c) Unless the Bank is served a written claim or demand on or before ⁹ (3 months more than the present date of validity of Bank Guarantee) 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.

Any claim or dispute arising under the terms of this document shall only be enforced or settled in the courts of at Kolkata only.

For and on behalf of
(Name of the Bank)

Dated.....

Place of Issue.....

¹ NAME AND ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER .

² DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

³ PROJECT/SUPPLY DETAILS

⁴ BG AMOUNT IN FIGURES AND WORDS

⁵ VALIDITY DATE

⁶ DATE OF EXPIRY OF CLAIM PERIOD

⁷ BG AMOUNT IN FIGURES AND WORDS.

⁸ VALIDITY DATE

⁹ DATE OF EXPIRY OF CLAIM PERIOD

Note:

TENDER NO. PSER: PUR: SAS:63(II):070 (ENQ:19:PP:0015: PUR:92) Date 24/10/2019

1. Units are advised that expiry of claim period may be kept 2/3 months after validity date.
2. In Case of Bank Guarantees submitted by Foreign Vendors-
 - a. **From Nationalized/Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India)** can be accepted subject to the condition that the Bank Guarantee should be enforceable in the town/city or at nearest branch where the Unit is located i.e. Demand can be presented at the Branch located in the town/city or at nearest branch where the Unit is located.
 - b. **From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)**
 - b.1 In such cases, in the Tender Enquiry/ Contract itself, it may be clearly specified that Bank Guarantee issued by **any of the Consortium Banks only** will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter- Guarantee by Foreign Bank in favour of the Indian Bank (BHEL's Consortium Bank). It is advisable that all charges for issuance of Bank Guarantee/ counter- Guarantee should be borne by the Foreign Vendor. The tender stipulation should clearly specify these requirements.
 - b.2 **In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank** (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at **sl.no. b.1** will required to be followed.
 - b.3 The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time). In case, of Foreign Vendors, the BG Format provided to them should clearly specify the same.
 - b.4 The BG should clearly specify that the demand or other document can be presented in electronic form.

PROFORMA OF BANK GUARANTEE FOR EARNEST MONEY
(On non-Judicial paper of appropriate value)

Bank Guarantee No.....
Date.....

To

(Employer's Name and Address)

.....

Dear Sirs,

In accordance with the terms and conditions of your Invitation for Bids/Notice Inviting Tender No.....¹(Tender Conditions) M/s. having its registered office at ² (hereinafter referred to as the '**Tenderer**'), is submitting its bid for the work of..... for.....³. at Bharat Heavy Electricals Limited, Power Sector Eastern Region, BHEL Bhawan, Plot No 9/1, DJ Block, Sector-II, Salt lake City, Kolkata – 700091.⁴(name of the Employer)

The Tender Conditions provide that the **Tenderer** shall pay a sum of Rs as Earnest Money Deposit in the form therein mentioned. The form of payment of Earnest Money Deposit includes Bank Guarantee executed by a Scheduled Bank.

In lieu of the stipulations contained in the aforesaid Tender Conditions that an irrevocable and unconditional Bank Guarantee against Earnest Money Deposit for an amount of ⁵ is required to be submitted by the Tenderer as a condition precedent for participation in the said Tender and the Tenderer having approached us for giving the said Guarantee,,

we, the[Name & address of the Bank] having our Head Office at(hereinafter referred to as the Bank) being the Guarantor under this Guarantee, hereby irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer without any demur, merely on your first demand any sum or sums of Rs. ⁵(*).....without any reservation, protest, and recourse and without the beneficiary needing to prove or demonstrate reasons for its such demand. Any such demand made by the 'Employer' shall be

conclusive and binding on us irrespective of any dispute or difference raised by the Tenderer.

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

We Bank further agree 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 Tender or to extend the time of submission of bids 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 Tenderer and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Tenderer or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Tenderer 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 Tenderer and notwithstanding any security or other guarantee that the Employer may have in relation to the Tenderer's liabilities.

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

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Tenderer but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms hereof. However, unless a demand or claim under this Guarantee is made on us in writing on or before the ⁷ we shall be discharged from all liabilities under this Guarantee.

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.....⁵.....
- b) This Guarantee shall be valid up to ⁶
- c) Unless the Bank is served a written claim or demand on or before _____⁷ 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)

Date.....

Place of Issue.....

