



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN - 04

Ref: PSER:SCT:KLN-T1966:TCN-04

Date: 24-05-2019

Sub	Tender Change Notice (TCN)- 04.	
Job	Erection, testing, commissioning, handing over, etc of steam turbine & aux, generator & aux, pumps, auxiliaries, and FGD, etc. of Unit#1 & common system including LP Piping at 2x660 MW Maitree STPP, Rampal, Bangladesh.	
Ref	1.0	Tender no PSER:SCT:KLN-T1966:19.
	2.0	BHEL's NIT, vide reference no PSER:SCT:KLN-T1966:7559 Date: 16-05-2019.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:KLN-T1966:19 Date: 18-05-2019
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:KLN-T1966:19 Date: 18-05-2019
	5.0	BHEL's TCN-03, vide reference no PSER:SCT:KLN-T1966:19 Date: 20-05-2019
	6.0	Other References, if any.

With reference to above, following points/documents, relevant to tender, may please be noted and complied with while submitting the offer.

1. Revised VOLUME-IF-TCC-CML-R-01 attached superseding VOLUME-IF-TCC-CML-R-00, issued earlier along with NIT.
2. Introduction of Technical specification, (i) VOL-IF-TCC-TS-GA of ABSORBER -MAITREE FGD, (ii) VOL-IF-TCC-TS-PFD-Absorber System_Maitree 2X660MW FGD, (iii) VOL-IF-TCC-TS-PFD-Gypsum Dewatering_Maitree 2X660MW FGD, (iv) VOL-IF-TCC-TS-PFD-Limestone Grinding system_Maitree 2X660MW FGD & (v) VOL-IF-TCC-TS-PGMA WISE FGD Scope Matrix.
3. The clarifications to bidder's queries are attached at Annexure-A.
4. Revised 'No deviation certificate' is attached. Bidder to submit 'No deviation certificate' as per attached format only.
5. All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,
for BHARAT HEAVY ELECTRICALS LTD

Sr.Engr (SCT)

Encl: As Above.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

फैक्स/Fax : (033) 23211960

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Erection, testing, commissioning, handing over, etc of steam turbine & aux, generator & aux, pumps, auxiliaries, and FGD, etc. of Unit#1 & common system including LP Piping at 2x660 MW Maitree STPP, Rampal, Bangladesh.

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TCN-04 (ANNEXURE-A)

Sl. No	Ref No	Existing Clause	Bidders Query	BHEL'S Clarification
1	Clause No. 2.14 of 4.2 Volume-IF-TCC (Page No 04 of 38)	Making arrangement to unload generator rotor, LP rotor, HP turbine, IP module, LPC inner-outer upper half , LPC inner casing assembly (LH), exciter, De-aerator / FST, turbine integral piping directly from the trailer/ wagon (inside project premises) and transport the same to stores/ place of work, etc as directed by engineer. Subsequent re-handling, if required, will also be under the scope of work. Detailed weight schedule is furnished in relevant annexure of tender. Necessary cranes, as required, for this shall be provided by BHEL free of cost. Arranging special low bed trailers, hydraulic trailers etc. of appropriate capacity and size for shifting these items within project premises / taking to erection site shall be in the normal scope of work.	<p>1) Pls provide detailed delivery Schedule of Items to be unloaded from Trailer at Site Premises</p> <p>2) We request BHEL to make necessary arrangements to unload the major components near to erection site to avoid re-handling of Material</p> <p>3) We also request BHEL to make the provision in payment break up for unloading/ Re-handling activities</p>	<p>1) Shall be shared subsequently.</p> <p>2) Efforts shall be taken to unlaod the material near unloading bay of power house, subject to availability of front.</p> <p>3) Shall be as per tender.</p>

Erection, testing, commissioning, handing over, etc of steam turbine & aux, generator & aux, pumps, auxiliaries, and FGD, etc. of Unit#1 & common system including LP Piping at 2x660 MW Maitree STPP, Rampal, Bangladesh.

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TCN-04 (ANNEXURE-A)

Sl. No	Ref No	Existing Clause	Bidders Query	BHEL'S Clarification
2	Clause No 54.1.3 of 4.1-Vol-IF-TCC (Page No.41 of 58)	<p>STG The quoted rate/ price shall remain firm for variation upto +/- 20% in the weight for TG & misc piping, as specified in relevant section of tender. If the variation in actual erected tonnage of TG & misc piping exceeds variation limit of +/- 20%, payment/ recovery for the differential tonnage will be made in the final bill at the rate of \$275 (USD) per MT for CS & alloy steel piping."</p>	<p>Regarding Quantity Variation, Please refer the clauses of existing projects Awarded by BHEL and request to modify the same accordingly.</p> <p>Variation of Qty +/- 20% will leads for major cost loading factor during the estimation.</p> <p>We request BHEL kindly look into the issue and modify the clause suitably with a variation of +/- 15 % instead of +/-20 %</p>	<p>STG PKG UINT #1 The quoted rate/ price shall remain firm for variation upto +/- 15% in the weight for TG & misc piping, as specified in relevant section of tender. If the variation in actual erected tonnage of TG & misc piping exceeds variation limit of +/- 15%, payment/ recovery for the differential tonnage will be made in the final bill at the rate of \$275 (USD) per MT for CS & alloy steel piping."</p>
			<p>This Clause will not accommodate the loss due to execution of additional TG & Misc piping beyond +/-20% @ Rs 275 USD/Ton.</p> <p>If quantity decreases, any recovery will again affect cash flow for which bidder is not at all reasonable. Quantity of TG & Misc Piping need to be decided by BHEL & Incorporated in a separate line item instead of clubbing in a Lumpsum line. Hence, We request you to revise the price bid format by extracting TG & Misc Piping as a separate line item. BHEL has floated tenders in such format earlier also. We are attaching a BHEL Super-critical STG Tender Price Schedule Format. We request you to revise the Price Schedule similarly.</p> <p>As per clause , Bidder has to include 20% of Additional Tonnage of scope for STG works. By Considering the same, Contract value for estimation/ execution will be effected .</p> <p>Requested BHEL to modify the clause with 15% instead of 20 %</p>	<p>Shall be as per tender</p>

Erection, testing, commissioning, handing over, etc of steam turbine & aux, generator & aux, pumps, auxiliaries, and FGD, etc. of Unit#1 & common system including LP Piping at 2x660 MW Maitree STPP, Rampal, Bangladesh.

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Sl. No	Ref No	Existing Clause	Bidders Query	BHEL'S Clarification
3	Sl.No.5 of Preamble VOLUME-III PRICE SCHEDULE	The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent or be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension, for reasons whatsoever, as long as variation in the total value of work executed under any part of this contract including extra items, if any but excluding any price variation remains, within fifteen percent ($\pm 15\%$) of the awarded price as per LOI	Request to clarify the exact quantity variation for the following packages 1. STG Package 2. FGD Package and, 3. LP Piping Package	Shall be as per tender
4	Clause No . 3.2 of 4.2-VOLUME-IF-TCC (Page No 5of 38)	Unloading of generator stator, generator rotor, HP turbine, IP module, LP rotor, LPC inner-outer upper half, LPC inner casing assembly (LH), exciter, turbine integral piping (TIP), its storage, verification and transporting to BHEL stores/ place as directed by BHEL and preservation is under the scope of successful bidder within accepted rate/ price. In case, fronts for taking these items to site are not available, then vendor would have to provide assistance in unloading at designated place and further loading during transportation to site shall also be in successful bidders scope.	As unloading of major components to be carried out by Bidder. BHEL has to make necessary arrangements like providing the required place to unload the major components near to work place to avoid Re-Handling of material BHEL is requested to provide Seperate Payment terms for Unloading & Shifting works for cash flow purpose as same was involved with Cranes/Trailer/ Skilled Man power etc. and also provide the unloading schedule.	Shall be as per tender. Refer sl. No. 1 above

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Sl. No	Ref No	Existing Clause	Bidders Query	BHEL'S Clarification
5	Clause No: 48.2 of 4.1- Volume_IF-TCC (page No .37 of 58)	The successful bidder shall guarantee the work executed under the scope of the contract for a period of 24 (Twenty-Four) months from the date of start of guarantee period as certified by the engineer and shall rectify free of cost all defects due to faulty supply or work done. In case the successful bidder fails to repair/ replace the defective works within the time specified by the engineer, BHEL may proceed to undertake the repairs/ replace such defective works at successful bidder's risk & cost without prejudice to any other rights and recover the same from security deposit/ other dues.	We request BHEL to change the guarantee period as 12 months instead of 24 Months inline with the Similar to recent projects awarded .	Shall be as per tender
6	Clause No 34.2.1.2 of 4.1- Volume-IF of TCC (Page No .29,30 of 58)	TG erection start -within 01 Month From Start of Work	As per project schedule it was mentioned that TG erection start from 1st Month from the date of start of work. Requesting BHEL to revise the schedule as per actual site conditions.	Shall be as per tender

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Sl. No	Ref No	Existing Clause	Bidders Query	BHEL'S Clarification
7	Sl.No E of Note in Annexure-1 (Pre Qualification Criteria) (page No 17 of 37)	Two tenders are floated separately for unit#1 & unit#2 of tg & aux incl. Fgd, fps & lpp packages at 2x660mw maitree stpp, bangladesh. This tender is for unit#1 comprising of (tg & aux, fgd and lpp pkgs) and tender for unit#2 comprising of (tg & aux, fgd and fps pkgs) shall be floated subsequently. These works shall be awarded to two different bidders. Bidders may quote against any or both the packages. Unit#1 pkg shall be finalised first and the successful bidder of unit#1 shall not be considered for unit#2 pkg	As per Qualification criteria, Successful bidder of Unit # 1 shall not be considered for Unit #2 work. Since, we are working in 03 Packages at Site , we have all required resources to execute the Two STG Packages in paralal , we request BHEL to remove the clause facilitate us to participate for U#2 STG package Tender also on later date	Shall be as per tender
8	Sl.No 45.2.2.4 of 4.1-Volume-IF of TCC (page No 35 of 58)	FGD WORKS Completion of non-destructive examination & stress relieving/ heat treatment - 17 %	The allocated % is very high and requested to revised to 10% instead of 17 % and the Balance 7% has to be distributed to a.3.5% for placement in addition to 25% b. 3.5% for Alignment in addition to 35%	Please refer revised billing break-up as per clasue no. 45.2.2 of VOL-IF-TCC-CML-R1 issued along with TCN-04.
9	Sl.No 54.2.1 of 4.1-Volume-IF of TCC (page No 35 of 58)	FGD works shall be an item rate contract and paid on tonnage basis for the actual item weight erected	Requested to provide % of Quantity variation fo rthe FGD Package	Shall be as per tender
10		LP Piping Package	Requested to provide % of Quantity variation for LP Piping Package	As per tender
11	Sl.No.7 of SCH-IV- LP PIPE PACKAGE (Price Bid)	PU coated UG piping of various system (900 NB to 3300 NB) and associated material	Quantity provided in document vide " 7330-80-468-outsideTG-23.03.19 " of 4.2.VOL-IF-TCC-TS-LP PIPE BOM is not similar to tonnage provided in Price Bid	As per tender

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TCN-04 (ANNEXURE-A)

Sl. No	Ref No	Existing Clause	Bidders Query	BHEL'S Clarification
12	Sl.no .2.4 of 4.2 Volume-IF - TCC-TG & FGD U#1-R0 (Page No 3 of 38)	Chemical cleaning and associated testing plus related activities of different system and normalisation	It is considered that all the required chemicals will be provided by BHEL along with Temporary Pipes & fittings and tanks- pls confirm BHEL is requested to specify the testing involved in the scope of work	Please refer clause no. 26.3 & 26.4 of VOL-IF-TCC-CML-R1 issued along with TCN-04.
13	Sl.no .12.6 of 4.2 Volume-IF - TCC-TG & FGD U#1-R0 (Page No 25 of 38)	Cleaning of vessels/ oil tank/ other equipment by sand blasting or other methods as per instructions of BHEL engineer, before/ after oil flushing and other cleaning is responsibility of successful bidder	Kindly specify the area for sand blasting and requesting to incorporate the separate line item for the scope of work	Shall be as per tender

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Sl. No	Ref No	Existing Clause	Bidders Query	BHEL'S Clarification
14	Sl.no .2.1.22 of 4.2 Volume-IF - TCC -TG & FGD U#1- R0(Page No 3 of 38)	Erection, testing, commissioning, trial run and handing over of the FGD system of Unit # 1 & various common systems. FGD system mainly consists of Absorber tower along with oxidation blowers, booster fans, Lime stone grinding and slurry preparation system consist of wet ball mills, lime stone silos, slurry pumps, Gypsum dewatering system, associated piping etc. A detail list of material, to be erected, by the successful bidder is attached for reference	Kindly specify the diameter of Absorber and delivery condition to site	Refer drawing issued along with TCN-04. Kidnly note that the drawing is for tendering purpose only and there may be variation in approved drawing.
15	Sl.no .3.4 of 4.2 Volume-IF - TCC -FGD- ABSORBER TANK (Page No 22 of 96)	Lining Work	It is considered that Lining/ Glass Flake material will be supplied by BHEL on Cost Free basis	Refer FGD scope matrix issued along with TCN-04. FGD lining work in tanks and Absorber shall be executed by BHEL.
16	4.2 VOL-IF- TCC-TS-Project Painting Scheme	GRP, or steel lined concrete pipes with cathodic protection and coating according to AWWA C 203	It is considered that Cathodic protection material will be supplied by BHEL on cost free basis	Cathodic protection work shall be executed by BHEL.

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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 confusion of any clause/ provision of this volume or any conflict/ inconsistency of any clause/ provision of this volume with that of other volume, 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. Unless otherwise specified, all terms & conditions shall be applicable for entire scope and for each part/ package of the tender.

CLAUSE NO	DESCRIPTION
1.0	PROJECT SYNOPSIS AND GENERAL INFORMATION
1.1	<p>The 2x660 MW MAITREE SUPER THERMAL POWER PROJECT is located in Moithara Village, Rampal Upazila, Bagerhat District, Bangladesh.</p> <p>The Bidder shall acquaint himself by a visit to the site, with the conditions prevailing at site before submission of the bid. The information given here in under is for general guidance and shall not be contractually binding on the Owner. All relevant site data / information as may be necessary shall have to be obtained / collected by the Bidder.</p>  <p style="text-align: center;">LOCATION MAP:2X660MW MAITREE RAMPAL PROJECT</p>

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	 <p style="text-align: center;">LOCATION MAP:2X660MW MAITREE RAMPAL PROJECT</p>
1.2	<p>APPROACH TO SITE</p> <p>The nearest town Khulna is at a distance of 23 km from project site. The site is Connected by road from Mangla- Khulna Highway.</p> <p>Nearest Domestic airport is Jessor, Bangladesh at a distance of about 93 KM and international airport is Dhaka at a distance of 263 KM, Bangladesh</p>
1.3	<p>OWNER</p> <p>Bangladesh-India Friendship Power Company (Pvt.) Limited (BIFPCL) is the owner which is a 50:50 joint venture company of NTPC, India and Bangladesh Power Development Board BPDB, Bangladesh.</p>
1.4	<p>OWNER'S ENGINEER (CONSULTANT)</p> <p>FICHTNER GmbH & Co. KG, Stuttgart, Germany is the Owner's Engineer i.e. consultant of the Owner.</p>
2.0	<p>NAME OF WORK</p> <p>Providing labour, supervision, T&Ps, consumables, etc. for receipt from store/ storage yard, transportation to site, pre-assembly, erection, testing, commissioning, trial run, handing over, etc., as required, for total scope defined in tender and terms & conditions of tender, taking into account of all clarifications, confirmations, agreements till date for complete work of steam turbine & its auxiliaries, generator & its auxiliaries, condenser, pump, dosing system LP, Oxygen, NaOH, etc.), condenser on line tube cleaning system, plate heat exchanger, <u>TG piping, various TG auxiliaries, misc. equipment, etc. including LP piping and Flue Gas De-Sulphurisation (FGD)</u> of 1x660 MW unit # 1 & common systems at 2x660 MW Maitree STPP, Rampal, Bangladesh.</p>
3.0	DELETED
4.0	DELETED
5.0	<p>SITE VISIT</p> <p>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.</p>
6.0	DEVIATIONS/ CLARIFICATIONS

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	Normally no deviation with respect to tender is acceptable to BHEL. However, in case of unavoidable circumstances, the bidder may submit their query for seeking clarifications of BHEL as per modality stipulated in NIT or may submit the same along with offer as per prescribed schedule/ format without any ambiguity. Any assumptions, presumptions, deviations etc, indicated or implied anywhere by the bidder except those indicated in the deviation schedule/ format, will not be recognized and will not form a part of consideration/ offer. In the absence of such filled-up schedule/ format it will be understood and agreed that the bidder's offer is based on strict conformance to the specification and no negotiation would be allowed in this regard. BHEL reserve the right not to recognize any/ all deviations submitted after opening of the bid.
7.0	DEWATERING Successful bidder shall ensure at all times that the 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 catchments water, if required, at any time during execution of the work including monsoon period shall be considered by BHEL. All dewatering pumps including high capacity pumps and diesel engine driven pumps are to be provided by successful bidder within finally accepted rates.
8.0	GENERAL TECHNICAL REQUIREMENTS (CODES AND STANDARDS)
8.1	The work must be performed according to the most recent relevant codes, standards, accident prevention regulations and local rules and legal regulations.
8.2	All materials and equipment supplied and all work carried out as well as calculation sheets, drawings, quality and class of goods, methods of inspection, specific design features of equipment and parts and acceptances of partial plants shall comply in every respect with the applicable standards, codes and regulations to be chosen from the following:
8.2.1	American Association of State Highway and transportation Officials AASHTO American Concrete Institute ACI American Gear Manufacturers Association AGMA American Institute of Steel Construction AISC American Iron & Steel Institute AISI American Moving and Conditioning Association AMCA American National Standards Institute ANSI American Petroleum Institute API American Public Health Association APHA American Society for Testing and Materials ASTM American Society of Civil Engineers ASCE American Society of Heating, Refrigeration & Air Conditioning Engineers ASHRAE American Society of Mechanical Engineers ASME American Water Works Association AWWA American Welding Society AWS American Wire Gauge AWG Anti-Friction Bearing Manufactures Association AFBMA Architectural Institute of Japan AIJ Association Francaise de Normalisation AFNOR British Standards Institute BS Chlorine Institute CI Crane Manufacturers Association of America CMAA Deutsches Institut für Normung DIN Diesel Engine Manufacturers Association DEMA

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	<p>European Norm EN Expansion Joint Manufacturer Association EJMA Fédération Européene de Manutention FEM Heat Exchanger Institute HEI Hydraulic Institute HI Illuminated Engineers Society IES Institute of Electrical and Electronics Engineers IEEE Instrument Society of America ISA Insulated Power Cable Engineers Association IPCEA International Electrotechnical Commission IEC International Standards Organization ISO Japanese Architectural Standard Specification JASS Japanese Electrical Manufacturers Association JEMA Japanese Electrotechnical Institute JEC Japanese Industrial Standards JIS Manufacturers Standardization Society MSS National Association of Corrosion Engineers NACE National Electrical Code (USA) NEC National Electrical Manufacturer Association (USA) NEMA National Electrical Safety Code NESC National Fire Protection Association NFPA National Structural Code for Building NSCB Occupation Safety and Health Administration OSHA Portland Cement Association PCA Properties of Water and Steam IFC Scientific Apparatus Manufacturers Association SAMA Society of Automotive Engineers ASE Standards of Japanese Electrotechnical Committee JEC Steel Structures Painting Council SSPC Technische Vereinigung der Grosskraftwerksbetreiber VGB Tubular Exchanger Manufacturers Association TEMA Underwriters Laboratory UL Uniform Building Code UBC Verband Deutscher Elektrotechniker VDE Verein Deutscher Ingenieure VDI Vereinigung Deutscher Elektrizitätswerke (Association of German Power Plants) VDEW Water Pollution Control Federation WPCF</p>
8.3	Generally, all internationally and nationally recognized standards as above will be applied, except if specific standards called for by:
8.3.1	<ul style="list-style-type: none"> a) Occupational Safety Board of Bangladesh b) Department of Inspection for Factories and Establishments, Bangladesh c) Department of Environment, Bangladesh d) Bangladesh Power Development Board e) Bangladesh Energy Regulatory Commission f) Ministry of Power, Energy and Mineral Resources g) Bangladesh Fire Service and Civil Defence Ministry h) All relevant Bangladesh National Statutory Regulations i) Bangladesh National Building Code j) Bangladesh Standards k) Local Authorities.
8.4	All steam boilers and unfired pressure vessels together with associated pipework and

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	fittings shall comply with the Bangladesh Boiler Act, 1923 with amendments.
8.5	All pressure parts shall be designed in accordance with applicable ASME codes.
8.6	All services, supplies and works shall comply with the requirements of the relevant laws of Bangladesh and the IFC/World Bank Group Standards and Guidelines in their latest edition, including but not limited to:
8.6.1	Environmental Conservation Rules Bangladesh Energy Regulatory Commission Act; BERC Licensing Regulation BERC Technical Quality Standards; Bangladesh National Building Code; other applicable laws in Bangladesh; IFC Performance Standards on Environmental and Social Sustainability; IFC / World Bank Group Environmental, Health and Safety (EHS) General Guidelines; IFC / World Bank Group EHS Guidelines for Thermal Power Plants; IFC / World Bank Group EHS Guidelines for Electric Power Transmission and Distribution.
8.7	It is contractor's responsibility to provide sufficient evidence that any national or other standard the Contractor proposes (other than those mentioned above) will ensure an equivalent or higher standard.
8.8	Except where otherwise specified, the plant/equipment shall comply with the appropriate 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 Successful 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.
8.9	Where the Successful 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.
8.10	In case bidder proposes any IS code, it shall be verified by reputed institutions like IIT that the proposed code is equivalent or superior to the codes mentioned above. Comparison report shall be established and provided to BHEL/Owner for information. Such report shall highlight the main items of the code, including material composition, material properties, design clauses and others as required. Report shall identify deviations of both codes and give justification for this deviation.
8.11	The bidder shall ensure that design will consider material properties as per approved code.
8.12	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.
8.13	Wherever specified or required the plant/equipment shall conform to various applicable statutory regulations at Bangladesh. Wherever required, obtaining approval for plant/ equipment supplied under the specification from statutory authorities shall be the responsibility of the successful bidder.
8.14	Following codes have been accepted by BIFPCL for use in the project:
8.14.1	IS-2062 for Structural Steel
9.0	GENERAL SERVICES TO BE RENDERED BY THE BIDDER
	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.

