



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN - 03

Ref: PSER:SCT:KLN-C1801:TCN-03

Date: 05-05-2017

Sub	Tender Change Notice (TCN) - 03.	
Job	Engineering, Procurement, Supply and Construction of jetty, retaining wall including construction of onshore/offshore civil, structural and architectural works for 2x660 MW Maitree STPP, Rampal, Bangladesh.	
Ref	1.0	Tender no PSER:SCT:KLN-C1801:17.
	2.0	BHEL's NIT, vide reference no PSER:SCT:KLN-C1801:5590, Dated 24-03-2017.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:KLN-C1801:TCN-01, Dated 31-03-2017.
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:KLN-C1801:TCN-02, Dated 28-04-2017.
	5.0	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) Clause no. 10.0 - TIME SCHEDULE/ COMPLETION PERIOD of Volume-IF-TCC-CML-Rev-00 has been modified and revised Volume-IF-TCC-CML-Rev-01 is attached herewith, superseding earlier version issued along with NIT.
- 2) Due date of submission of offer is extended from 08-05-2017 to **29-05-2017 (15-00 hrs)**. Bidders are requested to submit their offer by extended due date positively.
- 3) Revised 'No deviation certificate' is attached. Bidder to submit 'No deviation certificate' as per attached format only.
- 4) All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,
for BHARAT HEAVY ELECTRICALS LTD

Engineer (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

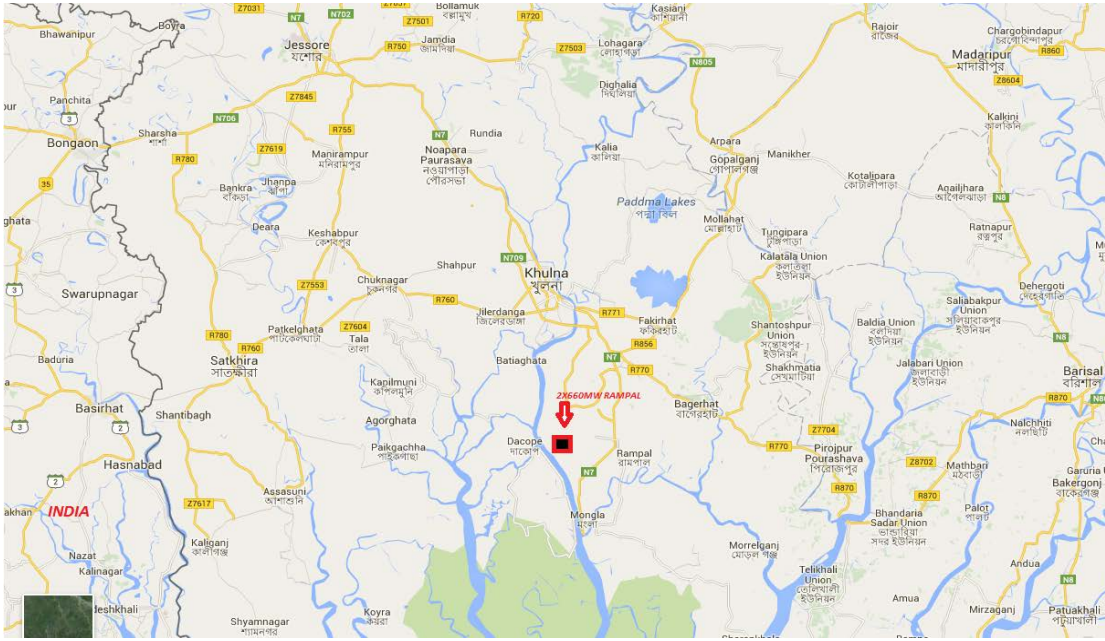
फोन/Phone : बोर्ड/EPABX : (033) 23398000

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1.0	PROJECT SYNOPSIS AND GENERAL INFORMATION
1.1	The 2 x 660 MW MAITREE SUPER THERMAL POWER PROJECT is located in Moithara Village, Rampal Upazila, Bagerhat District, Bangladesh. 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.  LOCATION MAP:2X660MW MAITREE RAMPAL PROJECT

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	 LOCATION MAP:2X660MW MAITREE RAMPAL PROJECT
1.2	APPROACH TO SITE The nearest town Khulna is at a distance of 23 km from project site. The site is Connected by road from Mangla- Khulna Highway. 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
1.3	Owner: BIFPCL (BANGLADESH-INDIA FRIENDSHIP POWER COMPANY (PVT.) LIMITED)
2.0	SCOPE OF THE CONTRACT
2.1	The complete scope of work includes Engineering, Procurement, Supply and construction of onshore/offshore civil, structural and architectural works required for completion of the following for 2x660 MW Maitree STPP, Rampal, Bangladesh: 1) Jetty structure. 2) Retaining wall including return walls. 3) Revetment & Shore protection. 4) Dredging including maintenance Dredging Till Completion of Guarantee / Warrantee Period. 5) Levelling and Grading. 6) Site Investigation. 7) Any other miscellaneous civil and structural works as required.
2.2	Mix design (M 20, M 25, M 30, M 35 or as required grade) for all concreting shall be carried out either at site or from a reputed institute, contractor has to ensure adding of admixture and minimizing of cement content in line with relevant BS code as advised by BHEL time to time without any additional cost.

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2.3	The work to be performed under this specification consists of providing all labour, materials, consumables, equipment, temporary works, temporary storage sheds for contractors own use, temporary colony for labour and staff, temporary site offices, constructional plant's transportation/ handling and all incidental items not shown or specified but reasonably implied or necessary for the completion of subject scope, all in strict accordance with the specifications including revisions and amendments thereto as may be required during the execution of work.
	SANITARY The Contractor shall furnish and maintain sanitary facilities for the use of all personnel engaged in the Work under this Contract. These facilities shall be subject to the approval by the Employer.
2.4	The scope shall also include setting up by the bidder a testing laboratory (one AC lab size 4.5 mtr. x 6 mtr. and 1 non AC lab 4.5 mtr. x 4.5 mtr.) in the field to carry out all relevant tests. Detail of laboratory equipments as per Annexure-A is to be arranged by the contractor within quoted rate. For conducting day to day one no. chemist/ Qualified quality engineer to be deployed as necessary.
2.5	All quality standards, tolerances, welding standards & other technical requirements shall be strictly adhered to. The Bidder shall fully apprise himself of the prevailing conditions at the proposed site, climatic conditions including monsoon pattern, soil conditions, local conditions and site specific parameters and shall include for all such conditions and contingent measures in the bid, including those which may not have been specifically brought out in the specifications.
2.6	All works under this specification, unless specified otherwise, shall conform to the latest revision and/or replacement of the following or any other Indian Standard Specifications and Codes of Practice. In case any particular aspect of work is not covered specifically by Indian Standard Specification, any other standard practice as may be specified by the Engineer shall be followed.
2.7	The Contractor is to carry out the work as per the drawings issued to him and/or Contractor's drawings which are approved by the Engineer and/or the Engineer's instructions.
3.0	SITE VISIT
3.1	Contractor should visit site and acquire full knowledge & information about site conditions prevailing at site and in and around the plant premises together with all the statutory, obligatory, mandatory requirements of various authorities before submission of the bid. In line with the above, site visit confirmation will be required to be submitted by the bidder with the technical bid.
3.1	OPEN SPACE FOR OFFICE & STORAGE
3.1.1	Open spaces for material storage yard & construction of temporary site office may be allocated as made available by the customer / BHEL free / hire charges. Contractor has to make his own arrangements for labour colony including Electricity and water for the labour colony.
3.1.2	Construction of necessary stores and storage of materials shall be in contractor's scope. BHEL shall provide available space as received from customer on mutually agreed basis. Security of stores & work place shall be in Contractor's scope.
3.1.3	REMOVAL OF TEMPORARY FACILITIES
	When the Work is completed all such temporary structures and facilities shall be removed from the Site and the area shall be restored to its original condition
3.2	WATER
3.2.1	Till such time, Construction water facility is not ready, the contractor has to make his own arrangement for construction water.