¹ *Details of the Invitation to Bid/Notice Inviting Tender*

² *Name and Address of the Tenderer*

³ *Details of the Work*

⁴ *Name and Address of BHEL Unit/Division/Region (Already filled up)*

⁵ *BG Amount in words and Figures*

⁶ *Validity Date*

⁷ *Date of Expiry of Claim Period*

Note:

1. Units are advised that expiry of claim period may be kept 2/3 months after validity date. As per Works Policy, the Bank Guarantee shall be valid for at least six months.

2. In Case of Bank Guarantees submitted by Foreign Vendors-

TENDER NO. PSER: PUR:SAS:63(II):070 (ENQ:19:PP:0015:PUR:92) Date 24/10/2019

- a. **From Nationalized/Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India)** can be accepted subject to the condition that the Bank Guarantee should be enforceable in the town/city or at nearest branch where the Unit is located i.e. Demand can be presented at the Branch located in the town/city or at nearest branch where the Unit is located.
- b. **From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)**
 - b.1 In such cases, in the Tender Enquiry/ Contract itself, it may be clearly specified that Bank Guarantee issued by **any of the Consortium Banks only** will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter- Guarantee by Foreign Bank in favour of the Indian Bank (BHEL's Consortium Bank). It is advisable that all charges for issuance of Bank Guarantee/ counter-Guarantee should be borne by the Foreign Vendor. The tender stipulation should clearly specify these requirements.
 - b.2 **In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank** (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at **sl.no. b.1** will required to be followed.
 - b.3 The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time). In case, of Foreign Vendors, the BG Format provided to them should clearly specify the same.
 - b.4 The BG should clearly specify that the demand or other document can be presented in electronic form.

HSE & OHSAS

1.0	OCCUPATIONAL HEALTH, SAFETY & ENVIRONMENT MANAGEMENT/ QUALITY ASSURANCE PROGRAMME : BHEL, Power Sector Regions (PSNR/ER/WR/SR) are each certified for ISO 9001. Quality of work to customer's satisfaction and fulfillment of system requirements are the essence of ISO 9001 certification. BHEL, PS Region have HSE certification (ISO 14001 & OHSAS 18001) and therefore Contractor also shall organize / plan/ perform all their activities to meet with the applicable requirements of these standards.
1.1	HSE (Health, safety & Environment): Contractor will comply with HSE (Health, safety & Environment) requirements of BHEL. HSE requirements in brief, are given below :-
1.1.1	Contractor will nominate one of their qualified and experienced employees as Safety Officer, who will be responsible for all HSE related issues of contractor's work area. Safety Officer will have authority to stop any activity, in case he observes that the activity is not being carried out in safe manner. He will conduct surprise inspection as well as periodic inspection/drill (at least once in a Week) and submit such reports to BHEL. He will conduct periodic meetings with working groups and explain HSE issues and use of PPEs to them. Reports of such meetings will be submitted to BHEL. Contractor will develop suitable work procedures based upon HSE guidelines and OCPs and implement it. Such work procedures will consist of Area of work, T&P Details, Work Procedure, PPE requirements etc. Contractor should highlight the requirement of safety to staff and labour through daily tool box meeting before start of the day's job
1.1.2	The contractor shall ensure that proper job specific health check-up is done by medical professional for their employees during initial mobilization and thereafter if there is any change of job.
1.1.3	Following personnel protective equipments (PPEs), in adequate numbers, will be made available at site & their regular use by all concerned will be ensured :- - HELMET - SAFETY GOGGLES & WELDING FACE SHIELDS - SAFETY BELTS AND PROTECTIVE NET FOR WORKING AT HEIGHT - SAFETY SHOES - EAR PLUG - ANY OTHER SAFETY EQUIPMENT REQUIRED FOR SAFE COMPLETION OF THE WORK

