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TENDER NO. BHEL: NR(SCT):KOSTI:CIVIL(PB):386

TENDER SPECIFICATIONS

FOR

**Civil & Architectural Works in Main Plant Area
(TGs, Boilers, ESPs) and BOPs at 4x125 MW
Kosti TPP, Sudan.**

PART I – TECHNICAL BID



**Bharat Heavy Electricals Limited
(A Govt. Of India Undertaking)
Power Sector – Northern Region,
Plot No. 25 , Sector - 16A ,
Distt. Gautam Budh Nagar, NOIDA – 201 301 (INDIA)**



ISO 9001-2000, ISO 14001
and OHSAS 18001 certified
company
SubContract and Purchase
Deptt.

Bharat Heavy Electricals Limited
(A Govt. Of India Undertaking)
Power Sector – Northren Region,
Plot No. 25 , Sector - 16A ,
Distt. Gautam Budh Nagar, NOIDA – 201 301.INDIA
Phone: 0091-0120-2515476 / 2515464 / 2515479
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IMPORTANT NOTE

PURCHASER OF THIS TENDER DOCUMENT IS ADVISED TO CHECK AND ENSURE COMPLETION OF ALL PAGES OF TENDER DOCUMENT AND REPORT ANY DISCREPANCY TIMELY FOR CORRECTIVE ACTION, IF ANY, TO THE ISSUING AUTHORITY BEFORE THE BIDS ARE SUBMITTED. ORIGINAL COPY OF TENDER DOCUMENT COMPLETE IN ALL RESPECTS MUST BE SUBMITTED BACK AS PART OF THE BID WITHOUT WHICH THE SAME IS LIABLE TO BE REJECTED BY BHEL.

THIS TENDER SPECIFICATION ISSUED TO:

M/S-----

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TENDER NOTICE

Sealed tenders are invited from the contractors fulfilling qualifying requirements for the “Construction of all the civil & architectural works in main plant area (TGs, Boilers, ESPs) and BOPs related to buildings and foundations including supply of all materials except those proposed to be supplied by BHEL for 4 x 125 MW units at Kosti TPP, Sudan of M/S NEC, SUDAN.”

TENDER NO. BHEL: NR(SCT):KOSTI:CIVIL(PB):386

QUALIFYING REQUIREMENTS:

1. Tenderers who wish to participate should have executed, during last seven years, at least one similar work consisting of Casting of Civil Foundation of Steam Turbine-Generator of a unit of 67.5 MW or higher rating.

‘AND’

2. Party should also have an average annual turnover of minimum of Rs. 100 Crores (Rupees One Hundred Crores only) during preceding three years (2003-04, 2004-05 and 2005-06).

NOTES:

- (i) The Tender Documents comprise of following;
 - (a) General Conditions of Contract
 - (b) Special Conditions of Contract, Tender Notice, Project Synopsis etc.
 - (c) BOQ cum Rate Schedule
 - (d) Technical Specifications
- (ii) Tender Documents with complete details are hosted in this web page. Bidder(s) intending to participate may download the tender document from the web site. Bidder(s) downloading the tender documents from the web site, shall remit Rs.1000/- (Rupees One thousand only) in the form of crossed demand draft (non-refundable), in favour of BHEL, NOIDA along with their offer
- (iii) Bidder(s) can also purchase hard copy of tender documents from this office. Tender documents (non transferable) will be issued on all working days between 09.30 Hrs. to 12.30 Hrs within the sale period i.e **upto 22.02.2007** on payment of

Rs.1,000/- (non-refundable) either in cash or by crossed demand draft in favor of BHEL, NOIDA. Request for issue of tender document should clearly indicate Tender No. and work.

- (iv) Tenders must be submitted to the undersigned **latest by 22.02.2007** before opening of technical bids commences. Technical bids shall **be opened at 15.30 Hrs. on 22.02.2007**.
- (v) **Earnest Money Deposit (EMD)** : Refundable, Non-interest bearing **EMD of Indian Rupees 2,00,000/- or US \$ 4500/- (for foreign bidders)** shall be deposited by Account Payee Pay Order 'OR' Demand Draft in favour of "Bharat Heavy Electricals Limited" payable at Delhi, INDIA. Those bidders who have already deposited 'One Time 'EMD' of Rs. 2,00,000/- with BHEL, PSNR, NOIDA need not submit EMD with the present tender.
- (vi) Tenders not accompanied with Full Earnest Money Deposit, as indicated above, will not be considered.
- (vii) All corrigenda, addenda, amendments and clarifications to this Tender will be hosted in this web page and not in the newspaper. Bidders shall keep themselves updated with all such amendments.
- (viii) BHEL reserves the right to accept or reject any or all tenders without assigning any reason whatsoever.
- (ix) BHEL takes no responsibility for any delay/loss of documents or correspondences sent by courier/post.
- (x) Purchase Preference will be given to CPSUs as per Govt. Guidelines.
- (xi) **Unsolicited rebate / discount shall not be accepted after bid opening**

AGM/SCP



ISO 9001-2000, ISO 14001
and OHSAS 18001 certified
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Sub-Contract and
Purchase Deptt.

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TENDER NOTICE-- Newspaper

LAST DATE OF SALE : 22.02.2007
DUE DATE : 22.02.2007
DATE OF OPENING : 22.02.2007

NIT NO. / NAME OF WORK

TENDER NO. BHEL: NR(SCT):KOSTI:CIVIL(PB):386

Sealed tenders are invited from the contractors fulfilling qualifying requirements for the “Construction of all the civil & architectural works in main plant area (TGs, Boilers, ESPs) and BOPs related to buildings and foundations including supply of all materials except those proposed to be supplied by BHEL for 4 x 125 MW units at Kosti TPP, Sudan of M/S NEC, SUDAN.”

NOTES:

1. Purchase Preference will be given to CPSU as per Govt. Guidelines.
2. Please visit our website at www.bhel.com for details of NIT including Qualifying Requirements.
3. Earnest Money Deposit (EMD) : Refundable, Non-interest bearing **EMD of Indian Rupees 2,00,000/- or US \$ 4,500/- (for foreign bidders)** shall be deposited by Account Payee Pay Order 'OR' Demand Draft in favour of “Bharat Heavy Electricals Limited” payable at Delhi, INDIA. Those bidders who have already deposited ‘ One Time 'EMD' of Rs. 2,00,000/- with BHEL, PSNR, NOIDA need not submit EMD with the present tender.

AGM/SCP

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PROCEDURE FOR SUBMISSION OF SEALED TENDERS:

The tenderers must submit their tenders as required in two parts in separate sealed covers prominently superscribed as Part-I Technical bid and Part-II ,Price bid also indicating on each of the cover tender specification no., date and time as mentioned in tender notice.

TECHNICAL BID (COVER-I)

Except Price bid Part-II, complete set of tender document consisting of General conditions of Contract, “Technical specification & Special terms and condition” (Part-I) issued by BHEL shall be enclosed in Part I Technical Bid only. All schedules, data sheets and details called for in the specification shall also be submitted along with technical bid. All details / Data / Schedules including offer letter duly signed and stamped are to be submitted in duplicate.

PRICE BID (COVER-II)

Tenderers may please note that price bid is to be submitted only in original copy of Tender i.e. Price bid (Part-II) issued by BHEL and no duplicate copy of same is required.

These Two separate covers i.e. cover I & II shall together be enclosed in a third envelope (Cover-III) and this sealed cover shall be superscribed with tender specification No., due date, time and submitted to officer inviting tender as indicated in tender notice on or before due date as indicated.

PROJECT SYNOPSIS

Kosti Thermal Power Project to be constructed is a greenfield project with 4x125 MW Thermal units having gas/oil fired boilers & aux., steam turbine generators & aux., BFPs, switchyard etc. to be executed on EPC basis by BHEL at Sudan. The owner of the Project is National Electricity Corporation(NEC), Sudan, which is a Govt. of Sudan entity. The plant will supply electricity to South & West Sudan.

Kosti lies south of Khartoum (Capital of Sudan) on an Asphalt road with latitude 13.10 N and longitude 090.14E. The Kosti site is centrally located just 350 KM south of Khartoum. The river Nile is passing near by and the site has easy connectivity by road and rail.

Distance of project site from Port of Sudan (only port in Sudan) is 1200 km and the project site is about 600 Mtrs. from Highway.

Temperature Data:

- (a) Maximum ambient temperature : 45 Deg C
- (b) Minimum ambient temperature : 16 Deg C

Mean(Design) annual humidity:

- (a) Maximum 71% in August
- (b) Minimum 26% in April

Wind Data:

- (a) Maximum speed of wind 11 Km/h
- (b) Wind direction is Southern (May to September) and Northern in the rest of the year.

SECTION - III**SPECIAL CONDITIONS OF CONTRACT**

Clause No.	Title
34.0	General Scope of Work
35.0	Instructions to Tenderers & Qualifying Requirements
36.0	Contractor's Supervision
37.0	Supervisory Staff & workmen
38.0	Tools & Plants / IMTEs
39.0	Materials
40.0	Execution of the work
41.0	Compliance to regulation & bylaws
42.0	Facilities to be provided by BHEL/ Contractor
43.0	Progress reporting
44.0	Delay & Extension of Time
45.0	Price Variation and over run
46.0	Taxes & Duties
47.0	Custom Duty & Custom Clearance
48.0	Time Schedule
49.0	Terms of payment
50.0	Insurance
51.0	Rate schedule
52.0	Liens
53.0	Other Miscellaneous Conditions

SECTION-III**SPECIAL CONDITIONS of CONTRACTS****34.0 GENERAL SCOPE OF WORK****34.1 BHEL has been awarded the work of setting up 4 x 125 MW Power Plant in Kosti, Sudan on EPC basis.**

This tender specification covers complete scope of Execution of Civil and Architectural works related to buildings, foundations & structures for Main Power block including various BOP structures / buildings for auxiliary areas. Work includes survey, site clearance, site grading & leveling, excavation in soil and rock (if any with/without blasting as per the site conditions), dewatering, dressing to required profile, sheet piling or shoring/strutting, backfilling around completed structures and plinth filling, plinth protection, disposal of surplus earth and rock, concreting including reinforcement and formwork, masonry work, plastering, painting, un-insulated/sandwiched insulated metal wall cladding, roofing including permanent steel decking, flooring, acid and alkali resistant lining, doors/windows, ventilators, fire proof doors, under deck insulation, false ceiling in all AC areas, roof water proofing, dismantling of existing structures (below ground and above ground-sheeting, structural steel, other facilities), RCC and brick/ block masonry and steel structures, fabrication and erection of all structural steel and miscellaneous steel (i.e. steel stair case, cable/duct/pipe supports, ladders, walkways, railing, chequered plate/grating floor, inserts, anchor bolts, etc.),paving, gravel filling, precast covers, trestle, cable ducts/duct banks, expansion joints, rain water pipe, water supply, toilet fittings, lift-well, sewerage, insulation, gates/valves, damp proofing, water proofing of under ground structures, anti-weed and anti-termite treatment, trenches, rail track, fencing, gates, final grading and site clearance before handing over to Owner and other auxiliary items of work, etc. all complete including supply of all materials except those proposed to be supplied by BHEL, consumables, labour, Tools and plants, transportation and storage, sample testing etc. all complete as per BOQ, specifications and drawings for proper and successful execution of the job.

The scope under this package covers but is not limited to the following buildings/ structures / systems / facilities:

- a) Site preparation, excavation, backfilling, all necessary leveling/grading (For areas under scope of work.)
- b) Foundations for Boilers, ESPs
- c) Foundations for GR Fans, FD Fans.
- d) ESP Control Rooms.
- e) Foundations for Duct supports and Misc. Equipment Foundations in Boiler Area viz. IBD Tank Foundations.
- f) Misc. Outdoor Equipment foundations, Trenches and Pits, RCC Paving.
- g) Civil Works related to CW, Potable and Service Water Systems.
- h) RCC Paving in Boiler Area including Plinth Protection around Buildings.
- i) Steam Turbine Building including Foundations of turbine, Generator, condenser, BFP & CEP etc.
- j) Pipe and Deaerator Bay.
- k) Control Bay.
- l) AC Plant Room cum Air compressor Building / foundations including Compressor Foundations.
- m) DG Building including DG Foundations.
- n) Condensate Transfer Pump House, Booster Pump House and Condensate Storage Tank Fdns.
- o) Air washer building / foundations.

- p) Transformer Yard Including Transformer Foundations With Soak Pits, Gravel Filling, Fire Barrier Walls, Oil Water Separator Pit, Fencing, Rail Track Etc Complete Including Supports For EHV Side Lightning Arrestors For Generator / Station / Unit auxiliary Transformers, Trfrs, Cable Pot Structures For EHV Side Cable Connections To Transformers.
- q) Auxiliary Transformer Foundations.
- r) Misc. Outdoor Equipment foundations, Trenches and Pits, RCC Paving.
- s) RCC Paving For areas under scope of work including Plinth Protection around Buildings.
- t) CW Pump House including Forebay, ducts, civil works related to CCW piping including CW Pipe Encasement if required.
- u) Clarified Water Sump & Pump House.
- v) Chlorination Plant Buildings Fuel Oil P & H Unit Building
- w) Fire Water Pump House & associated tank Foundations.
- x) DM Water Pump House & DM Water Storage Tank Foundations.
- y) Pipe & Cable Rack Foundations.
- z) Civil works related to Raw Water Electro-chlorination system.
- aa) Civil Work For Bulk Alkali Storage Tank
- bb) Clarified Water Reservoir At Plant Site
- cc) Raw Water Reservoir And Pump House At River Site
- dd) CW Pump House With Feed Pool And Duct
- ee) Dm Storage Tank Foundations
- ff) Raw Water Reservoir And Pump House At Plant Site
- gg) Power House And Misc Equipments Floors
- HH) Central Control Building
- II) Fuel Unloading Area And Storage Area Including Storage Tanks
- JJ) RCC Overhead Water Tank (150 M3 Min.)
- KK) Foam System Building And Associated Equipment Foundations
- LL) Utilities/ Bldgs-Plant Site And River Intake Site
- MM) Cable Trenches/Trestles/Buried Pipes For Cables For Outdoor And Indoor Facility
- NN) Service Bldg
- OO) Any building / Structure required from system point of view but not included above

Civil works related to clarified water pump house at river side, PT plant, channel from RWPH to near river PT plant, ETP, switchyard civil works including coloum / equipment foundations & river water intake structure are also covered under the scope of this tender.

- 34.2 All the works shall be carried out in accordance with British Standards, DIN, American Standards, Indian Standards or any internationally recognized standard as given in Technical Specifications. **Also all works shall be done using modern civil construction equipments & practices to produce finished job of International Standards.**
- 34.3 **The detailed scope of work and the technical requirements for work to be executed under this specification shall be as per Specifications No PE-TS-250-600-C001 (Section C) & PE-TS-250-600-C001 (Section D, Sub-Section D1 to D21), enclosed with this tender document (Annexure-B)**
- 34.4 The scope of work will also include such other related works although they may not be specifically mentioned in the specifications and all such incidental items not specified but

reasonably implied and necessary for completion of the job as a whole **and** as desired and as directed by the engineer.

The scope of work covered above is not a comprehensive list of items of work involved. The detailed scope of work may vary depending on the actual construction requirements.

34.5 **ALSO INCLUDED IN THE SCOPE**

Unless otherwise specified, the work shall include but not be limited to the following.

- a) Providing all labour, materials, supervision, construction plans, equipments, supplies, transport to and from the site, fuel, compressed air, transit and storage insurance and all other incidental items and temporary works. Any other work or activity not specified in drawings/ Technical specifications but reasonably implied or necessary for the proper completion, maintenance and handling over of the works, except in accordance with the stipulations laid down in the contract documents and additional stipulations as may be provided by the engineer during the course of works.
- b) Furnishing samples of all materials required by the engineers for testing / inspection and approval for use in the works. The samples may be retained by the engineer for final incorporation in the works.
- c) Furnishing test reports for the products used or intended to be used as may be called for or if so desired by the engineer.
- d) Giving all notices, paying all fees, taxes etc., in accordance with the General Conditions of Contract, that are required for all works including temporary works.
- e) Arranging manufacturer's supervision for items of work done as per manufacturer's specifications when so specified.
- f) Carrying out topographic survey of the entire project area and establish levels and coordinates at suitable intervals from existing grid levels and coordinates furnished by the Owner established bench marks, setting out the locations and levels of proposed structures, constructions and marking of reference pillars and other identification works etc. The Contractor shall provide the Owner/BHEL such an assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any material used. No separate payment shall be paid for providing the services as per this clause. The contractor shall provide these free of cost services within the quoted rates as per Rate Schedule cum BOQ.
- g) Providing all incidental items not shown/specified in drawings/ Technical specifications but reasonably implied or necessary for the successful completion of the work in accordance with the contract.

34.6 **BHEL-Power Sector (NR) is an ISO 9001-2000, ISO 14001-1996 and OHSAS 18001-1999 certified company. Quality of work, to customer's satisfaction and system requirements is the essence of these certifications. The contractor in all respects will organize his work, systems, environment, process control documentation, tools, plant, inspection, measuring and testing equipments etc. as per instructions of BHEL engineer.**

The contractor shall also comply with applicable legislation and regulations with regards to Health, Safety and Environmental aspects for minimizing risk arising from occupational health & safety hazards, controlling pollution and wastage. The Contractor will be responsible for Health, Safety & Environment management

(HSE) at site for the construction activities to be carried out by them in accordance with requirements given under section I (a) of GCC and elsewhere in this tender document. The contractor, who is awarded the work, shall have to sign an MOU w.r.t implementation of HSE conditions with BHEL (Safe Work Practices).

34.7 The NATIONAL ELECTRICITY CORPORATION (NEC), Sudan and / or their Consultant M/s. Fichtner may depute their representative for checking and supervision at different stages of work. The contractor shall be required to provide all facilities (Facilities related to inspection and testing of materials) for inspection of works at no extra cost to BHEL. Any defect in quality of work or deviations from drawings / specifications pointed out during such inspections shall be made good by the contractor in the same way as if pointed out by the BHEL Engineer, without any cost implication to BHEL.

34.8 WARRANTY & WARRANTY PERIOD.

- For critical and major defects of Civil Works (steel structure, concrete works, tank painting, a five (5) years warranty period will be granted, starting from the date of successful Reliability test of the unit . However, such warranty for the Civil Work shall not refer to the regular maintenance / repair.
- The Contractor shall, at its own cost, be responsible for making good by correction, repair or replacement and, where necessary by procuring redesign, with all possible speed and in accordance with the Contract, any defect in any part of the Works which may appear or occur during the Warranty Period, provided such defects belong to the contractor's defects. However, the Contractor shall have the right to search for the cause of any defects during the Warranty Period. For repair/ rectification of defects other than Contractor's defects, the terms including time, cost etc. will be mutually discussed with the Contractor.
- If any defect is such that repairs cannot be expeditiously carried out on the Site as mutually agreed upon and within a reasonable time, the Contractor shall replace such part of the Works which is in error, defective or damaged without any extra cost to BHEL.
- If the Contractor fails to commence to remedy any defect within a reasonable time after being required to do so or fails to proceed with or complete such remedy with all reasonable speed, BHEL or its Customer (M/s NEC) may without prejudice to any other remedies available to them under the contract, after giving the Contractor notice, at the Contractor's risk, cause the relevant work to be carried out. An amount equal to the costs incurred by BHEL or its Customer(M/s NEC) in so doing shall be paid by the Contractor to them on demand. The quality on the replacement part will be ensured by BHEL or its Customer(M/s NEC). The replacement work will be supervised by the Contractor.

35.0 INSTRUCTIONS TO BIDDERS & QUALIFYING REQUIREMENTS

35.1 The Tenderers are advised to physically visit the site and fully acquaint themselves with site conditions, transportation routes, various distances and the fact that other contractors would be working in this area, their structures are to be protected. The material brought and stacked for construction should not make hindrance to other contractors. **Necessary precautions and arrangements including sprinkling of water during work as acceptable to BHEL, for safety & security for the above have to be made by the contractor. No claim will be entertained by BHEL on the ground of lack of knowledge and the contractor's rates shall be deemed to have taken this into account.**

35.2 **The Tenderer should have executed during the last seven years at least one similar work consisting of Casting of Civil Foundation of Steam Turbine-Generator of a unit of 67.5 MW or higher rating.**

- 35.3 The Tenderer should have a minimum average annual turnover of Rs.100 Crores (Rupees One Hundred Crores) for the last three financial years 2003-04, 2004-05 and 2005-06.**
- 35.4 Suitability of Tenderers will be assessed based on their capability of handling the total work at the time of techno-commercial evaluation of their bids. Price bids of only those parties will be opened who are found acceptable in totality. It is, therefore, essential that bidders should furnish clear evidence of their capability to handle total work.
- 35.5 BHEL reserves the right to reject the bidders with unsatisfactory past performance in the execution of a contract. BHEL's decision in this regard shall be final & binding.**
- 35.6 PSUs shall be given Purchase Preference as per Indian Govt. Guidelines.
- 35.7 Contractors shall carry out all works using modern civil construction equipments and practices to produce finished job of International Standards.
- 35.8 Tenderers who wish to visit Sudan to collect any information in respect of this tender, may send, preferably within 10 days, the details of personnel along with copies of their passports in the soft form to facilitate arrangement of visas.**
- 35.9 **Clarification, if any, required against this tender, should be sent to us through e_mail, preferably within 10 days of issue of this NIT, specifically stating the clause nos. of the NIT.**
- 35.10 The contractor, in the event of this work awarded to him, shall establish an office at site and keep posted an authorized, responsible officer with valid Power of Attorney for the purpose of the contract. Any order or instructions issued to his office by the 'Engineer' or his duly authorized representative will be deemed to have been communicated to the contractor at his legal address.
- 36.0 CONTRACTOR'S SUPERVISION**
- 36.1 The Contractor shall appoint a Project Manager in India for the project, being the responsible representative of the Contractor in charge of managing the Works and liaison with BHEL / Customer (M/s NEC) and / or their Consultant M/s. Fichtner.
- 36.2 From the commencement of construction activities at site, Contractor shall appoint a suitable person as the Incharge (hereinafter referred to as "Site Incharge". The Site Incharge shall be present at the site throughout normal working hours except when on leave, sick or absent for reasons connected with proper performance of the contract. Whenever the Site Incharge is absent from the site, a suitable person shall be appointed to act as his or her deputy.
- 36.8 The BHEL Engineer shall have full powers to instruct the Contractor to arrange for immediate termination of services, in connection with this contract, of any Agent, servant or employee whose continued employment is, in his opinion, undesirable, without assigning any reason.
- 37.0 SUPERVISORY STAFF AND WORKMEN**
- 37.1 The contractor shall deploy all the experienced, skilled, semiskilled and unskilled workmen required for all the works under these specifications. BHEL reserves the right to decide on the suitability of the workers and other personnel who will be deployed by the contractor. BHEL reserves the right to insist on removal of any employee of the contractor at any time, if they find him unsuitable and the contractor shall forthwith remove him. **Such person shall not again be employed for the purpose of or in connection with the Contract without the written permission of BHEL**

and/or its Customer(M/s NEC). Any person so removed shall be replaced as soon as possible by a competent substitute with information to BHEL and/or its Customer(M/s NEC).

- 37.2 The supervisory staff including qualified Engineers deployed by the Contractor shall ensure proper out-turn of work and discipline on the part of the workforce put on the job by the contractor and, in general, see that the works are carried out in a safe and proper manner and in coordination with other labour and staff deployed directly by BHEL or other contractors of BHEL / BHEL's Client / other agency.
- 37.3 The work shall be executed under the usual conditions like rain, insufficient space, improper approach roads etc., affecting major construction work and in conjunction with numerous other operations at site. The contractor and his personnel shall cooperate with other personnel / contractors , coordinating his work with others and proceed in a manner that shall not delay or hinder the progress of work as a whole.
- 37.4 The contractor's supervisory staff shall execute the work in the most substantial and workman like manner in the stipulated time. Accuracy of work and aesthetic finish are essential part of this contract. The contractor shall be responsible to ensure that assembly and workmanship conform to the dimensions and tolerances given in the drawings /documents / instructions given by BHEL Engineer from time to time.
- 37.5 It is the responsibility of the contractor to engage his workmen in shifts or on overtime basis for achieving the targets set by BHEL. The contractor's finally accepted rates shall include all these contingencies.
- 37.6 During the course of construction, if the progress is found unsatisfactory, or in the opinion of BHEL, if it is found that the skilled workmen like welder, fitters , technicians, masons, carpenters, bar benders etc. deployed are not sufficient, BHEL after giving reasonable opportunity to the contractor, will induct on the work the required workmen in addition to contractor's workmen to improve the progress and recover the expenditure incurred along with overheads from the contractor's bills
- 37.7 If the contractor or his workmen or employees shall break, deface, injure or destroy any part of a building, road kerb, fence, enclosure, water pipes, cables, drains, electric or telephone posts or wire, trees or any other property or to any part of erected components etc., the contractor shall make the same good at his own expense or in default, BHEL may cause the same to be made good through other means and deduct the expenses along with overheads (of which BHEL's decision will be final) from any money due to the contractor.
- 37.8 **The monthwise manpower deployment plan to be submitted as per format (at Annexure-C to General Conditions of Contract)** is only to assess the capability as well as understanding of the contractor to execute the work. It shall be the contractor's responsibility to deploy the required manpower, for timely and successful completion of the job, to any extent over and above those indicated in the above deployment plan (including those which are not covered in the plan submitted) without any compensation on this account.

EMPLOYMENT OF WORKERS , WORKING TIME ETC.

- 37.9 **It shall be the responsibility of the Contractor to pay salaries and other benefits to its employees/personnel engaged by it as per the agreement with them, and in keeping in line with the local laws in Sudan. The Contractor shall submit to Construction Manager, BHEL Site, Kosti, Sudan regularly, the details/statement of wages paid to its workers in India/back home, besides wages paid in Sudan.**
- 37.10 **All travelling and transportation expenses including air fares etc shall be borne by the Contractor for all his employees. The Contractor shall also bear air fare and other expenses for those employees sent back to their place on account of misconduct, disobedience, improper behaviour, sickness, unsatisfactory work or any other reason whatsoever.**
- 37.11 **Contractor shall arrange passports for all his staff and labour. BHEL will assist Contractor for issue of visas including multi-entry visas and other permits as per**

requirement for the job. However, the Contractor shall arrange for attestation of certificates and other documents required for travel arrangements, medical tests as applicable and comply with other formalities. All expenses for all these activities will be borne by the Contractor.

- 37.12** The delay in obtaining the passports and other travel documents or compliance with the various formalities for the deputation of the contractor's personnel shall not absolve the contractor from his obligations under the Contract including completion of the work strictly in accordance with the time schedule.
- 37.13** The Contractor shall in all dealings with persons in his employment have due regard to all recognised festivals, days of rest/weekly off, and religious or other customs in Sudan and shall make special arrangements whenever the exigencies of the construction program demand that work shall proceed during such festivals and days of rest
- 37.14** The Contractor shall plan and schedule the activities on Site such that they happen strictly during the specified working hours.
- 37.15** The Contractor shall not otherwise than in accordance with Sudanese State Laws import, sell, give, barter, or otherwise dispose of any alcoholic liquor or drugs or any arms or ammunition to any person or persons whatsoever, nor permit or suffer any such importation, sale, gift, barter, or other disposal by his employees.
- 37.16** The Contractor shall submit a request to BHEL for issue of an identity card to each and every person employed at the Site by him along with passport size photographs and other documents as may be required for the purpose.
- 37.17** No person will be allowed to enter the project premises without an identity card. All identity cards will be surrendered by the Contractor to BHEL in respect of each person on completion of assignment of such person.
- 37.18** The Contractor shall deliver to BHEL before 10:00 hrs on each first working day of the week; a report in detail, in such form as BHEL or its Customer (M/s NEC) may prescribe, showing the supervisory staff and the numbers of the several classes of labour, from time to time employed by the Contractor on the Site.
- 37.19** The Contractor shall at all times take all requisite precautions and use his best endeavours to prevent any riotous or unlawful behaviour by or amongst the labourers and others employed by him for the purpose of or in connection with the Contract and for the preservation of the peace and the protection of the inhabitants and the security of property on or in the neighbourhood of the Site.
- 37.20** The Contractor shall in collaboration with, and to the requirements of, any duly constituted medical or sanitary authority, ensure that suitable arrangements are made on the Site for the maintenance of health, the prevention and overcoming of epidemics, and for adequate first-aid, welfare, and hygiene services.
- 37.21** The Contractor, his partners, foreign workers and employees and their families shall not be involved by any manner in any political activity during their residence in the Employer's country

38.0 TOOLS AND PLANTS / IMTEs

- 38.1** All T&Ps and 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. **Modern civil construction equipments & IMTEs** are required to be used as per international practices. BHEL shall not provide any T&P including crane. In the event of the failure of contractor to bring necessary and sufficient T&Ps/ and IMTEs, BHEL will be at liberty to arrange the same at the risk and cost of contractor including transportation cost of same from any of BHEL site/place and hire charges or total cost as applicable along with overheads shall be deducted from contractor's bill. Decision of BHEL in this regard shall be final and binding on contractor.
- 38.2** All distribution boards, connecting cables / welding cables, wire ropes, hoses etc. including temporary air/water / electrical connections etc. shall have to be arranged by the contractor at his own cost.

- 38.3 Consolidation of ground and arrangement of sleepers / sand bag filling, proper barricading etc. for safe operation / movement of equipment including cranes / trailers etc. shall be the responsibility of the contractor at his own cost.
- 38.4 Contractor shall ensure deployment of serviced and healthy T&Ps including cranes, lifting tackles, wire ropes, Manila ropes, winches and slings etc. History card and maintenance records for major T&Ps will be maintained by the contractor and will be made available to BHEL Engineer for inspection as and when required . Identification for such T&Ps will be done as per BHEL Engineer's advice.
- 38.5 Contractor shall ensure deployment of reliable and calibrated IMTEs (Inspection measuring and Test equipment). The IMTEs shall have test/ calibration certificates from authorised / Govt. approved / accredited agencies traceable to National / International standards. Each IMTE shall have a label indicating calibration status i.e. date of calibration, calibration agency and due date for calibration. A list of such instruments deployed by contractor at site with its calibration status is to be submitted to BHEL Engineer for control.
- 38.6 Retesting / re-calibration shall also be arranged at regular intervals during the period of use as advised by BHEL Engineer within the contract price. The contractor will also have alternate arrangements for such IMTE so that work does not suffer when the particular instrument is sent for calibration. Also if any IMTEs not found fit for use, BHEL shall have the right to stop the use of such item and instruct the contractor to deploy proper item and recall i.e. repeat the readings taken by that instrument, failing which BHEL may deploy IMTEs and retake the readings at contractor's own cost.
- 38.7 BHEL shall have lien on all T&P, IMTEs & other equipment of the Contractor brought to the site for the purpose of erection, testing and commissioning. BHEL shall continue to hold the lien on all such items throughout the period of contract. No material brought to the Site shall be removed from the Site by the Contractor and/or his Sub-contractors without the prior written approval of the Engineer. Unless otherwise specified in the contract, upon completion of the construction works, the contractor shall remove from the site all T&Ps brought by the contractor to the site along with any surplus materials remaining thereon.
- 38.8 **The monthwise T&P deployment plan to be submitted as per format (at Annexure-D to General Conditions of Contract)** is only to assess the capability as well as understanding of the contractor to execute the work. It shall be the contractor's responsibility to deploy the required T&Ps, for timely and successful completion of the job, to any extent over and above those indicated in the above deployment plan (including those which are not covered in the plan submitted) without any compensation on this account.

39.0 MATERIALS

- 39.1 **The contractor shall at his own expenses provide all materials including cement, paints, welding electrodes etc. required for the work.** However for permanent works reinforcement steel & structural steel will be issued free of cost as per terms & conditions specified as below.
- 39.1.1 Reinforcing steel, structural steel (like plates, chequered plates, beams, channels, joist, angles, flats, tees, rolled sections , MS rounds, pipes and tubes) for structural steel work items only (except for items where supply by contractor is envisaged like anchor bolts, doors, floor grating, MS grating covers etc.) will be issued by as a free issue materials from BHEL / Customer site stores or other issue points as specified by the Engineer. Such issues would be only for permanent works. Necessary indents shall be raised by the contractor as per procedure

laid down by the Engineer-in-Charge about 7 days in advance of the actual requirement for incorporation in the works.

- 39.1.2 Materials will be issued only for permanent works and not for making templates, other temporary works, enabling works etc. and the same shall not be taken into account for purpose of material reconciliation.
- 39.1.3 The contractor shall bear all other costs including the lifting, carting from issue points to works site/contractor's stores, custody and handling etc. and return of surplus/serviceable materials to Owner's stores to be designated by the Engineer-in-charge and all expenditure will be made by the contractor.
- 39.1.4 All steel shall be issued in available lengths / shapes and no claims for extra payment on account of issue of non-standard lengths/shapes will be entertained. For the purpose of billing & accounting, only linear measurement will be taken and any difference in weight based on linear measurement & actual weight shall be to contractor's account. Quoted price shall be deemed to include the above & the permissible wastage mentioned. No claim whatsoever shall be entertained on account of wastage & difference in weight as referred to above.
- 39.1.5 Issue of stores material is subject to availability and the contractor shall not be entitled to any claim or compensation for non-supply or delay in the supply under any circumstances. The material will be issued generally during the working hours.
- 39.1.6 The Contractor will have to submit their design mix for different grades of Concrete keeping in view the requirements stipulated in IS:456, specifically regarding slump and Water Cement ratio and Specific Gravity of Materials brought to site as analysed in the laboratories. The design shall be used upon absolute volume method and theoretical consumption of Cement shall be worked out on this basis.
- 39.1.7 The theoretical consumption of reinforcement steel and structural steel required for the work will be calculated on the basis of approved drawings / joint measurements. Reinforcement and structural steel shall be measured by weight in tones. The weight will be arrived at by multiplying the used length by the sectional weight. The sectional weight will be same as were applied at the time of issue. Standard hooks, cranks, bends and authorised laps, chairs, separator pieces etc. specified in drawing or instructed by engineer as required shall be measured and paid for. No payment shall be made for binding wires, spacer block etc. required for keeping the steel in position unless otherwise specified in the contract. No extra payment will be made for modification of already embedded reinforcement, if required due to faulty fabrication or placement.
- 39.1.8 The contractor shall submit proper account of material / material reconciliation statement for the material drawn by him from stores every three months. Failing compliance of this requirement further issue of steel to the contractor may be suspended and no claim of compensation for delay in execution on this account shall be entertained.
- 39.1.9 All the steel thus issued shall be properly accounted for as per the following permissible wastage over the theoretical quantity / consumption incorporated in the works.

<u>Item</u>	<u>Area</u>	<u>Permissible variation</u>
(a) Reinforcement bars	For all works except piling	3 %
	For piling works	5 %
(b) Structural steel	Accountable (visible)	4 %
	Un accountable (invisible)	1 %

- 39.1.10 Any unused / serviceable quantity of reinforcement steel & structural steel not returned in good condition & wastages / loss / consumption beyond specified / agreed limits shall be charged at penal rate of \$ 1000 per MT for reinforcement steel & \$ 1300 per MT for structural steel respectively at the time of preparing final bill, during finalisation of the contract. The decision of Engineer-in-charge with regard to applicability of penal rates shall be final & binding upon the contractor.
- 39.1.11 Since the steel is being issued free of cost, the scrap generated shall belong to BHEL
- 39.2** All materials to be provided by the Contractor shall be of the best kind in conformity with the specifications laid down in the contract or as per relevant International standard and the Contractor shall, if requested by the Engineer, furnish proof to the satisfaction of Engineer that the materials so comply.
- 39.3** The Contractor shall, at his own expense and without delay, supply to the Engineer samples of materials proposed to be used in the works. The Engineer shall within seven days of supply of samples or within such further period as he may require will intimate to the Contractor in writing, whether samples are approved by him or not. If samples are not approved, the Contractor shall forthwith arrange to supply to the Engineer for his approval fresh samples complying with the specifications laid down in the Contract. Any delay in approval of samples (original or fresh ones) shall not make the contractor eligible for any compensation.
- 39.4** The BHEL Engineer shall have full powers for removal of any or all of the materials brought to site by the Contractor which are not in accordance with the Contract specifications or do not conform in character or quality to samples approved by him. In case of default on the part of the Contractor in removing rejected materials, the Engineer shall be at liberty to have them removed by other means. The BHEL Engineer shall have full powers to procure other proper material to be substituted for rejected materials and in the event of the Contractor refusing to comply, the BHEL Engineer may arrange procurement of such items by other means. All costs, which may be incurred upon such removal and / or substitution, shall be borne by the Contractor.
- 39.5** The Contractor shall indemnify BHEL, its representatives or employees against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties or other charges which may be payable in respect of any article or material or part thereof included in the Contract. In the event of any claim being made or action being brought against BHEL or any agent, servant or employee of BHEL in respect of any such matters as aforesaid, the Contractor shall immediately be notified thereof, provided that such indemnity shall not apply when such infringement has taken place in complying with the specific directions issued by BHEL but the Contractor shall pay any royalties or other charges payable in respect of any such use, the amount so paid being reimbursed to the Contractor only if the use was the result of any drawings and / or specifications issued after submission of the tender.
- 39.6** The Engineer shall be entitled to have tests carried out as specified in the Contract for any materials supplied by the Contractor other than those for which, as stated above, satisfactory proof has already been furnished, at the cost of the Contractor and the Contractor shall provide at his expense all facilities which the Engineer may require for the purpose. If no tests are specified in the Contract, and such tests are required by the Engineer, the Contractor shall provide all facilities required for the purpose and the charges for these tests shall be borne by the Contractor only. The cost of materials consumed in tests shall be borne by the Contractor in all cases except when otherwise provided.

- 39.7** In addition the Contractor shall perform / submit at his own cost such tests / samples as may be required by the Engineer out of the materials used by the company except for the costs of materials used in such tests / samples.
- 39.8** After acceptance of the Contract, if Contractor desires BHEL to supply any other materials, such material may be supplied by BHEL, if available, at rates to be fixed by the Engineer along with prevailing departmental charges (current rate of 30%). BHEL reserve the right not to issue any material. The non-issue of such material will not entitle the Contractor for any compensation whatsoever either in time or in cost.
- 39.9** Material required for the works, whether brought by the Contractor or supplied by BHEL, shall be stored by the Contractor only at places approved by the Engineer. **Storage and safe custody of material shall be the responsibility of the contractor.**
- 39.10** BHEL's officials concerned with the Contract shall be entitled at any time to inspect and examine any materials intended to be used in or on the works, either on the Site or at factory or workshop or other place(s) where such materials are assembled, fabricated, manufactured or at any place (s) where these are lying or from which these are being obtained and the Contractor shall give such facilities as may be required for such inspection and examination.
- 39.11** All materials brought to the Site shall become and remain the property of BHEL and shall not be removed off the Site without the prior written approval of the Engineer. But whenever the Works are finally completed and advance, if any, in respect of any such material is fully recovered, the Contractor shall at his own expense forthwith remove from the Site all surplus material originally supplied by him and upon such removal, the same shall re-vest in and become the property of the Contractor.
- 39.12** It shall be the responsibility of the contractor to obtain prior approval of BHEL, regarding suppliers, type of electrodes etc. before procurement of welding electrodes / TIG wires. On receipt of electrodes at site these shall be subjected to inspection and approval by BHEL. The contractor shall inform BHEL details regarding type of electrodes, batch No. date of expiry etc. and produce test certificate for each lot / batch with correlation of batch / lot no. with respective test certificate. No electrode will be allowed to be used without valid test certificate.
- 39.13** **The Contractor shall be responsible for the transport of their tools, plant and equipment and construction materials, from their place of origin to the Site and more precisely to their exact point of utilisation at the Site .**
- 39.14** **Within the limits imposed by local laws, the Contractor shall be entitled to utilise all the roads and other communication facilities existing in the country, to the same extent as any other user. BHEL and its Customer(M/s NEC) shall assist the Contractor for obtaining licenses, permits, etc. from all the local authorities.**
- 39.15** **All charges on account of Octroi, terminal or sales tax and other duties on materials obtained for the works from any source shall be borne by the contractor.**

40.0 EXECUTION OF WORK

- 40.1 The work shall be executed in a workmanlike manner and to the entire satisfaction of the Engineer as per technical specification issued with tender, British Standards, DIN, American Standards, Indian Standards or any internationally recognized standard as given in Technical Specifications. In case of conflict, the decision of the Engineer shall be final & binding.
- 40.2 The Engineer will communicate or confirm his instructions to the Contractor in respect of the execution of the work in a "Work Site Order Book" maintained at his office and the Contractor

shall visit his office daily and shall confirm receipt of such instructions by signing the relevant entries in this book. Such entries will rank as order or notices in writing within the intent and meaning of these conditions.

- 40.3 Semi automatic welding (GMAW) process shall be used for structures etc to the maximum possible, considering its cost efficiency, better quality and time saving features. Only BHEL approved make of electrodes will be used. All electrodes shall be heated and dried in the electric electrode drying oven to the required temperature for the period specified by the Engineer before these are used in erection work. All welders shall have electrodes drying portable oven at the work spot. The electrodes brought to site will have valid manufacturing test certificate. The test certificate will have co-relation with the lot no. / batch no. given on electrode packets. No electrodes will be allowed to be used in the absence of above requirement. The thermostat and thermometer of electrode drying oven will be also calibrated and test certificate from Govt. approved / accredited test house traceable to National / International standards) will be submitted to BHEL before putting the oven in use. Periodical calibration for the same shall also be arranged by the contractor within the finally accepted rates.

40.4 SETTING OUT

- 40.4.1 All the works shall be set out to the true lines, grades and elevation indicated on the drawing. The contractor shall be responsible to locate and set out the works. Only one grid reference line and bench mark shall be made available for setting out the works under the contract. This reference lines shall be used as datum for the works under the contract and the contractor has to establish for his work area at available points horizontal and vertical control points. The contractor shall inform BHEL well in advance of the times & places at which he wishes to do work in the area allotted to him so that suitable datum points established by him are checked by BHEL / Customer to enable the contractor to proceed with the works. Any work done without being properly located may be removed and / or dismantled by BHEL / Customer at contractors expense.
- 40.4.2 The contractor shall at his own expense take all proper and responsible precautions to preserve and maintain these datum marks to its true position. In the event of these marks being disturbed or obliterated by accident or due to any other cause whatsoever, the same may be deemed necessary placed by BHEL / Customer at contractor's expenses.

40.5 SITE DRAINAGE

- 40.5.1 All water including sub-soil water which may accumulate on the Site during the progress of the works or in trenches and shall be removed by the contractor from the Site to the satisfaction of the Engineer. It will also be responsibility of the contractor to de-water all the foundation pits, trenches with suitable de-watering methods like, pumping out, well point system etc. considering the depth of water table at plant site. All such expenditure on de-watering shall be deemed to be included in quoted rates.

40.6 INSPECTION AND STAGE APPROVAL OF THE WORK

- 40.6.1 The owner or his duly authorised representative shall have at all reasonable times access to the contractor's premises or works and shall have the power to inspect drawings or any portion of the work, examine the materials and workmanship and shall have the authority to reject any work. This would be implemented through joint inspection by the representative of the Owner and BHEL and in the form of joint protocols without any extra claims and loss of time.
- 40.6.2 All work embracing more than one process shall be subject to examination and approval at each stage thereof and the Contractor shall give due notice in writing to the Engineer when each

stage is ready. In default of such notice being received, the Engineer shall be entitled to approve the quality and extent thereof at any time he may choose and in the event of any dispute, the decision of the Engineer thereon shall be final and conclusive.

40.7 UNCOVERING AND MAKING GOOD

40.7.1 The Contractor shall uncover any part of the Works and/or make openings in or through the same as the Engineer may from time to time direct for his verification and shall reinstate and make good such part to the satisfaction of the Engineer. If any such part has been covered up or put out of view after being approved by the Engineer and is subsequently found on uncovering to be executed in accordance with the Contract, the expenses of uncovering and / or making opening in or through, reinstating and making good the same shall be borne by BHEL. In all other cases, all such expenses shall be borne by the Contractor.

40.8 DISCREPANCIES AND ADJUSTMENT OF ERRORS

40.8.1 The several documents forming the Contract are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small-scale drawings, figures/dimensions in preference to scale, and special conditions in preference to general conditions.

40.8.2 In case of discrepancies between schedule of quantities, the specification and / or the drawings, the following order of preference shall be observed.

(a) Special Conditions of Contract

(b) Drawings

(c) Technical Specifications

(d) General Conditions of Contract

If there are varying or conflicting provisions made in any one document forming part of the contract, the Engineer shall be the deciding authority with regard to the document.

40.9 HEALTH, SAFETY & ENVIRONMENT (HSE)

40.9.1 Besides provision with regard to SAFETY under Clause 27 of GCC, Contractor shall note that Explosives shall not be used on the work by contractor except with permission in writing of the ENGINEER and in manner and to the extent to which he has prescribed. Where explosives are used, the same shall be stored in a special magazine to be provided by and at the cost of the contractor who shall be liable for all damages, losses and injury to any person or property and shall be responsible for complying with all statutory obligations in these respect. **Further, the contractor is required to provide proper Safety Net System wherever the hazard of fall from height is present as per instructions of BHEL Engineer at site. The safety net shall be duly tested and shall be of International standards and the nets shall be located as per site requirement to arrest or to reduce the consequences of a possible fall of persons working at different heights.**

40.9.2 Besides provision with regard to SAFETY under Clause 27 of GCC, the contractor will be responsible for Health, Safety & Environment management at site for the construction activities to be carried out by them in accordance with requirements **given under section I(a) of GCC of this document.** The contractor shall continuously take special care to ensure the safety

and prevention of human and equipment accidents and maintain good sanitary conditions in and around the site. All the construction work and plant operation must be carried out in the safest possible manner. The Engineer reserves the right to stop any process which, in the Engineer's opinion, is being performed dangerously. In this case the contractor must immediately adhere the requisite safety precautions and any delays attributed to the work stoppage on this account shall not affect the agreed contractual finishing dates.

The contractor shall appoint dedicated full-time Qualified Safety Officers who shall have full authority to ensure that all necessary safety precautions are observed by the Contractor's employees and sub-contractors. These appointees shall have full responsibility for the safety of all personnel within the contractor's area of the works.

Some of the common safety rules to be followed during working are as follows :-

- No outsider is allowed to enter construction area without permission.
- No body is allowed to enter at construction site without Safety Shoe.
- Never enter work area without Safety helmet & chin strap in place.
- No climbing/working allowed without proper safety belt above 2 m. height.
- Do not exceed the speed limit of vehicles 25 Kmph within premises.
- No debris obstacles allowed on the roads & passages.
- To maintain record of all accidents/incidents. All accidents/incidents need to be reported to site Incharge & also need to be investigated (formats & procedure should be finalized)
- Do not walk on pipelines or false ceiling.
- Maintain good Housekeeping at work site.
- No photography/ Videography allowed without permission
- Infrastructure to be developed for carrying out jobs properly in a safe manner.
- All Site supervisors & engineers (including subcontractor's) must be imparted structured training on construction safety before start of the job & record to be maintained.
- Site Safety training to be imparted to all workers & plan to be made to cover each and every worker for this training.
- Tools box talk (5-15 minutes) by supervisor prior to commencement of any job on safety and house keeping.
- Weekly co-ordination meeting of all Safety engineers with BHEL safety officer.
- Monthly safety meeting with Site In-charges.
- Reports: Weekly/monthly/annual HSE report format should be finalized.
- All Safety equipment must be International standards & checked by Safety officer before use.
- Bamboo/wooden Scaffolding material not allowed.
- LPG cylinders not allowed for gas cutting.
- Good House keeping. Separate waste bins to be used for flammable & non flammable material.
- Safety awareness programs for workers by display of boards, posters, competitions, talks etc.
- Deployment of Safety Supervisors for every 250 workers and part there of at work site.
- Display of List of First Aid trained persons.
- Testing certificates for lifting tools & tackle and inspection at regular intervals, besides thorough inspection prior using the same.
- Provision & maintenance of fire extinguishers at construction site & material stores.
- Display of emergency telephone numbers at various locations.
- For work in confined space use 24 V lamp fitting & use tools with air motors or electric tools with max. 24 V.

- Checking of tags of equipments like grinding machine, welding machine, gas cutting set etc. by supervisors before use.
- Provision of Fall arrestors & double lanyard safety belt

40.9.3 Contractor shall arrange for following provisions of HSE

1. Contractor has to maintain contact with local hospital having scanning & other modern medical facilities required during emergency.
2. Contractor has to ensure pre employment medical check for all staff & workers.
- 3. The Contractor shall provide and maintain proper sanitary facilities including Toilets/Urinals and drinking water at site for the use of workers and ensure that workers make use of them for maintaining cleanliness and health environment.**
4. Contractor has to ensure that adequate First Aid facilities with trained nurse & ambulance are available at work site for emergency purpose. This emergency set-up should include, but not limited to, following
 - Male nurse (in shifts)
 - Oxygen set up
 - Breathing apparatus
 - Eye wash facility
 - Stretcher
 - Trauma blanket
 - Medicines.

The Contractor shall arrange and maintain ambulance at site for entire contract period for subject work. This emergency facility set up including ambulance, male nurse etc. will be shared by BHEL and its other contractors working at same project at no extra cost to BHEL and its sub-contractors.

40.9.4 The contractor shall comply with following towards Social Accountability:

- (a) The contractor shall not employ any employee less than 15 years of age in pursuant to ILO convention. If any child labour were found to have been engaged ,the Contractor shall be levied with expenses of bearing his education expenditure which will include stipend to substantiate appropriate education or employ any other member of family enabling to bear the child education expenditure.
- (b)** The Contractor shall abide by UN convention w.r.t Human Rights and shall be liable for Discrimination/Corporal punishment for failure in meeting with relevant requirements.
- (c)** The Contractor shall arrange potable drinking water to its employees & workers.

40.9.5 Additional safety requirement of BHEL's Customer(M/S NEC), if any, shall be provided by the Contractor without any extra cost. Non adherence of safety requirements will attract penalty, which shall be as follows;

- a) Penalty equivalent to USD 20 for the first violation.
- b) Penalty equivalent to USD 60 for the subsequent violations.
- c) For serious lapses, as decided by BHEL, even fines upto USD 1000 at a time can be imposed.

The Contractor shall be fully responsible for accidents caused due to him or workmen's negligence or carelessness in regard to the observance of the safety requirements and shall be liable to pay compensation for injuries

40.10 NUISANCE

40.10.1 The Contractor shall not at any time do, cause or permit any NUISANCE on Site or do anything which shall cause unnecessary disturbance or inconvenience to owners, tenants or occupiers of other properties near the Site and to the public generally.

40.11 MATERIAL OBTAINED FROM EXCAVATION

40.11.1 Materials of any kind obtained from EXCAVATION on the Site shall remain the property of BHEL / its client and shall be disposed of as directed by the Engineer, within the quoted rates. Land for disposal of surplus earth will be available at about 10 Kms. from the Plant boundary free of charge.

40.12 TREASURE , TROVE , FOSSILS etc.

40.12.1 All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the site shall be the absolute property of BHEL / BHEL's client and the Contractor shall take reasonable precautions to prevent his workmen or any other person from removing or damaging any such article or thing, shall immediately upon discovery thereof and before removal acquaint the Engineer with such discovery and carryout the Engineer's directions as to the disposal of the same.

40.13 PROTECTION OF WORKS

40.13.1 Trees designated by the Engineer shall be protected from damage during the course of the Works and earth level within 1 meter of each such tree shall not be changed. Where necessary, such trees shall be protected by providing temporary fencing.

40.13.2 The contractor shall provide and maintain at his own expense all lights, guards, fencing and watching when and where necessary or required by the Engineer for the protection of the Works or for the safety and convenience of those employed on the Works or the public.

40.13.3 The contractor shall have total responsibility for protecting his works till it is finally taken over by BHEL. No claim will be entertained by BHEL for any damage or loss to the contractor's works and the contractor shall be responsible for the complete restoration of the damaged works to its original condition to comply with the specifications and drawings. Should any such damage to the contractor's works occur because of other party not under his supervision or control, the contractor shall make his claim directly with the party concerned. The contractor shall not cause any delay in the repair of such damaged works because of any delay in the resolution of such disputes. The contractor shall proceed to repair the work immediately and no cause thereof will be assigned pending resolution of such disputes.

40.14 RECORD FOR MATERIALS CONSUMED

40.14.1 The contractor shall maintain and furnish to the Engineer the RECORD OF MATERIALS consumed in the works for each activity. The statement showing the theoretical vis-à-vis actual consumption of specified materials, such as structural /reinforcement steel, cement, bitumen, lead, paint etc., shall be submitted by the contractor. Contractor has to also furnish the test results of the materials used in the work as per IS specifications.

40.15 PROTECTION OF EMBEDMENTS, BOLTS ETC.

40.15.1 The contractor shall ensure proper protection to the satisfaction of the Engineer, of all bolts, inserts, embedments etc. from weather etc/ by greasing, rapping them with gunny bags or canvas/tarpaulin or by any other means as directed by Engineer. Cost of such protections shall be deemed to be included in the rates quoted for the item.

40.16 CLEARANCE OF SITE AND REPAIRS.

40.16.1 **The Contractor shall at all times keep the Site free from obstruction and shall at any time, if or if not directed by the BHEL / its Customer(M/s NEC) & their consultant, store or dispose of any constructional plant and surplus materials and clear away and remove from the Site any wreckage or rubbish or Temporary Works no longer required. Contractor has to clear the site / area where mechanical and electrical erection work is to be commenced / or in progress. The contractor shall remove construction materials and equipment lying in the vicinity and causing obstruction in the erection work within 24 hrs. notice. In case, he fails to clear the site, this will be done at his risk & cost by BHEL. On the completion of the Works, the Contractor shall, except as otherwise specifically provided, clear away and remove from the Site and around Site all construction plant, Temporary Works, surplus materials, wreckage and rubbish of every kind, and shall reinstate and leave the whole of the Site and the Works clear and in a workmanlike condition to the satisfaction of BHEL. If the Contractor fails to remove any Constructional Plant within a reasonable time after the issue of the Provisional Acceptance Certificate then BHEL or its Customer (M/S NEC) may:**

- a) **sell any such plant & materials which are the property of the Contractor;**
- b) **return any such plant & materials which are not the property of the Contractor to the Employer thereof at the Contractor's expense;**
- c) **and, after deducting from any proceeds of sale the costs, charges and expenses in connection with such sale or return, shall pay the balance, if any, to the Contractor, but to the extent that the proceeds of any sale are insufficient to meet all such costs, charges and expenses, the excess shall be a debt due from the Contractor to BHEL and shall be reimbursed by the Contractor.**

40.17 QUALITY ASSURANCE

40.17.1 The contractor has to establish / arrange at site the field testing facilities for testing of civil construction materials and concrete cubes for ensuring the proper quality, grade and strength of the materials used in the construction in line with approved field quality check list of BHEL/ its client. Contractor has to set up the field laboratory with facilities required for material & concrete testing. **Tentative list of laboratory instruments is enclosed as Annexure- A.** Field quality Plans are to be submitted by successful bidders for BHEL / Customer's approval. Contractor has to submit detailed report for testing of all material used etc. All testing shall be done as per International Standard code specifications/ BHEL's quality plan. If further test is required by the engineer to be carried from outside laboratory, the cost of the same shall be borne by the contractor.

40.18 COMPLETION OF WORK

40.18.1 The works shall be completed to the entire satisfaction of the Engineer and in accordance with the completion schedule as specified in the Contract, and all unused stores and materials, tools, plant, equipment, temporary buildings, site office, labour hutments and other

things shall be removed and the site and work cleared of rubbish and all waste materials and delivered up clean and tidy to the satisfaction of the Engineer at the Contractor's expenses.

40.18.2 BHEL shall have the right to take over, for further works by other agencies, from the Contractor from time to time such sections of the work as have been completed to the satisfaction of the Engineer. Such work however shall not be treated as having been completed until all the works are executed to the satisfaction of Engineer. The Guarantee period shall commence only after handing over of the entire works.

40.18.3 The Engineer shall certify to the contractor the date on which the work is completed.

40.19 RECORDS AND MEASUREMENTS

40.19.1 All items having a financial value shall be entered in BHEL measurement Book so that a complete record is obtained of all works performed under the Contract.

40.19.2 Work which fails to be measured in details shall be measured physically without reference to any local custom excepting where it may otherwise be directed in the tender documents. The measurements shall be taken jointly by any person duly authorised on the part of BHEL and by the Contractor.

40.19.3 The Engineer shall give adequate notice to the Contractor for measurement.

40.19.4 The Contractor shall, without extra charge, provide assistance with appliances and other things necessary for measurement and shall bear all the cost of measurement of his work.

40.19.5 Measurement shall be entered in BHEL Measurement Book and signed and dated by both parties on completion of measurement. If the Contractor objects to any of the measurements recorded on the behalf of BHEL, a note to that effect will be made in BHEL Measurement Book or against the item or items objected to and such note shall be signed and dated by both the parties engaged in taking the measurement.

40.19.6 If, as a result of such objection, it becomes necessary to re-measure the work wholly or in part the expense of such re-measurement shall be borne by the contractor.

40.19.7 If the Contractor's representative fails to attend when required, the Engineer shall have power to proceed by himself to take measurements and in that case these measurements shall be accepted by the Contractor as final.

41.0 COMPLIANCE TO REGULATIONS AND BYELAWS

41.1 The Contractor shall conform to the provisions of any statute relating to the work and regulations and bylaws of any local authority and of any water and lighting Companies or Undertaking with whose system the work is proposed to be connected. He shall, before making any variation from the drawings or the specifications that may be necessitated for such connections give the Engineer, notice specifying the variation proposed to be made and the reasons therefore and shall not carryout any such variation until he has received instructions from the Engineer in respect thereof. The Contractor shall be bound to give all notices required by statute, regulations or bye-laws as aforesaid and to pay all fees and taxes payable to any authority in respect thereof.

41.2 **The Contract shall be governed by the applicable Laws of Sudan Govt. and the bidders to ensure considering latest Sudanese Laws before quoting. If during Contract execution there may be any Change in such Law which might cause additional or reduced cost to the Contractor in the execution of the**

works, such additional or reduced cost, if fully justified and approved by BHEL or its Customer (M/s NEC), shall be paid to 'OR' recovered from the Contractor, as the case may be.

41.3 The Contractor shall ensure conformance in all respects with the provisions of all state and local laws, regulations or other laws in force in Sudan or elsewhere including all regulations and by-laws of any local or other duly constituted authority within Sudan or elsewhere which may be applicable to the performance of the Contract and the rules and regulations of all public bodies and companies whose property or rights are affected or may be affected in any way by the Works or any Temporary Works (which are herein referred to as "Laws"), and shall give all notices and pay all fees required to be given or paid thereby and shall keep BHEL and/or its Customer (NEC) indemnified against all penalties and liability of any kind for breach of any of the same.

41.4 The Contractor shall comply with all applicable Sudan Government's safety and sanitary laws, transportation rules, regulations and ordinances, as well as the established safety rules and practices of BHEL's Customer (NEC). The Contractor shall also provide insurance cover for his workmen throughout the contract period, under prevailing local Laws.

42.0 FACILITIES TO BE PROVIDED BY BHEL / CONTRACTOR

42.1 The Contractor shall during the progress of the work, provide, erect and maintain at his own expenses all necessary temporary workshops, stores, consumables, offices, etc. required for the proper and efficient execution of the work. The planning, setting and erection of these buildings shall have the approval of the Engineer and the Contractor shall at all times keep them tidy and clean and sanitary condition to the entire satisfaction of the Engineer. BHEL shall provide free of charge limited open space for office & storage shed, as and where made available **by BHEL's customer**. It is the responsibility of the contractor to construct sheds, provide all utilities and dismantle and clear the site after completion of work or as and when required, as a part of his scope of work. On completion of work or as and when required by BHEL, all the temporary buildings, structures, pipe lines, cables etc. shall be dismantled and leveled and debris shall be removed as per instruction of BHEL by the contractor at his cost. In the event of his failure to do so, same will be got done by the Engineer and expenses incurred shall be recovered from the contractor along with prevailing overhead. The decision of BHEL Engineer in this regard shall be final.

42.2 Contractor shall be responsible for providing all necessary facilities like residential accommodation, transport, electricity, water, medical facilities etc. as required under various labour laws and statutory rules and regulations framed there under to the personnel employed by him. Land for construction of temporary accommodation for the contractor's personnel including labour colony shall be provided by BHEL free of cost. **This land shall be within/near plant boundary wall of the power station. The contractor shall at his own cost, provide temporary housing and / or camp accommodation for his site personnel, including sanitary facilities, canteen facilities etc. The contractor shall submit for prior approval of BHEL, plans for all such accommodation he proposes to erect before any construction commences. The contractor shall be responsible for all costs associated with any temporary housing and / or camp accommodation provided by him.**

42.3 BHEL or its Customer (M/s NEC) shall provide land for approach roads (one for movement of materials/ fuels and one for general use) from highway to plant boundary. However, the approach roads shall be constructed by the Contractor. Distance from highway to plant boundary is about 600 mtrs. Maintenance of this road during execution of the contract shall be in the scope of the Contractor.

42.4 All temporary housing and camp accommodation shall be run and maintained by the Contractor in efficient condition in accordance with the laws in force in Sudan.

- 42.5 The sanitary facilities shall be kept in clean and orderly conditions to the approval of BHEL and public health authorities of Sudan. The Contractor shall comply with sanitary laws, regulations and ordinances of Sudan Govt.**
- 42.6 BHEL shall provide Power supply at 240 V, 1 phase for labour colony free of charge at one point . Further distribution will be done by the Contractor. BHEL shall provide potable/drinking water supply for labour colony free of charge, at one point. Further distribution will be done by the Contractor at his own cost.**
- 42.7 The Contractor shall be responsible for providing adequate transport to and from the site for his own and his personnel who may be brought in daily from their living quarters or housing areas.**
- 42.8 Medical facilities available to BHEL staff shall be extended to Contractor's personnel, if possible. However, the Contractor shall bear all costs in respect of the Doctor's fees and all other expenses.**
- 42.9 The Contractor shall be fully responsible for the death or injury to any person employed by him for the purposes of or in connection with the execution of the Contract. The Contractor shall also provide insurance cover to all persons employed/engaged by him throughout the period of Contract under prevailing local laws.**
- 42.10 Construction power, for construction purposes will be provided free of cost and at one point near erection/construction site from supply point. Further distribution of power shall be done by contractor at his cost. All wiring must comply with local regulations and will be subject to BHEL's inspection and approval before connecting supply.**
- 42.11 Provision of distribution lines of power from the central points to the required place with proper distribution boards observing the safety rules laid down by the authorities of the state shall be done by the contractor, supplying all the materials like cables, distribution board, switch boards, TPN, CBS, ELCBS/ MCCBS / Copper / Brass clamps, copper conductor, change over switches pipes etc. at his own cost. If any failure is caused in supply of the power and water, it is the responsibility of the contractor to make alternate arrangements at his cost. The contractor shall adjust his working shift / hours accordingly and deploy additional manpower if necessary so as to achieve the targets
- 42.12 Following points should be strictly adhered to by the contractor while drawing construction power supply from Distribution Board
- (a) All electrical installations should be as per Sudan / International Electricity rules.
 - (b) All distribution Boards installed by the contractor should be constructed with fire proof materials viz. steel frames, bakelite sheets etc.
 - (c) Connection for single phase should be taken from phase and neutral. No where the connection should be taken with earth as neutral.
 - (d) All electrical connections should be made through connectors, nuts and bolts, switches, plug and sockets. Loose connections or hooking up of wires shall not be permitted.
 - (e) Contractor have to make their own earthing arrangement for their equipment / DB earthing. Earthing connection have to be done with copper conductor and copper / brass clamps with BHEL's prior permission.
 - (f) All electrical equipment / tools and plants should be properly earthed. DBs to be earthed diagonally opposite at two points.

- (g) Contractor should use "MCCB" and "ELCB" either on incoming or outgoing connections to the DBs.
- (h) Contractor should ensure that all the CBs / TPNs / Fuses / MCCB / ELCB cables etc. should be of adequate rating/ capacity.
- (i) For permission of supply connections contractor has to submit a test report of their installations with a single line diagram of connected / proposed loads. Contractor will also submit a report on all electrical connected load by the 7th of every month.
- (j) ELCB will be tested once in a week or as deemed fit by BHEL Engineer by actually simulating the earth leakage for all installations and the same shall be recorded by BHEL Engineer in the log book to be maintained by the contractor.
- (k) In case of power cuts / load shedding no compensation for idle labour or extension of time for completion of work will be given to contractor.

- 42.13 Adequate lighting facilities such as flood lamps, hand lamps and area lighting shall be arranged by the contractor at the site of construction, contractor's material storage area etc. within finally accepted rates.
- 42.14 **BHEL will make available water for construction/testing purposes close to the construction areas including potable/drinking water supply for site free of charge. Distribution within the plant area will be done by the Contractor at his own cost. BHEL will provide support and assistance to the contractor in arranging necessary connections with the local water supply authority. However, the contractor shall bear all cost on this account.** Contractor to satisfy himself that the water drawn by him is fit for construction / consumption and adequately treat such water at his cost when it is not found fit for the said purposes.
- 42.15 Though the contractor will be provided electricity and water free of charges at one point ,the contractor shall however ensure that there is no wastage . Periodical audits will be held to ensure that these resources are being optimally used .In case any wastage is observed , BHEL reserves the right to recover any charges /penalty as deemed fit to be decided by BHEL Engineer.
- 42.16 No claim for damages will be entertained by BHEL on account of interruptions of water supply or limitation of quantity of water as aforesaid or on account of the water so taken being not fit for construction purposes or on any other account in connection with such water supply.

43.0 PROGRESS REPORTING

- 43.1 Contractor is required to draw mutually agreed monthly programme in consultation with BHEL well in advance. Contractor shall ensure achievement of agreed programme and shall also timely arrange additional resources considered necessary at no extra cost to BHEL.
- 43.2 Weekly progress review meetings will be held at site during which actual progress during the week vis-a-vis scheduled programme shall be discussed for actions to be taken for achieving targets. The programme for subsequent week shall also be presented by contractor for discussions. The contractor shall constantly update / revise his work programme to meet the overall requirement. All quality problems shall be discussed during above review meetings. Necessary corrective and preventive action shall be discussed and decided upon in such review meetings and shall be implemented by the contractor in time bound manner so as to eliminate the cause of non-conformities.
- 43.3 The contractor shall submit weekly and monthly progress reports, materials reports, consumables (gases / electrodes) report and other reports as per proforma considered necessary by the Engineer. The Contractor shall prepare and submit during the entire project period

to the Employer and Engineer prior to the 3rd day of each calendar month the "Project Progress Report" with the following content:

- a) Project administration
- b) Project planning and control
- c) Delays and critical paths
- d) Project design, drawing list up-dated
- e) Variation orders
- f) Detailed Progress Schedule (refer to chapter Detailed Progress Schedule)
- g) Status of procurement, transportation, construction, erection, commissioning, testing
- h) Status of fabrication, workshop tests, shipping dates
- i) Site staff record, site delivery report
- j) Milestone events and payments, financial status quarterly.
- k) Colour photographs showing the progress of Works and completion of each structure or major feature (after the first month of construction and continuing every month until completion). A digital camera shall be used with reasonable resolution. Prints of the photos shall be furnished with explanations of the subject content. The softcopies of the pictures shall be transmitted and quarterly a CD-ROM with all these pictures shall be provided.

43.4 The progress report shall indicate the progress achieved against planned, with reasons indicating delays, if any, and shall give the remedial actions which the contractor intends to take to make good the slippage or lost time, so that further works again proceed as per the original programme and the slippages do not accumulate and effect the overall programme.

43.5 The daily manpower reports shall clearly indicate the manpower deployed, categorywise specifying also the activities in which they are engaged.

44.0 DELAY AND EXTENSION OF TIME

44.1 If, in the opinion of the Engineer, the work is delayed

- (a) by reason of abnormally bad weather, OR
- (b) by reason of serious loss or damage by fire, OR
- (c) by reason of civil commotion, local combination of workmen, strike or lockout, affecting any of the trades employed on the work, OR
- (d) by delay on the part of the agency or tradesmen engaged by the BHEL in executing work not forming part of the Contract, OR
- (e) by reason of any other cause which in the absolute discretion of the Engineer is beyond the Contractor's control, then in any such case, the Engineer (or higher authority) may make fair and reasonable extension in the completion dates of the individual items of work or the Contract as a whole. Such extension which will be communicated to the Contractor by the

Engineer in writing shall be final and binding on the Contractor. No other claim in this respect for compensation or otherwise howsoever is admissible. Upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer but shall nevertheless use constantly his best endeavour to prevent or make good the delay and shall do all that may reasonably be required to the satisfaction of the Engineer to proceed with the work.

44.2 FORCE MAJEURE

The term "Force Majeure" means any cause beyond the control of either party, which either party could not foresee and / or reasonably provide against and which prevents either party from performing his duties under the Contract. Force Majeure includes but is not limited to the following:

**War, revolution, insurrection, or hostilities (whether declared or not)
Riots, civil commotion or civil uprisings (other than among Contractor's employees)
Earthquake, flood, tempest, hurricane, lightning, or any other natural disaster.
Any fire of major proportions, or explosions.**

Strike, lockout, or other industrial disturbance other than among Contractor's employees.

If either party to this Contract because of a Force Majeure Event is rendered wholly or partly unable to perform its obligations under this Contract, other than the obligation of that party to make payments of money, that party shall to the extent provided in this Contract, be excused from the performance directly affected by the Force Majeure Event, provided that;

- a) The non-performing party, as soon as possible but in no event more than ten (10) business Days after it becomes aware of its inability to perform, shall declare that a Force Majeure Event has occurred and give the other party written notice of the particulars of the occurrence(s), including, without limitation, the nature, cause and date and time of commencement of the occurrence(s), the anticipated scope and duration of any delay, and any date(s) that may be affected thereby. If it is impracticable to specify the length of such delay at the time such notice is delivered, the non-performing party shall provide the other party with periodic (not less frequently than weekly) supplemental notices during the period the Force Majeure Event continues. Such supplemental notices shall keep such other party informed of any change, development, progress or other relevant information concerning the Force Majeure Event.**
- b) The suspension of performance is of no greater scope and of no longer duration than is required by the Force Majeure Event.**
- c) Obligations of either party which arose before the Force Majeure Event causing the suspension of performance are not excused as a result of the Force Majeure Event.**
- d) The non-performing party immediately and continuously uses its best efforts to remedy its inability to perform with all reasonable dispatch.**
- e) When the non-performing party is able to resume performance of its obligations under this Contract, that party shall promptly so notify the other party in writing.**
- f) During and following the occurrence of any Force Majeure Event, Contractor and Employer each shall use its best efforts to minimize the delay and costs caused by such Force Majeure Event and shall continue actively and in good faith consider the**

need for and, when appropriate, execute a change order covering such event, which may result in the extension of such Guaranteed Taking-Over Date or / and additional cost

45.0 PRICE VARIATION AND OVERRUN

45.1 The finally accepted rates for scope of work as defined in this tender shall remain **FIRM throughout the contract period including extended period, if any** . NO PRICE VARIATION / COMPENSATION / OVER RUN on account of any increase whatsoever, unless otherwise specified elsewhere in this 'Special Conditions OF Contract' (SCC), will be payable during the entire period of execution including extended period, if any .

46.0 TAXES & DUTIES

46.1 **The bidder shall quote their rates inclusive of all taxes/duties applicable for this work, except otherwise expressly set forth herein or under clause no. 41.2 of SCC. The Contractor shall be responsible for paying any and all Taxes/Duties assessed on the Contractor, its Sub-Contractor and Suppliers or their respective employees.**

46.2 **LOCAL TAXES AT SUDAN:** BHEL and / or its Customer shall obtain from the competent Sudanese Authorities all taxes exemption or pay on behalf of Contractor relating to the project including Business Profit Tax and Value Added Tax etc. However, Income Tax for personnel shall be borne by the Contractor.

46.3 Taxes as required to be deducted at source as per Local Sudanese Laws / Indian Law (applicable in case of only those contractors having their office in India), if any, at prevailing rates shall be deducted on gross invoice value from the running bills unless Exemption Certificate from appropriate Tax Authority is furnished

47.0 CUSTOM DUTY & CUSTOM CLEARANCE

47.1 Custom duty and demurrage occurred in Port Sudan and Khartoum airport for all equipment, facilities and materials imported by the Contractor for the Project shall be paid by BHEL's Customer (M/s NEC). The contractor shall furnish list of all such items including their temporary imported equipments(temporary imported equipments to be defined and listed clearly) well in advance. However, custom duty , if any, paid by the Contractor for any reason whatsoever shall not be reimbursed.

47.2 BHEL or its Customer(NEC) shall be responsible for the custom clearance agency to clear out the Equipment, tools, materials imported (Plant Materials) and Contractor's equipment and vehicles temporarily imported for the Project as per Procedure given below at 47.2.1. However, the Contractor shall take all actions for chasing/follow up and bear all expenditure on his own for the same. A bank guarantee shall be issued by the Contractor, if necessary according to the custom authority for custom clearance. The bidders to assume amount of BG equivalent to custom duty pertaining to their equipments/T&Ps brought by them on repatriable basis. The Contractor shall submit all relevant dispatch/shipment documents to Project Coordinator- Sudan, BHEL, PSNR, NOIDA(UP)-India / Construction Manager, BHEL Site, Kosti TPP. The Contractor shall take delivery of materials at Port of Sudan or at Khartoum airport and responsibility of handling (unloading/loading etc) and its transportation to Kosti Power Plant shall be of Contractor at their own cost. Payment of any Que/Quay dues at Port, will be the responsibility of the Contractor.

47.2.1 CUSTOMS CLEARANCE PROCEDURE

(A) For all the supplies/ dispatches related to this Project, the consignee will be NEC, SUDAN and the name of supplier to be mentioned either as "BHEL" or "on account of

BHEL". The Contractor will submit original + 7 copies of despatch documents to BHEL /BHEL's bankers after despatch of consignment from India.

BHEL bankers in India will forward these documents after necessary endorsement to Bank of Sudan in Sudan.

Bank of Sudan after stamping will send these original documents to NEC, Khartoum(BHEL's Customer).

- (B) The Contractor shall submit scanned / fax copies of documents such as invoice, packing list, certificate for country of origin, insurance, bill of landing etc to BHEL/ NEC, Khartoum after despatch of consignment from India.
 - (C) NEC (BHEL's customer) at Khartoum will process the document and obtain certification from Sudan customs / Government for zero custom duty and payment exemption for all other applicable taxes, duties, levies etc.
 - (D) NEC (BHEL's customer) at Khartoum shall forward these documents with certification to NEC-Port Sudan.
 - (E) NEC (BHEL's customer) at Port Sudan after necessary clearance permit will hand over the documents to the Contractor through BHEL's representative/Transporter for taking delivery and transport to power plant site at Kosti. The Contractor will sign that he has received the consignment.
- 47.3 **In case the temporary imported equipment is not defined and listed by the Contractor, the responsibility of custom clearance and payment of custom duty/taxes shall lie with them. When it is produced at any time it shall be considered as part of this Contract (i.e it will be considered as BHEL's Customer property).**
- 47.4 **Any demurrage incurred due to the reason of the Contractor's delay in unloading at the Port Sudan or airport shall be the Contractor's responsibility. Any other demurrage incurred during custom clearance for reasons other than those attributable to BHEL or its Customer (M/s NEC), shall also be borne by the Contractor..**
- 47.5 **For all the items like T&Ps, Erection equipments, consumables, establishment items etc. to be exported by the Contractor to Sudan on repatriable basis, the Contractor shall furnish list and value of such items to BHEL prior to dispatch. The Contractor shall also give an undertaking to BHEL prior to dispatch declaring these items as returnable/consumable.**

48.0 TIME SCHEDULE

- 48.1 The Contractor shall commence the works within 30 days from the date of issue of letter of intent (unless BHEL decides to fix any other later date) and shall thereafter proceed to carry out and complete the Works continuously, diligently and without delay. Time shall be of the essence in the performance of the Contractor of its obligation under the Contract.
- 48.2 **Entire work as detailed in tender specifications shall be completed, in all respect, within 26 months** from the scheduled date of start of work as per the programs / milestones indicated by BHEL from time to time. However, finishing works shall be allowed to be completed upto one month after synchronization of last unit. The Contractor has to mobilise adequate resources to meet BHEL's commitments to their customer as indicated from time to time. **In case due to reasons not attributable to the contractor, the work gets delayed and additional manpower / resources have to be mobilized so as to expedite the work to meet various milestones, same shall be done within the quoted rates, at no extra cost to BHEL. In the event the contractor fails to respond to these requirements, BHEL shall take appropriate actions in line with the provisions of General Conditions of Contract.**

48.3 Unit # 1 is scheduled to be commissioned by 23th month from Zero date of this contract. Unit #2, 3 & 4 shall follow at interval of 4 months respectively. Civil works of respective units are to be scheduled accordingly. The various milestone dates to be achieved as per the current status of contract, are as below

MILE STONES	MONTHS
Release of LOI	Zero Date
Kick off Meeting	within 15 days of Zero Date
Boiler #1 foundation readiness	3rd Month
Station building structure erections start	6th Month
Readiness for condenser (#1) erection start	11 th Month
Readiness for TG & auxiliaries (#1) erection start	12 th Month
Switchgear room readiness (for #1)	15 th Month
Control room readiness (for unit #1)	17 th Month
Auxiliary buildings readiness	18 th Month

Milestones for Unit #2, 3 & 4 shall follow at interval of three months respectively. Based on above time schedule, the contractor shall submit, within one month from Zero date, detailed programme for construction activities envisaged under this contract. BHEL shall approve all schedules within two weeks after receipt. However, the submission for approval by BHEL of such program shall not relieve the contractor of any of his duties or responsibilities under this contract.

48.4 In case due to reasons not attributable to the contractor, the work gets delayed and scheduled completion gets extended, time extension will be granted by BHEL but in no case over run compensation will be payable.

48.5 The work under the scope of this contract is deemed to be completed in all respects, only when the contractor has discharged all responsibilities to the entire satisfaction of BHEL. The decision of BHEL on completion date shall be final and binding on the contractor

49.0 TERMS OF PAYMENT

49.1 Advance Payment

(a) 5% of the contract value shall be paid as interest bearing advance against submission of a Bank Guarantee for an amount equal to 1.25 times of advance valid for 24 months initially and thereafter extension for a period upto which the advance is fully adjusted. The interest chargeable shall be Prime Lending Rate of State Bank of India plus 2%.

(b) The advance paid shall be recovered from the contractor's monthly running bills to an extent of 10% of each bill amount till it is fully recovered. The BG amount shall be allowed to be reduced every six months by an amount equal to the amount adjusted against running bills.

(c) The BG against advance shall be returned after full adjustment of the entire amount of advance along with interest .

49.2 Progressive Payments

(a) The Contractor shall be paid monthly running bill to a maximum of 95% of the value of the work actually executed on site provided the work has been executed to the satisfaction of the Engineer. **BHEL site in-charge, at his discretion can split this 95 % payment, to facilitate site operations.** The Engineer may after a measured bill allow & certify payment to the contractor on the basis of abstract measurement bill submitted by the contractor. Contractor will also submit the soft copy in a CD containing abstract & measurement sheets of the bill which will be returned to him after correction for further resubmission of bill. From this amount recovery such as advances, security deposit taxes etc. would be made. The

certificate of the Engineer regarding such approval and passing of sums so payable shall be final and conclusive against the contractor.

- (b) 2.5% of the contract value shall be paid on completion of all pending works, rework wherever required, site clearing and reconciliation of materials and against provisional takeover certificate by BHEL's Customer(NEC).
- (c) Balance 2.5% of the contract value shall be paid within one month of submission and passing of final bill and against final take over certificate by BHEL's Customer(NEC) and against submission of a BG for an amount equivalent to 50% of Security Deposit as per clause no. 16.1 of GCC with validity up to completion of warranty period (as per Clause 34.8) plus two months. The certificate of the Engineer regarding such approval and passing of sums shall be final and conclusive against the contractor.

49.3 MODE OF PAYMENT:

- (a) Payments shall be made by cheque or bank transfer.
- (b) BHEL Engineer shall certify regarding the actual work executed in the measurement books in line with approved billing schedule. The contractor shall submit progressive bills for the works completed in line with approved billing schedule, once in a month. The Contractor shall be paid monthly running bill to a maximum of 95% of the value of the work actually executed on site provided the work has been executed to the satisfaction of the Engineer.
- (c) Any certificate relating to the work done may be modified by any subsequent interim certificates or by the final certificates and no certificate of the Engineer supporting an advance payment shall by itself be conclusive evidence that any work or materials to which it relates are in accordance with the contract.

(d) Currency of Payment and Exchange Rate

(i) US DOLLAR Payment

85% of the Total Contract Price will be paid in US Dollars subject to RBI guidelines.

Bidder has to ensure that total imports (CIF Value) from 3rd country i.e. steel (wherever required), cement and other materials which is going directly from the 3rd Country to Kosti Site in Sudan shall not be more than 50% of the Total Contract Price to ensure that total Imports from the 3rd country going directly to Sudan Site shall meet the RBI guidelines.

(ii) Local Currency Payment

Balance 15% of the Total Contract Price will be paid in local currency (i.e. Sudanese Dinar) for the supplies and services carried out in Sudan.

Exchange rate from one currency to another applicable for the entire period of contract including extended period, if any, shall be the rate prevailing on the date of opening of technical bid (Part-I). For conversion from US Dollars to Sudanese Dinar buying, rate of US Dollars as available on the website of Bank Of Sudan (www.bankofsudan.org) on the date of opening of technical bids (Part-I), shall be considered and will be applicable for the entire period of Contract including extended period, if any. If the date happens to be a holiday, the exchange rate of next working day will be considered.

50.0 INSURANCE

Besides provisions under clause no. 29.0 of GCC regarding insurance, the following shall also be applicable. The contractor shall also take care of the same while submitting their offer.

- 50.1 BHEL / its customer shall arrange for insuring the materials of BHEL / its customer covering the risks during transit, storage, erection and commissioning.
- 50.2 If due to negligence/ carelessness on the part of the contractor, any material/ equipment gets damaged, the contractor shall submit necessary documents for lodging insurance claims as required by BHEL Engineer. BHEL shall however reserve the right to recover deductible franchise and also unsettled portion of insurance claim amount from the contractor.
- 50.3 If due to negligence/ carelessness on the part of the contractor, any surrounding properties also get damaged, the contractor shall submit necessary documents for lodging insurance claims as required by BHEL Engineer. BHEL shall however reserves the right to recover deductible franchise and to unsettled portion of insurance claim amount from the contractor.
- 50.4 **Insurance for all materials pertaining to the Contractor(T&Ps, Construction Materials etc.) during transit, storage and during construction shall be in his (Contractor's) scope.**
- 50.5 **The Contractor shall provide insurance cover to all persons employed/engaged by him throughout the period of Contract, including the extended period, if any, under prevailing local laws.**

51.0 RATE SCHEDULE

- 51.1 Contractor shall fully understand description and scope of work before quoting. The scope of work and responsibility of the contractor as mentioned under these specification shall be covered within the quoted / finally accepted rates.
- 51.2 The Tenderer shall quote the prices/rates for entire scope of work as per the rate schedule only, in part II price bid (Original). **Conditional price bids or price bids with any deviation are liable to be rejected. No cutting / erasing / over writing shall be done.**
- 51.3 Quantities mentioned in the rate schedules are approximate only and liable for variation. The tentative contract value (CV) for entire scope of work shall be calculated as per finally accepted item rates & the quantities indicated in Rate Schedule cum BOQ.
- 51.4 Contractor's total quoted price as per rate schedule will be taken as tentative only. The contractor undertakes to erect / commission actual quantities as per advice of BHEL Engineer and accordingly the final contract price shall be worked out on the basis of quantities actually erected at site and payments will also be regulated for the same. The quantities indicated against each item may vary to any extent and no compensation will be payable in variation of Individual item quantity. **However, in case of overall reduction in contract value beyond 30%, the contractor will be eligible for compensation as per the following provision:**
- "The actual executed value shall be raised by 10 % subject to the condition that the total value of work executed plus increase as above shall be limited to 70 % of the awarded contract value"**

Tenderers are required to take above into account while quoting the unit rates as per Rate Schedule so as to take care of such variation during execution stage.

52.0 LIENS

- 52.1** Each Contractor, for himself and for any persons directly or indirectly responsible to him, and for his or their material, equipment and employees; and for all other persons performing any labour or furnishing any labour or material for any/or all of the Work covered by his Contract, will be required to release or waive, to the full extent permitted by law, all mechanical and other liens, for or on account of the Work done or equipment and material furnished hereunder and the improvements or structures herein same may be incorporated, and the land to which they are appurtenant shall at all times be free and clear of all such liens.

53.0 OTHER MISCELLANEOUS CONDITIONS

- 53.1 PACKING, MARKING AND TRANSPORTATION :** All equipment and material, together with the applicable instruction book, packing list, and special site storage instructions, shall be carefully boxed, crated, or otherwise adequately protected for overseas shipment by the Contractor
- 53.2** The Contractor shall be responsible for the transport of the tools and plant and construction equipments for site work from their place of origin to the Site and more precisely to their exact point of utilization at the Site.
- 53.3** The Contractor shall take care that if the machinery is disassembled into components, the weight and size of which are in line with actual transport possibilities.
- 53.4** Within the limits imposed by law, the Contractor shall be entitled to utilise all the roads and other communication facilities existing in the country, to the same extent as any other user. BHEL and its Customer(NEC) shall assist the Contractor for obtaining licenses, permits, etc. from all the local authorities. However, all the expenditure on this account shall be borne by the Contractor.
- 53.5** The Contractor shall repair or replace the Works lost, damaged, or destroyed, without waiting for the settlement of claims from insurance company to ensure completion in accordance with the Overall Project Schedule.
- 53.6** The Contractor shall be responsible for the safety and security of all the Works and shall replace promptly at Site each part of any and all Works which may be lost or damaged or destroyed due to fire, explosion, lightning, earthquake, theft, flood, storm, tempest, aircraft and other aerial devices or articles dropped therefrom, malicious damage, etc. and the actions of the BHEL or its Customer (M/s NEC) in the operation of appliances on behalf of the Contractor in case the contractor do not act from the date of arrival of equipment, plant, materials, machinery, etc. at the Site until Provisional Acceptance Certificate has been issued.

The Contractor shall repair or replace the Works lost, damaged, or destroyed, within shortest possible time at Site to ensure commissioning and operation of the Works without delay. If the Contractor shall fail to promptly replace or repair the Works damaged as per above clause, the Employer, at his discretion, will get such works repaired or replaced as the case may be and such costs will be reimbursed by the Contractor.

- 53.7 SECURITY DEPOSIT:** The contractor shall submit Security Deposit within 15 days from the date of issue of LOI as per clause no. 16.2 of the General Conditions of Contract (GCC). In case the contractor opts to furnish Bank Guarantee as a part of Security Deposit, the BG shall be issued as per the Performa enclosed as per Annexure-H of the GCC and also that the BG should be issued preferably through any of the Member Banks listed on Page No. 34(a) of the GCC;

For BG through any other Nationalized Bank (Not covered in the list of Member Banks of GCC), the discretion of its acceptance shall lie solely with BHEL.

- 53.8 LIQUIDATED DAMAGES(LD):** For delay in completion of work attributable to the contractor, the LD shall be applicable at the rate of ½% of the contract value per week of delay or part thereof limited to a ceiling of 10% of the contract value as mentioned under clause no.25.5 of the GCC of the tender.
- 53.9 Unsolicited rebate/discount shall not be accepted after bid opening.**

Annexure-A**INDICATIVE LIST OF LABORATORY INSTRUMENTS TO BE ARRANGED BY THE CONTRACTOR AT HIS OWN COST**

SL NO	EQUIPMENT
1	THEODOLITE ONE SECOND ACCURACY
2	DUMPY LEVEL UPTO 350 MM
3	COMPRESSION STRENGTH TESTING EQUIPMENT
4	CONSTRUCTION MATERIAL TEST EQUIPMENT
5	CONCRETE CUBE MOULDS
6	CONCRETE slump cone
7	COARSE AGGREGATE SIEVES & SAND SIEVER
8	SIEVE SHAKER
9	AGGREGATE IMPACT TEST MACHINE
10	HEATING OVEN
11	PHYSICAL BALANCE FOR LAB WORK
12	COATING THICKNESS METER
13	WET FILM THICKNESS COMBS
14	FLOW CUP & STOP WATCH
15	HOLIDAY DETECTOR
16	ADHESION TESTER
17	HYGROMETER, THERMOMETERS
18	FIELD / LAB TESTING INSTRUMENTS FOR COMPACTION TESTING
19	SVESK PHOTOGRAPIC STANDARD SURFACE PROFILE GAUGE.

NOTE:

1. The above list specifies only major instruments. All additional measuring instruments etc. in good and safe working conditions which are required for satisfactory & timely completion of work shall also be deployed by the contractor within finally accepted rate / price.

Annexure-B**LIST OF DRAWINGS & SPECIFICATIONS ENCLOSED.**

S.NO	TITLE
1.	SPECIFICATION NO PE-TS-250-600-C001, Section C
2.	SPECIFICATION NO PE-TS-250-600-C001, Section D, Sub-section D1 to D21 as follows:
D1	EARTHWORK IN EXCAVATION AND BACKFILLING
D2	CEMENT CONCRETE (PLAIN & REINFORCED)
D3	CARPENTRY AND JOINERY
D4	ROOF AND UNDERGROUND STRUCTURES WATER PROOFING, INSULATION AND ALLIED WORKS
D5	METAL DOORS, WINDOWS, VENTILATORS, LOUVERS ETC.
D6	GLASS AND GLAZING
D7	ROLLING STEEL SHUTTERS AND GRILLS
D8	MISCELLANEOUS METAL
D9	MASONRY AND ALLIED WORKS
D10	FINISH TO MASONRY AND CONCRETE
D11	PAINTING, WHITEWASHING, POLISHING
D12	FLOOR FINISH AND ALLIED WORKS
D13	SHEETING WORK IN ROOF AND SIDING
D14	SUSPENDED CEILING
D15	WATER SUPPLY, DRAINAGE AND SANITATION
D16	ROAD AND DRAINAGE
D17	FABRICATION OF STRUCTURAL STEEL WORK
D18	ERECTION OF STRUCTURAL STEELWORK
D19	ROOF DECKING
D20	FALSE FLOORING
D21	SITE LEVELLING AND GRADING

ANNEXURE-I

CERTIFICATE OF DECLARATION FOR CONFIRMING THE KNOWLEDGE OF SITE CONDITIONS

We,.....
..... Hereby declare and confirm that we have visited the project site under the subject namely,and acquired full knowledge and information about the **site conditions, wage structure, Industrial climate and total work involved**. We further confirm that the above information is true and correct and we will not raise any claim of any nature due to lack of knowledge of site condition.

Tenderers Name and Address

Place:

(Signature of the Tenderer with stamp)

Date:

ANNEXURE-II

**NON DISCLOSURE AGREEMENT
Memorandum of Understanding**

BHEL PSNR is committed to Information Security Management System as per Information Security Policy.

M/s....., providing.....service to BHEL PSNR, Noida hereby undertake to comply with the following in line with Information Security Policy of BHEL PSNR;

- To maintain confidentiality of documents & information which shall be used during the execution of the Contract.

- The documents & information shall not be revealed to or shared with third party which shall not be in the business interest of BHEL PSNR.

()
M/s. BHEL, PSNR

()
M/s.....

SECTION- I

GENERAL INSTRUCTIONS TO TENDERERS

- 1 This tender specification as a whole, furnishing all the details and other documents as required in the following pages, shall be duly signed and sent in a sealed cover (IN DUPLICATE) super-scribing the name of work as given in the tender notice.
- 2 The tender shall be addressed to : OFFICER INVITING TENDER AS INDICATED IN THE TENDER NOTICE.
3. Tenders submitted by post shall be sent as "**REGISTERED/ SPEED/ COURIER POST** " and shall be posted with due allowance for any postal delay. The tenders received after the due date and time of opening are liable to be rejected. Offers received by Telegram/telex/ Fax/ E-mail/ Internet may be considered as per terms of NIT.
- 4 Tenders shall be opened at the time and date as specified in the tender notice in the presence of such of those tenderers or their authorised representatives who may be present.
- 5 The tenderers shall closely peruse all the clauses, specifications and drawings indicated in the Tender Documents before quoting. Should the tenderer have any doubt about the meaning of any portion of the Tender Specifications or find discrepancies / omission in the Drawings or the tender documents issued are incomplete or shall require clarification on any of the technical aspect, scope of work etc., he shall atonce contact the authority inviting the tender for clarification before the submission of the tender.
- 6 Before tendering, the tenderers are advised to inspect the site of work and the environments and be acquainted with the actual working and other prevalent conditions, facilities available, position of material and labour. No claim will be entertained later on grounds of lack of knowledge.
- 7 Tenderer must fill up all the schedules and furnish all the required information as per the instructions given in various sections of the tender specification. Each and every page of the Tender Specification must be SIGNED, STAMPED AND SUBMITTED ALONG WITH THE OFFER by the Tenderer in token of complete acceptance thereof. The information furnished shall be complete by itself.
- 8 The tenderer shall quote the rates in English Language and international numerals. These rates shall be entered in figures as well as in words. In case of difference in rates between words and figures THE LESSER OF THE TWO will be treated as valid rate. For the purpose of tender, the metric system of units shall be used.
- 9 All entries in the tender shall either be typed or be written in ink. Erasure and over writings are not permitted and may render such tenders liable to summary rejection. All cancellations and insertions shall be duly attested by the tenderer.
- 10 **QUALIFICATIONS OF TENDERERS** : Only tenderers who have previous experience in the work of this nature and description detailed in this tender specification are expected to quote for this work. Offers from tenderers who do not have proven and established experience in the field are not likely to be considered.

- 11 **DATA TO BE ENCLOSED** : Full information shall be given by the tenderer in respect of the following. Non submission of these information may lead to rejection of the offer.
- 11.1 **FINANCIAL STATUS** : Financial viability as per proforma enclosed at **ANNEXURE-`A`**
- 11.2 **INCOME TAX CERTIFICATES** : A Certificate of Income tax clearance from the appropriate authority in the forms prescribed therefor duly indicating annual turnover. These certificates shall be valid for one year from the date of issue or for the period prescribed therein for all tenders submitted during the period.
- 11.3 **PREVIOUS EXPERIENCE** : A statement giving particulars (duly supported by documentary evidence) of the various service rendered in progress for each similar works by the tenderer indicating the particulars and value of each work, the site location, the duration, date of completion etc., strictly as per proforma enclosed at **ANNEXURE-B**.
- 11.4 **ORGANISATION CHART** : The organisation pattern that are totally available with him and that will be employed by the tenderer for this work in the form of monthwise and categorywise deployment plan duly indicating the number of Engineers, Supervisors, skilled and unskilled workers etc., as per proforma enclosed at **ANNEXURE-`C`**.
- 11.5 An attested copy of the **Power of Attorney**, in case the tender is signed by an individual other than the sole Proprietor, shall also be attached.
- 11.6 **IN CASE OF AN INDIVIDUAL** : His full name, experience, address and nature of business.
- OR
- IN CASE OF PARTNERSHIP FIRMS** : The names of all the partners with addresses and their experience. A copy of the partnership deed/ instrument of Partnership duly certified by a Notary Public shall be enclosed.
- OR
- IN CASE OF COMPANIES** : Date and place of registration including date of commencement certificate in case of public companies and the nature of business carried or by the Company. Certified copies of memorandum and Articles of Association are also to be furnished. Also indicate names, addresses and experience of the Directors.
- 11.7 A list of tools and tackles (including cranes, tractor-trailers, winches, Derricks, welding sets etc., wherever applicable) that the tenderer is having and those that will be deployed on this job as per proforma enclosed at **ANNEXURE-`D`**.
- 11.8 Analysis of unit rate quoted as per proforma enclosed at **ANNEXURE-`E`**.
- 11.9 Declaration sheet as per proforma enclosed at **ANNEXURE-`F`**.
- 11.10 In addition to the above, the particulars required elsewhere in tender documents.
- 11.11 Checklist and schedule of general particulars duly filled in, signed and stamped as per **ANNEXURE-`G`**.

NOTE : In terms of clauses 11.1 to 11.11 above, all the data required to be enclosed with the tender need to be furnished neatly typed, signed and stamped in the given formats only (in the form

of separate sheets) failing which the tender may be considered as incomplete and is liable for rejection. Documentary proofs wherever necessary also need to be enclosed.

- 12 **EARNEST MONEY DEPOSIT** : Every tender must be accompanied by the prescribed amount of Earnest Money Deposit in any one of the following forms.

NOTE : Bank Guarantee, Cheques, Currency Notes, Money Orders or Postal Orders will not be accepted.

- 12.1 **Cash(As permissible under Income Tax Act)** : The amount should be remitted by the party to the Cashier of Bharat Heavy Electricals Limited and cash receipt issued by him shall be enclosed alongwith the tender.

- 12.2 Pay Order or Demand Draft in favour of Bharat Heavy Electricals Limited, Noida.

- 12.3 Tenders received without Earnest Money in full in the manner prescribed above will not be considered.

- 12.4 The Earnest Money Deposit of the successful tenderer will be retained towards part of Security Deposit.

- 12.5 In the case of unsuccessful tenderers, the Earnest Money will be refunded normally within fifteen days of acceptance of award of work by the successful tenderer.

- 12.6 BHEL reserves the right of **forfeiture of Earnest Money deposit** in case the successful tenderer,

(a). After opening of Tender, revokes his tender within the validity period or increases his earlier quoted rates.

(b) Does not commence the work within the period as per LOI/Contract. In case the LOI/Contract is silent in this regard then within 15 days after award of contract.

- 12.7 EMD shall not carry any interest.

- 12.8 Tenderers, who so ever desires, may deposit one time Earnest Money Deposit of Rs. 2,00,000/- in cash(**As permissible under Income Tax Act**) /DD/pay order only with the cashier of BHEL. Tenderers who furnish one time EMD as above, will not be required to furnish EMD time and again alongwith their tenders submitted to BHEL/ PSNR. However they will be required to indicate the cash receipt No. and date of one time EMD in all their tenders.

- 13 **AUTHORISATION AND ATTESTATION** : Tenders shall be signed by persons duly authorised / empowered to do so. Certified copies of such authority and relevant documents shall be submitted alongwith the tenders.

- 14 **VALIDITY OF OFFER** : *THE OFFER SHALL BE KEPT OPEN FOR ACCEPTANCE FOR A MINIMUM PERIOD OF SIX MONTHS FROM THE DATE OF OPENING OF TENDERS.* In case Bharat Heavy Electricals Limited calls for negotiations, such negotiations shall not amount to cancellation or withdrawal of the original offer which shall be binding on the tenderers.

- 15 **EXECUTION OF CONTRACT** :The successful tenderer's responsibility under this contract commences from the date of issue of the Letter of Intent by Bharat Heavy Electricals Limited.

The successful tenderer shall be required to execute an agreement in the prescribed form as per **ANNEXURE- 'I'** with the BHEL within a reasonable time after the acceptance of his tender and in any case before submitting the first bill for payment.

16 **SECURITY DEPOSIT** : Upon acceptance of tender, the successful tenderer must deposit the required amount of security deposit within the time specified in the Letter of Intent for satisfactory completion of work.

16.1 The total amount of Security Deposit shall be as follows :

(a) In case of work costing upto 10 lakhs : 10% of the contract value.

(b). In case of work costing above Rs 10 lakhs and upto Rs 50 lakhs : 1 Lakh + 7.5 % of the amount exceeding Rs. 10 Lakhs.

(c). In case of work costing more than Rs 50 lakhs : 4 Lakhs + 5 % of the amount exceeding Rs. 50 Lakhs.

16.2 The Security Deposit will be deposited within 15 days from the date of issue of Letter of Intent but before start of work in any one of the following forms :-

(a). The total Security Deposit as indicated in the Letter of Intent in **cash** (As permissible under Income Tax Act).

(b) Pay Order, Demand Draft in favour of BHEL.

c) Local cheques of scheduled banks, subject to realization.

d) Securities available from Post Offices such as National Savings Certificates, Kisan Vikas Patras etc.

(Certificates should be held in the name of Contractor furnishing the security and duly pledged in favour of BHEL and discharged on the back).

e) Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act subject to a maximum of 50% of the total security deposit value. The balance 50% has to be remitted either by cash or in the other form of security. The Bank Guarantee format should have the approval of BHEL.

f) Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act . The FDR should be in the name of the contractor, A/C BHEL, duly discharged on the back.

g) Security deposit can also be recovered at the rate of 10% from the running bills. However in such cases at least 50% of the Security Deposit should be collected before start of the work and the balance 50% may be recovered from the running bills.

h) EMD of the successful tenderer shall be converted and adjusted against the security deposit.

16.3 The security deposit shall not carry any interest.

NOTE: Acceptance of Security Deposit against Sl. No. (d) and (f) above will be subject to hypothecation or endorsement on the documents in favour of BHEL. However, BHEL will not

be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith.

- 16.4 Security deposit shall not be refunded to the contractor except in accordance with the terms of the contract.
- 16.5 The validity of the Bank Guarantee furnished towards Security Deposit under (e) above shall be upto the period of completion of work as stipulated in the Letter of Intent + 1 month and the same will be kept valid by proper renewal till the satisfactory completion of the Guarantee Period.
- 16.6 If the value of the work done at any time exceeds the accepted agreement value, the Security Deposit shall be correspondingly enhanced and the extra Security Deposit shall be immediately deposited by the Contractor or recovered from payments due to him.
- 16.7 Failure to deposit the Security Deposit within the stipulated time, may lead to forfeiture of Earnest Money Deposit and Cancellation of the award of work.
- 16.8 If any part of Security Deposit of the Contractor is held in the form of approved securities, it shall be kept transferred in the name of Bharat Heavy Electricals Limited, in such a manner that the same can be realised fully without referring to the Contractor. BHEL shall not be responsible for any depreciation in the value of the Security while in BHEL's custody or for any loss of interest thereon.
- 16.9 BHEL reserves the right of **forfeiture of Security Deposit** in addition to other claims and penalties in the event of the contractor's failure to fulfil any of the contractual obligations or in the event of termination of contract as per terms and conditions of contract. BHEL reserves the right to set off the Security Deposit, against any claims of any other contracts with BHEL.
- 16.10 **RETURN OF SECURITY DEPOSIT** : If the contractor fully performs and completes the work in all respects to the entire satisfaction of BHEL and presents an absolute "**No Demand Certificate**" in the prescribed form and returns properties belonging to BHEL taken, borrowed or hired by him for carrying out the said works, half the amount of Security Deposit will be released to the contractor after deducting all costs, expenses and other amounts that are to be paid to BHEL under this or other contracts entered into with the Contractor. It may be noted that in no case the Security Deposit shall be refunded / released prior to passing of final bill. Balance half of the amount of Security Deposit will be released only after the Guarantee Period is over.

NOTE : All the BGs are to be submitted as per BHEL/PSNR performa.

- 17 **No interest** shall be payable by BHEL on Earnest Money Deposit, Security Deposit or on any moneys due to the contractor.
- 18 **REJECTION OF TENDER AND OTHER CONDITIONS :**
- 18.1 The acceptance of Tender will rest with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever.
- (a) To reject any or all of the tenders.

- (b) To split up the work amongst two or more Tenderers.
- (c) To award the work in part.
- (d) In either of the contingencies stated in (b) and (c) above to modify the time for completion suitably.
- 18.2 Conditional and un-witnessed tenders, tenders containing absurd or unworkable rates and amounts, tenders which are incomplete or otherwise considered defective and tenders not in accordance with the tender conditions, specifications, etc., are liable to be rejected.
- 18.3 If a tenderer expires after the submission of his tender or after the acceptance of his tender, BHEL may at its discretion, cancel such tender. If a partner of a firm expires after the submission of the tender or after the acceptance of the tender, BHEL may cancel such tender at its discretion unless the firm retains its character.
- 18.4 BHEL will not be bound by any Power of Attorney granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the contract. BHEL may, however, recognise such Power of Attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.
- 18.5 If the tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract, if awarded and forfeit the Earnest Money/ Security Deposit/ any other moneys due.
- 18.6 Canvassing in any form in connection with the tender is strictly prohibited and the tenders submitted by the contractor who resorts to canvassing are liable to be rejected.
- 18.7 Should a tenderer or contractor or in the case of a firm or Company of contractors/ one or more of its Partners/ share holders / Directors have a relation or relations employed in BHEL, the authority inviting tender shall be informed to the fact alongwith the offer, failing this BHEL may, at its sole discretion reject the tender or cancel the contract and forfeit the Earnest Money/ Security Deposit
- 18.8 The successful tender should not sub-contract the part or complete work detailed in the tender specification without written permission of BHEL. The tenderer is solely responsible to BHEL for the work awarded to him.
- 18.9 **NO DEVIATIONS** to the tender conditions will normally be accepted. however, if the tenderer insists for certain deviations to the conditions, financial implication thereof shall be loaded to the quoted price for evaluating the tenderer's offer.

SECTION - II

GENERAL TERMS AND CONDITIONS

- 19.0 The following terms and expressions shall have the meaning hereby assigned to them except where the context otherwise requires.
- 19.1 **BHEL** (or B.H.E.Ltd.) shall mean Bharat Heavy Electricals Limited, a Company registered under the Indian Companies Act, 1956, with its Registered Office at BHEL HOUSE, SIRI

FORT, NEW DELHI-110049 or its authorised officers or its Engineer or other employees authorised to deal with any matters with which these persons are concerned, on its behalf.

- 19.2 **`GENERAL MANAGER'** shall mean the Officer in Administrative charge of the contracting Unit of BHEL.
- 19.3 **`ENGINEER' or `ENGINEER-IN-CHARGE'** shall mean Engineer deputed by BHEL. The terms includes Deputy General Manager, Construction Manager, Resident Manager, Site Engineer, Resident Engineer and Assistant Site Engineer of BHEL at the site as well as the officers in charge at Head Office.
- 19.4 **`SITE'** shall mean the place or places at which the plants/ equipment are to be erected and services are to be performed as per the specifications of this Tender.
- 19.5 **`CLIENTS OF BHEL' or `CUSTOMER'** shall mean the project authorities to whom BHEL is supplying the equipment.
- 19.6 **`CONTRACTOR'** shall mean the individual, firm or company who enters into contract with BHEL and shall include their executors, administrators, successors and permitted assigns.
- 19.7 **`CONTRACT' or `CONTRACT DOCUMENT'** shall mean and include the agreement, the work order, the accepted appendices of rates, Schedules of Quantities, if any, General Conditions of Contract, Special Conditions of Contract, Instructions to Tenderers, the drawings, the technical specifications, the special specifications, if any, the tender documents and the Letter of Intent/ Acceptance letter issued by BHEL. Any conditions or terms stipulated by the tenderer in the tender documents or subsequent letters shall not form part of the Contract unless specifically accepted in writing by BHEL in the Letter of Intent and incorporated in the Agreement.
- 19.8 **`GENERAL CONDITIONS OF CONTRACT'** shall mean the `Instructions to Tenderers' and `General Conditions of Contract' pertaining to the work detailed.
- 19.9 **`TENDER SPECIFICATIONS'** shall mean the Special Conditions, Technical Specifications, appendices, Site information and drawings pertaining to the work for which the tenderers are required to submit their offer. Individual Specifications Number will be assigned to each tender specifications.
- 19.10 **`TENDER DOCUMENTS'** shall mean the General Conditions of Contract (19.8) and Tender Specifications (19.9).
- 19.11 **`LETTER OF INTENT'** shall mean the intimation by a letter / telegram / telex / fax to the tenderer that the tender has been accepted in accordance with provisions contained in the letter. The responsibility of the contractor commences from the date of issue of this letter and all the terms and conditions of contract are applicable from this date.
- 19.12 **`COMPLETION TIME'** shall mean the period by date specified in the Letter of Intent or date mutually agreed upon for handing over the erected equipment/ plant which are found acceptable by the Engineer being of required standard and conforming to the specifications of the Contract.
- 19.13 **`PLANT'** shall mean and connote the entire assembly of the plant and equipment covered by the Contract.

- 19.14 **'EQUIPMENT'** shall mean all equipment, machineries, materials, structurals, electricals and other components of the plant covered by the Contract.
- 19.15 **'TESTS'** shall mean and include such test or tests to be carried out by the contractor as are prescribed in the Contract or considered necessary by BHEL in order to ascertain the quality, workmanship, performance and efficiency of the contracted work or part thereof.
- 19.16 **'APPROVED', 'DIRECTED' or 'INSTRUCTED'** shall mean approved, directed or instructed by BHEL.
- 19.17 **'WORK' or 'CONTRACT WORK'** shall mean and include supply of all categories of labour, specified consumables, tools and tackles required for complete and satisfactory site transportation, handling, stacking, storing, erecting, testing and commissioning of the equipment to the entire satisfaction of BHEL.
- 19.18 **'SINGULAR' and 'PLURAL'** etc. Words carrying singular number shall also include plural and vice versa where the context so requires. Words importing masculine gender shall be taken to include the feminine gender and words importing persons shall include any Company or Association or Body of Individuals, whether incorporated or not.
- 19.19 **'HEADINGS'** The headings in these General Conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or the contract.
- 19.20 **'MONTH'** shall mean calendar month.
- 19.21 **"WRITING"** shall include any manuscript, type written or printed statement under the signature or seal as the case may be.
- 20 **LAW GOVERNING THE CONTRACT AND COURT JURISDICTION:** The Contract shall be governed by the Law for the time being in force in the Republic of India. The Civil Court at Delhi/ New Delhi, having ordinary Original Civil Jurisdiction shall alone have exclusive jurisdiction in regard to all claims in respect of this Contract.
- 21 **ISSUE OF NOTICE** The Contractor shall furnish to the Engineer, the name, designation and address of his authorised agent and all complaints, notices, communications and references shall be deemed to have been duly given to the Contractor, if delivered to the Contractor or his authorised agent or left at or posted to the address either of the contractor or his authorised agent and shall be deemed to have been so given in the case of posting on the day on which they would have reached such address in the ordinary course of post or at which they were so delivered or left.
- 22 **USE OF LAND** No land belonging to BHEL or its customer under temporary possession of BHEL shall be occupied by the Contractor without the written permission of BHEL.
- 23 **COMMENCEMENT AND COMPLETION OF WORK**
- 23.1 The contractor shall commence the work within the time indicated in the Letter of Intent and shall proceed with the same with due expedition without delay.

- 23.2 If the successful tenderer fails to commence the work within the stipulated time, BHEL, at its sole discretion, will have the right to cancel the contract. His Earnest Money and/ or Security Deposit will stand forfeited without any further reference to him without prejudice to any and all of BHEL's other rights and remedies in this regard.
- 23.3 All the works shall be carried out under the direction and to the satisfaction of BHEL.
- 23.4 The transported equipment, erected /constructed plant or work performed under the Contract, as the case may be, shall be taken over when it has been completed in all respects and/or satisfactorily put into operation at site.

24 MEASUREMENT OF WORK AND MODE OF PAYMENT

- 24.1 All payments due to the contractor shall be made by 'Account Payee' Cheques.
- 24.2 For progress/ running bill payments, the contractor shall present detailed measurement sheets in triplicate duly indicating all relevant details based on technical documents and connected drawings for the work done during the month/ period under different categories in line with terms of payment as per Letter of Intent. The basis of arriving at the quantities/ weights shall be the relevant documents and drawings released by BHEL. These measurement sheets shall be prepared jointly with Engineer and signed by both the parties.
- 24.3 These measurement sheets will be checked by the Engineer and quantities and percentages eligible for payment under different groups shall be decided by him. The abstract of quantities and percentages so arrived at based on the terms of payment shall be entered in the **Measurement Book and signed by both the parties.**
- 24.4 Based on the above quantities, contractor shall prepare the bills in the prescribed proforma and work out the financial value. These will be entered in the Measurement Book and signed by both the parties. Payment shall be made by BHEL after effecting the recoveries due from the contractor.
- 24.5 All recoveries due from the contractor for the month / period shall be effected in full from corresponding running bills unless specific approval from Competent authority is obtained to the contrary.
- 24.6 Measurement shall be restricted to that quantity for which it is required to ascertain the financial liability of BHEL under this contract.
- 24.7 Measurement shall be taken jointly by persons duly authorised by BHEL and the Contractor.
- 24.8 The Contractor shall bear the expenditure involved, if any, in making the measurements and testing of materials to be used/ used in the work. The Contractor shall, without extra cost to BHEL, provide all the assistance with appliances and other things necessary for measurement.
- 24.9 If, at any time due to any reason whatsoever, it becomes necessary to re-measure the work done, in full or in part, the expenses towards such remeasurement shall be borne by the Contractor.

- 24.10 *Passing of bills covered by such measurements does not amount to acceptance by BHEL of the completion of the work measured. Any left out work has to be completed by the Contractor, as directed.*
- 24.11 Final measurement bill shall be prepared in the proforma prescribed for the purpose, based on the certificate issued by the Engineer that the entire work as stipulated in the tender specifications has been completed in all respects to the entire satisfaction of BHEL. The Contractor shall give unqualified 'No Claim' and 'No Demand' certificates. All the tools and tackles loaned to him should be returned in condition satisfactory to BHEL. The abstract of final quantities and financial values shall also be entered in the Measurement Book and signed by both the parties. The final bill shall be paid within a reasonable time after completion of the work. After the payment of final bill, only the guarantee obligation percentage value shall remain unpaid which shall be released in accordance with clause 32.

25 RIGHTS OF BHEL

BHEL reserves to itself the following rights in respect of this contract without entitling the contractor to any compensation.

- 25.1 To get the work done through another agency at the risk and cost of the contractor, in the event of poor progress or the contractor's inability to progress the work for completion as stipulated in the contract, poor quality of work, persistent disregard of instructions of BHEL, assignment, transfer, subletting of the contracted work without written permission of BHEL, non-fulfillment of any contractual obligations etc. and to claim / recover compensation for such losses from the contractor including BHEL's supervision charges and overheads from Security Deposit/ other dues.
- 25.2 To withdraw any portion of work and / or to restrict / alter quantum of work as indicated in the contract during the progress of work and get it done through another agency and/ or by the departmental labour to suit BHEL's commitments to its customer or in case BHEL decides to advance the completion due to other emergent reasons/ BHEL's obligation to its customer.
- 25.3 To terminate the contract after due notice and forfeit the Security Deposit and recover the loss sustained in getting the balance work done through other agencies in addition to liquidated damages in the event of :
- (a) Contractor's continued poor progress.
 - (b) Withdrawal from or abandonment of the work before completion of the work.
 - (c) Corrupt act of the contractor.
 - (d) Insolvency of the contractor.
 - (e) Persistent disregard of the instructions of BHEL.
 - (f) Assignment, transfer, subletting of the contract work without BHEL's written permission.
 - (g) Non-fulfillment of any contractual obligations.
- 25.4 To recover any moneys due from the Contractor from out of any moneys due to the Contractor under this or any other Contract or from the Security Deposit.

- 25.5 To claim compensation for losses sustained including BHEL's supervision charges and overheads in case of termination of contract and to levy liquidated damages for delay in completion of work, at the rate of 1/2% of the contract value per week of delay or part thereof subject to a ceiling of **10% of the contract value**.
- 25.6 To determine the Contract or to restrict the quantum of work and pay for the portion of work done in case BHEL's contract with its customer is terminated for any reason.
- 25.7 To effect recoveries from any amounts due to the contractor under this or any other contract or in any other form the moneys which BHEL is forced to pay to anybody due to contractor's failure to fulfil any of his obligations.
- 25.8 To restrict or increase the quantity and nature of work to suit site requirements, since the tender specification is based on preliminary documents and quantities furnished therein are indicative and approximate and the rates quoted shall not be subject to revision.
- 25.9 To deploy BHEL's skilled and semiskilled workmen in case of emergency / poor progress/ deficiency in skill on the part of the employees of the contractor and to recover the expenditure on account of the same from the moneys due to the contractor.
- 25.10 While every endeavor will be made by BHEL to this end, BHEL can not guarantee uninterrupted work due to conditions beyond its control. The Contractor will not be entitled to any compensation/ extra payment on this account.
- 25.11 In the event of any dispute of technical nature, the decision of BHEL shall be final and binding on the Contractor.

26 RESPONSIBILITIES OF CONTRACTOR IN RESPECT OF LOCAL LAWS, EMPLOYMENT OF WORKERS, ETC.

The following are the responsibilities of the Contractor in respect of observance of local laws, employment of personnel, payment of taxes etc.:

- 26.1 As far as possible, unskilled workers shall be engaged from the local areas in which the work is being executed.
- 26.2 The contractor at all times during the continuance of this contract, shall in all his dealings with the local labour for the time being employed on or in connection with the work, have due regard to all local festivals, religious and other customs.
- 26.3 The Contractor shall comply with all State and Central Laws, Statutory Rules, Regulations, etc., such as The payment of wages Act, The Minimum Wages Act, The workmen's Compensation Act, The Employer's Liability Act, The industrial Disputes Act, The Employees' Provident Fund Act, Employees' State Insurance Scheme, the Contract Labour (Regulations and Abolition Act, 1970) and other Acts, Rules and Regulations for labour as may be enacted by the Government during the tenure of the Contract and having force or jurisdiction at site. The contractor shall give to the local Governing Body, Police and other concerned Authorities all such notice as may be required under law.

- 26.4 The Contractor, in the event of his engaging 20 or more workmen, will obtain independent license under the Contract Labour (Regulations and Abolition Act, 1970) from the concerned authorities based on the certificate (Form-V) issued by the principal employer/ customer.
- 26.5 The contractor shall pay all taxes, fees, license charges, deposits, duties, tolls, royalty, commissions or other charges which may be leviable on account of any of his operations connected with this contract. In case BHEL is forced to make any such payment, BHEL shall recover the same from the contractor either from moneys due to him or otherwise as deemed fit.
- 26.6 While BHEL will pay the **inspection fees of the Boiler/ Electrical** Inspectorate, all other arrangements for the periodical visits of Boiler/ Electrical Inspector to site, inspection certificates etc. will have to be made by the contractor at his cost. The contractor will also meet all expenses in connection with his welder's qualification/ requalification tests etc.
- 26.7 The contractor shall be responsible for the provision of health and sanitary arrangements more particularly described in the Contract Labour (Regulations and Abolition Act, 1970) and safety precautions as may be required for safe and satisfactory execution of the contract.
- 26.8 The contractor shall be responsible for proper accommodation including adequate medical facilities for the personnel employed by him.
- 26.9 The contractor shall be responsible for the proper behavior and observance of all regulations by the staff employed by him.
- 26.10 The contractor shall ensure that no damage is caused to any person / property of other parties working at site. If any such damage is caused, it shall be the responsibility of the contractor to make good the losses and compensate them.
- 26.11 All the properties/ equipment/ components of BHEL/ its customer loaned with or without deposit, to the contractor shall remain the properties of BHEL/ its customer. The contractor shall use such properties for the purpose of execution of this contract. All such properties/ equipment/ components shall be taken to be in good condition unless notified to the contrary by the contractor within 48 hours. The contractor shall return them in good condition as and when required by BHEL/ its customer. In case of non-return, loss, damage, repairs etc., the cost thereof, as may be fixed by the Engineer, will be recovered from the contractor.
- 26.12 It shall not be obligatory on the part of BHEL to supply any tools and tackles or materials other than those specifically agreed to be given by BHEL. However, depending upon availability / possibility, BHEL/ its customer's equipment and other materials may be made available to the contractor on payment of hire charges as fixed by them, subject to the conditions laid down by BHEL/ its customer from time to time. Unless paid in advance, such hire and other charges shall be recovered from out of dues to the contractor or security deposit in one installment.
- 26.13 The contractor shall fully indemnify and keep indemnified BHEL/ its customer against all claims of whatever nature arising during the course of execution of this contract.
- 26.14 In case the contractor is required to undertake any work outside the scope of this contract, the amount payable shall be as may be mutually agreed upon.
- 26.15 Any delay in completion of works or non-achievement of periodical targets, due to reasons attributable to the contractor, will have to be compensated by the contractor either by

increased manpower and resources or by working extra hours or more than one shift at no extra cost to BHEL.

- 26.16 The contractor shall execute the work under the conditions usual to such power plant construction and in conjunction with numerous other operations at site. The contractor and his personnel shall cooperate and coordinate with other agencies at project site and proceed in a manner that shall help in the progress of work at site as a whole.
- 26.17 The contractor will be directly responsible for payment of wages to his workmen. A pay-roll sheet giving details of all payments made to the workmen duly signed by the contractor's representative should be furnished to BHEL, if called for.
- 26.18 In case of any class of work for which there is no specification laid down in the contract, such work shall be carried out in accordance with the instructions and requirements of the Engineer.
- 26.19 No levy, payment or charges made or imposed shall be impeached by reason of any clerical error or by reason of any mistake in the amount levied, demanded or charged.
- 26.20 ***No idle labour charges will be admissible in the event of any stoppage of work resulting in the contractor's workmen being rendered idle due to any reason at any time.***
- 26.21 The contractor shall take all reasonable care to protect the materials and the work till such time the plant / equipment has been taken over by BHEL / its customer.
- 26.22 Contractor shall not stop work or abandon the site for whatsoever reason or dispute, excepting for force majeure conditions. All problems / disputes shall be separately discussed and settled without effecting the progress of work. Stoppage or abandonment of work, other than under force majeure conditions, shall be treated as breach of work of contract and dealt with accordingly.
- 26.23 The contractor shall keep the area of work clean and shall remove the debris etc. while executing day-to-day work. Upon completion of work, the contractor shall remove from the vicinity of work, all scrap, packing materials, rubbish, unused and other materials and deposit them in places specified by the Engineer. The contractor will also demolish all the hutments, sheds, offices, etc. constructed and used by him and shall clean the debris. In the event of his failure to do so, the same will be arranged to be done by the Engineer and the expenses recovered from the contractor.
- 26.24 The contractor shall execute the work in the most substantial and workman like manner in the stipulated time. Accuracy of work and timely execution shall be the essence of this contract. The contractor shall be responsible to ensure that the quality, assembly and workmanship conform to the dimensions and clearance given in the drawings and/ or as per the instructions of the Engineer.
- 26.25 The contractor shall furnish fortnightly labour deployment report indicating the classification and number of workmen engaged, date wise and category wise. Besides, the contractor shall also furnish progress reports on work at regular intervals as required by the Engineer.
- 27 **RESPONSIBILITIES OF CONTRACTOR IN RESPECT OF SAFETY OF MEN, EQUIPMENT, MATERIAL AND ENVIRONMENT.**

- 27.1 All safety rules and codes applied by BHEL and its customer at site shall be observed by the contractor and his workmen without exception. The contractor shall be responsible for the safety of the equipment / material and work to be performed by him and shall maintain all lights, fencing guards, signs etc. or other protections necessary for the purpose. Contractor shall also take such additional precautions as may be indicated from time to time by the Engineer, with a view to prevent pilferage, accidents, fire hazards etc. Suitable number of clerical staff, watch and ward, store keepers to take care of equipment, materials, construction tools and tackles shall be posted at site by the contractor till the completion of the work under this contract. The contractor shall arrange for such safety devices as are necessary for this type of work and carry out the requisite site tests of handling equipment, lifting tools, tackles etc. as per usual standards and practices.
- 27.2 The contractor shall provide to it's work force and ensure the use of the following personal protective equipment as found necessary and as directed by the authorized BHEL officials.
- (a) Safety Helmets conforming to IS-2925
 - (b) Safety Belts conforming to IS-3521
 - (c) Safety shoes conforming to IS-1989
 - (d) Eye & Face Protection devices conforming to IS-8520 and IS-8940
 - (e) Hand & body protection devices conforming to IS-2573, IS-6994, IS-8807 & IS-8519.
- 27.3 All tools, tackles, lifting appliances, material handling equipment, scaffolds, cradles, safety nets, ladders, equipment etc. used by the contractor shall be of safe design and construction. These shall be tested and certificate of fitness obtained before putting them to use and from time to time as instructed by authorized BHEL official who shall have the right to ban the use of any item.
- 27.4 All electrical equipment, connections and wiring for construction power, it's distribution and use shall conform to the requirements of Indian Electricity Act and Rules. Only electricians licensed by the appropriate statutory authority shall be employed by the contractor to carry out all types of electrical works. All electrical appliances including portable electric tools used by contractor shall have safe plugging system to source of power and be appropriately earthed.
- 27.5 The contractor shall not use any hand lamp energised by electric power with supply voltage of more than 24 volts. For work in confined spaces, lighting shall be arranged with power source of not more than 24 volts.
- 27.6 Where it becomes necessary to provide and / or store petroleum products, explosives, chemicals and liquid or gaseous fuel or any other substance that may cause fire or explosion, the contractor shall be responsible for carrying out such provision and/or storage in accordance with the rules and regulations laid down in the relevant Government Acts, such as Petroleum Act, Explosives Act, petroleum and Carbides of Calcium Manual of the Chief Controller of Explosives, Government of India etc. Prior approval of the authorised BHEL official at the site shall also be taken by the contractor in all such matters.
- 27.7 The contractor shall arrange at his cost (wherever not specified) appropriate illumination at all work spots for safe working, when natural daylight may not be adequate for clear visibility.

- 27.8 In case of a fatal or disabling injury / accident to any person at construction sites due to lapses by the contractor, the victim and / or his / her dependents shall be compensated by the contractor as per statutory requirements. However, if considered necessary, BHEL shall have the right to impose appropriate financial penalty on the contractor and recover the same from payments due to the contractor for suitably compensating the victim and / or his / her dependents. Before imposing any such penalty, appropriate enquiry shall be held by BHEL giving opportunity to the contractor to present his case.
- 27.9 In case of any damage to property due to lapses by the contractor, BHEL shall have the right to recover the cost of such damages from the payments due to the contractor after holding an appropriate enquiry.
- 27.10 In case of any delay in the completion of a job due to mishaps attributable to lapses by the contractor, BHEL shall have the right to recover cost of such delay from the payments due to the contractor, after notifying the contractor suitably and giving him opportunity to present his case.
- 27.11 If the contractor fails to improve the standards of safety in its operation to the satisfaction of BHEL after being given reasonable opportunity to do so and / or if the contractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instructions regarding safety issued by the authorized BHEL official, BHEL shall have the right to take the corrective steps at the risk and cost of the contractor after giving a notice of not less than seven days indicating the steps that would be taken by BHEL.
- 27.12 The contractor shall submit report of all accidents, fires, property damage and dangerous occurrences to the authorized BHEL official immediately after such occurrence, but in any case not later than 12 hours of the occurrence. Such reports shall be furnished in the manner prescribed by BHEL. In addition, periodic reports on safety shall also be submitted by contractor to the authorized BHEL official from time to time as prescribed.
- 27.13 During the course of construction, alteration or repairs scrap lumbars with protruding nails, sharp edges etc., and all other debris including combustible scrap shall be kept cleared from working areas, passage ways and stairs in and around site.
- 27.14 Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dropped, struck or permitted to strike each other violently. When cylinders are transported by powered vehicles, they shall be secured in a vertical position.
- 27.15 The contractor shall be responsible for the safe storage of his radioactive sources.
- 27.16 All the contractor's supervisory personnel and sufficient number of workers shall be trained for fire fighting and shall be assigned specific fire protection duties. Enough number of such trained personnel must be available during the tenure of the contract.
- 27.17 Contractor shall provide enough fire protecting equipment of the types and numbers at his office, stores, erection site, other temporary structures, labour colony area etc. Access to such fire protection equipment shall be easy and kept open at all times. Compliance of the above requirement under fire protection shall in no way relieve the contractor of any of his responsibility and liabilities to fire accident occurring. In the event fire safety measures are not to BHEL's satisfaction, BHEL shall have option to provide the same and recover the cost plus incidentals from contractor's bills and / or impose penalty as deemed fit by the Engineer.

- 27.18 Before commencing the work, the contractor shall appoint /nominate a responsible officer to supervise implementation of all safety measures and liaison with his counterpart of BHEL.
- 27.19 If safety record of the contractor in execution of the awarded job is to the satisfaction of Safety Department of BHEL, issue of an appropriate certificate to recognize the safety performance of the contractor may be considered by BHEL after completion of the job.

28.0 CONSEQUENCES OF CANCELLATION

- 28.1 Whenever BHEL exercises its authority to terminate the contract / withdraw a portion of work under clause 25, the work may be got completed by any other means at the contractor's risk and cost provided that in the event of the cost of completion (as certified by the Engineer which shall be final and binding on the contractor) being less than the contract value, the advantage shall accrue to BHEL. If the cost of completion exceeds the moneys due to the contractor under the contract, the contractor shall either pay the excess amount demanded by BHEL or the same shall be recovered from the contractor. This will be in addition to the forfeiture of Security Deposit and recovery of liquidated damages as per relevant clauses.
- 28.2 In case BHEL completes the work under the provisions of this clause, the cost of such completion to be taken into account for determining the excess cost to be charged to the contractor shall consist of cost of materials purchased and / or labour provided by BHEL with an addition of such percentage to cover supervision and establishment charges as may be decided by BHEL.

29.0 INSURANCE

- 29.1 BHEL / its customer shall arrange for insuring the materials / property of BHEL / its customer covering the risks during transit, storage, erection and commissioning.
- 29.2 It shall be the sole responsibility of the contractor to insure his workmen against risks of accidents and injury while at work as required by the relevant Rules and to pay compensation, if any, to them as per Workmen's Compensation Act. The contractor shall also insure his staff against accidents. The work will be carried out in a protected area and all the Rules and Regulations of BHEL / its client in the Project Area which are in force from time to time will be followed by the contractor.
- 29.3 If due to negligence and/or non-observance of safety and other precautions, any accident / injury occurs to any other persons/ public, the contractor shall pay necessary compensation and other expenses, if so decided by the appropriate authority.
- 29.4 The contractor will take necessary precautions and due care to protect the material, while in his custody from any damage/ loss till the same is taken over by BHEL or customer. For lodging / processing of insurance claim the tractor will submit necessary documents. BHEL will reserve the right to recover the loss from the contractor, in case the damage / loss is due to carelessness / negligence on the part of the contractor. In case of any theft of material under contractor's custody, matter shall be reported to police by the contractor immediately and copy of FIR and subsequently police investigation report shall be submitted to BHEL for taking up with insurance.

- 29.5 If due to negligence/ carelessness on the part of the contractor, any material/ equipment gets damaged, the contractor shall submit necessary documents for lodging insurance claims as required by BHEL Engineer. BHEL shall however reserves the right to recover deductible franchise and also unsettled portion of insurance claim amount from the contractor.
- 29.6 If due to negligence/ carelessness on the part of the contractor, any surrounding properties also gets damaged, the contractor shall submit necessary documents for lodging insurance claims as required by BHEL Engineer. BHEL shall however reserves the right to recover deductible franchise and to unsettled portion of insurance claim amount from the contractor.
- 29.7 The contractor may note that BHEL T&Ps / IMTEs are not insured. The Contractor will take necessary precautions and due care to protect the same while in his custody from any damage/ loss till the same is handed over back to BHEL. In case the damage / loss is due to carelessness/ negligence on the part of the contractor, the Contractor is liable to get them repair/ replaced immediately and in case of his failure to do so within a reasonable time , BHEL will reserve the right to recover the loss from the contractor.

30.0 STRIKES AND LOCKOUTS

- 30.1 The contractor will be solely responsible for all disputes and other issues connected with his workmen. In the event of contractor's workmen resorting to strike or the contractor resorting to lockout and if the strike or lockout so declared is not settled within a period of one month, BHEL shall have the right to get the erection work executed by employing its own men or through other agencies or both. The cost incurred by BHEL in this regard shall be recovered from the contractor.
- 30.2 For any purpose whatsoever, the employees of the contractor shall not be deemed to be in the employment of BHEL

31.0 FORCE MAJEURE

- 31.1 The following shall amount to force majeure conditions. Acts of God, Act of any Government, War, Sabotage, Riots, Civil Commotion, Police Action, Revolution, Flood, Fire, Cyclone, Earthquake and Epidemic and other similar causes over which the contractor has no control.
- 31.2 If the contractor suffers delay in the due execution of the contract, due to delays caused by force majeure conditions, as defined above, the agreed time for completion of the work covered by this contract shall be extended by a period of time equal to the period of delay, provided that on the occurrence of any such contingency, the contractor immediately reports to BHEL in writing the causes for the delay but the Contractor shall not be eligible for any compensation on this account.
- 32.0 **GUARANTEE** Even though the work will be carried out under the supervision of the Engineer, the contractor will be responsible for the quality of the workmanship and shall guarantee the work done for a period of twelve months from the date of completion of work as certified by the Engineer, and shall rectify, free of cost to BHEL, all defects arising out of faulty erection during the guarantee period starting from the date of completion of rectification. In the event of the contractor failing to repair the defective works within the time specified by the Engineer, BHEL may proceed to undertake the repairs of such defective works at the contractor's risk and cost, without prejudice to any other rights and recover the same from out of any moneys payable to the contractor or by other legal means.

- 33.0 **ARBITRATION** : All disputes between the parties to the contract arising out of or in relation to the contract, other than those for which the decision of the Engineer or any other person is by the contract expressed to be final and conclusive, shall after written notice by either party to the contract to the other party, be referred to sole arbitration of the General Manager or his nominee. The arbitration shall be conducted in accordance with the provisions of the Arbitration and Reconciliation Act, 1996. The parties to the contract understand and agree that it will be no objection that the General Manager or the person nominated as Arbitrator had earlier in his official capacity to deal directly or indirectly with the matters to which the contract relates or that in the course of his official duties had expressed views on all or any of the matters in dispute or difference. The award of the Arbitrator shall be final and binding on the parties to this contract. In the event of the Arbitrator dying, neglecting or refusing to act or resigning or being unable to act for any reason or his award being set aside by the Court for any reason, it shall be lawful for the General Manager or his successor, as the case may be, either to act himself as the Arbitrator or to appoint another Arbitrator in place of the outgoing Arbitrator in the manner aforesaid. The Arbitrator may, from time to time, with the consent of both the parties to the contract, enlarge the time for making the award. Work under the contract shall be continued during the arbitration proceedings. The venue of the arbitration shall be the place from which the contract is issued or such other place as the Arbitrator at his discretion may determine.

--X--X--

ANNEXURE-A

FINANCIAL VIABILITY

1. Owner's capital in the business (incase of Partnership, please mention percentage shares and amounts).
2. Quantum of business done during last three financial years.
 - i) Rs.
 - ii) Rs.
 - iii) Rs.
3. Value of fixed Assets of the business in last three years.
 - i) Rs.
 - ii) Rs.
 - iii) Rs.
4. Guarantee limits (if any) enjoyed by the firm.
5. Over draft limits (if any enjoyed by the firm.
6. Please enclose audited profit and loss account and balance sheet for last 3 years (indicate no. of sheets).
7. Certificate from Scheduled Bank to prove Contractor's financial capacity to undertake the work duly indicating the financial limits the tenderer enjoys.

(Signature of tenderer)
With Stamp

NOTE:

All the above documents should be duly certified by auditors/ Bank as may be applicable.

ANNEXURE - E

ANALYSIS OF UNIT RATE QUOTED

S.NO.	DESCRIPTION	PERCENTAGE OF THE UNIT RATE QUOTED	REMARKS
1.	Salary & wages for staff & workers		
2.	Consumables		
	(a) Gases		
	(b) Welding Electrodes		
	(c) P.O.L.		
	(d) Others		
3.	Depreciation & maintenance for T&P		
4.	Depreciation & Maintenance for other items		
5.	Establishment and Administration expenses of site		
6.	Overheads		
7.	Profit		

(SIGNATURE OF TENDERER)
WITH STAMP

ANNEXURE - F

DECLARATION SHEET

I, -----hereby certify that, all the information and data furnished by me with regard to this Tender Specification No.----- are true and complete to the best of my knowledge. I have gone through the specification, conditions and stipulations in detail and agree to comply with the requirements and intent of specification.

I, further certify that I am the duly authorised representative of the under mentioned tenderer and a valid power of attorney to this effect is also enclosed.

Tenderer's Name & Address

Authorised representative's signature with name and address.

ANNEXURE - 'G'

CHECKLIST AND SCHEDULE OF GENERAL PARTICULARS

NOTE : Tenderers are requested to fill in the following details and no column should be left blank

1. Name and address of the tenderer
2. Telegraphic/ telex address
3. Phone No. (Office)/ Fax No.
4. Name & designation of the official of the tenderer to whom all the references shall be made.
5. Tenderer's proposal No. & date
6. Whether EMD submitted (By cash/Pay order / bank draft) by.....
7. Validity of offer/ rates quoted for six months from the date of opening of tender Yes/No
8. Financial Status as per Clause 11.1 (in the format as per Annexure-A) Yes/No
9. Income tax Clearance certificate as per Clause 11.2 Yes/No
10. Details of experience as per clause 11.3 (in the format as per Annexure-B) Yes/No
11. Monthwise & Categorywise manpower deployment plan as per Clause 11.4 (in the format as per Annexure-C) Yes/No
12. Attested copy of power of attorney as per clause 11.5 Yes/No
13. Details about type of the firm as per clause 11.6 Yes/No
14. Status of T&P and monthwise deployment plan as per clause 11.7 (in the format as per Annexure-D) Yes/No
15. Analysis of unit rate quoted as per Clause 11.8 (in the format as per Annexure-E) Yes/No

16. Declaration sheet as per clause 11. 09
(in the format as per Annexure-F)

Yes/No

Date _____

(SIGNATURE OF TENDERER)
WITH STAMP

WITNESS
(SIGNATURES WITH FULL PARTICULARS)

1.

2.

ANNEXURE - I

AGREEMENT

Agreement No. and Date _____
 Name of the Work _____
 Name of the Contractor with full address _____
 Value of work awarded _____
 Letter of Intent No. and Date _____
 Scheduled Commencement Date _____
 Scheduled Completion Date _____

THIS AGREEMENT MADE THIS _____ DAY OF _____ 2000 between BHARAT HEAVY ELECTRICALS LIMITED (A Government of India Enterprise) a Company incorporated under the Companies Act, 1956, having its Registered Office at BHEL House, Siri Fort New Delhi- 110049 (herein after called BHEL) of the ONE PART.

AND

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

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

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

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

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

OR

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

OR

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

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

OR

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

5. That in consideration of the payments to be made to the Contractor by BHEL in accordance with this Agreement the Contractor hereby covenants and undertakes with BHEL that they shall execute, construct, complete the works in conformity, in all respects, with the terms and conditions specified in this Agreement and the documents governing the same.
6. That the Contractor shall be deemed to have carefully examined this Agreement and the documents governing the same and also to have satisfied himself as to the nature and character of the Works to be executed by him.
7. That the Contractor shall carry out and complete the execution of the said works to the entire satisfaction of the Engineer or such other officer authorised by BHEL, within the agreed time schedule, the time of completion being the essence of the Contract.
8. That BHEL shall, after proper scrutiny of the bills submitted by the Contractor, pay to him during the progress of the said works such sum as determined by BHEL in accordance with this Agreement.
9. That this Agreement shall be deemed to have come into force from ----- the date on which the letter of intent has been issued to the Contractor.
10. That whenever under this contract or otherwise, any sum of money shall be recoverable from or payable by the Contractor, the same may be deducted in the manner as set out in the General Conditions of Contract or other conditions governing this Agreement.
11. That all charges on account of Octroi, Terminal and other taxes including sales tax or other duties on material obtained for execution of the said works shall be borne and paid by the Contractor.
12. That BHEL shall be entitled to deduct from the Contractor's running bills or otherwise Income Tax under Section 194 (C) of the Income Tax Act, 1961.
13. That BHEL shall be further entitled to recover from the running bills of the Contractor or otherwise such sum as may be determined by BHEL from time to time in respect of consumables supplied by BHEL, hire charges for tools and plants issued (Where applicable) and any other dues owed by the Contractor.
14. That it is hereby agreed by and between the parties that non- exercise, forbearance or omission of any of the powers conferred on BHEL and /or any of its authorities will not in any manner constitute waiver of the conditions hereto contained in these presents and the liability of the Contractor with respect to compensation payable to BHEL or Contractor's obligations shall remain unaffected.
15. It is clearly understood by and between the parties that in the event of any conflict between the Letter of Intent and other documents governing this Agreement, the provisions in the Letter of Intent shall prevail.
16. The following documents
1. Invitation to Tender No-----
and the documents specified therein.

2. Contractor's Offer No----- dated-----.
3. _____
4. _____
5. _____
6. Letter of Intent No _____ dated _____.
7. _____

shall also form part of and govern this Agreement.

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

WITNESS

1.

2.

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

WITNESS

1.

2.

(For and on behalf of BHEL)

ANNEXURE – B

ANALYSIS OF SIMILAR JOBS EXECUTED / IN PROGRESS

S.No.	Agency By whom Awarded	Location of project	Capacity & unit nos.	Scope of work and tonnage	Date of award	Contract value
1	2	3	4	5	6	7

%age work completed and due date for completion	Date of completion if job is already over	No. of skilled/ unskilled workers deployed at peak	No. of Engrs. & Super- visors deployed at peak	Details of major T&P like cranes, Tractor Trailors, Winches, welding M/cs supplied		Consumables by whom
				By Con- Tractor	By other Agency	
8	9	10	11	12	13	14

(SIGNATURE OF TENDERER)
WITH STAMP

ANNEXURE – C

MONTHWISE MANPOWER DEPLOYMENT PLAN

S.No.	Category	No. of Person available on roll of the Organisation	Month (Indicate No. of persons to be deployed in each month)						
			Ist	2 nd	3 rd	4 th	5 th	6 th	and so on
1.									
2.									
3.									
		Total							

(SIGNATURE OF TENDERER)
WITH STAMP

ANNEXURE – D

(A) STATUS OF TOOLS & PLANTS

S.No.	Name of Equipment	Quantity owned	Registration no. wherever Applicable	Documents enclosed for proof of Ownership	Present Location	Quantity proposed to be deployed for this job
-------	-------------------	----------------	--------------------------------------	---	------------------	---

(B) MONTHWISE T&P DEPLOYMENT PLAN

S.No.	Description of T & P	Month (Indicate No. to be deployed in each month)								
		Ist	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	and so on

(SIGNATURE OF TENDERER)
WITH STAMP

ANNEXURE - H

BANK GUARANTEE FOR SECURITY DEPOSIT

B.G. NO.

Date

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

WHEREAS -----(hereinafter referred to as the Contractor) have entered into a contract arising out of Letter of Intent no.----- dt.----- (hereinafter referred to as "the contract") for the construction of ----- with the company.

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

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

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

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

The company shall have the fullest liberty without affecting in any way the liability of the Guarantor under this Guarantee, from time to time to vary any of the terms and conditions of the contract or extend time of performance by the contractor or to postpone for any time and from time to time any of the powers exercisable by it against the contractor and either enforce or forebear from

enforcing any of the terms and conditions governing the contract or securities available to the company and the Guarantor shall not be released from its liability under these presents by any exercise by the company of the liberty with reference to the matters aforesaid or by reasons of time being given to the contractor or any other forbearance, act or commission on the part of the company or any indulgence by the company to the contractor or any other matter or thing whatsoever which under the law relating to sureties would, but for this provision have the effect of so releasing the Guarantor from its liability under this guarantee.

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

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

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

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

Any claim or dispute arising under the terms of this documents shall only be enforced or settled in the courts of at New Delhi / Delhi only.

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

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

Signed for and on behalf of the Bank

(Signatory No.-----)

WITNESSES

1. Name & Address

2. Name & Address

Notes :

1. The above BG shall be executed on the non-judicial stamp papers of adequate value procured in the name of the bank in the state where the bank is located.
2. The above BG is required to be sent by the executing bank directly to BHEL at the address where tender is submitted / accepted under seal cover.

LIST OF MEMBER BANKS

- | | |
|---|--|
| <p>1. State Bank of India
CAG Branch,
10th Floor, Vijaya Building,
Barakhamba Road,
New Delhi – 110001.</p> | <p>9. HDFC Bank Ltd.,
5th Floor, HT House,
K.G. Marg,
New Delhi – 110001.</p> |
| <p>2. Canara Bank
74, Janpath,
New Delhi – 110001.</p> | <p>10. Citi Bank N A
Jeevan Vihar Building,
Sansad Marg,
New Delhi – 110001.</p> |
| <p>3. Punjab National Bank,
74, Janpath,
New Delhi – 110001.</p> | <p>11. Standard Chartered Bank,
H2 Block, Connaught Place,
New Delhi – 110001.</p> |
| <p>4. Bank of Baroda,
Corporate Banking Branch,
11th Floor, BOB Building,
Sansad Marg,
New Delhi – 110001.</p> | <p>12. ICICI Bank Ltd.,
ICICI Tower,
Bisham Pitamah Marg,
Pragati Vihar,
New Delhi – 110003.</p> |
| <p>State Bank of Hyderabad,
Surya Kiran Building, K.G. Marg,
New Delhi – 110001.</p> | <p>13. IDBI Bank Ltd.,
19, K.G. Marg,
Surya Kiran Building,
New Delhi.</p> |
| <p>5. State Bank of Mysore,
Antriksh Bhawan, K.G. Marg,
New Delhi – 110001.</p> | <p>14. HSBC Ltd.,
ECE House,
28 KG Marg,
New Delhi – 110001.</p> |
| <p>6. State Bank of Mysore,
Industrial Finance Branch,
18, Ramanashree Arcade,
M.G. Road, Bangaloe – 560001.</p> | |
| <p>7. State Bank of Travancore,
Travancore House, IF Branch,
K.G. Marg, New Delhi – 110001.</p> | |
| <p>8. Deutsche Bank,
Tolstoy Marg,
New Delhi – 110001.</p> | |

SECTION – I (a)
SPECIFICATION
FOR
HEALTH, SAFETY AND ENVIRONMENT (HSE)

1.0 SCOPE

This specification establishes the Health, Safety and Environment (HSE) management requirement to be complied with by the Contractors during construction.

Requirements stipulated in this specification shall supplement the requirements of HSE Management given in relevant Act (s) /legislations, General Condition Contract (GCC). Special Conditions of Contract (SCC) and job specification where different documents stipulates different requirements, the most stringent be adopted.

2.0 REFERENCES

This document should be read in conjunction with following :

- General Conditions of Contract (GCC)
- Special Conditions of Contract (SCC)
- Scope of work
- Relevant IS Codes (refer Annexure-I)
- Reporting Formats (refer Annexure-II)

3.0 REQUIREMENTS OF HEALTH, SAFETY & ENVIRONMENT (HSE) MANAGEMENT SYSTEM TO BE COMPLIED BY CONTRACTORS.

3.1 MANAGEMENT RESPONSIBILITY

3.1.1 The Contractor to comply with HSE requirement at Construction sites as enclosed to cover commitment of their organization to ensure health, safety and environment aspects in their line of operations.

3.1.2 The HSE management system shall cover the HSE requirements including but not limited to what is specified under Para 1.0 and para 2.0 above.

3.1.3 Contractor shall be fully responsible for planning and implementing HSE requirements. Contractor as a minimum requirement shall designate/deploy the following to co-ordinate the above :

No. of workers deployed upto 250	- Designate one safety Supervisor
Above 250 & upto 500	- Deploy one qualified and Experienced safety Engineer/ Officer
Above 500	- One additional safety engineer/

(for every 500 or less)

officer, as above.

Contractor shall indemnify & hold harmless Owner/BHEL & their representatives free from any and all liabilities arising out of non-fulfillment of HSE requirement.

- 3.1.4 The Contractor shall ensure that the Health, Safety and Environment (HSE) requirements are clearly understood & faithfully implemented at all levels at site.
- 3.1.5 BHEL shall promote and develop consciousness for Health, Safety and Environment among all personnel working for the Contractor. Regular awareness programmes and work site meetings shall be arranged on HSE activities to cover hazards involved in various operations during construction.
- 3.1.6 The Contractor shall arrange suitable first aid measures such as First Aid Box, trained personnel to give First Aid and install fire protection measures such as adequate number of steel buckets with sand and water to the satisfaction of BHEL/Owner.
- 3.1.7 Non-Conformance on HSE by Contractor (including his Sub-contractors) as brought out during review / audit by BHEL/Owner representative shall be resolved forthwith by Contractor. Compliance report shall be provided to BHEL.
- 3.1.8 The Contractor shall ensure participation of his Resident Engineer / Site-In-Charge in the Safety Committee / HSE Committees meetings arranged by BHEL / Owner. The compliance of any observations shall be arranged urgently. He shall assist BHEL / Owner to achieve the targets set by them on HSE during the project implementation.
- 3.1.9 The Contractor shall adhere consistently to all provisions of HSE requirements. In case of non-compliance or continuous failure in implementation of any of HSE provisions, BHEL / Owner may impose stoppage of work without any Cost & Time implication to BHEL / Owner and / or impose a suitable penalty for non-compliance with a notice of suitable period, upto a commulative limit of 1.0% (one percent) of Contract value. This penalty shall be in addition to all other penalties specified else where in the contract. The decision of imposing stoppage of work, its extent & minority penalty shall rest with BHEL / Owner & binding on the Contractor.
- 3.1.10 All fatal accidents and other personnel accidents shall be investigated by a team of Contractor's senior personnel for root cause & recommended corrective and preventive actions. Findings shall be documented and suitable actions taken to avoid recurrences shall be communicated to BHEL / Owner. BHEL / Owner shall have the liberty to independently investigate such occurrences and Contractor shall extend all necessary help and co-operation in this regard.

3.2 HOUSE KEEPING

- 3.2.1 Contractor shall ensure that a high degree of house keeping is maintained and shall ensure interalia; the following :
- a) All surplus earth and debris are removed / disposed off from the working areas to identified locations (s).
 - b) Unused/Surplus Cables, Steel items and steel scrap lying scattered at different places within the working areas are removed to identified locations (s).

- c) All wooden scrap, empty wooden cable drums and other combustible packing materials, shall be removed from work place to identified location(s).
- d) Roads shall be kept clear and materials like : pipes, steel, sand boulders, concrete, chips and brick etc., shall not be allowed on the roads to obstruct free movement of men & machineries.
- e) Fabricated steel structurals, pipes & piping materials shall be stacked properly for erection.
- f) Water logging on roads shall not be allowed.
- g) No parking of trucks/trolleys, cranes and trailers etc., shall be allowed on roads which may obstruct the traffic movement.
- h) Utmost care shall be taken to ensure over all cleanliness and proper upkeep of the working areas.
- i) Trucks carrying sand, earth and pulverized materials etc., shall be covered while moving within the plant area.

In case of non-compliance of any of above, BHEL shall have the liberty to get it done from some other agency at this risk and cost.

3.3 HEALTH, SAFETY AND ENVIRONMENT

- 3.3.1 The Contractor shall provide safe means of access to any working place including provisions of suitable and sufficient scaffolding at various stages during all operations of the work for the safety of his workmen, and BHEL / Owner. Contractor shall ensure deployment of appropriate equipment and appliances for adequate safety and health of the workmen and protection of surrounding areas.
- 3.3.2 The contractor shall ensure that all their staff and workers wear Safety Helmet and Safety shoes. Contractor shall also ensure use of safety belt, protective goggles, gloves etc., by the personnel as per job requirements. All these gadgets shall conform to relevant IS specifications or equivalent.
- 3.3.3 The Contractor shall assign to his workmen, tasks commensurate with their qualification, experience and state of health for driving of vehicles, handling and erection of material and equipments. All lifting equipments shall be tested certified for its capacity before use. Adequate and suitable lighting at every work place and approach there to, shall be provided by the Contractor before starting the actual operations at night. It is mandatory for contractor to get his workmen medically examined / checked for fitness of work assigned once a year and furnish the certificate to that effect from RMP / Govt. Hospital.
- 3.3.4 Hazardous and / or toxic materials such as solvent, coating or thinners shall be stored in appropriate containers.
- 3.3.5 All hazardous materials shall be labeled with the name of the materials, the hazards associated with its use and necessary precautions to be taken.

- 3.3.6 Contractor shall ensure that during the performance of the work, all hazards of the health of personnel, have been identified, assessed and eliminated.
- 3.3.7 Chemical spills shall be contained and cleaned up immediately to prevent further contamination.
- 3.3.8 All personnel exposed to physical agents such as ionizing or non-ionizing radiation, ultraviolet rays or similar other physical agents shall be provided with adequate shielding or protection commensurate with the type of exposure involved.
- 3.3.9 Where contact or exposure of hazardous materials could exceed limits or could otherwise have harmful effects, appropriate personnel protective equipment such as gloves, goggles, aprons, chemicals resistant clothing and respirator shall be used.
- 3.3.10 All persons deployed at site shall be knowledgeable of and comply with the environmental laws, rules & regulations relating to the hazardous materials substances and wastes. Contractor shall not dump, release or otherwise discharge or dispose off any such materials without the express authorization of BHEL / Owner.

4.0 DURING JOB EXECUTION

- 4.1 Implement Health, Safety and Environment requirements including but not limited to as brought out under para 3.0. Contractor shall ensure to :
- arrange workmen compensation insurance, registration under ESI Act, third party liability insurance etc., as applicable.
 - arrange all HSE permits before start of activities (as applicable) like hot work, confined space, work at heights, storage of chemical / explosive materials and its use and implement all precautions mentioned therein.
 - Submit timely the completed checklist on HSE activities, Monthly HSE report, accident reports, investigation reports etc., as per BHEL / Owner requirements. Compliance of instructions on HSE shall be done by Contractor and informed urgently to BHEL / Owner.
 - Ensure the Resident Engineer / Site-Incharge of the Contractor shall attend all the Safety Committee / HSE meetings arranged by BHEL/Owner. In case of his absence from site that a second senior most person shall be nominated by him in advance and communicated to BHEL/Owner.
 - Display at site office and work locations caution boards, list of hospitals, emergency services available.
 - Display posters, banners made available by BHEL for safe working to promote safety consciousness.
 - Assist in HSE audits by BHEL / Owner and submit compliance report.
 - Generate and submit HSE records / report as per HSE plan.
 - Appraise BHEL / Owner on HSE activities at site.

ANNEXURE - I**RELEVANT IS – CODES FOR PERSONAL PROTECTION**

IS: 2925-1984	Industrial Safety Helmets
IS: 4770-1968	Rubber gloves for electrical purposes
IS: 6994, 1973 (Part-I)	Industrial Safety Gloves (Leather & Cotton Gloves)
IS: 1989-1986 (Part I & III)	Leather safety boots and shoes
IS: 3738-1975	Rubber knee boots
IS: 5557-1969	Industrial and Safety rubber knee boots
IS: 6519-1971	Code of practice for selections, care and repair of Safety footwear
IS: 11226-1985	Leather Safety footwear having direct moulding sole
IS: 5983-1978	Eye protectors
IS: 9167-1979	Ear protectors
IS: 3521-1983	Industrial Safety belts and harness

ANNEXURE – II

1.0 HEALTH, SAFETY & ENVIRONMENT (HSE) PLAN

PROJECT: ----- CONTRACTOR :-----

DATE :----- OWNER :-----

(To be prepared by each construction Agency)

							ACTIV
PROCEDURE/ DESCRIPTION	W.I/ GUIDELIES	CODE OF CONFOR- MANCE	PERFORMING FUNCTIONS PERFOR- MER	CHECK- ER	APPRO- VER	AUDIT FUNCTION CUSTOMER REVIEW AUDIT REQUIREMENT	

PREPARED BY

REVIEWED BY

APPROVED BY
(RESIDENT ENGINEER)

2.0 MONTHLY HSE CHECKLIST CUM COMPLIANCE REPORT (1/6)

PROJECT:----- CONTRACTOR:-----

DATE :----- OWNER:-----

INSPECTION BY:-----

Note: Write 'NA' wherever the item is not applicable.

ITEM	YES	NO	REMARKS	ACTION
------	-----	----	---------	--------

HOUSING KEETING

Waste containers provided and used

Sanitary facilities adequate and clean

Passageways and Walkways Clear

General neatness of working areas

Others

PERSONNEL PROTECTIVE EQUIPMENT

Goggles: Shelds

Face protection

Hearing protection

Safety Shoes provided

Hand protection

Safety Belts

Others

EXCAVATIONS / OPENINGS

Openings properly covered or barricaded

Excavations shored

Excavations barricaded

Overnight lighting provided

Other

MONTHLY HSE CHECKLIST CUM COMPLIANCE REPORT (Contd.. 2/6)

ITEM	YES	NO	REMARKS	ACTION
WELDING, CUTTING				
Gas cylinders chained upright				
Cables and hoses not obstructing				
Screens or shields used				
Flammable materials protected				
Fire extinguisher (s) accessible				
Other				
SCAFFOLDING				
Fully decked platforms				
Guard and intermediate rails in place				
Toe boards in place				
Adequate shoring				
Adequate access				
Other				
LADDERS				
Extension side rails 1 m above				
Top of landing				
Properly secured				
Angle + 70 from horizontal				
Other				

MONTHLY HSE CHECKLIST CUM COMPLIANCE REPORT (Contd.3/6)

ITEM	YES	NO	REMARKS	ACTION
------	-----	----	---------	--------

HOIST. CRANES AND DERRICKS

Condition of cables and sheaves OK

Condition of slings, chains, hooks & eyes O.K.

Inspection and maintenance logs maintained

Outriggers used

Signs/barricades provided

Signals observed and understood

Qualified operators

Other

MACHINERY, TOOLS AND EQUIPMENT

Proper instruction

Safety devices

Proper cords

Inspection and maintenance

Other

VEHICLE AND TRAFFIC

Rules and regulations observed

Inspection and maintenance

Licensed drivers

Other

MONTHLY HSE CHECKLIST CUM COMPLIANCE REPORT (Contd.4/6)

ITEM	YES	NO	REMARKS	ACTION
TEMPORARY FACILITIES				
Emergency instructions posted				
Fire extinguishers provided				
Fire-aid equipment available				
Secured against storm damage				
General neatness				
In accordance with electrical requirements				
Other				
FIRE PREVENTION				
Personnel instructed				
Fire extinguishers checked				
No smoking in Prohibited areas				
Hydrants Clear				
Other				
ELECTRICAL				
Proper wiring				
ELCB's provided				
Ground fault circuit interrupters				
Protection against damage				
Prevention of tripping hazards				
Other				

MONTHLY HSE CHECKLIST CUM COMPLIANCE REPORT (Contd.5/6)

ITEM	YES	NO	REMARKS	ACTION
------	-----	----	---------	--------

HANDLING AND STORAGE OF MATERIALS

Properly stored or stacked

Passageways clear

Other

FLAMMABLE GASES AND LIQUIDS

Containers clearly identified

Proper storage

Fire extinguishers nearby

Other

WORKING AT HEIGHT

Erection plan

Safety belts and lanyards; chute lines

Other

ENVIRONMENT

Chemical and other Effluents properly disposed

Cleaning liquid of pipes disposed off properly

Water used for hydrotesting disposed off as
Per agreed procedure

Lubricant Waste/Engine Oil properly disposed

Waste from Canteen, offices, sanitation etc.,
Disposed properly

Disposal of surplus earth, stripping materials,
Oily rags and combustible materials done
Properly

MONTHLY HSE CHECKLIST CUM COMPLIANCE REPORT (Contd.6/6)

ITEM	YES	NO	REMARKS	ACTION
Green belt protection				
Hygienic conditions at labour camps O.K?				
Availability of First Aid facilities				
Proper sanitation at site, office and Labour camps				
Arrangement of medical facilities				
Measures for dealing with illness				
Availability of Potable drinking water For workmen & staff				

Signature of Resident

Engineer with Seal

3.0 ACCIDENT CUM FIRE REPORT

(To be submitted by contractor after every accident within 24 hours of accident)

Report : _____

Name of Site: _____

Date: _____

CONTRACTOR _____

NAME OF THE INJURED _____

FATHER'S NAME _____

SUB-CONTRACTOR M/S _____

DATE & TIME OF ACCIDENT _____

LOCATION _____

BRIEF DESCRIPTION OF ACCIDENT

CAUSE OF ACCIDENT

NATURE OF INJURY/DAMAGE

MEDICAL AID PROVIDED/ACTIONS TAKEN

INTIMATION TO LOCAL AUTHORITIES

DATE:

SIGNATURE OF CONTRACTOR

WITH SEAL

TO: SITE-IN-CHARGE/BHEL

1 COPY

4.0 SUPPLEMENTARY ACCIDENT & INVESTIGATION REPORT

Project:_____ Supplementary to Report No. _____

(Copy enclosed)

Site:_____ Date:_____

CONTRACTOR_____

NAME OF THE INJURED _____

FATHER'S NAME _____

SUB-CONTRACTOR M/S _____

DATE & TIME OF ACCIDENT _____

LOCATION _____

BRIEF DESCRIPTION & CAUSE OF ACCIDENT

NATURE OF INJURY/DAMAGE

COMMENTS FROM MEDICAL PRCTICETIONER, WHO ATTENDED THE VICTIM / INJURED

SUGGESTED IMPROVEMENT IN THE WORKING CONDITION, IF ANY

LOSS OF MANHOURS AND IMPACT ON SITE WORKS

ANY OTHER COMMENT BY SAFETY OFFICER

DATE:

SIGNATURE OF CONTRACTOR

WITH SEAL

TO: SITE-IN-CHARGE/BHEL

1 COPY

5.0 MONTHLY HEALTH, SAFETY & ENVIRONMENT (HSE) REPORT

(To be submitted by each Contractor)

Actual work start Date: _____ For the month of _____

Project: _____ Report No. _____

Name of the Contractor: _____ Status as on: _____

Name of Work: _____ Name of safety officer _____

ITEM	THIS MONTH	CUMMULATIVE
------	------------	-------------

Total Strength (Staff + Workmen)

Number of HSE meetings organized at site

Number of HSE awareness programmes

Attended at site

Whether workmen compensation policy taken Y/N

Whether workmen compensation policy is valid Y/N

Whether workmen registered under ESI Act Y/N

Number of Fatal Accidents

Number of Loss Time Accidents (Other than Fatal

Other accidents (Non Loss Time)

Total No. of Accidents

Total man-hours worked

Man-hour loss due to fire and accidents

Compensation cases raised with Insurance

Compensation cases resolved and paid to workmen

Remarks

Date

Safety Officer/Resident Engineer

(Signature & Name)

To: SITE-IN-CHARGE,BHEL

1 COPY

**FOR OFFICIAL USE ONLY
NOT FOR PUBLICATION**

**TENDERER'S COPY
ORIGINAL COPY**

TENDER NO. BHEL: NR(SCT):KOSTI:CIVIL(PB):386

T E N D E R S P E C I F I C A T I O N S

FOR

**Civil & Architectural Works in Main Plant Area
(TGs, Boilers, ESPs) and BOPs at 4x125 MW
Kosti TPP, Sudan.**

PART II – PRICE BID



**Bharat Heavy Electricals Limited
(A Govt. Of India Undertaking)
Power Sector – Northern Region,
Plot No. 25 , Sector - 16A ,
Distt. Gautam Budh Nagar, NOIDA – 201 301 (INDIA)**



ISO 9001-2000, ISO 14001
and OHSAS 18001 certified
company
SubContract and Purchase
Deptt.

Bharat Heavy Electricals Limited
(A Govt. Of India Undertaking)
Power Sector – Northren Region,
Plot No. 25 , Sector - 16A ,
Distt. Gautam Budh Nagar, NOIDA – 201 301.INDIA
Phone: 0091-0120-2515476 / 2515464 / 2515479
Fax 091-0120-2515464 / 2515467
Email: sku@bhelnsnr.co.in / msd@bhelnsnr.co.in

TENDER NO. BHEL: NR(SCT): KOSTI:CIVIL(PB):386

IMPORTANT NOTE

PURCHASER OF THIS TENDER DOCUMENT IS ADVISED TO CHECK AND ENSURE COMPLETION OF ALL PAGES OF TENDER DOCUMENT AND REPORT ANY DISCREPANCY TIMELY FOR CORRECTIVE ACTION, IF ANY, TO THE ISSUING AUTHORITY BEFORE THE BIDS ARE SUBMITTED. ORIGINAL COPY OF TENDER DOCUMENT COMPLETE IN ALL RESPECTS MUST BE SUBMITTED BACK AS PART OF THE BID WITHOUT WHICH THE SAME IS LIABLE TO BE REJECTED BY BHEL.

THIS TENDER SPECIFICATION ISSUED TO:

M/S-----

Bharat Heavy Electricals Limited
(A Govt. Of India Undertaking)
Power Sector – Northren Region,
Plot No. 25 , Sector - 16A ,
Distt. Gautam Budh Nagar, NOIDA – 201 301.INDIA

PROCEDURE FOR SUBMISSION OF SEALED TENDERS:

The tenderers must submit their tenders as required in two parts in separate sealed covers prominently superscribed as Part-I Technical bid and Part-II ,Price bid also indicating on each of the cover tender specification no., date and time as mentioned in tender notice.

TECHNICAL BID (COVER-I)

Except Price bid Part-II, complete set of tender document consisting of General conditions of Contract, “Technical specification & Special terms and condition” (Part-I) issued by BHEL shall be enclosed in Part I Technical Bid only. All schedules, data sheets and details called for in the specification shall also be submitted along with technical bid. All details / Data / Schedules including offer letter duly signed and stamped are to be submitted in duplicate.

PRICE BID (COVER-II)

Tenderers may please note that price bid is to be submitted only in original copy of Tender i.e. Price bid (Part-II) issued by BHEL and no duplicate copy of same is required.

These Two separate covers i.e. cover I & II shall together be enclosed in a third envelope (Cover-III) and this sealed cover shall be superscribed with tender specification No., due date, time and submitted to officer inviting tender as indicated in tender notice on or before due date as indicated.

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
100	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION AND DRAWINGS				
101	Excavation including providing coffer dams, shoring, strutting, sheeting, bracing, draining and pumping out water other than water below ground water table, clearing all grass, vegetation etc. including trimming of excavation bottom, staking, levelling, grading etc. of excavated materials all complete as per specifications, drawings and instructions of the engineer, including a lead(disposal) up to 100 meters and a lift up to 2.0 meters.				
i)	In all types of soils including expansive soil, ash, morrum, laterite	CUM	542507		
102	Extra over item 101 above, for all types of soil/rock (soft rocks only, requiring no chiselling / blasting), for additional lifts beyond the initial lift of 2 meters (included in item 1 above) all complete as per specifications, drawings and instructions of the engineer for the following lifts:				
i)	In all types of soils				
a	beyond 2 m and upto 4 m	CUM	405489		
b	beyond 4 m and upto 7 m	CUM	58896		
c	beyond 7 m and upto 10 m	CUM	73950		
d	beyond 10 m and upto 15 m	CUM	1530		
103	Extra over item 101 above for excavation below ground water table including lowering of ground water table to maintain dry working conditions for all activities up to filling/testing all complete as per specifications, drawings and instructions of the engineer. However dry working conditions will have to be maintained till completion of all works in excavated area	CUM	60000		
104	Extra over item 101 above for carriage of all types of excavated materials beyond the initial lead of 100 m (included in item 1 above) all complete as per specifications, drawings and instructions of the engineer for the following leads				
i)	Carriage beyond initial lead of 100 m but not exceeding 500 m	CUM	137636		
ii)	Carriage beyond initial lead of 500 m but not exceeding 2 Km	CUM	157379		
iii)	Carriage beyond initial lead of 2 Km but not exceeding 5 Km	CUM	123932		
iv)	Carriage beyond initial lead of 5 Km but not exceeding 10 Km	CUM	207693		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
105	BACKFilling using selected excavated materials in trenches, plinths, foundations and other underground structures, pipes, etc. in layers not exceeding 200 mm thickness including re-excavation and loading from stock pile, transporting (from a lead upto 1 KM), unloading, filling, watering and compacting/ramming each layer to required degree as mentioned below for all leads and lifts all complete as per specifications, drawings and as directed by the engineer to achieve the following densities:				
i)	Minimum 85% Standard Proctor density	CUM	26049		
ii)	Minimum 90% Standard Proctor density	CUM	40887		
iii)	Minimum 95% Standard Proctor density	CUM	130070		
105A	BACKFilling using selected excavated materials directly from excavation area in trenches, plinths, foundations and other underground structures, pipes, etc. in layers not exceeding 200 mm thickness including filling, watering and compacting/ramming each layer to required degree as mentioned below for all leads and lifts etc all complete as per specifications, drawings and as directed by the engineer to achieve the following densities:				
i)	Minimum 85% Standard Proctor density	CUM	1050		
ii)	Minimum 90% Standard Proctor density	CUM	36106		
iii)	Minimum 95% Standard Proctor density	CUM	56666		
106	BACKFilling in trenches, plinths, foundations, and other underground structures, pipes etc using selected soil from borrow areas in layers not exceeding 200 mm in thickness and including excavating, loading, unloading, transporting, filling, watering and compacting/ramming each layer to required degree for all lead and lifts etc all complete as per specifications, drawings and as directed by the engineer to achieve the following densities:				
i)	With selected soil non expansive soil brought from borow areas arranged by contractor including royalties, fees if any etc.				
a	Minimum 90% Standard Proctor density	CUM	146612		
b	Minimum 95% Standard Proctor density	CUM	297648		
ii)	With selected sand brought from quarries/river bed arranged by contractor including royalties, fees if any and compacting to minimum 80% relative density etc.	CUM	10044		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
106A	Filling using selected materials from borrow areas below foundations and other under ground structures, pipes etc. in layers not exceeding 200 mm in thickness including excavating, loading, unloading, transporting, filling, watering and compacting/ramming each layer etc for all leads and lifts all complete as per specifications, drawings and as directed by the engineer for the following . With selected non expansive soil brought from borow areas arranged by contractor, including royalties, fees etc. if any compacted to 100% Standard Proctor Density	CUM	147334		
107	Filling in trenches, plinths, area paving and other underground structures with stone (63 mm down graded), in layers not exceeding 200 mm thickness including breaking of boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts all complete as per instructions of engineer-in-charge.	CUM	17869		
108	Filling in transformer pits etc. , with clean 40 mm nominal size stone aggregate including all labour, materials, royalties, equipments etc. complete as per instructions of engineer in charge.	CUM	374		
109	Bulldozing earth for grading of ground including removable of vegetation complete including disposal of debris upto 5 kms.	CUM	102		
110	Cutting of trees, including transportation, stacking at storage yard and disposal of unused material as per the direction of engineer in charge.				
i)	300 mm upto 600 mm girth	Nos.	15		
ii)	601 mm upto 900 mm girth	Nos.	15		
GRADING & LEVELLING					

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
111	Earth work in stripping of top soil upto a minimum depth of 0.20m below ground level so as to exclude all debris, grass, vegetation, bushes, trees including roots and organic materials etc for levelling and grading including dressing to specified levels & grades and compacting the graded/stripped surface by manual/mechanical means including stacking/ disposal of stripped materials/earth, debris, vegetation, bushes, trees etc within a lead of 1km etc all complete as per specification and as directed by the engineer.	SQM	91800		
112	Earth work in cutting (excavation) upto any level in all types of soil and soft rock including ash, laterite, moorum, weathered rock, decomposed rock etc which can be excavated by means of crow bar, pick axe etc but does not require chiselling or blasting for levelling and grading including dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of excavated material within a lead of 1km etc all complete as per specification and as directed by the engineer.	CUM	18360		
114	Disposal of surplus excavated earth beyond an initial lead of 1km and upto a lead of 5km including levelling the disposed material etc all complete as specified and as directed by the engineer.	CUM	5100		
115	Earth work in filling for levelling and grading using approved quality of borrowed cohesive non swelling soil (borrowed earth to be arranged by the bidder at no extra cost to the Owner/BHEL) on prepared surface obtained by compacting with mechanical means including setting out, sorting, breaking clods, handling, transportation, spreading, dewatering if necessary, watering, compaction in layers not exceeding 200mm compacted thickness compacting to a minimum 95% of maximum dry density (modified Proctor test) obtained as per IS:2720, Part VIII, levelling, dressing, finishing to required slopes and grades including all lifts and leads etc all complete as per specification and as directed by the engineer.	CUM	18360		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
116	Providing, stacking and laying 300mm thick boulder pitching on the slopes of earth fill/cut with approved quality of rock fragments including necessary excavation (if any) compaction etc all complete as per specification, drawing and as directed by the engineer.	CUM	306		
117	Providing anti termite treatment under floors etc. as per specifications.	SQM	5000		
200	PROVIDING AND PLACING CONCRETE WORK INCLUDING COST OF LABOUR, MATERIALS AND EQUIPMENT FOR HANDLING, TRANSPORTATION, BATCHING, MIXING, PLACING, VIBRATING AND CURING, (EXCLUDING COST OF CENTERING, SHUTTERING AND REINFORCEMENT) COMPLETE AS PER DRAWING AND SPECIFICATIONS UNLESS SPECIFIED OTHERWISE FOR THE FOLLOWING: (IN CASE OF UNDERGROUND WATER AGRESSIVENES, SPECIAL CORRESPONDING CEMENT TO BE USED)				
201	Concrete of grade M7.5 as filling course at any level below finished floor level, under and around foundations/floors, mass dumps etc with 40 mm nominal size graded aggregate.	CUM	381		
202	Concrete of grade M10 as levelling course , under and around foundations/floors etc with 40 mm nominal size graded aggregate.	CUM	500		
202 A	Concrete of grade M15 as levelling course , under and around foundations/floors etc with 40 mm nominal size graded aggregate.	CUM	17122		
203	Concrete of grade M20 in foundations, under floors etc complete with 20 mm nominal size graded aggregate.	CUM	1000		
203A	Concrete of grade M20 (1 part cement, 2 part sand, 4 parts of 12.5 mm graded aggregate by volume) as under bed to floors etc complete.	CUM	1500		
204	Concrete of grade M-25 in foundations, under floors etc complete with 20 mm nominal size graded aggregate.	CUM	50000		
205	Concrete of grade M-25 in superstructure from finished floor level complete at all heights with 20 mm nominal size graded aggregate	CUM	15541		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
206	Concrete of grade M-25 in T.G. Block and machine foundations at all heights from finished floor level except top deck including addition of suitable plasticizer conforming to IS 9103-latest to achieve a slump more than 125mm in concrete as per manufacturer's recommendation with 20 mm nominal size graded aggregate.	CUM	10914		
207	Concrete of grade M-30 in top deck of TG or other machine foundations including addition of suitable plasticizer conforming to IS 9103-latest to achieve a slump more than 125mm in concrete as per manufacturer's recommendation with 20 mm nominal size graded aggregate.	CUM	1428		
208	Screed concrete 1:2:4 conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at any level or thickness complete.	CUM	459		
209	Concrete of grade M-25 in precast works like roof slabs/trench covers, fins, lintels, chajas, beams, columns, wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjusant precast units with M30 concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm).	CUM	1189		
210	Concrete of grade M25 in foundation, superstructure of water retaining structures either below or above finished floor level including addition of suitable plastisizer confirming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and subsequent reduction in cement content upto a maximum 10% complete etc. as per specification with 20 mm nominal size graded aggregate.	CUM	28000		
211	Concrete of Grade M-20 in paving, plinth protection, pipe encasing etc. complete with 20 mm nominal size graded aggregate.	CUM	158		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
212	Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.				
i)	Plain cement concrete of all grades	CUM	20		
ii)	Reinforced cement concrete of all grades	CUM	41		
213	Chipping of concrete in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials upto a lead of 2 km as directed by engineer including equipment, safety precautions etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement	CUDM	1020		
214	Extra over and above St No 213 for cutting of reinforcement, all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer in charge.	SQM	306		
214 A	Providing and laying 50mm thick lime powder below earth fill complete as per specifications	SQM	130000		
215	Providing and adding of ice of approved quality in concrete to maintain concrete temperature below 23 degree centigrade	CUM	867		
300	SUPPLYING, FIXING AND REMOVING FORMWORK AT ANY ELEVATIONS FOR ALL STRUCTURES, AS PER SPECIFICATIONS AND INCLUDING ALL LABOUR MATERIAL, SCAFFOLDINGS AND CENTERING COMPLETE INCLUDING POCKETS ETC. FOR THE FOLLOWING:				
301	Ordinary form work below finished ground floor level for foundations, footings, bases of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.	SQM	88504		
302	Fairface form work below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc. for exposed concrete works.	SQM	31858		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
303	Ordinary form work above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc. for all heights.	SQM	5413		
304	Fairface form work above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc. for all heights.	SQM	105029		
305	Formwork for TG superstructure-fairface. (above finished floor level)	SQM	5100		
306	Providing, fixing and removing formwork in block-outs/pockets and openings (below 0.1 sqm contact surface area with concrete) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.				
i)	Upto 300 mm depth	Nos.	204		
ii)	From 301 mm upto 600 mm depth	Nos.	87		
iii)	From 601 mm upto 1000 mm depth	Nos.	51		
400	REINFORCEMENTS				
401	Providing, straightening cutting, bending, placing in position at any level, binding of mild steel reinforcements in concrete including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings. (Steel shall be supplied free of cost by BHEL as per Clause 39.1)	MT	62		
402	Providing, straightening, cutting, bending, placing at any level, binding in position high yield strength steel reinforcements in concrete including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings. (Steel shall be supplied free of cost by BHEL as per Clause 39.1)	MT	8960		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
403	Providing, straightening cutting, bending, placing in position at any level, binding of mild steel reinforcements in brickwork including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings. (Steel shall be supplied free of cost by BHEL as per Clause 39.1)	MT	31		
404	Providing, straightening, cutting, bending, placing at any level, binding in position high yield strength steel reinforcements in brickwork including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings. (Steel shall be supplied free of cost by BHEL as per Clause 39.1)	MT	233		
500	WATER PROOFING AS PER SPECIFICATIONS. (Contractor has to furnish a guarantee for material and workmanship for a minimum period of 20 years.)				
501	Providing and laying roof water treatment with high solid content liquid applied elastomeric water proofing membrane with separate wearing course as per ASTM C-898 . Thickness of membrane shall be min 1.5 mm. Treatment shall include application of polymerized mastic over roof achieving a smooth surface. Wearing course on the top of membrane shall consist of 25 mm thick PCC (1:2:4) cast in panels of maximum size 1.2 X 1.2 m and reinforced with 0.56 mm dia galvanised chicken wire mesh and sealing of joints using sealing compound / elastomeric water proofing membrane complete complete as directed by engineer in charge.	SQM	16999		
502	Providing and laying chequered concrete tiles over water proofing of minimum size 200 X 200 and minimum thickness 22 mm conforming to IS 13801 including 15 mm thick cement mortar (1:4) bedding. (water proofing paid else where)	SQM	1000		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
502A	Providing and laying foam concrete block insulation over roofs including minimum 15 mm cement sand plaster finished smooth over foam concrete and providing of expansion joints at intervals as per the recommendation of manufacturer. Thermal conductivity of the foam concrete shall not exceed 0.125 KCL/Sqmh degree C and weight shall be from 0.3 to 0.5 gm/cu.cm, all complete with fillets as per specification.	SQM			
a	75 mm thick	SQM	6000		
b	100 mm thick	SQM	2600		
503	Providing minimum two coats of bituminous paint on concrete surfaces in contact with soil in water retaining structures, of grade 85/25 conforming to IS: 702 @ 1.7 kg/sqm.	SQM	20000		
504	Providing and mixing approved water proofing compound in concrete or cement mortar for works wherever specified or directed as per specification/manufacturer's instructions, testing of samples for water proofing etc. complete.	KG	100000		
600	SUPPLYING & INSTALLATION OF JOINT FILLER AND SEALING COMPOUND:				
601	Supplying & installation of bitumin impregnated fibre board conforming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin, labour, material, equipments etc all complete at all levels as per specification, drawings and instruction of engineer in charge:				
a	12mm thick joints.	SQM	177		
b	20mm thick joints.	SQM	35		
c	25mm thick joints.	SQM	106		
d	50mm thick joints.	SQM	4		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
602	Supplying and filling in position hot applied bitumin sealing compound(Grade A) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints at all levels including application of primer, labour, material, equipments etc. all complete as per specification/drawing, instruction of engineer in charge.	Kg	204		
700	M.S. EMBEDMENTS				
701	Supply, fabricating and fixing of embedments, MS inserts, pipe sleeves, guide rails, angle pieces, foundation bolts, anchor bolts, rungs of various diameters, plates of dimensions as required including cost of all labour, materials and equipment, transportation, loading, unloading, handling, welding, rivetting, bolting, cutting, drilling, scaffolding and setting as per specifications and drawings. (Steel shall be supplied free of cost by BHEL as per Clause 39.1)	MT	290		
702	Fixing of embedments, MS inserts, pipe sleeves, rails, guide rails angle pieces, anchor bolts of various diameters, plates of dimensions as required including cost of all labour, materials and equipment for fixing in position, scaffolding and setting in position, transportation from stores within the plant boundary to work spot, loading, unloading etc. complete as per specifications and drawings. (Steel shall be supplied free of cost by BHEL as per Clause 39.1)	MT	148		
703	Providing, fabricating, transporting, erecting and installing at all elevations miscellaneous steel/PVC pipes, expansion fasteners in concrete/brickwall, for all kind of works, including the cost of labour, material and equipment, setting material in concrete, layout, scaffolding, handling at site, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete as per drawings and specifications and instructions of engineer.				
i	MS pipes of all diameters	Quintal	39		
ii	PVC conduits of all sizes	Quintal	12		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
iii	Expansion fasteners (galvanised) of HILTI make or equivalent of safe				
	250 kg	Each	2050		
	500 kg	Each	1744		
	750 kg	Each	1285		
704	Supply, fabrication, transportation, delivery at site, erection, installation and alignment of MS foundation bolt (Grade-1 of IS:432 & IS:2062) assembly in concrete along with nuts, lock nuts (IS:1363, IS:1364 & IS:3138), anchor plates, stiffner plates, protective tape etc. upto and including 80 mm dia, 3000 mm long including furnishing of labour, materials, equipments, welding, cutting, grinding, threading, drilling, pipe sleeves etc. all complete as per specification, drawing and instruction of the engineer.	MT	46		
800	GROUTING AS PER SPECIFICATION FOR THE FOLLOWING:				
801	Providing & grouting cement slurry mix at any elevation/depth with pressure pump for water retaining concrete structures, including fixing nozzles, cost of approved cement, admixture, curing, etc all complete as per specification and as directed by the Engineer.	SQM	4		
802	Providing and grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with mix 1:1:2 (one part Cement : 1part Sand : 2 parts of 6mm down graded stone chips) at any elevation including roughening surface, cleaning, ramming, curing etc complete (non-shrink hand grout using approved admixture) as per specification and as directed by the Engineer.	CUM	33		
803	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with mix 1:1(1 part cement : 1part sand) at any elevation including roughening surface, cleaning, ramming, curing etc complete (non-shrink flowable grout as per specification using approved admixture) as per specification and as directed by the Engineer.	CUM	30		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
804	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plate after erection and alignment if necessary, structural steel work, machinery at any elevations including roughening surface, cleaning, ramming, curing, etc with CobextraGP-2/CobextraGP-1/Pidigrout10/Pagel or equivalent all complete as per specifications. (Cost of all material and clearing the pocket by compressed air shall be in the scope of the contractor).	CUM	17		
900	DOORS, WINDOWS, VENTILATORS, LOUVERS, ROOF VENTILATORS, ROLLING SHUTTERS, PARTIONS ETC. COMPLETE AT ALL ELEVATION INCLUDING FRAMING, KICK PLATES, STOPPERS AS PER SPECIFICATION AND DRAWINGS (all steel doors, windows and rolling shutters etc. shall be blast cleaned to near white metal surface (Sa 2 1/2), painted with two coat of red oxide zinc primer and finished with two coats of synthetic enamel paint conforming to IS2074)				
901	Providing, fitting and fixing solid core flush door shutter as per IS2202 part II, 35 mm thick homogeneous particle board (decorative veneer prelaminated on both sides) bonded with BWP type phenol formaldehyde synthetic resin, particle board core conforming to IS3087 type I, 35/12 mm thick teak wood beading all around including preparation of working drawings, butt hinges, tower bolt, sliding bolt handles, knobs, door stoppers (all fitting shall be anodised aluminium color dyed), screws etc complete as per drawing, specification and instructions of engineer in charge.	SQM	124		
901A	Providing and fixing 12 mm thick particle board , decorative veneer (prelaminated) on both sides, as panels in aluminium framed door shutter, fixed with necessary snap-on-beading (excluding the cost of aluminium works).	SQM	20		
902	Providing and fixing openable/fixed steel windows and ventilators with steel sections as per IS:1361 including wire mesh, painting with minimum 2 coats of synthetic enamel paint on primer complete.	SQM	4263		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
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ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
903	Providing and fixing steel single or double door shutters. Shutters shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers side, top, bottom edges of shutter shall be of pressed steel channels of 1.2mm thk voids to be filled with mineral wool (48 kg/cum density) including all fittings like tower bolts, handles, stoppers, aldrops etc. and painting with minimum 2 coats of synthetic enamel paint on primer complete.	SQM	989		
904	Providing and fixing fire proof steel doors (single or double shutter) with panic devices shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers including all fittings, shop painting with approved post office/signal red color fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs.	SQM	206		
905	Providing and fixing anodised aluminium work for doors, windows, ventilators and partitions etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-mettalic protection etc.	KG	8976		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
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ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
905	including preparation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid separately).				
906	Providing and fixing of over head hydraulic door closers of approved make & quality as directed by Engineer.	Nos	133		
907	Providing and fixing floor mounted Hydraulic door closer of approved make & quality as directed by engineer	Nos	22		
908	Providing and fixing pressed steel frames fabricated from 1.6 mm thk gauge M.S sheet mortised, reinforced strikes, hold fasts, adjustable floor anchors, floor tiles/weather bars etc. complete as per specifications.	KG	29762		
909	Providing and fixing in position rolling shutters of approved make as per IS 6248, made of 80x1.25mm M.S laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs top cover, 3coats of approved enamel paint etc., all complete as per specification- Mechanically operated.	SQM	352		
910	Providing and fixing in position rolling shutters of approved make as per IS 6248, made of 80x1.25mm M.S laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs top cover, 3coats of approved enamel paint etc., all complete as per specification- Hand operated.	SQM	10		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
911	Providing and fixing in position rolling shutters of approved make as per IS 6248, made of 80x1.25mm M.S laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs top cover, 3 coats of approved enamel paint etc., all complete as per specification- Electrically operated.	SQM	357		
912	Providing, fabricating and fixing in position window grills as per approved design pattern at all elevations and of all sizes including with or without openings for operating window handles with all labour, material. Handling, equipment complete etc as per specification, drawing and instructions of engineer in charge.				
i)	Made of anodised aluminium sections	Kg	510		
913	Providing, fitting and fixing of glazing including poly carbonate sheet of superior (selected) quality, first grade class, at various elevations, where required, cleaning after fixing, with all labour and material etc. complete as per specification, drawing and instructions of engineer in charge.				
i)	4 mm clear sheet glass	SQM	153		
ii)	4 mm clear float glass	SQM	133		
iii)	5.5 mm clear float glass	SQM	3491		
iv)	6 mm wired glass	SQM	779		
v)	6 mm thick polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges.	SQM	51		
vi)	5.5 mm tinted glass	SQM	10		
vii)	Two nos. 6 mm thick clear toughened safety glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation.	SQM	318		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
914	Providing, fitting and fixing heavy duty minimum six lever mortised lock of godrej or equivalent make with handles or knobs to single and double leaf door (wooden/steel/aluminium) with duplicate set of keys and masterkeyed locks, openable from one side by the key and from the other side by the handle etc. all complete as per drawing, specification and instruction of engineer in charge.	Each	128		
915	Providing and fixing PVC doors of sintex or equivalent make including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	100		
916	Providing and fixing in position of 25 mm wide aluminum Venetian blinds of approved shade with aluminum extruded duly epoxy powder coated top channel including mechanism etc complete as per specifications, drawing and instruction of engineer in charge	SQM	2009		
1000A	BLOCK WORKS MASONRY INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR, SCAFFOLDING ETC. COMPLETE AS PER SPECIFICATIONS, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-				
1003A	Providing and laying 200mm thick block work in cement mortar 1:6 (1cement : 6 coarse sand) consisting of 200mm hollow concrete block for walls, chambers etc. at all heights, places and position above plinth including raking out joints, curing, scaffolding, etc complete but excluding plastering and painting, having compressive strength of 10N/mm ² manufactured as per approved methodology and as per specification.	CUM	700		
1004A	Providing and laying 150mm thick block work in cement mortar 1:6 (1cement : 6 coarse sand) consisting of 150mm hollow concrete block for walls, chambers etc. at all heights, places and position above plinth including raking out joints, curing, scaffolding, etc complete but excluding plastering and painting, having compressive strength of 10N/mm ² manufactured as per approved methodology and as per specification.	CUM	260		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1005A	Providing and laying Hollow glass block work of approved quality using suitable binding material as per manufacturers instructions including reinforcing the joints and filling the connections with adjacent concrete block work with fibrous/plastic non load bearing substance etc all complete as per specification.	CUM	100		
1007A	Dismantling existing block work at all level including stacking and removing the debris within a lead of 1Km. , including transportation, loading, unloading, etc all complete and as directed by Engineer.	CUM	50		
1000	BRICKWORK MASONRY INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR ETC. COMPLETE, AS PER SPECIFICATIONS. CONTRACTOR WILL HAVE TO SET UP A BRICK MANUFACTURING UNIT OF CAPACITY SUITABLE FOR ALL BRICKWORK ACTIVITIES OF THE ENTIRE PACKAGE. THE UNIT SHALL BE SET UP AS PER SPECIFICATION. LOCALLY AVAILABLE BRICKS CAN BE USED PROVIDED THESE MEET THE STRENGTH / STABILITY PROPERTIES REQUIRED AS PER RELEVANT IS CODES AND CLASS DESIGNATION				
1001	Providing brick work in cement mortar 1:6 (1 part cement 6 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.				
i)	Using ordinary bricks of class designation 7.5 of nominal dimension	CUM	231		
1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.				
i)	Using ordinary bricks of class designation 7.5 of nominal dimension	CUM	1873		
1003	Ruled pointing in masonry in CM 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.	SQM	638		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1004	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls , chambers etc. in thickness 115mm at all heights, places and position above or below plinth/graded level including providing H.B. wetting at every third layer, raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification.				
i)	Using ordinary bricks of class designation 7.5 of nominal dimension	SQM	7		
1005	Providing brick soling spreading of earth, ramming, watering including 12mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item). Using brick on edge.				
i)	Using ordinary bricks of class designation 7.5 of nominal dimension	SQM	102		
1006	Providing brick soling including spreading of earth, ramming, watering including 12mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item.).- Using flat bricks.				
i)	Using ordinary bricks of class designation 7.5 of nominal dimension	SQM	476		
1008	Breaking of existing brick work at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	CUM	15		
1009	Breaking of existing brick partition wall at all levels including plastering, cutting of reinforcement, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	SQM	15		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1010	Providing and encasing of structural steel member with masonry work around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar. Encased member shall be wrapped with checken wire mesh with 50mm lap etc. complete as per specification.	CUM	64		
1012	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar etc. complete.	CUM	90		
1013	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	704		
1014	Providing and filling brick bats in soak pits.	CUM	10		
1100	DAMP PROOF COURSE INCLUDING ALL MATERIALS LABOUR, SHUTTERING, CENTERING, CURING ETC., COMPLETE WITH THICKNESS AS SPECIFIED/SHOWN ON DRAWINGS.				
1101	Damp Proof Course 50mm thk. 1:1.5:3 concrete (10mm down aggregate) with 2% of approved admixture of water proofing compound. Hot bitumen @ 1.7Kg./sqm shall be applied before & after the DPC as per specification.	SQM	435		
1200	CEMENT MORTOR PLASTER INCLUDING ALL MATERIALS SCAFFOLDING, CURING ETC. COMPLETE AS PER SPECIFICATION				
1201	Providing 12 mm thick plaster in cement mortar 1:6 on walls, finished to a smooth finish as per specification and conforming to IS 1661	SQM	44033		
1202	Providing 12 mm thick plaster in cement mortar 1:6 on walls, with a rough finish as per specification and conforming to IS 1661	SQM	1454		
1203	Providing 12 mm thick plaster in cement mortar 1:6 on walls with a paste of neat cement @1kg/sqm and rubbed smooth with trowel as per specification and conforming to IS 1661	SQM	411		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1204	Providing 18 mm thick plaster in two layers in cement mortar 1:6 on walls finished to a wooden float/smooth/rough finish as per specification and conforming to IS 1661	SQM	42981		
1205	Providing 6mm thick plaster in cement mortar 1:4 on ceilings finished to a smooth finish as per specification.	SQM	29866		
1206	Providing and making decorative plaster (cement plaster, ratio 1: 6 mortar) over existing plastered surface of all types and design on walls, ceilings, arcs, columns with various thickness upto 20 mm including finishing all complete .	SQM	411		
1207	Providing Plaster of Paris 2 mm thick punning over finished plaster surface and finished with smooth surface as per specification.	SQM	18034		
1208	Providing screed/grading plaster of average 20 mm thickness in ratio 1:6 nominal by volume including finishing smooth and even etc. all complete at all levels above or below grade level.	SQM	8986		
1208-1	Providing and making decorative interior plaster of heritage finish over existing plastered surface of all types and design on walls, ceilings, arcs, columns including finishing all complete.	SQM	153		
1208-2	Forming groove of uniform size from 12X12 mm upto 20X15 mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battons, repair of the edges of plaster panel and finishing the groove etc. complete as per specification, drawing and the instructions of engineer in charge.	RM	102		
1208-3	Providing drip coarse on plastered surface at all elevations for all type of work such as chajjas, parapet, projections etc. including scaffolding, finishing etc. complete with all labour, tools and plants as per specification, drawing and instructions of engineer in charge.	RM	296		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1209	Providing and laying encasement to box type steel beams at all levels with lath plaster 50 mm nominal thickness with cement plaster (1:4) over galvanised hexagonal chicken wire of 0.9 mm wire diameter and 19 mm mesh size as per IS3150 including all labour, materials, equipment, handling, transporting, mixing, placing, leveling, curing and cleaning, finishing the exposed surfaces etc including centering and shuttering all complete as per specification, drawing and instructions of enginner in charge (rate shall include the cost of GI chicken wire mesh)	SQM	337		
1300	FINISHES, PAINTING TO CONCRETE, PLASTERED SURFACES, SURFACE PREPARATION INCLUDING ALL MATERIALS, LABOUR, SCAFFOLDING ETC. ALL COMPLETE				
1301	Two or more coats of exterior masonry paint (water or solvent base) of special resins, adhesives and additives mixed with fine, hard stone aggregate and finest available pigment. The paint shall be applied on a coat of primer over dried, prepared plaster surface as manufacturers guidlines. The final finished coating shall be fungus resistant, UV resistant, water repellent, alkali resistant and extremely durable with color fastness as per specification.	SQM	300		
1302	Two or more coats of white wash/ colour wash as per IS 627 of approved brand and manufacture to give an even shade including a priming coat as per specifications.	SQM	26153		
1303	Providing and applying two or more coats of oil bound distemper as per IS 428 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline including plaster of paris punning minimum 2 mm.	SQM	19596		
1304	Two or more coats of dry distemping of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete.	SQM	14806		
1305	Two or more coats of cement paint (for internal use) of approved brand and manufacture to give an even shade including priming coat complete.	SQM	6304		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1306	Providing and applying 2 or more coats of acid/alkali resistant chlorinated rubber paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying bitumen primer confirming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	2412		
1307	Two or more coats of flat oil paint as per IS: 137 or fire resistant transparent paint as per IS: 162 over french polish as per IS: 348 on all woodwork as per specifications.	SQM	128		
1308	Two or more coats of oil resistant paints epoxy based and ammine cured, 150 micron over primer of approved grade and manufacture to give an even shade.	SQM	1020		
1309	Providing and applying two or more coats of acrylic emulsion paint as per IS 5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline including plaster of paris punning minimum 2 mm.	SQM	20135		
1311	Providing and applying resin bonded granular textured finish, for external applications shall consist of crushed stone/quartz chips of .5 mm to 2.5 mm size and of approved natural color/shade and bonded with synthetic resins, adhesives and additives altogether in a single pack mix, applied on cured and dried plaster surface with a dry film thickness of minimum 2 mm. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulfide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.	SQM	901		
1312	Providing and applying 2 or more coats of water proof cement paint of approved make and color on exterior surface at all heights including material, labour, scaffolding, curing etc complete as per specification.	SQM	41675		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1400	FLOORING AND SKIRTING INCLUDING ALL MATERIALS, LABOUR, CURING, POLISHING, FINISHING, EXPANSION JOINTS, GROOVES, ETC. COMPLETE IN ALL RESPECTS AS SHOWN ON DRAWINGS AND DESCRIBED IN SPECIFICATIONS. (Under bed to be paid separately under relevant item)				
1401	Providing and laying 40 mm thick heavy duty cement concrete flooring with metallic hardener pigmented topping of 12 mm thick uniform graded treated iron particles in flooring complete as per specification.	SQM	30829		
1402	Providing and laying 25 mm thick heavy duty cement concrete flooring with metallic hardener pigmented topping of 10 mm thick uniform graded treated iron particles in skirting and dado complete as per specification.	SQM	746		
1404	Providing and Laying Precast Terrazo tiles including preparation of underbed all complete as per specifications	SQM	2587		
1406	Providing and laying removable false flooring with fire resistant particle board panels bonded by phenol formaldehyde of size 610X610 mm with all panel edges finished to a tolerance of +- 0.2 mm including 2 mm thick non static PVC top and lipping, supporting arrangement as per specification, drawings and engineer in charge.	SQM	306		
1407	Providing & fixing chemical resistant (Acid & Alkali) Tiles as per IS 4860 of minimum thickness 40 mm thick in flooring/Dado. The tiles shall be abrasion resistant and durable. The potassium silicate 6 mm thick mortar as per IS 4832 used for setting or for under bed shall be durable strong and chemical resistant epoxy mortar including pointing etc. after laying bitumen primer as per IS 158 and 12 mm thick bitumastic as per IS 9510 and IS 412 complete as per specification.	SQM	3101		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1408	Providing & fixing chemical resistant (Acid & Alkali) Tiles as per IS 4457 of minimum thickness 20 mm thick in flooring/Dado . The tiles shall be abrasion resistant and durable. The potassium silicate as per IS 4832,6 mm thick mortar used for setting or for under bed shall be durable strong and chemical resistant epoxy mortar including pointing etc. after laying bitumen primer as per IS 158 and 12 mm thick bitumastic complete as per IS 9510 and IS 412 and as per specification.	SQM	1132		
1409	Providing & fixing chemical resistant (Acid & Alkali) bricks (75 mm thk) as per IS 4860 in the floor of neutralization pit. Surface on which lining has to be applied shall be prepared in accordance with IS 2395. Bitumen primer as per IS 158 followed by 18 mm thk Bituminastic followed by 6 mm thk potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar confirming to IS 4832, Part II. Seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End ceiling shall be done with bitumastic. A.R. bricks shall be laid with 6 mm wide and 20 mm deep pointing (epoxy/furane/CNSL) and acid curing shall be done complete as per specification.	SQM	102		
1410	Providing & fixing chemical resistant (Acid & Alkali) bricks (115 mm thk) as per IS 4860 in the walls of neutralization pit. Surface on which lining has to be applied shall be prepared in accordance with IS 2395. Bitumen primer as per IS 158 followed by 18 mm thk Bituminastic followed by 6 mm thk potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar confirming to IS 4832, Part II. Seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End ceiling shall be done with bitumastic. A.R. bricks shall be laid with 6 mm wide and 20 mm deep pointing (epoxy/furane/CNSL) and acid curing shall be done complete as per specification.	SQM	102		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1411	Providing epoxy coating 150 micron over epoxy primer over MS Grating/Chequered plate/any other steel structure complete as per engineer in charge.	SQM	102		
1411A	Providing epoxy coating on operatinf floor as per spec.	SQM	102		
1412	Providing and laying polished Kota stone 20 mm thk in flooring . The kota stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. complete.	SQM	2244		
1413	Providing polished Kota stone 20 mm thk in skirting projecting 6mm from adjacent plaster all complete .	SQM	161		
1414	Providing and laying polished Granite stone of approved color and texture 25 mm thk and 600x600 size in flooring with brass dividers of 30x6 mm size at 1.8mx 1.8m intervals. The granite stone slabs/tiles laid over under bed of cement sand mortar (1:3) 15mm thick, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. complete .	SQM	1000		
1415	Providing and laying polished Granite stone 20 thk in skirting, facia and dado including pigments, curing, grinding, granite polishing etc. complete.	SQM	100		
1416	Providing and laying 7 mm thk vitrified ceramic tiles of polished variety of size 300x300 from reputed manufacturer, complete as per specification.	SQM	2915		
1417	Providing and laying 7 mm thk vitrified ceramic tiles of unpolished variety of size 300x300 from reputed manufacturer, complete as per specification.	SQM	1183		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1418	Providing and laying 7 mm thk vitrified ceramic tiles of polished variety of size 300x300 from reputed manufacturer, for skirting and dado up to specified height complete as per specification.	SQM	141		
1419	Providing and laying 7 mm thk vitrified ceramic tiles of unpolished variety of size 300x300 from reputed manufacturer, for skirting and dado up to specified height complete as per specification.	SQM	8		
1419 A	Providing and fixing white glazed tiles from reputed manufacturer all complete as per specifications	SQM	1428		
1420	Providing and laying granite stone slab of 12mm thickness single piece for wash basin slab, wall of black or approved colour with cutting and opening complete.	SQM	42		
1421	Providing and laying Heavy Duty dust pressed Ceramic Tiles in floors of size 300x300x7mm thick of reputed manufacturer of approved finish shade and colour.	SQM	200		
1422	Providing and laying colored Ceramic Tiles 5mm thick in dado of reputed manufacturer of approved finish shade and colour.	SQM	740		
1423	Providing and laying 40 mm thick heavy duty cement concrete flooring with cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded) with required finish as per specification, drawing and instructions of engineer in charge.	SQM	4590		
1425	Providing and laying of PVC flooring & skirting of minimum thickness 2 mm anti static flexible tiles as per IS 3462 and IS 5318.	SQM	1594		
1427	Providing and laying cinder filling in the toilets complete as directed by engineer in charge.	CUM	51		
1428	Providing and laying precast mosaic tiles 20 mm thick of approved shade with marble chips of sizes upto 6 mm laid in floors, skirtings and landings, jointed with neat cement slurry with pigment to match the shade of tiles including rubbing and polishing complete.	SQM	1459		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1429	Providing and laying 12 mm thick cast in situ terrazo finish consisting of marble chips of size 1 mm to 12 mm nominal size laid in white/grey cement or mixture of both in propotion 1:1.5 (1 part cement, 1.5 parts chips) with marble powder 3:1 (3 parts cement, 1 part marble powder) in propotion mix dry in cement including pigments, rubbing, grinding, polishing etc in floors, skirtings, treads, risers and landings complete.	SQM	204		
1430	Providing and fixing dividing strips in joints of cast in situ floorings at various elevations, finishing, all labour, material etc. complete as per drawing, specification and instructions of engineer in charge.				
i)	Glass strips 40 mm wide and minimum 6 mm thick.	RM	51		
ii)	Aluminium strips 40 mm wide and min 3 mm thick	RM	51		
1500	PROVIDING AND ERECTING ROOFING/SIDE CLADDING INCLUDING LAPS, SCAFFOLDING HOOKS, WASHERS, CORNER PIECES, ETC. COST OF ALL MATERIAL, LABOUR, EQUIPMENT, CLEATS, SHEETING RUNNER, RAILS MILD STEEL WIND TIES (HORIZONTAL/VERTICAL) AND ANY OTHER STEEL WORKS ETC. COMPLETE FOR THE FOLLOWING:				

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1501	<p>Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate over roof purlins as per relevant IS code and specification. Thickness of deck plate shall be minimum 1.2mm (base metal excluding coating), with minimum trough depth of 38 mm, with minimum yeild strength of 240Mpa and shall serve as permanent shuttering to the cast-in-situ roof slab 100mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads during construction spanning between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc.complete as per engineers approval and specification. (height of trough required as per design should be included in the cost). M.S. Trough decking plate shall be connected to the top surface of the purlin, top chord of truss with self tapping self drilling white zinc plated heat treated high carbon steel screws of min 5.6mm diameter at spacing of 390mm C/c in the trough a it with epoxy sealent including all material, labour, tools, etc</p> <p>complete. In addition shear connector of 16mm dia and min 75mm long mild steel studs at spacing 520mm C/c shall be fixed on top cord of purlin passing through the metal decking. (Note:-Leak proofing of the metal decking and concrete system shall be demonstrated by the contractor). Measurement shall be of the plan area of roof covered by MS trough metal decking. (Fabrication / erection of purlins is excluded from the scope of this item)</p>	SQM	6746		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1503	<p>Design supply & erection of permanent colour coated thermally insulated sandwiched metal cladding for external walls with troughed galvanised MS sheeting of 0.6mm thickness and 275 g/sqm of galvanisation or Hi tensile steel (350 Mpa) 0.5 mm thick, coated with zinc aluminium alloy @ 150 g/sqm. Outer exposed face shall have silicon modified polyester coating of DFT 20 microns over primer having life span sustenance against weathering action, inner side of external sheeting shall have 7 micron of precoating. sandwiched Insulation of minimum 50mm thick bonded mineral wool blanket conforming to IS 8183 (minimum density of 32 kg/cum for glass wool and 48 kg/cum for rock wool or 40-45 Kg/cum for polyurethane foam (fire retardants and non-toxic) conforming to IS 12436 , Inner sheet shall consist of 0.6 mm thick galvanised, MS permanently colour coated sheet with 20 micron DFT coating of silicone modified polymer paint on exposed face and 7 microns DFT coating on inner face and rate of galvanising as 150 gm/sqm , cladding shall be fixed to</p> <p>supports/rails by concealed fixing system with corrosion resistant self tapping/self drilling type fasteners provided with suitable cap. Flashing shall have the same material and minimum overlap of 100 mm.</p>	SQM	4284		
1504	<p>Design supply & erection of permanent colour coated non insulated metal cladding for external walls with troughed galvanised MS sheeting of 0.6mm thickness and 275 g/sqm of galvanization or Hi tensile steel (350 Mpa) 0.5 mm thick, coated with zinc aluminium alloy @ 150 g/sqm. Outer exposed face shall have PVF2 coating of DFT 20 microns over primer having life span sustenance against weathering action, inner side shall be coated with same paint of minimum DFT 12 microns over primer. Cladding shall be fixed to supports/rails by concealed fixing system with corrosion resistant self tapping/self drilling type fasteners provided with suitable cap. Flashing shall have the same material and minimum overlap of 100 mm.</p>	SQM	1887		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1505	Providing and installing under deck insulation comprising of 50 thick resin bonded mineral wool insulation mat conforming to IS: 8183. This mat shall be backed with minimum 0.05 mm thick aluminium foil and 24Gx25 mm wire mesh netting. This shall be fixed to ceiling or wall as the case may be with 100x50x6 slotted mild steel plate welded to MS plate inserts embedded at the soffit of the slab at 600 mm c/c and 14 G steel wire drawn through slots and fixed to wire netting as per specification, drawing and instructions of engineer in charge.	SQM	4386		
1506	Providing and fixing Corrugated GI sheet as cladding/roofing as per IS 277 and minimum grade of galvanisation shall be 450 gm/sqm including all fixing accessories, labour, material, scaffolding etc all complete as per specification, drawing and instructions of engineer in charge.	MT	80		
1507	Providing and fixing profiled aluminium sheet as cladding including all fixing accessories, labour, material, scaffolding etc all complete as per specification, drawing and instructions of engineer in charge.	SQM	408		
1600	PROVIDING AND FIXING FALSE CEILING INCLUDING SUPPLY OF CEILING MATERIAL, WORKING LAYOUT DRAWINGS AND DETAILS, SUSPENSION SYSTEM AND ALL OTHER MATERIALS REQUIRED FOR THE WORK INCLUDING MAKING RECESS FOR LIGHT FIXTURES, ALUMINIUM DIFFUSERS, FIRE ALARMS ETC., POLISHING/PAINTINGS, LABOUR ETC., ALL COMPLETE AS PER SPECIFICATION.				
1601	Providing and fixing glass reinforced gypsum (GRG) ceiling system consisting of supporting grid system forming panels of specified size, suspended from RCC slab/structural steel or catwalkway grid above with 4 mm (minimum) galvanised wires (rods) with special height adjustment clips, including preparation of working drawing, providing openings for AC ducts, return air grills, light fixtures etc (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.				

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
i)	12 mm thick GRG board with galvanised light gauge steel load bearing supporting GI frame and finished flat.	SQM	2725		
ii)	12 mm thick GRG board in profile (dome etc.) with galvanised light gauge steel load bearing supporting GI frame and finished flat.	SQM	257		
iii)	12 mm thick GRG board in tile of 600mmX600mm with double web design, galvanised steel with prepainted steel capping of approved shade and color, supporting Tee frame (24mmX38mm).	SQM	41		
1602	Providing and fixing prepainted coil coated steel ceiling system consisting of 0.5mm thick coated (as per IS277) galvanised to grade 180 mild steel (as per IS513), with regular modified polyster coating (DFT-10 microns) of required color and shade on the exposed surface and supporting grid system of roll formed double web design galvanised steel Tees 24mm X 38mm (with prepainted steel capping of approved shade and color) froming panels of specified size, for tile type panels, and roll formed stove enamelled 0.6mm thick steel carrier for fixing of lineal type panels by clip on arrangement, suspended from RCC slab/structural steel or catwalkway steel channel grid above with 4mm (minimum) galvanised wires (rods) with special height adjustment clips, including preperation of working drawings, providing openings for AC ducts, return air grills, light fixtures etc but excluding the cost of catwalkway all complete as per drawings, specifications and instructions of engineer				
i)	Tile type square pattern panels of 600mm X 600mm size with Tee support.	SQM	26		
ii)	Lineal pattern (closed type) of 100 mm nominal width with carrier support	SQM	26		
1602A	Providing and fixing Lineal Aluminium -Luxalon or equivalent false ceiling (type 84-c interior) with necessary fixtures and fittings all complete as per specifications.	SQM	1043		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1700	PROVIDING AND FIXING RAIN WATER DOWN TAKE PIPES INCLUDING 2 COATS OF APPROVED PAINT OVER A PRIMARY COAT, ALL SPECIALS AND ACCESSORIES ETC. COMPLETE AS PER SPECIFICATION.				
1701	GI down take pipes conforming to IS1239/IS3589 as per specification of following dia.				
i)	100 mm dia	RM	129		
ii)	150 mm dia	RM	1932		
iii)	200 mm dia	RM	515		
1702	CI down take pipes conforming to IS1230 with lead joints as per				
i)	100 mm dia	RM	12		
ii)	150 mm dia	RM	336		
iii)	200 mm dia	RM	165		
1800	MISCELLANEOUS				
1801	Providing and fixing PVC water stops 225mm wide, 6 mm thick.	RM	148		
1802	Supplying and installation of 25mm thick vibration damping, resilient pads around foundation of vibrating equipment and other locations as directed by the Engineer-in-charge including cost of all materials labour equipment etc. complete as per drawing and specifications.	SQM	26		
1803	Providing 50mm thick premix carpet surfacing laid to slope in two layers 30mm and 20mm respectively with 12mm and down broken stone chips mixed with 80/100 grade bitumen @ 52 Kg/Cu.M including compaction and cost of all material, labour all complete as per specification and as directed by the Engineer.	SQM	412		
1803A	Providing 50mm thick anticorrosive layer laid to slope consisting of compacted crushed stone screenings, fine gravel, clean sand or similar material as directed by the Engineer, mixed in hot asphalt 10% by volume and rolled or compacted complete as per drawings and specifications, below fuel oil tanks and at such other places as per specifications and as directed by the Engineer.	SQM	412		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1805	Providing and fixing aluminium strips minimum 18 SWG thk and 300mm wide over expansion joints with minimum lap of 50mm length including aluminium screws, rawl plugs all complete as per specification.	RM	179		
1806	Preparation of detail fabrication drawing, supply, fabrication of structural steel (rolled section, built up section or combination), delivery at site, transportation, work in columns, girders, beams ,gantry girders, trusses, purlins, bracings, cleats, shear connectors, chequered plates, gratings, hand rails and other fittings including cutting, grinding, machining (where ever applicable), drilling, bolting (including MS or HSFG bolts and nuts), welding, reheating of welded joints, use of hydrogen/radiographic electrodes, shop coat of paint and touch of paints and final painting including all Non Destructive Tests complete. (Steel shall be supplied free of cost by BHEL as per Clause 39.1)	MT	56		
1807	Providing, laying and fixing transformer rails including guide rails in concrete including joining of rails. Anchoring lugs etc. complete as per specification.	MT	97		
1808	Laying of earthing mats/rods including transportation from yard stores, loading, unloading, cutting to length, welding etc. complete as per specification and as directed by Engineer-in-charge. (Steel shall be supplied free of cost by BHEL as per Clause 39.1)	MT	112		
1809	Providing and fixing weep holes in Drains consisting of 100 mm dia LDPE pipe sleeves along with single side covering for the pipe mouth with galvanised welded wire fabric of 20 mm sq. opening along with 300 X 300 mm sq., 300 mm deep, 40 mm aggregates to cover fabric mesh mouth complete as directed by engineer in charge.	Nos.	5		
1810	Providing and fixing GI rungs in concrete/brick walls at all elevations including @ zinc coating shall not be less than 900 g/sqm all complete.	KG	3126		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1811	Design, supply, fabrication, erection of stoplog gates in CW/RW and other Pump houses as per specification with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as structural steel, cast steel, stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fastners etc., cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc 750 gms/sqm., following by an application of etching primer and dipping in black bitumen as per B.S. 3416, erection along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc., all complete as per specifications and approved drawings. The leakage through rubber seal shall not be more than 5 lit/min/metre length of seal under maximum head.(only weight of structural steel including embedments shall be considered for payment purpose)	MT	45		
1812	Supplying, fabricating, erecting in position and testing / examining bolted and / or welded structural steel work at all levels for stationary screens made out of rolled sections and / or plates including cutting, straightening if required, edge preparation, bolting / welding of joints, cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc as 750 gms./sqm. followed by application of an etching primer and dipping in black bitumen as per BS 3416, complete as per drawing and directed.	MT	10		
1813	Providing and laying dry stone pitching of minimum thickness of 230 mm for slope protection in cement mortar 1:6 with hammer dressed 230 mm size stones including racking of joints, pointing, preparing the bedding surface and voids filling with stone aggregate etc. complete.	CUM	1428		
1814	Providing and fixing PVC pressure release valve of minimum dia 90mm in water retaining structure including 160 mm dia housing pipe of minimum length 2 m with perforation as per IS4558, nylon jali, perforated end plug, collar, graded filter, excavation, fixing in concrete slab/wall all complete as per specification, drawing and instruction of engineer in charge.	Nos	204		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
1815	Providing and fixing ms vent pipes with cowls as per specifications, drawings and instructions of engineer in charge	KGS	510		
1816	Providing and fixing LDPE pipes in cable duct banks, openings in RCC work at all elevations of following sizes including cutting, fixing and levelling in position as per drawings, specifications all complete.				
	I) 100 mm dia	RM	102		
	ii) 150 mm dia	RM	102		
	iii) 200 mm dia	RM	857		
2000	FENCING AND GATES.				
2001	Supplying and erecting in position 2.5 m high PVC coated gavanised chain linked fencing of minimum 8 gauge (including PVC coating) of mesh size 75 mm and galvanised concertina . The diameter of the steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. GI barbed wire fencing confirming to IS 298 at top of chain link fencing shall be provided with 4 stands of height of 600 mm including all accesories as per specification all complete. Required civil works like excavation & concreting for fencing shall be paid seperately as per respective item rate. Quoted rate for this item shall include erection / fabrication of steel post, supplying & fixing of all accessories like clips, anchors etc.as per drawing. However Material for fabrication of steel post shall be supplied free of cost by BHEL. Drawing for subject shall be provided at site during execution	SQM	2249		
2002	Supplying and fixing G.I. barbed wire in fencing including G.I clips etc. complete as per specification Required civil works like excavation & concreting for fencing shall be paid seperately as per respective item rate. Quoted rate for this item shall include erection / fabrication of steel post, supplying & fixing of all accessories like clips, anchors etc.as per drawing. However Material for fabrication of steel post shall be supplied free of cost by BHEL. Drawing for subject shall be provided at site during execution	MT	2		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
2003	Supply, fabrication and installing in position and testing galvanised MS Gates out of channels, joists, angles, flats, plates, pipes & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, ball bearing arrangements, castor wheels, etc. all complete as per drawing, specification and as directed by Engineer-in-charge with 600mm high GI barbed wire fencing at top all complete. GI barbed wire shall be paid as per Item No. 2002	MT	18		
2100	WATER SUPPLY				
2101	Providing and fixing in position tested heavy duty type chromium plated brass long neck bib cocks including sockets, union, nut etc. complete 15mm nominal bore.	NO.	112		
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc. complete as directed by Engineer 15mm nominal bore.	NO.	64		
2103	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality 25mm nominal bore.	NO.	45		
2104	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality 50mm nominal bore.	NO.	37		
2105	Providing and fixing GI pipes complete with GI sockets, unions, elbows, tees, nipples etc. and clamps including cutting and making good the walls etc. complete (internal work) 15 mm nominal bore.	RM	296		
2106	Providing and fixing GI pipes complete with GI fittings a clamps including cutting and making good the walls etc. complete (internal work) 20 mm nominal bore.	RM	373		
2107	Providing and fixing GI pipes complete with GI sockets, unions, elbows, tees, nipples etc. and clamps including cutting and making good the walls etc. complete (internal work) 25 mm nominal bore (N.B).	RM	383		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
2108	Providing and fixing GI pipes complete with GI sockets, unions, elbows, tees, nipples etc. including trenching & refilling anti-corrosive paint etc. complete (external work) 15mm nominal bore (N.B).	RM	225		
2109	Providing and fixing GI pipes complete with GI sockets, unions, elbows, tees, nipples etc. including trenching & refilling anti-corrosive paint etc.complete (external work) 20mm nominal bore (N.B).	RM	214		
2110	Providing and fixing GI pipes complete with GI sockets, unions, elbows, tees, nipples etc. including trenching & refilling anti-corrosive paint etc.complete (external work) 25mm nominal bore (N.B).	RM	169		
2111	Providing and fixing GI pipes complete with GI sockets, unions, elbows, tees, nipples etc. including trenching & refilling anti-corrosive paint etc.complete (external work) 50mm nominal bore (N.B).	RM	153		
2112	Providing and fixing 610mmx453mmx5mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets etc. complete with CP screws as per specification.	NO.	92		
2113	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc. complete as per specification.	NO.	76		
2114	Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted towel rod with C.P. brackets etc. all complete as per specification.	NO.	37		
2115	Providing and fixing C.P. soap holder mounted with C.P. screws etc.complete as per specification.	NO.	98		
2116	Providing and fixing C.P. liquid soap dispenser . Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc.complete as per specification.	NO.	98		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
2117	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. complete as per specification	NO.	38		
2118	Providing and fixing chromium plated brass shower rose with 15 or 20 mm inlet all complete.	No.	31		
2119	Providing & fixing P.V.C. /Polyethylene water tank (Syntex or equivalent) in position of 5000 litres capacity conforming to IS 12701. The work to including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc. all complete as per specification at all heights and levels	NO.	4		
2120	Providing & fixing P.V.C. /Polyethylene water tank (Syntex or equivalent) in position of 2000 litres capacity conforming to IS 12701. The work to including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc. all complete as per specification at all heights and levels	NO.	4		
2121	Providing & fixing P.V.C. /Polyethylene water tank (Syntex or equivalent) in position of 500 litres capacity conforming to IS 12701. The work to including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc. all complete as per specification at all heights and levels	NO.	13		
2122	Providing & fixing P.V.C. /Polyethylene water tank (Syntex or equivalent) in position of 1000 litres capacity conforming to IS 12701. The work to including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc. all complete as per specification at all heights and levels	NO.	10		
2200	SANITARY WORKS				
2201	Supply and fixing vitreous china wash basin size 600x450 with R.S. or C.I. brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug 32mm chromium plated brass bottle trap and waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, cutting and making good the walls where required etc. complete as per specifications	NO.	86		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
2202	Providing and fixing approved vitreous china acid/alkali resistant laboratory sink of size 600x450x200mm with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, CP brass waste and 40mm CP brass bottle trap with necessary union complete including painting the fittings, cutting and making good the wall where required as per specification.	NO.	10		
2203	Providing and fixing colour European type water closet with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre glazed stone water flushing cistern with valveless fittings, necessary C.P connections etc. complete as per specification.	NO.	41		
2204	Providing and fixing Orissa type glazed vitreous china pan conforming to IS2556 (Part 3)with foot rests and high level 12.5 litre C.I flushing cistern with valveless fittings, necessary C.P connections, foot rests shall be made of white glazed vitreous china with chequered surface allcomplete with cistern painting, C.I brackets etc. as per specification.	NO.	71		
2205	Providing and fixing wall type glazed vitreous china urinals with C.I automatic flushing cistern approximately once every five minutes for every four urinals (max.) with flush pipes, lead pipes, gratings, CP bottle traps and necessary C.P fittings all complete as per specifications.	NO.	86		
2206	Supply, laying and jointing 75mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, lead cocking, a coat of bitumenous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc. all complete and as per specifications.	RM	212		
2207	Supply, laying and jointing 100mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, lead caulking, a coat of bitumenous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc. all complete and as per specifications.	RM	227		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
2208	Supply, laying and jointing 150mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, a coat of bitumenous paint, M.S holder bats/clam lead caulking, a coat of bitumenous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc. all complete and as per specifications.	RM	186		
2209	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc. complete 150mm dia, as per specifications.	RM	238		
2210	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc. complete 200mm dia, as per specifications.	RM	231		
2211	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc. complete 250mm dia, as per specifications.	RM	231		
2212	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc. complete 300mm dia , as per specifications.	RM	1		
2213	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc. complete 500mm dia , as per specifications.	RM	78		
2214	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc. complete 600mm dia , as per specifications.	RM	41		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
2215	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc. complete 900mm dia , as per specifications.	RM	5		
2216	Providing, laying light duty non pressure NP2 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc. as per specifications for dia:				
i)	150mm	RM	113		
ii)	250mm	RM	103		
iii)	300mm	RM	180		
iv)	400mm	RM	307		
v)	500mm	RM	149		
vi)	600mm	RM	93		
vii)	750mm	RM	72		
2218	Providing and fixing C.I Manhole cover of size 600mmx450mm including frame from reputed manufacture all complete as per specifications.	NO.	19		
2219	Providing and fixing circular heavy duty man hole cover of 600mm dia with frame all complete as per specification.	NO.	9		
2220	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and watertight CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc. all complete size 100x100mm P or S Type.	NO.	12		
2221	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and watertight CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc. all complete size 150x100mm P or S Type.	NO.	17		

4X125 MW KOSTI Thermal Power Plant		RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
2222	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and watertight CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc. all complete size 150x150mm P or S Type.	NO.	13		
2223	Providing and fixing C.I. floor traps with C.P jalli complete as per specification.	NO	95		
2224	Providing and installing approved brand single tap water cooler of 80 L cooling capacity complete in all respect.	NO.	16		
2225	Providing and installing approved brand single tap water cooler of 150 L cooling capacity complete in all respect.	NO.	12		
2226	Providing and fixing white vitreous urinal partitions all complete as per specification.	NO.	59		
2701	RIVER FLOW STUDY AND C/S SURVEY "River flow study will mean finding out the max, min water level, invert level, High flood level, bed soil properties required for construction of channel, optimum angle for channel wall with the river direction, depth of channel inside the bank etc. This will be required to be done for only half the width of the river".	LS	1		

NOTES:

1	In case of omission in quoting any rate, the evaluation will be done considering the highest quoted rate obtained against that item but the work, if awarded, will be on the lowest quoted rate obtained against that item.
2	The rate shall be entered in figures as well as in words. In case of difference in rates between words and figures, the lesser of the two will be treated as valid rate.
3	The bidders shall enter both 'Unit Rate' & 'Amount'. In case of any mismatch between 'Total Amount based on Unit Rate' & 'Total Amount as quoted', the lower of the two shall be considered for evaluation and award.

	4X125 MW KOSTI Thermal Power Plant	RATE SCHEDULE CUM BILL OF QUANTITIES			
		TOTAL CIVIL WORKS FOR MAIN POWER BLOCK			
ST. NO	DESCRIPTION	UNIT	QUANTITY	RATE IN USD	AMOUNT IN USD
4	The quantities indicated against each item above are tentative and are liable to vary depending upon the site requirement. The contractor has to supply / install actual quantities as per advice of BHEL Engineer and accordingly the final contract price shall be adjusted on the basis of quantities actually erected at site & payment will also be regulated accordingly for the same. The contractor confirms that unit rate quoted above takes care of such variations during execution stage.				
5	Evaluation of the bids shall be done based on total price against this BOQ.				
6	Unit Rate' as well as 'Amount' against each item to be quoted in US Dollars (USD) only.				