



Volume I A TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS LIMITED



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Chapter - I: PROJECT INFORMATION

1.0 Project Information:

3X800 MW PVUNL PATRATU TPP PHASE-1 is being set up by PVUNL (Patratu Vidyut Utpadan Nigam Limited, a subsidiary of PVUNL Ltd in Joint venture with Jharkhand Bijli Vitran Nigam Limited).

Sl. No.	Description	Details
1.1	Location	PATRATU
1.2	Nearest Railway Station	Patratu (04Kms)
1.3	Nearest Airport	RANCHI (45Kms)
1.4	Access By Road	Patratu (04Kms)
1.5	Major Towns/Cities	Ranchi (45Kms)
1.6	Source of Water	Patratu Reservoir.
1.7	Maximum Temperature	48 degree Centigrade
1.8	Minimum Temperature	0.6 degree Centigrade

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Chapter – II: Scope of Works and Technical Specifications

2.0 SCOPE OF WORK

2.1 Scope of work:

- 2.1.1 Construction of 3 nos closed storage sheds (60m x 15m), which comprises of following, but not limited to:
 - 2.1.1.1 Execution of all civil works (i.e. foundation, plinth beam, column, tie beams, walls, foundation bolt fixing, etc.) including supply/ deployment of all consumable, T&Ps, necessary materials (except cement & reinforcement steel)
 - 2.1.1.2 Fabrication and erection of truss including supply of bolts, all necessary consumables, T&Ps, etc. (structural steel shall be supplied by BHEL but cleaning and painting is in the scope of contractor)
 - 2.1.1.3 Supply and fixing of doors, windows, louvers, ventilator, rolling shutters, etc.
 - 2.1.1.4 Micro grading and development of area around storage shed including preparation of approach
 - 2.1.1.5 Supply and fixing of AC sheets for roof cladding

2.2 The scope of work will involve following civil, structural and architectural works and shall be executed as per relevant IS codes:

- 2.2.1 Earthwork in stripping of top soil up to a maximum depth of 0.3m below ground level
- 2.2.2 Preparation of sub- grade by excavating earth to required depth for all types of soil.
- 2.2.3 Earthwork in excavation in all types of soil.
- 2.2.4 Earthwork in backfilling up to any depth below ground level.
- 2.2.5 Supplying and filling up to any depth below ground below level for grading to proper grade and level with granular moorum.
- 2.2.6 Providing and filling in trenches, plinths, area paving and other underground structures with graded stone aggregate.
- 2.2.7 Providing and placing concrete of required grade.
- 2.2.8 Providing and fixing doors, windows, ventilators, rolling shutters, louvers, etc.
- 2.2.9 Brickwork, plastering, painting, flooring, misc. work, etc.
- 2.2.10 Providing and fixing roof sheeting, rain water downcomers, etc including all consumables, bolts, etc.
- 2.2.11 Structural steel works:
 - 2.2.11.1 Loading, transportation and unloading of structural steel from BHEL store yard situated inside PVUN plant boundary, including arrangement of all necessary out pass, arrangement of vehicles, compliance to all PVUN administrative requirements, etc.
 - 2.2.11.2 Cleaning of structures steel received from BHEL
 - 2.2.11.3 Fabrication of structural steel as per drawing and direction of engineer in-charge
 - 2.2.11.4 Painting: Structural/ steel members will have 1 coat of zinc chormate primer (surface preparation of the section as per the standards to suit the climatic conditions) followed by 2 coats of high build epoxy paint.

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And any left-over civil or architectural works (of buildings/foundations) which is required for successful completion of the project, are deemed to be within the scope of this contract.

Note: The names of the structures mentioned above may change on later / change during detail engineering stage.

2.3 CIVIL AND ARCHITECTURAL WORKS

The scope covers all Civil and Architectural works within the battery limits of this Package.

The important works covered under this package are as below:

- 2.5.1** Excavation of earth and backfilling including dewatering of excavations for foundations, trenches, pits, etc. till the construction of the same is completed and disposal of surplus earth.
- 2.5.2** Construction Raft/ Foundation with pedestal for all civil structures, trenches, tunnels, sumps, grade beams, tie beams at foundation level, grade slabs, floor slabs and roof slabs at any height, equipment foundations etc.
- 2.5.3** Preparation and submission of detailed calculations, arrangement drawings and detail drawings of formwork, staging and scaffolding for all reinforced concrete structures and foundations as directed by the Engineer for his checking and approval.
- 2.5.4** Preparation of detailed working drawings and bar bending schedule for all reinforced concrete work and getting them approved before start of work by the BHEL Engineer.
- 2.5.5** Taking delivery of TMT Steel, structural steel, earthing rod, GI flat, etc. from BHEL stores/ storage yards for utilisation in construction work under this package.
- 2.5.6** Fabrication and fixing of templates/frames, inserts, fixing of anchor bolts, sleeves, and embedment etc. in concrete.
- 2.5.7** Supply of all instruments and personnel for conducting necessary tests at site as specified/as directed by the Engineer.

2.4 General Scope:

- 2.4.1** Furnishing all labour, materials, supervision, construction plans, equipment, supplies, transport, to and fro the site, fuel, compressed air, and all other incidental items and temporary works not shown on specified but reasonably implied or necessary for the proper completion, maintenance and handling over the works, except in accordance with the stipulations laid down in the contract documents and additional stipulations as may be provide by the engineer during the course of works.
- 2.4.2** 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.

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- 2.4.3 Furnishing test reports for the products used or intended to be used, if called for the specifications or if so desired by the engineer.
- 2.4.4 Giving all notices, paying all fees, taxes etc., in accordance with the general conditions of contract, that is required for all works including temporary works.
- 2.4.5 Arranging manufacturer's supervision for items of work done as per manufacturer's specifications when so specified.
- 2.4.6 Carrying out topographic survey of the entire 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 a 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.
- 2.4.7 Providing all incidental items not shown or specified but reasonably implied or necessary for the successful completion of the work in accordance with contract.
- 2.4.8 Arranging for joint checking (with BHEL) of all site construction activities Preparation of joint protocols for each & every activity and maintaining quality records for audit/inspection as per approved FQP by BHEL.
- 2.4.9 The drawings enclosed with this tender are intended to give the tenderer a general idea of the type and extent of work involved. The drawings are as such only indicative and not to be considered as the exact construction drawings.