HSE & OHSAS

1.1.4	Providing appropriate First Aid facilities for prompt treatment of injuries and illness at work place. Arranging training to contractor workmen/ employees for giving first aid.
1.1.5	Arranging ambulance in case of any emergency situation .
1.1.6	Identification of nearest hospital and health check-up of workmen/employees
1.1.7	Providing filtered drinking water at work place in cool container.
1.1.8	Providing appropriate fire fighting equipment at designated work place and nominate a fire officer/warden adequately trained for his job.
1.1.9	Identification of nearest fire station and display contact telephone nos. / person's name around work places for cases of emergencies .
1.1.10	Providing adequate no. of 24 V sources and ensure that no hand lamps are operating at voltage level above 24 Volts.
1.1.11	Fulfilling safety requirements at all power tapping points.
1.1.12	Red & White caution tape of proper width(1.5 to 2 inch) to be used for cordoning unsafe area such as open trench, excavation area etc.
1.1.13	Providing contractors company logo on cloths /uniform/ proper identity cards with photographs, for correct identification of people working at project site .
1.1.14	High/ Low pressure welders to be identified with separate colour clothings. No welders will be deployed without passing appropriate tests and holding valid welding certificates. Approved welding procedure should be displayed at work place.
1.1.15	Displaying safe handling procedures for all chemicals such as lube oil, acid, alkali, sealing compounds etc , at work place .
1.1.16	All scaffolding/ platforms should be made from materials of appropriate quality/grade so that these are safe for use. It should be certified/declared safe for use by an experienced contractor person, before any scaffolding/platform is used.
1.1.17	All T&Ps/ MMEs should be of reputed brand/appropriate quality & must have valid test/calibration certificates bearing endorsement from competent authority of BHEL.
1.1.18	Ensure that the regulatory requirement of excessive weight limit (to carry/lift/ move weights beyond prescribed limits) for male and female workers are complied with.
1.1.19	Safety slogan, Safety/ Caution boards , wherever required to be displayed in consultation with BHEL.

HSE & OHSAS

1.1.20	Take suitable measures for waste management and environment related laws/legislation as a part of normal construction activities. Compliance with the legal requirements on storage/ disposal of paint drums (including the empty ones), Lubricant containers, Chemical Containers, and transportation and storage of hazardous chemicals will be strictly maintained. Ensure proper cleanliness of work place, housekeeping and waste management (including proper waste disposal) on daily basis.																				
1.1.21	The Contractor is required to provide proper safety net systems where ever the hazard of fall from height is present as per instruction of BHEL Engineer. The safety nets shall be fire resistant, duly tested and shall be of ISI Mark and the nets shall be located as per site requirements to arrest or to reduce the consequences of a possible fall of persons working at different heights.																				
1.1.22	All applicable OCPs (Operational control procedures) will be followed by contractor as per BHEL instructions. This will be done as part of normal scope of work. List of such OCPs is given below . In case any other OCP is found to be applicable during the execution of work at site, then contractor will follow this as well, within quoted rate. These OCPs (applicable ones) will be made available to contractor during work execution at site. However for reference purpose, these are kept with Safety Officer of BHEL at the Power Sector Regional HQ, or available in downloadable format in the website, which may be refereed by contractor, if they so desire. <table border="1"> <tr><td>☐</td><td>OCP for safe handling of chemicals</td></tr> <tr><td>☐</td><td>OCP for Electrical safety</td></tr> <tr><td>☐</td><td>OCP for energy conservation</td></tr> <tr><td>☐</td><td>OCP for safe welding and gas cutting operation</td></tr> <tr><td>☐</td><td>OCP for fire safety</td></tr> <tr><td>☐</td><td>OCP for safety in use of hand tools</td></tr> <tr><td>☐</td><td>OCP for first aid</td></tr> <tr><td>☐</td><td>OCP for food safety at canteen</td></tr> <tr><td>☐</td><td>OCP for safety in use of cranes</td></tr> <tr><td>☐</td><td>OCP for storage and handing of gas cylinders</td></tr> </table>	☐	OCP for safe handling of chemicals	☐	OCP for Electrical safety	☐	OCP for energy conservation	☐	OCP for safe welding and gas cutting operation	☐	OCP for fire safety	☐	OCP for safety in use of hand tools	☐	OCP for first aid	☐	OCP for food safety at canteen	☐	OCP for safety in use of cranes	☐	OCP for storage and handing of gas cylinders
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☐	OCP for manual arc welding
☐	OCP for safe use of helmets
☐	OCP for good house keeping
☐	OCP for working at height
☐	OCP for safe excavation
☐	OCP for safe filling of Hydrogen in cylinder
☐	OCP for illumination
☐	OCP for handling and erection of heavy metals
☐	OCP for safe acid cleaning
☐	OCP for safe alkali boil out
☐	OCP for safe oil flushing
☐	OCP for steam blowing
☐	OCP for safe working in confined area
☐	OCP for safe operation of passenger lift, material hoists & cages
☐	OCP for Vehicle maintenance
☐	OCP for safe radiography
☐	OCP for waste disposal
☐	OCP for working at night
☐	OCP for blasting
☐	OCP for DG Set
☐	OCP for handling & storage of mineral wool
☐	OCP for drilling, reaming and grinding(machining) etc.
☐	OCP for hydraulic test
☐	OCP for spray insulation
☐	OCP for trial run of rotary equipment
☐	OCP for stress relieving
☐	OCP for material preservation
☐	OCP for cable laying/tray work
☐	OCP for electrical maintenance
☐	OCP for transformer charging
☐	OCP for safe handling of battery system
☐	OCP for computer operation
☐	OCP for storage in open yard
☐	OCP for sanitary maintenance
☐	OCP for batching
☐	OCP for piling rig operation
☐	OCP for gas distribution test