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9.1	Collecting materials from store/ open yard from time to time for fabrication, erection, commissioning/ construction as per the construction program as per flow of consignment. Successful bidder shall be custodian of all the materials issued till the plant/ equipment is officially taken over by owner/ BHEL after complete erection, commissioning/ construction. Successful bidder shall maintain adequate security personnel and security measures for proper precaution and safety of material.
9.2	Transport of material to their respective places of erection and erection of complete plant & equipment as supplied under this tender.
9.3	Trial run, commissioning of individual equipment/ sub-systems to the satisfaction of BHEL/ BHEL's advisor/ owner.
9.4	Deployment of all skilled & unskilled manpower required for watch & ward, erection, supervision of erection, commissioning and other services to be rendered under this tender.
9.5	Deployment of all erection tools & tackle, construction machinery, transportation vehicles, all other implements in adequate number & size, appropriate for erection work to be handled under scope of this tender, unless otherwise specified.
9.6	Supply of all consumables, eg 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.
9.7	Providing support services for successful bidder's erection staff, eg, construction of site offices, temporary stores, residential accommodation and transport to work site for erection personnel, watch & ward for security & safety of materials under successful bidder's custody, etc, as required.
9.8	Maintaining proper documentation of all site activities undertaken by successful bidder as per the proforma mutually agreed with BHEL, submitting monthly progress reports as also any such document as & 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.
9.9	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.
9.10	As part of overall project management activity, successful bidder shall be responsible for proper co-ordination of erection activities during various phases of execution of the contract. Successful bidder shall identify a person designated as Site-in charge, with whom BHEL shall interact on matters related to execution of the contract. The Site-in-charge shall be the single point contact person on behalf of successful bidder. BHEL shall interact with Site-in-charge only, on all matters related to co-ordination between BHEL and successful bidder. For timely completion of work successful bidder may have to work in one or more shifts. He will not be eligible for any extra charge on this account.
9.11	Successful bidder shall confine all field operations to those works which can be reformed without subjecting the equipment & materials to adverse effects, during inclement weather conditions, like monsoon, storms, etc and during other unfavourable construction conditions. No field activities shall be performed by successful bidder under conditions which might adversely affect quality & efficiency thereof, unless special precautions or measures are taken by successful bidder in proper & satisfactory manner in performance of such works and with concurrence of BHEL. Such unfavourable construction conditions in no way relieve successful bidder of his responsibility to perform the works as per the schedule.
9.12	Successful bidder shall supply all skilled workmen like mill-wright fitters, welders, gas cutters, electricians, riggers, sarengs, erectors, carpenters, pipe fitters, masons,

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	<p>lagers, tin-smiths, instrument mechanics, etc, in addition to other skilled, semi-skilled and unskilled workmen required for all works of handling and transportation from site store to erection site, erection, testing, commissioning/ construction contemplated in tender. Only fully trained and competent men with previous experience on the job shall be employed. They shall hold valid certificates wherever necessary. BHEL reserve the right to decide on the suitability of the workers and the other personnel who will be employed by successful bidder. BHEL reserves the right to insist on removal of any employee of successful bidder at any time, if they find him unsuitable and successful bidder shall forthwith remove him.</p>
9.13	<p>The supervisory staff employed by successful bidder 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 engaged for the job by successful bidder 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 successful bidders of BHEL/ owner.</p>
9.14	<p>Successful bidder 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.</p>
9.15	<p>The work shall be executed under the usual conditions affecting major power plant construction and in conjunction with numerous other operations at site. Successful bidder and his personnel shall co-operate with other personnel, and other successful bidders, coordinate his work with others and proceed in a manner that shall not delay or hinder the progress of work as a whole.</p>
9.16	<p>Successful bidder's supervisory staff shall execute the work in the most substantial & workman like manner within stipulated time. Accuracy of work and aesthetic finish are essential part of the contract. Successful bidder shall be responsible to ensure that assembly & workmanship conform to the dimensions & tolerance given in the drawing/ instruction given by BHEL from time to time.</p>
9.17	<p>It is the responsibility of successful bidder to engage his workman in shifts or on overtime basis for achieving the target set by BHEL during erection, commissioning/ construction and testing period. Successful bidder's quoted rate shall include all these contingencies.</p>
9.18	<p>Any other service, although not specifically called for but required for a contract of the size and nature indicated in the tender.</p>
9.19	<p>After completion of commissioning activity of equipment/ systems, successful bidder shall prepare test reports which shall include all relevant information related to various commissioning checks, tests carried out, any deviations/ commissioning noticed wrt intended design requirements, sequence of various commissioning activities as actually adopted vis-à-vis as recommended in the procedures, program schedule achieved and any other such information as required .These test reports shall be submitted in requisite number of copies to BHEL/ BHEL's advisor/ owner during the commissioning activities.</p>
9.20	<p>Truck/ trailers of suitable capacities and length for transportation of materials as required for normal materials plus ODC items, like feed storage tank parts, deaerator, HP/ LP heater, drain cooler, TDBFP, drive turbine, IV, HP/ IP turbine, LP rotor, generator rotor, HP turbine, IP turbine or parts, etc. is included within quoted rate of bidder. These items are to be preserved in store yard, TG hall, other designated areas as per instruction of BHEL and suitable facilities are to be arranged and maintained by successful bidder and these are to be kept under preservation for longer time during normal storage period, erection, commissioning time. For purpose of preservation, successful bidder has to make arrangement of electrical heating, dehumidifying, etc. TG preservation quality plan has to be followed for this purpose.</p>

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	No extra claim on this account for whatsoever reason will be entertained by BHEL.
10.0	PROTECTION
10.1	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.
10.2	Electrical equipment controls & insulations 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 & protected with metallic or other substantial type protectors.
10.3	All piping, tubing & 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 shall be sealed and taped.
10.4	All other consumables including wire brush, emery papers, painting brush, etc to be supplied by successful bidder within the accepted rate.
11.0	GENERAL GUIDELINES FOR FIELD ACTIVITIES
11.1	Successful bidder shall execute the works in a professional manner so as to achieve the target schedule without any sacrifice on quality and maintaining highest standards of safety and cleanliness.
11.2	Successful bidder shall co-operate with owner and other successful bidders working in site and arrange to perform his work in a manner so as to minimize interference with other successful bidder's works. BHEL's engineer shall be notified promptly of any defect in other successful bidders' works that could affect successful bidder's work. If rescheduling of successful bidder's work is requested by BHEL/ owner in the interest of overall site activities, the same shall be complied with by successful bidder. In all cases of controversy, the decision of BHEL shall be final & binding on successful bidder without any commercial implication.
11.3	BHEL will hold weekly meeting of all successful bidders working at site at a time and a place. Successful bidder shall attend to such meetings and take notes of discussions during the meeting and the decisions of BHEL shall strictly adhere to those decisions in performing this work. In addition to the above weekly meeting, BHEL may call for other meetings either with individual successful bidders or with selected number of successful bidders and in such a case successful bidder, if called will also attend such meetings.
11.4	Time is the essence of the contract and successful bidder shall be responsible for performance of his work in accordance with the specified construction schedule. If at any time successful bidder is falling behind the schedule, he shall take necessary action to make good of such delays by increasing his work to comply with the schedule and shall communicate such action in writing to the engineer, satisfying that his action will compensate for the delay. Successful bidder shall not be allowed any extra compensation for such action.
11.5	The engineer shall however not be responsible for provision of additional labour and or materials or supply of any other services to successful bidder except for the co-ordination work between various successful bidders as set out earlier.
11.6	The works under execution shall be open to inspection & supervision by BHEL/ owner engineer at all times. Successful bidder shall give reasonable notice to BHEL before covering up or otherwise placing beyond the reach of inspection any work, in order that same may be verified, if so desired by owner/ BHEL.
11.7	Every effort shall be made to maintain the highest quality of workmanship by stringent

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	supervision & inspection at every stage of execution. Manufacturer's instruction manual & guidelines on sequence of erection and precautions shall be strictly followed. Should any error or ambiguity be discovered in such documents, the same shall be brought to the notice of BHEL. Manufacturer's interpretation in such cases shall be binding on successful bidder.
11.8	Successful bidder shall comply with all the rules & regulations of local authorities, all statutory laws including Minimum Wages, Workmen Compensation, etc. All registration and statutory inspection fees, if any, in respect of the work executed by successful bidder shall be to his account.
11.9	All the works such as cleaning, checking, leveling, blue matching, aligning, assembling, temporary erection for alignment, opening, dismantling of certain equipment for checking and cleaning, surface preparation, edge preparation, fabrication of tubes and pipes as per general engineering practice at site, cutting, grinding, straightening, chamfering, filling, chipping, drilling, reaming, scrapping, shaping, fitting-up, bolting/ welding, etc, as may be applicable in such erection and necessary to complete the work satisfactorily, are to be treated as incidental and the same shall be carried out by successful bidder as part of the work.
11.10	It is the responsibility of successful bidder to do alignment, etc if necessary, repeatedly to satisfy engineer, with all necessary tools & tackles, manpower, etc. The alignment will be complete only when jointly certified so, by successful bidder's engineer and BHEL. Also, successful bidder should ensure that the alignment is not disturbed afterwards.
11.11	Equipment & material, in case wrongly installed, shall be removed & reinstalled to comply with the design requirement at successful bidder expense, to the satisfaction of BHEL/ owner.
11.12	After identification of erection materials by BHEL at BHEL's store/ storage yard, it shall be the responsibility of successful bidder to take delivery of materials from BHEL's store/ storage yard by successful bidder's own manpower and re-stack the leftover materials as per erection sequence at BHEL store at their own cost. The entire activities are to be carried out under supervision of BHEL's engineer.
11.13	Successful bidder shall provide proper barricading/ cordoning/ temporary protection over all left out opening at deaerator floor, condenser surrounding, LPBP valves, different equipment erected by them, 17 mtr/ 8.5 mtr, 0 mtr floors for safe working at site at their own cost. Raw steel will be provided by BHEL free of cost from scrap.
12.0	QUALITY CONTROL & QUALITY ASSURANCE
12.1	INSPECTION & FIELD QUALITY ASSURANCE
12.1.1	Contractor shall carry out all activities conforming to the approved Field Quality Plan (FQP) & technical instructions as revised from time to time. 'Total Quality' shall be the watchword of the work and contractor shall strive to achieve the quality standards, procedures laid down by BHEL. He shall follow all the instructions as per BHEL drawings and quality standards. Contractor shall provide the services of quality assurance engineer as per the relevant clauses.
12.1.2	Preparation of quality assurance log sheets and protocols with customer / consultants / statutory authority, welding logs, NDE records, testing & calibration records and other quality control and quality assurance documentation as per BHEL engineer's instructions, is within the scope of work / specification. These records shall be submitted to BHEL / customer for approval from time to time.
12.1.3	The protocols between contractor and customer / BHEL shall be made for correctness of foundations, materials, procedures, at each stage of installation, generally as per the requirement of customer / BHEL. This is necessary to ensure elimination of errors and to avoid accumulation and multiplication of errors.
12.1.4	A daily log book (with proper indexing) should be maintained by every supervisor /

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	<p>engineer of contractor, for respective area of work, on the job for detailing and incorporating alignment/ clearance / centering / levelling readings and inspection details of various equipment, etc. This log book shall be always accessible to BHEL engineers.</p> <p>High pressure welding (as applicable under the scope of this contract) details like serial number of weld joints, welders name, date of welding, details of repair, heat treatment etc. will be documented in welding log as per BHEL Engineer's instructions. Record of radiography (as applicable under the scope of this contract) containing details like serial number of weld joints, date of radiography, repairs, if any, re-shots etc shall also be maintained as per BHEL Engineer's instructions. Record of heat treatments (as applicable under the scope of this contract) performed shall be maintained as prescribed by BHEL.</p>
12.1.5	The performance of welders (as applicable under the scope of this contract) will be reviewed from time to time as per the BHEL standards. Welders' performance record shall be furnished periodically for scrutiny of BHEL's Engineer. Corrective action as informed by BHEL shall be taken in respect of those welders not conforming to these standards. This may include removal/ discontinuance of concerned welder(s). Contractor shall arrange for the alternate welders immediately.
12.1.6	Only welders duly authorized by BHEL / customer / consultant after welder qualification test as per ASME Sec-Ix / AWS D1.1 (as applicable) shall be engaged on the work. All the welders shall carry identity cards as per the proforma prescribed by BHEL / Customer / Consultant.
12.1.7	Any re-laying or re-termination of cables / re-erection of instruments / recalibration of instruments etc. required due to contractor's mistake and found at any stage inspection, shall be carried out by the contractor at no extra cost. Repair / rectification procedure to be adopted to make any job acceptable shall be subject to the approval of BHEL.
12.1.8	Weekly Quality Review Meeting at site shall be organized by BHEL to discuss quality issues and next week inspection plans. Site in-charge of the contractor along with QAEs of the contractor must be present in the meeting with closure report of the issues raised by BHEL in the previous meetings.
12.2	REQUIREMENT OF ISO 9001
12.2.1	BHEL: PSER is accredited with ISO 9001 certification and as such this work is subject to various audits to meet ISO 9001 requirements.
12.2.2	<p>The basic philosophy of the Quality Management System under ISO 9001 is to define the organizational responsibility, work as per documented procedures, verify the output with respect to acceptance norms, identify the non-conforming product / procedure and take corrective action for removal of non-conformance specifying the steps for avoiding recurrence of such non-conformities, & maintain the relevant quality records. The non-conformities are to be identified through the conduct of periodical audit of implementation of quality systems at various locations/stages of work. Suppliers / vendors of various products / services contributing in the work are also considered as part of the quality management system.</p> <p>As such the contractor is expected not only to conform to the quality management system of BHEL but also it is desirable that they themselves are accredited under any quality management system standard.</p>
12.2.3	BHEL reserves the right to carry out quarterly quality audits and quality surveillance of the systems and procedures of contractor's quality management. Contractor shall provide all necessary assistance to enable BHEL to carry out such audit & surveillance.
12.2.4	Quality audits / approval of the results of test & inspection will not prejudice the right

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	of BHEL to reject an equipment service not giving desired performance and shall not in no way limit the liabilities and responsibilities of the contractor in earning satisfactory performances of equipment / service as per specification.
12.3	MMEs / MMRs
12.3.1	Contractor shall ensure deployment of reliable and calibrated MMEs (Measuring and Monitoring Equipment). The MMEs shall have test / calibration certificates from authorized / Government approved / Accredited agencies traceable to National / International Standards. Re-testing / re-calibration shall also be arranged at regular intervals during the period of use as advised by BHEL Engineer within the contract price. The contractor will also have alternate arrangements for such MMEs so that work does not suffer when the particular equipment / instrument is sent for calibration. Also if any MMEs not found fit for use, BHEL shall have the right to stop the use of such item and instruct the contractor to deploy proper item and recall i.e. repeat the readings taken by that instrument, failing which BHEL may deploy MME and retake the readings at Contractor's cost.
12.3.2	Contractor shall provide all the Measuring Monitoring Equipment (MMEs) required for completion of the work satisfactorily. These MMEs shall be of brand, quality and accuracy specified by BHEL Engineer and should have necessary calibration and other certificates as per the requirement of BHEL Engineer. Decision of BHEL Engineer regarding acceptance or otherwise of the measuring instruments / gauges / tools for the work under this specification, is final and binding on the contractor. BHEL shall give an indicative list of MMEs required for this work else where in this contract and to be made available by the contractor. The list will be reviewed by BHEL site as per the requirement of approved FQPs and the contractor shall meet any augmentation needed wherever required.
12.3.3	It is the responsibility of the contractor to prove the accuracy of the testing / measuring / calibrating equipment brought by him based on the periodicity of calibration as called for in the BHEL's quality assurance standards/BHEL Engineer's instructions.
12.3.4	Re-work necessitated on account of use of invalid MMEs shall be entirely to the contractor's account. He shall be responsible to take all corrective actions, including resource augmentation if any, as specified by BHEL to make-up for the loss of time.
12.3.5	In the courses of erection, it may become necessary to carry repeated checks of the work with instruments recently calibrated, re-calibrated. BHEL may counter / finally check the measurements with their own MMEs. Contractor shall render all assistance in conduct of such counter / final measurements.
12.4	INSPECTION BY TS / FES / QA ENGINEERS OF BHEL UNITS / ENGINEERING CENTRES
12.4.1	Apart from day-to-day inspection by BHEL Engineers stationed at Site and Customer's Engineers, stage inspection of equipment under erection and commissioning at various stages may also be conducted by teams of Engineers from Field Engineering Services of BHEL's Manufacturing Units, Quality Assurance teams from Field Quality Assurance, Unit/Factory Quality Assurance and Commissioning Engineers from Technical Services etc. Contractor shall arrange all labour, tools and tackles etc along with proper access for such stage inspections free of cost.
12.4.2	Any modifications suggested by BHEL FES and QA Engineers' team shall be carried out. Claims of contractor, if any, shall be dealt as per applicable clause of the contract, and provided such modifications have not arisen for reasons attributable to the contractor.
12.5	CONFORMANCE TO THE STATUTORY REQUIREMENTS (AS APPLICABLE UNDER THE SCOPE OF THE CONTRACT)
12.5.1	The work to be executed under these specifications has to be offered for inspection,

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	<p>at appropriate stages of work completion, to various statutory authorities for compliance with applicable regulations. The work related statutory inspections, though not limited to, are as under:</p> <ol style="list-style-type: none"> 1) Inspectorate of Steam Boilers and Smoke Nuisance 2) Electrical Inspector 3) Factory Inspector, Labour Commissioner, PF Commissioner and other authorities connected to this project work. <p>The scope includes getting the approvals from the statutory authorities, which includes arranging for inspection visits of statutory authority periodically as per BHEL Engineer's instructions, arranging materials for ground inspection, taking rub outs for stamping of the pressure parts / pipes to be offered for inspection, submitting co-related inspection reports, documents, radiographs etc. and following up the matter with them. Contractor shall also make all arrangements for offering the Products / Systems for inspection at location, as applicable, to the concerned authority.</p>			
12.5.2	Contractor should be qualified to execute pressure parts & piping work coming under the purview of IBR or Competent Inspecting Authority, for which he should register himself with CIB of state concerned / Competent Inspector. Contractor also should be aware of the latest Boiler regulations and Electricity Act, including the amendments thereof, as applicable under the scope of this contract.			
12.5.3	Contractor shall comply with 'Qualification Tests for welders engaged in welding of Boilers and Steam Pipes under Construction, Erection and Fabrication at Site in India and in repairing Boilers and steam pipes by welding' in line with Chapter XIII of Indian Boiler Regulations-1950, for testing his welders / men / workers, including all associated fees, procedures, required instruments and equipment and their calibration thereof. It shall be contractor's responsibility to obtain approval of Statutory Authorities, wherever applicable, for the conducting of any work which comes under the purview of these authorities, at his cost.			
12.5.4	The following fees shall be excluded from scope of Contractor: 1. Registration Fee as per Regulation 385 of Chapter IX of Indian Boiler Regulations-1950 or Registration Fee as per prevailing statutory boiler regulations. 2. Fees for inspection of Boiler at the site of Construction as per Regulation 395 A, sl no 4 of Chapter IX of Indian Boiler Regulations- 1950. However all other fees like visit fees charged by the Boiler Inspector and other arrangements for his visit or visits till satisfactory completion of work, shall be included in scope of Contractor.			
12.6	STORAGE & PRESERVATION OF WELDING ELECTRODES & OTHER BHEL- ISSUED MATERIAL			
	The contractor shall be responsible for storage & preservation of welding electrodes & other BHEL-issued materials as per BHEL Storage & Preservation Guidelines / Instructions.			
12.7	PENALTIES ON VENDORS / SUB-CONTRACTORS AGAINST NON-COMPLIANCE OF QUALITY NORMS			
Sl. No.	Nature of Non-compliance		Penalty	Remarks
12.7.1	GENERAL			
12.7.1.1	Unavailability of QAE deployment schedule (duly approved by BHEL Site) matching with manpower requirement of approved L2 schedule	0.10%	0.10%	Against each RA bill
12.7.1.2	Unavailability of required number of QAE with proper experience & NDT certification as per the requirement of the Contract	Rs. 1,000.00	\$16.00	Per person per day
12.7.1.3	Not attending quality meeting of BHEL by	Rs.	\$32.00	Per meeting

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	nominated member of vendor / sub-contractor	2,000.00		
12.7.2.	CALIBRATION			
12.7.2.1	Use of MMEs without valid calibration certificate	Rs. 1,000.00	\$16.00	Per equipment per instance
12.7.2.2	Use of NDT equipment, welding equipment without having valid calibration certificate / condition not as per requirement	Rs. 1,000.00	\$16.00	Per equipment per instance
12.7.3	WELDING & NDT			
12.7.3.1	Unqualified welders carrying out welding / tack welding	Rs. 1,000.00	\$16.00	Per welder per instance. (Gatepass of the person shall be withheld)
12.7.3.2	Not using portable oven for welding consumables	Rs. 500.00	\$8.00	Per welder per instance. (The consumables in the oven shall be confiscated)
12.7.3.3	Not using electrodes pre-baked in baking oven	Rs. 500.00	\$8.00	Per instance. (The subject consumables shall be confiscated)
12.7.3.4	Not using welding consumables of approved make & not using correct type of electrode as per approved EWS / Drawing / WPS	Rs. 1,000.00	\$16.00	Per instance. (The subject consumables shall be confiscated)
12.7.3.5	Non-removal of welding slag and spatters after welding	Rs. 500.00	\$8.00	Per joint
12.7.3.6	Not using NDT equipment as prescribed in the manual / FQP / guidelines / Contract	Rs. 1,000.00	\$16.00	Per equipment per instance
12.7.3.7	Welder doing welding without valid job card	Rs. 500.00	\$8.00	Per instance
12.7.3.8	Discrepancy observed in the weld joints identified by BHEL / Customer for RT vs RT film offered	Rs. 2,000.00	\$32.00	per joint
12.7.3.9	Unqualified welders carrying out welding / tack welding	Rs. 1,000.00	\$16.00	Per welder per instance. (Gatepass of the person shall be withheld)
12.7.3.10	Not using portable oven for welding consumables	Rs. 500.00	\$8.00	Per welder per instance. (The consumables in the oven shall be confiscated)
12.7.4	MATERIAL MANAGEMENT			
12.7.4.1	Non-maintenance of grid pillar marking	Rs. 200.00	\$3.00	Per location week
12.7.4.2	Mismatch of location of material in store area	Rs.	\$8.00	Per instance

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	w.r.t. location mentioned in stock register	500.00		
12.7.4.3	Non-compliance of Preservation of material as per storage & preservation manuals	Rs. 1,000.00	\$16.00	Per equipment
12.7.4.4	Not offering received material for verification within stipulated time as per contract	Rs. 500.00	\$8.00	Per instance
12.7.5	PAINTING & ALLIED WORKS			
12.7.5.1	Not using primer / paints of approved make and as per Specifications	Rs. 1,000.00	\$16.00	Per instance
12.7.5.2	Painting without proper surface preparation as per approved schedule / drawing / FQP	Rs. 500.00	\$8.00	Per instance
12.7.6	PROTOCOLS & LOG SHEETS			
	Delay in preparation of Protocols / Log-sheets as per approved FQP within 3 days of completion of checks	Rs. 200.00	\$3.00	Per protocol per day delay
12.7.7	INSPECTION OF BOUGHT-OUT ITEMS / CONSUMABLES			
12.7.7.1	Delay in offering inspection of Bought-out Items / Consumables / Aggregates (for items which need site inspection as per approved QP) within 3 days of receipt of material at site	1% of the item value of the LOT	1% of the item value of the LOT	per item per day delay after receipt of material
12.7.7.2	Delay in submission of required documents (viz. Invoice, Inspection Release Note, COC, MDCC, MTC as the case may be) of Bought-out Items (shop inspection items / consumables) within 3 days of receipt of material at site.	1% of the item value of the LOT	1% of the item value of the LOT	per item per day delay after receipt of material
12.7.8	Any non-conformity requiring dismantling / rework, attributable to vendor / sub-contractor, shall be penalized at a rate mentioned above or cost to BHEL, which-ever is higher.			
13.0	DELETED			
14.0	HEALTH, SAFETY & ENVIRONMENT			
14.1	HSE shall be guided by a separate volume (DOCUMENT NO HSEP:14-MAITREE: VENDOR DATE:05.05.16) , over and above the below mentioned terms and conditions.			
14.2	Round the clock experienced paramedical personnel with first aid facility & ambulance including driver, fuel, etc., at site, shall be arranged by BHEL through other sub-contractors at site. However, expenditure towards above facilities shall be shared by BHEL's sub-contractors working at site (actual cost distribution amongst all successful bidders shall be on pro rata basis proportionate to their contract prices). In case of any dispute, Construction Manager decisions in this regard shall be binding.			
15.0	DELETED			
16.0	PROJECT MANAGEMENT/ CONSTRUCTION MANAGEMENT			
	To meet the need of construction management at site, successful bidder shall provide the following services within accepted rates.			
16.1	PLANNING & MONITORING			
16.1.1	Within 15 days of placement of order/ LOI by BHEL, successful bidder shall interact with BHEL site for kick-off meeting to discuss & firm up item-wise/ activity-wise schedule of erection, testing, commissioning so as to complete the entire job within the stipulated completion period, matching with project schedule.			
16.1.2	Based on the discussion of the kick-off meeting or otherwise, a master schedule shall be drawn and successful bidder shall submit the same within 7 days of kick-off			

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	meeting, for review & acceptance/ approval of BHEL. Successful bidder shall interact with BHEL to ensure acceptance/ approval of the master schedule within 7 days of submission.
16.1.3	On the basis of accepted/ approved master schedule, on every month, the successful bidder shall submit to Construction Manager, BHEL schedule-wise plan vs actual status of erection, testing, commissioning, along with action plan to make-up delay, if any.
16.1.4	The project schedule might undergo revision/ modification periodically, for which the successful bidder may have to prepare/ modify schedule periodically in consultation with BHEL, so as to match with revised project milestones.
16.1.5	The successful bidder shall ensure monitoring of these activities at least on fortnight basis or at other frequency as mutually agreed with BHEL.
16.1.6	Successful bidder shall submit daily work program based on above schedule. Deferment of above schedule is not acceptable. Successful bidder will adhere to schedule & augment resources to ensure completion as per schedule.
16.1.7	Progress reviews on entire activities will be held periodically as per direction of BHEL, at site/ Kolkata. These meetings will be used as a forum for discussing all areas where progress needs to be expedited. The successful bidder shall be further responsible for ensuring that suitable steps are taken to meet various targets decided upon such meetings.
16.1.8	Successful bidder shall prepare progress report indicating progress on key activities, management summary for critical activities, list of actions require BHEL's attention. The schedule shall preferably be made in Primavera/ MS Projects, so that the same is compatible with BHEL's project management software.
16.2	INFRASTRUCTURE (Only One set for all packages for entire contract duration- shall be included in the TG Contract)
16.2.1	<p>The successful bidder shall install 2 nos. all in one PCs (multimedia PC work station Core-i3, 2.1 GHz or above, 500 GB HDD, 4 GB RAM, 100/ 1000 MBPS LAN card) of HP/ Compaq/ Lenevo or equivalent make with window 10 or 8 O/S and required software like MS Office 2010 Professional, AutoCAD 2009 or higher, PageMaker (7.0, etc.), ADOBE PDF CREATOR and ONE NO. SCANNER (HP Scan Jet Pro 2500 or equivalent), one no laser jet printer compatible for A4 size printing at places, as per instruction of BHEL for exclusive use of BHEL. These computers/ printers/scanner shall remain successful bidder's property and they will be allowed to take out the same after completion of contract period including extension. The successful bidder shall provide data/ information, etc. in prescribed formats for periodical updating of progress reports, material management reports, updating of network pertaining to the successful bidder's scope of work, etc.</p> <p>The successful bidder shall also provide 2 nos. computer operators and 2 numbers service staff for miscellaneous service for BHEL's use at site/ Kolkata for reconciliation, progress review & day-to-day planning purpose, documentation, etc. These facilities are to be provided within 15 days from date of start work till completion of scheduled contract period, including extension, if the reason for extension is attributable to successful bidder. In case successful bidder fails to provide computer/ printer or personnel as per requirement, for a continuous period of fifteen days or more, BHEL shall have the right to deduct as per following rates on prorata basis, from successful bidder's RA bill or any other dues.</p>
16.2.1.1	@ USD 230/- (Two Hundred Thirty) per month for each computer operator or at actual rate +30%, whichever is lower.
16.2.1.2	@ USD 150 /- (One Hundred Fifty) per month for each computer with printer/scanner or at actual rate +30%, whichever is lower.