Further this is to be noted that the drawings and the documents furnished along with this specification are the sole property of B.H.E.L. It must not be used directly or indirectly in any way detrimental to the interest of the company.

- 2.4.10 The scope of work will also include such other related works although they may not be specifically mentioned in the above paragraph and all such incidental items not specified but reasonably imply and necessary for completion of the job as a whole all as desired and as directed by the engineer.
- 2.4.11 The detail scope of work covered above is not a comprehensive list of items of work involved. The detail scope of work may vary considerably depending on the actual construction requirements as per RFC Drawings.

2.5 WORKS BY OTHERS

No work under the specification will be provided by any agency other than the contractor unless specifically mentioned elsewhere in the contract.

2.6 SITE VISIT

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Contractor should visit 3X800MW PVUN project site, to acquaint himself with the conditions prevailing at site and in and around the plant premises, together with all the statutory, obligatory, mandatory requirements of various authorities before submission of the bid.

2.7 Carrying out work by BHEL

BHEL reserves the right to withdraw/restrict/alter the quantum of works as per clause 2.7 of Vol-IC General Conditions of Contract (GCC). BHEL may carry out work through any other agency/purchase Bought Out items as per clause 2.7 of Vol-IC General Conditions of Contract (GCC).

2.8 PREAMBLE FOR THE SCHEDULE OF QUANTITIES/BOQ.

- 2.8.1** Details of the items in this Schedule shall be read in conjunction with the Corresponding BHEL specifications, drawings and other documents and shall have precedence over any contrary statement mentioned anywhere in this document.
- 2.8.2** The work shall be carried out as per construction drawings, specifications, the description of the items in this schedule and/or Engineer's instructions, Drawings enclosed with these documents are only indicative giving some idea of the type of work involved. The layout, sizes and details of the building, structures and foundations shown in tender drawings may vary at a large extent during actual construction. Final drawings will be issued progressively during the execution of the work.
- 2.8.3** Items of work provided in this schedule but not covered in the specifications shall be executed strictly as per instructions of the Engineer.
- 2.8.4** Unless specifically mentioned otherwise in the contract, the bidder shall quote his rates for the finished items and shall provide for the complete cost towards fuel, tools, tackle, equipment, constructional plant , temporary works, labour materials, levies , taxes , transport, layout, repairs, rectification, maintenance till handing over, supervision, shops, establishments, services, temporary roads, revenue expenses, contingencies, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the works according to the contract.
- 2.8.5** The rate quoted shall be inclusive of cleaning the site of any vegetation, dressing and levelling etc., required for commencement of site activities. The rates shall also be inclusive of final micro grading before handing over. No separate payment will be made towards the same.
- 2.8.6** The rate shall also be inclusive of carrying out topography survey of site to establish levels and coordinates at suitable intervals, form existing grid levels and coordinates furnished by the owner, establish bench marks, setting out the location and levels of the proposed structures, constructions and making references, pillars and other identification marks etc. No separate payment will be made towards the same.
- 2.8.7** VOID.

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~~2.8.8~~ Rates shall be quoted both in figures and in words in clear legible writing. No over writing is allowed. All scoring and cancellation should be counter signed by the bidder. In case of illegibility, the interpretation of the engineer shall be final. All entries shall be in English language.

2.8.9 Engineers' decision shall be final and binding on the contractor regarding clarification of items in this schedule with respect to the other section of the contract.

2.8.10 In case of any discrepancy between item description, relevant drawing and/or specification Clarification shall be sought at tender stage itself. Otherwise it shall be assumed that the bidder has quoted for the more stringent requirement.

2.8.11 Mix design (M 20 ,M 25, M 30/M 35) for all concreting shall be carried out either at site or from a reputed approved institute, contractor has to ensure adding of admixture and minimizing of cement content in line with IS 456 as advised by BHEL time to time without any additional cost. Bidder may be allowed to use approved available Design Mix at site with approval of Engineer Incharge. Engineer Incharge decision shall be final and binding in this regard.

2.8.12 All testing/ laboratory equipments required as per TCC/Specification is to be arranged by the contractor within quoted rate for conducting day to day. The contractor may tie up with approved/registered inspection agencies for carrying out test lab at site as described above.

(i) Installation of necessary amenities- temporary infrastructure for construction activities at Project site locations- following are the minimum amenities to be provided by the bidder without any extra cost and removal/disposal of the same in environment friendly manner after its intended use/completion of complete scope of work:

1. Labour rest sheds near work spot.
2. Canteen facility creation.
3. Drinking water facility.
4. Labour toilets near work spot in sufficient nos. with regular cleaning & maintenance arrangement
5. First Aid Facility will be maintained by BHEL and it will be on cost sharing basis.
- 6 Labour colony should have all hygienic condition, dining hall, toilets, proper sewerage system, good drinking water arrangements.

NOTE: In case of non-compliance of above points, BHEL will make penal recoveries at the rate decided at site mutually by BHEL and contractor or as imposed by PVUNL.

2.9 Hierarchy of Documents:

In case of any conflict/deviations of technical specifications with regard to any work; amongst various documents, the order of precedence shall be as follows:

- (1) Statutory Regulations

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- (2) BHEL Technical Specifications
- (3) Items in Schedule of Quantities
- (4) IS standards
- (5) Section-D: General Technical Specifications

The above hierarchy shall be followed strictly for technical requirements only to carry out works under the scope of this contract.

2.10 Construction Power (Chargeable):

- 2.10.1** Construction Power shall be made available to the Contractor at 415 V feeders of LT substation located at Single point in the plant. Contractor shall be fully responsible to make all the arrangement beyond these LT feeder points for further distribution to meet all construction power requirements for the entire area in scope of this package.
- 2.10.2** Supply, erection, testing and commissioning of 415V switchboards, power and control cables, DC Systems etc. under the Contractor's scope. All necessary statutory requirements for charging construction power Contractor's network shall be in the Contractor's scope.
- 2.10.3** Contractor shall deploy and install required energy meter, cables, fuses, distribution boards, switchboards, bus bars, earthing arrangements, protection devices and any other installation as specified by statutory authority/act. Capacitor Bank is to be arranged by vendor for power factor improvement of the system as per I. E. Rule.
- 2.10.4** Contractor shall also obtain approvals of appropriate authority and pay necessary fees, levies etc towards the clearance of such installations, prior to use. Sufficient power factor compensation equipment's like capacitor shall be provided by contractor for reactive loads like welding machines etc. In case of any fine/penalty on account of low power factor, same shall be shared by contractor proportionately according to power consumption.
- 2.10.5** Contractor shall make necessary arrangements for onward distribution of construction power taking due care of surrounding construction activities like movement of cranes & vehicles, civil work, fabrication/construction/assembly/erection etc. and safety of personnel. It may become necessary to relocate some of the installations to facilitate work by other agencies or by him.
- 2.10.6** It shall be the responsibility of the Contractor to provide, maintain the complete installation on the load side of the supply with due regard to the safety requirements at site. All cabling and installations shall comply in all respects with the appropriate statutory requirements. The installation and maintenance of this shall be done by licensed and experienced electrician.
- 2.10.7** While reasonable efforts will be made to ensure continuous electric power supply, interruptions cannot be ruled out and no claim from the Contractor shall be entertained on this account such as idle labor, extension of time etc. The Contractor shall adjust his working shift accordingly and deploy additional manpower, if necessary, so as to achieve the target.

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- 2.10.8** Contractor shall be well equipped with back-up power supply arrangement like DG set and diesel operated welding machine etc. to tackle situations arising due to failure of supplied power, so as to ensure continuity and completion of critical processes that are underway at the time of power failure or important activities planned in immediate future.
- 2.10.9** BHEL is not responsible for any loss or damage to the Contractor's equipment as a result of variations in voltage or frequency or interruptions in power supply.
- 2.10.10** The charges for the actual energy consumed by contractor shall be recovered on relevant rate of Discom and as specified in specification.
- 2.10.11** Contractor have to arrange DG with suitable capacity as backup for construction power at its own cost.

GENERAL: -

If any other voltage level (other than normally available) is required, the same shall be arranged by the contractor from power supply as above by use of suitable electrical equipment. Contractor will have to provide at his own cost necessary calibrated energy meters (tamper proof, suitably housed in a weather proof box with lock & key arrangement) at point of power supply along with calibration certificate from authorized / accredited agency for working out the power consumption. In case of recalibration required for any reason the necessary charges including replacement by calibrated meters is to be borne by the contractor. Supply of electricity shall be governed by Indian Electricity Act and Installation Rules and other Rules and Regulation as applicable. The contractor shall ensure usage of electricity in an efficient manner and the same may be audited by BHEL time to time. In case of any major deviation from normally accepted norms is observed, BHEL will reserve the right to impose penalty as deemed fit for such cases.

2.11 Construction Water:

Construction water is in the scope of successful bidder. However, if available, BHEL may provide on chargeable basis upon request by contractor

2.12 Field Quality Assurance:

The contractor shall be responsible for day-to-day quality checks of concrete and other building materials during the progress of work. All quality records and log sheets shall be maintained as per the requirement of BHEL/BHEL'S customer and as per field quality plan approved by BHEL. Contractor shall establish their own field quality lab and have tie-up with approved lab by BHEL/PVUNL in/outside of the plant if so required by BHEL/PVUNL.

2.13 Issue of cement free of cost:

- 2.13.1** Cement is issued through Bag being supplied from manufacturer/stockiest; the same shall be stored in cement stores of batching plant and necessary assistance shall be provided by contractor.
- 2.13.2** Cement shall be issued through bags as received from the manufacturer/stockiest. The theoretical weight of each bag of cement for issued purposes will be considered as 50 kg. The contractor shall be accountable for the cement issued to the contractor on this notional weight only. No claim whatsoever will be entertained because of difference

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between theoretical and actual weight of the bags of cement. Contractor shall make cement storage shed of adequate size for storing cement bags issued from BHEL.

2.13.3 The empty cement bags duly accounted for against issue shall be the contractor's property and the same shall be disposed as per statutory regulation prevailing in the project.

2.13.4 BHEL will not issue cement free of cost for factory made Product/BOI like Fly Ash Brick, Paver Block, Tiles, Hume Pipe, AAC Block etc. unless specified otherwise.

2.14 Reconciliation of steel issued by BHEL (free of cost):

2.14.1 General Notes:

- a. All steel like structural steel, reinforcement bars, MS bars, earthing rod/ GI flats, **except MS/GI/SS Hand rails** as specified in relevant BOQ and shall be issued free of cost by BHEL unless specified otherwise in BOQ for use in the work covered in this contract from BHEL stores/storage yard. The contractor shall collect these materials from BHEL stores/store yard at specified places at his own cost and store the same at the work site or in his stores as per standard norms. Materials issued will be used only for construction of permanent works. **Procurement, supply, fabrication erection and painting of MS Handrails, MS Rail, is in contractor scope.**
- b. BHEL reserves the right to recover from the contractor any loss arising out of damage/ theft or any other causes or during verification/stacking or at any time under the custody of the contractor.
- c. The contractor shall take care of material issued by BHEL and shall protect the same from damage and weathering. Contractor shall construct waterproof cement store (**capacity minimum 50 MT/ 1000 Bags**) for storing and stacking of cement **issued by BHEL free of cost.**
- d. The contractor shall in no case be entitled for any compensation on account of any delay in supply or non-supply thereof for all or any such materials. However, in case of non-availability of any specific section(s) which delays the completion of work, such cases shall be recorded separately in monthly planning format (F14) and shall be considered for time extension of contract.
- e. Contractor will have to make his own arrangement at his own cost for procurement of any other materials except as mentioned above, as required for the works and of such quality as acceptable to BHEL.
- f. The contractor shall maintain proper store account for all the BHEL issued materials and shall give **Three (03) copies of monthly-computerized reconciliation statement** of such account showing total receipt, consumption and balance at site to the BHEL. BHEL Engineer's certification for the reconciliation of steel shall be final. The detailed

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reconciliation (dia. Wise or as required) shall be done **at least once in three months (03) or before submission of final bill which comes earlier.**

- g.** Contractor shall also carryout in complete association with BHEL, the material management functions and execution like day-to-day update of materials, issued to contractor, accounting for surplus/scrap material returned etc. These functions shall also be carried out through computerized system utilizing suitable software. Contractor shall engage experienced software personnel to associate on dedicated basis for efficient discharge of the same in time.
- h.** The contractor shall solely be responsible for the safety & security of material after it is handed over and issued to contractor by the BHEL.
- i.** BHEL issued materials, shall not be under any circumstances whatsoever, and shall be taken out of the project site unless otherwise permitted by BHEL for outside job.

2.15 HANDLING OF MATERIALS ISSUED BY BHEL:

2.15.1 Materials shall be issued by BHEL based on the weighment basis/linear measurements & sectional weight. However, on specific request of the contractor **“as a special case to expedite the job”** the consignment received at BHEL stores can directly be diverted to the work site following issuance procedure of BHEL. Such direct issues shall be as per the Challan/dispatch document/LR received with the consignment. In such cases, Contractor shall do unloading of materials from trucks/lorry at their own cost.

2.15.2 All materials issued by BHEL shall be stacked, stored above ground level **by use of concrete or wooden sleepers. No materials shall remain on ground at any time.** All concrete or wooden sleepers required for stacking the materials shall be arranged by contractor (successful bidder of this package) at his own cost within the quoted rates. All other equipment’s like winches, D-Shackles, slings of various sizes, max puller, pulley blocks, jacks, trucks, trailers etc. Required for such handling of steel from BHEL stores/storage yard etc. Shall be arranged by contractor within quoted/accepted rates.

2.15.3 The contractor shall take delivery of the materials from the designated place within the project premises at his own cost and store the same at his stores as per standard norms. Open land for such purposes shall be provided by BHEL on free of cost basis based on availability. Temporary barbed wire fencing of the open storage yard is to be done by the contractor and is included under the scope of his work. Contractor shall also remove grass, bushes, trees etc wherever required off the land provided to him and shall make proper continuous up keeping of the open yard /land by removing grass, bushes trees etc and same is included under the scope of his work & No extra payment shall be made to the contractor in this regard. The bidder shall make complete arrangement of necessary security personnel’s to safeguard all such materials in his custody. Materials issued will be used only for construction of permanent works. The contractor shall take care of material issued by BHEL and shall protect the same from theft, damage and weathering. Excessive rusting of

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steel in custody of agency/contractor must be avoided. In case, due to any cause attributable to the contractor, such rusting of steel occur rendering the same unusable, then such quantity of steel shall be recovered from the interim payment at the penal rate specified in the tender.

2.16 ISSUE OF STEEL.

2.16.1 The steel shall be issued to the contractor on the following basis:

- i. Structural Steel: Weighment basis (Unit – MT)
- ii. Reinforcement Steel: Weighment basis (Unit-MT)

2.16.2 All the steel (structural, reinforcement etc as per item) issued by BHEL shall be properly accounted for. The total quantity of steel required for the work will be calculated from the approved Bar Bending schedule, fabrication drawings, approved laps, chairs and lugs etc. The measurement for payment as well as for accounting shall be based on the sectional weights as indicated in the following IS/BS/EN specifications.

Sr No	Name of Standard	Name of Section
1	IS: 808-latest revision	Beams, Channels and Angles
2	IS: 1730-latest revision	Plates, Sheets and Strips/Flats
3	BS4-1: latest revision	UB/UC sections
4	IS: 12778/equivalence with EN-19-57	For NPB sections
5	IS: 12778/equivalence with EN-53-62	For HE/WPB sections
6	IS: 1786 or grade -1 of IS432 (Part-I)	Rounds including deformed high yield strength bars.

In case any such sectional weights are not available in the above documents, the manufacturer recommendation shall be binding.

2.16.3 The steel issued to the contractor shall be mainly in standard length and sections as received from the supplier. However, the contractor shall be bound to accept the steel in length as available in the project stores, no claims for extra payment because of issue of non-standard length will be entertained.

2.16.4 The contractor shall satisfy himself of the quality and quantity of the materials at the time of taking delivery from BHEL stores. No claims whatsoever will be entertained by BHEL because of quality or quantity after the materials are taken by the contractor from BHEL stores.

2.16.5 The contractor shall submit to BHEL, a statement indicating estimated quantity of **cement and steel** required during a quarter. In addition, the contractor shall also furnish the

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estimated requirement of steel during a month by the third week of the previous month indicating his requirement.

- 2.16.6** Following shall be limit for the maximum quantity of BHEL issue materials that would be with the contractor at any point of time when work is in progress (excluding what has already been incorporated in the works).

SL No.	ISSUE OF MATERIALS	MAX QUANTITY IN CONTRACTORS STORE
01	Reinforcement steel, earthing rod/GI flat, GI grating	ONE MONTH
02	Structural Steel	ONE MONTH
03	Cement	ONE MONTH

- 2.16.7** Bidders shall ensure that no lamination material is taken over by them from BHEL.

- 2.16.8** The contractor must note that cement and steel required for the contractor's enabling job like store/ site office/batching plant/temporary works etc. shall be arranged by the contractor at his own cost.

2.17 RETURN OF MATERIALS

- 2.17.1** **Return of Cement:** Sealed cement bags remaining unused and in perfectly good condition at the time of completion or termination of the contract shall be returned promptly, (within 15 days from assessment) if BHEL/ engineer is satisfied of the physical condition of the cement. Return of such cement to the project stores / place as identified within the project area by engineer/ BHEL will not be entitled to handling and incidental charges. Surplus sealed and good conditioned cement bags will be taken back on weighment basis.

- 2.17.2** **Return of Reinforcement Steel and Structural Steel including Scrap:** All surplus steel and all wastage materials will be taken back on weighment basis. Surplus, unused and untampered steel shall be sorted section-wise and returned separately at a place directed by BHEL/Engineer within the project area. Return of such materials will not be entitled to any handling and incidental charges. All wastage / scrap (including melting scrap, wastage, and unusable scrap) shall be promptly returned to the stores and a receipt obtained for material accounting purposes. Return of such material will not be entitled to any transportation and incidental charge. Scrap for reinforcement steel and structural steel shall be returned separately.

2.18 Scrap and Serviceable Materials:

- 2.18.1** All structural steel of length above 2 M except M.S Plate shall be considered as **serviceable materials** provided the materials is in good and acceptable condition. Structural steel in length less than 2 M Shall be treated as scrap.
- 2.18.2** Plates having both side greater than 1 Meter OR if any side is less than 1 M but greater than 0.5 M and the total area is equal or greater than 2 sq. Meter shall be considered as **serviceable material**.

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2.18.3 All pipe measuring 2 M and above in length shall be treated serviceable materials provided they are in good and acceptable condition. Pipe in less than 2 M length shall be treated as Scrap.

2.18.4 All TMT measuring 3 M and above in length shall be treated as **serviceable material** provided they are in good acceptable condition. TMT in less than 3 M shall be treated as scrap.

2.19 Cement, Steel Consumption and wastage:

2.19.1 Cement Consumption:

The theoretical consumption of cement shall be based on the following:

- a. For design mix concrete as per approved design mix.
- b. For nominal mix concrete work, as per minimum cement as specified or as approved by engineer-in-charge.
- c. For item of works, where volume mix is permitted in writing by the BHEL, for masonry works, plaster other miscellaneous items, the cement consumption shall be governed by the “Statement of cement consumption” attached to the DSR-latest revision unless otherwise specified in the specifications or the drawing of contract or mutually agreed by engineer-in-charge and the contractor.
- d. Actual consumption = Issue – Surplus/ unused quantity of cement returned in good condition by the contractor to store. (No sweep cement will be taken back by BHEL).

2.19.2 Cement Wastage:

- a. **Allowable wastage:** One and half percent (+1.5%) of theoretical consumption of cement.
- b. For any material issued by BHEL to the contractor free of cost, and which is not accounted for by the contractor to BHEL, then recovery for such material shall be affected at penal rates.

Sl no.	Cement consumption	Basis of issue & penal recovery
C-1	Theoretical consumption (without considering any wastage or loss).	Free
C-2	Actual consumption being Limited to one and half percent (+1.5%) of aforesaid theoretical consumption towards allowable wastage.	Free
C-3	Actual consumption beyond one and half percent (+1.5%) of above (C-1).	Penal rate

2.19.3 Reinforcement Steel, MS earthing rod, consumption

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The theoretical consumption of various sections and/or diameter of reinforcement and earthing rod steel shall be based on approved construction drawing and bar bending schedule. Weight shall be calculated considering the sectional weights as per Indian standards. No extra cost shall be payable to the contractor for any deviation in weights for the different procedures adopted for issue and calculation of the theoretical consumption including rolling tolerances.

- a. Actual consumption = Issue – Surplus.
- b. Surplus = un-tampered, unused, uncut QTY of steel **including serviceable material** returned by the contractor to BHEL store along-with relevant documents.
- c. Wastage = Actual consumption – Theoretical consumption.

2.19.4 Reinforcement Steel, MS earthing rod, Wastage

- a. **Allowable Wastage:** (+3%) of the theoretical consumption shall be considered as allowable wastage.

Wastage and scrap shall be as per actual weightment basis.		
Sl no.	Reinforcement steel & MS earthing rod	Basis of issue & penal recovery
R-1	Theoretical consumption (without considering wastage and scrap or loss)	Free
R-2	Wastage limited to plus THREE percent (+3%) of aforesaid theoretical consumption (R-1) towards allowable wastage.	Free
R-3	Wastage beyond THREE percent (+3%) of the theoretical consumption above (R-1).	Penal rate

2.19.5 Structural Steel (Rolled Sections and Plates etc.) Consumption

The theoretical consumption of various sections shall be based on approved drawings. Weights shall be calculated considering the sectional weights as per Indian standard. No extra shall payable to the contractor for any deviation in weights for the two different procedures adopted for issue and calculation of the theoretical consumption including rolling tolerances.

- a. Actual consumption = Issue – Surplus.
- b. Surplus = un-tempered, unused, uncut quantity of steel **including serviceable material** returned by the contractor to BHEL store.
- c. Wastage = Actual consumption – Theoretical consumption.

2.19.6 Structural Steel Wastage

- a. **Allowable wastage:** 4% (FOUR percent) of the theoretical consumption shall be considered. Wastage shall be considered as cut pieces and scrap material, measured as per actual weightment basis. Invisible wastage, if any, shall be considered to be included in the specified 4 % allowable wastage.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: Scope of Works and Technical Specifications

Sl no	Structural steel	Basis of issue & penal recovery
S-1	Theoretical consumption (without considering any wastage, scrap or loss) as per specification & drg.	Free
S-2	Wastage limited to plus four percent (+4%) of the aforesaid theoretical consumption (S-1) towards allowable wastage.	Free
S-3	Wastage beyond four percent (4%) of the aforesaid theoretical consumption (S-1).	Penal rate

2.20 **Reconciliation of Materials:**

- 2.20.1** The contractor shall submit a reconciliation statement of cement and steel issued to the contractor with each RA Bill.
- 2.20.2** At the time of submission of bills, the contractor shall properly account for the material issued to him as specified herein to the satisfaction of BHEL certifying that the balance material are available in the contractor custody at site.
- 2.20.3** At the time of submission of bills, if it is noticed by BHEL that the wastage is high and calls recovery at the penal rate, then, BHEL will proceed for recovery for the excess wastage as per penal recovery rates as specified.
- 2.20.4** The reference drawings for actual material consumption to be used for the purpose of reconciliation shall be drawings prepared by the BHEL and drawings approved by BHEL for fabrication works and such other drawings approved by BHEL. This shall also include the bar bending schedule prepared by the contractor and approved by BHEL.

2.21 **Recovery of Materials (Penal Rates):**

If wastage exceeds the specified limit, the recovery of excess wastage shall be made from monthly RA Bills as per following penal rates if material Supply is in BHEL SCOPE:

Sl. No.	Item	Penal rate (Rs)
P-1	Cement (OPC/ PPC/ PSC).	6,500 per MT
P-2	Reinforcement steel and MS earthing rod/GI flat	65,000 per MT
P-3	Chequered Plates(if supplied by BHEL) and MS plates	75,000 per MT
P-4	MS Flats, beams, channel, angels etc. (Rolled Sections)	65,000 per MT
P-5	Foundation bolts if supplied by BHEL	90,000 per MT

Please note Penal Rate will be 1.3 Times the actual cost to BHEL or Rate mentioned in Table whichever is higher.

2.22 **Procurement and Testing of Materials by Contractor:**

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: Scope of Works and Technical Specifications

Material required for the entire job (other than issued by BHEL as explained above) like sand, aggregates, windows, doors, ventilators, Foundation Bolt, MS Rail, rolling shutter, sanitary fixtures, painting & finishing material, electrical fittings and wiring material and all other material required for the completion of entire scope, has to be arranged by the contractor, except those specifically indicated as BHEL scope of supply. BHEL/ PVUNL reserves the right to reject any material not found satisfactory. Apart from the above, it shall be the responsibility of contractor to get materials procured from outside, should get laboratory approved by BHEL/PVUNL to ascertain the quality if insisted by BHEL/PVUNL.

Rate quoted shall be inclusive of all such contingencies and no additional payment shall be made on this account. For this purpose, sample shall be collected at site in presence of BHEL/PVUNL representative.

Bidders are requested to have pre-bid visit/ inspection of site to make them fully acquainted with the site situation & nature of job. No claim shall be entertained at later date on account of non-familiarization of site condition.

Contact Details of persons for Site Visit:

Sh Ashish Ranjan
BHEL Site Office
3x800 MW PVUNL Patratu STPS
Email: aranjan@bhel.in
Ph no: +91-7894188572

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter – III: Facilities in the scope of Contractor/BHEL

Sl. No.	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.1	PART I ESTABLISHMENT			
3.1.1	FOR CONSTRUCTION PURPOSE:			
a	Open space for office (as per availability)	Yes		BHEL may provide free of charge limited open space for office and store as and where made available by its customer. Also refer clause no. 3.9.2
b	Open space for storage (as per availability)	Yes		
c	Construction of bidder's office, canteen and storage building including supply of materials and other services		Yes	
d	Bidder's all office equipments, office / store / canteen consumables		Yes	
e	Canteen facilities for the bidder's staff, supervisors and engineers etc		Yes	
f	Firefighting equipments like buckets, extinguishers etc		Yes	
g	Fencing of storage area, office, canteen etc of the bidder		Yes	
3.1.2	FOR LIVING PURPOSES OF THE BIDDER			
a	Open space for labour colony (as per availability)		Yes	
b	Labour Colony with internal roads, sanitation, complying with statutory requirements		Yes	
3.2.0	ELECTRICITY			
3.2.1	Electricity for construction 415 V (To be specified whether chargeable or free)			
a	Single point source of 415 V	Yes		Chargeable. Bidder to make its own arrangement of distribution of electricity at its own cost.

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter – III: Facilities in the scope of Contractor/BHEL

Sl. No.	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
	PART I			
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.2	Electricity for the office, stores, canteen etc of the bidder(to be specified whether chargeable or free)			
a	Single point source		Yes	
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.3	Electricity for living accommodation of the bidder's staff, engineers, supervisors etc		Yes	Contractor has to make his own arrangement.
a	Single point source		Yes	
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.3.0	WATER SUPPLY			
3.3.1	For construction purposes:(to be specified whether chargeable or free)			
a	Making the water available at single point		Yes	As per Clause no 2.11
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.3.2	<u>Water supply for bidder's office, stores, canteen etc</u>			
a	Making the water available at single point		Yes	
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.3.3	<u>Water supply for Living Purpose</u>			Contractor has to make his own arrangement.
a	Making the water available at single point		Yes	
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.4.0	LIGHTING			

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter – III: Facilities in the scope of Contractor/BHEL

Sl. No.	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
	PART I			
a	For construction work (supply of all the necessary materials) 1. At office/storage area 2. At the preassembly area 3. At the construction site /area		Yes	
b	For construction work (execution of the lighting work/ arrangements) 1. At office/storage area 2. At the preassembly area 3 At the construction site /area		Yes	
c	Providing the necessary consumables like bulbs, switches, etc during the course of project work		Yes	
d	Lighting for the living purposes of the bidder at the colony / quarters		Yes	
3.5.0	COMMUNICATION FACILITIES FOR SITE OPERATIONS OF THE BIDDER			
a	Téléphone, fax, internet, intranet, e-mail etc.		Yes	
3.6.0	COMPRESSED AIR wherever required for the work		Yes	
3.7.0	Demobilization of all the above facilities		YES	
3.8.0	TRANSPORTATION			
a	For site personnel of the bidder		Yes	
b	For bidder's equipments and consumables (T&P, Consumables etc)		Yes	

Sl. No.	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
	PART II			
	3.9.0 ERECTION FACILITIES			
3.9.1	Engineering works for construction:			NOT APPLICABLE
a	Providing the erection/constructions drawings for all the equipment covered under this scope	Yes		
b	Drawings for construction methods	Yes	Yes	In consultation with BHEL

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – III: Facilities in the scope of Contractor/BHEL

Sl. No.	Description PART II 3.9.0 ERECTION FACILITIES	Scope / to be taken care by		Remarks
		BHEL	Bidder	
c	As-built drawings – where ever deviations observed and executed and also based on the decisions taken at site- example – routing of small bore pipes		Yes	Changes are to be marked in drawing & handover to BHEL on completion of work.
d	Shipping lists etc for reference and planning the activities			NOT APPLICABLE
e	Preparation of site erection schedules and other input requirements		Yes	In consultation with BHEL
f	Review of performance and revision of site erection schedules in order to achieve the end dates and other commitments	Yes	Yes	In consultation with BHEL
g	Weekly erection schedules based on SI No. e		Yes	In consultation with BHEL
h	Daily erection / work plan based on SI No. g		Yes	In consultation with BHEL
i	Periodic visit of the senior official of the bidder to site to review the progress so that works is completed as per schedule. It is suggested this review by the senior official of the bidder should be done once in every two months.		Yes	
j	Preparation of preassembly bay			NOT APPLICABLE
k	Laying of racks for gantry crane if provided by BHEL or brought by the contractor/bidder himself			NOT APPLICABLE
L	Arranging the materials required for preassembly			NOT APPLICABLE

3.9.2 BHEL may provide free of charge limited open space, for office & storage shed, as per availability. 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.

Note: Due to space constraint at site, contractor may have to arrange for open space for Batching Plant, Storage Area etc. outside the plant premises. Any cost implication of the same shall be to the account of contractor and no extra payment shall be made for any such arrangements made by contractor (if required).

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – IV: T&Ps AND MME TO BE DEPLOYED BY CONTRACTOR

4.1 Tools & Plants:

Nos of T&Ps to be deployed at site shall be decided with respect to monthly plan and review formats (F 14) based on site requirement. Below given Nos are tentative for planning purposes by the bidder.

Sl. No.	Description of T&P	Quantity
1	Concrete mixer of adequate capacity Alternately, tie up can be made with existing batching plant after obtaining approval from Engineer In- Charge	01 Nos
2	Concrete Pump (30 Cum/Hr min capacity & lift 50M)	As applicable
3	Concrete Transit Mixer	As applicable
4	Electrical Winch (of required capacity)	Not applicable
5	Vibrators (electrical/diesel)	1 Nos.
6	Air Compressor/ Air Blowers	As applicable
7	Concrete Breaker (HILTI/STANLEY or equivalent)	As applicable
8	Welding Machine	As per requirement
9	Self-priming Dewatering pump of various capacity (Diesel/Electric) From 3HP to 10 HP	As per requirement
10	Curing / dewatering pump – 1.5 / 2 HP	As per requirement
11	Hydraulic Excavator /Poclain	01 Nos as per requirement
12	Hydraulic Excavator with Rock Breaker Attachment	As applicable
13	JCB	1 nos as per requirement
14	Trailer (20 MT Cap)	As applicable
15	Tractor mounted Grader/Loader	As applicable
16	Hydra crane (12/14 MT Capacity)	As per Requirement
17	<ul style="list-style-type: none"> • Ply Shuttering board with adequate supporting structure – (Old steel shuttering plates will not be allowed). • Steel shuttering (fare face) 	Lot (As per requirement)
18	<ul style="list-style-type: none"> • Pipe Scaffolding, Clamps / Swivel Couplers (One/Two Way), Props, Jacks, Screw Nos, MS Pipes, Wooden Battens, Planks, Bullies, H Frames, Tie Rods with Nuts, Adjustable Acro Span (Considering Individual Areas) 	As per requirement.
19	Dumper	01 Nos as per requirement
20	Reinforcement bending machine	01 Nos as per requirement
21	Reinforcement cutting machine	01 Nos as per requirement
22	MS scaffolding pipe with matching Couplers	As per requirement

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter – IV: T&Ps AND MME TO BE DEPLOYED BY CONTRACTOR

Sl. No.	Description of T&P	Quantity
23	Plate Compactor	As per requirement
24	Total Station	As per requirement
25	Auto level & staff	As per requirement
26	Mini Vibro Roller	As per requirement
27	Vibro roller 10-12MT	As per requirement
28	Water Tanker	As per requirement
29	Man lift crane of Minimum 20 mtr reach	Not applicable
30	All Equipment for area Lightning like Halogen bulbs and Portable Light Towers etc for General Area Illumination	As per requirement
31	COMPUTER with printing/photocopying & CD writing facility	1 set as per requirement as applicable
32	COMMUNICATION Facilities – Landline, WLL, Mobile, FAX, etc.	As per requirement and as applicable
<u>33</u>	<u>DG Set – 1 nos, Capacity 125 KVA</u>	Not applicable
<u>34</u>	<u>Water sprinkler- 1 no , water sprinkling on daily basis</u>	Not applicable

4.2 Measuring and Monitoring Devices (MMD)

To be finalized at site as per requirement.

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter – V: T&Ps AND MME TO BE DEPLOYED BY BHEL ON
SHARING BASIS

5.1 BHEL WILL NOT PROVIDE ANY T&P's FOR THIS WORK.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VI: TIME SCHEDULE

6.0 Time Schedule and Mobilization:

6.1 Initial Mobilization and Time Schedule:

After issuance of LOI (through email/fax/courier), Contractor shall report to the GM (Patratu)/Construction Manager of BHEL at site within 15 days and make KOM (Kick of Meeting) for mobilization of manpower, T&P, Date of start of work and detailed completion program.

The contractor has to subsequently augment his resources in such a manner that the entire works are completed within the **contract period of (8) Eight months** in a manner required by BHEL to match with the project schedule.

Date of start (DOS) of works shall be reckoned as 15 Days after date of Issuance of LOI (Letter of Intent) or date of handing over of site whichever is later. However, the date of start may be reviewed and changed accordingly by Construction Manager/Site-in-Charge/Project Manager of BHEL with recorded reasons in the KOM (Kick of Meeting).

6.2 Contract Period and Schedule of Completion:

The entire work under the scope of this contract shall be carried out in such a manner that the following listed major milestones are achieved as per completion schedule given against each activity & released for erection by other agency.

SI No.	Activity	Period of release of fronts from DOS
1.	Foundation of shed 1	1 Months
2.	Foundation of shed 2	2 months
3.	Foundation of shed 3	3 months
4.	Column upto bolt level shed 1	4 months
5.	Column upto bolt level shed 2	5 months
6.	Column upto bolt level shed 3	6 months
7.	Brick work and flooring for shed 1	4 months
8.	Brick work and flooring for shed 2	5 months
9.	Brick work and flooring for shed 3	6 months
10.	Truss and roof sheeting for shed 1	7 months
11.	Truss and roof sheeting for shed 2	7 months
12.	Truss and roof sheeting for shed 3	7 months
13.	Other Misc./ Finishing Works	8 Months

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VI: TIME SCHEDULE

6.3 PROVISION OF PENALTY IN CASE OF SLIPPAGE OF INTERMEDIATE MILESTONES:

In case of slippage of Two Major Intermediate Milestones, mentioned as M1 & M2 hereunder, Delay Analysis shall be carried out on achievement of each of these two Intermediate Milestones in reference to F-14.

Milestones	Activity	Period of release of fronts from DOS
M1	Column upto bolt level shed 1	4 th Month
M2	Roof sheeting of storage shed 1	7 th Month

Note: Refer clause no 14 of NIT “Annexure-04” regarding modalities against provision of penalty in case of slippage of Intermediate Milestones.

Notes:

- Common activities like Plant roads, drains, fencing, paving and other misc. works etc. shall be completed in Phase wise manner / Instruction of Engineer within the Contractual time as applicable in accordance with provision of contract.
- Contractor shall note that individual milestones as above shall be achieved as per schedule furnished above.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VII: TERMS OF PAYMENT

7.0 Terms of Payment:

7.1 Progressive Payment / Final Payment:

The payments for works under the scope of this contract shall be as per clause no 2.6; clause 2.22; clause 2.23 of General Conditions of Contract and Chapter X of Special Conditions of Contract. However, Clause No. 10.5 on RA Bill Payments, in Volume-IB, Chapter-X of SCC, is revised as under:

The payment for running bills will normally be released within 30 days of submission of running bill complete in all respects with all documents. It is the responsibility of the contractor to make his own arrangements for making timely payments towards labour wages, statutory payments, outstanding dues etc. and other dues in the meanwhile.

Few points of consideration are as below:

7.1.1 The measurements sheets of work done in a month shall be submitted in triplicate duly agreed/signed by BHEL Engineer. The contractor shall extend all necessary assistance for verification of measurements of works without any extra cost.

7.1.2 The RA bill payments are interim payments and bills shall be submitted in prescribed formats.

7.1.3 Recoveries on account of electricity, water, statutory deductions etc. shall be made as per terms of contract.

7.1.4 BHEL will release payment through **Electronic Fund Transfer (EFT)/RTGS**.

7.1.5 Final bill shall be submitted after completion of works and upon material reconciliation along with all prescribed formats.

7.2 In order to facilitate part payment, BHEL Site Engineer at his discretion may further split the contracted rates/percentages to suit site conditions, cash flow requirements according to the progress of work as per Vol. IC - GCC clause 2.23.1 (v), however following points are to be noted:

- a) Provided no 'part' payment is recommended till 25% of work in the item rate is executed.
- b) Payment of item rate to be made in not more than three instalments, last stage payment to be not lower than 20% of the item rate.

7.3 Extra/ Supplementary items of work:

The works shall be regulated as per clause no 2.15 and clause no 2.16 of General Conditions of Contract.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VIII: Taxes and Other Duties

8.0 TAXES, DUTIES, LEVIES (Rev 10 dated 19/08/2017)

8.1 The successful bidder shall furnish proof of GST registration. Registration should also bear endorsement for the premises from where the billing shall be done by the successful bidder on BHEL for this project/ work.

8.2 The contract price shall be inclusive of all taxes including Goods and service tax (GST), GST Cess, BOCW Cess, license charges, deposits, duties, tools, royalty, commissions or other charges, if any. Bidder should also note that no other taxes including new taxes, if imposed subsequently and variation in any taxes shall not be reimbursed by BHEL. In case, BHEL has to pay any of such taxes, BHEL shall have the right to recover the same from contractor's bills or otherwise as deemed fit.

8.3 GST charged in the Tax Invoice/Debit note by the contractor shall be released separately to the contractor only after contractor files the outward supply details in GSTR-1 on GSTN portal and such input tax of the invoice is matched with corresponding details of outward supply of the contractor and has paid the GST at the time of filing the monthly return.

8.4 Bidder shall note that the GST Tax Invoice complying with GST Invoice Rules (Section 31 of GST Act & Rules referred there under) wherein the 'Bill To' details will as below:-

BHEL GSTN - **As per annexure-1**

NAME - Bharat Heavy Electricals Limited

ADDRESS - Site address

8.5 In case of raising any Supplementary Tax Invoice (Debit / Credit Note) Bidder shall issue the same containing all the details as referred to in Section 34 read with rule 53.

8.6 Bidder shall comply with the Time limit prescribed under the GST Law and rules thereof for raising of the tax invoice.

8.7 Bidder shall upload the Invoices raised on BHEL in GSTR-1 within the prescribed time as given in the GST Act. Bidder shall note that in case of delay in declaring such invoice in your return and GST credit availed by BHEL is denied or reversed subsequently as per GST Law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from the bidder along with interest levied / leviable on BHEL.

8.8 Way Bill: Successful Bidder to arrange for way bill / e-waybill for any transfer of goods for the execution of the contract.

The Bidder has to make their own arrangement at their cost for completing the formalities, if required, with Issuing Authorities, for bringing materials, plants & machinery at site for execution of the works under this contract, Road Permit/ Way Bill, if required, shall be arranged by the contractor and BHEL will not supply any Road Permit/ Way Bill for this purpose.

8.9 TDS under Income Tax shall be deducted at prevailing rates on gross invoice value from the running bills unless exemption certificate from the appropriate authority/ authorities is furnished.

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter-VIII: Taxes and Other Duties

8.10 TDS under GST (as & when applicable) shall be deducted at prevailing rates on applicable value from the running bills

Annexure-1
State wise GSTIN Nos of BHEL

Sl. No	Projects under state	GSTIN
1	Andhra Pradesh	37AAACB4146P7Z8
2	Bihar	10AAACB4146P1ZU
3	Chhattisgarh	22AAACB4146P1ZP
4	Gujarat	24AAACB4146P1ZL
5	Jharkhand	20AAACB4146P5ZP
6	Madhya Pradesh	23AAACB4146P1ZN
7	Maharashtra	27AAACB4146P1ZF
8	Orissa	21AAACB4146P1ZR
9	Telangana	36AAACB4146P1ZG

TECHNICAL CONDITIONS OF CONTRACT (TCC)
CHAPTER IX – Drawings

Relevant Drawings are uploaded as File Titled 'Drawings'

TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER X – Tentative Manpower Requirements

10.0 Tentative Manpower Requirements:

1. **Project manager – 01** with adequate experience of minimum 8Years in Industrial Foundation, Building Civil & architectural Works.
2. Experienced Civil Engineers: 01 Head
3. Experienced Foreman / Supervisors –02 heads
4. Stores, Gate Pass – 01 head
5. Accounts & Administration- 01 head
6. HSE stewards – 01 heads
7. Surveyor – as per requirement
8. Operator, Licensed Electrician, Mechanic - As per requirement
9. Experienced Carpenters & Helpers – lot for similar nature of work
10. Experienced Bar Benders & Helpers – lot for similar nature of work.
11. Security Guards (Round The Clock) – As per requirement

10.1 Deputation of above man-power shall be jointly decided at site in line with construction schedule.

10.2 **Engineer/ supervisor for other functions like store & purchase, material management, planning, finance, administration & liaison etc are to be provided as per site requirement and not considered above.**

10.3 In the event of non-deputation of engineer/supervisor by the bidder as per above agreed schedule, BHEL shall reserve the right to deduct Rs 50,000.00 per man-month for engineer, Rs 35,000.00 per man-month for the supervisor/safety officer/chemist and Rs. 30,000 per man-month for safety supervisor from RA bills. Further induction of manpower regarding site supervisor & site engineer will be decided at site as per requirement without any financial implication.

10.4 BHEL reserves the right to reject or approve the list of personnel proposed by the contractor. The persons whose bio-data have been approved by BHEL will have to be posted at site and deviation in this regard will not be permitted unless specific & reasonable justification is made.

10.5 In addition to above, a well experienced qualified engineer to be designated, as 'Project Co-coordinator', shall be deployed by the contractor. Such engineer shall have adequate exposure on the job and shall remain fully involved in all planning activities, guidance etc. to contractor's own team during the complete execution period of contract.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER X – Tentative Manpower Requirements

The contractor should also submit the fitness/calibration certificate for T&Ps regularly and renew as per applicable IS standards and statutory requirements. The tools & tackles shall not be removed from site without written permission of BHEL.