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	☐ OCP for cleaning of hotwell / deaerator
	☐ OCP for electro-resistance heating
	☐ OCP for compressor operation
	☐ OCP for O&M of control of AC plant & system
	☐ OCP for air compressor
	☐ OCP for passivation
	☐ OCP for Safe EDTA Cleaning
	☐ OCP for Safe Chemical cleaning of Pre boiler system
	☐ OCP for Safe Boiler Light up
	☐ OCP for Safe Rolling and Synchronisation
1.2	☐ OCP for Safe Loading of Unit SAFETY AND CLEANLINESS : The contractor shall take all necessary safety precautions and arrange for appropriate appliances as per discretion of BHEL or its authorised officials (Site Construction Manager) to prevent loss of human lives, injuries, to personnel engaged and damage to property. Before commencing the work, the contractor shall submit a "Safety Plan" to the above authorised BHEL official and obtain approval on the same. The safety plan shall indicate in detail the measures that would be taken by the contractor to ensure safety of men, equipment, materials and environment during execution of the work. This will also include an organization structure, role and responsibilities of the concerned key personnel, the safety practices that will be followed, PPEs deployed, plan for handling critical activities and emergencies.
1.3	If the contractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instructions issued by the authorised BHEL official, BHEL shall have the right to take corrective steps at the risk and cost of the contractor.
1.4	During the course of construction, alternation or repairs, scrap with protruding nail, sharp edge etc and all other debris shall be kept clean from working areas, passage, ways and stairs in and around site.
1.5	Combustible scrap and debris shall be removed at regular intervals during the course of execution. Safe means shall be provided to facilitate such removal. The combustible scrap should be stored in safe place away from the plant materials to avoid fire accidents. The area shall be chosen in consultation with the Engineer and to be cordoned off.
1.6	Rigging equipment for materials handling shall be inspected prior to use in each shift and as necessary during its use to ensure that it is safe. Defective

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	rigging equipment will be removed from service.
1.7	Rigging equipment shall not be loaded in excess of its recommended safe working load. Rigging equipment, when not in use, shall be removed from the original work area so as not to present a hazard to employees.
1.8	Contractor shall notify the engineer, of his intention to bring on to site any equipment or any container, with liquid or gaseous fuel or other substance which may create a hazard. The Engineer shall have the right to prescribe the condition under which such equipment or container may be handled and used during the performance of the works and the contractor shall strictly adhere to such instructions. The Engineer shall have the right to inspect any construction tool and to forbid its use, if in his opinion it is unsafe. No claim due to such prohibition will be entertained.
1.9	Where it is necessary to provide and/or store petroleum products or petroleum mixture & explosives, the contractor shall be responsible for carrying out such provision / storage in accordance with the rules & regulations laid down in the relevant petroleum act, explosive act and petroleum and carbide of calcium manual, published by the chief inspector of explosives of India. All such storage shall have prior approval if necessary from the chief inspector of explosives or any other statutory authority. The contractor shall be responsible for obtaining the same.
1.10	Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dragged, struck or permitted to strike each other violently.
1.11	When cylinders are transported by powered vehicle they shall be secured in a vertical position.
1.12	All workmen of the contractor working on construction area shall wear safety shoes, hand gloves, safety helmets and safety belt as applicable. The contractor shall provide to its workforce and ensure the use of following personnel protective equipment as found necessary and as directed by BHEL.
1.12.1	Safety Helmets conforming to IS-2965 : 1984
1.12.2	Safety Belts conforming to IS-3521:1983
1.12.3	Safety Shoes conforming to IS-1989 : 1978
1.12.4	Eye and face protection devices conforming to IS – 8620 : 1977 & IS – 8950 : 1978.