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	On readiness of the Construction water system (expected tentatively within 6 months from start of work), BHEL will provide construction water at one point at mutually agreed point or within 500 m from work premises, free of cost to the contractor. Bidder to note that no ground water is allowed for construction purpose by the project authority.
3.2.2	Further necessary network for construction & drinking water system shall be done by the bidder at his own cost.
3.2.3	Contractor should arrange on their own, drinking water in their labour colony.
3.2.4	BHEL shall not be responsible for any inconvenience or delay caused due to any interruption of water supply and the contractor shall claim no compensation for delay in work for such interruption. Contractor may make standby arrangement for water for which no separate payment shall be made by BHEL.
3.2.5	Contractor will have to arrange for storage of water to meet the day-to-day requirement. Bidder will ensure adequate supply of construction water to meet the requirement of water during major concreting.
3.2.6	The availability of water (construction as well as drinking) in Maitree project may be limited. Contractor shall ensure that no water is wasted. In this regard the contractor shall take all necessary measure towards preservation of water.
3.3	ELECTRICITY
3.3.1	CONSTRUCTION POWER & GENERAL ILLUMINATION NETWORK:- Till such time the Construction Power is not ready, the Contractor has to make his own arrangement for the same as required to carry out the job under the scope of work within the quoted rate. On readiness of the Construction Power (expected tentatively within 8 months from start of work), BHEL Shall Provide Construction Power free of charge at 415V level at one point (within 500 M from his workplace / batching plant) , bidder has to make his own distribution arrangement to draw electricity. The bidder will have to procure & install adequate area illumination system during construction right from start of his work. This system will include temporary pole lighting, portable lighting towers with sufficient DG back-up for area lighting at different working areas for execution of the work & safety of workmen within the quoted rate. The illumination should be such that minimum illumination requirement as specified in specification or any-where for general illumination is maintained. GENERAL:- If any other voltage level (other than normally available) is required, the same shall be arranged by the contractor from power supply as above. Contractor will have to provide at his 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 the necessary charges including replacement by calibrated meters is to be borne by

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	the contractor. Supply of electricity shall be governed by Electricity Act and Installation Rules and other Rules and Regulation as applicable. The contractor shall ensure usage of electricity in an efficient manner and the same may be audited by BHEL time to time. In case of any major deviation from normally accepted norms is observed, BHEL will reserve the right to impose penalty as deemed fit for such cases.
3.3.2	The bidder shall have to provide earth leakage circuit breaker at each point wherever human operated electrical drives / T&Ps are deployed.
3.3.3	The power supply will be from the available source of customer. 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 contractor due to such non-supply on the grounds of idle labour, machinery or any other grounds.
3.3.4	Bidder will have to arrange sufficient illumination at their own work areas.
3.3.5	The contractor 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 contractor to step up the progress of work after restoration of electric supply so that overall progress of work is not affected.
3.3.6	The contractor shall have to make arrangement at their own cost for illumination that will be required in the working area for execution of the work & safety of workmen.
3.3.7	The contractor shall have to make arrangement at their own cost for illumination etc in labor colony. However there may be provision of Chargeable Power for labor colony for which contractor has to install meters and necessary accessories
4.0	TOOLS & PLANTS
4.1	All the tools and plants required for execution of the above work are in contractor's scope.
5.0	MATERIAL SUPPLY
5.1	SUPPLY OF MATERIALS – All requisite materials viz reinforcement steel, structural steel, cement, aggregates, sand, bricks, all consumables like gas, electrodes etc and other materials required for the work shall be supplied by the contractor in time during execution. BHEL shall not supply any materials for this work.
5.1.1	Cement and Steel required for this package need to be supplied by the contractor.
5.1.2	Cement shall be as per Technical specification of the contract.
5.1.3	Reinforcement shall be grade B500B confirming to BS 4449:2005+A:2009
5.1.4	Test certificates in respect of both Steel and Cement to be furnished. The contractor shall submit the consumption statement of cement and steel used in the works along with bill.
5.2	All the required materials to be supplied and erected by the bidder within the quoted cost. The use of materials shall be subject to inspection at site before erection / installation. Any damaged materials received at site shall be suitably replaced & rectified up to the satisfaction of BHEL Engineer.
6.0	INSPECTION, TESTING AND INSPECTION CERTIFICATES
6.1	The engineer, his duly authorized representative and / or an outside inspection agency acting on behalf of BHEL / owner shall have access at all reasonable times to inspect & examine the materials & workmanship of the works during its manufacture and if part of the works is being manufactured or assembled on other premises or works, the vendor shall obtain for the engineer and for their duly

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	authorized representative permission to inspect as if the works were manufactured or assembled on vendor's own premises or works. Necessary arrangement for carrying out inspection including supply of labour, IMTEs, area illumination and scaffolding, if required will be vendor's responsibility and same has to be carried out within the quoted price.
6.2	To facilitate advance planning of inspection in addition to giving inspection notice the vendor shall furnish quarterly inspection program indicating schedule dates of inspection at customer hold point and final inspection stages. Updated quarterly inspection plans will be made for each 3 consecutive months and shall be furnished before beginning of each calendar month.
6.3	Before any plant / equipment leaves the place of manufacture, BHEL shall be given the option of witnessing inspections & tests for compliance with specifications & related standards. The vendor shall give the engineer/ inspector 15 days written notice of any material being ready for testing. Such test shall be to the vendor's account except for the expenses of the inspector. The engineer / inspector, unless the inspection is waived will attend such tests within 15 days of the date on which the equipment is notified as being ready for test / inspection, failing which the vendor may proceed with test which shall be deemed to have been made in the inspector's presence and he shall forthwith forward to the Inspector duly certified copies of test reports.
6.4	The engineer or inspector shall within 15 days from the date of inspection as defined herein give notice to the vendor of any objection w.r.t. drawing / equipment / workmanship which in his opinion not in accordance with the specification / contract. The vendor shall either make modification as may be necessary to meet the said objection or explain to the engineer/ inspector giving reasons that no modifications are necessary to comply with the contract.
6.5	When the factory tests have been completed at the vendor's or sub-vendor's works, the engineer or inspector shall issue a certificate to this effect within reasonable time after completion of tests but if the tests are not witnessed by the engineer or Inspector the certificate shall be issued within 15 days of the receipt of vendor's test certificate by the engineer inspector. Completion of these tests or the issue of the certificates shall not bind BHEL to accept the equipment should it on further tests after erection be found not to comply with the contract.
6.6	In all cases where the vendor provides the tests at the premises of the vendor or any sub-vendor, the vendor except where otherwise specified shall provide free of charge such items as labour, materials, electricity, fuel, water, stores, apparatus and instruments as may be reasonably demanded by the engineer/ inspector to carry out effectively such tests on the equipment in accordance with the contract and shall give facilities to the engineer/ inspector to accomplish testing.
7.0	INSURANCE
	The contractor shall make available the original insurance cover(s) taken by him, against his T&P, assets and workmen compensation and any other cover as may be pertinent to his works and obligatory in terms of law, to BHEL for necessary verification in regard to their adequacy, before commencement of work. However, irrespective of such verification/ acceptance, the responsibility to maintain adequate insurance coverage at all times during the period of the contract shall be of the contractor alone. Such insurance covers to be taken shall be in the joint names of the owner and the contractor. The contractor shall however be authorised to deal directly with the Insurance company(s) and shall be responsible in regard to maintenance of such insurance covers. Insurance covers to be taken

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	by BHEL / Customer shall be as stipulated under relevant clause of Volume-IB.
8.0	DEVIATIONS/ CLARIFICATIONS
8.1	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 his 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.
9.0	DEWATERING
9.1	Contractor shall ensure at all times that his work area & approach / access roads are free from accumulation of water, so that the materials are safe and the erection / progress schedule are not affected. No separate claim in this regard shall be admitted by BHEL. No separate payments for dewatering of subsoil, surface water or catchments water, if required, at any time during execution of the work including monsoon period shall be considered by BHEL.
10.0	TIME SCHEDULE/ COMPLETION PERIOD
10.1	The entire work under the scope of work shall be successfully completed in all respect within 21 (Twenty One) months from date of intimation from BHEL or start of work whichever is earlier, as certified by Construction Manager, BHEL / PSER HQ, BHEL. Mobilization at site shall be done within 20 days from date of written intimation from BHEL.
11.0	PRICE BID, CONTRACT PRICE & EVALUATION OF PRE-QUALIFICATION CRITERIA
11.1	Bidders should quote prices in USD as per format, Volume-III provided in the tender. Bids shall be evaluated based on total price quoted.
11.2	Bidder's quote is in USD as per price schedule. However, payment shall be done in 80 % USD & 20% BDT. BDT will be paid at the Buying Exchange Rate of USD as available in the web site of Bangladesh Bank on the latest due date of Bid submission. If the date happens to be a holiday / or rate is not published, then the exchange rate of previous published day of Bangladesh Bank will be considered.
11.3	Evaluation of Pre-Qualification Criteria
11.3.1	For finalising the value under Financial & Technical requirement of Pre-Qualification Criteria, following procedure to be followed for value other than INR/ USD/ BDT:
11.3.1.1	Other currency shall be converted to USD as per Buying rate of Bangladesh Bank dated 04.01.2017.
12.0	TERMS OF PAYMENT
12.1	The contractor shall submit his running bill (RA bill) once in a month at the end of each month in line with payment terms/ billing schedule indicated below. The RA bill complete in all respects accompanied by BHEL engineers certified/ measurement sheet, jointly signed, will be paid after passing of the bill subject to completeness & correctness. The measurement will be taken as specified in terms & conditions of

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	contract and certified by the BHEL engineer of actual work. However, no extra payment shall be made in the event of delay in release of payment. 90% pro-rata monthly RA payment shall be considered for payment based on monthly work completion certificate to be issued by BHEL engineer as per approved BBU/Price Schedule. The payment shall be released within 60 days from the date of receipt of complete invoice along with all necessary documents including Engineering Certificate.
12.2	Out of above 90%, 1.5 % 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-fulfilment of respective activity by contractor in each month, no payment shall be made by BHEL against corresponding activity and no claim of bidder at a later date, whatsoever, in this regard shall be entertained by BHEL.
12.2.1	0.7 % shall be paid on compliance of housekeeping of contractor's working area and store/ office areas.
12.2.2	0.3 % shall be paid on compliance of general illumination of contractor's working area and stores, office area.
12.2.3	0.2 % shall be paid on compliance of applicable OHSAS requirement as per guidelines of BHEL/ PSER and as specified in the tender.
12.2.4	0.3 % shall be paid on compliance of applicable safety requirement as per guidelines of BHEL/ PSER and as specified in the tender.
12.3	5% of contract value shall be paid against PAC (Preliminary Acceptance Certificate) to be issued by BHEL/BIFPCL on completion of job.
12.4	Balance 5% of contract value shall be paid against FAC (Final Acceptance Certificate) to be issued by BHEL / BIFPCL after completion of warranty period. However, if desired by vendor, this 5% may be released by BHEL against submission of equivalent amount bank guarantee as per Performance Bank Guarantee format, to be kept valid till warranty period, subject to the followings:
12.4.1	(i) Receipt of certificate that all works are completed in all respects;
12.4.2	(ii) Reconciliation of materials / T&P / MMD;
12.4.3	(iii) Completion of final bill formalities and
12.4.4	(iv) Handing over to BHEL.
12.5	Contractor shall make their own arrangement for making payment of impending labour wages and other dues in the meanwhile.
12.6	Contractor have to submit BHEL entry gate pass for cement, steel, and other materials required for the work, in absence of which their corresponding RA bills shall not be processed.
12.7	Subject to any deduction which BHEL may be authorized to make under the contract, the contractor shall on the certification of the BHEL engineer at site, be entitled to payment explained hereunder.
12.8	The bills will be sent to BHEL, Site Finance for scrutiny and payment will be made after processing / verification only.
12.9	The measurement will be taken by BHEL engineer as per relevant clause of GCC and certify regarding actual work executed in measurement book and bills for work. However no additional payment shall be made in the event of delay in release of payment beyond the stated period.
12.10	All admissible recovery / adjustment, etc. shall be made from interim payable amount.

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12.11	BHEL site at its discretion may split up percentage break up and effect payment to suit the site condition, cash flow requirement, according to the progress of work.	
12.12	Payment shall be made in respective currencies i.e. USD and BDT calculated in the mode specified in 11.2 above. However for reasons, solely at the discretion of BHEL, if BDT amount is not possible to be paid then USD equivalent of BDT will be paid at the Buying Exchange Rate of USD as available in the web site of Bangladesh Bank on the latest due date of Bid submission. If the date happens to be a holiday / or rate is not published, then the exchange rate of previous published day of Bangladesh Bank will be considered. The quoted / accepted price shall remain Firm throughout the contract period including extension period, if any, without any escalation till handing over.	
13.0	DELETED	
14.0	TAXES, DUTIES ETC	
14.1	<u>For Imports</u> 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 & AIT. Hence successful Bidder is requested to furnish EXHAUSTIVE ITEM –WISE LIST OF IMPORTED MATERIALS for the instant jobs/ works to facilitate us to arrange the requisite papers for exemption purposes. 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. 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. Bidder shall quote their rates/ price inclusive of all taxes, duties 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. <u>For domestically sourced / Execution</u> 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. A.I.T unless Exemption Certificate from the appropriate authority/ authorities is/ are furnished under Income Tax Act of Bangladesh , shall be deducted at prevailing rates on Gross Invoice Value from the bills <u>For Both Imports & domestically sourced/ Execution</u> Except otherwise mentioned above all taxes, Charges, Royalties, Cess any State or Central Levy and other Taxes in or outside Bangladesh for materials supplied for the work and for the execution of the contract shall be borne by contractor and shall not be payable extra by BHEL Bidder should have valid 12 digit TIN number in Bangladesh prior to start of work.	

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	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.
14.2	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.
15.0	PROJECT MANAGEMENT/ CONSTRUCTION MANAGEMENT
	To meet the need of construction management at site, contractor shall provide the following services within quoted/ accepted rates.
15.1	CUSTOMS CLEARANCE
	The Contractor 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 Contractor's personnel. 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 Contractor. Further, if the Contractor is delayed in submitting necessary shipping documents to the Employer, the demurrage charges by the Port Authority will be borne by the Contractor. Tools and equipment and other equipment of the Contractor for use during construction but which are to remain the property of the Contractor and which are to be exported by the Contractor from Bangladesh at the completion of the Work shall be carefully documented and specially listed to facilitate both import and export. The Contractor shall determine prior to shipment the customs regulations applicable to this special case as well as normal import rules and regulations applicable. The Contractor shall also be responsible for inland transport by barge/ truck/train to the Site.
15.2	RECEIVING, TRANSPORTING, HANDLING AND STORAGE
	The Contractor shall receive, transport, handle, store and install all materials and equipment furnished under these specifications, or otherwise involved in the implementation of this Contract. It shall be the responsibility of the Contractor to determine the availability and capacity of transportation and unloading facilities (including for the transportation, delivery and receipt of all equipment, materials, Plant to the Site) and to make the required arrangements to secure the necessary facilities for the same. The Contractor shall be responsible for the prompt unloading of all equipment or materials. The Contractor shall pay any demurrage incurred due to delay in unloading and for any other reasons. The Contractor shall handle materials and equipment carefully to prevent damage or loss. The use of bare rope slings for handling will not be permitted unless specifically approved by the Engineer. Special handling devices shall be used

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	when necessary to avoid damage. In addition the Contractor shall also comply with the requirements of Technical Specification with respect to the receipt, transportation, handling and storage.
15.3	PLATFORMS Open platforms shall be constructed by the Contractor at least 50 cm above grade and shall have adequate flooring and base structure to support the stored materials and equipment.
15.4	INDOOR STORAGE Indoor storage sheds shall be constructed by the Contractor by suitable means for keeping materials and equipment from contact with the ground and to protect it from the environment and outside atmosphere. Sensitive equipment (including inter-alia, electrical, I&C and other equipment) must be kept in dust proof and ventilated rooms and means have to be provided to maintain the moisture content at required levels, in accordance with Good Industry Practices.
15.5	SHORING Shoring shall be provided by the Contractor to safely support materials and equipment not less than 30 cm above the ground. The ground shall be compacted and concreted or asphalted.
15.6	WEATHERPROOF COVERINGS Weatherproof and flame resistant sheeting of sufficient size for outdoor storage shall be provided by the Contractor. The sheeting shall be carefully placed and tied down to prevent moisture and wind from entering underneath the sheeting and to otherwise protect the equipment, materials and other Plant.
15.7	IDENTIFICATION OF CONTRACTOR'S EMPLOYEES, VEHICLES & BUILDINGS 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, a serial number and the name of the Contractor. Each employee shall wear his badge visibly to the security personnel at any time. Subcontractor's employees with a name tag bearing the picture, the name or initials of the employee, a serial number and the name of the Contractor. Each employee shall wear his badge visibly to the security personnel at any time. 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 Health, Safety and Environment (HSE) Plan of BHEL. 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. 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.
15.8	EXPATRIATE PERSONNEL The Contractor shall submit to Employer data of all personnel he intends to bring into Bangladesh for the performance of the Work. This data shall include the name

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	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 Employer at least thirty (30) days prior to their expected arrival in Bangladesh. Any expense associated with illness of the Contractor's personnel, including replacement thereof, shall be to the Contractor's account. 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. All accommodations and amenities for the Contractor's personnel and families (including all staff and labour) must be provided by the Contractor, and the Employer shall not have any liability for the same.
15.9	SAFETY The Contractor shall comply with all ordinances and regulations including, but not limited to, National, State, Municipal laws and Department of Labour, Transmigration and Co-operation Regulations, and other Applicable Laws that are in force in the locality of the Works and shall comply with any instructions that may be from time to time issued by Employer. The safety rules and regulations laid down in the Health, Safety and Environment (HSE) Plan are to be strictly adhered to.
15.10	CONTRACT PLANNING AND CONTROL Before starting the Work at the Site, the Contractor shall submit the detail site management organization for approval by the Employer. Such proposals shall show clearly the Contractor's key personnel, classification and qualification with the detailed information and curriculum vitae for above key personnel. The Contractor's Representative, site manager and senior key personnel who will be responsible for working closely with the Employers staff to achieve efficient execution of the Contract shall be competent to conduct meetings and communications in the English language. The management organization shall include a planning and programming tools covering the Work, and shall apply the latest techniques in communication and analysis. The Contractor shall nominate a planning engineer to co-ordinate all planning activities.
15.11	RELEASE OF INFORMATION The Contractor shall not communicate or use in advertising, publicity, or sales release, photographs or other reproductions of the Work under this Contract, or descriptions of the size, dimensions, quantity, quality, or other information concerning the Work unless prior written permission has been obtained from the Employer.
15.12	SAFETY AND ACCIDENT PREVENTION It shall be the Contractor's responsibility to maintain throughout the construction period, a safety and accident prevention program satisfactory to the Employer

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	which meets the requirements of Applicable Laws and of all other Governmental Authorities authority having jurisdiction over the Works. The rules and regulations laid down in the Health, Safety and Environment (HSE) Plan must be adhered to at all times.
15.13	SECURITY The Contractor shall be solely responsible for the security of all equipment and materials incorporated or to be incorporated in the Work by him and all equipment, materials, tools, supplies, structures, facilities and others properly used in the execution of the Work while in his care and custody. The Contractor shall conform also to any specific security requirements of Employer but such compliance shall not relieve the Contractor from the total responsibility for security.
15.14	HOUSING & TRANSPORT The Contractor shall arrange for suitable housing units together with furnishing and utilities in the close proximity of the construction Site for accommodation of all his expatriate personnel. If the services of any expatriate personnel of the Contractor or its Subcontractors. If the Contractor decides in consultation with the Employer that the health or safety of any of his personnel is or might be jeopardized by political or health hazards in Bangladesh, the Contractor may, after forty eight (48) hours' notice, order its employees and the employees of its Subcontractors and suppliers to return to their headquarters or other safe location, in which case the Work will be deemed to be suspended for the duration. The Contractor shall provide to the extent agreed transport vehicles for use during construction period by the expatriate as well as local personnel.
15.15	PROPRIETARY NAMES Whenever a material or article is specified or described on the plants by using the name of a proprietary product or by using the name of a particular manufacturer or vendor, the specific item mentioned shall be understood as establishing the type, function and quantity desired. Unless otherwise specified, other manufacturers' products which in the opinion of the Employer are equivalent of those specified will be accepted. Such items shall be submitted for approval prior to their incorporation in the Works.
15.16	PERFORMANCE OF THE WORK The Contractor shall conduct all Works in such a manner as to cause the least possible disturbance or damage to the environment. In cases where some temporary disturbance or damage is unavoidably caused due to the nature of the work, the Contractor shall, as soon as possible, remove the cause of such temporary disturbance, repair the damage and, in general, restore the affected areas to their original condition to the extent possible, and in a manner satisfactory to the Employer, the landowner and any authorities. Prior to commencement of the Work, the Contractor shall provide details of its

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	EMP specifically addressing the following: Environmental management system and manual – policies, standards and procedures, and programs; organization / responsibilities; Training Incident and accident investigation; Management support; Environmental protection, mitigation and restoration; Emergency preparedness and response; • Socio-economic plans, including historical and cultural resources; • audit, monitoring and corrective action; • information and records management; and, • Integration of safety & health requirements with the EMP. All aspects of the EMP and the environment work requirements are the Contractor's accountability and the Contractor, its management and its Site supervisory staff will be held responsible for its implementation. All relevant Health, Safety and Environment (HSE) issues, results of audit and monitoring plans and programs, and HSE performance indicators will be communicated to the Contractor's management and the Employer through daily inspection meetings and reports, weekly construction meetings, monthly meetings, and in terms of the monthly project report. The Contractor shall ensure that he has complete knowledge of all the laws, statutes, statutory instruments, regulations, rules, treaties and conventions (by whatever name or title), environmental protection regimes and other Applicable Laws, in each of the jurisdictions where he shall perform the Work. The Contractor shall also take all necessary measures to protect the atmosphere, ocean, rivers, groundwater, seaports and land from pollution. In any event the Contractor shall promptly use its best efforts to eliminate and clean up any pollution caused, directly or indirectly, by the Contractor or which occurs at the Site, or other sites associated with this Work. The Contractor shall cooperate in all respects with any participant environmental representatives and with governmental persons, and allow them to inspect any and all equipment or operations that they wish to observe. The Contractor shall, at all times, be ready to discuss the implementation of the Contractor's safety, health and environmental protection program.
15.17	INSTRUCTION TO WORKERS (ORIENTATION / INDUCTION) The Contractor shall ensure that all employees, subcontractors, servants and agents (and employees, servants and agents of all Subcontractors) participating in the Work, are advised about the strategy and plan for managing the

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	environmental-social issues related to the work, and on their role and responsibility; instructed on the requirements of environmental laws, rules, regulations and specific permit conditions applicable to the area and the Work; instructed on the application and use of the required personal protective equipment (PPE) for their job duties and functions; and, have received the appropriate training in the use, application and maintenance of PPE.
15.18	RISK MANAGEMENT The Contractor shall clearly state the management methods and techniques to be used to identify potential hazards and risks at any stage prior to the execution of a particular activity. If required, specific procedures shall be developed by the Contractor to eliminate or mitigate the hazard to a safe level prior to the work being authorized. All requirements of the project's environmental impact assessments ("EIA") and other relevant assessments and conditions of approvals accorded by the relevant Governmental Authorities must be considered by the Contractor in the development of the Contractor's Health, Safety and Environment (HSE) Plan, EMP and other related/relevant plans. The Contractor is required to implement a system whereby all risks associated with hazardous substances, whether chemicals, by-products, effluents or waste materials, are minimized and/or eliminated. In conjunction with its emergency plans and procedures, the Contractor shall develop and submit to the Employer's Representative a "Safety Philosophy Document" that details the strategy to be adopted for control and shutdown systems, including alarms and programmable electronic control systems.
15.19	EMERGENCY PREPAREDNESS, RESPONSE & CONTINGENCY PLAN The Contractor shall prepare an Emergency Preparedness, Response and Contingency Plan (a detailed program of action to minimize the effects of an abnormal event requiring prompt actions beyond normal procedures to protect human life, minimize injury and safeguard the environment) for environmental and personal safety emergencies or incidents. This plan shall be found within the Contractor's Safety & Health and/or Environmental Programs. The purpose of the plan shall be to limit insurance and damage to people, property and the environment respectively. The plans, procedures, and trained personnel shall be in place for the duration of the Contract to manage and control emergency situations and incidents in a proper and expeditious manner.
15.20	SERVICING AND FUELLING To ensure adequate response capability in the event of a fuel, ground spill or other spill, all fuel transport vehicles and the Contractor's foreman vehicles shall carry a suitable amount of commercial absorbent material. In addition, floating absorbent pads and booms for spill clean- up on open water shall be kept accessible on the construction Site. All service vehicles and/or equipment utilized for re-fuelling must be equipped with automatic shut-off valves. All equipment or servicing activities with the potential for accidental spills (e.g., oil changes, hydraulic repair, coolants) will require appropriate containment methods to be in place (i.e., storage containers,

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	impervious liners, absorbent materials, etc.) prior to the start of the activity.
15.21	SOIL AND GROUNDWATER PROTECTION The Contractor shall develop and implement soil and groundwater protection measures. Protection measures shall include building and impervious floors, where appropriate. The Contractor shall make an assessment of groundwater quality prior to the start of construction and prior to commissioning to demonstrate to Employer's Representative that construction activities have not adversely affected the environment. Groundwater quality shall be monitored throughout the construction phase.
15.22	HEALTH HAZARDS Worker and public health is a critical part of any HSE management program. The Contractor shall control substances and materials that may be a hazard to worker's health. These controls shall be a combination of hazard communication, safe work systems and the controlled handling and disposal of hazardous materials. The Contractor's controls shall commence at contract preparations and procurement stages, where all vendors and subcontractors shall be required to submit Material Safety Data Sheets ("MSDS") for all hazardous materials that will be supplied, provided or brought onto the Site. These MSDSs shall be forwarded to Contractor's HSE Manager for review and records management. In the event hazardous materials are to be used, the Contractor shall carry out assessments according to recognized international standards, to determine if there are any more suitable or less hazardous materials that could be substituted for the original materials. Only when the Project Manager, Employer and his Engineer and the Contractor are satisfied that assessments have been completed, and control measures are adequate to protect worker health, the materials shall be allowed on the project worksite. The Contractor's control measures shall include: ☐ Material transport, storage, labelling, packaging, and disposal, ☐ Personnel protective equipment (PPE), ☐ Health surveillance and monitoring, and ☐ Emergency procedures and training. All explosive materials to be used for blasting during Site preparation shall only be handled by approved and qualified personnel. All explosive materials shall be stored in a secure, limited access sites, protected from workers and the public, and removed from the site every day and immediately after use. All radioactive equipment and materials shall only be used by qualified, approved and permitted personnel. Radioactive materials must be stored in approved and protected containers. Radioactive materials and waste products shall not be disposed of on-site but removed in protective containers and disposed at government approved storage and disposal sites

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15.23	WASTE MATERIAL MANAGEMENT
	The Contractor shall ensure that waste management identification, handling, transport and disposal are addressed in the development of their HSE management plans. The Contractor's employees responsible for handling hazardous materials (including wastes) shall receive training and certification in the handling, transport, storage and disposal of chemicals and regulated or hazardous materials. Where applicable, Workplace Hazardous Materials Information System ("WHMIS") certification and training, or its equivalent, shall be made available to employees. Regular written updates shall be included for continued employee awareness. The Contractor shall ensure proper segregation and isolation for wastes that could react together in the event of a leak or other incident. These facilities shall include lockable, fire proof cabinets or storage in shelving units separated by fireproof barriers or walls. The Contractor shall dedicate a space for waste and drum storage. The storage area must be easily accessible for spill containment and emergency response and not be susceptible to flooding. For any waste storage area which could accumulate hazardous gases, vapors, or dust due to the nature of the wastes stored, the Contractor must supply suitable ventilation or other controls to ensure exposure by employees is kept below required minimum standards. Storage areas for hazardous wastes shall be designated as restricted areas and shall be suitably equipped to control an incident involving a leak or spill. The Contractor shall make available suitable fire extinguishing equipment and proper electrical bonding equipment in all areas involving the handling and storage of flammable and reactive wastes. Disposal of wastes by burning will not be allowed on the construction site. Sumps and waste pits shall not be used for waste storage at the work site. Sumps should only be used for temporary control and containment of spills, equipment leaks, etc. If the Contractor encounters former sump sites or waste pits during ground surveys, the Contractor shall identify and investigate the same. If any contamination is suspected, the Contractor shall excavate, remove and where required replace with an approved sump container system. The Contractor shall develop and implement a waste disposal control system. This system shall control every load of waste leaving the worksite, detailing the type of waste disposal, waste origin and destination, approximate weight, date and transport details on a waste manifest/document. These documents shall be audited.
15.24	SPILL RESPONSE AND CONTROL
	All spills shall be stopped and cleaned up immediately to avoid potential impact to

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	water and soil quality. All spills shall be reported using the Incident Management Process. Under no circumstance contaminated material may be “stored” on the work site. All spills shall be rapidly stopped and appropriately eliminated as defined in the Contractor's Emergency Preparedness, Response and Contingency Plan. Spills shall be contained in a way that will prevent their redistribution. All ground spills shall be contained as quickly as possible through diking, suction methods, excavation and the use of absorbents or other appropriate recovery techniques. A list including the type, quantity and location of the storage of retaining and clean up equipment to be used during construction shall be prepared. The list shall include the procedures and mitigation measures to be used in case of a spill. A written inventory will also be prepared, before starting construction works, including lubricants, fuels, solvents, chemicals and other materials that might be accidentally discharged during construction. All on-site fuel storage tanks shall be located in an impermeable secondary containment area with a holding capacity equal to 110% of the largest tank within the berm. For above ground tanks, the tanks shall be surrounded by a berm, the entire area covered with a suitable commercial absorbent material and with a sealed plastic liner to form an area that can be pumped out in the event of a leak in the tank. A waste handling plan shall be made with the purpose of identifying the procedures necessary for cleaning and disposing of residues from a major spill. In the event of a spill, the Contractor shall make all resources available to contain and clean up the spill. Traffic shall be minimized in and around the spill site.	
15.25	NOISE CONTROL Noise level specifications to be followed by the Contractor in design, assessment and monitoring activities are based upon the maximum (acceptable) levels which plant personnel may be exposed during their normal working duties. The Contractor shall be familiar with and comply with the environmental guidelines as issued by the relevant Governmental Authorities in Bangladesh, including the Department of Environment, Government of Bangladesh and other relevant Applicable Laws. All internal combustion motors of vehicles, machinery and equipment used during the construction phase, shall have adequate noise silencers, and shall be kept in good operating conditions, during the entire construction period. Where temporary noise pollution of greater than 85 dBA will occur, temporary silencers shall be used. Equipment noise should not exceed the specified limits at accessible locations.	
15.26	CONSTRUCTION TRAFFIC PLANNING The Contractor shall ensure that the construction Site is organized in such a way that pedestrians can move safely and without risk. The Contractor shall firstly select the lowest period of traffic flow for equipment crossings; and secondly, ensure that traffic patterns and entrances to private and public roads for access	

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	are not obstructed during construction activities. All site entry will be controlled by vehicular passes. Road closures, on-site and off-site, shall be with the approval of the Contractor's site manager and/or road closure permit. Site traffic shall be minimized and speed limits posted and enforced.
15.27	HOUSEKEEPING All construction debris and other garbage shall be continuously collected and disposed at an approved facility. At the end of each day, all waste material shall be removed from the construction Site and deposited at the approved allocated area. The approved procedures to manage waste shall be specified in the Contractor's waste management plan. All empty hazardous material containers shall be removed from the work area as soon as is practicable. All empty gas containers and bottles shall be returned to their storage area and secured properly. The Contractor's shall prepare a pest and vector control program to address specific site conditions, including a mosquito control program.
15.28	CONSTRUCTION CAMPS The location of work places, camps, areas of storage and installation of works, compression, regulation and communication stations shall be located on levelled land, avoiding areas with non-cohesive soils to avoid erosive processes. Health conditions in the camp shall be controlled in order to prevent contamination of adjacent groundwater or surface water resources. Domestic sewage generated at the construction sites shall be eliminated by two systems of septic/absorption tanks or chemical toilets located on the sites. Solid combustible garbage shall be collected and secured daily, until disposal, to prevent the attraction of livestock, vermins and wild animals. Residue shall be disposed of, along with non-combustible garbage, in a disposal location approved by the Authorities. Upon abandonment, the camp site area shall be cleared of all trailers, piping, cable, insulation, lumber, blockage, metal wastes, etc., and re-graded according to the landscaping concept. These guidelines and procedures for the management of domestic and other waste shall be specified in a plan.
15.29	SITE REGULATION MANUAL The Contractor shall thirty (30) days prior starting any Work at the Site furnish a detailed and comprehensive site regulation manual for its proposed operation and works on the Site, which shall be based on the site related regulations and requirements in the Contract and which shall be subject to Employer's approval. All work on the Site, shall be carried out in compliance with the so approved site regulation manual.
15.30	PLANNING & MONITORING
15.30.1	The bidder shall prepare detail construction schedule (L-3) as per completion dates given in this document. This schedule must include all milestone and key activities for each subsystems / components in the areas of engineering (wherever applicable), procurement, manufacture (wherever applicable), excavation / construction / erection. This network must conform to the overall project schedule. The bidder should also ensure monitoring of these activities at least weekly basis to

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	start with and on daily basis whenever required by BHEL.
15.30.2	The bidder shall also prepare progress report indicating progress on key activities, management summary for critical activities and list of actions requiring attention of BHEL. This schedule is to be preferably made in PRIMAVERA / MS PROJECTS, so that the same is compatible with BHEL's project management software.
15.30.3	The bidder will have to install 2 Nos. PCs (multimedia PC work station Pentium-Core-i5-650, 3.2 GHZ or above, 500 GB HDD, 4 GB RAM, 100 /1000 MBPS LAN card) of HP / HCL / COMPAQ/ ZENITH or equivalent make with window 10 or higher, 64 bit (with roll back to 32 bit O/S and required software like MS Office 2010 or higher, AutoCAD 2014 or higher, PageMaker (7.0 etc.), ADOBE PDF CREATOR with one no laser jet printer compatible for A3 size printing (ink/ cartridge for which to be supplied as and when required), one no. laser jet printer compatible for A4 size printing (ink / cartridge for which to be supplied as and when required) with power backup at places, as per instruction of BHEL for exclusive use of BHEL. These computers / printers shall remain contractor's property and they will be allowed to take out the same after completion of contract period. The contractor shall provide data / information etc. in prescribed formats for periodical updating of the progress reports, material management reports, updating of network pertaining to the contractor's scope of work etc. The contractor shall also provide 2 (one) Nos. computer operators and 2 (one) 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 30 days from LOI date till completion of scheduled contract period. If contractor fails to provide computer / printer / personnel as per requirement, for a continuous period of fifteen days or more, BHEL shall have the right to deduct the amount as per following rates on prorated basis, from contractor's RA bill or any other dues.
15.30.3.1	@ BDT 30,000/- (Thirty thousand) or USD 400 / month for each computer operator.
15.30.3.2	@ BDT 24,000/- (Twenty four thousand) or USD 310 / month for each service staff.
15.30.3.3	@ BDT 18,000/- (Eighteen thousand) or USD 230 / month for each set of computer & printer.
15.30.3.4	In the event of the contract period getting extended beyond the stipulated time for reasons not attributable to you, above services may either be withdrawn or retained as per instruction of BHEL. If services are retained, you will be reimbursed at the above 70% of the mentioned rate or (actual +15%), whichever is lower, if the services of operator / service staff are being used by BHEL.
15.30.3.5	The contractor's site office must have facilities of communications like Fax, E-mail, and telephone with STD facility within a month from LOI.
15.30.2	PROGRESS REPORTING
15.30.2.1	The bidder shall submit daily, weekly and monthly progress reports for work force, materials reports, consumables (cement / steel / gases / electrodes) report and other reports as per pro-forma considered necessary by BHEL. In case of any failure on contractor's part to comply with this, BHEL may at its discretion, consider to withhold part payment against their RA bills.
15.30.2.2	The progress report shall indicate the progress achieved against planned with reasons indicating delays, if any, and shall give the remedial actions which the

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	contractor 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.	
15.30.2.3	The daily work force reports shall clearly indicate the work force deployed, category-wise specifying also the activities in which they are engaged.	
15.30.2.4	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 contractor shall present program of subsequent week. The contractor shall constantly update/revise his work program to meet the overall requirement.	
15.30.2.5	Periodic progress reviews on the entire activities of execution in respect of supply and works in scope of bidder will be held once in a month at Kolkata / site. These meetings will be attended by reasonably higher officials of the contractor and will be used as a forum for discussing all areas where progress needs to be speeded up. The contractor shall be further responsible for ensuring that suitable steps are taken to meet various targets decided upon such meetings.	
15.30.2.6	During construction contractor shall take an average twenty colour digital photograph / slides each month (not less than four per week) of the works during progress. In case of failure in providing such photograph in each month, an amount of BDT 20,000/- or USD 260 per month shall be deducted from contractor's RA bill.	
15.30.2.7	Successful bidder has to provide for electronic/ computerized storing and reproduction / printing / plotting of various data, log sheets, protocols, measurements etc. These may be stored in CD (as per requirement) and handed over to BHEL as per requirement.	
15.30.2.8	PHOTOGRAPHS The Contractor shall furnish to the Employer three (3) hard copies (and three (3) soft copies in .jpeg or .pdf format on separate CDs/DVDs) of each photograph taken to show shop assembly of equipment and the monthly stages of equipment installation. Each photograph shall show upon its face, the date, the Contractor's name, and description of the view taken. Photographs shall be taken of each assembly or sub-assembly to indicate the progress of the Work. Additional photographs shall be taken when and where required as directed by Employer and/or the Engineer. Shop photograph shall be not smaller than 120 mm by 150 mm in size.	
15.30.3	SITE ORGANIZATION	
15.30.3.1	The contractor 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 construction manager for site operations with sufficient level of authority to take site decisions. The vendor will submit organization chart (showing the name of SITE-IN-CHARGE) with individual bio-data indicating various levels of experts to be posted for supervision in the fields of supervision and 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 the schedule without any commercial implication to BHEL. The organization chart is to be submitted within 10 days from the date of LOI.	
15.30.3.2	Following (minimum) engineering manpower with power plant construction background to be deployed at site by the successful vendor for their day to day supervision etc.	
15.30.3.2.1	Qualified safety officers with assistants (exclusive for safety supervision for project	Officer – One No. Assistant - Two Nos.

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	jobs).	
15.30.3.2.2	Engineer & Supervisors for quality inspection.	One no Two supervisor
15.30.3.2.3	Site supervising engineer and supervisors for civil works	Four Nos. Engineers Four Nos. supervisors
15.30.3.2.5	Chemist/Quality engineer for Civil Laboratory	One no. Assistant - Two Nos.
15.30.3.2.6	Planning Engineer (exclusively for planning)	One no. Engineer Assistant - One Nos.
15.30.3.3	Deputation of above man-power shall be jointly decided at site in line with construction schedule.	
15.30.3.4	Engineer / supervisor for other functions like store & purchase, material management, fin, administration etc. are to be provided as per site requirement and not considered above.	
15.30.3.5	In the event of non-deputation of engineer/ supervisor by the bidder as per above agreed schedule, BHEL shall reserve the right to deduct USD 1050 per man-month for engineer, USD 650 per man-month for the supervisor / safety officer / chemist and USD 650 per man-month for safety supervisor from RA bills. Further induction of manpower regarding site supervisor & site engineer will be decided at site as per requirement without any financial implication.	
15.30.3.6	BHEL reserves the right to reject or approve the list of personnel proposed by the contractor. 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.	
15.30.3.7	In addition to above, a well experienced qualified engineer to be designated, as 'Project Co-coordinator', shall be deployed by the contractor. Such engineer shall have adequate exposure on the job and shall remain fully involved in all planning activities, guidance etc. to contractor's own team during the complete execution period of contract.	
15.30.3.8	The contractor 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.	
15.30.3.9	The contractor should also submit network programs for the erection of various items. These networks shall show the BIFCL/ BHEL hold points, which have to be cleared by BIFCL/ BHEL, or their authorized representatives before further erection can take place. These programs for the erection would clearly identify responsibilities of the contractor and BIFCL/ BHEL. It is the responsibility of the contractor to get the Networks approved by BHEL within four weeks of the date of finalization of award of work/ placement of LOI.	
16.0	QUALITY CONTROL & QUALITY ASSURANCE	
16.1	Contractor's engineers & supervisors shall be adequately qualified and also inclined to do a quality job. The quality assurance engineer shall co-ordinate all aspects of quality control, inspection, implementation of quality assurance procedures laid down in Quality Plan and technical specification by BHEL. He shall fill up quality assurance log sheets / formats and submit to BHEL for joint inspection and acceptance. The contractor shall fill up, maintain & preserve the quality records in computerized media. BHEL's authorized representative shall be given free access at all time to such quality related records etc. for inspection, review etc.	
17.0	QUALITY ASSURANCE PROGRAMME	
17.1	The contractor shall arrange for suitable quality assurance programme to control all	

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	activities pertaining to the scope of work, as necessary. Such programs shall be outlined by the contractor & shall be finally accepted by BHEL. A quality assurance programme of the contractor shall generally cover the following
17.2	Organization structure and qualification data for key personnel of the contractor for the management and implementation of proposed quality assurance programme
17.3	The procedure for source inspection, incoming raw material inspection, verification of material purchased etc.
17.4	System for maintenance of records.
18.0	GENERAL REQUIREMENTS – QUALITY ASSURANCE
18.1	All materials, components and equipment covered under the specification shall be procured, manufactured, erected, commissioned and tested, as applicable, at all stages as per comprehensive quality assurance program. An indicative program for inspection / test, to be carried out by the contractor, for some of the major items is given in the respective technical specification.
18.2	Field quality plan will detail out the quality practices and procedures etc. to be followed by the contractor's site quality control organization, during various stages of site activities from receipt of material / equipment at site.
18.3	BHEL reserves the right to carry out quality audit 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.
18.4	Quality audit / approval of the results of test & inspection will not prejudice the right of BHEL to reject an equipment service not giving desired performance and shall not in any way limit the liabilities and responsibilities of the contractor in earning satisfactory performances of equipment/ service as per specification.
18.5	Repair / rectification procedure to be adopted to make any job acceptable shall be subject to the approval of BHEL.
18.6	All the latest relevant codes as per technical specification should be available with the contractor at site within 15 days from the date of placement of LOI or otherwise specified by Construction Manager/ Project Manager, BHEL.
19.0	HEALTH, SAFETY & ENVIRONMENT
19.1	REFER DOCUMENT NUMBER ; HSEP:14-MAITREE: DATE:01.03.16
	DOCUMENT TITLE:-HEALTH, SAFETY AND ENVIRONMENT PLAN FOR 2X660MW MAITREE SUPER THERMAL POWER PROJECT
20.0	SPECIFIC REQUIREMENTS FOR ISO 9002
20.1	Contractors shall ensure that all their staff / employees are exposed to periodical training programs conducted by qualified agencies/ personnel on ISO 9002 Standards.
20.2	Contractor shall ensure that the quality is maintained in all the works connected with this contract at all stages of the requirement of BHEL.
20.3	Contractor shall ensure that all MMDs that are used, whether owned by the contractors or used on loan, are calibrated by the authorized agencies and the valid calibration certificate will be available with them for verification by BHEL. A list of such instruments possessed by the contractor at site with its calibration status is to be submitted to BHEL Engineer for control.
20.4	Contractor shall ensure that fitness certificate of the tools & plants, that are in use, whether owned by contractor or issued on loan, are tested by authorised agency and the valid fitness certificate is available for verification by BHEL.
20.5	Contractors shall arrange for the inspection of the works at various stages as required by BHEL. The contractors shall take immediate corrective action for the non-conformances if any, observed and pointed out by BHEL.

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21.0	INTEREST BEARING RECOVERABLE ADVANCE/ MOBILISATION ADVANCE
21.1	Interest bearing recoverable advance of 5 (five) % of the contract price in stages is admissible in the following manner. Interest rate shall be the base rate of SBI (on the date of release of advance) plus 6% (compound interest shall be calculated as per monthly rest).
21.2	One and a half (1.5) % to be released on submission of following.
21.2.1	Unqualified acceptance to LOI.
21.2.2	Requisite security deposit.
21.2.3	Bank guarantee (BG) equivalent to 1.1 times the advance amount valid for a period initially for one year subsequently to be extended till the advance is adjusted.
21.2.4	Detailed L-2 network submission & approval by BHEL.
21.3	One and a half (1.5) % to be released on following.
21.3.1	Submission of bank guarantee (BG) equivalent to 1.1 times the advance amount valid for a period initially for one year subsequently to be extended till the advance is adjusted.
21.3.2	Mobilization of Pilling rig and Batching plant on certification of the same by BHEL site.
21.4	Two (2) % to be released as per following.
21.4.1	Submission of bank guarantee (BG) equivalent to 1.1 times advance amount valid for a period initially for one year subsequently to be extended till the advance is adjusted.
21.4.2	Opening of site office on certification of the same by BHEL site.
21.5	Recovery of mobilization advance along with interest shall be made at the rate of 10% of the Gross Bill Value from 1st applicable RA bill, till the amount paid along with the interest is fully recovered by the time the contractor reaches 90% billing of total value of works to be executed.
21.6	The bank guarantee shall be kept valid till the entire advance amount is recovered.
21.7	Invoice for advance against individual stage as per above to be raised immediately & prior to accomplishment of activities/ event, associated with subsequent stage advance.
21.8	All other terms and conditions of IBRA not mentioned above shall be governed by the pertinent provisions of GCC of tender.
22.0	OVER RUN CHARGES
22.1	Not applicable in this tender.
23.0	REVISION ON ACCEPTED CONTRACT RATE
23.1	Not applicable in this tender
24.0	PRICE VARIATION CLAUSE / ESCALATION
24.1	Not applicable for this tender
25.0	LIQUIDATED DAMAGE
25.1	If the contractor fails to maintain the required progress of work which results in delay in the completion of the works as per the contractual completion period, BHEL shall have the right to impose Liquidated Damage / Penalty at the rate of 0.5% of the contract value, per week of delay or part thereof subject to a maximum of ceiling specified below. For this purpose, the period of delay shall be the delay attributable to the Contractor for the completion of work as per contract. Contract Value for this purpose, shall be the final executed value exclusive of ORC, Extra Works executed, Supplementary / Additional Items and PVC.
25.2	If Completion of work goes beyond specified contract period i.e. 22 (Twenty Two) months from the date of intimation from BHEL or start of work whichever is earlier,

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	LD will be imposed with maximum LD amount i.e. 10 % of total contract value.
25.3	BHEL shall deduct the amount of such compensation from any money due or which may become due to the contractor and/or recover such compensation from the bank guarantees / security deposit of the contractor. To be entitled to impose such compensation, BHEL will not be required to prove that he has incurred such amount as actual damage.
25.4	BHEL reserve the right to cancel the order/ contract or a portion thereof at the risk & cost of the contractor and the contractor shall be liable to BHEL for any excess costs thereof.
26.0	GUARANTEE / WARRANTY
26.1	The contractor will be responsible for the quality of workmanship, quality of materials/ items and design for which the contractor is responsible.
26.2	Guarantee / warranty period shall be 24 months from the date of issue of PAC including dredging work till completion of the Guarantee/Warranty period as per relevant clause of GCC. Commencement of guarantee period shall be from the date completion of work under the contract as certified by BHEL.
27.0	EXTENSION OF TIME FOR COMPLETION
27.1	If the completion of work as detailed in the scope of work gets delayed beyond the contract/ completion period due to reasons not attributable to contractor, the contractor shall make request for an extension of the contract and BHEL at its discretion may extend the contract. However such extension shall not entitle the vendor for price revision or price compensation as this being FIRM price contract.
27.2	Based on review of agreed & jointly signed L-2 / construction schedule (as enumerated in the tender), the balance work at the end of original contract period less the backlog attributable to the contractor shall be quantified, and the number of months of 'Time extension' required for completion of the same shall be jointly worked out. Within this period of 'Time extension', the contractor is bound to complete the portion of backlog attributable to contractor. Further 'Time extension' or 'Time extensions' at the end of previous extension shall be worked out similarly.
27.3	However if any 'Time extension' is granted to the contractor to facilitate continuation of work and completion of contract, due to backlog attributable to the contractor alone, then it shall be without prejudice to the rights of BHEL to impose penalty / LD for the delays attributable to the contractor, in addition to any other actions BHEL may wish to take at the risk and cost of contractor.
27.4	A joint program shall be drawn for the balance amount of work to be completed during the period of 'Time Extension', along with matching resources to be deployed by the contractor as per specified format. Review of the programme and record of shortfall shall be done.
27.5	During the period of 'Time extension', contractor shall maintain their resources as per mutually agreed program
27.6	At the end of total work completion as certified by BHEL engineer, and upon analysis of the total delay, the portion of time extensions attributable to (i) Contractor, (ii) Force majeure conditions, and (iii) BHEL, shall be worked out and shall be considered to be exhausted in the same order. The total period of time extensions shall be the sum of (i), (ii) and (iii) above and shall be equal to period between the scheduled date of completion and the actual date of completion of contract. LD shall be imposed/ levied for the portion of time extensions attributable solely to contractor after adjusting delay attributable to BHEL& Force majeure and recoverable from the dues payable to the contractor.
28.0	EARNEST MONEY DEPOSIT (EMD / SECURITY DEPOSIT (SD) /

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	PERFORMANCE BOND (PB)
28.1	EARNEST MONEY DEPOSIT (EMD)
28.1.1	EMD is to be paid by tenderers for securing fulfilment of any obligations in terms of the NIT. EMD shall be INR 5,42,47,547 OR USD 8,03,667 for this tender. In case of EMD submitted in USD by the successful tenderer, the same shall be converted and adjusted towards the required amount of Security Deposit of 50%. In case of EMD in INR, whole EMD shall be converted into USD as per stipulated Buying conversion rate of INR to USD as per State Bank of India(SBI) publication dated 04.01.2017. The TT Buying conversion rate of 1 USD as per State Bank of India (SBI) publication dated 04.01.2017 is equal to Rs. 67.50.
28.1.2	All other terms & conditions shall be as per GCC.
28.2	SECURITY DEPOSIT(SD)
28.2.1	The total amount of Security Deposit will be 5% of the contract value. EMD of the successful tenderer shall be converted and adjusted towards the required amount of Security Deposit.
28.2.2	At least 50% of the required Security Deposit, including the EMD, shall be collected in before start of the work. Balance of the Security Deposit shall be collected by deducting 10% of the gross amount in USD progressively from each of the running bills of the Contractor till the total amount of the required Security Deposit is collected. If the value of work done at any time exceeds the contract value, the amount of Security Deposit shall be correspondingly enhanced and the additional Security Deposit shall be immediately deposited by the Contractor or recovered from payment/s due to the Contractor. The recoveries made from running bills (cash deduction towards balance SD amount) can be released against submission of equivalent Bank Guarantee in acceptable form, but only once, before completion of work, with the approval of the authority competent to award the work.
28.2.3	All other terms & conditions shall be as per GCC.
28.3	PERFORMANCE BOND
28.3.1	Performance bond is not applicable.
29.0	CERTIFICATE TOWARDS COMPLETION
29.1	The work under the scope of the contractor 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 contractor.
30.0	CIVIL LABORATORY
30.1	Contractor shall establish and maintain civil laboratory with necessary equipment (as per Annexure-A) for conducting relevant tests at site, as required. Instruments used in Lab shall have valid calibration certificate from NABL accredited agency.
31.0	CONSTRUCTION SCHEDULE
31.1	Entire work shall be carried out in accordance with the broad construction schedule given below, within the stipulated completion period. Within 30 days of LOI, the contractor shall discuss with BHEL site engineer & furnish detail construction schedule (L-3/ L-4) indicating all milestones on the basis of major activities and get

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	it approved from BHEL engineer. This schedule will undergo review and based on progress vis-à-vis project requirement, contractor shall have to submit revised schedule for approval of BHEL.		
31.1.1	SI no.	Major Milestone	Months from date of start of work
	1	Completion of Statutory survey, Bathymetric survey, Geotech. studies, analysis etc.	2
	2	Completion of Design, Engineering	6
	3	Completion of Piling for Jetty & entire Work	10
	4	Completion of RCC retaining wall work	14
	5	Completion of Deck of jetty	16
	6	Completion of balance RCC Work of jetty	17
	7	Completion of Filling, Leveling & grading	18
	8	Clearance for Mech. Erection	18
	9	Completion of balance work including dredging adjacent to jetty structure and retaining wall, Mooring and berthing structures etc.	22
31.2	Complete Civil works must be completed within 22 months. Mobilization period is within 20 days from date of written intimation from BHEL.		
31.3	Contractor shall establish mix design for all concreting either by taking trial mix at site or from a reputed institution (As per BHEL / Customer approval). Contractor shall ensure adding of admixture and minimizing of cement content in line with relevant BS Code.		
31.4	The contractor shall plan his work in such a manner so as to meet the overall project schedule, in consultation with BHEL/ BIFCL engineer.		
31.5	Contractor shall submit daily work program based on above construction schedule. Deferment of above schedule is not acceptable. Contractor will adhere to schedule and resource planning to be augmented to ensure completion as per schedule.		
31.6	Periodic progress reviews on the entire activities of execution in respect of supply & works in scope of contractor will be held once in a month at Kolkata / site. These meetings will be attended by reasonably higher officials of the contractor and will be used as a forum for discussing all areas where progress needs to be speeded up. The contractor shall be further responsible for ensuring that suitable steps are taken to meet various targets decided upon such meetings.		
31.7	Above schedule is indicative. The contractor shall plan his work in such a manner so as to meet the overall project schedule, in consultation with BHEL/BIFCL Engineer.		
32.0	LABORATORY EQUIPMENT		
32.1	You shall provide the following equipment to carry out following tests as listed below.		
32.1.1	Sieve analysis of fine aggregates and coarse aggregates.		
32.1.2	Concrete Cubes shall be taken at site as per instruction of BHEL and the same shall be tested at Site / Govt. approved laboratory / Institution.		
32.2	Other than above mentioned test, any testing required to be carried out at site as per joint discussion at site and technical specification have to be arranged by you for all the works at your own cost.		
33.0	MATERIAL HANDLING		
33.1	No material is envisaged to be issued by BHEL in this contract.		

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33.2	However, all the materials (to be supplied by you as envisaged) are to be handled by you and you will be solely responsible for safe custody of the same.	
34.0	TOOLS & PLANTS (TO BE PROVIDED BY CONTRACTOR)	
34.1	Tentative list of T&P to be deployed by contractor for successful completion of work is detailed below. No T&P shall be provided by BHEL	
34.2	It may be noted that the list is not exhaustive and is only for general guidance. The contractor is required to provide all necessary T&P (other than those specified to be provided by BHEL, if any) measuring (calibrated) instruments & handling equipments to maintain work progress for timely completion of total work as per contract. In case of project requirement, some activities may have to pre-pone. In such cases the contractor may have to deploy additional T&P. Quoted rate shall be inclusive of such emerging requirements. However, contractor shall submit deployment plan of all T&P along with tender bid.	
34.3	In the event of any failure on the part of the contractor to deploy T & P to sustain desired work progress, BHEL may at his discretion also terminate the contract on this ground and take out any or whole amount of the contract from the scope of the contractor. In the event of failure of contractor to deploy necessary and sufficient T&P/ IMTEs to maintain work progress, BHEL will be at liberty to arrange the same at the risk & cost of contractor including transportation cost of same from any of BHEL site/ other agency & charges as applicable shall be deducted from contractor's RA bill. Decision of BHEL in this regard will be final & binding on contractor.	
34.4	Following Major T&Ps to be arranged by contractor within the indicated time	
	Major T&P items	Deployment Schedule
34.4.1	2 Nos. Hydraulic Pile Rig Crawler mounted	Within 75 days of LOI
34.4.2	2 Nos. Hydraulic Pile Rig Burge mounted	Within 90 days of LOI
34.4.2	2 Nos. Hydraulic Pile Rig Burge mounted with one office container on Burge	Within 90 days of LOI
34.4.2.1	4 Nos. Pontoon with sufficient counterweight for Burge	Within 90 days of LOI
34.4.2.2	1 No. Vibro Hammer, if required for erection of temporary structures.	Within 90 days of LOI
34.4.2.3	Two Set of Pile Load Test arrangement	Within 90 days of LOI
34.4.3	2 Nos. Hydraulic Excavator / Poclain	1 st within 70 days of LOI & 2 nd as per requirement
34.4.4	1 no. dozer	Within 70 days of LOI
34.4.5	4 Nos. dumper	2 Nos. within 70 days of LOI balance 2 Nos. as per requirement
34.4.6	1 no. vibromax /earth compactor	Within 90 days of LOI
34.4.7	1 No. Jack Hammer with Compressor	Within 70 days of LOI
34.4.9	1 no 18/20 T crawler crane	Within 75 days of LOI
34.4.10	1 no hydra (10 / 12 T capacity)	Within 75 days of LOI
34.4.11	8 Nos. welding rectifier	Within 70 days of LOI
34.4.12	One Nos. Portable/stationary automatic batching plant with printing facility (approx. 45 Cum/Hr.) – to be commissioned at site.	Within 20 days of LOI
34.4.13	One Nos. Portable/stationary automatic batching plant	Within 50 days of LOI

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	with printing facility (approx. 30 Cum/Hr.) – to be commissioned at site. (One No. Backhoe Loader / JCB to feed aggregates in to the bin common for both the Batching Plant).	
34.4.14	6 Nos. transit mixer (4.5/5/6 M3 capacity)	3 Nos. Within 70 days of LOI balance 3 Nos. within 90 days
34.4.15	3 no concrete pump (20 cum/ hr. min capacity & lift 70M)	2 Nos. Within 70 days of LOI balance 1 no. within 120 days
34.4.16	2 Nos. self-priming dewatering pump 10 HP (diesel/ electric)	1 no. Within 50 days of LOI balance 1 no. within 75 days
34.4.17	2 Nos. self-priming dewatering pump 20 HP or higher(diesel/ electric)	1 no. Within 20 days of LOI balance 1 no. within 75 days
34.4.18	2 Nos. reinforcement bending machine	1 no. Within 50 days of LOI balance 1 no. within 75 days
34.4.19	2 Nos. reinforcement cutting machine	1 no. Within 50 days of LOI balance 1 no. within 75 days
34.4.20	1 no compression testing machine (200 T cap)	Within 50 days of LOI
34.4.21	Civil laboratory equipments as per list attached in ANNEX `A` with temporary building one AC lab size 4.5mtrx6mtr and 1 non AC lab 4.5 mtrx4.5 mtr.	Within 50 days of LOI
34.4.22	10 Nos. Concrete vibrator with adequate needle (5 Nos.. diesel driven + 5 Nos.. electric driven)	5 Nos. Within 70 days of LOI balance 5 Nos. within 75 days
34.4.23	1 No. total station	Within 20 days of LOI
34.4.26	2 Nos. auto level & staff	Within 20 days of LOI
34.4.25	2 Nos. DG set 125KVA	Within 20 days of LOI
34.4.26	Concrete compressive strength testing moulds – 125 Nos.	Within 50 days of LOI
34.4.27	1 no trailer – 20T,	Within 50 days of LOI
34.4.28	1 no drinking water tank – 2000 lit.	Within 20 days of LOI
34.4.29	4 Nos Portable High Mast for illumination	Within 60 days of LOI
34.4.29	Portable fire extinguishers as below: Soda acid – 2 sets. Dry chemical powder – 2 sets CO2 – 2 sets. Water & sand bucket (4 buckets in one stand) – 2 sets. Fire hose with nozzle (50 M length) – 2 sets	Within 70 days of LOI
34.5	T&P shown in the above mentioned list are tentative based on planned progress requirement. Actual Mobilization schedule, based on front availability, drawings, construction schedule and material availability at site is to be reviewed and mutually agreed with CM, BHEL site periodically from time to time for mobilization of major T&Ps, and the same have to be adhered to. No change will be permitted without written approval of Construction Manager, BHEL site.	

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	Further requirement will be reviewed time to time at site and contractor will provide additional T&P/equipments to ensure completion of entire work within schedule time without any financial implication to BHEL. All other T&Ps shall be provided by the contractor without any extra cost to BHEL. Vendor will give advance intimation & certification regarding capacity etc. prior to dispatch of heavy equipments.
34.6	All T&P and all IMTEs, which are required for successful and timely execution of the work covered within the scope of this tender, shall be arranged and provided by the contractor at his own cost in working condition.
34.7	In the event of non mobilisation of any T&P by the successful bidder and as a result progress of work suffered, BHEL reserves the right to deduct suitable amount from the dues of the bidder, with assigning reasons thereof at the following rates
35.0	OTHER TERMS
35.1	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 – A LIST OF EQUIPMENTS FOR CIVIL SITE LABORATORY CONCRETE TESTING EQUIPMENT			
SL NO.	NAME OF TEST	NAME OF EQUIPMENT	SIZE OF EQUIPMENT
1	Initial & final setting time, Consistency of cement	Vicat Apparatus with desk pot	Standard
2	Shrinkage of cement, Auto Clave Test	Le Chatelier's apparatus Auto Clave Equipment	Standard
3	Abrasion value test	Los Angeles Abrasion testing machine	Standard
4	Aggregate Impact value test	Aggregate Impact value testing machine with blow counter	Standard
5	Aggregate crushing value test	Crushing value apparatus	Standard
6	Flakiness index	Thickness gauge for measuring flakiness index	Standard
7	Elongation Index	Elongation gauge	Standard
8	Bulk density, voids and bulking apparatus	Measuring cylinders	3, 5,10 & 15 liters cylinders
9	Concrete Compressive test	Digital Compressive Testing Machine with 2000 KN capacity.	2000KN capacity
10	Cement mortar cube casting	Mortar testing mould	, minimum 09 sets desired.
11	Concrete Cube casting	Concrete testing Mould	Minimum 125 sets desired considering major concerting activity.
12	Workability of concrete	Slump cone	Standard, at least 04 Nos.
13	Specific gravity of aggregates	Pycnometer	Standard, at least 02 Nos.
14	Cement mortar cube vibrating	Motorized vibration machine for cement testing	Standard
15	Course aggregate Sieve analysis (Concrete & Road Works)	Sieve set	450mm dia GI Frames Size: 125 mm, 90 mm, 75 mm, 63 mm, 53 mm, 40 mm, 20 mm, 16 mm, 12.5 mm, 10 mm, 4.75 mm, Pan and cover
16	Fine aggregate sieve analysis	Sieve set	Minimum 200 mm dia Brass sieves; Size 4.75 mm, 2.36 mm, 1.18 mm 600 micron, 300 micron, 150 micron, 75 micron, 75 micron, Pan and cover
17	Sieve Shaker	Motorized Sieve shaker	Mfg. Catalogue
18	Silt content check	Sand silt content beaker	Standard
19	Ultrasonic pulse velocity test	UPV apparatus for concrete	Standard

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	Soil Testing Equipment (Levelling & Grading)		
1	Liquid limit test	Liquid limit apparatus	Standard
2	Core Cutter test	core cutter apparatus	Rammer, 6 Nos. of standard core cutter mould, dolly
3	Proctor density test	Standard proctor Compaction apparatus	Standard
4	Moisture Content	Rapid moisture meter	Standard, at least 02 Nos.
	Process Control Accessories		
1	Hot air oven	Temperature range 50° C to 300° C	600x600x600mm (minimum. Size)
2	Electronic balance	3 Nos.	600gx0.01g, 10g and 50 kg
3	Physical balance	5 kg capacity	Weights up to 5 kg
4	Thermometer	Temperature range 0° C to 150° C	Digital
5	Poker Thermometer (Concrete Road)	Temperature range 0° C to 50° C & 150° C	02 Nos. each required
6	Measuring jars	2 Nos. set of each size	100ml, 200ml, 500ml & 1000 ml
7	Gauging trawlers	4 Nos.	100mm & 200 mm with wooden handle
8	Spatula	2 Nos. each size	100mm & 200 mm with long blade wooden handle
9	Stainless steel scoop	2 Nos. each	2 kg and 5 kg
10	Venire calipers	2 Nos. each	12" and 6" Sizes
11	Digital pH meter	01 Nos.	.01 mm least count
12	Digital micrometer	01 Nos.	0.01 mm least count
13	Digital paint thickness meter for steel	02 Nos.	500 micron Range
14	GI tray	02 Nos. each	600x450x50mm, 450x300x40mm, 300x250x40mm
15	Electric mortar mixer	01 Nos.	0.25 CUM capacity
16	Rebound hammer test	01 Nos.	Digital Rebound hammer
17	Screw Gauge	02 Nos.	0.1 mm-10mm, Least count 0.05
18	Digital paint thickness meter for masonry/concrete painting measurement	02 Nos.	150 micron range

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	Engineering, Procurement, Supply and Construction of jetty, retaining wall including construction of onshore/offshore civil, structural and architectural works for 2x660 MW Maitree STPP, Rampal, Bangladesh.	
Ref	1.0	Tender no PSER:SCT:KLN-C1801:17.
	2.0	BHEL's NIT, vide reference no PSER:SCT:KLN-C1801:5590, Dated 24-03-2017.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:KLN-C1801:TCN-01, Dated 31-03-2017.
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:KLN-C1801:TCN-02, Dated 28-04-2017.
	5.0	BHEL's TCN-03, vide reference no PSER:SCT:KLN-C1801:TCN-03, Dated 05-05-2017.
	6.0	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 offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

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

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : (033) 23398000