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16.2.1.3	@ USD 185/- (One Hundred Eighty five) per month for each service staff or at actual rate +30%, whichever is lower.
16.2.1.4	Bidder shall ensure that in the eventuality of termination / transfer of any computer operator, there shall be overlapping of approx. one week so that all processes, records and documentation can be shared/secured/transferred properly.
16.2.2	In case BHEL extends the service of computer operator or service staff beyond the aforesaid mandatory period, successful bidder shall extend the service to BHEL, for which BHEL will reimburse following rates.
16.2.2.1	@ USD 230/- (Two Hundred Thirty) per month for each computer operator or at actual rate +30%, whichever is lower.
16.2.2.2	@ USD 185/- (One Hundred Eighty five) per month for each service staff or at actual rate +30%, whichever is lower.
16.2.2	The successful bidder's site office must have facilities of communications like Fax, E-mail, and telephone with STD facility within a month from LOI.
16.3	PROGRESS REPORTING
16.3.1	The bidder shall submit daily, weekly and monthly progress reports for work force, materials reports, consumables (gases/electrodes) report and other reports as per pro-forma considered necessary by BHEL. In case of any failure on successful bidder's part to comply with this, BHEL may at its discretion, consider to withhold part payment against their RA bills.
16.3.2	The progress report shall indicate the progress achieved against planned with reasons indicating delays, if any, and shall give the remedial actions which the successful bidder intends to take to make good the slippage or lost time, so that further works again proceed as per the original program and the slippages do not accumulate and effect the overall program.
16.3.3	The daily work force reports shall clearly indicate the work force deployed, category-wise specifying also the activities in which they are engaged.
16.3.4	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. For discussions, the successful bidder shall present program of subsequent week. The successful bidder shall constantly update/ revise his work program to meet the overall requirement.
16.3.5	Periodic progress reviews on the entire activities of execution in respect of supply and works in scope of successful bidder will be held once in a month at site/ Kolkata. These meetings will be attended by reasonably higher officials of the successful bidder and will be used as a forum for discussing all areas where progress needs to be speeded up. The successful bidder shall be further responsible for ensuring that suitable steps are taken to meet various targets decided upon such meetings.
16.4	SITE ORGANIZATION
16.4.1	Successful bidder shall maintain a site organization of adequate strength in respect of manpower, construction machinery and other implements at all time for smooth execution of the contract headed by a competent Site In-charge (SIC) for site operations with sufficient level of authority to take site decisions. The successful bidder will submit organization chart (showing the name of SIC) with individual bio-data indicating various levels of experts to be posted for supervision in the fields of supervision & execution, quality, material management, planning, safety, etc. The organization shall be reinforced from time to time, as required to make up slippage (if any) from schedule without any commercial implication to BHEL. The organization chart is to be submitted within 10 days from date of LOI.
16.4.2	The successful bidder shall provide experienced engineer / supervisors in various area of operation depending upon requirement. Further, following (minimum) manpower with power plant construction background to be deployed at site by the

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	successful bidder for their day to day supervision, etc., within specified days from start of work or otherwise decided jointly with Construction Manager, BHEL. Regarding qualification & experience of each of following categories of manpower, successful bidder shall take prior approval of Construction Manager, BHEL, whose decision shall be final & binding regarding acceptance of any person.	
	Area	Quantity, deployment schedule (From Start of work)
16.4.2.1	TG & AUX PKG - UNIT #1 & COMMON SYSTEMS	
16.4.2.1.1	Planning engineer.	1 no. within 15 days,
16.4.2.1.2	Qualified safety officers with stewards (exclusive for safety supervision for project jobs).	As per HSE manual.
16.4.2.1.3	Site engineer and supervisors for supervision.	Engineers – 3 nos. 1 no within 15 days. Balance as per requirement. Supervisors – 7 nos. 2 nos. within 15 days. 1 no within 30 days. Balance as per requirement.
16.4.2.1.4	Site engineer and supervisors for quality inspection.	As detailed below. Deployment schedule to be decided at site.
16.4.2.1.5	NDT specialist with NDT level 2 certification.	1 no.
16.4.2.2	LP PIPE	
16.4.2.2.1	Planning engineer.	1 no. within 15 days,
16.4.2.2.2	Qualified safety officers with stewards (exclusive for safety supervision for project jobs).	As per HSE manual.
16.4.2.2.3	Site engineer and supervisors for supervision.	Engineers – 2 nos. 1 no within 15 days. Balance as per requirement. Supervisors – 4 nos. 1 no. within 15 days. 1 no. within 30 days. Balance as per requirement.
16.4.2.2.4	Site engineer and supervisors for quality inspection.	As detailed below. Deployment schedule to be decided at site.
16.4.2.2.5	NDT specialist with NDT level 2 certification.	1 no.
16.4.2.3	FGD PACKAGE	
16.4.2.3.1	Planning engineer.	1 no. within 15 days,
16.4.2.3.2	Qualified safety officers with stewards (exclusive for safety supervision for project jobs).	As per HSE manual.
16.4.2.3.3	Site engineer and supervisors for supervision.	Engineers – 1 nos. 1 no within 15 days. Supervisors – 2 nos. 1 nos. within 15 days. Balance as per requirement days.
16.4.2.3.4	Site engineer and supervisors for quality inspection.	As detailed below. Deployment schedule to be decided at site.
16.4.2.3.5	NDT specialist with NDT level 2 certification.	1 no.
16.4.3	Engineer/ supervisor for other functions like store & purchase, material management, planning, FIN, administration etc. are to be provided as per site requirement and not referred above.	
16.4.4	In the event of failure of the successful bidder to provide necessary manpower	

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	indicated above as per requirement, BHEL reserve the right to deduct USD 770 per man-month for engineer and USD 460 per man-month for the supervisor/ safety/ quality officer/ NDT specialist from the date of deputation as indicated as above from RA bills. Further induction of manpower regarding site supervisor & site engineer will be decided at site as per requirement. Further induction of manpower regarding site supervisor & site engineer will be decided at site as per requirement.
16.4.5	For rendering commissioning assistance with effect from HT, Chemical Cleaning, BLU till handing over of the set, a dedicated gang of six persons along with an exclusive supervisor need to be deployed by the successful bidder to attend the incidental works of commissioning as per the instruction of BHEL commissioning engineer. The total gang will report to BHEL and will follow instruction of BHEL's commissioning engineer. This gang with supervisor shall be separate and will be their besides other personnel to be provided by successful bidder for his day-to-day work. The gang (6+1 as per above) need to be provided during all shifts also whenever required by BHEL commissioning engineer. They shall be equipped with all necessary hand-tools to attend all incidental work during commissioning.
16.4.5.1	In the event of failure of the successful bidder to provide necessary manpower indicated above as per requirement for a continuous period of 3 days or more, BHEL reserve the right to recover at the following rates. USD 230 /- for semi-skilled/ un-skilled worker from the date of deputation as indicated above from RA bills.
16.4.6	BHEL reserve the right to reject or approve the list of personnel proposed by successful bidder. The persons whose bio-data have been approved by BHEL will have to be posted at site and deviation in this regard will not be permitted unless specific & reasonable justification is made.
16.4.7	In addition to above, a well experienced qualified engineer to be designated, as 'Project Coordinator', shall be deployed by successful bidder. Such engineer shall have adequate exposure on the job and shall remain fully involved in all planning activities, guidance, etc to successful bidder's own team during complete execution period of contract.
16.4.8	Successful bidder 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.
16.4.9	Successful bidder should also submit network programs for the erection of various items. These networks shall show owner/ BHEL hold points (CHP), which have to be cleared by BHEL/ customer, or their authorized representatives before further erection can take place. These programs for the erection would clearly identify responsibilities of successful bidder & BHEL/ customer. It is the responsibility of successful bidder to get the Networks approved by BHEL within four weeks of the date of finalization of award of work/ placement of LOI.
16.5	CONSTRUCTION MANAGEMENT
16.5.1	Based on approved program, successful bidder shall submit program of construction/ erection/ commissioning for implementation. These programs would be amplified showing start of erection & subsequent activities and shall form the basis for site execution & detail monitoring. Three monthly rolling program with first month's program being tentative based on the site condition would be prepared based on these programs. The successful bidder shall also be involved along with owner/ BHEL to tie up detailed resources mobilization plan over the period of the contract matching with the performance targets.
16.5.2	The program would be jointly finalized by the site in-charge of successful bidder with BHEL/ customer's project coordinator as well as site-planning representative.

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	Erection program will also identify sequential events matching financial turnover.
16.5.3	Successful bidder is liable to furnish all documentary evidences towards payment of Works Contract Tax as and when required by BHEL.
17.0	LAND
17.1	Land will be provided free of cost by BHEL to the extent available/ considered necessary by BHEL to the successful bidder for their office, store, and labour colony within project premises. Availability of land is very limited and successful bidder have to plan & use existing land considering use of land by other civil/ mechanical/ electrical/other successful bidders and storage of plant machineries & materials. The existing land shall be shared by all agencies deployed by BHEL at site.
17.2	BHEL shall hand over such allotted land to the successful bidder on as is where is condition. The successful bidder shall arrange, at his own cost, cleaning and grading of area allotted, construction of their temporary office, stores, godown, fabrication yards etc. and also the watch & ward, etc. as may be required.
17.3	All temporary roads for crane movement shall be constructed and maintained by BHEL.
17.4	Land, as available, may be provided for labour colony outside plant boundary, free of cost. The successful bidder should visit the site to assess site condition regarding feasibility of use of land for the purpose. The successful bidder to construct temporary labour colony/ hutment, toilets as per attached technical specifications and drawing, after obtaining approval of formalities from statutory body.
17.5	The successful bidder shall provide adequate no of toilet in their labour colony.
17.6	On completion of work, all the temporary buildings, structures, pipelines, cables, etc, shall be dismantled & leveled and debris shall be removed as per instruction of BHEL by the successful bidder at their cost. In the event of failure to do so, the same will be removed and expenditure thereof will be recovered from successful bidder. Decision of BHEL in this regard shall be final & binding. However, the scope of dismantling & leveling the area is limited only to the successful bidder's site office, yard and other spaces occupied by successful bidder.
18.0	WATER
18.1	BHEL will provide construction as well as potable water at one strategic point within plant premises, free of cost, to the successful bidder for their site office, store.
18.2	Further network for construction & potable water system for construction work shall be arranged by successful bidder at their own cost.
18.3	BHEL shall not be responsible for any inconvenience or delay caused due to any interruption of water supply and successful bidder shall claim no compensation for delay in work for such interruption. Successful bidder may make standby arrangement for water for which no separate payment shall be made by BHEL.
18.4	Successful bidder will have to arrange for storage of water to meet day-to-day requirement.
18.5	Availability of water (construction as well as potable) in project site is limited. Successful bidder shall ensure that no water is wasted and shall take all necessary measures for any wastage & preservation of water. In this context, for proper utilization & to avoid scarcity, successful bidder shall mandatorily construct storage facility of construction & potable water at site (Near work places). Any deviation from this shall lead to forthwith withdrawal of the facility.
18.6	Construction water, as available, may be provided for labour colony within project premises, free of cost. Successful bidder should visit site before quoting to assess site condition regarding feasibility of use of water source for the purpose. Further

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	network for drinking water system for construction work shall be arranged by successful bidder at their own cost. Successful bidder shall take care of all precautions to avoid any sort of misuse, wastage of water. Any deviation from this shall lead to forthwith withdrawal of this facility.
18.7	Successful bidder shall make their own arrangement of potable water facility for labour colony, at their own cost.
18.8	Bidder to note that no ground water is allowed for construction purpose by the project authority.
19.0	ELECTRICITY
19.1	BHEL will provide construction power free of charges at 415 V level at one/two strategic point(s) within plant premises. Successful bidder shall make their own distribution arrangement to draw electricity. General illumination system shall be provided by BHEL. However, provision of suitable temporary lights at different floors/ working areas for execution of the work & safety of workmen shall be provided by successful bidder, within accepted rate. Illumination should be such that minimum illumination requirement as specified by local statutory body / international standard for general illumination is maintained.
19.2	If any other voltage level (other than normally available) is required, the same shall be arranged by successful bidder from power supply as above. Successful bidder will have to provide at their own cost necessary calibrated energy 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 the power consumption. In case of recalibration required for any reason, necessary charges including replacement by calibrated meters is to be borne by successful bidder. Supply of electricity shall be governed by applicable Rules & Regulation in Bangladesh. 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.
19.3	Successful bidder shall have to provide earth leakage circuit breaker at each point wherever human operated electrical drives/ T&Ps are deployed.
19.4	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/ variation in voltage level and no compensation for delay in work can be claimed by the successful bidder due to such non-supply on the grounds of idle labour, machinery or any other grounds.
19.5	Successful bidder will have to arrange sufficient illumination at their own work areas.
19.6	Successful bidder should ensure that the work in critical areas is not held up in the event of power breakdown. In the event of breakdown in the electric supply, if the progress of work is hampered, it will be the responsibility of the successful bidder to step up the progress of work after restoration of electric supply so that overall progress of work is not affected.
19.7	Successful bidder have to make arrangement at their own cost for illumination for their working area for execution of the work & safety of workmen.
19.8	Though the construction power is provided free of charge, it is the responsibility of the successful bidder to ensure efficient utilization of electricity. Suitable audit shall be carried out jointly by BHEL & successful bidder on a periodic basis to ensure the same. In case at any point of time it is found that construction power is being used inefficiently or for any other purpose than the intended use, the successful bidder will be suitably penalized as per the provision of the contract. The maximum penalty that can be imposed on the successful bidder shall be limited to one month's electricity charges (as will be obtained from the energy meter point) per incident of inefficient

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	use or misuse.
19.9	The contractor shall have to make arrangement of power, at their own cost, in labor colony. However, BHEL may provide the same on chargeable basis, for which successful bidder has to make necessary arrangements including installation of meter etc.
20.0	CONSTRUCTION OF TEMPORARY OFFICE, STORES ETC
20.1	Successful bidder shall arrange at their own cost cleaning & grading of area allotted, construction of their temporary office, stores, godown, fabrication yards, etc and also the watch & ward, etc.
20.2	Labour colony as per owner's/BHEL standard practice has to be made by successful bidder. Rest sheds, toilet, canteen facility for workers and staff, storage sheds for oils, lubricants/ waste/ hazardous items – To be done in line with safety, HSE policy, statutory, Labour Law requirement as applicable at owner.
20.3	Storage sheds for oils, lubricants/ waste/ hazardous items (for successful bidders own items for vehicles, cranes, etc.) – To be done in line with safety, HSE policy, statutory, Labour Law requirement as applicable at site.
21.0	CONSUMABLE
21.1	Successful bidder shall provide all consumables required for carrying out the work covered under this tender excepting those which are specifically indicated as BHEL scope. TG special consumables like Hylomar, Golden Hermetite, Stag-B, Molykote, Anabond compounds, Loctite, Rubber fixing compounds/ rubber hoses, petrol, CTC, etc will have to be arranged by the contractor within the quoted rate. Erection, commissioning jobs should not suffer due to non-availability of these types of consumables. Failure to arrange the same in time may call for BHEL's intervention and BHEL shall arrange the same at successful bidder's risk and cost with BHEL's standard overhead charges.
21.2	All consumables/ special materials/ cements/ paints, etc arranged by successful bidder to be used for the work shall have prior approval of BHEL engineer with regard to brand and quality specifications. Test reports/ certificates in respect of these consumables, wherever applicable, shall be submitted to BHEL.
21.3	PRIMERS & PAINT
	Successful bidder will provide paint & primer for finish paintings of total area of applications like, turbine, generator, condenser, BFPs, CEPs and other auxiliaries including arranging all associated arrangements like spray guns, brushes, nozzles etc. within quoted rate. Painting is to be done as per BHEL/ owner's instruction/ applicable code/ drawings/ documents. Required thickness is to be achieved as per owner's requirement. Painting thickness measuring instruments is to be arranged by successful bidder within quoted rate. The paint shall be sourced from BHEL/ Owner approved manufacturers/suppliers.
21.4	WELDING ELECTRODE, FILLER WIRE FOR TIG WELDING AND GAS
21.4.1	Unless specifically mentioned otherwise in the tender, all welding consumables including electrodes/ SS electrodes/ filler wires shall be supplied by successful bidders within the quoted rates/ price. Any TIG/ filler wire supplied by BHEL manufacturing unit for use in TG area, shall be issued free of cost by BHEL.
21.4.2	All the required welding electrodes as approved by BHEL shall be arranged by successful bidder at their cost. It shall be the responsibility of successful bidder to obtain prior approval of BHEL, before procurement, regarding manufacturer, type of electrodes, etc. On receipt of the electrodes at site, it shall be subject to inspection and approval by BHEL regarding type of electrodes, batch number, date of expiry, etc. Batch test certificates shall be made available for verification & record before the actual use of the welding consumables.
21.5	All the required gases like Argon, Oxygen, Acetylene, etc including required high

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	purity Nitrogen gas (for purging of generator stator water system) shall be arranged by successful bidder at their cost.
21.6	In the event of failure of successful bidder to bring necessary and sufficient consumables, BHEL may arrange for the same at the risk and cost of successful bidder. The entire cost towards this along-with overhead shall be paid by successful bidder or deducted from successful bidder's bills.
21.7	BHEL reserves the right to reject the use of any consumable, if found non-acceptable because of bad quality, deterioration in quality due to improper storage, shelf life expiry, unapproved type/ brand, etc.
21.8	Filler wires, for TIG welding of piping to the extent supplied by the manufacturing units of BHEL along with the components/ equipment only shall be provided by BHEL free of cost. Successful bidder shall at their cost meet requirements of TIG filler wires, if any, beyond these free issues of BHEL.
22.0	MMR
22.1	Successful bidder shall ensure deployment of reliable & calibrated measuring and monitoring Resources (MMR). The MMRs shall have test calibration certificate from authorized/ Govt. approved agencies. Successful bidder shall also keep provision of alternate engagement for such MMRs so that the work does not suffer when a particular MMR is sent for calibration. Re-testing/ re-calibration shall also be arranged by the successful bidder at their own cost at regular interval during the period of use as advised by BHEL.
22.2	In the event of failure of successful bidder to bring necessary and sufficient MMRs, BHEL may arrange for the same at the risk and cost of successful bidder. The entire cost towards this along-with overhead shall be paid by successful bidder or deducted from successful bidder's bills.
23.0	TEST CERTIFICATE FOR T&P
	All T&P, lifting tackles, pulling devices, other material to be deployed/ supplied by successful bidder must bear valid/ latest test certificates for their suitability before their use/ application and the documents shall be preserved at site.
24.0	T&Ps TO BE PROVIDED BY BHEL AND TERMS OF ISSUE
24.1	List of T&Ps to be provided by BHEL free of cost on sharing basis is given in the relevant annexure of this tender. The T&Ps shall be shared by various other agencies and successful bidder shall plan their activities accordingly in co-ordination with BHEL site engineers.
24.2	BHEL will make available the crane (as per relevant appendix of this tender) with fuel & operators free of charges as applicable, to successful bidder on sharing basis mainly for the purpose of pre-assembly and erection of components. The crane shall be available for 14 (fourteen) hours inclusive of one hour lunch break daily, excluding Sundays and scheduled holidays. If crane is required beyond normal working hours or on Sundays/ holidays, prior permission of Construction Manager, BHEL is to be obtained. However, Construction Manager, BHEL decision in this regard will be final after judging proficiency of successful bidder's crane requirement.
24.3	These cranes have to be shared with other agencies/ successful bidders of BHEL. Allocation of cranes shall be the discretion of Construction Manager, BHEL, which shall be binding on successful bidder.
24.4	All arrangements, including providing & laying of sleeper beds, back-filling of approaches wherever necessary for safe movement of the cranes as directed by BHEL shall be the responsibility of successful bidder. Successful bidder shall provide sleepers for this purpose at their cost.
24.5	Any boom reduction, extension for their use & restoration to previous state or as directed by BHEL after the use shall be successful bidder's responsibility and to be done with successful bidder's own T&P, cranes, consumables, manpower.

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24.6	For dismantling/ assembly and unloading/ loading of BHEL cranes during mobilization/ demobilization process, successful bidder shall render assistance in the form of manpower with tools & tackles including cranes, etc (Except cranes of 75 T or above capacity) at no extra cost to BHEL.
24.7	Major breakdown will be attended by BHEL. The cranes provided by BHEL will be withdrawn for regular & capital maintenance as per schedule of maintenance. As far as possible such schedules will be intimated to successful bidder in advance and may be adjusted depending on the work requirements at site. However, no claim whatsoever will be entertained on account of non-availability of cranes.
24.8	Where services of cranes provided by BHEL are to be shared by other agencies/ successful bidder of BHEL, successful bidder's responsibilities defined above will also be apportioned accordingly to the beneficiary agency. BHEL will do working arrangements in this regard and BHEL's decision shall be final & binding.
24.9	Loading of materials at BHEL stores for transportation to working area shall be done by successful bidder using their cranes. However BHEL crane(s) shall also be provided for handling components which can not be handled by the T&Ps to be deployed by the contractor.
24.10	Responsibilities of successful bidder defined above for BHEL cranes shall also be applicable, mutatis–mutandis, in respect of other tool & plants provided by BHEL.
24.11	Special tools which are supplied by BHEL as part of maintenance tools, to be handed over to owner under regular DU/ DESS numbers in various product groups, may be issued to successful bidder free of charge for specific activities, at BHEL's discretion. Successful bidder shall return these after completion of specific activities, for which the tools were spared, in good working order.
24.12	Lubricants like engine oil, Cardium compound, hydraulic oil, gear oil, grease for BHEL's T&Ps including cranes will be provided by BHEL free of charge. Similarly filters for cranes will be provided free of charge by BHEL.
24.13	Successful bidder must not use these equipment for any purpose other than what they are intended for.
24.14	If the above items issued to successful bidder are found not utilized/ not maintained to the satisfaction of BHEL engineer or misused, these will be withdrawn and no replacement will be done for such items.
25.0	TOOLS & PLANTS, MMR TO BE PROVIDED BY SUCCESSFUL BIDDER
25.1	Except for the T&Ps provided by BHEL as per relevant clause, all other T&Ps, as may be required for completion of the work, have to be provided by the successful bidder within the quoted rates. A tentative list of such T&Ps to be deployed by the bidder for successful completion of work is given in the relevant annexure of this tender.
25.2	It may be noted that the list is not exhaustive and is only for general guidance purpose. Successful bidder is required to provide all necessary T&P (other than those specified to be provided by BHEL, if any) MMRs, handing equipment for timely completion of total work as per contract. For project requirement, some activities may have to pre-pone; and in such cases the successful bidder may have to deploy additional T&Ps. Accepted rates shall be inclusive of all above requirements.
25.3	In the event of any failure on the part of successful bidder and as a result, progress of work suffers, BHEL may at their discretion, also terminate the contract on this ground and take out any or whole amount of the contract from the scope of successful bidder. In line with this, in the event of failure of successful bidder to deploy necessary & sufficient T&Ps, BHEL also reserve the right to arrange the same, in case progress of work is suffered, at the risk & cost of successful bidder including transportation cost of same from any of BHEL site/ other agency & charges, as applicable, shall be deducted from successful bidder's RA bill, Decision of BHEL in

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	this regard will be final & binding on successful bidder.
25.4	The successful bidder shall mobilize T&Ps, as per contract/ mutually agreed schedule at site to meet the project requirement. Successful bidder will have to give advance intimation & certification regarding capacity etc. prior to dispatch of major equipment.
25.5	Timely deployment of adequate quantity of T&P is the responsibility of the successful bidder. The successful bidder shall be prepared to augment the T & P at short notice to match the planned program and to achieve the milestones.
25.6	Successful bidder shall maintain and operate his tools and plants in such a way that major breakdowns are avoided. In the event of major breakdown, successful bidder shall make alternative arrangements expeditiously so that the progress of work is not hampered.
25.7	For welding, use of welding generators/ rectifiers only is permitted.
25.8	The successful bidder at his cost shall carry out periodical testing of his construction equipment and calibration of measuring instruments (MMRs) and tests. Test/ calibration certificates shall be furnished to BHEL. MMRs shall be calibrated only at accredited laboratory as per the list available with BHEL or any other laboratory approved by BHEL.
26.0	CLEANLINESS
26.1	The successful bidder shall be responsible for keeping the entire area allotted to him clean and free from rubbish, debris etc. during the period of contract. The successful bidder 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/ customer. 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.
26.2	Similarly, the labor colony, the offices and the residential areas of the successful bidder'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 successful bidder, in the work-areas, office and residential areas of the successful bidder.
27.0	REPORTING DAMAGES AND CARRYING OUT REPAIRS
27.1	Checking all components/ equipment at siding/ site and reporting to transport and/ or insurance authorities of any damages/ losses will be in the scope of successful bidder. Necessary assistance for verification/ survey and lodging claims with underwriters and follow up to logical conclusion will also be part of this tender.
27.2	Successful bidder shall render all help to BHEL in inspection including handling, opening packages, re-packing, re-stacking, assessing and preparing estimates for repairs of components damaged during transit, storage, erection, commissioning and preparing estimates for fabrication of materials lost/ damaged during transit, storage and erection. Successful bidder shall help BHEL to furnish all the data required by railways, insurance company or their surveyors.
27.3	Successful bidder shall report to BHEL in writing any lost/ damages to equipment/ components during drawl of the materials from stores, in transit to site and unloading at a place of work and during erection & commissioning. The above report shall be as prescribed by BHEL site. Any consequential loss arising out of noncompliance of this stipulation will be borne by successful bidder.
27.4	Successful bidder shall carry out fabrication of any material lost/ damages as per Instructions from BHEL.
27.5	BHEL, however, reserve the right to award or not to award to successful bidder any of the rectification/ rework/ repairs of damages and also fabrication of components.
27.6	All the repairs/ rectification/ rework of damages and fabrication of materials lost, if

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	any, shall be carried out by a separately identifiable gang for certification of man-hours. Daily log sheets should be maintained for each work separately and be signed by successful bidder's representative & BHEL. Signing of log sheets does not necessarily mean acceptance of these as extra works for payment purpose.
27.7	All rectification, repairs, reworks and fabrication of components lost, which are minor and incidental to erection work (consuming up to 50 man-hours on each occasion) shall be treated as part of work without any extra cost.
27.8	In case the repairs/ rectification/ rework and fabrication of materials lost, the work has been done by more than one agency including successful bidder, payment towards extra charges will be on pro-rata basis and decision of BHEL in this regard is final & binding on the successful bidder.
28.0	FACILITIES TO BE PROVIDED BY THE SUCCESSFUL BIDDER
28.1	All tools and tackles, machinery, equipment, instruments required for the work have to be arranged by the successful bidder including its transportation before and after work and including storage, insurance etc.
28.2	Successful bidder shall provide all the necessary scaffolding materials, temporary structures, as may be required and necessary safety devices etc.
28.3	The T&P to be arranged by the successful bidder shall be in proper working condition and their operation shall not lead to unsafe condition. The movements of cranes, and other equipment should be such that no damage/ breakage occurs to foundations, other equipment, material, property and men. All arrangements for the movement of the T&P, etc, shall be the successful bidder's responsibility. Valid test certificate of all the applicable T&Ps are required to be produced at the time of deployment.
28.4	The successful bidder shall arrange adequate nos. of wooden sleepers /steel plates for compaction of approach for crane movement and material stacking near work site failing which BHEL may get the same done at their risk & cost.
28.5	Temporary toilet blocks are to be constructed/fabricated at different elevations of boiler & boiler work area, material pre-assembly yard, etc. for maintaining proper sanitation.
29.0	RESPONSIBILITIES WITH REGARD TO EMPLOYMENT OF LABOUR, ETC
29.1	Successful bidder shall also comply with the requirements of local authorities (Govt. of Bangladesh) with regard to employment of labours/workers at project site. They shall comply with any other statutory requirement/ local authority requirement such as police verification of antecedents of the workmen, staff, etc. with regard to employment of labours/workers at project site. In case of workmen / supervisors deployed to project from INDIA / any other country, necessary statutory guidelines issued by Indian Govt./ concerned Govt. authorities shall be strictly complied with in addition to local laws. Skilled labour with experience in construction of large utility thermal power projects shall be deployed (preferably 80% of such skilled labours shall be sourced from India).
29.2	BHEL/ customer may insist for witnessing the regular payment to the labour. They may also like to verify the relevant records for compliance with statutory requirements. Successful bidder shall enable such facilities to BHEL / Customer.
29.3	It is the responsibility of the successful bidder to arrange gate pass for all his employees, T & P etc. for entering the project premises. Necessary coordination with customer officials is the responsibility of the successful bidder. Successful bidder to follow all the procedures laid down by the customer for making gate passes. where permitted, by customer/ BHEL, to work beyond normal working hours, the successful bidder shall arrange necessary work permits for working beyond normal working hours.

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29.4	If at any time during the execution of work, it is noticed that the work is suffering on account of non-availability/shortfall in provision of resources from the successful bidder's side BHEL will make suitable alternate arrangements at the risk and cost of successful bidder. The expenditure incurred with overheads thereby shall be recovered from the successful bidder.
29.5	The successful bidder shall deploy all the skilled/semiskilled/ unskilled labour including highly skilled workmen etc. These workmen should have previous experience on similar job. They shall hold valid certificates wherever necessary. BHEL reserves the right to insist on removal of any employee of the successful bidder at any time if he is found to be unsuitable and the successful bidder shall forthwith remove him. Successful bidder should furnish a tentative deployment plan of his manpower as required in GCC. Also the actual deployment will be so as to satisfy the project schedule of erection and commissioning.
29.6	It is the responsibility of the successful bidder to engage his workmen in shifts and or on overtime basis for achieving the targets set by BHEL. This target may be set to suit BHEL 's commitments to its customer or to advance date of completion of events or due to other reasons. The decision of BHEL in regard to set the erection and commissioning targets will be final and binding on the successful bidder.
29.7	Successful bidder shall deploy only qualified and experienced engineers/ supervisors. They shall have professional approach in executing the work.
29.8	The successful bidder's supervisory staff shall execute the work in the most professional manner in the stipulated time. Accuracy of work and aesthetic finish are essential part of this contract. They shall be responsible to ensure that the assembly and workmanship conform to dimensions and tolerances given in the drawings/instructions given by BHEL engineer from time to time.
29.9	The supervisory staff employed by the successful bidder shall ensure proper outturn of work and discipline on the part of the labour put on the job by the successful bidder. Also in general they should 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 successful bidders of BHEL or BHEL 's client.
29.10	If at any time, it is found that the successful bidder is not in a position to deploy the required engineers/supervisors/workmen due to any reason, BHEL shall have the option to make alternate arrangements at the successful bidder's risk and cost.
30.0	RECONCILIATION OF BHEL ISSUED MATERIALS
30.1	Successful bidder shall submit a reconciliation statement of material s issued to them, once in two months. The same may be submitted along with RA bill.
30.2	Successful bidder shall properly account for the material issued to them as specified herein to the satisfaction of BHEL certifying that the balance material are available with successful bidder's custody at site.
31.0	METHOD OF MEASUREMENT
	Shall be as per GCC-1B.
32.0	INSURANCE
32.1	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 unit including theft, sabotage, fire, lightning and other natural calamities.
32.2	Contractor shall report to BHEL in writing any damages to equipment/components on receipt, storing, and during withdrawal of the materials from stores, in transit to site and unloading at place of work and during erection and commissioning till trial operation completion including handing over. The above report shall be as prescribed by BHEL site management. Any consequential loss arising out of non-compliance of

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	this stipulation will be borne by contractor.	
32.3	The contractor 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 handed over to BHEL/ customer at Project site. For lodging/ processing of insurance claim the contractor will submit necessary documents. BHEL will reserve the right to recover the loss from the contractor as detailed below in case the damage/loss is due to negligence/ carelessness on the part of the contractor. In case of theft of material under contractor's custody, the same shall be reported to police by the contractor 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 contractor of his contractual obligation for the materials in his custody.	
32.4	In case the damage/loss/theft of materials are attributable to negligence/failure in discharging the duties and obligations of the contractor, 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 contractor.	
32.5	Other conditions of Insurance shall be as per relevant clause of GCC/SCC.	
33.0	COMPLETION PERIOD	
33.1	The package wise work of erection, testing and commissioning, up to handing over of unit shall be completed as per below mentioned schedule from the date of start of work (SOW) of respective package:	
33.1.1	TG & AUX PKG - UNIT #1 & COMMON SYSTEMS	
	19 months (Nineteen months)	
33.1.2	LP PIPE EXCLUDING CW & ACW PIPING	
	21 months (Twenty-One months)	
33.1.3	FGD- UNIT #1 & COMMON SYSTEMS	
	12 months (Twelve months)	
33.2	Successful bidder shall arrange to mobilize and start the erection work within 15 days from the date of written notice/ intimation by BHEL.	
33.3	The actual date of start of work of each package will be certified by Construction Manager, BHEL after adequate mobilization of manpower, T&P by successful bidder and availability of minimum fronts to start the works. This certificate date will be deemed as start of work of respective packages at site for the purpose of the contract time schedule.	
33.4	The work under the scope of contract will be deemed to be completed in all respects only when all the components are erected and trial runs, testing and commissioning of all individual equipment including trial operations of each unit with full load are conducted and handed over. The decision of BHEL shall be final and binding on successful bidder.	
34.0	CONSTRUCTION SCHEDULE	
34.1	Entire work shall be carried out in accordance with the broad schedule of this package as furnished below, within the stipulated completion period. This schedule will undergo review and based on progress vis-à-vis project requirement, successful bidder may have to submit revised schedule for approval of BHEL.	
34.2	Project Schedule for the subject job	
	Milestone	Project Schedule (From Start of Work)
34.2.1	TG & AUX PKG. (Unit # 1 & COMMON SYSTEMS)	
34.2.1.1	Condenser erection start	Within 15 days
34.2.1.2	TG erection start	Within 01 month
34.2.1.3	Erection of TG cycle piping	Within 06 months

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34.2.1.4	TG Box Up - (M1)	Within 10 months
34.2.1.5	TG Oil flushing completion	Within 11 months
34.2.1.6	TG on Barring gear – (M2)	Within 12 months
34.2.1.7	Synchronization with grid.	Within 14 months
34.2.1.8	Reliability Run	Within 16 months
34.2.1.9	Final completion	Within 19 months
34.2.2	FGD PKG. (Unit # 1 & Common System)	
34.2.2.1	Start of Work	Within 15 days
34.2.2.2	Readiness of FGD system for Light-Up of Unit # 1 (M1)	Within 8 months
34.2.2.3	Completion of erection & commissioning of FGD Unit # 1 & common system (M2)	Within 10 months
34.2.2.4	Final completion.	Within 12 months
34.2.4.	LP PIPING	
34.2.4.1	Start of erection	Within 15 days
34.2.4.2	Readiness For Boiler Light Up Unit#1 - (M1)	Within 08 months
34.2.4.3	Readiness For Synchronization Unit#1	Within 12 months
34.2.4.4	Readiness For Boiler Light Up Unit#2 - (M2)	Within 14 months
34.2.4.5	Readiness For Synchronization Unit#2	Within 19 months
34.2.4.6	Final completion	Within 21 months
34.3	Successful bidder shall plan their work in such a manner so as to meet the above construction schedule & project schedule, in consultation with BHEL/ customer. M1 & M2 are the intermediate LD milestone. Successful bidder shall submit detailed L1/ L2 schedule separately for each package after getting LOI from BHEL and prior to issuance of detailed work order.	
34.4	Successful bidder shall submit daily work program based on above construction schedule. Deferment of schedule is not acceptable, unless specifically called for by BHEL. Successful bidder will adhere to schedule and resource planning to be augmented to ensure completion as per schedule. Slippage from adherence to this schedule will attract penalty/ LD as per tender provision.	
34.5	Periodic progress reviews on the entire activities of execution in respect of supply & works in scope of successful bidder will be held once in a month at Kolkata/ site. These meetings will be attended by reasonably higher officials of the successful bidder and will be used as a forum for discussing all areas where progress needs to be speeded up. The successful bidder shall be further responsible for ensuring that suitable steps are taken to meet various targets decided upon such meetings. Review shall be done in applicable BHEL format (F-14 etc.) and shall have to be signed jointly by BHEL engineer and site incharge of vendor. This signed document shall form the basis for future delay analysis of the project.	
35.0	CERTIFICATE TOWARDS COMPLETION	
	The work under the scope of the successful bidder shall be deemed to have been completed in all respects only when so certified by BHEL/ owner. The decision of BHEL in this regard shall be final and binding on the successful bidder.	
36.0	EXTENSION OF TIME FOR COMPLETION	
36.1	If the completion of work as detailed in the scope of work gets delayed beyond the contract/ completion period, the successful bidder shall request for an extension of the contract and BHEL at its discretion may extend the contract.	
36.2	Based on the reviews jointly signed, the works balance at the end of original contract period less the backlog attributable to the successful bidder 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 successful bidder is bound to complete the portion of backlog attributable to the successful bidder. Any	

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	<p>further 'Time extension' or 'Time extensions' at the end of the previous extension shall be worked out similarly.</p>				
36.2	<p>However if any 'Time extension' is granted to successful bidder to facilitate continuation of work & completion of contract, due to backlog attributable to successful bidder alone, then it shall be without prejudice to the rights of BHEL to impose penalty/ LD for the delays attributable to successful bidder, in addition to any other actions BHEL may take at the risk and cost of successful bidder.</p>				
36.3	<p>A joint programme 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 successful bidder as per specified format. Review of the programme and record of shortfall shall be done.</p>				
36.4	<p>During the period of 'Time extension', successful bidder shall maintain their resources as per mutually agreed program</p>				
36.5	<p>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) Successful bidder, (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 successful bidder and recoverable from the dues payable to the successful bidder.</p>				
37.0	<p>INTEREST BEARING RECOVERABLE ADVANCE/ MOBILISATION ADVANCE Not applicable for this tender.</p>				
38.0	<p>OVER RUN CHARGES Applicable as per GCC subject to a minimum amount of USD 1,500/- and a maximum amount of USD 7,500 /- per month for each package (Considering respective start & completion dates).</p>				
39.0	<p>REVISION ON ACCEPTED CONTRACT RATE Not applicable in this tender.</p>				
40.0	<p>PRICE VARIATION CLAUSE/ ESCALATION Not applicable in this tender.</p>				
41.0	<p>EXTRA/ ADDITIONAL ITEMS OF WORK</p>				
41.1	<p>Extra/ additional work for all items/ systems, except for high pressure joints, shall be as per GCC.</p>				
41.2	<p>EXTRA/ ADDITIONAL ITEMS OF WORK FOR HIGH PRESSURE JOINT The following are all inclusive rates applicable for rectification/ modification/ rework involving welding of high pressure joints.</p>				
41.2.1	<p>Unit rate per equivalent water wall joint of size OD 63.5 mm x 6.3 mm thick.</p>				
41.2.2	<table border="1" style="width: 100%;"> <tr> <td colspan="2">Rate</td> </tr> <tr> <td>Type of material</td> <td>Average rate per joint (USD)</td> </tr> </table>	Rate		Type of material	Average rate per joint (USD)
Rate					
Type of material	Average rate per joint (USD)				
41.2.2.1	<table border="1" style="width: 100%;"> <tr> <td>Carbon steel</td> <td>3.00</td> </tr> </table>	Carbon steel	3.00		
Carbon steel	3.00				
41.2.2.2	<table border="1" style="width: 100%;"> <tr> <td>Alloy steel</td> <td>4.00</td> </tr> </table>	Alloy steel	4.00		
Alloy steel	4.00				
41.2.3	<p>The rates indicated above are firm and are not subject to any escalation during the contract period including extension if any, till the completion of work. Unit rates for welding are all inclusive but excluding scaffolding, joint preparation, cutting, edge preparation, welding and stress relieving, radiography with all consumables and tools and plants.</p>				
41.2.4	<p>For additional radiography, if so desired by BHEL, payment @ USD 0.10 per cm length of film (100 mm wide) exposed and accepted by site engineer, and further certified by site engineer that the length of film exposed is minimum required for carrying out the radiography, shall be paid.</p>				

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41.2.5	No PVC, rate revision, over run charge/ compensation is applicable for extra works.
41.2.6	In the event of any dispute regarding acceptance of any work as "EXTRA", the work has to be carried out by keeping man-hour and consumables record jointly signed with remark "for EHQ decision". Under no circumstances, the bidder can refuse to carry out such work with pre-condition, save and except of keeping daily record of category of man-hours and consumables spent for the particular job for further consideration by EHQ at Kolkata.
42.0	SECURITY DEPOSIT, PERFORMANCE BOND & FINAL BILL
42.1	Security deposit shall be applicable as per relevant clause of GCC (Volume-IB).
42.2	Performance bond is not applicable for the tender.
42.3	RELEASE OF SD BG AND FINAL BILL
	In addition to other provisions of tender regarding release of SD and final bill, following provisions shall also be governing to this tender.
42.3.1	For SD BG- further extension beyond date of acceptance of final bill will not be enforced if the following is fulfilled.
42.3.1.1	Successful bidder discharges their responsibility in r/o of submission of final bill along with absolute 'No Demand Certificate' and other documents as detailed below to the satisfaction of BHEL.
42.3.1.2	Joint protocol of set of documents as submitted as detailed in below is certified by site & successful bidder's representative.
42.3.1.3	There is no negative value of the final bill (after release of SD BG) - site to certify the same before release of SD BG.
42.3.1.4	Successful bidder has returned the property belonging to BHEL - site to certify the same before release of SD BG.
42.3.1.5	Successful bidder has submitted joint protocol against 'Delay analysis', if applicable for delayed execution of job.
42.3.2	List of documents to be submitted & jointly protooled indicating acceptance of final bill by BHEL.
42.3.2.1	Final bill.
42.3.2.2	Measurement for final bill signed, jointly signed by BHEL & successful bidder's representative.
42.3.2.3	Statement having cumulative joint measurement for the contract, jointly signed by BHEL & successful bidder's representative.
42.3.2.4	Claim by successful bidder for refund of security deposit.
42.3.2.5	Jointly signed material reconciliation statement.
42.3.2.6	Statement of payment received from BHEL – Bill wise (Including RA/ PVC/ ORC/ rate revision/ extra work).
42.3.2.7	No claim certificate by successful bidder.
42.3.2.8	Clearance certificates wherever applicable, viz clearance certificates from customer, various statutory authorities, like Labour Department, PF Authorities, Commercial Department, etc.
42.3.2.9	Notarized Indemnity Bond as per prescribed format.
43.0	TAXES, DUTIES, ETC
43.1	IMPORT DUTIES:
43.1.1	Bidder may please note that import for the project shall be in the name of our Employer / Owner of the Plant / Project and such import other than Office and Household Equipment shall be exempted from payment of Customs Duty, VAT & Supplementary Duty as per S.R.O-73 dtd. 19-03-1997. Also Regulatory Duty (RD), Advance Trade VAT (ATV) & AIT are exempted / not applicable. Any documentation needed for availing of Duty Free Imports will be submitted by the bidder in reasonable time having regard to the time for delivery of the work and the time for completion.

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43.1.2	However, if any of the taxes as mentioned above are paid by the bidder as per the extant law in force in Bangladesh, the same shall be reimbursed at actuals subject to production of documentary evidence in support of such payment. However, the bidder shall obtain prior approval of BHEL before deposition of such taxes.
43.1.3	Temporarily imported erection materials, machineries and spare parts during Construction period of Project are exempted from payment of Customs Duty and VAT. Such items shall be exported within six months from the commercial operation date. Documentation for the same to be submitted / maintained by the bidder.
43.1.4	Any Taxes for exporting material from source country & as applicable in the source Country shall be on bidder's account. However, bidder to take into consideration Duty Free Export Provisions in source country, as applicable, including that in GST in case of exports from India. As such, while offering the rates, the bidder may take into account the benefit of above provisions, as the cost of input to the bidder will be net of such taxes and adjust their offer price accordingly to make it more competitive.
43.2.0	BANGLADESH VAT
43.2.1	The Bidder shall submit copy of VAT registration Certificate (Musak-8), TIN, Certificate, Trade License to the BHEL site office immediately after receiving the Order but before raising the first Tax Invoice against this tender.
43.2.2	The subject job shall be a Construction Job. As per Section 6 (4aa) of The Bangladesh Value Added Tax Act, 1991, the bidder shall not collect VAT from BHEL as the Employer (i.e. Customer of BHEL) shall make deduction of VAT from BHEL's invoice and deposit the same to the Government Treasury. Documentary evidence shall be provided to the bidder.
43.2.3	Adequate documents for not charging/ claiming VAT from BHEL shall be made available to the Bidder.
43.2.4	The bidder shall raise Tax Invoice (Challan Patra) as per Rule 16(1) (Musak-11) of the Value Added Tax Rules, 1991 mentioning Name, Address and VAT Registration Number of BHEL site office.
43.2.5	Bidder shall note that the Tax Invoice complying with Rule16(1) of the Value Added Tax Rules, 1991 must contain the 'Bill to' and 'Ship to' details as below: BHEL Bangladesh VAT Regn. No. 000761853 Bharat Heavy Electricals Limited Power Sector Eastern Region, 2x660 MW Maitree Super Thermal Power Project Moidara Village, Rampal Upazila, Bagerhat District, Bangladesh
43.2.6	Bidders shall quote price excluding Bangladesh VAT envisaging VAT exemption on the same. In this connection, please note that VAT, if and as applicable, on Bidders Quoted Price and in case BHEL is unable to provide exemption documents shall be payable extra. In such case, bidder shall submit self-certified copy of the Treasury Challan and / or self-attested copy of the Current Account (Musak-18) along with the Tax Invoice as an evidence of payment of output tax claimed from BHEL.
43.2.7	Value Added Tax Deduction at Source: BHEL will not deduct any VAT from Bidder's Gross Bill and such bidder need not to load any Output VAT in Bidder's quoted price.
43.3	INCOME TAX DEDUCTION AT SOURCE:
43.3.1	Bidder should have valid 12-digit TIN number in Bangladesh prior to start of work. Advance Income Tax (AIT) under the Income Tax Ordinance,1984(and rules made thereunder) shall be deducted at prevailing rates on Gross Invoice value from the bills unless Exemption Certificate from the appropriate authority/ authorities is/ are furnished under Income Tax Laws of Bangladesh
43.3.2	Since payment shall be made in Bangladesh. Bangladesh Income Tax shall be

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	deducted, as is applicable.
43.3.3	The Bidder shall carry out their own tax diligence to get acquainted with the relevant rules and regulations of Bangladesh pertaining to the subject job.
43.3.4	The bidder is responsible for compliance of all relevant Tax Laws of Bangladesh and all other related places outside Bangladesh in connection with this contract and BHEL will not bear any such liability.
43.3.5	Except otherwise mentioned above bidder shall quote their rates/ price inclusive of all taxes, duties, Cess, any State or Central Levy, social security contribution and other Taxes in or outside Bangladesh (but excluding Bangladesh VAT) in line with provisions as mentioned above etc. together with variation thereto during contract period including extension, if any. BHEL shall not release any additional payment in this regard.
43.3.6	New tax & duties, if imposed subsequent to latest due date of offer submission, as per NIT & TCN, as applicable, by statutory authority after due date of submission of latest price offer and within the contract period including extension, if any (provided reason for extension is not attributable to vendor), shall be reimbursed by BHEL at actual on production of relevant supporting document to the satisfaction of BHEL. However, the vendor shall obtain prior approval from BHEL before depositing new taxes & duties. 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.
44.0	TERMS OF PAYMENT
44.1	Successful bidder shall submit RA bill once in a month at the end of each month. as per billing break-up of the tender. The measurement will be taken by BHEL engineer as per relevant clause of GCC and certify regarding the actual work executed in the measurement book and bills for work.
44.2	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, certified by BHEL; within 60 days of submission of the bill.
44.3	However no extra payment / interest charges shall be made in the event of deferment in payment.
44.4	For all items of work as per the break-up, interim payment shall be limited to 95 % of the gross value of interim bill. Balance 5 % shall be payable along with final bill. However, this 5 %, retained from each RA bill, may be released against submission of a separate bank guarantee as per Performance Bank Guarantee format, to be kept valid till final bill & guarantee period, subject to (i) Receipt of certificate that all works are completed in all respects; (ii) Reconciliation of materials/ T&P/ MMR; (iii) Completion of final bill formalities and (iv) Handing over to BHEL/ customer.
44.5	Out of above 95 %, 2.5 % of gross bill amount shall be paid in the following manner, on certification by BHEL engineer, after compliance of each of following activity in each month. In case of non-fulfillment of respective activity by successful bidder in each month, no payment shall be made by BHEL against corresponding activity and no claim of successful bidder, at a later date, whatsoever, in this regard will be entertained by BHEL.
44.5.1	0.5 % shall be paid on compliance of house-keeping of successful bidder's working area and store/ office areas.
44.5.2	0.5 % shall be paid on compliance of general illumination of successful bidder's working area and stores, office area.
44.5.3	0.5 % shall be paid on compliance of applicable OHSAS requirement as per guidelines of BHEL and as specified in the tender.
44.5.4	0.75 % shall be paid on compliance of applicable safety requirement as per guidelines of BHEL and as specified in the tender.

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44.5.5	0.25 % shall be paid on compliance of applicable security requirement as per guidelines of BHEL.	
44.6	Each RA bill shall accompany with latest agreed & jointly signed L-3/ construction schedule, as enumerated in this tender.	
44.7	All admissible recovery/ adjustment, etc. shall be made from interim payable amount.	
45.0	BIILING BREAK-UP	
45.1	Progressive payment, as per terms of payment provision of the tender, shall be made as per following billing schedule break-up, operated on contract rate/ price. The percentages of billing schedule are only for the purpose of progressive payments and should not be construed as price of individual items and successful bidder shall complete the work without any reference to the break up.	
45.2	Description of activity	Percentage allocated
45.2.1	Billing Break-up of SI. No. 1 (TG PKG) of Schedule-II of Price Schedule	
45.2.1.1	Condenser.	18.00%
45.2.1.2	Turbine.	15.00%
45.2.1.3	Generator.	10.00%
45.2.1.4	Static auxiliaries & accessories.	7.50%
45.2.1.5	Rotating auxiliary & accessories.	10.00%
45.2.1.6	Integral piping & TG piping.	15.00%
45.2.1.7	Common system equipment & auxiliaries.	1.50%
45.2.1.8	Erection of Misc. hoist & chain pulley block and other Misc. packages.	1.50%
45.2.1.9	Painting.	4.00%
45.2.1.10	Pre-commissioning & commissioning.	13.00%
45.2.1.11	PG test.	1.50%
45.2.1.12	Liquidation of pending points.	2.00%
45.2.1.13	Handing over of the unit to BHEL/ owner.	0.50%
45.2.1.14	Reconciliation of issued materials.	0.50%
	TOTAL	100.00%
45.2.2	Billing Break-up of SI. No. 2 (FGD PKG) of Schedule-II of Price Schedule	
45.2.2.1	Completion of pre-assembly	15.00 %
45.2.2.2	Placement in position	25.00 %
45.2.2.3	Alignment, welding, grouting & bolting as required	35.00 %
45.2.2.4	Completion of non-destructive examination & stress relieving/ heat treatment	10.00 %
45.2.2.5	Pre-commissioning & commissioning.	7.00 %
45.2.2.6	Finish painting	5.00 %
45.2.2.7	Submission of as-built drawings	0.50 %
45.2.2.8	Liquidation of pending points	2.00 %
45.2.2.9	Reconciliation of issued materials	0.50 %
	Total	100.00%
45.2.3	Please refer price schedule for billing break-up of LP Piing works.	
45.3	Out of above break up for progressive payment, 5% will be retained from each RA bill and will be released on completion of guarantee period. However, this 5% payment can be released against submission of performance bank guarantee valid for the guarantee period as stated above in prescribed proforma subject to receipt of certificate that all works are completed in all respects. Submission of bank guarantee towards performance guarantee is separate and the bank guarantee towards security deposit cannot be utilized for this purpose. The security deposit will be refunded as per GCC.	
45.4	BHEL, at their discretion, may further split up above percentages and effect payment	

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	to suit the site condition, cash flow requirement and according to the progress of work.
45.5	The billing break-up is drawn for progressive payment and shall not be construed as the value/ price of corresponding item, unless otherwise decided by BHEL.
46.0	RETENTION AMOUNT
46.1	Shall be as per as per terms of payment/ billing schedule of this volume.
46.2	No retention will be effected on successful bidder's bills for extra/ additional item of works.
47.0	LIQUIDATED DAMAGE
47.1	If the successful bidder fails to complete entire scope within completion period, for reasons attributable to them, BHEL shall have the right to recover as liquidated damages (LD) a sum equivalent to 0.5 % of contract price, including taxes, duties, etc., for delay of each week or part thereof.
47.2	INTERMEDIATE LD
47.2.1	Package wise intermediate LD milestones (M1 & M2) have been defined as per clause no. 34.0 . In case of slippages of these milestones, delay analysis shall be carried out on achievement of each of these two intermediate milestone.
47.2.2	In case delay in achieving M1 Milestone is solely attributable to the contractor, 0.5% per week of executable contract value*, limited to maximum 2% of executable contract value, will be withheld.
47.2.3	In case delay in achieving M2 Milestone is solely attributable to the contractor, 0.5% per week of executable contract value*, limited to maximum 3% of executable contract value, will be withheld.
47.2.4	Amount already withheld, if any against slippage of M1 milestone, shall be released only if there is no delay attributable to contractor in achievement of M2 Milestone.
47.2.5	Amount required to be withheld on account of slippage of identified intermediate milestone(s) shall be withheld out of respective milestone payment (if any) and balance amount (if any) shall be withheld @10% of RA Bill amount from subsequent RA bills.
47.2.6	Final deduction towards LD (if applicable), on account of delay attributable to contractor shall be based on final delay analysis on completion / closure of contract. Withheld amount, if any due to slippage of identified intermediate milestone(s) shall be adjusted against LD or released as the case may be.
47.2.7	In case of termination of contract due to any reason attributable to contractor before completion of work, the amount already withheld against slippage of intermediate milestones shall not be released and be converted into recovery.
47.2.8	* Executable Contract Value - Value of work for which inputs/ fronts were made available to contractor and were scheduled for execution till the date of achievement of that milestone
47.3	The total liability for delay shall not in any case exceed 10 % (Ten percent) of the contract price, including taxes, duties, etc. Contract price for this purpose, shall be the final executed value exclusive of ORC, extra work executed, supplementary/ additional items and PVC.
47.4	BHEL shall deduct aforesaid amounts from any money due or which may become due to the successful bidder and/ or recover from the bank guarantees/ security deposit of the successful bidder. To be entitled to impose such compensation/ penalty/ recovery, BHEL will not be required to prove that they have incurred such amount as actual damage.
47.5	BHEL reserve the right to complete the job through other resource on account of and at the risk & cost of successful bidder without notice to successful bidder of the work not so executed, without cancelling the order/ contract in respect of the work not yet due for completion.

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47.6	BHEL reserve the right to cancel the order/ contract or a portion thereof for the work not so completed at the risk & cost of the successful bidder and the successful bidder shall be liable to BHEL for any excess costs thereof.
47.7	The successful bidder shall continue with performance of the order/ contract under all circumstances, to the extent not cancelled.
47.8	Where action is taken as per above, the successful bidder shall be liable for any loss, which BHEL may sustain on that account. The successful bidder shall not be entitled to any gain on such action and the manner & the method of such purchase shall be at the discretion of BHEL. It shall not be obligatory on the part of BHEL to serve a notice of such completion, through other resource, on successful bidder.
47.9	Other provision shall be as per the GCC.
48.0	GUARANTEE
48.1	Even though the work will be carried out under supervision of BHEL, the successful bidder will be responsible for the quality of workmanship, quality of materials/ items and design for which the successful bidder is responsible.
48.2	The successful bidder shall guarantee the work executed under the scope of the contract for a period of 24 (Twenty-Four) months from the date of start of guarantee period as certified by the engineer and shall rectify free of cost all defects due to faulty supply or work done. In case the successful bidder fails to repair/ replace the defective works within the time specified by the engineer, BHEL may proceed to undertake the repairs/ replace such defective works at successful bidder's risk & cost without prejudice to any other rights and recover the same from security deposit/ other dues.
48.3	The guarantee period will commence from the date of handing over of respective unit to customer or six months after completion of full load operation of respective unit, whichever is earlier, provided, all erection, testing and commissioning works are completed in all respect for respective unit.
48.4	Other provision shall be as per the GCC.
49.0	CUSTOM CLEARANCE
49.1	The successful bidder shall be responsible for Bangladesh customs clearance of all materials, supplies, equipment, tools and other articles shipped into Bangladesh by him for the implementation of his works, including the food and the personal effects of the Successful bidder's personnel.
49.2	All payment for clearance charge, storage charge, etc. which are imposed by the relevant agencies of the Government of Bangladesh, relating to the clearance of equipment, materials and Plant that will be incorporated in the Permanent Works or relating to the Temporary Works shall be borne by the Successful bidder. Further, if the Successful bidder is delayed in submitting necessary shipping documents to the Employer, the demurrage charges by the Port Authority will be borne by the Successful bidder.
49.3	Tools and equipment and other equipment of the Successful bidder for use during construction but which are to remain the property of the Successful bidder and which are to be exported by the successful bidder from Bangladesh at the completion of the Work shall be carefully documented and specially listed to facilitate both import and export. The Successful bidder shall determine prior to shipment the customs regulations applicable to this special case as well as normal import rules and regulations applicable. The Successful bidder shall also be responsible for inland transport by barge/ truck/train to the Site.
50.0	IDENTIFICATION OF CONTRACTOR'S EMPLOYEES, VEHICLES AND BUILDINGS
50.1	The Contractor shall provide each of his employees and his Subcontractor's employees with a name tag bearing the picture, the name or initials of the employee,

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	a serial number and the name of the Contractor. Each employee shall wear his badge visibly to the security personnel at any time.
50.2	All vehicles and large equipment furnished and used by the Contractor or his Subcontractors on the Work shall be clearly marked with the Contractor's or Subcontractor's business name. The Contractor's offices, stores, depots and other facilities shall also be clearly identified. The detailed requirements are defined in the Safety Health and Environmental (SHE) Plan to be provided by the Contractor.
50.3	The Contractor shall be liable for and shall provide all aspects of security and security measures for the Site, Employer's site offices and Employer's living accommodation, including guard services, transfer organizations and transport etc.
50.4	Around-the-clock security presence and operational routine shall be maintained throughout the year. Passes and temporary identification permits shall be issued and examined and access to any part of the Site, the site offices and living accommodation shall be controlled and limited to those who have an authorization.
51.0	EXPATRIATE PERSONNEL
51.1	The Contractor shall submit to BHEL / Employer data of all personnel he intends to bring into Bangladesh for the performance of the Work. This data shall include the name and present address of each person, his intended assignment and responsibility in connection with the Work and a concise resume of his experience in the type of work to which he will be assigned. This data shall be submitted to the BHEL / Employer at least thirty (30) days prior to their expected arrival in Bangladesh.
51.2	Any expense associated with illness of the Contractor's personnel, including replacement thereof, shall be to the Contractor's account.
51.3	Costs of passports, visas, travel documents, inoculations and other incidental expenses incurred by the Contractor's non-Bangladesh employees and their dependents occasioned by travel to and from Bangladesh shall be borne by the Contractor.
51.4	All accommodations and amenities for the Contractor's personnel and families (including all staff and labour) must be provided by the Contractor, and BHEL / Employer shall not have any liability for the same.
52.0	BANK DETAILS
52.1	<p>EMD, Tender cost, & Security Deposit amount, as applicable, can also be submitted directly by Foreign Bidders (other than Indian bidders) to the followings Bharat Heavy Electricals Limited bank account in Bangladesh-</p> <p><u>SBI (Branch Address):</u></p> <p>Dr. Motiar Rahman Tower, 64 KDA Avenue, Tetultola Mor, Shibbari Khulna City Corporation, Khulna-9100. Phone: 88-041-721338 (Direct), 88-041-2831345 Ext. 102 Cell: 8801716-138627, Fax: 88-041-733350.</p> <p><u>A/C No (USD): 05620257520202</u> <u>A/C No (BDT): :05620257520201</u></p> <p><u>SWIFT: SBINBDDH056</u></p> <p><u>ROUTING NO: 220471543</u></p> <p>BHEL's address in Bank A/c- Bharat Heavy Electricals Ltd., Rampal, Bagerhat,</p>

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	Bangladesh.
52.2	EMD, Tender cost, & Security Deposit amount, as applicable, can also be submitted directly by Indian Bidders to the followings Bharat Heavy Electricals Limited bank account in India- 1. SBI (Branch Address:-Commercial Branch, Salt Lake, Sector V, Kolkata, Branch Code SBIN0004289), A/C No. 11107800029, INR Account.
53.0	LAWS AND REGULATIONS
53.1	The Successful bidder agrees and acknowledges that:
53.1.1	He and their respective employees, servants, consultants and agents abide by all Applicable Law, (i) relating to the performance of the Work; (ii) by all rules and regulations of those Governmental Authorities who have control or jurisdiction over the Site or the countries where the Successful bidder may reside or perform work, directly or indirectly under this Contract (including the timely payment of any and all fees, assessments, or other governmental charges and registrations with relevant agencies or other Governmental Authorities required in connection therewith) and; (iii) with the terms and conditions of any Authorizations.
53.1.2	Successful bidder represents that it is fully aware of all of the Applicable Laws, terms and conditions of any Authorizations, business practices and plant rules and regulations which must be complied with when performing the Work.
53.1.3	Successful bidder shall furnish to Employer and Engineer, promptly upon request, such information concerning Successful bidder, their respective employees, consultants, servants and agents as the Employer or Engineer may be required to furnish to any applicable Governmental Authority.
53.2	Without prejudice to the generality of the foregoing:
53.2.1	The Successful bidder shall observe, comply with and respect Bangladesh laws, rules and regulations and shall not interfere with Bangladesh political or religious affairs either directly or indirectly.
53.2.2	The Successful bidder shall comply with such other rules and regulations as Employer and the Engineer may establish from time to time with respect to the construction work and personnel employed by the Successful bidders provided such rules and regulations shall not modify any of the Contract.
53.2.3	The Successful bidder shall, in all dealings with its labor, pay due regard to all recognized festivals, official holidays, religious or other customs and all local laws and regulations pertaining to the employment of labor.
53.2.4	The Successful bidder shall not give or barter or otherwise dispose of, to any person or persons, any arms or ammunition of any kind, or permit the same as aforesaid.
53.2.5	In the event of any outbreak of illness of an epidemic nature the Successful bidder shall comply with and carry out such regulations, orders and requirements as may be made by the Government of the People's Republic of Bangladesh or the local medical or sanitary authorities, for the purpose of dealing with and overcoming the same.
53.3	Compliance
53.3.1	Successful bidder shall ensure that its employees, servants, consultants and agents abide by all Applicable Law, relating to the performance of the Work and by all rules and regulations of those Governmental Authorities and persons who have control or jurisdiction over the Site (including the timely payment of any and all fees, assessments, or other governmental charges and registrations with relevant agencies or other Governmental Authorities required in connection therewith) and with the terms and conditions of any Authorizations.

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53.3.2	Successful bidder represents that it is fully aware of all of the Applicable Laws, terms and conditions of the Authorizations, consents, business practices and plant rules and regulations which must be complied with when performing the Work.
53.3.3	Successful bidder shall furnish to the BHEL / Employer, promptly upon request, such information concerning its employees, consultants, servants and agents as BHEL / Employer may be required to furnish to any applicable Governmental Authorities.
53.4	Related Compliance Obligations
53.4.1	The Successful bidder shall Take all reasonable care that the Work is performed with the minimum possible impact on the environment and local community in respect of land and occupants affected by or adjacent to the Work.
53.4.2	The Successful bidder shall have responsibility prior to Provisional Acceptance Certificate for administration and co-ordination with the Governmental Authorities, as necessary, of any testing or the taking of any other action necessary to demonstrate the Work's compliance with all Applicable Laws, as well as the Authorizations, Consents, as maybe required for or issued in connection with the development, construction, erection and operation of the Works.
53.4.3	The Successful bidder shall provide BHEL / Employer with a copy of all communications with any such authorities and at least five (5) days prior written notice to BHEL / Employer in respect of any meeting with any such authorities (with Successful bidder responsible for obtaining all necessary permissions for the attendance of a representative of BHEL / Employer at any such meeting).
53.4.4	The Successful bidder shall carry out its obligations under this Contract so as not to cause or contribute to any breach by, or violation of, Employer of any Applicable Law, consent or Authorization.
53.5	Permits and Licenses
53.5.1	Successful bidder shall obtain and maintain all consents, permits and licenses (" Consent ") which are required by Applicable Law for the performance of the Work and to allow Successful bidder to perform and complete the Work in accordance with the Contract Schedule (irrespective of whether the same are required to be procured in the name of Successful bidder or Employer), other than the Authorizations.
53.5.2	Specifically, where an Consent by its very nature can only be procured by the Employer (BIFPCL), the Employer shall at the Successful bidder's request, execute such documents and complete such formalities as are necessary for presentment of the application or other Consent related documents to the relevant Governmental Authority or other person. However, the foregoing shall in no circumstances be construed as (i) relieving the Successful bidder from his obligations under Clause 23.3.1 for which he shall remain primarily and fully responsible, or (ii) as imposing any responsibility on the Employer in respect of procurement of consents/ licenses/ approvals/ permits other than the Authorizations.
53.5.3	If requested by Successful bidder, BHEL / Employer shall provide reasonable assistance to Successful bidder in obtaining and maintaining such Consents. Successful bidder shall not be entitled to any adjustment to the Contract Schedule or the Contract Price or any other terms of this Contract relating to any delay or failure to obtain or maintain any such Consents. Employer /BHEL will provide reasonable assistance to the Successful bidder for obtaining any required authorization and export licenses for exporting tolls, equipment, test equipment, and other Successful bidder's Equipment, all of which are and remain the property of the Successful bidder, from Bangladesh at the conclusion of the Work.
53.6	SUCCESSFUL BIDDER'S RESPONSIBILITY TO GET ACQUAINTED WITH

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	BANGLADESH LAWS, IMPORT POLICY, ETC. The Successful bidder shall get himself acquainted with the relevant Bangladesh Laws as well as the import policy of the Government of People's Republic of Bangladesh remaining in force regarding import of banned items, if any, during the execution of the Contract. In case of import of any banned items and/or contraband item, the consequential liability shall rest with the Successful bidder. Similarly the Successful bidder shall be responsible for any non-conformance of Bangladesh Laws either by its own employees during execution of the Contract.
54.0	CONTRACT PRICE
54.1	The bidder shall quote their rates strictly in accordance with prescribed price schedule of Volume-III (latest version). The total price quoted in Price Schedule, Volume-III, shall be considered for evaluation & awarding.
54.2	Based on the total quoted price and the weightage of individual packages, separate orders shall be placed for: a. TG & AUX PKG - UNIT #1 & COMMON SYSTEMS b. FGD SYSTEM - UNIT #1 & COMMON SYSTEMS c. LP PIPE
54.3	Following clauses are applicable for TG portion of contract:
54.1.1	The bidder shall quote their rates strictly in accordance with prescribed price schedule of Volume-III (latest version).
54.1.2	The quantities/ weights mentioned in weight schedule/ equipment description is approximate only and given to facilitate bidder to make assessment of magnitude of work of the tender. These are liable to variations as per design consideration. The quoted/ accepted rates/ price shall remain firm for variation in weights for items under rate schedule and no revision of rates/ price will be entertained for increase in weight of these items, except for TG & misc. piping of relevant annexure.
54.1.3	The quoted rate/ price shall remain firm for variation upto +/- 20% in the weight for TG & misc piping, as specified in relevant section of tender. If the variation in actual erected tonnage of TG & misc piping exceeds variation limit of +/- 20%, payment/ recovery for the differential tonnage will be made in the final bill at the rate of \$275 (USD) per MT for CS & alloy steel piping."
54.1.4	Omission of specific reference to any method and equipment, system or material necessary for proper and efficient services towards installations of the plant shall not relieve successful bidder of the responsibility of providing all services/ facilities to complete the work or portion of the work awarded to them. The quoted/ accepted rate/ price shall deem to be inclusive of such contingencies. Only exclusion specifically mentioned in this tender shall be entertained in all matters.
54.2	For FGD portion of the contract, following clauses are applicable
54.2.1	This shall be an item rate contract and paid on tonnage basis for the actual item weight erected.
54.2.2	The item/PGMA wise Category / Group distribution, indicated in the tender as per weight schedule, is tentative and in case of any discrepancy, BHEL Site CM/GM's decision in this regard shall be final.
55.0	OTHER TERMS
55.1	The contractor shall provide signed ' <i>Certificate of Declaration for Confirming the Knowledge of Site Conditions, Laws and Regulations</i> ' as per attached format on its letter head along with the offer.
55.2	Applicable Law or Law with respect to any person, shall mean any law, legislation, statute, act, by-laws, rule, regulation, ordinance, order, decree, protocol, notification, policy, by-law, administrative guideline, ruling, instruction, directive, code, requirement, consent, license, approval, permit, judgment, court order, treaty or any

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	interpretation thereof by any Governmental Authority or person acting under the authority of any Government Authority and / or of any statutory authority, whether in effect as on the Contract Date or thereafter, as applicable to such person.
55.3	Customer shall mean the Bangladesh –India Friendship Power Company (Pvt.) Limited (BIFPCL), having its office at Level 17, Barak Unique Height, 117, Kai Nazrul Isam Avenue, Eskaton Garden, Dhaka, Pin 1217, Bangladesh.
55.4	Engineer or Consultant shall mean M/s. FICHTNER GmbH & Co. KG, Stuttgart, Germany or such other engineer or consultant, as may be appointed from time to time by Customer and who is acting on behalf of Customer as Engineer for the purpose of the Contract with Customer and includes such other person (if any) to who the Engineer's authority may have been lawfully delegated pursuant to the Contract with Customer.
55.5	Governmental Authority shall mean, in respect of a country, the government (Central, State and local) or any ministry, directorate, department or political sub division thereof and any person exercising executive, legislative, judicial, regulatory or administrative functions of or pertaining to government or law or any other governmental entity, instrumentality, agency, authority, corporation, committee or commission under the direct or indirect control of any such government.
55.6	Site means the Project Site at Rampal, District Bagerhat, Bangladesh, all off-site and lay down areas, jetty, intake water system, ash dyke and other locations where all or any part of the work is to be executed under the scope of work of BHEL in accordance with the Contract with Customer.
55.7	The Contractor shall provide and employ in connection with the execution of the Works :
55.7.1	Only such technical assistants as are skilled and experienced in their respective trades and such sub-agents, foremen and leading hands as are competent to give proper supervision to the Work they are required to supervise.
55.7.2	Such skilled, semi-skilled and unskilled labour as is necessary for the proper and timely execution of the Works. To the extent possible, the Contractor shall deploy unskilled labour from the local populations.
55.7.3	Child Labour: The Contractor shall not employ any child to perform any work that is economically exploitative, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development in compliance with the applicable labor laws and other relevant treaties ratified by the government.
55.7.4	<u>Working Time:</u> No work shall be done on legal Bangladesh holidays or at times other than the regularly established working hours without the written approval of BHEL/ Owner (BIFPCL) and/ or Engineer (Fichtner), which shall not be unreasonably withheld. However, work necessary in case of emergencies or for the proper case, receipt, unloading, transporting, maintenance, and protection of equipment or finished work may be done without prior approval. This requirement shall not preclude the Contractor's use of scheduled overtime work and such work may be established by the Contractor, as a regular procedure, with the written permission of BHEL/ Owner (BIFPCL) and/ or Engineer (Fichtner); such permission, however, may be revoked at any time by BHEL/ Owner (BIFPCL) and/ or Engineer (Fichtner) if the Contractor fails to maintain adequate equipment and supervision for proper execution and control of the Work and all operations performed there under.
55.7.5	The Contractor shall comply with all applicable relevant labour Laws including the Bangladesh Labour Act 2006 and the Bangladesh Labour Rules 2015 to the Contractor's personnel relating to their employment, health, safety, welfare,

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	immigration and shall allow them all their legal rights.
55.7.6	The Contractor shall be responsible for obtaining all necessary permits(s) and /or visa(s) from the relevant Governmental Authorities for the entry and deployment of employees, representatives, labour, consultants and other personnel to be employed on the Site into the country where the Site is located, and otherwise for ensuring all due compliance with Applicable Laws with respect thereto.
55.7.7	The contractor shall arrange passports for all his employees, representatives, labour, consultants and other personnel. BHEL will assist Contractor for issue of Visa including multi-entry visa and other permits as per requirement for the job/Work. However, the Contractor shall arrange for attestation of certificates and other documents required for travel arrangements, medical test as applicable and comply with other formalities. All expenses for all these activates will be borne by the Contractor.
55.7.8	It shall be the responsibility of the Contractor to pay wages/ salaries and other benefits to its employees / personnel engaged by it as per the agreement with them, and in keeping in line with the Local laws in Bangladesh. The Contractor shall submit the Construction Manager, BHEL Maitree Project, Bangladesh regularly, the details / Statement of wages/ salaries and other benefits paid to its employees / personnel in India /Back home, besides wages / salaries and other benefits paid in Bangladesh.
55.7.9	The Contractor, in particular, shall provide proper accommodation to his labourers and arrange proper water supply, conservancy and sanitation arrangements at the site for all necessary hygienic requirements and for the prevention of epidemics in accordance with relevant regulations, rules and orders of the government.
55.7.10	The Contractor, further in particular, shall pay applicable wages to his labourers, and pay them in time. In the event of delay in payment BHEL may effect payments to the labourers and recover the cost from the Contractor.
55.7.11	The Contractor shall at all times during the progress of the Contract use its best endeavour to prevent any unlawful, riotous or disorderly conduct or behaviour by or amongst its employees, representatives, labour, consultants and other personnel.
55.7.12	The Customer and / or Engineer or BHEL after notifying and discussion with the Contractor, be entitled to object to and require the Contractor to remove forthwith from the Work any person employed by the Contractor in or about the execution of the Work who in the opinion of the Customer and / or Engineer or BHEL misconduct himself or is incompetent or negligent in the proper performance of his duties or whose employment is otherwise considered by the Employer and / or Engineer to be undesirable and such person shall not be again employed upon the Work without the written permission of the Customer and / or Engineer or BHEL. Any person so removed form the Work shall be replaced immediately by a competent substitute approved by Customer and / or Engineer or BHEL.
55.7.13	All employees or representatives engaged by the Contractor in connection with the performance of the Contract shall be under the complete control of the Contractor and shall not be deemed to be employees of the BHEL or Customer , and nothing contained in the Contract shall construed to create any contractual relationship between any such employees, representatives and BHEL or Customer.
55.8	Indemnification : Contractor shall protect, defend, indemnify and hold the Customer, the Engineer, BHEL (and their respective officers, directors, employees, servants or agents) (the "Indemnified Persons") harmless from and against:
55.8.1	Any and all Losses arising directly or indirectly from or incurred by reason of the acts or omissions of any of Contractor or any of their respective officers, directors, employees, servants or agents in the performance of Contractor's obligations under the Contract, without limitation, whether or not resulting from any defect in or condition of the premises on which the Work is or is to be performed or any

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	equipment thereon, including any such Losses arising from injury to or death or damage to or loss of property.
55.8.2	Any and all Losses arising directly or indirectly from or incurred by reason of claims or sanctions or penalties imposed by any Governmental Authorities or others for any actual or asserted failure by any of Contractors or any of their respective officers, directors, employees, servants or agents to comply with any Applicable Law or Authorizations or Consents or with any rules and regulations applicable to it or them or to obtain or maintain any Consents.
55.8.3	Any and all Losses arising directly or indirectly from or incurred by reason of any failure of Contractor:
55.8.3.1	To pay any Taxes relating to income or any other Taxes required to be paid by such person;
55.8.3.2	To make any payments in respect of Taxes which are to be paid by such Person in connection with the performance of its obligations relating to this contract or, in the case of the Contractor, any Taxes which it is required to pay pursuant to the terms of this Contract.
55.8.3.3	To file tax returns as required by Applicable Laws or comply with reporting or filing requirement under Applicable Law relating to Taxes; or nothing in this clause shall restrict any person's right to contest the amount of any tax or other liability owned to a competent authority provided such contest is bona fide and made in good faith;
55.8.4	Any and all Losses arising directly or indirectly from or incurred by reason of hazardous materials introduced to the Site or any other location by any of other location by Contractor or any of their respective officers, directors, employees, servants or agents in t the performance of the Work;
55.8.5	Any and all Losses arising directly or indirectly from or incurred by reason of non-compliance with Applicable Laws by the Contractor or any of their respective officers, directors, employees, servants or agents including , without limitation , labour laws; and
55.8.6	Any and all Losses arising directly or indirectly from or incurred by reason of any accident or injury to any workman or other person in the employment of the Contractor.
55.8.4	Contractor Obligation to Ensure
55.8.4.1	The Contractor shall appropriately insure against such liability in compliance with all Applicable Law and shall continue such insurance during the whole of the time that any persons are employed by him/it on the Work and shall provide BHEL, Customer or Engineer with a copy of such policy of insurance and the receipt of payment of the current premium or evidence that it has complied with the Applicable Law in this regard.
55.8.4.2	All accidents shall be reported by the Contractor directly to the appropriate Governmental Authority as per Applicable Law remaining in force.
55.8.4.3	Automobile Liability Insurance: Covering use of all vehicle use by the Contractor or its Subcontractors (whether or not owned by them) in connection with the execution of the Contract.
55.8.4.4	Workers' Compensation: In accordance with the statutory requirements under Applicable Laws. The minimum insurance cover for personal injury or death insurance for the Contractor's employees is as per the law and common practice in Bangladesh.
55.9	Laws and Regulations : The contractor agrees and acknowledges that :
55.9.1	Contractor shall and shall ensure their respective employees, servants, consultants and agents abide by the all Applicable Law, (i) relating to the performance of the Work and (ii) by all rules and regulation of those Governmental Authorities who have control or jurisdiction over the Site or the countries where the Contractor may reside

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	or perform work, directly or indirectly under this Contract (including the timely payment of any or all fees, assessments or other governmental charges and registrations with relevant agencies or other Governmental Authorities required in connection therewith) and (iii) with the terms and conditions of any Authorizations.
55.9.2	Contractor represents that it is fully aware of all the Applicable Laws, terms and conditions of any Authorizations, business practices, plant and project Site rules and regulations which must be complied with when performing the Work.
55.9.3	Contractor shall furnish to BHEL, Customer and Engineer, promptly upon request, such information concerning contract and their respective employees, consultants, servants and agents as BHEL or Customer or Engineer may be required to furnish to any applicable Governmental Authority.
55.10	SIGN BOARDS
	<p>The Contractor shall provide one project/Work profile sign board for each site of the size not exceeding 1 m x 2 m, and maintain them in good condition. All information on the signboards will be written in English and Bengali. The signboards will be positioned on a steel frame as directed by the BHEL or Customer or Engineer. The Contractor shall submit proposals for the materials of the signboards, the text layout (in English and Bengali) on an approved yellow background and installation of the signboards on Site to BHEL for approval. Each sign board shall show:</p> <ul style="list-style-type: none"> a) the name of the Work b) the name of the Contractor c) all other details as required by the BHEL or Customer or Engineer <p>The Contractor shall maintain the sign boards and remove them on completion of the Works or when instructed by the Engineer</p>
55.11	Without prejudice to the generality of the foregoing :
55.11.1	The Contractor shall observe, comply with the respect Bangladesh Laws, rules and regulation and shall not interfere with Bangladesh political or religious affairs either directly or indirectly.
55.11.2	The Contractor shall comply with such other rules and regulation as Customer and Construction Management may establish from time to time with respect to the Construction work and personnel employed by the Contractors provided such rules and regulation shall not modify any of the Contract.
55.11.3	The Contractor shall, in all dealings with its labour employed on or connected with the Contract, pay dues regard to all recognized festivals, official holidays, religious or other customs and all local laws and regulation pertaining to the employment of labour.
55.11.4	The Contractor shall not give or barter or otherwise dispose of, to any person or persons, any arms or ammunition of any kind, or permit the same as aforesaid.
55.11.5	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 of the People's Republic of Bangladesh or the local medical or sanitary authorities, for the purpose of dealing with and overcoming the same.
55.12	Change in Laws and Regulation: Any law, regulations ordinance, order or by laws having the force of law is enacted, promulgated, abrogated, or changed in Bangladesh, which shall be deemed to include any change in interspersion of application by the Competent Authority.
55.13	While bidder's scope include deployment of all resources, like T&P, materials, consumables, manpower including supervision etc for proper completion of the subject job and no sub-contracting for execution of the job is allowed by BHEL, depending on project's requirement and on prior acceptance of BHEL, bidder may associate agencies for deployment of skilled/ un-skilled manpower only for site

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	execution. Bidder should arrange all resources, like T&P, materials, consumables, supervision etc directly for the subject job.
55.14	Drawings issued, if any, are for tender purpose only. No additional financial implication will be entertained by BHEL at a later date on account of any alteration to this.
55.15	Successful bidder shall provide temporary barricade all around the working area to avoid any untoward incident, as per guideline of customer.
55.16	Successful bidder shall strictly comply with the HSE guidelines of BHEL & customer and follow the Access Control System regarding security aspect of the project.
55.17	Any other non-conformity noticed w.r.t. customer's guidelines, but not listed in the tender, will also be fined. Decision of BHEL in this regard is final & binding on successful bidder. For this purpose, it is prudent that bidder visit site prior to offer submission and get acquainted with local environment, customer's guideline, etc. No claim successful bidder, whatsoever, at a later date will be entertained by BHEL. The amount will be deducted from bills of the successful bidder. The amount collected on the above will be utilized for giving award to the employees of various agencies working at site who could avoid accidents by following safety rules and for improving the safety at site. Such award will be decided by the committee consisting of employees of agencies working within the project and be awarded in presence of BHEL representative.
55.18	Successful bidder shall submit indemnity bond after receipt of LOI towards indemnifying BHEL of non-fulfillment of any statutory payments to authorities as per prescribed format in line with customer's format.
55.19	The successful bidder shall make arrangement at their own cost for necessary access to the work site from common access road.
55.20	The security and safety laws/ guidelines as applicable from time to time shall have to be strictly followed by the successful bidder. For this purpose, it is prudent that bidder visit site prior to offer submission and get acquainted with local environment, customer's guideline, etc. No claim successful bidder, whatsoever, at a later date will be entertained by BHEL.
55.21	For materials supplied by the successful bidder for the project, entry gate pass duly signed & stamped, as per guidelines of the project, to be submitted positively for record purpose.
55.22	No announcements, press releases, handouts or photographs for publication etc. relating to this agreement/ purchase-order/ work-order or any part of the Supply/Work shall be issued or released without BHEL's prior written approval.
55.23	Duly filled & Signed, BHEL Evaluation Report (Customer Approval Format) as per attached format to be submitted by the bidders alongwith their offer.
55.24	EXIM Bank undertaking as per attached format to be furnished by the bidder along with their offer.
55.25	All other term & conditions of this specification shall be governed by the pertinent provisions of GCC and other volumes of this tender, as applicable.

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ANNEXURE – I

LIST OF T&P TO BE PROVIDED BY BHEL ON SHARING BASIS FREE OF HIRE CHARGE

SL NO	DESCRIPTION & CAPACITY OF T&P	QTY	REMARKS
1.0	EOT crane in TG hall (Capacity 200T/ 20T as installed)	1 no., as per availability	For handling and erection inside TG hall. Second EOT crane shall be for unit#2 erection. However for tandem operation and other usage, it may be allotted for use by BHEL.
2.0	EOT crane in BC Bay (Capacity 28T or as installed)	1 no. (If available)	Operation and maintenance (both mechanical & electrical) of the crane along with arrangement is included in successful bidder's scope.
3.0	EOT crane in CW Pump House (Capacity 55/10T or as installed)	1 no. (If available)	Operation and maintenance (both mechanical & electrical) of the crane along with arrangement is included in successful bidder's scope.
4.0	Above 80T capacity crawler /tyre mounted crane(s)	1 no., as per availability	As per requirement for any item under this contract which cannot be handled by cranes upto 80MT.
5.0	Special T&P as supplied by BHEL's manufacturing units	2 set	For erection, commissioning of TG & aux. In case T&Ps get damaged/ lost, same shall be replaced/ made good by successful bidder before returning to BHEL/ owner.
6.0	High capacity hydro-test pump (400 kg/ sqcm or above)	1 no	For hydro-test of power cycle piping, De-aerator / FST etc.
7.0	Loads like plate, block, etc	As required	For load testing of different hoists & lifting equipment. However, successful bidder has to arrange for required shifting & handling arrangement on their own for issuing from BHEL/ owner's store and returning to BHEL/ owner's store.
8.0	Industrial Blower	As required	As required

NOTE	
1.0	Successful bidder shall note that since above T&Ps will be used by various agencies at site, can be issued depending on availability & as per direction of BHEL. Terms of issue shall be as specified in the tender.
2.0	BHEL shall provide above T&P to the successful bidder in running condition. However, for all T&P except cranes, operation and maintenance including supply of spares, if required, shall be in the scope of the bidder.

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ANNEXURE – II

MAJOR CONSUMABLES TO BE PROVIDED BY BHEL FREE OF COST

SL NO	DESCRIPTION OF ITEMS
1.0	Chemicals for chemical cleaning for carrying out pre-commissioning, commissioning activities
2.0	Lub-oil & control fluid (FRF) for oil flushing & trial run of equipment.
3.0	Imported electrodes / filler wires supplied by BHEL manufacturing units.
4.0	Shims and gaskets going into the equipment, supplied by BHEL manufacturing units.
5.0	Any other special consumables as supplied by BHEL manufacturing units.

NOTE	
1.0	Successful bidder shall note that since above consumable will be used as per direction of BHEL. Terms of issue shall be as specified in the tender.

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ANNEXURE – III
MAJOR TOOLS & PLANTS AND MMRs TO BE DEPLOYED BY SUCCESSFUL BIDDER

SL NO	DESCRIPTION OF EQUIPMENT	MINIMUM QUANTITY	Mobilization from start of work (SOW)
A	T&P		
1.0	75/80 MT Hydraulic crawler crane	1 no.	As per requirement
2.0	40 MT Hydraulic crane	1 no.	As per requirement
3.0	14MT New Generation Tyre mounted mobile crane (TRX / SX or Equivalent model). Note: Hydra or similar crane shall not be accepted	3 nos.	1 st Crane: Within 15 days from SOW of TG pkg. 2 nd Crane: Within 15 days from SOW of FGD pkg. 3 rd Crane: As per requirement.
4.0	Electro hydraulic pipe bending m/c	1 no.	As required at site
5.0	Trailers with suitable capacity as required	As required	As required at site
6.0	Special Hydraulic trailer of suitable capacity to transport items to be handled by successful bidder	1 no.	As required for transportation of heavy equipment, like heaters, rotors, TDBFP, deaerator, feed storage tank components, IV, LP rotor, generator rotor, TG parts turbine casing, MDBFP etc.
7.0	Welding generator (Electric as well as diesel)	7 nos.	Continuously as required at site. During peak condenser internal activity, requirement may go beyond specified quantity
8.0	3 phase complete set up for drawal of construction power	As required	As required at site
9.0	Radiography arrangement including source and film viewer	--do--	--do--
10.0	TIG welding sets	--do--	--do--
11.0	Stress reliving equipment with temp recorders	--do--	--do--
12.0	Electrical baking oven (big)	--do--	--do--
13.0	Electrical baking oven (portable)	--do--	--do--
14.0	Mixer machine for grouting of equipment on foundations	--do--	--do--
15.0	Vacuum cleaner (industrial)	1 no	--do--
16.0	Portable pipe cutting & bending m/c for bending pipes upto Nb 100	1 no	--do--

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	mm.		
17.0	Air compressor	1 no	--do--
18.0	Step down transformer (230 V/ 24V) with adequate number of lamps of 24 V	As required (Minimum 1 no transformer and at least 6 nos lamps in working condition)	--do--
19.0	Condenser tube expander set, flare up tool/ bell mousing tools as per requirement set with adequate spares, mandrels, expanders, accessories consumables, etc	Minimum 3 sets	As per site requirement and to be arranged at site at least one month before tube expansion start
20.0	Condenser tube cutting set with adequate accessories, spares, consumables and cutting tools	Minimum 3 sets	As per site requirement and to be arranged at site at least one month before tube expansion start
21.0	Electrically operated winches 5/ 3 T capacity	As required	As required at site
22.0	Jacking bolt/ press out bolt	--do--	--do--
23.0	Hydraulic Jack of 100 T capacity with hand operated pump and jack, hose, etc	4 nos	--do--
24.0	Hydraulic Jack of 50 T capacity with hand operated pump and jack, hose, etc	4 nos	--do--
25.0	Torque wrench (0-200 N-M capacity) with all fittings	1 no	--do--
26.0	Torque wrench upto 2000 N-M capacity or above	1 no	--do--
27.0	Bolts stretching device (For turbine, generator and auxiliaries)	As required	--do--
28.0	Long filler set	--do--	--do--
29.0	Spanner/ eye bolt/ de-shackle	--do--	--do--
30.0	Centrifugal oil purifier/ electro-static oil purifier with heating arrangement	1 set	Before start of oil flushing of BFP/ LPBP
31.0	Erection/ commissioning fixture	As required	As required at site
32.0	Scaffolding material with steel pipe, clamp, GI sheet, plank, etc	--do--	--do--
33.0	Coat-meter for thickness checking of paint thickness	1 no	--do--
34.0	M64 x 2 tap set / Any other required special tap sets	2 nos	--do--
35.0	Digital multimeter (3.5 digits)	2 nos	--do--
36.0	Digital multimeter (4.5 digits)	1 no	--do--
37.0	Tongue tester	As required	--do--
38.0	30 A 3-phase variac	--do--	--do--
39.0	Micro-ohm meter (measuring upto	--do--	--do--

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	1 micro-ohm)		
40.0	Motorised megger (measuring upto 5KV range)	--do--	--do--
41.0	HV test kit (upto 50 KV DC)	--do--	--do--
42.0	Vernier	--do--	--do--
43.0	Dial gauge of different sizes and types as per requirement	--do--	--do--
44.0	Micro-meter (both inside and outside)	--do--	--do--
45.0	Welding rectifier	--do--	--do--
46.0	Chain pulley block of 16 T	--do--	--do--
47.0	Chain pulley block of other capacities	--do--	--do--
48.0	Pulling & lifting m/c upto 5 T capacity	--do--	--do--
49.0	Multi Sheave pulley upto 100 MT	--do--	--do--
50.0	Single sheave pulley blocks upto 20 T capacity	--do--	--do--
51.0	Gas cutting torches of different sizes and capacity	--do--	--do--
52.0	Grinding machine	As required (around 10 nos)	--do--
53.0	Drilling machine	As required (around 10 nos)	--do--
54.0	Pistol drilling m/c	As required	--do--
55.0	Wire rope sling (different sizes)	--do--	--do--
56.0	Loose wire rope (different sizes)	--do--	--do--
57.0	Hydraulic jack with total sets of 25, 10, 5 T capacity as per requirement	--do--	--do--
58.0	Wooden sleepers	--do--	--do--
59.0	Hydro-test pump (hand operated), at least 150 Kg/ cm ² capacity	1 no	--do--
60.0	NDT test kit as per requirement	As required	--do--
61.0	Steel tape of different sizes as per requirement	--do--	--do--
62.0	Plumb block as per requirement	--do--	--do--
63.0	Surface plate of different sizes	--do--	--do--
64.0	Straight edge of different sizes	--do--	--do--
65.0	Feeler gauges of different sizes	--do--	--do--
66.0	Calliper of different sizes as per requirement	--do--	--do--
67.0	Bolt heating thermocouple	--do--	--do--
68.0	Magnifying glass as per requirement	--do--	--do--
69.0	Piano-wire as per requirement	--do--	--do--
70.0	Precision water level micro-meter as per requirement	--do--	--do--
71.0	Parallel and V-blocks as per requirement	--do--	--do--

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72.0	Taper wedge as per requirement	--do--	--do--
73.0	Lead wire as per requirement	--do--	--do--
74.0	Dial bore indicator as per requirement	--do--	--do--
75.0	Balancing machine	--do--	--do--
76.0	Thermometer of different ranges	--do--	--do--
77.0	Depth gauges as per requirement	--do--	--do--
78.0	Vernier calliper of different sizes as per requirement	--do--	--do--
79.0	GO & NO GO gauge as per requirement	--do--	--do--
80.0	Drill set as per requirement	--do--	--do--
81.0	Taps and die set as per requirement	--do--	--do--
82.0	Spirit level as per requirement	--do--	--do--
83.0	Hg manometer	--do--	--do--
84.0	1.0 KV/ 500 V megger as per requirement	--do--	--do--
85.0	Reamer of different sizes as per requirement	--do--	--do--
86.0	Sand blasting m/c as per requirement	--do--	--do--
87.0	Spray painting m/c as per requirement	--do--	--do--
88.0	Bearing puller as per requirement	--do--	--do--
89.0	Bearing scrapper and other scrapper as per requirement	--do--	--do--
90.0	Slip gauge as per requirement	--do--	--do--
91.0	MIG welding set as per requirement	--do--	--do--
92.0	Filler of different sizes as per requirement	--do--	--do--
93.0	Allen key/ screw driver set as per requirement	--do--	--do--
94.0	File of different sizes as per requirement	--do--	--do--
95.0	Socket wrench set as per requirement	--do--	--do--
96.0	Bench grinder as per requirement	--do--	--do--
97.0	Belt, number, letter punch as per requirement	--do--	--do--
98.0	Lead, steel, test, wooden, plastic, nylon hammer set as per requirement	--do--	--do--
99.0	Fire proof tarpaulin as per requirement	--do--	--do--
100.0	Pipe cutters as per requirement	--do--	--do--
101.0	Rubber, PVC hose with/ without re-enforcement of different sizes as per requirement	--do--	--do--
102.0	Magnetic base for drilling m/c	--do--	--do--

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103.0	Vibrator and mixer m/c for grouting as per requirement	--do--	--do--
104.0	End mill cutter or suitable device for cutting condenser tubes as per requirement	--do--	--do--
105.0	Mercury plumb block	--do--	--do--
106.0	Copper rod	--do--	--do--
107.0	All kinds of NDT test kit as per requirement	--do--	--do--
108.0	Other T&Ps as per requirement to complete the job	--do--	--do--
109.0	Ropes of different sizes and lengths as per requirement. Plastic/ Nylon material special slings of all sizes to handle rotor and other delicate items.	--do--	--do--
110.0	ELC/ portable purification m/c	--do--	--do--
111.0	Hardness testing m/c	1 no	--do--
112.0	PMI m/c / MPI machine	1 no. each	--do--
113.0	Machining facility comprising of 1 no lathe machine and 1 no small shaper machine	As required	--do--
114.0	20 HP or of suitable capacity (as decided by BHEL) diesel pump – minimum 2 nos for dewatering of inside of piping, low lying areas, CW/ CEP pit, different trenches in case of inundation, etc due to rain/ maloperation of various equipment/ systems. This facility is to be maintained till handing over	As required (Minimum 2 nos)	--do--
115.0	20 HP or of suitable capacity (as decided by BHEL) electric pump – minimum 2 nos for dewatering of inside of piping, low lying areas, CW/ CEP pit, different in case of inundation etc due to rain/mal-operation of various equipment/ systems. This facility is to be maintained till handing over	As required (Minimum 2 nos)	--do--
116.0	Surface Grinder	As required	--do--
117.0	Boroscope / tachometer / Temp. measuring portable hand set / portable vibration measuring set	--do--	--do--
118.0	UT machine for checking welding, inspection of bearings	--do--	--do--
119.0	Scaffolding materials like pipes, clamps, platforms with fitness for use	--do--	--do--
120.0	Equipment/ MMD for voltage drop test and Helium leak test of generator	--do--	--do--

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121.0	Resistance heating equipment for welding, pre-heating, stress relieving/ PW HT for welding of alloy pipes	--do--	--do--
B	MMR		
	List of MMR to be supplied by the bidder is attached separately.		

NOTE	
1.0	Bidder shall note that this T&P list is not exhaustive and they may be required to provide additional T&Ps not stated in this list for proper execution of job, at no extra cost to BHEL.
2.0	MMR and T&P shall be mobilized and deployed by successful bidder, as required at site for successful execution of the job. Once, the requirement for a particular T&P is over, vendor can demobilize the T&P with due permission from BHEL. Deployment plan of T&P, MMR shall be jointly finalised based on project requirement prior to start of work. The plan might undergo revision depending on project requirement. Depending upon the jointly agreed deployment program, any additional T&P, MMR, if required, for proper completion of job, shall have to be deployed by successful bidder. Similarly, if any of the aforesaid T&P is not required for the job as per jointly agreed program, successful bidder need not have to deploy the same.
3.0	Apart from above, in case successful bidder fail to deploy other T&Ps as per jointly agreed schedule, BHEL reserve the right to deploy the same at the risk & cost of successful bidder or levy penalty at a rate, to be rationally derived by BHEL. Decision of BHEL shall be final & binding on successful bidder. Further, if BHEL has to provide any T&P due to non-deployment of such T&P by the successful bidder, then BHEL shall deduct appropriate charges on the basis of its T&P hire charges, revised from time to time.
4.0	Bidder shall note periodical testing & calibration of testing equipment are to be done and copy of test certificates to be submitted to BHEL as per 'ISO' norms.
5.0	Sufficient measures shall be taken by the successful bidder to minimise the radiography test at site and maximise the use of Ultrasonic testing wherever applicable.
6.0	The above major T&P list is indicative only. Additional T&Ps, if required have to be mobilized by the successful bidder within the accepted rate.

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ANNEXURE – IV
MAJOR CONSUMABLES TO BE DEPLOYED BY THE SUCCESSFUL BIDDER

SL NO	DESCRIPTION OF EQUIPMENT	CAPACITY	MINIMUM QUANTITY
1.0	Gases like O2, CO2, N2, Argon, D/A, LPG and others as per requirement (For construction purpose and not for commissioning uses)	As required	Sufficient stock has be maintained.
1.0A	Gases like H2, CO2 & O2 as per requirement for commissioning uses 1. Hydrogen – 400 cylinders 2. CO2 – 150 cylinders 3. O2 – 30 cylinders	All these gasses shall be of ultra high purity as per BHEL/Siemens/OEM standards.	1. Empty cylinders shall be provided by BHEL 2. Expenses towards Consumption beyond these quantities shall be reimbursed at actuals by BHEL.
2.0	Ultra high purity Nitrogen required for generator PW system, accumulators charging for pre-commissioning, commissioning, and operation period till handing over to owner	--do--	Sufficient stock has be maintained.
3.0	Filler wire for both SS and others as required	--do--	
4.0	Ordinary portland cement (OPC) with shuttering material	--do--	
5.0	Grouting material/ grouting cement with shuttering material	--do--	
6.0	Florescence powder	--do--	For condenser tube leak detection
7.0	Plugs for condenser tube	--do--	For plugging damaged tubes of condenser
8.0	Lapping compound	--do--	For valves servicing
09.0	Mercury	--do--	For generator gas tightness test and other applications as required
10.0	Hydraulic oil	--do--	For uses in different equipment and hydraulic jacks, pumps and other applications
11.0	Paints for preservation, touch up painting, normal and final cum finish painting	--do--	For painting
12.0	Different types of electrical lamp, tube light, halogen lamp, sodium vapour lamp with fixture	--do--	As required
13.0	Electrodes as per requirement	--do--	--do--
14.0	Test pieces for welders test like plate, pipe, etc	--do--	--do--
15.0	Brazing rod	--do--	--do--
16.0	Soldering consumable	--do--	--do--
17.0	Consumables for welding and NDT	--do--	--do--
18.0	Thermal chalks of different range	--do--	--do--
19.0	Consumables for pre-heating, stress relieving, post	--do--	--do--

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VOLUME-IF-TCC-CML, (REV-01)	TECHNICAL CONDITIONS OF CONTRACT	PAGE 56 OF 58

	heating, etc.		
20.0	Consumables for arranging welders' qualifying works	--do--	--do--
21.0	Welders accessories	--do--	--do--
22.0	Handling accessories for handling chemicals, control fluid and other items as required	--do--	--do--
23.0	Services for effluent disposal	--do--	--do--
24.0	Rustolene	--do--	--do--
25.0	Kerosene	--do--	--do--
26.0	CTC, Acetone as per requirement	--do--	--do--
27.0	Petrol	--do--	--do--
28.0	Diesel	--do--	--do--
29.0	Special consumables for TG & aux, like Hylomar, Golden Hermetite, Stag-B, Molykote, Anabond compounds, Locktite, rubber fixing compounds/ rubber, plastic, PVC hoses as per requirement	--do--	--do--
30.0	Shellack compound	--do--	--do--
31.0	Red lead	--do--	--do--
32.0	Hemp fibre	--do--	--do--
33.0	Asbestos rope (Pure) 2,4, 6, 8, 10, 12, 25 mm and other sizes as required	--do--	--do--
34.0	Insulation adhesive tape 20 mm width and other sizes as per requirement	--do--	--do--
35.0	Emery tape as per requirement	--do--	--do--
36.0	Hack-shaw of different sizes as per requirement	--do--	--do--
37.0	Emery paper Gr 60, 80, 100, 120, 150 , 220 and others as per requirement	--do--	--do--
38.0	Asbestos cloth in wax paper 1x1 m – as required	--do--	--do--
39.0	Packing black paper 1x1 m	--do--	--do--
40.0	Adhesive tape 0.3 mm thickness-as required	--do--	--do--
41.0	White cotton tape 12 mm width-as required	--do--	--do--
42.0	Graphite powder fine quality – as required	--do--	--do--
43.0	Graphite flakes as required	--do--	--do--
44.0	Raw linseed oil as required	--do--	--do--
45.0	Double boiled linseed oil as required	--do--	--do--
46.0	Cylinder oil as required	--do--	--do--
47.0	Enamel paint (of required colour) as required	--do--	--do--
48.0	Mobile velocite oil 's' as required	--do--	--do--
49.0	Turpentine oil as required	--do--	--do--
50.0	Trichloro ethylene as required	--do--	--do--
51.0	Methylated spirit as required	--do--	--do--
52.0	Mobilox grease 2 (IOC) as required	--do--	--do--
53.0	Servogem – 2,3 grease as per requirement	--do--	--do--
54.0	Other special grease as per requirement	--do--	--do--
55.0	Rust ban (ESSO) as per requirement	--do--	--do--
56.0	Molykote paste as per requirement	--do--	--do--
57.0	Birkosite as per requirement	--do--	--do--
58.0	Washing soda and soap as per requirement	--do--	--do--
59.0	Cotton waste as per requirement	--do--	--do--
60.0	Clean rag as per requirement	--do--	--do--
61.0	White cloth (cearse) and used cloths as required	--do--	--do--

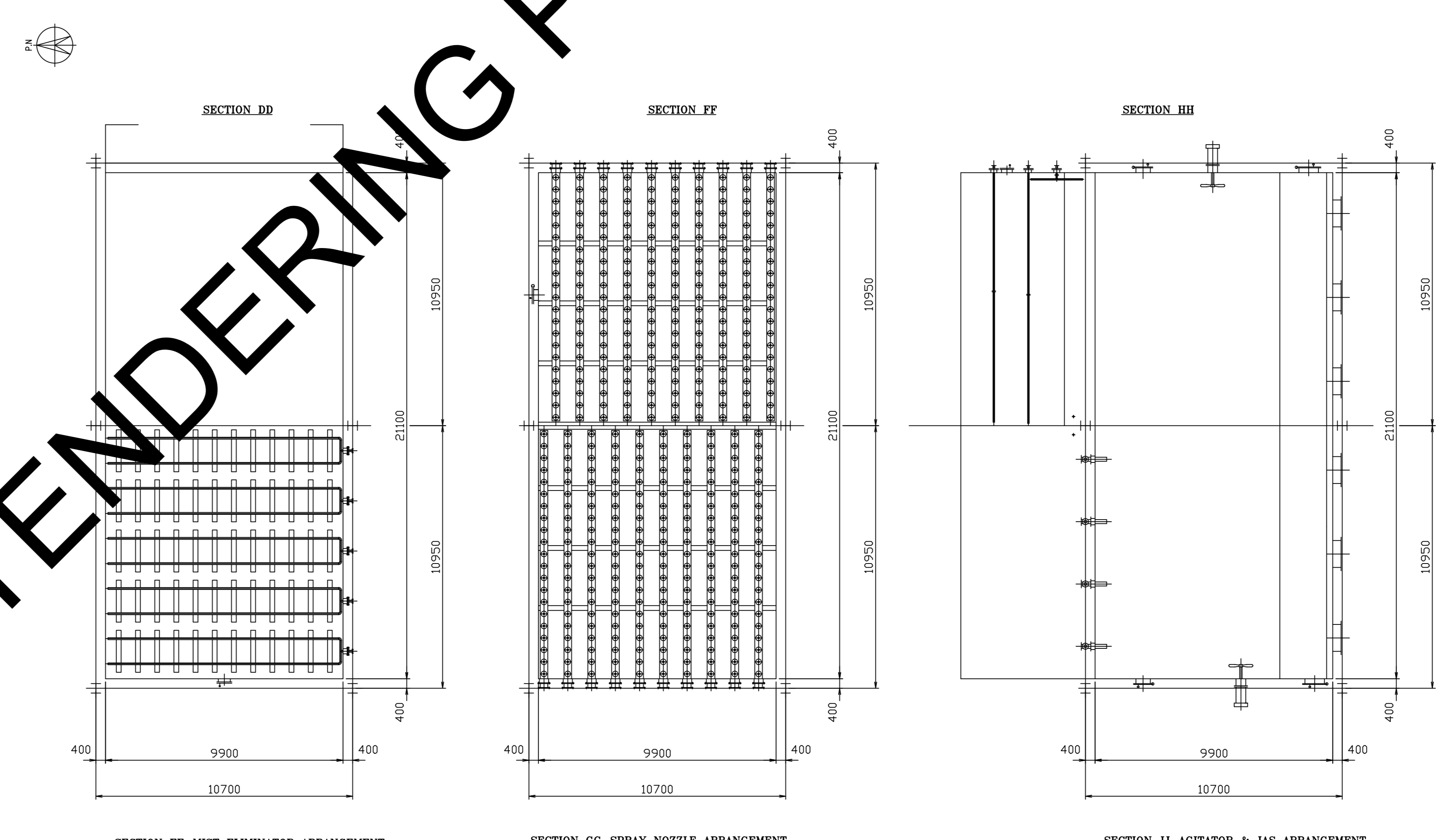
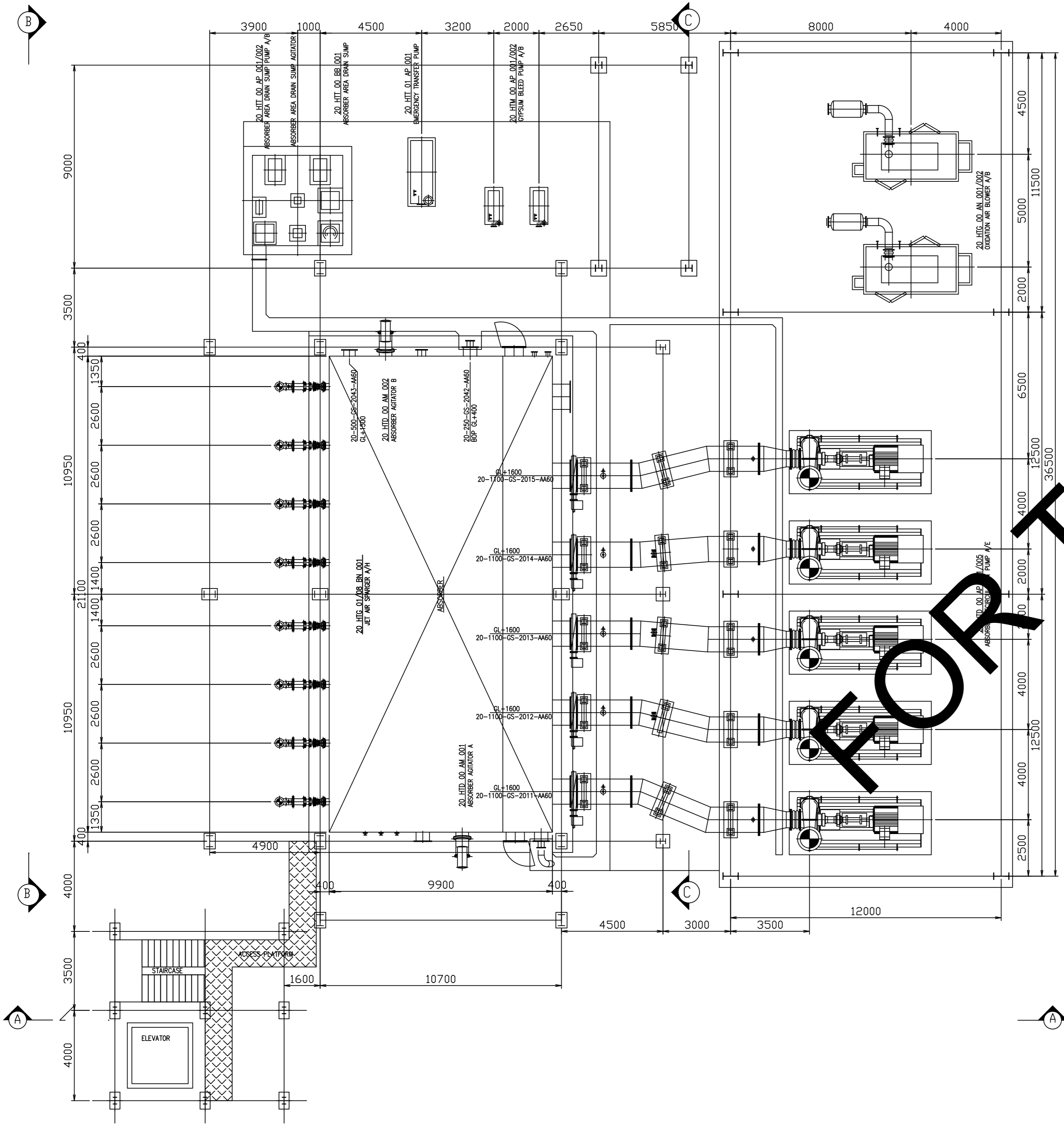
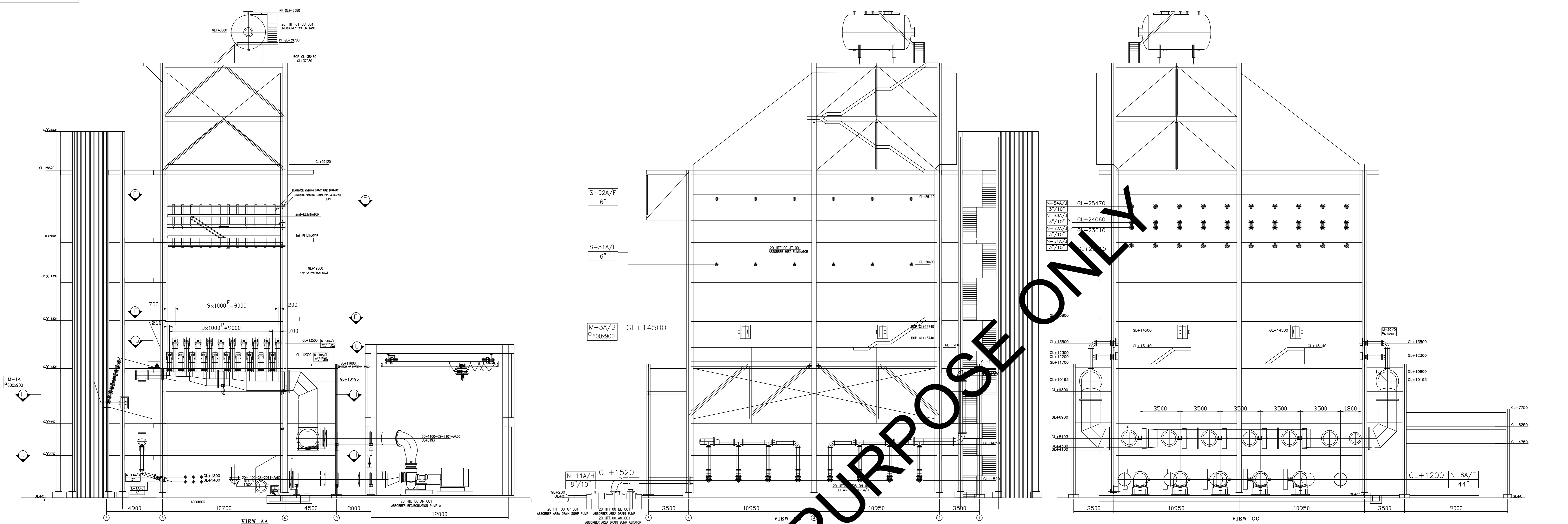
TENDER NO – PSER:SCT:KLN-T1966:19		TCN-04
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62.0	Sack cloth as per requirement	--do--	--do--
63.0	Jelley soap or bar soap as per requirement	--do--	--do--
64.0	Emery cloth 100 mm width roll Gr 60, 100, 120, 150, 220 and others as per requirement	--do--	--do--
65.0	Sand papers Gr 60, 80, 120 and other as per requirement	--do--	--do--
66.0	Emery paste (valve lapping compound) Gr 60, 80, 100, 220 and others as per requirement.	--do--	--do--
67.0	Grinding wheels, stones of different sizes as per requirement	--do--	--do--
68.0	Welding electrode (carbon steel, MS, alloy steel and filler wires, stainless steel both ferrous and non-ferrous) excepting those supplied by BHEL as per relevant annexure) as per requirement	--do--	--do--
69.0	Soldering stick (lead-tin alloy) as per requirement	--do--	--do--
70.0	Soldering wire (silver alloy) as per requirement	--do--	--do--
71.0	Soldering flux (silver alloy) as per requirement	--do--	--do--
72.0	Brazing flux/ borax as required	--do--	--do--
73.0	Soldering flux (lead-tin alloy) as required	--do--	--do--
74.0	MS gas welding wire as required	--do--	--do--
75.0	DP test kit with magnifying glass as required	--do--	--do--
76.0	Iron and steel sections as required	--do--	For arranging scaffolding and fixtures, etc
77.0	MS bolt and nut with two plain washers and one spring washer as required	--do--	As required
78.0	MS angle assorted as required	--do--	--do--
79.0	MS channel assorted as required	--do--	--do--
80.0	Rounds, flat, MS plate assorted as required	--do--	--do--
81.0	Engineers blue/ prussian blue as required	--do--	--do--
82.0	Chalk pieces - white, colour and powder as required	--do--	--do--
83.0	Teine as required	--do--	--do--
84.0	Battery cells 1.5 V torch light cells, pencil battery, etc as required	--do--	--do--
85.0	Red and blue pencils as required	--do--	--do--
86.0	Galvanised steel wire 1 mm dia and other sizes as required	--do--	--do--
87.0	Flannel cloth 1m width as per requirement	--do--	--do--
88.0	Split pins 2 mm to 6 mm and other sizes as per requirement	--do--	--do--
89.0	Wood screws 3/4" to 3" as per requirement	--do--	--do--
90.0	Lead sheet 3 mm and 4 mm thickness as per requirement	--do--	--do--
91.0	Tarpauline 3x3 m and 5x5 m and 10x5 m and other sizes as per requirement	--do--	--do--
92.0	Vulcanised rubber fibre 0.5 m x 0.5 m x 15 mm thickness as per requirement	--do--	--do--
93.0	Plywood 1 m x 2 m x 3 mm and other sizes as per requirement	--do--	--do--
94.0	Nails-wire 1' to 3' as per requirement	--do--	--do--
95.0	Candles medium size as per requirement	--do--	--do--

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96.0	Portable switch board containing 15 A metal clad switch with fuse 3x15 A, switch and 3 plug sockets as per requirement	--do--	--do--
97.0	Wooden plank pulleys as required	--do--	--do--
98.0	All kind of water/ oil/ steam gasket (asbestos free) (other than those being supplied by BHEL units)	--do--	--do--
99.0	SS shim/ other shim (for thickness of less than 5.0 mm)		--do--
100.0	Any other items as required to complete the jobs	-do--	--do--

NOTE	
1.0	Bidder shall note that this list is not exhaustive and they may be required to provide additional consumables not stated in list for proper execution of job, at no extra cost to BHEL. Successful bidder may have to provide nut, bolt, washer, etc as referred in exceptional cases in case of any shortage of supply from BHEL's end. Accordingly, total implication in this regard is insignificant in comparison to total magnitude of work and bidder may work out implication of these items base on their previous exposure.
2.0	Deployment plan of major consumables shall be jointly finalized based on project requirement prior to start of work. The plan might undergo revision depending on project requirement. Depending upon the jointly agreed deployment program, any additional consumables, if required for proper completion of job, shall have to be deployed by successful bidder. Similarly, if any of the aforesaid items is not required for the job as per jointly agreed program, successful bidder need not have to deploy the same.
3.0	This above list is only indicative and neither exhaustive nor limiting. Successful bidder shall deploy all necessary consumable to meet the schedules & as prescribed by BHEL.



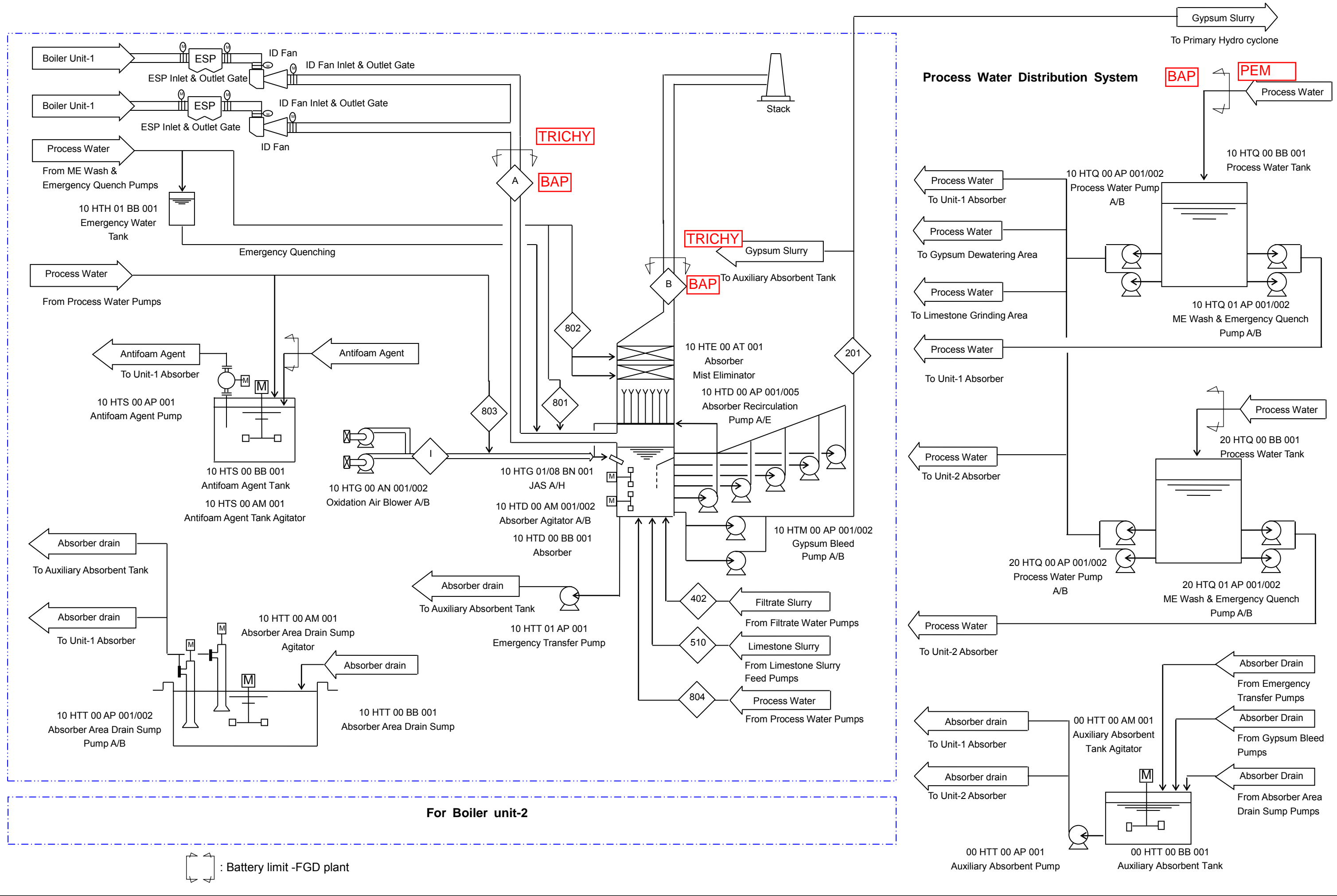
COMPONENT	TYPE	MATERIAL	REMARKS
MIST ELIMINATOR	---	---	PP
LET AIR SPARKER	---	---	FRP-CERAMICS
EXTERNAL BOLT/NUT	A307B or EQ+SAUV	A307B or EQ+SAUV	A307B or EQ+SAUV
INTERNAL BOLT/NUT	UNS S 31603 or EQ	UNS N 06059 or EQ	PP
SPRAY NOZZLE	UNS S 31603 or EQ	UNS N 06059 or EQ	SIC
SPRAY PIPE	UNS S 31603 or EQ	UNS N 06059 or EQ	FRP
ANCHOR BOLT/NUT	UNS S 31603 or EQ	UNS N 06059 or EQ	A307B or EQ
INTERNAL SUPPORT	PIPE	PTFE	BUTYL RUBBER
NOZZLE FLANGE	A105 or EQ	UNS N 06059 or EQ	A105 or EQ
NOZZLE NECK	A53F or EQ	UNS N 06059 or EQ	A53F or EQ
MANHOLE BOLT/NUT	A193B/A194B	A193B/A194B	A193B/A194B
MANHOLE COVER	E250 or EQ	UNS N 06059 or EQ	E250 or EQ
MANHOLE FLANGE	E250 or EQ	UNS N 06059 or EQ	E250 or EQ
MANHOLE NECK	E250 or EQ	UNS N 06059 or EQ	E250 or EQ
BOTTOM PLATE	E250 or EQ	UNS N 06059 or EQ	E250 or EQ
SHELL	E250 or EQ	UNS N 06059 or EQ	E250 or EQ
SERVICE	EMERGENCY QUENCHING AREA	GAS INLET AREA	SPRAY PIPE AREA
		ABSORBER INK AREA	MIST ELIMINATOR AREA

MARK	NO.	SIZE	RATING	SERVICE	REMARKS
S-52A/F	6	6"	ASME 150 ^{LB} SO	FF	
S-51A/F	6	6"	ASME 150 ^{LB} SO	FF	SAMPLING NOZZLE WITH BLIND
N-54A/F	10	3"/10"	ASME 150 ^{LB} SO	FF	M/E WASHING SPRAY PIPE
N-53A/F	10	3"/10"	ASME 150 ^{LB} SO	FF	M/E WASHING SPRAY PIPE
N-52A/F	10	3"/10"	ASME 150 ^{LB} SO	FF	M/E WASHING SPRAY PIPE
N-51A/F	10	3"/10"	ASME 150 ^{LB} SO	FF	M/E WASHING SPRAY PIPE
M-3	4	600x900		FF	MAN-HOLE WITH HINGE
M-1	2	600x900		FF	MAN-HOLE WITH HINGE
L-1	3	3"	ASME 150 ^{LB} PAD	FF	LT CONNECTION
N-20A/F	20	12"/20"	ASME 150 ^{LB} SO/-	FF	DCFS SPRAY PIPE (UPPER SIDE)
N-19A/F	20	12"/20"	ASME 150 ^{LB} SO/-	FF	DCFS SPRAY PIPE (LOWER SIDE)
N-14A/F	3	17"/21"	ASME 150 ^{LB} SO	FF	LT WASHING PIPE
N-11A/F	8	8"/10"	ASME 150 ^{LB} SO	FF	JAS PIPE
N-6	5	44"	AWWA CLASS B		RECIRCULATION PUMP SUCTION
N-8A	1	44"	AWWA CLASS B		SPARE

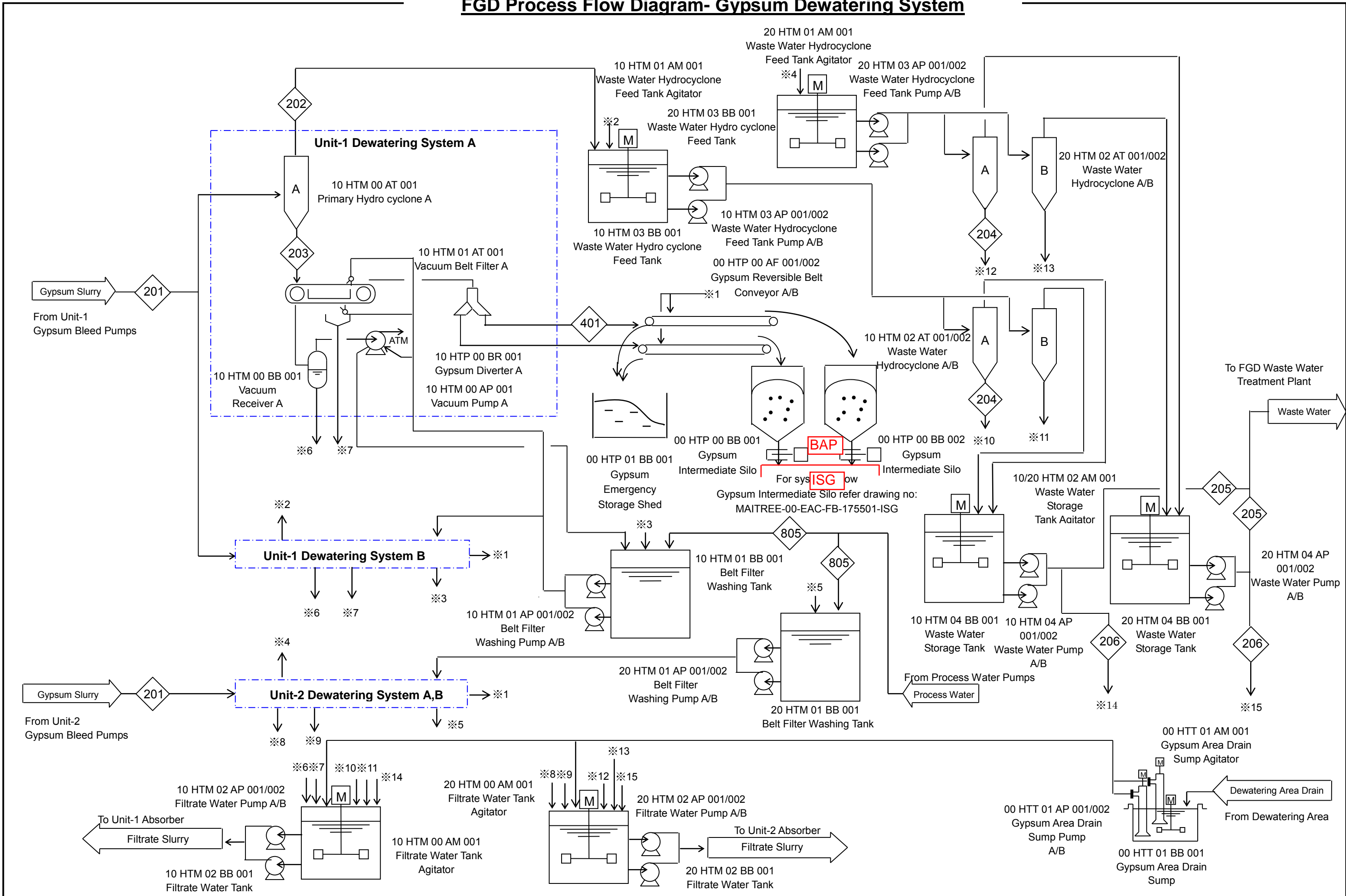
NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES

DATE	ALTERED	CHECKED	APPROVED	NOTE
PROJECT 2x660MW MATREE SUPER THERMAL POWER PROJECT, RAMPAL, BANGLADESH (EPC MAIN PLANT PACKAGE)				
OWNER CONSULTANT: FICHTNER M/s FICHTNER GmbH & Co. KG Stuttgart, GERMANY		OWNER: BANGLADESH-INDIA FRIENDSHIP POWER COMPANY (PVT.) LIMITED, BANGLADESH		
DRAWN BY: 07/07/2018 HABILASH		SCALE: 1:100		
CHECKED BY: 07/07/2018 FELIX		SHEET (6 OF 46)		
APPROVED BY: 07/07/2018 BALAJI		MITSUBISHI HITACHI POWER SYSTEMS, LTD. AIR QUALITY CONTROL SYSTEMS TECHNOLOGY DIVISION		
SUPERSEDED BY:		TITLE: GA OF ABSORBER		
SYSTEM:		SIZE: A0 PROJECT NO: RAMPAL FILE: 01-FV-201-0001		
		ANNEX DRAWING NO: MATREE-1-HTD-CLB-20084-RPT-A REV: A		

FGD Process Flow Diagram-Absorber System



FGD Process Flow Diagram- Gypsum Dewatering System



Gypsum Slurry
From Unit-1
Gypsum Bleed Pumps

Gypsum Slurry
From Unit-2
Gypsum Bleed Pumps

To FGD Waste Water
Treatment Plant
Waste Water

To Unit-1 Absorber
Filtrate Slurry


To Unit-2 Absorber
Filtrate Slurry

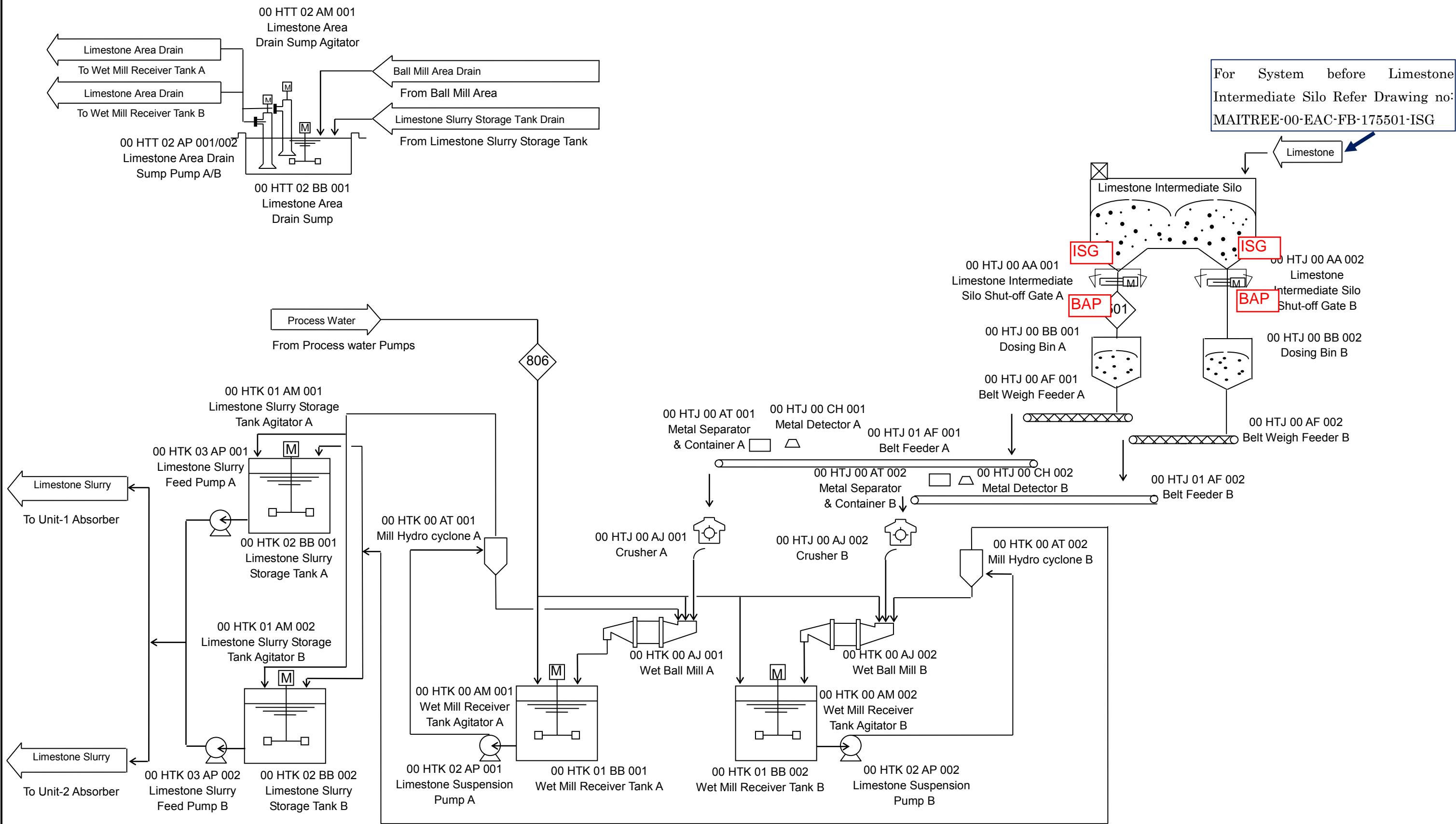
Dewatering Area Drain
From Dewatering Area

BAP
For sys **SG** low

Gypsum Intermediate Silo refer drawing no:
MAITREE-00-EAC-FB-175501-ISG

FGD Process Flow Diagram-Limestone Grinding system

 : Battery limit -FGD plant



BHEL		EDC-FGD PGMA Weight			Issue Date:06 06 17
CUSTOMER/ PROJECT		M/s. BIFPCL/ MAITREE FGD 2X660MW- UNIT-1&2 PRODUCT : LIMESTONE FGD ,WORK ORDER: R4M8-R4M9			Rev. No : Rev. Date : PG:FW
LIST OF APPLICABLE PGMA -MAITREE 2X660MW-FGD					
UNIT WISE SYSTEM					
S.No	PG-MA	PGMA_DESCRIPTION	Weight (Tons) Per Boiler	Erection Remarks	PGMA Details
1	FW212	SLURRY RECIRCULATION PUMP SYSTEM	55	SV	RC Pumps incl Shaft seal Common Base Plate Coupling and Guard Gear Box Expansion Bellow Anchor Bolts & Fasteners Special Tools Supervisory Services
2	FW213	ABSORBER SYSTEM INTERNALS FGD	25	R	Spray Nozzles Spray Pipes JAS Nozzles Fasteners Gaskets Technical Additional Services
3	FW215	MIST ELIMINATOR & ACCESSORIES	40	SV	Mist Eliminator Washing spray pipes Wash Spray Nozzles Fasteners Gaskets Packing for Wash Pipes Spare ME (Not Equipped) Supervisory Services
4	FW219	ABSORBER SYSTEM-BASE	18	R	Absorber Tank Bottom Plate
5	FW220	ABSORBER SYSTEM-STRUCTURES	330	R	Absorber Tank structure Absorber Tower structure Spray Headers structure RC Pumps structure
6	FW221	ABSORBER SYSTEM-CASING BOTTOM	100	R	Absorber Tank wall casing -Bottom
7	FW222	ABSORBER SYSTEM-CASING TOP	175	R	Absorber Tank wall casing -Top Mist Eliminator supports Spray pipe supports Internal Beam Shim plates in Absorber area Internal Struts
8	FW223	ABSORBER SYSTEM ACCESSORIES	40	R	Nozzles & Flanges Inspection doors & Man holes Viewing Ports Anti Foam Dosing Equipment Suction Strainers-FRP
9	FW225	ABSORBER SYSTEM-RUBBER LINING	22	V	Rubber Lining -Material Supply Rubber Lining -Application including Scaffolding , Surface preparation, Application of Adhesive coating, Application of Rubber Lining, Testing , Inspection and Handing over
10	FW226	EMERGENCY QUENCH WATER TANK	5	R	Base Plate & its supports Roof Shell
11	FW227	EMERGENCY QUENCH SYSTEM	8	R	Emergency Quenching Spray Pipe Nozzle for Emergency Pipe Fasteners Gaskets
12	FW228	ABSORBER-W/D INTERFACE	9	R	Alloy 59 -5mm plate Alloy 59- Welding Electrodes
13	FW229	W/D INTERFACE WASH SYSTEM	8	R	W/D Wash Spray Pipe Nozzle for W/D Wash Pipe Fasteners Gaskets
14	FW230	AIR OXIDATION SYSTEM	20	SV	Oxidation Blowers Common Base Plate Coupling and Guard Anchor Bolts & Fasteners Expansion Bellow Suction & Discharge Silencers Acoustic Enclosure Water Injection cooling system Pipe, Valves & Instruments Special Tools Supervisory Services
15	FW244	OXIDATION AIR DISTRIBUTION SYSTEM	10	R	Pipe & Fittings Flanges Pipe Hanger,Bottom elbow,Bottom sliding supports
16	FW251	EXPANSION JOINT BETWEEN BYPASS DUCT & GGH-Metallic	6	R	Expansion joints Seal Plates & Fasteners
17	FW253	EXPANSION JOINT BETWEEN SCRUBBER OUTLET & GGH-Non Metallic	6	R	Fabric & its fixing fasteners Sleeves & Flanges Gaskets
18	FW255	DUCT BETWEEN BYPASS DUCT INLET & GGH	45	R	Plates & Stiffeners Guide Vanes

FOR TENDER REFERENCE PURPOSE ONLY

19	FW257	DUCT BETWEEN SCRUBBER AND GGH	100	R	Plates & Stiffeners Guide Vanes
20	FW260	DUCT STRUCTURE BETWEEN BYPASS DUCT INLET & GGH	10	R	Duct Supports Gusset Plate Divider plate Internal Struts Support Bearings
21	FW262	DUCT STRUCTURE BETWEEN SCRUBBER & GGH	10	R	Duct Supports Gusset Plate Divider plate Internal Struts Support Bearings
22	FW267	INSULATION MATERIALS FOR DUCTS	40	R	Wool Mattress
23	FW268	FIXING COMPONENTS AND CLADDING SHEET	40	R	Fixing pin Retainer Casing support GI Binding & sewing wire Self Tapping screw Outer casing Wire Mesh
24	FW281	FOUNDATION MATL FOR SCRUBBER	20	R	Foundation Bolts Template
25	FW282	FOUNDATION MATL FOR ELEVATOR STRUCTURE	4	R	Foundation Bolts Template
26	FW286	SUPPORTING STR FOR BYPASS DUCT INLET-GGH	15	R	Bracings Columns Foundation Bolts for Duct structure
27	FW292	STRUCTURES FOR ELEVATOR	43	R	Columns Seal Plate Bracings Enclosure (Purlin & Sheetings)
28	FW293	ELEVATOR AND ACCESSORIES	7	V	Base Frame Buffer Spring Mast Section Cage Control Panel & AC Mandatory Spares Erection & commissioning Services & other items
29	FW299	MISCELLANEOUS-FGD SYSTEM	10	R	Services & other items
	A	Total Weight(Tonnes) for Unit#1		1221	
	B	Total Weight (Tonnes) for Unit#2		1221	
COMMON SYSTEM					
S.No	PG-MA	PGMA_DESCRIPTION	Weight (Tons) for 2 Boilers	Erection Remarks	PGMA Details
1	FW610	GALLERIES&RAILINGS FOR SCRUBBER	240	R	Stairs Handrail Step treads Floor grills Ladders Foundation bolts Fasteners
2	FW614	PLATFORM FOR PIPE RACK	60	R	Floor grills Clips
3	FW701	SLURRY PUMPS & ACCESSORIES	56	SV	Slurry Pumps incl Shaft seal Common Base Plate Coupling and Guard Belt & Pulley Expansion Bellow Anchor Bolts & Fasteners Motor & accessories Supervisory Services Sump Pumps incl Shaft seal Common Base Plate Coupling and Guard Belt & Pulley Expansion Bellow Anchor Bolts & Fasteners Motor & accessories Supervisory Services
4	FW702	WATER PUMPS & ACCESSORIES	40	SV	Water Pumps incl Shaft seal Common Base Plate Coupling and Guard Belt & Pulley Expansion Bellow Anchor Bolts & Fasteners Motor & accessories Supervisory Services
5	FW710	MONORAIL FOR HOIST & CRANES	20	R	Insert Plate Stiffener plate Monorail beam
6	FW715	HANDLING EQUIPMENT IN FGD	40	V	Electrically operated Hoists Underslung Cranes Chain Pulleys
7	FW720	AGITATORS	40	SV	Agitators for Tanks & Drain pits Coupling and Guard Belt & Pulley Motor & accessories Supervisory Services
8	FW721	AGITATOR SUPPORT	10	R	Channels & beams
9	FW722	GALLERIES & RAILINGS FOR ALL TANKS INCLUDING STAIR CASE	30	R	Stairs Handrail

					Step treads
					Floor grills
					Foundation bolts
					Fasteners
10	FW735	LIMESTONE MILL ACCESSORIES	1360	SV	Gate Valve
					Belt feeder
					Crusher
					Belt conveyor
					Bucket Elevator
					Limestone Dosing Bin
					Dosing Bin Shut off gate
					Weigh Feeder
					Mill separator Tank with agitator
					Mill circuit Pumps
					Hydrocyclone
					Peripheral Drive system with gear box
					Auxiliary motor for inching operation
					Lubrication system
					Coupling & Guard
					Internal Piping & Valves
					Controls & Instrumentation
					Anchor bolts & Fasteners
					Special Tools
					Supervisory Services
11	FW738	GYPSUM BELT FILTER AND ACCESS	191	SV	Primary Hydrocyclones
					Secondary Hydrocyclones
					Vacuum Belt Filters
					Vacuum Receivers
					Vacuum Pumps
					Coupling & Guard
					Cake washing & cloth washing arrangmt
					Reversible belt conveyor
					Internal Piping & Valves
					Controls & Instrumentation
					Anchor bolts & Fasteners
					Special Tools
					Supervisory Services
12	FW740	FOUNDATION MATL FOR TANKS	15	R	Foundation Bolts
					Template
13	FW741	LINING FOR TANK AND SUMPS COMMON	12	V	Rubber Lining -Material Supply
					Rubber Lining -Application including Scaffolding , Surface preparation, Application of Adhesive coating, Application of Rubber Lining, Testing , Inspection and Handing over
14	FW742	LIMESTONE SLURRY STORAGE TANK	36	R	Base plate & its supports
					Shell
					Roof
15	FW743	AUXILIARY ABSORBER TANK	272	R	Base plate & its supports
					Shell
					Roof
16	FW744	FILTRATE TANK	7	R	Base plate & its supports
					Shell
					Roof
17	FW745	WASTAGE WATER TANK	5	R	Base plate & its supports
					Shell
					Roof
18	FW747	HYDROCLONE WASTE WATER TANK	13	R	Base plate & its supports
					Shell
					Roof
19	FW748	PROCESS WATER TANK	41	R	Base plate & its supports
					Shell
					Roof
20	FW749	ALL TANKS INTERNAL STRUCTURE	12	R	Baffle plates of all Tanks and absorber
					Internal Stiffeners
					Supports
21	FW750	TANK ACCESSORIES	20	R	Nozzles & Manholes for all Tanks & Gypsum Silo
					Flanges
22	FW751	PROCESS WATER PIPE ACCESSORIES	59	R	CS/FRP Pipes & Fittings
					Sight Glass
					R Orifice
					Gaskets & Fasteners
23	FW752	COOLING WATER PIPE ACCESSORIES	14	R	CS Pipes & Fittings
					Strainer (T-Type)
					Strainer (Y-Type)
					Sight Glass
					Expansion Joint (Metallic)
					Hose connector
					R Orifice
					Gaskets & Fasteners
24	FW753	SLURRY PIPE ACCESSORIES	110	SV	CSRL/FRP Pipes & Fittings
					Strainer (Cone)
					Expansion Joint-Rubber
					R Orifice
					Gaskets & Fasteners
25	FW754	SERVICE AIR PIPE ACCESSORIES	24	R	GI Pipes & Fittings
					Flexible Hose
					Expansion Joint (Metallic)
					Hose connector
					R Orifice
					Gaskets & Fasteners
26	FW755	INSTRUMENT AIR PIPE ACCESSORIE	24	R	SS Pipes & Fittings

					Strainer(Y Type)
					Gaskets & Fasteners
27	FW758	VALVES AND FITTINGS COMMON	90	R	Globe valves
					Ball Valves
					Butterfly Valves
					Diaphragm Valves
					Gate Valves
					CheckValves
					Pinch Valves
					Knife Gate Valves
					Control Valves
					Relief Valves
28	FW760	FOUNDATION MATL FOR PIPE RACKS	10	R	Foundation bolts
					Template
29	FW761	STRUCTURE FOR PIPERACKS	40	R	Bracings
					Columns
30	FW769	TRESTLE FOR PIPE RACKS	240	R	Truss
					Beams, Supports for all Pipes
31	FW774	CABLES	140	R	Copper Power Cables
					Copper Instrumentation/Screened Cables
					Copper Control Cables
32	FW775	JUNCTION BOX	1	R	Power Junction Box-FRP
					Control Junction Box-FRP
33	FW776	CABLE TRAY AND EARTHING MATL	160	R	Cable trays-FRP
					Coupler plates
					Coupler plates
					GI Flat
					GI Wire
					Crimping type Cable Lug
					Cable Tag
34	FW779	SUPPORTS FOR CABLE TRAYS/CONTR	50	R	Double Sup Channel & Base plates
					Single Sup Channel & Base plates
					Cantilever Arm
					Fasteners & clamps
					Brackets
35	FW781	START STOP PUSH BUTTON	1	R	Push Buttons
36	FW790	TOOLS	10	R	Any special , Erection, commissioning tools
37	FW792	GYPSUM INTERMEDIATE SILO AND ACCESSORIES	200	SV	Shell
					Ring girder
					Roof
					Silo -bottom discharge type arrangmt
					Drives
					Supervisory Services
38	FW794	STRUCTURE AND APPROACH PLATFORM FOR GYPSUM INTERMEDIATE SILO INCLUDING BOLTS	186	R	Silo structure-Columns & Bracings
					Stairs
					Handrail
					Step treads
					Floor grills
					Foundation bolts for silo and galleries
					Fasteners
39	FW795	SUPPORT STRUCTURE FOR GYPSUM SHED INCLUDING BOLTS	100	R	Columns & Bracings
					Foundation Bolts
					Steel Liner on Walls
40	FW796	SUPPORTS FOR GYPSUM REVERSIBLE CONVEYORS & INCLUDING BOLTS	61	R	Columns & Beams
					Anchor Bolts
					Bracings
41	FW798	AIR RECEIVERS	8	R	Instrument Air receivers
					Any Instruments/Valves
42	FW988	COMMISSIONING SPARES	10		Any Start up & commissioning spares
43	FW999	MANDATORY SPARES	200		As per Contract
	C	Total Weight(Tonnes) for common system (for 2 boilers)	4258		
		Total Weight (Tonnes) for the project (for 2 boilers)-FGD-A+B+C	6700		

SV Supervision of Erection & commissioning by BAP Sub vendor. Erection by Region
V Erection by BAP Sub vendor
R Erection by Region

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

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	Erection, testing, commissioning, handing over, etc of steam turbine & aux, generator & aux, pumps, auxiliaries, and FGD, etc. of Unit#1 & common system including LP Piping at 2x660 MW Maitree STPP, Rampal, Bangladesh.	
Ref	1.0	Tender no PSER:SCT:KLN-T1966:19.
	2.0	BHEL's NIT, vide reference no PSER:SCT:KLN-T1966:7559 Date: 16-05-2019.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:KLN-T1966:19 Date: 18-05-2019
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:KLN-T1966:19 Date: 18-05-2019
	5.0	BHEL's TCN-03, vide reference no PSER:SCT:KLN-T1966:19 Date: 20-05-2019
	6.0	BHEL's TCN-04, vide reference no PSER:SCT:KLN-T1966:19 Date: 24-05-2019
	7.0	All other pertinent issues till date.

Dear Sirs,

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)