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1.12.5	Hand and body protection devices conforming to IS – 2575 : 1975 and IS – 6994 : 1973, IS – 8907 : 1970 & 8619 : 1977
1.13	The contractor shall insure his workmen against all accidents and the policy shall be presented to BHEL Engineer on demand. Other wise, BHEL will arrange the same and the expenditure towards this will be debited to the contractor. In case of a fatal or disabling injury accident to any person at construction site due to lapses by the contractor, the victim and/or his/her dependants shall be compensated by the contractor as per statutory requirements. However, if considered necessary BHEL shall have the right to impose appropriate financial penalty on contractor and recover the same from payments due to the contractor for suitably compensating the victim and/or his/her dependence before imposing any such penalty. Appropriate enquiry shall be held by BHEL giving opportunity to the contractor for presenting his case. Above safety conditions are not exhaustive but gives an idea for the contractor and contractor shall adhere to all safety precaution given by the Engineer at site.
1.14	The contractor shall arrange at his cost adequate lighting facilities e.g. flood lighting, hand lamps, area lighting etc. at various levels for safe and proper working operations during night hours at the work spot as well as at the pre-assembly area.
1.15	The contractor shall be responsible for provision of all the safety notices and safety equipment as enjoined on him by the application of relevant statutory regulation / provisions and/or as called upon by BHEL from time to time. He shall be held responsible for any violation of statutory regulations (local, state or central) and BHEL instruction that may endanger safety of men, equipment and material.
1.16	The contractor shall provide temporary fencing wherever required as a safety measure against accident and damage to properties. Suitable caution notices shall be displayed where access to any part is found to be unsafe and hazardous.
1.17	Contractor shall ensure safety of all the workmen, material and equipment either belonging to him or to others working at site. He shall observe safety rules and codes applied by BHEL without exception.
1.18	It will be the responsibility of the contractor to ensure safe lifting of the equipment, taking due precaution to avoid any accident and damage to other equipment and personnel. All requisite tests and inspection of handling

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	equipment, tools & tackle shall be periodically done by the contractor. Defective equipment shall be removed from service. Any equipment shall not be loaded in excess of its recommended safe working load.
1.19	The contractor shall provide necessary first aid facilities for all his employees, representatives and workmen at site and BHEL shall have no obligation in this regard. The first aid boxes should be placed at various elevations so as to make them available within the reach and at the quickest possible time. The contractor should conduct periodical first –aid classes to keep his supervisor and Engineers properly trained for attending to any emergency.
1.20	All the contractor's supervisory personnel and sufficient number of workers shall be trained for fire protection systems. Enough number of such trained personnel must be available during the tenure of contract. Contractor should nominate his supervisor to coordinate and implement the safety measures.
1.21	Contractor shall provide enough fire protecting equipment of the types and numbers at his office, stores, temporary structure in labour colony etc. Such fire protection equipment shall be easy and kept open at all times. The fire extinguishers shall be properly refilled and kept ready which should be certified at periodic intervals. The date of changing should be marked on the Cylinders. A other fire safety measures as laid down in the "codes for fire safety at construction site" issued by safety coordinator of BHEL shall be followed. Non-compliance of the above requirement under fire protection shall in no way relieve the contractor of any of his responsibility and liabilities to fire accident occurring either to his materials or equipment or those of others.
1.22	The contractor shall at his cost, remove from vicinity of work at least once each day all combustible waste, scrap, painting materials, rubbish, unused or other materials and deposit them in places specified by BHEL to keep the work site clear and tidy. Use of undercoated canvas paper, corrugated paper, fabricated carton, plastic or other flammable materials shall be restricted to the minimum and promptly removed.
1.23	The contractor shall not use any hand lamp energized by Electric power with supply voltage of more than 24 volts in confined spaces like inside water boxes turbine casings, condensers etc.
1.24	All portable electric tools used by the contractor shall have safe plugging system to source of power and be appropriately earthed. Only electricians licensed by appropriate statutory authority shall be employed by the contractor to carry out all types of electrical works.

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1.25	In case of any delay in completion of a job due to mishaps attributable to lapses by the contractor, BHEL shall have the right to recover cost of such delay from the payments due to the contractor, after notifying the contractor suitably.
1.26	Valve protection caps shall be kept in place and secured.
1.27	The contractor shall be responsible for the safe storage and handling of his radio-active sources as per BARC rules and regulations.
1.28	Tarpaulin being inflammable should not be used (instead, only non infusible covering materials shall be used) as protective cover while preheating, welding, stress relieving etc. at site.
1.29	If the contractor fails to improve the standards of safety in its operation to the satisfaction of BHEL after being given reasonable opportunity to do so and/or if the contractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instruction regarding safety issued by BHEL, BHEL shall have the right to take corrective steps at the risk and cost of the contractor after giving a notice of not less than 7 days indicating the steps that would be taken by BHEL.
1.30	If the contractor succeeds in carrying out its job in time with out any fatal or disabling injury accident and without any damage to property BHEL may, at its sole discretion, favorably consider to reward the contractor suitably for the performance.
1.31	The contractor shall carefully follow the safety requirement of BHEL/ the purchaser with the regard to voltages used in critical areas.
1.32	The contractor shall use only properly insulated and armored cables which conform to the requirement of Indian Electricity Act and Rules for all wiring, electrical applications at site. BHEL reserves the right to replace any unsafe electrical installations, wiring, cabling etc. at the cost of the contractor. All electrical appliances used in the work shall be in good working condition and shall be properly earthed. No maintenance work shall be carried out on live equipment. The contractor shall maintain adequate number of qualified electricians to maintain his temporary electrical installations.
1.33	The contractor shall arrange adequate number of persons specifically for clearing any debris and for house keeping of the erection area including restacking of components in the erection areas.

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1.34	In case of any damage to property due to lapses by the contractor, BHEL shall have the right to recover the cost of such damages from the contractor after holding an appropriate enquiry.
1.35	The contractor shall submit report of all accidents, fires and property damage etc to the Engineer immediately after such occurrence, but in any case not later than 24 hours of the occurrence. Such reports shall be furnished in the manner prescribed by BHEL. In addition periodic reports on safety shall also be submitted by the contractor to BHEL from time to time as prescribed by the Engineer.
1.36	Before commencing the work, the contractor shall appoint/nominate a responsible person to supervise implementation of all safety measures and liaison with his counterpart of BHEL.
1.37	Suitable scaffolds shall be provided for workman for all works that cannot safely be done from the ground, or from solid construction except in the case of short duration of work which can be done safely from ladders. When a ladder is used, it shall be of rigid construction made of steel. The steps shall have a minimum width of 45 cm and a maximum rise of 30 cm. Suitable handholds of good quality wood or steel shall be provided and the ladder shall be given an inclination not steeper than $\frac{1}{4}$ horizontal and 1 vertical.
1.38	Scaffolding or staging more than 3.6 m above the ground floor, swung or suspended from an overhead support or erected with stationery support shall have a guard rail properly bolted, braced or otherwise secured, at least 90 cm above the floor or platform of such scaffolding or staging and extending along the entire length of the out side and ends thereof with only such openings as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from savor, from swaying, from the building or structure.
1.39	Working platforms, gangways and stairways shall be so constructed that they do not sag unduly or unequally and if the height of the platform gangways provided is more than 3.6 m above ground level or floor level, they shall be closely boarded and shall have adequate width which shall not be less than 750 mm and be suitably fenced as described above.
1.40	Every opening in the floor or a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 90 cm.

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1.41	Wherever there are open excavation in ground, they shall be fenced off by suitable railing and danger signals installed at night so as to prevent persons slipping into the excavations.
1.42	Safe means of access shall be provided to all working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 m in the length while the width between side rails in rung ladder shall in no case be less than app. 29.2 cm for ladder upto and including 3 m in length. For longer ladders this width shall be increased at least $\frac{1}{4}$ " for each additional foot of length.
1.43	A sketch of the ladders and scaffolds proposed to be used shall be prepared and approval of the Engineer obtained prior to Construction.
1.44	All personnel of the Contactor working within the plant site shall be provided with safety helmets. All welders shall wear welding goggles while doing welding work and all metal worker shall be provided with safety gloves. Persons employed on metal cutting and grinding shall wear safety glasses.
1.45	Adequate precautions shall be taken to prevent danger for electrical equipment. No materials on any of the sites of work shall be so stacked or placed as to cause danger or inconvenience to any person or the public.
1.46	All trenches, four feet or more in depth, shall at all times be supplied with at least one ladder for each 30 m in length or fraction thereof. The ladder shall be extended from bottom of the trench to at least 90 cm above the surface of the ground. Sides of the trenches which are 1.50 m or more in depth shall be stepped back to give suitable slope or securely held by timer bracing, so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5 m of the edges of the trench or half of the depth of the trench whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.
1.47	The Contactor shall take all measures at the sites of the work to protect all persons from accidents and shall be bound to bear the expenses of defense of every suit, action or other proceeding at law that may be brought by any persons for injury sustained or death owing to neglect of the above precautions and to pay any such persons such compensation or which may with the consent of the Contractor be paid to compromise any claim by any such person should such claim proceeding be filed against BHEL, the Contractor hereby agrees to indemnify BHEL against the same.
1.48	Before any demolition work is commenced and also during the process of the

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	work the following shall be ensured:
1.48.1	All roads and open areas adjacent to the work site shall either be closed or suitably protected.
1.48.2	No electric cable or apparatus which is liable to be a source of danger nor a cable or an apparatus used by the operator shall remain electrically charged.
1.48.3	All practical steps shall be taken to prevent danger to persons employed from the risks of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render them unsafe.
1.49	All necessary personnel safety equipment as considered adequate by the Engineer should be kept available for the use of the persons employed in the Site and maintained in a condition suitable for immediate use and the Contactor should take adequate steps to ensure proper use of equipment by those concerned.
1.49.1	Workers employed on mixing asphalted materials, cement and lime mortars shall be provided with protective foot wear and protective goggles.
1.49.2	Those engaged in white washing and mixing or stacking of cement bags or any materials which is injurious to the eyes shall be provided with protective goggles.
1.49.3	Those engaged in welding works shall be provided with welder's protective eyesight lids.
1.49.4	Stone breakers shall be provided with protective goggles and protective clothing and seated sufficient to safe intervals.
1.49.5	Where workers are employed in sewers and manholes, which are in use, the Contractor shall ensure that the manhole covers are opened and ventilated at least for an hour before the workers are allowed to get into manhole, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public.
1.49.6	The Contractor shall not employ men below the age of 18 years and women on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following precautions should be taken.
1.49.6.1	No paint containing lead or lead products shall be used except in the form of paste or ready made paint.

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1.49.6.2	Suitably face masks should be supplied for use by the workers where paints are applied in the form of spray or a surface having lead paint dry rubbed and scrapped.
1.49.6.3	Overalls shall be supplied by the Contractor to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.
1.50	When the work is being done near any place where there is risk of drowning all necessary equipment should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision should be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.
1.51	Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safe guards. Hoisting appliance should be provided with such means as will reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers employed on electrical installations which are already energized, insulting mats, wearing apparel, such as gloves, sleeves and boots as may be necessary should be provided. The worker should not wear any rings, watches and carry keys or other materials which are good conductor of electricity.
1.52	All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near the places of work.
1.53	The contractor shall maintain and ensure necessary safety measures as required for inspection and tests HV test, Pneumatic test, Hydraulic test, Spring test, Bend test etc as applicable, to enable. inspection Agency for performing Inspection. If any test equipment is found not complying with proper safety requirements then the Inspection Agency may withhold inspection, till such time the desired safety requirements are met.
1.54	The Contractor shall notify BHEL of his intention to bring to site any equipment or material which may create hazard. BHEL shall have the right to prescribe the conditions under which such equipment or materials may be handled and the contractor shall adhere to such instructions. BHEL may prohibit the use of any construction machinery, which according to him is unsafe. No claim for compensation due to such prohibition will be entertained by BHEL.

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1.55	All safety precautions shall be taken for welding and cutting operations as per IS-818. All safety precautions shall be taken for foundation and other excavation marks as per IS-3764.																						
1.56	These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent, place at work spot. The persons responsible for compliance of the safety code shall be named therein by the Contractor.																						
1.57	To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangement made by the contract shall be open to inspection by the Engineer of the Engineer's Representative.																						
1.58	Keeping the work area clean/ free from debris, removed scaffoldings, scraps insulation/sheeting wastage /cut pieces, temporary structures, packing woods etc. will be in the scope of the contractor. Such cleanings has to be done by contractor within quoted rate, on daily basis by an identified group. If such activity is not carried out by contractor / BHEL is not satisfied, then BHEL may get it done by other agency and actual cost alongwith BHEL overheads will be deducted from contractor's bill. Such decisions of BHEL shall be binding on the contractor.																						
1.59	Notwithstanding the above clauses there is nothing to exit the Contractor from the operations of any other Act or Rule in force in area of work in this respect. Provided always that all safety measures apart from those specifically provided in this agreement which are brought to the notice of the Contractor from time to time by the Engineer shall be complied by the Contractor. Provided further that all consequences, damages, or losses arising by reason of any safety code shall be met with by the Contractor.																						
1.60	<u>NON COMPLIANCE:-</u> NONCONFORMITY OF SAFETY RULES AND SAFETY APPLIANCES WILL BE VIEWED SERIOUSLY AND BHEL HAS RIGHT TO IMPOSE FINES ON THE CONTRACTOR AS UNDER <u>for every instance of violation noticed:</u> <table border="1"> <thead> <tr> <th>SN</th><th>Violation of Safety Norms</th><th>Fine (in Rs)</th><th></th></tr> </thead> <tbody> <tr> <td>01</td><td>Not Wearing Safety Helmet</td><td>50/-</td><td></td></tr> <tr> <td>02.</td><td>Not wearing Safety Belt</td><td>100/-</td><td></td></tr> <tr> <td>03.</td><td>Grinding Without Goggles</td><td>50/-</td><td></td></tr> <tr> <td>04.</td><td>Not using 24 V Supply For Internal Work</td><td>500/-</td><td></td></tr> </tbody> </table>			SN	Violation of Safety Norms	Fine (in Rs)		01	Not Wearing Safety Helmet	50/-		02.	Not wearing Safety Belt	100/-		03.	Grinding Without Goggles	50/-		04.	Not using 24 V Supply For Internal Work	500/-	
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	05.	Electrical Plugs Not used for hand Machine	100/-
	06.	Not Slings property	200/-
	07.	Using Damaged Sling	200/-
	08.	Lifting Cylinders Without Cage	500/-
	09.	Not Using Proper Welding Cable With Lot of Joints And Not Insulated Property.	200/-
	10.	Not Removing Small Scrap From Platforms	200/-
	11.	Gas Cutting Without Taking Proper Precaution or Not Using Sheet Below Gas Cutting	200/-
	12.	Not Maintaining Electric Winches Which are Operated Dangerously	500/-
	13.	Improper Earthing Of Electrical T&P	500/-
	14.	Accident Resulting in Partial Loss in Earning Capacity	25,000/- per victim
	15.	Fatal Accident/Accidents Resulting in total loss in Earning Capacity	1,00,000/- per victim
	Any other non-conformity noticed not listed above will also be fined as deemed fit by BHEL. The decision of BHEL engineer is final on the above. The amount will be deducted from running bills of the contractor. The amount collected above will be utilized for giving award to the employees who could avoid accident by following safety rules. Also the amount will be spent for purchasing the safety appliances and supporting the safety activity at site.		
1.61	<u>CITATION:-</u> If safety record of the contractor in execution of the awarded job is to the satisfaction of safety department of BHEL, issue of an appropriate certificate to recognize the safety performance of the contractor may be considered by BHEL after completion of the job		
1.62	<u>MEMORANDUM OF UNDERSTANDING</u> After Award Of Work, Contractors Are Required To Enter Into A Memorandum Of Understanding As Given Below: <u>Memorandum of Understanding</u> ¾ BHEL, Power Sector _____Region is committed to Health, Safety and Environment Policy (EHS Policy). ¾ M/s _____do hereby also commit to the same		

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	EHS Policy while executing the Contract Number _____ $\frac{3}{4}$ M/s _____ shall ensure that safe work practices not limited to the above are followed by all construction workers and supervisors. Spirit and content therein shall be reached to all workers and supervisors for compliance. $\frac{3}{4}$ BHEL will be carrying out EHS audits twice a year and M/s _____ shall ensure to close any non-conformity observed/reported within fifteen days. Signed by authorized representative of M/s ----- Name : Place & Date: