



Bharat Heavy Electricals Limited

(A Government of India Undertaking)

BOILER AUXILIARIES PLANT

RANIPET-632 406 (TN)

Civil Projects & Services

Phone No. 04172-254615 / 284632

NOTICE INVITING TENDER

1. Tender Number : BAP:CF:OT: 05/2015-16 Dt. 09.06.2015
2. Name of work : Engineering Consultancy for Architectural, Civil, Structural design and drawings for RODM related structures at Ennore SEZ.
3. Completion Time : 13 months.
4. Estimated Cost : Not applicable
5. Document cost : Nil
6. Earnest Money Deposit : 1,00,000/-
7. Last Date & Time for receipt Of Completed Tender.
 - Technical bid : Before 15:00 Hrs. on 07.07.15.
8. Date & Time of tender Opening:
 - Technical bid : At 15:00 Hrs. on 07.07.15.
9. Place of submission of Tender: To be dropped in Tender box at
Office of Deputy General Manager / Civil
Projects & Services, BHEL / BAP, Ranipet-6
Tamil Nadu

This tender document contains **85** pages including the following.

Issued to M/s:



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STANDARD TERMS & CONDITIONS (FOR GUIDANCE TO THE CONSULTANTS)

A] ELIGIBILITY CRITERIA FOR ENGINEERING CONSULTANCY WORKS FOR BHEL, RANIPET

1) Experience of having successfully completed similar works during the last 7 years as on 31.03.2015 for Government Departments, Government Undertakings **reputed private sectors** etc.

- a) Three similar completed consultancy works costing not less than the amount equal to 40% of the estimated amount.
- b) Two similar completed consultancy works costing not less than the amount equal to 50% of the estimated amount.
- c) One similar completed consultancy work costing not less than the amount equal to 80% of the estimated amount.

2) The tenderer should have designed the buildings, tanks & foundations for use in Fertilizer / Power plant, chemical industry of similar works.

B] MANDATORY COMMERCIAL ACCEPTANCE TERMS

Terms of Payment:

1. No advance will be paid on any account.
2. Being an item rate contract payment will be made upon completion of each item as indicated in the schedule.
3. Interim payment shall be released as detailed below:
 - i. 60% on submission of design & detailed drawing for preliminary approval
 - ii. 30% on submission of design & detailed drawing for final approval
 - iii. 10% on submission of final drawings for distribution.
4. Security Deposit recovered from running bills will be released against submission of performance bank guarantee valid up to the warranty period of one year.

C] Submission of Offer

TENDERS

Sealed tenders super-scribing Tender Number, Due Date & Firm's Name shall be addressed to:

Deputy General Manager / Civil Projects & Services,
Bharat Heavy Electricals Limited,
Ranipet – 632 406, Tamilnadu,

So as to reach the office on or before the date and time specified in the tender.

It shall contain two separate sealed covers put in a common envelope. **Sealed envelope super-scribed, with Tender Number, Name of work, Tender Due Date & Supplier's Name containing:**

Cover I: Qualifying Requirements, Techno-Commercial:

Sealed Cover super-scribed "Cover I – EMD amount, Qualifying Requirements, Techno-Commercial and Un-priced Bid" containing:

Submittals:

- a. **Non-Refundable Tender Fee** favoring Bharat Heavy Electricals Ltd., Ranipet – 632 406 for value of tender document, as called for,



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- b. **Supporting documents** to substantiate their capacity viz manpower, machineries, financial statements, etc., as called for in the check list.
 - c. **Customer list** with their full address including detail of contact person with phone no., fax no. & e-mail ID (if any) to whom the work has been done for the past five years. The date of completion should also be indicated,
 - d. **Annual Reports** giving the audited Profit & Loss account and Balance Sheet for the last three financial years.,
 - e. **Certificate** from customers/end users for satisfactory performance of the work.
 - f. **BHEL registered Contractors:** Vendors registered with any unit of BHEL, shall give details of their registration along with the category registered for. Such Contractors may be exempted from submitting their annual reports.
 - g. **Authorization Letter:** Such of those tenderers who wish to participate in the Tender Opening, should attach an authorization letter which shall be duly signed and stamped in original, identifying the representative to be deputed for tender opening.
 - h. **Technical qualification:** The vendors who have experience in designing structures for thermal power plants / Desalination plants are only eligible to quote for this work.
 - i. **EMD:** The EMD for this work is Rs. 1,00,000/- . The EMD shall be in the form of DD in favour of "Bharat Heavy Electricals Limited, payable at Ranipet 632406" through any nationalized bank.
EMD by the tenderer will be forfeited if:
 - i. After opening the tender, the tenderer revokes his/their tender within the validity period or increases his earlier quoted rates.
 - ii. The tenderer 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.
 - iii. EMD given by all unsuccessful tenderers shall be refunded normally within 15 days after acceptance of award of work by the successful tenderer.
 - iv. EMD shall not carry any interest.
 - j. Complete technical Offer with details, catalogues, drawings,
 - k. Un-priced bid (i.e. Price bid without Price),
 - l. Filled-in BHEL's Technical Specification format enclosed with the Tender document,
 - m. All relevant enclosures of above documents / formats.

Note:

- i. Cover I received without EMD and / or all Supporting Documents as specified above will lead to rejection of the offer.
- ii. The Cover II of such offerers shall not be opened and they would not be eligible to participate in the tender further.
- iii. The Applicable Tender Fee would be available in the Inquiry Sheet of the Tender Document
- iv. Optional items offered, if any, would not be considered for evaluation. Acceptance of such optional item/s will be at the sole discretion of BHEL.



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- v. No changes shall be entertained once the bid is opened unless otherwise specifically agreed to by BHEL.

Sealed envelope super-scribed (Price bid), with Tender Number, Item Name, Tender Due Date & Name of the Supplier, containing:

Sealed Cover super scribed "Cover II –Price Bid" containing:

Price Bid (i.e., Un-priced bid but with Price duly filled-in) in conformance with the commercial terms as per Envelope I).

The Prices shall be indicated in both figures and words. Unit rates should be quoted in figures as well as in words in Indian Currency only – i.e., Rupees and Paise with reference to each item and for all the items shown in the attached schedule. The rates shall include all taxes and duties payable on account of Service Tax, Sales Tax etc., and also expensed towards PF and ESI contributions (see clauses 8, 39 and Annexure 'C'). Amount of each item and the total on each sheet as also the grand total amount of the whole contract shall be filled by the tenderers. No corrections would be permitted. Error statements should be completely erased / struck out and fresh values given in the offer, which should be initialed and attested by the tender submitting authority. Offers without the above may become liable for rejection.

Note

- i. No Price Variation Clause will be entertained.
- ii. In case, there is a discrepancy in the term quoted in techno-commercial bid and price bid, the term as per the techno-commercial bid (Envelope I) shall hold good and the commercial term quoted in the Price Bid
- iii. In their own interest, all Tenderers are advised to double check their prices, applicable duties and taxes.
- iv. The quotation should be valid at least for a period of **90 days** from the tender opening date.
- v. All the pages of the offers should **invariably contain Signature (ink-signed) & Office Stamp of the Supplier**. Any corrections / erasures in the offers should be initialed and stamped.

Both the covers I & II shall be submitted in a common cover super scribing Tender No., Name of work, Date & Time of tender opening etc.

D] Opening of Offers

- a. Tenders shall be received up to 15:00 Hours on the said due date and be opened on the same day at 15:00 Hours. Tenders received after 15:00 Hours would not be opened. The times indicated are Indian Standard Time (IST).
- b. Tenders received after tender opening shall be treated as late tender which shall not be considered for evaluation; hence tenderers are advised to submit their offers well in advance so as to reach this office before the time and date of tender opening.
- c. If a tenderer submits only one envelope / cover containing all the bids or combined bids e.g. techno-commercial bid & price bid together, the bid is liable for rejection. The decision to accept such bids shall be the sole discretion of BHEL, which may be done by BHEL after segregating the bids so received.



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- d. Such of those Tenderers who wish so, may participate in the Tender Opening by deputing their representatives. The representatives would be allowed to participate in the Tender opening only on submission of a signed and stamped authorization letter issued by the Supplier. Representatives without the Authorization Letter would not be allowed to participate in the Tender Opening. Representatives who turn up after the Tender opening time / start of the Tender opening would not be allowed to participate. After tender opening the details would not be given to such suppliers who choose to be absent at the Tender opening.
 - e. One more original of the authorization letter should be kept in the Cover I. Authorizations received by fax / e-mail would not be acceptable.
 - f. Details such as the Technical Specification, Price, Delivery Terms, and Delivery Period alone would be read out by the Tender Opening Officer.
 - g. In exceptional cases, at the discretion of BHEL, in the event of the named representative (named in the Tender Document) is unable to come due to unavoidable circumstances, then an alternative representative would be allowed, where the alternative representative should carry a revised original authorization certificate. Suppliers are advised to avoid such situations to avoid embarrassments on both sides and
 - h. If so required, BHEL reserves the right to open the Price-Bids, 'in-camera'. Intimation to this effect would be given to the Supplier by BHEL, before the opening of the Price-Bids.

Note

(i) At its option, BHEL may consider extending the due date/s for the tender openings. Sufficient notice would be given by BHEL for such extensions.

E] Evaluation of Offers

- a) The price bids of the technically acceptable offers alone, contained in Cover II shall be opened.
- b) All bidders shall submit their offers by filling-in the format of the BHEL tender documents. Offers received in any other format are liable to be rejected. Offers are asked in BHEL's format for purpose of standardisation - to help in the offer evaluation.
- d) Offer with any pre-conditions (like conditional discounts) for price is liable to be not considered / rejected.
- e) BHEL reserves the right to reject without assigning any reasons / load any offer with factors other than already specified for such offers having deviations to BHEL Specifications, Standard Terms & Conditions at its discretion. The decision of BHEL in this regard shall be final.
- f) BHEL reserves the right to reject an offer due to unsatisfactory past performance during tender finalization / execution of a contract at any of BHEL projects / units.
- g) BHEL reserves the right to conduct negotiations on the "Price" and "Other Commercial Terms and Conditions" with the lowest ranked offerer and
- h) If so required by BHEL, Consultant may have to share their cost data / costing sheet with BHEL.



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F] Placement of Orders

- a. Orders would be placed on technically acceptable financially lowest offer, based on the evaluation of BHEL.
- b. For acceptable payment terms, guarantees and warranties, and other commercial terms and conditions, please see the detailed standard commercial terms of BHEL.
- c. Where ever applicable, Necessary Tax Deduction at Source (TDS) certificates will be issued.
- d. Contractors shall make their own arrangements for the stay of their Engineers deputed to the customer consultants place during the meeting with them.

G] Security Deposit:

a) Security deposit will be collected from the successful tenderer. The rate of Security Deposit (SD) will be as below:

- Up to Rs. 10 lakhs: 10%
- Above 10 lakhs up to 50 lakhs: Rs. 1.lakh + 7.5% of amount exceeding Rs. 10 lakhs.
- Above 50 lakhs: Rs. 4 lakhs + 5% of the amount exceeding Rs. 50 lakhs.

b) The security deposit will be collected before start of the work from the contractor.

c) The security deposit may be furnished in any one of the following forms:

- 1) Cash (as permissible under the Income Tax Act)
- 2) Pay order, Demand draft in favour of BHEL,
- 3) Local cheques of scheduled banks, subject to realization.
- 4) 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).
- 5) Bank guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL.
- 6) 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.
- 7) Security Deposit can also be recovered at the rate of 10% from running bills. However in such cases at least 50% of the Security Deposit should be paid before start of the work and the balance 50% may be recovered from the running bills.
- 8) EMD of the successful tenderer can be converted and adjusted against the security deposit.
- 9) The security deposit shall not carry any interest.

(Note: Acceptance of Security Deposit against Sl. No. 4 & 6 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.)

H] Termination of Inquiry / Orders:

- a. BHEL reserves the right to cancel any inquiry before opening of the tender, without assigning any reason.



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- b. BHEL reserves the right to cancel any tender and refloat a fresh tender, at any time after opening of the tender, in case it finds the response to its tender as not meeting its requirement. This shall be at the sole discretion of BHEL.
- c. BHEL reserves the right to cancel the order for delay in submission of drawings beyond penalty period without any monetary or legal obligations and at the risk and cost of the Consultant.
- d. BHEL will levy penalty as Liquidated Damages (LD), for delay in delivery as per Clause 43 of BHEL General conditions of contract (GCC).

I] Others

- a. In case of any contradiction in the terms and conditions given here and elsewhere in the other documents of the tender, it shall be the responsibility of the tenderer to get it clarified from BHEL. The officer authorized to provide such clarifications is the Deputy General Manager / Civil Projects & Services, Phone: 04172 – 284632, e-mail rathinam@bhelrpt.co.in
- b. Alterations to the conditions of the Tender can be done only by the authorized officer, at any time before the date and time of tender opening. Such changes, if any, would be communicated in writing and / or hosted in the web-page.
- c. If any Supplier attempts to bribe, or pay commission, gift or any advantage or bring in undue influence either by himself or on his behalf any one including a stranger to the tender, in addition to instituting legal proceedings as per the extant laws prevailing, will disqualify the supplier from this tender and all future tenders of BHEL. Decision of the Purchaser would be final in this matter.
- d. The laws governing this transaction shall be the laws in India.
- e. Wherever not specified, INCO Terms 2000 shall be used to interpret the Commercial terms and conditions and
- f. In the event of an order, Consultant shall agree to settlement of disputes or differences, if any, by way of arbitration, in accordance with the "Rule of Arbitration" of the Indian Council of Arbitration.
- g. ***The offer/s of such of those bidders who do not accept for levy of liquidated damages (LD) for delay in Contract period and who do not accept for submission of the Security deposit for the value and period specified herein above is likely to be summarily rejected. No correspondence would be entertained by BHEL in this regard, on this subject. BHEL specifically draws the need of this mandatory requirement to the notice of all Bidders. The Price Bid of such of those offerers failing to meet this requirement, would not be considered for the Price-Bid Opening.***
- h. *The language in the tender downloaded by the Bidders shall at no point of time be changed, altered or modified in any manner by the Tenderer. If such changes are made by any tenderer, it shall be considered as tampering with BHEL's specifications and the offer shall be summarily rejected, whenever it is noticed by BHEL. Such Bidders would be disqualified from the Bidding Process and their offers would be forfeited / Bank Guarantees invoked. They would not be allowed to participate in future tenders of BHEL.*



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- i. *BHEL reserves the right to split the work into two parts in the proportion of 60% to the L1 party and 40% to the L2 party at the rate of L1 party (counter offered) or two projects to the original L1 tenderer and one project to the L2 offerer at the rate of L1 offer.*

J] Specific technical requirements:

- a. This clause specifies the special technical requirements for the work in the scope of this Contract. All works shall conform to Indian Standards and Codes and all local and state regulations. Where requirements are at variance, the more stringent of them shall govern.
- b. The Contractor's plans and drawings submitted with the bid show the location and sizes of various buildings. These plans and drawings will be finalized during the detailed design stage taking into consideration the actual size of the equipment, the specific features of operation, maintenance and safety as detailed in the specification. The contractor shall incorporate all changes suggested by the Owner at no extra cost to the Owner and with no extension of time. The contractor shall begin further works like preparation of design criteria only after obtaining approval of the report.
- c. Detailed design calculations / drawings shall be commenced by contractor only after approval is obtained from the owner on the basic design criteria for building / structure / areas to be submitted by the contractor. No later deviation for the approved design criteria shall be permitted unless specifically approved by the owner in writing, prior to its adoption.
- d. Civil assignment drawings showing all details such as equipment loads, live loads, erection and maintenance loads, cutouts, crane capacity, wheel loads and wheel spacing, point loads due to piping / pipe hangers, ventilations duct, cable trays etc., shall be submitted for information. Vertical bracing, brick wall location, etc. shall be based on approved general arrangement (GA) drawings and all construction drawings of the equipment, piping / cable tray / ventilation duct layout drawings and shall be submitted by the contractors for owner's approval. Interferences shall be indicated in civil GA drawings. Civil GA drawings submitted without prior approval of relevant GA drawings for equipment, piping / cable tray / ventilation duct layout shall not be considered for review and approval.
- e. Design calculations and drawings and other documents shall be submitted sequentially after obtaining approval as indicated in items ii, iii & iv in a phased manner. Contractor shall ensure that design calculations / drawings for several structures are not submitted at one time. For this purpose, design / drawing submission schedule furnished during bidding stage and agreed upon by owner shall be followed. Owner will reviews and furnish comments / approval, if any, to the designs and drawings, generally within a period of two weeks from the date of receipt of the same in the owner's office. Timely submission of designs / drawings to the owner for review / approval is the sole responsibility of the contractor and postal or other delays as reasons for late / non-submission shall not be entertained by the owner.
- f. Should there be a requirement for preparation of separate drawings to show enlarged details to facilitate construction / erection, then such drawings shall also be prepared by the contractor at no extra cost.



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- g. Preparation and review of structural steel fabrication drawings is entirely of the responsibility of the contractor and shall be submitted for approval.
 - h. All architectural features of buildings shall be detailed by the contractor's qualified Architect. Detailed drawings along with schedule of doors / windows etc. floor / wall finishes including colour scheme shall be submitted for obtaining approval from the owner.
 - i. Design drawings showing typical connection details conforming to design assumptions shall be submitted for approval before starting fabrication drawings.
 - j. All construction drawings shall include total quantity of concrete (grade wise), reinforcement (diameter wise) and structural steel (section wise).
 - k. Design drawings shall indicate structural arrangements, member sizes, member forces, splice location, details of base plate, anchor bolts, details of moment connection, construction joints, water stops, loading etc. so that the drawings indicate clearly all the necessary information brought out in relevant design calculations. Proposed bracing patterns shall be subject to approval by owner.
 - l. The designs shall clearly spell out the erection scheme for various structures envisaged by the contractor and resulting additional loadings, if any, shall be duly accounted for. Before taking up actual erection work, detailed erection scheme proposed to be followed by the contractor shall be submitted for owner's approval.
 - m. Approval / comments conveyed by the owner neither relieves the contractor of his contractual obligations and his total responsibility for correctness of dimensions, materials of construction loadings, quantities, design details assembly fits, performance particulars, safety and stability of the structure including foundation / appurtenances and conformity of supplies with the statutory laws as may be applicable, nor does it limit the owner's right under this contract. No change in the approved designs / drawings shall be permitted without prior written approval of the owner.
 - n. Owner or his representative has every right to go to the contractor's design office to check the quality control being implemented at their design office to ensure that the documents being prepared are of approved quality. The contractor shall provide all assistance required by owner for carrying out the audit.
 - o. All design calculations and drawings shall be in English and shall be in SI units.
 - p. Designs, drawings and other documents submitted by the contractor shall be thoroughly checked and approved by the authorized contractor's engineers. Any unchecked / unsigned documents will not be reviewed by the owner. Also design calculations not accompanied by supporting engineering drawings, incomplete or shabbily done design calculations, design calculations without adequate reference or back up data and documents where previous comments have not been incorporated will not be reviewed by the owner. No claim from the contractor for extension of time or extra cost on this account shall be entertained by the owner under any circumstances.
 - q. No check will be specifically carried out by the owner to verify arithmetical / numerical accuracy of the calculations, input data, compatibility of dimensions among various



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drawings or between drawings and design calculations. These shall remain entirely the contractor's responsibility.

- r. All modification suggested by the owner to meet specification requirements and sound engineering practice shall be incorporated by the contractor at no extra cost to the owner. In this respect, the decision of the owner shall be binding on the contractor. Owner will accord his approval only after the contractor has incorporated in the design and drawings all modifications required by the owner.
- s. Soft copies of all design calculation and drawings shall be submitted for records after approval of the owner.
- t. All structural analysis has to be done adopting STAAD Pro / SAP. The complete input (soft copy with editable format) and output data (soft copy) is to be submitted by successful bidder for owner's review and approval, all the drawings shall be of standard sizes (Metric system) and shall be made on AUTOCADD latest version. The software above mentioned is not exhaustive.

Note: Tender will be finalized on over all L1 basis (i.e., Cost to company basis)

1. Reverse Auction:

"BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. All bidders to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

In case BHEL decides to go for Reverse Auction, only those bidders who have given their acceptance to participate in RA will be allowed to participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit "online sealed bid" in the Reverse Auction. Non-submission of "online sealed bid" by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue."



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Annexure - I

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Terms & Conditions of Reverse Auction

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

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit "online sealed bid" in the Reverse Auction. Non-submission of "online sealed bid" by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
3. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
4. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
5. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
6. Bidders have to fax the Compliance form (annexure IV) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
7. In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
8. Reverse auction will be conducted on scheduled date & time.
9. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.



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Annexure - I

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10. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (Annexure VII) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL's standard practice.
12. Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the „Business Rules of Reverse Auction“, which will be communicated before the Reverse Auction.
13. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action *as per extant BHEL guidelines*, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
15. In case BHEL decides to go for reverse auction, the H1 bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.



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CERIFICATE OF NO DEVIATION

I / We of M/s

hereby certify that there is no deviation from the tender conditions either technical or commercial and I am /We are agreeing to all the terms and conditions mentioned in the Tender Specification.

Date:

Signature of the tenderer



CERTIFICATE

AUTHORISED SIGNATORY OF VENDOR WITH SEAL

Note: This EFT Form is to be submitted duly filled in manually in all fields and duly signed by Authorised Signatory and certified by Banker.

Engineering Consultancy for Architectural, Civil, Structural design and drawings for RODM related structures at Ennore SEZ.

Service Tax

The Bidder shall not include Service Tax in their quoted rates but the bidder has to separately indicate the Service Tax rate, amount and workings thereof in the Price bid schedule included in the bid documents.

If service tax amount is not indicated separately in the price bid schedule included in the Bid documents, it will be presumed that the quoted rate is inclusive of applicable service tax and bids will be evaluated accordingly.

Pure service not involving any supply of materials by Contractor.

Bidders have to quote the applicable service tax payable in the price bid format included in the bid document, which shall be considered for evaluation and considered for reimbursement against original service tax invoice. Service tax paid certificate and copy of service tax challan to successful bidders.

The applicable Service Tax is _____% (tenderer has to quote this percentage at the time of submission).

GENERAL CONDITIONS OF CONTRACT
FOR
LUMP SUM, ITEM RATE AND
PERCENTAGE CONTRACT

SPECIMEN

Civ 02

GCC



Bharat Heavy Electricals Limited
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**GENERAL CONDITIONS OF CONTRACT
FOR
LUMP SUM, ITEM RATE AND
PERCENTAGE CONTRACT**



Bharat Heavy Electricals Limited

**BOILER AUXILIARIES PLANT
RANIPET - 632 406.**

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CHAPTER - I

DEFINITIONS IN THE CONTRACT AS HEREINAFTER DEFINED

The following terms shall have the meanings hereby assigned to them, except here the context otherwise requires :-

- a. **'CONTRACT'** means and includes the conditions of contract, the documents forming the tender and acceptance, thereof, specifications, drawings, bill of quantities, schedule of rates and prices if any, general and special conditions of contract, schedules A,B,C,D and or general summary attached to the form of tender and contract agreements. All these terms and conditions and documents as applicable taken together shall be deemed to form one contract and thereby complementary to one another.
- b. **'TENDER DOCUMENTS'** means and includes the form of tender, the applicable schedules A, B, C, D and / or general summary, general and special conditions of contract and specifications and drawings as given to the contractors on payment.
- c. **'THE CONTRACTOR'** means the person or persons, firm or company whether incorporated or not, whose tender is being accepted and includes the contractor's legal / personal representatives, successors and permitted assignees.
- d. **'THE WORK'** means the work described in the tender documents and / or individual work orders, drawings and specifications as may be issued from time to time to the contractor by the Engineer - In - Charge within the powers conferred upon them including modified or additional works and obligations to be carried out either at the site or at any factory, workshop or any other place as required for the performance of the contract.
- e. **'THE SITE'** means the lands and other places on, under, in or through which the work has to be executed under the contract and any other lands and places provided by the company for the purpose of carrying out the contract.
- f. **'THE COMPANY'** referred to as BHEL in this contract shall mean M/s. Bharat Heavy Electricals Limited including its Board of Directors, Director, Executive Director, Group General Manager, General manager, Dy. General Manager and / or the Officers of the company including Sr. Manager, Manager, Dy. Manager, Sr. Engineer and Engineer authorised on behalf of Bharat Heavy Electricals Limited, Boiler Auxiliaries Plant, Ranipet.
- g. **'THE ACCEPTING OFFICER'** means the official who signs the contract agreement on behalf of Bharat Heavy Electricals Limited and includes his successors.
- h. **'ENGINEER-IN-CHARGE'** means the Officer / Engineer of BHEL who is in charge of works under the contract and includes such other Officer / Engineer as may be notified by BHEL from time to time.
- i. **'APPROVED AND DIRECTED'** means approval and / or directions of the Officers / Engineers of BHEL issued from time to time with regard to the contract.

- j. In the case of Lump-sum Contracts '**CONTRACTOR'S PERCENTAGE**' means the percentage offered by the Contractor as addition to our deduction from the cost of building, or other works listed in Schedule "A" to provide a Lump-sum quotation for performance of the contract inclusive of all extra costs, profit, establishment charges, carriage, insurance etc., complete.
- In the case of percentage Rate "Contracts Contractor's Percentage" shall, if the context so permits mean the uniform percentage tendered by the Contractor and accepted by the Accepting Officer; and the expression '**CONTRACT RATE**' shall likewise mean the rates in the BHEL Schedule of Rate applicable as on date as adjusted by the said Contractor's percentage, if any.
- k. '**THE CONTRACT SUM**' means the sum accepted or the sum calculated in accordance with the prices accepted in the tender and / or the contract rates as payable to the contractor for the execution and full completion of the work.
- l. The '**FINAL SUM**' means the actual amount payable under the Contract by BHEL, to the Contractor for the entire Execution and full completion of the work.
- m. The '**DATE OF COMPLETION**' is the date or dates for completion of the whole or any part of the work as the case may be set out in or ascertained in accordance with the individual work orders of the tender documents, or any subsequent agreed amendments thereto.
- n. A '**WEEK**' means seven days without regard to the number of hours worked or not in any day in that week.
- o. A '**DAY**' means a day of 24 (Twenty Four) hours irrespective of the number of hours worked or not in that day.
- p. A '**WORKING DAY**' means any day other than the holidays declared by BHEL, Ranipet.
- q. '**DEVIATION ORDER**' means an order given by the Engineer-in-Charge to effect an alternation addition or deduction which does not radically affect the scope or nature of the contract.
- r. '**EMERGENCY WORKS**' means any urgent measures which in the opinion of the Engineer-In-Charge, become necessary during the progress of the work to obviate any risk of accident or failure which become necessary for security.
- s. '**PROVISIONAL SUM**' or "Provisional Lump-sum" means a Lump-sum included by the BHEL in the tender documents and represents the estimated value of work for which details are not available at the time of inviting the tender.
- t. '**PROVISIONAL ITEMS**' means items for which approximate quantities have been included in the tender documents.
- u. '**DAY WORK**' means an item of work requiring the employment of labour with or without materials as the case may be which in the opinion of the Engineer-in-charge, is not capable of being evaluated by the accepted methods of measurement or assessment and is paid for on the basis of the actual labour and materials utilised on the particular item of work referred to.

- v. Heading of these terms and conditions shall not affect the interpretation or construction thereof.
- w. The '**DATE OF CONTRACT**' shall mean the date / dates on which the parties to the contract have signed the contract agreement.
- x. **MAINTENANCE PERIOD / GUARANTEE PERIOD** shall mean the period during which the contractor shall remain liable for satisfactory performance of the work under the contract, repair or replacement of any part of the work performed under the contract.
- y. '**COST**' shall mean and include any liability, expenditure, overhead costs whether on the site or off the site incurred by BHEL.

The contractor shall be deemed to have carefully examined all the documents to his satisfaction. If he shall have no doubt as to the manner of the contract document, he shall obtain the details/clarification from BHEL before signing the contract.

MANNER OF EXECUTION OF CONTRACT

The contract shall be deemed to have come into force from the date of Letter of Intent unless otherwise provide in the Letter of Intent. Unless and untill the contract agreement is executed, the Letter of Intent read in conjunction with the tender documents will constitute a binding contract.

CONTRACTOR / TENDER

ACCEPTING OFFICER

CHAPTER - II

SCOPE OF CONTRACT

2. Heading to the Contract

The heading to these conditions shall not affect the interpretation thereof.

3. Contract Documents

The Accepting Officer shall furnish to the Contractor on demand "FREE OF COST" three copies of signed Drawings and one copy of the signed agreement comprising of preamble to agreement, General and Special Specification, Schedule A,B,C & D etc., (but excluding General Conditions of Contract and Drawings) and three copies of all further drawing issued the progress of work.

However, for any additional copies of the agreement of drawings required by the Contractor, the same will be supplied on payment of the Specified cost.

The Contractor shall keep one copy of all the Drawings and of the Specifications on the site and the Engineer-in-Charge or his representative shall be at all reasonable times have access to them.

None of these documents shall be used by the contractor for any purpose other than that of this contract.

3a. Secrecy

The Contractor shall take necessary steps to ensure that all persons employed on any work in connection with this contract have noted that the Indian Officials Secrets Act 1923 (XIX of 1923) applies to them and shall continue so to apply even after the execution of such work under the contract.

All classified documents furnished to the contractor shall be returned to the Engineer-in-charge on the completion of works or the earlier determination of the Contract.

4. Works to be Carried Out

The Contract shall, except as provided under Schedules "B" and "C" included all labour materials, tools, plant, equipment, and transport which may be required in preparation for and in the entire execution and full completion of the work. Schedule "A" shall be deemed to have been prepared in accordance with good practice and recognised principles and unless otherwise stated, the descriptions given therein shall be held to include waste on materials carriage and cartage, lead, hoisting, setting, fitting in position and all other labour necessary in and for the entire execution and full completion aforesaid. Any error in description or quantity in Schedule "A" or any omission therefrom shall not vitiate the Contract or release the Contractor from the execution of the whole or any part of the work comprised therein according to the Drawings and Specifications, or from any of his obligations under the Contract.

The insertion of the name of any firm of suppliers in the Tender Documents is for the purpose of obtaining a particular class or quality of materials or workmanship but the articles or materials specified may be obtained from any other firm subject to prior written approval of the Engineer-in-Charge.

In the case of a discrepancy between Schedule "A" the specification and / or the Drawings, the Accepting Officer shall be the sole deciding authority as to which shall prevail and his decision shall be final and conclusive. If neither Drawings nor specifications contain any mention of minor details of construction, which is in the opinion of the Accepting Officer, whose decision shall be final and conclusive, are reasonable and obviously and fairly intended for the satisfactory completion of the work, such details shall be provided by the Contractor without any extra cost as if they were specially mentioned and shall be deemed to be included in the contract.

The Contractor will be deemed to have satisfied himself as to the nature of the site, local facilities of access and all matters affecting the execution and completion of the work. No extra charges consequent on any mis-understanding in these respects or otherwise will be allowed.

5. Provisional Items

The full amount of provisional Lump-sums and the value annexed to each provisional item inserted in the Tender Documents shall be deducted from the contract sum and the value of work ordered and executed there under shall be ascertained by measurement or valuation as for deviations.

No work under these items is to be begun without instructions in writing from the Engineer-in-charge.

The extent of quantities or items described as "Provisional" shall not be held to guarantee or limit the amount and description of the work to be executed by the Contractor either in respect of the items concerned or the work as a whole.

No addition or deduction shall be made by the Contractor to the amount of the provisional Lump-sum as included in the tender documents.

6. Deviations

The contractor shall not make any alteration in addition to or omission from the work as described in the tender documents except in pursuance of the written instructions of the Engineer-in-charge. No such deviation from the work described in the tender documents shall be valid unless the same has been specifically confirmed and accepted by the Accepting Officer in writing and incorporated in the contract.

The Accepting Officer may deviate either by way of addition or deduction, from the work so described, provided that the contract sum be not thereby varied on the whole by more than percentage set out in the tender documents. The value of all additions and deductions will be added to or, deducted from the contract sum, when ever the Accepting Officer intends to exercise such a right, his intentions shall specify the deviations which are to be made, the Lump-sum assessment or the proposed basis of payment, the extra time allowed, if any, and the date for completion of the entire contract.

Any objection by the Contractor to any matter concerning the order shall be notified by him in writing to the Engineer-in-charge within seven days from the date of such order, but under no circumstances shall the work be stopped (unless so ordered by the Engineer-in-charge) owing to differences or controversy that may arise from such an objection. In the absence such notification of objection by the contractor, he will be deemed to have accepted the order and the conditions stated therein. In the event of the contractor failing to agree with the Engineer-in-charge regarding the terms of the proposed deviation, the objection shall be referred to the Head of Civil Engineering Department whose decision shall be final, conclusive and binding on the contractor.

7. Time

Time is the essence of the contract and is specified in the tender documents or in each individual Work Order.

As soon as possible after the contract is let or any substantial Work Order is placed and before work order is to begin, the Engineer-in-charge and the Contractor shall agree to a Time and progress Chart. The Chart shall be prepared in direct relation to the time stated in the tender documents or the Work Order for the completion of the individual items thereof and the contract or order as a whole. It shall indicate the forecast of the dates for the commencement of the various trade processes or sequence of the work, and shall be amended as may be required by agreement between the Engineer-in-charge and the Contractor within the limitation of the time imposed in the tender, document or order.

In the absence of any specific Time and Progress chart to be agreed to between the Contractor and Engineer-in-charge the contractor shall ensure and maintain uninterrupted progress of the work such that the entire work shall be completed within the time imposed in the Tender documents or Order and that the proportion of the work completed upto any time in relation to the entire work to be under the Contract or Order shall not be less than the proportion that the time elapsed bears to the total time of completion provided in the Tender documents or Order.

The Contractor shall suspend the execution of the work, or any part or parts thereof whenever called upon in writing by the Engineer-in-charge to do so, and shall not resume work thereon until so directed in writing by the Engineer-in-charge. The Contractor will be allowed an extension of time for completion not less than the period of suspension. However, no other claim in this respect for compensation or otherwise however will be admitted. Provided the cause for suspension is not attributable to any default of the contractor's part to proceed with or fulfil the contractual obligations. This may also be extended to allow for alteration of work made by the deviation order.

8. Stores and Materials

8.1 Materials to be supplied by the Contractor

The Contractor shall at his own cost and expense provide all materials required for the work other than those listed in Schedule-B which are to be supplied by Bharat Heavy Electricals Ltd.

All materials to be provided by the Contractor shall be brand new and in conformity with the specifications laid down in the contract and the Contractor shall if requested by the Engineer-in-charge furnish proof, to the satisfaction of the Engineer-in-charge, that the materials so comply.

The Contractor shall at his own cost and expense and without delay, supply to the Engineer-in-charge samples of materials proposed to be used in the works. The Engineer-in-charge shall within seven days of supply of samples or within such further period as he may require and intimate to the Contractor in writing, inform, the Contractor whether samples are approved by him or not. If samples are not approved, the Contractor shall forthwith arrange to supply to the Engineer-in-charge for his approval fresh samples complying with the specification laid down in the contract.

The Engineer-in-charge shall have full powers to require removal of any or all of the materials brought to site by the Contractor which are not brand new and not in accordance with the contract specifications or do not confirm 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-in-charge shall be at liberty to have them removed by other means at the Contractor's expense and risk. The Engineer-in-charge shall have full power to require other proper materials to be substituted for rejected materials and in the event of the contractor refusing to comply, he may cause the same to be procured by other means. All costs charges and expenses which may attend such substitution shall be borne by the contractor. All charges on account of Octroi, terminal or sales tax and other duties on material obtained for the works from any source (excluding materials supplied by BHEL) shall be borne by the Contractor.

The Engineer-in-charge 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-in-charge may require for the purpose.

8.2 Materials to be supplied by BHEL

Materials which BHEL are prepared to supply are shown in Schedule-B which also stipulates place of issue and rate(s) to be charged in respect thereof soon after acceptance of the tender the Contractor shall agree in writing with the Engineer-in-charge on a phased programme of his requirements with regard to deliver of materials.

In the event of delay in supply of any Stores and materials mention in Schedule-B the contractor shall be entitled to reasonable extension of time as provided for under condition-9 but no claim for compensation or damage on any ground whatsoever shall be entertained by BHEL.

For the materials listed in Schedule-B the contractor shall give a reasonable notice in writing of his requirement to the Engineer-in-charge in accordance with the phased programme.

All materials issued to the Contractor by BHEL for incorporation or fixing in the works shall on completion or on fore-closure of the works and before submission of bills, be returned by the Contractor at his expense, at the place of issue, after making due allowance for actual consumption reasonable wear and tear and for waste. In the Contractor is required to deliver such materials at a place other than the place less the transportation charges which would have been incurred by the Contractor had such materials been delivered at the place of issue, shall be borne by BHEL.

The Contractor shall bear the cost of loading, transporting to site, unloading storing under covered area as necessary, assembling and joining the several parts together as necessary and incorporating or fixing materials in the work including all preparatory work of whatever description as may be required, and of closing preparing, loading and returning empty cases or containers to the place of issue.

If, in the opinion of the Engineer-in-charge (which shall be final and conclusive) any stores supplied by BHEL have either during currency of the work or after completion of the work whilst under custody, of the contractor, become damaged to such an extent that they cannot be usefully utilised, either in the same work or in other works, the Engineer-in-charge shall not accept the stores and in the rates specified in the contract. The contractor shall not be entitled to any claim whatsoever on this account.

The Engineer-in-charge shall have access to the stores where materials issued by BHEL as per schedule -B of the contract is stored to ensure the balance stock of material on hand after taking into consideration the materials used on the work is as per the issue and usage. If there be any discrepancy, the cost towards the same will be recovered at the double recovery rate indicated for the material concerned. This is without prejudice to and in addition to the overall reconciliation of materials to be made at the completion of work.

If on completion of works, the Contractor fails to return surplus materials out of those supplies by BHEL then, in addition to any other liability which the Contractor would incur, the Engineer-in-charge may, be written notice to the Contractor, require him to pay within a fortnight of receipt of the notice for such un-returned surplus materials given in sub para-4.

The Contractor shall have to build a weather-proof shed ^{for} or the storage of Cement (required for 15 days consumption of the work).

8.3 General

Materials 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-in-charge. Storage and safe custody of materials shall be at the risk and the responsibility of the Contractor.

Officials concerned with contract shall be entitled at any time to inspect and examine any materials intended to be used in or in the works either on the site or at factory or workshop or other places where such materials are assembled, fabricated or 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.

All materials brought to the site shall not be removed off the site without the prior written approval of the Engineer-in-charge. But whenever the works are finally completed and advance if any, in respect of any such materials is fully recovered the Contractor shall at his own expense forthwith remove from the site all surplus materials originally supplied by him and upon such removal the same shall revert in and become the property of the Contractor.

Should the Engineer-in-charge consider at any time during the construction or re-construction prior to the expiry of the MAINTENANCE PERIOD that the stores or materials provided by the Contractor are unsound or of a quality inferior to that contracted for or otherwise not in accordance with Contract (in respect where of the decision of the Engineer-in-charge shall be final and conclusive) the Contractor shall on demand in writing from the Engineer-in-charge specifying the Stores or materials complained of notwithstanding that the same may have been inadvertently passed, certified and paid for, forthwith remove the Stores or materials so specified and provide other proper and suitable stores or materials at his own expense, to the entire satisfaction of the Engineer-in-charge and in the event of his failing to do so within a period to be specified by the Engineer-in-charge in his demand aforesaid the Engineer-in-charge may replace with others the Stores or materials complained of at the risk and expense in all respects of the Contractor. The liability of the Contractor under this condition shall not extend beyond the maintenance period aforesaid except as regards Stores or materials which the Engineer-in-charge shall have previously given notice of to be Contractor to replace.

9. Delay and Extension of Time

If, in the opinion of Engineer-in-charge the work is delayed :

- i) by reason of abnormally bad weather, OR
- ii) by reason of serious loss or damage by fire OR
- iii) by reason of Civil commotion local combination of workmen, strike or lockout, affecting any of the trades employed on the work, OR
- iv) by delay on the part of the agency or tradesman engaged by BHEL in executing work not forming part of this Contract OR
- v) by reason of any other cause which in the absolute discretion of the Engineer-in-charge is (when he is the Accepting Officer of the Contract), beyond the Contractor's reasonable control, then in such cases the Accepting Officer, on the recommendation of the Engineer-in-charge or higher authority may make fair and reasonable extension in the completion dates of the individual items of work of the Contract as a whole. Such extension which will be communicated to the Contractor by the Engineer-in-charge 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-in-charge 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-in-charge to proceed with the work.

10. Patent Rights

The Contractor shall fully indemnify BHEL or the agent, servant, employee of BHEL against any action, claim or proceeding relating to infringement or the use of any patent or design or any alleged patent or design rights, and shall pay any royalties which may be payable in respect of any article / or part thereof included in the Contractor. In the event of any claim, being made or action brought against BHEL or any agent, or servant or employee of BHEL in respect of the matters aforesaid, the Contractor shall immediately be notified thereof for taking necessary action provided that payment of indemnity shall not apply when such infringement has taken place in complying with the specific directions issued by the BHEL but the Contractors shall pay any royalties payable in respect of any such use.

11. Octroi and Other Duties

All charges on account of Octroi, Terminal or Sales Tax and / or other duties on materials obtained for the Work (excluding materials provided by BHEL on payment) shall be borne by the Contractor.

12. Royalties

Royalties fixed from time to time as per prevalent local rules will be recovered for materials, which the Contractor may be allowed to remove from quarries situated on land which is in charge of the BHEL authorities.

13. Plant and Equipment

The Contractor, shall at his own expense, supply all tools, plant and equipment (here-in-after referred to as T & P) required for the execution of the contract other than those listed in Schedule - C which subject to their availability may be hired by BHEL to the Contractor or issued free for use in the execution of the work, as specified in Tender documents.

14. Assignments or Transfer of Contract

The Contractor shall not without the prior written approval of the Accepting Officer assign or transfer the Contract or any part thereof, or any share, or interest there in to any other person. No sum of money which may become payable under the Contract shall be payable to any person other than the Contractor unless the prior written approval of the Accepting Officer to the assignment or transfer of such money is given.

14 (a) Sub - Contract

The Contractor shall not sub-let any portion of the Contract without the prior written approval of the Accepting Officer.

15. Compliance to the Regulations and Bye - Laws

The Contractor shall confirm to the provision of any statute relating to the work and regulations and bye-laws of any local authority and of any water and lighting Companies or Undertakings 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-in-charge notice, specifying the variation proposed to be made and the reasons there for and shall not carryout any such variation until he has received instructions from the Engineer-in-charge in respect thereof. The Contractor shall be bound to give all notice required by Statute Regulations of Bye-laws as aforesaid and to pay all fees and taxes payable to any authority in respect thereof.

16. BLANK

17. BLANK

CHAPTER – III

PERFORMANCE OF THE CONTRACT

18. Security Deposit

18.1.1 Security Deposit should be collected from the successful tenderer. The rate of Security Deposit will be as below:

Upto Rs. 10 lakhs	10%
Above Rs. 10 lakhs up to Rs.50 lakhs	1 lakh+7.5% of the amount Exceeding Rs. 10 lakhs.
Above Rs. 50 lakhs	Rs.4 lakhs + 5% of the amount Exceeding Rs. 50 lakhs.

The security Deposit should be collected before start of the work by the contractor.

18.1.2 Security Deposit may be furnished in any one of the following:

- i) Pay Order, Demand Draft in favour of BHEL.
- ii) Local cheques of scheduled banks, subject to realization.
- iii) 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).
- iv) 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.
- v) 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.
- vi) 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.
- vii) EMD of the successful tenderer shall be converted and adjusted against the security deposit.
- Viii) The security deposit shall not carry any interest.

NOTE: Acceptance of Security Deposit against Sl. No. (iv) and (vi) 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.

CONTRACTOR

- 18.1.3** Security deposit shall not be refunded to the contractor except in accordance with the terms of the contract.
- 18.1.4** All compensation or other sums of money payable by the contractor to BHEL, under the terms of this contract or under any other contract with BHEL, may be deducted from the security deposit or realized by the sale of the securities or from the interest arising there from or from any sums which may be due or may become due to the contractor payable by BHEL on any account whatsoever against this contract or any other contract with BHEL, and in the event of his security deposit being reduced by reason of such deduction or sale as aforesaid, the contractor shall within seven days thereafter make good in cash or in securities endorsed as aforesaid, any sum or sums by which the security deposit has been so reduced.
- 18.1.5** 50% of the security deposit may be refunded on completion of the work after payment of the final bill and the balance 50% of the security deposit is refundable only after the expiry of the maintenance period of six (6) months from date of completion of work as stipulated in the contract concerned.

19. Orders under the Contract

All orders, notices, etc., to be given under the contract shall be in writing, typescript or printed and if sent by registered post to the address given in the tender of the Contractor, shall be deemed to have been served on the date when in the ordinary course they would have been delivered to him.

The Contractor shall carry out without delay all orders given to him.

20. Admission to Site

The contractor shall not enter on (other than for inspection purposes) or take possession of the site unless permitted to do so by the Engineer-in-charge. The portions of the site to be occupied by the Contractor will be clearly defined and marked on the site plan, and the contractor will on account be allowed to extend his operations beyond these areas. The Contractor shall provide if necessary or required at the site, temporary access there to and shall alter, modify and maintain the same as required from time to time. He shall out and clear away the access route when no longer required restoring the area to its original condition.

The Engineer-in-charge shall have power to execute other works (whether or not connected with the work, in the contract agreement) on the site contemporaneously with the execution of the original work and contractor shall give reasonable facilities for this purpose.

BHEL reserves the right of taking over, at any time, any portion of the site which they may require and the contractor shall at his own expense clear such portion forthwith. No photographs of the site or of the work or any part here of shall be taken published or otherwise circulated without the prior approval of the Engineer-in-charge.

No such approval shall ~~however~~ ^{however} exempt the Contractor from complying with any statutory provision in regard to the taking and publication of such photographs.

BHEL Officials connected with the Contract shall have the right of entry to the site at all times.

Engineer-in-charge shall have the power to exclude from the site any person whose admission there to may, in his opinion be undesirable for any reason whatsoever

The Contract shall be governed by the security regulations of BHEL including the entry exit timings, use of roads as may be in force from time to time. The Contractor should follow these regulations strictly and no claims for any additional payment whatsoever will be entertained under by circumstances.

21. Contractors Supervision

The Contractors shall either himself supervise the execution of the Contractor or shall appoint a competent Agent approved by the Engineer-in-charge to act in his stead. The Contractor shall employ an Engineer/Agent having atleast a Degree of Bachelor of Civil Engineer from a recognised University/on any work with a Contract value exceeding rupees two lakhs, and having atleast a Diploma in civil Engineering from a recognised college, on work with a contract value exceeding Rs. 50,000/- but not exceeding rupees two lakhs.

The Employment of an Engineer/Agent as aforesaid shall not be necessary if the Contractor himself is in possession of a recognised technical qualification and is, in opinion of the Engineer-in-charge, capable of the receiving instructions of the Engineer-in-charge and of the executing the work to the satisfaction of the Engineer-in-charge. If the Contractor fails to appoint a suitable Engineer/Agent as aforesaid, the Engineer-in-charge shall have full powers to suspend the execution of work and stop payment of any advances that may have become due until such date as a suitable Engineer/Agent is appointed and the Contractor shall be held responsible for the delay caused to the work and no extension of time on this account shall be given to him as stipulated in condition (9) above.

Orders given to the Contractor's Agent Engineer shall be considered to have the same force as if they had been given contractor himself.

The Contractor or his Agent shall be in attendance at the site during all working hours and shall superintend the executing of work with such additional assistance in each trade as the Engineer-in-charge may consider necessary.

The Contractor or his accredited agent shall attend when required and without making any claim for doing so, either the Office of the Engineer-in-charge or the work site to receive instructions.

The Engineer-in-charge shall have full powers, and without assigning any reason to require the Contractor immediately to cease to employ in connection with the

Contract any Agent, servant or employee whose continued employment is, in his opinion undesirable.

The contractor shall not be allowed any compensation on this account.

22. Labour

The contractor shall employ labour in sufficient number either directly or through sub-contractors to maintain the required rate of progress and of quality ensure workmanship of the degree specified in the contract and to the satisfaction of the Engineer-in-charge. The contractor shall comply with all labour laws in force from time to time.

23. Safety Rules

The Contractor shall comply with all safety rules of BHEL.

24. Water

The Contractor shall allow in his Tender and provide at his cost all water required for the work or his employees on the work, together with all pipes and fittings or other means that may be necessary or required to ensure a proper and ample supply of water for all purposes connected with the work.

In the event of a provision existing in the Tender documents for supply of water on payment by Bharat Heavy Electricals Limited, water will be supplied from the BHEL supply system or other sources at any points fixed by the Engineer-in-charge on the site of work. The contractor shall make necessary arrangement for lifting pumping carrying or conveying the water as required at his own cost. The levy of water charges to be borne by the contractor in such case shall be specifically mentioned in the Tender documents.

25. Temporary workshops, store Etc,

The Contractor shall, during the progress of the work provide, erect and maintain at his own expense all necessary temporary workshops, offices etc., required for the proper and efficient execution of the work. The planning, siting, and erection of these buildings shall have the approval of the Engineer-in-charge and the Contractor shall at all times keep them tidy and in a clean and sanitary condition to the entire satisfaction of the Engineer-in-charge.

On completion of the work all such temporary building shall be cleared away and the site restored and left in a clean and tidy condition to the entire satisfaction of the Engineer-in-charge.

26. Tool and Plant on site

All tools, plant and equipment brought to the site shall not be removed from the site without the prior written approval of the Engineer-in-charge when the work is finally completed or the contract is determined for reasons other than the default of the contractor he shall forthwith remove from the site all tool, plant, equipment etc., (other than those as may have been provided by BHEL)

27. Statments of Hire Charges

A monthly detailed statment of the hire charge incurred in respect of BHEL tools, plant, equipments etc., shall be given to the Contractor by the Engineer-in-charge.

28. Precaution Against risks

The Contractor shall be responsible for providing at his own expense, for all precaution to prevent loss or damage and for the necessary steps to be taken for the said purpose until the works have been handed over complete, in all respects to the Engineer-in-charge.

The Contractor shall provide all watchman necessary for the protection of the site, the work, the materials, tools, plant, equipment and anything else lying on the site during the progress of the work. He shall solely be responsible for and shall take all reasonable and proper steps for protecting, securing, lighting and watching all places on or about the work and the site which may be dangerous to any person whomsoever.

29. Notices and fees

The Contractor shall give all notices required by any Statutory provision or by the regulations and/or bye-laws of any local / or of any same are or will be connected. The contractor shall pay and indemnify BHEL against any statutory fees and charges payable under such Acts. Regulation and / or bye-laws in respect of the work and shall make and supply all drawings and plans required in connetion with any such notice.

30. Setting out of the works and Protective and Maintaining signals and works

The Engineer-in-charge shall supply dimensioned drawings, levels and other information necessary to enable the cotractor to set out the work. the cotractor shall at his own expense set accurately according to the drawings and figured dimension thereon, all the work comprised in the contract and any extras or additions there to and shall be solely responsible for their being so set out and executed.

All bench marks, pegs, signals on the surface alignment stones, milestones and all similar marks whether put in by BHEL Authorities for the purpose of checking the Contractor's work or in the nature of permanent survey marks will during the tenure of the contract, be under the care of the Contractor who shall at his own expense take all proper and reasonable precautions and care to preserve and maintain them in their true position. In the event of these marks being disturbed or obliterated by accident or due to any other cause whatsoever, the same may, if deemed necessary be replaced by the Engineer-in-charge at the Contractor's expense and the cost thereof deducted from any money then or thereafter becoming due to the Contractor.

Where requested by the Contractor, the level marks, centre line and chainage pegs corresponding to those shown on the Drawing will be pointed out to the Contractor on the ground but all bench marks or chainage pegs additional to those shown on the Drawing will be set out by BHEL authorities.

31. Site Drainage

All water that may accumulate on the site during the progress of the work, or in trenches and excavations shall be removed to the entire satisfaction of the Engineer-in-charge and at Contractor's expense.

32. Excavation, Relics, etc.

Materials of any kind obtained from excavation on the site shall remain the property of BHEL and shall be disposed off as Engineer-in-charge directs.

All gold, silver, oil and other minerals of any description and all precious stones coins treasures, relics, antiquities and other similar items which may be found in or upon the site shall be the property of Bharat Heavy Electricals Limited and the contractors shall duly preserve the same to the satisfaction of the BHEL and shall from time to time deliver the same to such person or persons as the BHEL may appoint to receive the same.

33. Foundations

The Contractor shall not lay any foundations until the excavations for the same have been examined and approved in writing by the Engineer-in-charge.

34. Covering - in work

The Contractor shall give reasonable notice in writing to the Engineer-in-charge whenever any work is to be permanently covered up or concealed, whether by earth or other means so that it can finally be inspected or measured, if necessary. In default of so doing, the Contractor shall if required by the Engineer-in-charge uncover such work at his own expense.

35. Approval of Works by Stages

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-in-charge when each stage is ready. In default of such notice being received, the Engineer-in-charge 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-in-charge thereon shall be final conclusive.

36. Execution of the work

The work shall be executed in a workman like manner and to the satisfaction in all respects of the Engineer-in-charge.

The Engineer-in-charge will communicate or confirm his instructions to the Contractor in respect of the execution of the works in a "Work Site Order Book" maintained at his office and the Contractor shall visit this office daily and shall confirm receipt of such instruction by signing the relevant entries in this book. Such entries will rank as order to notices in writing the intent and meaning of these conditions.

37. Day Work

No day - work shall be performed without the prior written instructions of the Accepting Officer.

The Contractor shall give to the Engineer-in-charge reasonable notice of the start of any work ordered to be executed by day-work and shall deliver to the Engineer-in-charge within two days of the end of each pay week a return in duplicate giving full detailed accounts of labour and materials for the payweek. One copy of each of these returns, if found correct will be certified by the Engineer-in-charge and returned to the Contractor and must be produced at the time of adjustment of accounts.

An Invoice in duplicate signed by the Contractor or his agent shall be sent with each delivery of materials for day-work and the Contractor will be furnished with receipt signed by the Engineer-in-charge specifying the description, quantities, weight or measurement (as the case may be) of the articles approved, reference will be made in this receipt in the return aforesaid and the Contractor's Bill.

In the case of Lumpsum Contracts, the rates to be charged and the percentage addition for profit and establishment charges etc. will be agreed upon between the Accepting Officer and the Contractor prior to the execution of the work.

38. Inspection of the Work

BHEL Officers concerned with the contract shall have power at any time to inspect and examine any part of the work and the Contractor shall give such facilities as may be required to be given for such inspection and examination.

Should Engineer-in-charge consider, at any time during the expiry of the maintenance period, that any work has been executed with unsound, imperfect or unskilled workmanship or of a quality inferior to that contracted for or not otherwise in accordance with the contract (in respect). Whereof the decision of the Engineer-in-charge shall be final and conclusive the contractor shall, on demand in writing from the Engineer-in-charge specifying the fault notwithstanding that the same may have been inadvertently passed, certified and paid for, forthwith rectify or removed and reconstruct the work so specified in whole or in part as the case may require at his own expense to the entire satisfaction of the Engineer-in-charge and in the event of his failing to do so within a period to be specified by the Engineer-in-charge in his demand as aforesaid, the Engineer-in-charge whose decision shall be final and binding may carry out the work by other means at the risk and expense in all respects of the Contractor. However, the liability of the Contractor under this condition shall not extend beyond the maintenance period except as regards workmanship which the Engineer-in-charge shall have previously given notice of to the Contractor to rectify.

39. Responsibility for Building

In the event of any building or part of any building being handed over to the Contractor for the execution of work there to under the provisions of the Contract he shall give a written receipt for all fixtures, glass etc., and he shall be required to make good at his own expense all damages resulting from the cause whatsoever while in his charge and on completion of the work to deliver the said building or part

thereof in a clean state complete in every particular to the entire satisfaction of the Engineer-in-charge.

40. Insurance

The Contractor shall within one month after the date of acceptance of the Contract, insure the work against loss or damages to the contract works, temporary work and materials erected in performance of the contract "all risks" basis from the time of arrival on site until taken over by BHEL on completion of the Contract.

The cover shall also include whenever necessary the risks of testing including breakdown or explosion of plant and machinery undergoing testing, trial and commissioning operations. The insurance shall also specifically cover removal of debris cost. The sum insured shall represent the estimated full value of the contract work inclusive of value of free supply materials by BHEL, transport charges, customs dues, express freight, overtime charges, cost of erection, value of constructional plants and machinery; removal of the debris and excavation of costs. Where the contract includes a maintenance period, the insurance cover shall specifically include the Contractor's liabilities during the maintenance period. The insurance shall also be extended to cover third party personal injury and property damage for a sum to be specified by BHEL. The insurance shall be effected in the name of BHEL and the Contractor shall submit to BHEL a draft of the insurance policy for approval. The policy when issued will be lodged with BHEL together with receipts of premium for such insurance and the contractor shall maintain such policies in force until the obligations of the Contractor are fully discharged.

If the Contractor fails to comply with the terms of this condition the Accepting Officer may insure the work and may deduct the amount of premiums from any money that may become payable to the Contractor or may at his discretion refuse payment of any advances to the Contractor until the Contractor shall have complied with the terms of this condition. This provision does not, however, absolve the Contractor of his responsibility for taking up the insurance. The Contractor is, therefore, primarily responsible for the insurance in time.

41. Damage and Loss to Private Property and Injury to Workmen

The Contractor shall at his own expense reinstate and make good to the satisfaction of the Engineer-in-charge and pay compensation for any injury, loss or damage occasioned to any property or rights whatever including property and rights of BHEL (or agents, servants or employees of BHEL) the injury loss or damage arising out of or in any way in connection with the execution of the contract and further the Contractor shall indemnify BHEL against all claims enforceable against BHEL or any agent, servant, or employee of BHEL a private person, in respect of any such injury (including injury resulting in death loss or damage to any person) who so ever or property, including all claims which may arise under the Workmen's Compensation Act or otherwise, or which would be enforceable against BHEL.

42. Completion

The works shall be completed to the entire satisfaction of the Engineer-in-charge and in accordance with the Contractor's forecast of Time and progress where operative, and all unused stores and materials, tools, plants equipment, temporary Building and things shall be removed from the site and work cleared of rubbish and all

waste materials and levelled up clean and tidy to the satisfaction of the Engineer-in-charge at the Contractor's expense and/or before the Schedule date of completion.

The BHEL shall have power to take over from the Contractor from time to time such sections of the Work as have been completed to the satisfaction of the Engineer-in-charge. In such an event, the contractor is not entitled for any extension of time or any other compensation for executing the balance work.

In case the Contractor fails to remove any of his properties, assets or fails to clear the rubbish and waste materials within 30 days of the completion of the contract, it is lawful for the contractee, that is BHEL to take such action as it deems fit to clear, dispose of such properties, assets or such waste materials and charge the Contractor any expenses incurred thereon.

The Engineer-in-charge shall certify to the Contractor the date on which the work is completed and the state thereof.

The Engineer-in-charge shall also certify to the Contractor the state of the work at the end of maintenance period, where applicable.

43. Compensation for delay

If the Contractor fails to maintain the required progress in terms of condition 7 or to complete the work and clear the site on or before the contracted or extended period of completion, he shall, without prejudice to any other right or remedy of the BHEL on account of such breach pay as agreed compensation an amount calculated as stipulated below or such smaller amount as may be fixed by the BHEL on the contract value of the work for every week that the progress remains below that specified in condition 7 or that the work remains incomplete.

This will also to items or groups of items for which separate period of completion has been specified.

For the purpose the term "Contract Value" shall be the value at contract rates of the work or ordered.

- | | |
|--|------------------------|
| a) Completion period (as originally stipulated) not exceeding 6 months | at 1 per cent per week |
| b) Completion period (as originally stipulated) exceeding 6 months and not exceeding 2 Years | at ½ per cent per week |
| c) Completion period (as originally stipulated) exceeding 2 years | at ¼ per cent per week |

Provided always that the total amount of compensation for delay to be paid under this condition shall not exceed the under noted percentage of the contract value or of the item or group of items of work for which a separate period of completion is given :

- | | |
|--|-------------|
| Completion | |
| a) Complete Completion period (as originally stipulated) not exceeding 6 months | 10 per cent |

- | | |
|--|-------------|
| b) Completion period (as originally stipulated) exceeding 6 months and not exceeding 2 Years | 7½ per cent |
| c) Completion period (as originally stipulated) exceeding 2 years | 5 per cent |

The amount of compensation may be adjusted or set-off against any sum payable to the contractor under this or any other contract with the BHEL.

44. Laws Governing the Contract

This Contract shall be governed by the Indian Laws for the time being in force.

45. Cancellation of Contract for Corrupt Acts

The Accepting Officer, whose decision shall be final and conclusive, shall without prejudice to any other right or remedy which shall have accrued or shall accrue thereafter to Bharat Heavy Electricals Limited, cancel the Contract in any of the following cases and the contractor shall be liable to make payment to BHEL for any loss or damage resulting from any such cancellation for default. If the Contractor shall :

- a) Offer or give or agree to give to any person in BHEL service any gift or consideration of any kind as an inducement or reward for doing or for bearing to do or for having done or forborne to do a day act in relation to the obtaining or execution of this or any other contract for BHEL service OR
- b) Enter into a contract with BHEL in connection with which commission has been paid or agreed to be paid by him or with his knowledge, unless the particulars of any such commission and the terms of payment thereof have previously been disclosed in writing to the Accepting Officer, OR
- c) Obtain a contract with BHEL as a result of ring tendering or by non-bonafide methods of competitive tendering without first disclosing the fact in writing to the Accepting Officer.

46. Cancellation of Contract for Insolvency, Assignment or Transfer or Sub-Letting of Contract

The Accepting Officer, without prejudice to any other or remedy which shall accrue thereafter to BHEL shall cancel the contract in any of the following cases :

If the Contractor

- a) being an individual, or if a firm any partner thereof shall at any time be adjudged bankrupt or have a receiving order or orders for administration, of his Estate made against him or shall take and proceedings, for liquidation or composition under any Bankruptcy Act for the time being in force or make any conveyance of assignment of his effects composition or arrangement for the benefit of his credit or purport to do so, or if any application be made under any Bankruptcy Act for the time being in force for sequestration of his Estate or if a trust deed be granted by him on behalf of his creditors, OR

- b) being a company shall pass a resolution or the court shall make an order for the liquidation of its affairs, or a Receiver or Manager on behalf of the debentures holders shall be appointed or circumstances shall arise which entitle the court or debentures holders to appoint a Receiver or Manager OR
- c) assigns, transfer, sub-lets or attempts to assign, transfer or sub-let any portion of the work without the prior written approval of the Accepting Officer OR
- d) Shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days.

Whenever the Accepting Officer, exercises his authority to cancel the contract under this condition, he may complete the work by any means at the Contractor's risk and expense provided always to that in the event of the cost of completion (as certified by Engineer-in-charge which is final and conclusive) being less than the contract cost, the advantage shall accrue to the BHEL and that if the cost of completion exceeds the moneys due to the Contractor under the contract, the contractor shall either pay the excess amount ordered by the Engineer-in-charge or the same shall be recovered from the Contractor by other means.

Engineer-in-charge will have powers to take possession of the site and any materials constructional plant, implements, stores, etc. thereon and carry out the work by any means at the risk and cost of the Contractor.

In case the BHEL completes the work under the provisions of this condition the cost of such completion to be taken into account in determining the excess cost to be charged to the contractor under this condition shall consist of the cost of materials purchased and or labour provided by the BHEL with an addition of such percentage or cover superintendence and establishment charges as may be decided by the General Manager whose decision shall be final and conclusive.

In the Contractor fails to pay the excess sum within a period of 30 days, the Engineer-in-charge shall have the right to sell any or all of the Contractor's unused materials, constructional plant implements, temporary buildings etc. and apply the proceeds of sale thereof towards the satisfaction of any sum due from the Contractor under the contract and if thereafter be any balance outstanding from the Contractor, it shall be recovered in accordance with the provisions of the Contract.

47. Cancellation of contract in part or Full for Contractor's Default

If the contractor :

- a) makes default in commencing the within a reasonable time from the date of handing over of the site and continue in that state a reasonable notice from Engineer-in-charge OR
- b) in the opinion of the Engineer-in-charge at any time, whether before or after the date extended date for completion, make default in proceeding with the work, with due diligence and continue in the state after a notice of seven days from Engineer-in-charge OR
- c) fails to comply with any of the terms and conditions of the contract or after 7 days notice in writing with orders properly issued thereunder. OR

- d) fails to complete the work order and items of work individual dates for completion and clear the site on or before the date of completion or fails to achieve the progress at set out under clause 7 of these General conditions of contract.

The Accepting Officer may, prejudice to any other right or remedy which shall have accrued or shall accrue after B H E L, Cancel the contract as a whole or in part there or only such work order items of work in default from the contract. Whenever the Accepting officer exercises his authority to cancel the contract as a whole or in part under this condition he may complete the work at the contractor's risk and cost provided always that in the event of the cost of completion (as certified by Engineer-in-charge which is final and conclusive) being less than the contract cost the advantage shall accrue to the BHEL if the cost of completion exceeds, the money due to the contractor under this contract the contractor shall either pay the excess amount ordered by General Manager or the same shall be recovered from the contractor by other means. Engineer-in-charge will have power to take possession of site and materials, constructional plant, implements, stores etc there on.

In case the BHEL completes the work or any part there of under the provisions of the condition the of such completion to be taken in to account in determining the excess cost to be charged to the contract under this condition shall consist of the cost of materials purchased and / or labour provided by the BHEL. with an addition of such percentage to cover superintendence and establishment charges as may be decided by the General Manager whose decision shall be final and conclusive.

If the contract fails to pay the excess sum within a period of 30 days the Engineer-in-charge shall have the right to sell any or of the contractor's unused materials, construction plant, implements, temporary buildings etc and apply the proceeds of sale there of towards the satisfaction of any sum due from the contractor under the contract and if ^{there} ~~here~~ after be any balance out-standing from the contract, it shall be recovered in accordance with the provisions of the contract.

48. Termination of Contract for death

Without prejudice to any of the rights or remedies under this contract. if the contractor dies, the Accepting officer shall have the option of terminating the contract without compensation to the contractor.

49. Special Powers of Determination

If at any time after the acceptance of the tender BHEL shall for any reason whatsoever not require the whole or any part of the work to be ^{carried out} ~~done~~ General Manager shall give notice in writing of the fact to the contractor who shall have no claim to any payment of compensation or otherwise howsoever on account of any profit or advantage which he might have derived from the execution of the work in full but which he ^{did} ~~did~~ not derive in consequence of the foreclosing of the work.

He shall be paid at contract rates for the full amount of the executed including such additional works, e. g. clearing of site, etc., as may be rendered necessary by the said foreclosing. He shall also be allowed a reasonable payment (as decided by the Accepting office) for any expenses sustained on account of labour and materials collected but which could not be utilised on the work, as verified by the Engineer-in-charge. Neither shall the contractor have any claim for compensation on account of any alterations have been made in the original specifications drawings, designs and instructions, involving any curtailment of the work as original contemplated.

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CHAPTER - IV

VALUATION AND PAYMENT

5). Records and Measurements :

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

Buildings, etc., priced in schedule 'A' as a unit Lump-sum will be entered by number at the unit Lump-sum.

Work carried out for agreed Lump-sum will be described and similarly recorded.

Lump-sum omissions will be entered for deduction. Measurement shall be restricted to that required to ascertain the financial liability of BHEL under the contract.

Work which fails to be measured in detail shall be measured physically, without reference to any local custom that may obtain 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 the BHEL and by the contractor.

The engineer-in-charge shall give reasonable notice in writing to the contractor of appointment of measurement.

The contractor shall without extra charge provide assistance with appliance and other things necessary for measurement.

The contractor shall bear all the cost of measurements of his work.

Measurements shall be entered in the BHEL measurement book and signed and dated by both parties each day at the site on completion of measurement. If the contractor objects to any of the measurements recorded on behalf of the BHEL, a note to that effect to be made in the 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.

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

Measurement to be re-taken provided that a net error is found by this re-measurement to amount to less than 5% (Five percent) of the value as recorded by the first measurement. But where the net errors amount to 5% and over of the said value, then the cost is to be borne by the other party. In any case if the net value of errors found exceeded to Rs 500 the expense or re-measurement is said to be borne by the other party. If the contractor's representative fails to attend when required, the engineer-in-charge shall have power to proceed by himself to take measurement and in that case those measurements shall be considered as accepted by the contractor as final. The contractor shall, once in every month, submit to the engineer-in-charge with a copy to the accepting officer details of his claims for the work done by him up to and including the previous month which are not covered by his contract agreement in any of the following respects.

- a) Deviation from the items and specifications provided in the contract documents.
- b) Extra Items / Items of work.
- c) Quantities in excess of those provided in the contract schedule.
- d) Items in respect of which rates have not been settled. He should, in addition furnish a clear certificate to the effect that the claims submitted by him as aforesaid cover all his claims and that no further claims shall be raised by him in respect of work done up to and including the period under report.

Except where any general to detailed description of the work in quantities expressly shows to contrary, schedule of quantities shall be deemed to have been prepared and measurements shall be taken in accordance with the procedure set forth in the schedule of rates specification not withstanding any provision in the relevant standard method of measurement or any general or local custom. In the case of items which are not covered by the schedule of rates / specification, measurement shall be taken in accordance with relevant standard method of measurement issued by the Indian Standard Institution or as per Standard engineering practice.

52 Valuation of Deviations

Rates for deviated items of work will be fixed as follows :

- 1) For any item of work required to be carried out after the contract has been awarded and which is not covered by Contractor's Schedule but is covered by B.H.E.L. schedule of Rates the payable for such a fresh item will be derived from B.H.E.L. Schedule by the method of proportion as follows:
 - a) In the same proportion to the BHEL Schedule of rates as the tendered rate for the nearest analogous item of work in contractor's schedule bears to rate for the particular analogous item of work in BHEL schedule of rates. However in case of nearest analogous item of work in contract schedule forms part of individual chapter of the BHEL schedule of rates the above proportion will be worked out only for such items which are found both in contract schedule and BHEL Schedule of rates as group of items under the chapter.
 - b) If a single appropriate analogous item of work is not available in both schedule (contractor's and BHEL schedule) then the method of proportion will be applied to the nearest analogous group items available in both the schedule referred to i.e. in the same proportion as the total tendered cost of that particular group of item (the sum of the products of the tendered rates and the quantities for which orders are placed) bears to the total cost of the same items and quantities and BHEL Schedule of Rates.
 - c) If even an appropriate analogous group of items is not available in contractor's schedule and BHEL Schedule, then the methods of proportion will be applied to all those items of the whole work, which are available in both the schedule and for which orders have been placed on the contractor i. e., in the same proportion as the total cost of all

these items of work (the work of the products of the tendered rates and the quantities for which order are placed) bears to the total cost of the same items and quantities at the BHEL schedule of rates.

The selection of analogous items or analogous group of items referred to above shall be done by the Engineer-in-charge. Where the rates for deviated items or new items of work can be derived by the selection of different analogous items or analogous group of items, the lowest of all such derived rates shall be taken as the correct rate.

In the case of the contracts for which the Engineer-in-charge is the Accepting officer all disputes regarding the settlement of rates of deviated or new items or work shall be referred to the Head of Civil Engineering Department whose decision shall be final and conclusive as the case may be.

- II. If any work not covered by any of the foregoing is ordered of the contractor, the basis of payment shall be decided by the Accepting Officer whose decision shall be final and conclusive and binding on the parties.

53. Reimbursement / Refund on variation in Price, Materials

If after submission of the tender and / or during the progress of the works, the price of any material (not being a material supplied from the BHEL store in accordance with the conditions of the contract) is increased or decreased by an Act of Legislature (central or state) and / or any notification thereunder or on account of new duties or levies such as octroi or on account of increase or decrease in such duties affecting the price of materials required for incorporation in the works and made from materials of which the price has increased or decreased as aforesaid and the contractor has thereupon to pay in respect of such material or item a price which is higher or lower than the price of that material or item as prevailing immediately before the passing of such act or levying, increasing / decreasing of such duty, the BHEL shall increase in price or the duty reimbursed to the contractor the increase in price or additional or increased duty paid by the contractor and in case of decrease in price the BHEL shall be entitled to a refund of the reduction in the price or the reduction in duty. This will be applicable only for material which are directly incorporated on the work. The contractor shall however indicate the assumption he has made while submitting the tender. However no reimbursement or refund shall be made if the increase / decrease is not more than + 10% of the said price, and if so the reimbursement or refund shall be made only / on the excess over $\pm 10\%$ provide always that any such increase shall not be payable if, in the opinion of the Accepting officer (whose decision shall be final and conclusive) the increase is attributable to the delay in the execution of the contract with the control of the contractor or that any such increase has become operative after the contracted/ or extended date of completion of the works or items of work in question.

The Contractor shall, for the purpose of this condition, keep such books of account and other document as are necessary to show the amount of any increase or any reduction available and shall allow inspection of the same by any duly authorised representative of the BHEL and further shall at the request of the Engineer-in-charge furnish for verification such other information as the Engineer-in-charge may require.

The Contractor shall within a reasonable time of his becoming aware of any alteration in the prices of any such materials give notice thereof in writing to the Engineer-in-charge stating that the rate is submitted in pursuance to this condition together with all information relating thereto which he may be in a position to supply.

Advance on account

No payment shall be made for work estimated to cost less than Rupees ONE THOUSAND till after the whole of the work shall have been completed and a certificate of completion given by the Competent authority.

In the case of work estimated to cost more than Rupees FIVE THOUSAND the contractor may at intervals of less than one month or as otherwise provided for in the Contract documents, counting from the date on which order to commence work is given by Engineer-in-charge submit claims on BHEL forms for payment of advances on account of work done and of materials delivered in connection with the Contract.

The Contractor shall be paid in respect of such claims to the extent approved and passed by the Engineer-in-charge subject to a maximum of 90% of the value of the work actually executed to the satisfaction of the Engineer-in-charge. The certificate of the Engineer-in-charge regarding such approval and passing of the sums so payable shall be final and conclusive against the contractor.

Notes :

"After the full amount of Security Deposit is made up through the 10% deduction from On account bills, 100% payment of all subsequent bills may be made to the contractor.

The Contractor may also be paid during the progress of the work 75% of the value of any materials which are in the opinion of the Engineer-in-charge in accordance with the Contract, and are actually required for incorporation in the work and which have reasonably been brought to the site in connection therewith and are adequately stored and / or protected against damage by weather or other causes, but which have not at the time of payment of the advance been incorporated in the work on furnishing a formal hypothecation deed. Payment of such advances, however shall be purely at the discretion of the Accepting Officer provided always that payment shall not be made under these periodical certificate in respect of materials like lime, cement, timber, sand, kankar, etc.

Any sums, due from the Contractor on account of Tools and Plant, stores or any other items provided by BHEL shall be deducted from the respective advances. The Engineer-in-charge shall from time to time certify the sums payable to the Contractor after retaining the reserves.

Any certificate relating to work done or materials delivered may be modified or corrected by any subsequent interim certificate or by the final certificate of the Engineer-in-charge supporting an advance payment shall itself be conclusive evidence that any work or materials it relates are in accordance with the contract. All such intermediate payments shall be regarded as advance against the final payment only and shall not be considered an admission of the performance of the contract or any part thereof in any respect or the accruing of any claim whatsoever.

Such intermediate payment shall not conclude determine or affect in any way the powers of the Engineer-in-charge as to the final settlement and adjustment or the account or otherwise or in any way vary or affect the contract.

55. Final Bill

As soon as possible after the completion of the work to the satisfaction of the Engineer-in-charge, the contractor shall forward a certified final account on BHEL forms, in duplicate.

It shall be accompanied by all abstracts, vouchers, etc., in support thereof and shall be prepared in the manner prescribed by the Engineer-in-charge.

No claims will be entertained after the receipt of the final bill.

The Contractor shall be entitled to be paid the final sum less the value of payments already made on account, subject to certification of the final bill by the Engineer-in-charge. Any sums due from the Contractor on account of Tools and Plant, Stores or any other items provided by BHEL not yet recovered from the contractor shall be deducted from the final sum aforesaid.

No charge shall be allowed to the Contractor on account of the preparation of the final bill.

56. Payment of Bills

All payment to be made to the Contractor under this contract shall be by "Crossed Cheque" marked "A/c payee only" (within a reasonable time after the certification by the Engineer-in-charge) at the Nationalised Banks/Scheduled banks or their subsidiaries located in the station where either the work is executed or service rendered or at their branch nearest to the station where the Office of the Engineer-in-charge is located.

57. Recovery from Contractor

Whenever under the contract any sum of money shall be recovered from or payable by the Contractor the same may be deducted any sum then due or which at any time thereafter may become due to the Contractor under the contract or under any other contract with BHEL or from his Security Deposit or he shall pay the claim on demand.

58. Post Technical Audit of work and Bills

BHEL reserve the right to carry out a post-payment audit and technical examination of the work and final bill including all supporting vouchers, abstracts etc., and to enforce recovery of any sums becoming due as a result thereof in the manner provided in the preceding sub-paragraphs provided. However, no such recovery shall be enforced after three years of passing the final bill.

59. Refund of Security Deposit

50% of the Security deposit mentioned in condition 18 above, may be refunded to the Contractor in respect of all contract on completion of work and after payment of final bill and the balance 50% on expiry of the maintenance period, provided the

Contractor shall have rendered a "No - Demand" Certificate. In case of work where maintenance period is not involved 100% of the Security Deposit may be refunded after payment of final bill provided that the Contractor shall have rendered a "No Demand" Certificate.

60. Arbitration

Except where otherwise provided for in the contract all questions and disputes relating to the meaning of the specifications, designs, drawings and Instructions herein before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or their conditions or otherwise concerning the work or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the sole arbitration of the General Manager of BHEL and if General Manager is unable or unwilling to act, to the sole arbitration of some other persons appointed by the General Manager, willing to act as such arbitrator.

The cases referred to arbitration shall be other than those for which the decision of the Accepting Officer, or Engineer-in-charge as the case may be, is expressed in the contract to be final and conclusive. There will be no objection if the arbitration, so appointed is an employee of BHEL and that he had to deal with the matters to which the contract relates and that in the course of his duties as such he had expressed views on all or any of the matters in dispute or difference.

The arbitrator to whom the matter is originally referred being transferred or vacating his office or being unable to act for any reason, such General Manager as aforesaid at the time of such transfer, vacation of office or inability to act, shall appoint another person to act as arbitrator in accordance with the terms of the contract. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

Subject as aforesaid the provision of the Arbitration Act, 1940 or any statutory modification or re-enactment thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceeding under this clause.

It is a term of the contract that the party involving arbitration shall specify the dispute or disputes to be referred to arbitration under this clause together with the amount or amount claimed in respect of each dispute.

The arbitrator(s) may from time to time with consent of the parties enlarge the time, for making and publishing the award.

The work under the Contract shall if reasonably possible continue, during the arbitration proceedings and no payment due or payable to the Contractor shall be withheld on account of such proceedings.

The Arbitrator shall be deemed to have entered on the reference on the date he issues notices to both the parties fixing the date of first hearing.

The Arbitration shall give a separate award in respect of each dispute or difference referred to him.

The venue of arbitration shall be such place as may be fixed by the Arbitrator in his sole discretion.

The award of the Arbitration shall be final, conclusive and binding on all parties to this contract.

In the event of disputes or differences arising between one public sector enterprise and a Govt. Department or between two public sector enterprises the above stipulations shall not apply, the provisions of BPF Office memorandum No. BPF/CL001/76MAN/2(1.10) 75 - BPE (GM - 1) dated 1st January 1976 or its amendments for arbitration shall be applicable.

61. Jurisdiction of Court

For the purpose of Court proceeding if any, same shall be in the Court having jurisdiction over Ranipet - 632 406. (Vellore District, Tamilnadu).

62. Taxes etc -

All taxes, duties, levies that are payable to the Government or to any other authorities in respect of the works under the contractor at the time of contract or becomes payable in future shall be exclusively borne by the contractor and the BHEL is not liable for any reimbursement / Payment thereof.

ANNEXURE - I

TERMS AND CONDITIONS REGARDING COMPLIANCE WITH VARIOUS LABOUR LAWS BY THE CONTRACTORS FOR BHEL {Please See Condition - 22}

1. The Contractor shall not employ in connection with the work any person who has not completed 18 years of age.
2. The Contractor shall in respect of labour employed by him either directly or through sub-contractor's comply with or cause to be complied with the following statutory provisions and rules and in regard to all matters provided therein.
 - a) The Contract Labour (Regulation & Abolition) Act 1970 and the related Tamilnadu rules.
 - b) The Minimum wages Act 1948 and the related Tamilnadu Rules.
 - c) The payment of wages Act 1936 and the related Tamilnadu Rules.
 - d) The factories Act 1948 and the related Tamilnadu Rules.
 - e) The Employees' Provident Fund & Miscellaneous Provisions Act 1952.
 - f) The Employees State Insurance Act 1948.
 - g) The workman's Compensation Act 1923.
 - h) The Industrial Disputes Act 1947 and any other Law or modifications to the above or to the rules made there under from time to time.
 - i) Payment of Bonus Act 1965.

REGISTRATION AND LICENSING

3. Every Contractor shall register his name with the Welfare Section of BHEL before taking up the work awarded to him by giving the following information and getting a code Number :-
 - a) The Name of the Contractor.
 - b) Nature of Contract Work.
 - c) Period of Work.
 - d) Number of maximum labour employed by him on anyone day.
 - e) Licence No. & Date (applicable in case of Contractors employing 20 or more workers)
 - f) Whether enrolled for PF, ESI, etc., and enrolment No.

This information is called for the purpose of informing the Inspectorate of Factories whenever they call for information regarding Contracts.

4. The Contractor employing 20 or more workmen is required to obtain licence from the authorities (The Deputy Chief Inspector of Factories / Assistant Commissioner of Labour as the case may be). This licence shall be amended and /or renewed wherever there is an increase in the workmen employed by him or in the event of contract being extended or renewed. The Contractor shall inform the licence number to the BHEL Management before taking up the work.
5. The Contractor (licensed or unlicensed) shall promptly furnish every information and document required by BHEL authorities for the purpose of fulfilling their obligations as principal Employer and / or occupier of the factory and shall render all necessary assistance for the same.

WAGES

6. The Contractor shall pay wages to the workmen employed by him at the rate which shall not be less than the minimum wages applicable under Law from time to time.
7. The Contractor shall fix wage periods in respect of which wages shall be payable. No wage period shall exceed one month.
8. The Contractor shall ensure payment of wages to the Contract labour employed by him within three days from the end of wage period in case the wage period, is one week or a fortnight and in all other cases before 10th day of the following month.
9. All payment of wages shall be made on working days at the work site and during the working time and on dates notified in advance. In case the work is completed before the expiry of the wage period, final payment shall be made within 48 hours of the last working day.
10. Where the employment of any works is terminated by or on behalf of the Contractor, the wages earned by him shall be paid before the expiry of the second working day from the day on which him employment is terminated.
11. Wages due to every worker shall be paid to him direct or to the person authorities by him in this behalf. All wages shall be paid in current coin or currency or in both.
12. The Contractor shall ensure the disbursement of wages in the presence of such authorised representatives of BHEL Management.
13. The above payment shall be verified by the authorised Officers/ representative of BHEL with the following certificates on the payment sheet
 Certified that the amount shown in Column No..... has been paid to the workmen concerned in my presence on..... at
14. A certificate of payment shall be furnished in duplicate by the Contractor to the Engineer-in-charge each month in Form "A" enclosed.

15. A Notice of showing the wage period and the place and time of disbursement of wages shall be displayed at the place of work and a copy to be sent to the welfare department by the Contractor under acknowledgement.
16. Notices showing the rates of wages, weekly rest days, wage period, hours of work, date of payment of wages, and addressed to the Inspectors having jurisdiction the date of unpaid wages shall be displayed in Tamil and English in conspicuous places at the establishment and at worksite the contractor. The contractor shall inform the BHEL Management every month the details of contract labour engaged for each contract in the following form :-
 - a) Serial Number
 - b) Location
 - c) Period of Work
 - d) No. of Contract labour engaged during the work
 - e) No. of days worked
 - f) No. of Mandays worked
 - g) Wages paid to his workers

The above statement shall be furnished to BHEL Management at the end of every month.

REGISTERS AND RECORDS AND COLLECTION OF STATISTICS

17. The following documents/formats under contract labour (Regulation and Abolition) Act 1970 and Tamil Nadu Rules there under shall be maintained by each Contractor.
 - a) Register of Persons employed by the Contractor.
 - b) Employment Card
 - c) Service Certificate
 - d) Muster Roll, Wage Register, Deduction Register, Wage Slip, Over Time Register, Register of Fines, Register of Advances etc.
18. The Contractor shall display the abstract of the contract labour (Regulation and Abolition) Act and the Rules there under both in English and in Tamil.
19. Half Yearly Return shall be sent by the Contractor in duplicate to the Licensing Officer.
20. The Contractor shall submit the returns required under the Contract Labour (Regulation and Abolition) Act 1970 periodically to BHEL Management.
21. The Contractor shall without fail give upto date information in writing of the attendance of the workers employed by him.

22. The Contractor shall ensure that his workers keep and produce their Employment Card when coming to duty and take them back when leaving duty.
23. All the above registers and records shall be preserved in original for a period of Three years. All the Registers, Records and notice maintained under the Act and rules shall be produced on demand by Inspector or any authority under the Act.

WORKING HOURS AND WORKING CONDITIONS

24. NO WORKER SHALL BE REQUIRED OR ALLOWED TO WORK ON SUNDAY UNLESS HE HAS OR WILL HAVE A HOLIDAY ON ANYONE OF THE THREE DAYS BEFORE OR AFTER THE SAID DAY.
25. The contractor shall inform BHEL Management in the prescribed form details of the contract workers scheduled to work on Sunday, the day of rest and also indicate the substituted holiday in lieu thereof. This shall be intimated two days in advance before his workmen are booked for work on Sunday.
26. The contract labour working for more than nine hours in any day or for more than 48 hours in any week shall be paid wages at the rate of twice the ordinary rates of wages in accordance with the provisions of section 59 of the Factories Act 1948.
27. The contractor shall provide all safety devices and personal protective equipment to his workmen at his own cost and shall ensure that his workmen wear/use such devices or equipment provided to them while doing the work and there should not be any relaxation on this.
28. The contractor shall give four paid National Holidays to his workers, viz., 26th January, 1st May, 15th August and 2nd October.
29. The contractor shall ensure that his workmen vacate the premises after the shift is over.
30. No woman worker shall be required or allowed to work in the factory except between the hours of 6.00 a.m and 7.00 p.m.
31. The contractor shall comply with the provisions relating to welfare and Health facilities as provided in the contract labour (Regulation and Abolition) Act 1970 read with the Tamilnadu contract labour Rules 1975.

NOTICES OF ACCIDENTS

32. Notwithstanding anything contrary to this, in the event of accident the contractor shall be required to fill injury report and submit the Engineer-in-charge immediately and ensure the compliance of ESI/Workmen's Compensation Act, Factories Act and Rules made there under. He shall also maintain a register of accident as per Act.
33. The contractor shall get the contract labour engaged by him insured under workmen's Compensation Policy from General Insurance Corporation of India before actually starting the work of contract. The Insurance coverage should

be for the entire period of contract. The contractor shall comply with the provision of the Workmen's Compensation Act 1923 [This should be read in conjunction with the provision of ESI Act]

34. The contractor shall ensure that all his workmen are covered under the Employees State Insurance Act and produce to BHEL such Registration Number/ Enrolment Number before executing the contract work.
35. The contractor shall regularly pay the amount of contribution i.e. employers contribution as well as employees contribution in pursuance of the above scheme as fixed from time to time. The contribution payable presently is 1.75% of wages to be recovered from the workmen and 4.75% of wages to be contributed by the contractor. Contribution recovered from employee and contribution made by the contractor may be rounded to the next higher multiples of five paise.
36. The contractor shall take note of any amendment that may be brought forth in the above contribution rate and accordingly.
37. The contractor shall ensure that his workmen are covered under the EPF & miscellaneous Provision Act 1952 and accordingly produce to the BHEL Management the registration / enrolment number before awarding of contract work. As per the existing provision every worker who has completed three months continuous service or has actually worked for not less than 60 days within a period of three months or less shall be entitled and required to become a member of the fund. The employees' contribution payable at present is 12% of wage which will be recovered by the contractor from the wages of his workmen and the contractor should pay equal contribution. The contractor is also liable to pay any administrative charges in this behalf that may be decided from time to time, it will be the responsibility of the contractor to ensure such contribution payable in respect of workmen employed through sub-contractors also.
38. The contractor shall take note of any amendment in the rate of contribution payable under the scheme from time to time.
39. The contractor shall within seven days of the close of every month submit to BHEL a statement showing the amount of contribution payable/paid for employees engaged by him or through him and shall also furnish to BHEL such information as Principal Employer is required to furnish under the provision of the ESI Act and PF as well as the schemes made thereunder to the authorities concerned.
40. Whenever any sum of money is found to be recoverable from or payable by the contractor under the above Acts the same shall be deducted from any sum that may be due or which at any time thereafter may become due to the contractor under this contract or under any other contract or from his security deposit in case the recoveries are not sufficient to satisfy the claims, the contractor shall pay the balance thereof on demand. In case any recoveries are made this clause shall as may be required to replace the shortage caused by such recoveries in the amount of Security Deposit.

41. The contractor shall abide by all the labour and other laws applicable to contract labour/workers under this contract and shall at all times keep BHEL indemnified against all losses, claims, prosecutions under any law.
42. In case of non compliance of any of the provisions of the Acts and in case BHEL Having complied with the same BHEL will be entitled to recover the same from the contractor / sub contractor.
43. Non exercise of any of the power of or rights available to BHEL here under or under any law, shall not in any way operate as waiver thereof.

ACCEPTING OFFICER

FORM - IV

(See Rule 21(1) of Tamil Nadu Contract Labour Rules)

Application for Licence

01. Name and Address of the Contractor
(including his Father's Name in case of
Individuals) :
02. Date of Birth and age (in case of
Individuals) :
03. Particulars of Establishment where
Contract Labour is to be employed :
- a) Name and Address of the
Establishment :
- b) Type of business, trade industry
manufacture :
- c) Number and date of certificate of
Registration of occupation, which is
carried on the Establishment under
the Act. :
- d) Name and address of the Principal
Employer :
04. Particulars of contract labour :
- a) Nature of work in which contract
labour is employed or is to be
employed in the establishment :
- b) Duration of the proposed contract
work (give particulars of proposed
date of commencing and ending) :
- c) Name and address of the agent or
Manager of contractor at the worksite :
- d) Maximum No. of contract labour
proposed to be employed in the
establishment on any date :

05. Whether the contractor was convicted of any offence within the preceeding five years, if so give details :
06. Whether there was any order against the contractor revoking or suspending licence or forfeiting security deposit in respect of an earlier contract if so the date of such order :
07. Whether the contractor has worked in any other establishment within the past five years, if so, give details of the principal employer Establishment and nature of work :
08. whether a certificate by the principal Employer in form V is enclosed :
09. Amount of licence fee paid No of Treasury challan and Date :
10. Particulars of security deposit if any, requested to be adjusted, including Treasury Receipt number :
11. The amount of security deposit or balance if any after adjustment of amount to be refunded under rule 31 deposited with treasury Receipt Number and date :

DECLARATION

I hereby declare that the details above are correct to the best of my knowledge and belief.

PLACE :
DATED :

SIGNATURE OF THE APPLICANT
[CONTRACTOR]

NOTE : The application should be accompanied by a treasury Receipt for the appropriate amount and a certificate in Form V From the principal employer.

(To be filled in the office of the Licensing officer)

Date of receipt of the application with challan for fees / security Deposit.

SIGNATURE OF THE LICENSING OFFICER

CONTRACTOR

FORM - XIII

(See Rule 75 of Tamil Nadu Contract Labour Rules 1975)

Register of workman employed by contractor

Name and Address of the Contractor :

Name and location of work :

Name and address of establishment in /under
which contract is carried on :

Name and address of Principal Employer :

01. Serial Number :

02. Name and surname of workman :

03. Age and sex :

04. Father's / Husband's Name :

05. Nature of Employment /Designation :

06. Permanent Home address of workman
(village Taluk and District) :

07. Local Addresss :

08. Date of commencement of Employment :

09. Signature or Thump Impression of workman :

10. Date of termination of Employment :

CONTRACTOR

FORM - XIV

(See Rule 76 of Tamil Nadu Contract Labour Rules)

EMPLOYMENT CARD

Name and Address of contractor : Name and address of
Establishment in/under which
contract is
carried on _____

Nature of work and location of work : Name and address of
Principal Employer

01. Name of the workmen :

02. Sl. No. of register of workmen employed :

03. Name of Employment/Designation :

04. Wage rate (with particulars of unit in case of
Piece work) :

05. Wage period :

06. Tenure of Employment :

07. Remarks :

SIGNATURE OF CONTRACTOR

CONTRACTOR

FORM - XV

{See Rule 77 of Tamil Nadu Contract Labour Rules}

SERVICE CERTIFICATE

Name and Address of the contractor : Name and address of
Establishment in/under which
contract is
carried on _____

Name and location of the work :

Name and address of the workman : Name and address of Principal
Employer

Age or Date of Birth :

Identification marks :

Father's / Husband's Name :

Sl.No	Total period for which employed		Nature of work done		Rate of wage (with particulars units in case of piece of work	Remarks
	From	To				
(1)	(2)	(3)	(4)	(5)	(6)	(7)

SIGNATURE

CONTRACTOR

FORM - XVI

(See Rule 78 [1] [a] [i] of Tamil Nadu Contract Labour Rules)

MUSTER ROLL

Name and Address of contractor

: Name and address of
Establishment in/under which
contract is
carried on _____

Nature of location of the work

: Name and address of
Principal Employer _____

For the Month of _____

Sl. No	Name of workmen	Father's/Husbands Name	Sex	Dates					Remarks
				1	2	3	4	5	
(01)	(02)	(03)	(04)	(05)					(06)

SIGNATURE OF CONTRACTOR

CONTRACTOR

FORM - XVII

(See Rule 78(1) (a) (i) of Tamil Nadu Contract Labour Rules)

Register of wages

Name and Address of the Contractor :

Nature and location of work :

Name and address of establishment in/under
which contractor is carried on :

Name and address of Principal Employer :

Wage Period : MONTHLY

01. Serial Number :

02. Name of workman :

03. Sl. No. in Register of workman :

04. Designation / Nature of work done :

05. No. of days worked :

06. Units work done :

07. Daily rate of wages / Piece rate :

08. Basic wages :

09. Dearness allowance :

10. Overtime :

11. Other cash Payment
(Nature of payment to be indicated) :

12. Total :

13. Deductions, If any [indicate nature] :

14. Net amount paid :

15. Signature / Thumb impresion of workman :

16. Initials of contractor or his representative :

CONTRACTOR

FORM - XIX

(See Rule 78(1) (b) of Tamil Nadu Contract Labour Rules)

Wage Slip

Name and Address of the Contractor : Name and Father's /
Husband Name of the
workman _____

Name and location of work : For the week / Fortnight /
Month ending

01. No. of days worked :

02. No. of units worked in
case of piece rate workers :

03. Rate of daily wages /piece rate :

04. Amount of over time wages :

05. Gross wages Payable :

06. Deductions, if any :

07. Net amount of wages paid :

**INITIALS OF THE CONTRACTOR OR
HIS REPRESENTATIVE**

CONTRACTOR

FORM - XX

(See Rule 78(1) (a) (ii) of Tamil Nadu Contract Labour Rules)

Register of deductions for damage or loss

Name and Address of the Contractor	:	
Nature and location of work	:	
Name and address of establishment in/under which contractor is carried on	:	
Name and address of Principal Employer	:	
01. Serial Number	:	
02. Name of workman	:	
03. Father's / Husband's Name	:	
04. Designation / Nature of employment	:	
05. Particular of damage or loss	:	
06. Date of damage or loss	:	
07. Whether workman showed cause against deduction	:	
08. Name of person in which presence employee's explanation was heard	:	
09. Amount of deduction imposed	:	
10. No. of instalments imposed	:	
11. First Instalments	:	
12. Final Instalments	:	
13. Remarks	:	

Date of Recovery

CONTRACTOR

FORM - XXI.

(See Rule 78(1) (a) (ii) of Tamil Nadu Contract Labour Rules)

Register of Fines

Name and Address of the Contractor :

Nature and location of work :

Name and address of establishment in/under
which contractor is carried on :

Name and address of Principal Employer :

01. Serial Number :

02. Name of workman :

03. Father's / Husband's Name :

04. Designation / Nature of employment :

05. Act / Omission for which fine imposed :

06. Date of offence :

07. Whether workman showed cause against
fine :

08. Name of the person in whose presence
employee's explanation was heard :

09. Wage period & Wage payable :

10. Amount of fine imposed :

11. Date on which fine realised :

12. Remarks :

FORM - XXII

(See Rule 78 (1) (a) (ii) of Tamil Nadu Contract Labour Rules)

Register of Advance

Name and Address of the Contractor :

Nature and location of work :

Name and address of establishment in/under
which contractor is carried on :

Name and address of Principal Employer :

01. Serial Number :

02. Name of workman :

03. Father's / Husband's Name :

04. Designation / Nature of employment :

05. Wage period and wages payable :

06. Date and amount of advance given :

07. Purposes (s) for which advance made :

08. No. of instalments by which advance
to be repaid :

09. Date and amount of each instalment repaid :

10. Date on which instalment was repaid :

11. Remarks :

CONTRACTOR

FORM - XXIII

{See Rule 78(1) (a) (iii) of Tamil Nadu Contract Labour Rules}

Register of Overtime

Name and Address of the Contractor	:
Nature and location of work	:
Name and address of establishment in/under which contractor is carried on	:
Name and address of Principal Employer	:
01. Serial Number	:
02. Name of workman	:
03. Father's / Husband's Name	:
04. Sex	:
05. Designation / Nature of employment	:
06. Dates on which overtime worked	:
07. Total overtime worked or production in case of piece -rated	:
08. Normal rate of wages	:
09. Overtime rate of wages	:
10. Overtime earning	:
11. Date on which Overtime wages paid	:
12. Remarks	:

CONTRACTOR

PAYMENT CERTIFICATE

FORM "A"

Certified that :

1. I as contractor of
have made payment to all contract Labourers in full in respect of contract
No. as per terms of my contract
and in no case less than the rates applicable upto the period ending.
2. The above payment have been made by me in the presence of the au-
thorised representative of
of for
Employees amounting to Rs
3. The necessary payment registers attendance register / Form 12 . Leave
register / book under Laboure and industrial Law and other relevant records
have been maintained by me and available with me for production as and
when required .
4. No payment is due / outstanding to any contract Labourers engaged by
me in respect of the aforesaid contract upto the period ending
.....

CONTRACTOR

NAME :

DATE :

SUPERVISOR

NAME :

DESIGN :

DATE :

COUNTERSIGNED
OFFICER INCHARGE

NAME :

DESIGN :

DEPT. :

CONTRACTOR

ANNEXUR II
SAFETY RULES
(See Condition 2)

A BHEL SAFETY CODE

A

1. Suitable scaffolds shall be provided for workmen for all work that cannot safely be done from the ground, or from solid construction except such short period of work as can be done safely from ladder. When a ladder is used an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well suitable footholds and handholds shall be provided on the ladder and the ladder shall be give an inclination not steeper than $\frac{1}{4}$ to $1\frac{1}{2}$ horizontal and 1 vertical)
2. Scaffolding or staging more than 3.25 metres above the ground or floor, swing or suspended from an overhead support or erected with stationary support, shall have a guard rail properly attached, bolted braced and otherwise secured atleast 1 metre high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
3. Working platform, gangways and stairways shall be so constructed that they do not sag unduly or unequally, and its height of a platform or gangway or stairway is more than 3.25 metres above ground level or floor level it shall be closely boarded, have adequate width and be suitably fenced, as described in 2 above.
4. Every opening in floor of a building or in a working platform shall be provided with suitable means to prevent fall of persons or materials by providing suitable fencing or railing with a minimum height of 1 metre.
5. Safe means of access shall be provided to all working platform and other working places. Every ladder shall be securely fixed, no portable single ladder shall be over 9 metres in length. Width between side rails in a rung ladder shall in no case be less than 30 cm for ladders upto and including 3 metres in length. For longer ladder this width shall be increased by atleast 6mm for each additional 30cm of length. Uniform step spacing shall not exceed 30cm.

Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall provide all necessary fencing and light to protect public from the accident and shall be bound to bear expenses of defence of every suit-action or other proceeding at law that may be brought by any person for injury sustained owing to neglect of the above precautions, and pay any damages and cost which may be awarded in any such suit, action or proceeding to any such person or which may with the consent of the contractor be paid to compromise any claim by such person.

6. Excavation and Trenching

All trenches 1.5 metres or more in depth, shall at all time be supplied with atleast one ladder for each 30m length or fraction there of ladder shall be extended from bottom of trench to atleast 1 metre above surface of the ground . Sides of the trench 1.5 metres or more in depth shall be stepped back to give suitable slope or securely held by timber bracing,so as to avoid the danger of sides collapsing . Excavated materials shall not be placed within 1.5 metres of the edge of trench or half the depth of trench, whichever is more. Cutting shall be from top to bottom under no circumstances shall under mining or under - cutting be done.

7. Demolition :

Before any demolition work is commenced and also during the progress of work.

- a) All roads and open areas adjacent to the work site shall be closed or suitably protected .
 - b) No electric cable or apparatus which is liable to be a source of danger over a cable or apparatus used by the operator shall remain electrically charged.
 - c) All practical steps shall be taken to prevent danger to person employed from the risk of fire or explosion ,or flooding no floor , or roof or other part of building shall be so overloaded with debris or materials as to render it unsafe.
8. All necessary personal safety equipment as considered adequate by the Engineer-in-charge shall be /available for use of person employed on the site and maintained in a condition suitable for immediate use and the contractor shall take adequate steps to ensure proper use of equipment by those concerned.
- a) Workers employed on mixing asphaltic materials cement and lime mortars concrete shall be provided with protective footwear and protective gloves.
 - b) Those engaged in handling any material which is injurious to the eye shall be provided with protective goggles.
 - c) Those engaged in welding work shall be provided with welder's protective eye shells
 - d) Stone breaker shall be protective goggles and protective clothing and seated at sufficiently safe intervals.
 - e) When workers are employed in sewers and manholes which are in use , the contractor shall ensure that manhole covers are opened and manholes are ventiled atleast for an hour before the workers are allowed to get into them manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to public.
 - i) No paint containing lead or lead products shall be except in the form of paste or ready-made paint.
 - ii) Suitable face masks shall be supplied for use by workers when paint applied in the form of spray or surface having lead paint is dry rubbed and scrapped .

f) The contractor shall not employ men below the age of 18 and women on the work of painting with products containing lead in any form. Whenever men above the age of 18 are employed on the work of lead painting the following precaution shall be taken :

A i) No paint containing lead or lead products shall be used except in the form of paste or ready-made paint.

ii) Suitable face masks shall be supplied for use by workers when paint is applied in the form of spray or surface having paint is dry rubbed and scrapped

iii) Overalls shall be supplied by the contractor to workmen and adequate facilities shall be provided to enable working painters to wash during or cessation of work.

9. When work is done near any place where is risk of drowning ,all necessary equipment shall be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision made for prompt first aid treatment of all injuries likely to be sustained during the during the course of the work.

10. Use of hoisting machine and tackles including their attachments, anchorage and support shall conform to the following

a)

i) These shall be of good mechanical construction, sound materials and adequate strength and free from defects and shall be kept in good working order.

ii) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength and free from defects.

b) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 yrs shall be incharged of any hoisting machine including any scaffolding winch or give signals to operator.

c) In case of every hoisting machine and or every chain ,ring , hook, shackle swivel and pull block used in hoisting or lowering as means of suspension safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall have the safe working load plainly marked there on. In case of a hoisting machine having a variable safe working load, each safe working load at the condition under which it is applicable shall be clearly indicated. No part of any machine or gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.

d) In case of department machine ,safe working load shall be notified by the Engineer-in-charge. As regards contractor's machine the contractor shall notify safe working load of each machine to the Engineer-in-charge when ever he brings it to site of work and get it verified by the Engineer-in-charge.

11. Motors , gearing , transmission electric wiring and other dangerous parts of hoisting appliances shall be provided with efficient safeguards, hoisting appliances shall be provided with such means as will reduce to the minimum risk of accident descent of load . Adequate precaution shall be taken to reduce to the minimum risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations which are already energised insulating mats, working apparel such as gloves, sleeves and boots as may be necessary shall be provided. Workers shall not wear any rings watches ,carry keys or other materials which are good conductors of electricity.
12. All scaffolds , ladders and other safety devices mentioned or described here in shall be maintained in a safe condition and no scaffold , ladder or equipment shall be altered or removed while it is use. Adequate washing facilities shall be provided at or near the places of work.
13. These safety provision shall be brought to the notice of all concerned by display on a notice board at a prominent place at the workspot persons responsible for ensuring compliance with the safety code shall be named thereon by the contractor.
14. To ensure effective enforcement of the rules and regulations relating to safety precaution , arrangement made by the contractor shall be open to inspection by the Engineer-in-charge or his representation and the inspecting officers as defined in the contractor's Labour Regulations.
15. Notwithstanding to the above conditions 1 to 14, the contractor is not exempted from the operation of any other Act or Rule in force.

B. GENERAL SAFETY PRECAUTIONS TO BE FOLLOWED AT WORK SITES DURING EXECUTION

The following safety measures should be strictly adhered to during execution of works at sites.

1. Providing the working platform with toe-board and handrail for continuous working at heights.
2. Providing safety belt and lifeline at all times for men working at heights.
3. Providing dust or fume respirator in places where dust and fume concentration exists
4. Providing goggles and welding screens.
5. Providing acid and alkali proof rubber gloves for handling acids, alkali and chemicals, which are corrosive.
6. Providing rubber gloves for working on electrical works.
7. Ensuring proper lashing of the components while being transported in vehicles.
8. The vehicles must have side supports or have body to support the materials conveyed.
9. The materials should not be allowed to extend or overflow the sides of vehicles.
10. Materials should not be allowed to overhang from the rear edge of the body of the vehicle.
11. Driver of the vehicle must possess license.
12. Vehicle must not be overloaded prescribed limits.
13. Red flags and lights for parts projecting from the body of the vehicle must be provided.
14. The speed restrictions within the factory must be strictly adhered to.
15. The gas cylinders must always be handled on trolleys or kept tied down not in use. They should never be rolled as Roller for conveying.
16. Cylinders should not be used without regulators.
17. All excavations may be barricaded and red belts/ lamps must be provided .
18. All electrical connections must be properly earthed.
19. No work should be taken up for execution inside shop floor, without obtaining necessary work permit.
20. Providing helmet for high level work.
21. The contractor should maintain a register regarding the driver license particulars.
22. All Personnel Protective Equipments (PPE) conform to standard specification as per the details given in the code of conduct.
 - (i) Safety helmets confirming to IS-2925: 1984
 - (ii) Safety Belts confirming to IS-3521: 1983
 - (iii) Safety Shoes confirming to IS-1989: 1978
 - (iv) Eye and face protection devices confirming to IS – 8520:1977 & IS – 8940:1978
 - (v) Hand and body protective devices confirming to: IS – 2573: 1975
IS – 6994: 1973
IS – 8807: 1978
IS – 8519: 1977

Contractor including the subcontractors, agents and labours engaged on work are required to scrupulously adhere to the safety regulations, safety precautions and measures. Any violation thereof will invite punitive action being taken against them. Also contractors with frequent violations of safety regulations will not be entrusted with further work in this organization.

General:

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.

C. SAFETY PRECAUTION TO BE OBSERVED WHILE TRANSPORTING MATERIALS

I. Vehicle

1. Vehicle carrying materials should have proper registration documents and must be produced on demand by our Security staff.
2. The light on right side i.e. over the driver's cabin shall be in working condition
3. Both the head light as well as park lamps must be in working condition.

II. Movement of Vehicle

1. The vehicle should not travel at more than 20KMPH in our premises.
2. The driver of the vehicle must possess heavy duty licence and produce on demand by the Security Staff.
3. Vehicles carrying inflammable liquids in the tanks containers should have grounding chain or the tank container should be coated with insulating materials to avoid static electricity.
4. In road junction , speed breaker and Railway crossing the speed should be lowered and vehicles should proceed cautiously.
5. The driving should be ' keep to the left ' at all places.
6. The vehicles should not parked on the road which could obstruct the vehicular traffic.
7. No person other than driver should be allowed to sit or stand on the prime mover or trailer.
8. The vehicle should pass only through the approved routes. Short cuts should be forbidden.
9. There must be a safe distance behind another moving truck.
10. The driver should avoid making quick starts, jerk stop or quick turns at excessive speed .

III Shipping

1. Strong side supports should be provided on both sides of the trailer. The side supports should be fixed in such a way that it cannot be removed even temporarily.
2. Adequate packing must be given for easy slinging operations. The packing materials should be good enough to withstand the load.
3. The stacking of loads on the truck should be evenly placed. The load should not be heaped together or dumped over the chassis.
4. The load on the truck should not be beyond its standard capacity. The carrying capacity must be clearly marked on the trailers also.
5. The loaded materials should be fastened tightly with "WIRE ROPE". Manila rope or coir rope should not at all be used. There must be side packing such as gunny or rubber tyre between the sharp edges of the job and wire rope in order to avoid cut in the wire rope.
6. There must be minimum two fastening and it should be more in case of lengthier loads.
7. The wire rope should be in sound condition i.e there should not be links, knots or bristles etc.
8. The wire rope ends should be clamped with 'U' clamps.
9. The loose pieces should be bundled before loading on the truck.
10. There must be red flags or red lamps for the lengthly loads which extend beyond chassis.
11. The materials should not be stacked too high to avoid hitting against live electric lines.
12. The load should not be overhanging more than 0.9 metres from the end of body.
13. While transporting the scraps, there must be wire net cover to prevent falling of scrap.

IV General

1. The vehicles should not be moved directly inside the production building in case the materials are to be unloaded there. But the vehicles should be parked outside the building and the driver should ascertain the passage as well as the unloading points, with the help of the shop officials. This will avoid the congestion or blocking of traffic in the gangway.

16600 - 1M - 220 - 00491
DRAWING NO.

ALL DIMENSIONS ARE IN MILLIMETRES

A

B

C

D

E

F

G

H

A

B

C

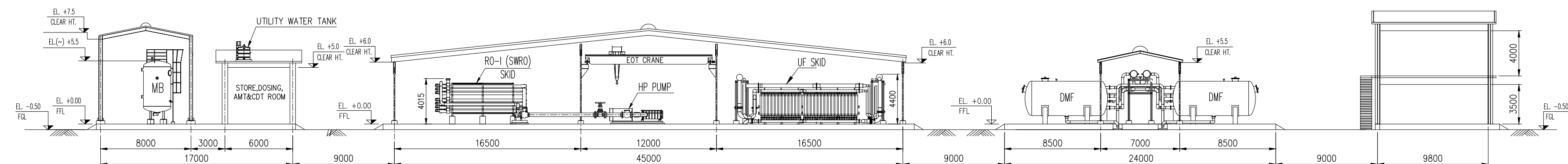
D

E

F

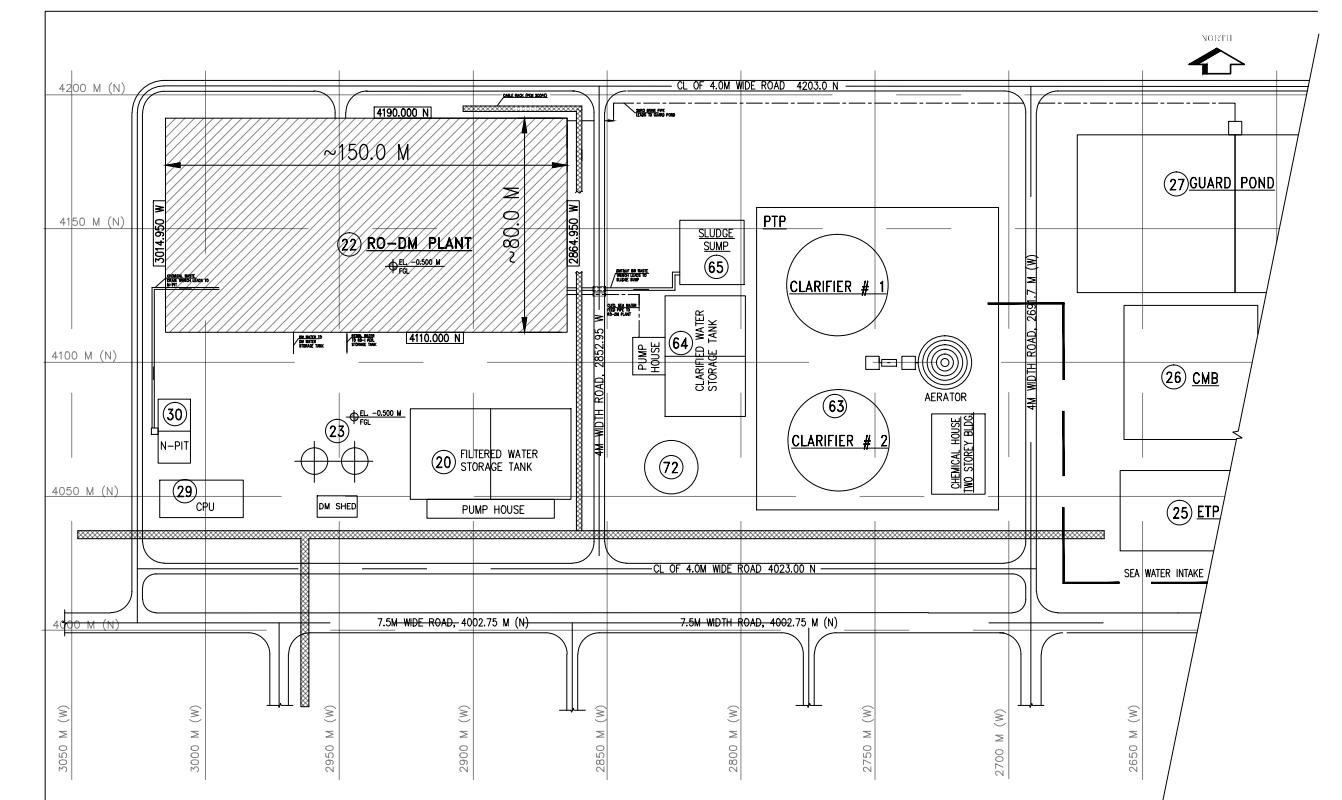
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H



SECTION A-A

NORTH



KEY PLAN

BUILDING AND TANK DETAILS

SL. NO.	NAME	SIZE - L x W x H (IN METERS)	DESCRIPTION	REMARKS
1	FILTER SHED	42.0 x 7.0 x 5.5	STRUCTURAL STEEL FRAMED STRUCTURE WITH METAL SHEET ROOFING. SIDE OPEN TYPE STRUCTURE. SIDE CLADDING STARTS AT ~4.0M HEIGHT FROM FFL CONTINUING UP TO ROOF LEVEL.	
2	UF-RO SYS BLDG.	45.0 x 37.0 x 6.0	STRUCTURAL STEEL FRAMED STRUCTURE WITH METAL SHEET ROOFING. SIDE OPEN TYPE STRUCTURE. SIDE CLADDING STARTS AT ~3.0M HEIGHT FROM FFL CONTINUING UP TO ROOF LEVEL.	
3	PUMP HOUSE	45.0 x 7.0 x 5.0	RCC FRAMED STRUCTURE WITH RCC ROOF & BRICK CLADDING. CLOSED TYPE STRUCTURE.	
4	DM SYS BLDG.	42.0 x 8.0 x 7.0	STRUCTURAL STEEL FRAMED STRUCTURE WITH METAL SHEET ROOFING. SIDE OPEN TYPE STRUCTURE. SIDE CLADDING STARTS AT ~3.0M HEIGHT FROM FFL CONTINUING UP TO ROOF LEVEL.	
5	CHEM. DOSING SYS ROOM	33.0 x 6.0 x 5.0	RCC FRAMED STRUCTURE WITH RCC ROOF & BRICK CLADDING. CLOSED TYPE STRUCTURE.	
6	LTMC & CONTROL ROOM I & II BLDG.	1st FLOOR: -54.0 x 10.0 x 4.0 2nd FLOOR: -62.0 x 10.0 x 3.5	RCC FRAMED STRUCTURES (TWO STORED BUILDING) WITH RCC ROOF & BRICK CLADDING. CLOSED TYPE STRUCTURE.	CABLE VAULT, BATTERY ROOM, OFFICE, LAB & TOILET ARE IN G. FLOOR
7	REMIN. BLDG.	15.0 x 5.0 x 4.0	STRUCTURAL STEEL FRAMED STRUCTURE WITH METAL SHEET ROOFING. SIDE OPEN TYPE STRUCTURE. SIDE CLADDING STARTS AT ~3.0M HEIGHT FROM FFL CONTINUING UP TO ROOF LEVEL.	
8	DMF BACKWASH TANK-600 CU.M	15.0 x 15.0 x 3.35	RCC TANK - TOP COVERED & ABOVE GROUND TANK	
9	UF PERMEATE WATER TANK	15.0 x 10.5 x 3.35 (EACH COMPT.-400 CU.M)	RCC TANK - TWO COMPARTMENT, TOP COVERED & ABOVE GROUND TANK	TWIN COMPT.
10	SWRO INT. PER. STORAGE TANK	15.0 x 15.0 x 3.15 (600 CU.M)	RCC TANK - TOP COVERED & ABOVE GROUND TANK	
11	RO-II PER. STORAGE TANK	Ø 17.0 x 5.6 H (1200 CU.M)	MS CYLINDRICAL TANK (EPOXY PAINTED) RESTING ON RCC RING WALL FOUNDATION	
12	DEGASSER TOWER PLATFORM	10.0 x 5.0 AT EL(+5.0)	RCC FRAMED STRUCTURE SUPPORTING PLATFORM	OPEN TO SKY

NOTES :

- FINISHED GRADED LEVEL (FGL) ELEVATION IS CONSIDERED AS -0.500 M.
- BUILDING DIMENSIONS FURNISHED IN THIS DRAWING ARE AS FOLLOWS.
FLOOR - COLUMN CENTRE TO CENTRE
HEIGHT - INSIDE CLEAR HEIGHT
- ALL RCC TANK DIMENSIONS FURNISHED IN THIS DRAWING ARE INSIDE CLEAR INCLUDING FREE BOARD AND DEAD VOLUME.
- STEEL TANK DIMENSION INDICATES INSIDE DIA AND CYLINDRICAL HT.
- OVER ALL SIZE OF THE RO-DM PLANT IS 150.0 M X 80.0 M
- ELEVATION 0.0 M CORRESPONDS TO RL (+) 10.0 M FROM MSL.
- ALL ELEVATION AND CO-ORDINATES SHOWN ARE IN METERS UNLESS OTHERWISE MENTIONED.
- CO-ORDINATES SHOWN FOR BUILDING, RCC TANKS AND OTHER FACILITIES ARE TENTATIVE.

REFERENCE DRGS :

- PLOT PLAN : PE-DG-412-100-M001 R.01
- KEY PLAN : 1-WT-220-00490 REV.01A

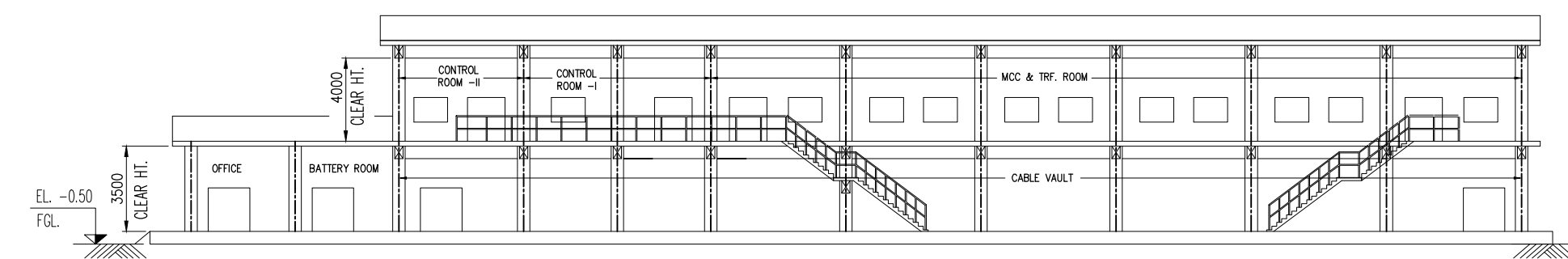
LEGEND :

	RCC ROOF		CABLE/PIPE RACK
	METAL CLADDING ROOF		BACKWASH WASTE DRAIN
	MAIN ROAD		CHEMICAL WASTE DRAIN
	APPROACH ROAD		BAP SCOPE
			OTHER'S / SISTER UNIT SCOPE

DMF&UF BW WASTE TRENCH LEADS TO SLUDGE SUMP
CLFD. SEA WATER FEED PIPE TO RO-DM PLANT

CUSTOMER NO. R4K4

PROJECT		2 X 660MW ENNORE SEZ SUPERCRITICAL TPP AT ASH DYKE OF NCTPS, CHENNAI		
OWNER		TAMILNADU GENERATION & DISTRIBUTION CORPORATION LTD.		
OWNER'S CONSULTANT		DESEIN PRIVATE LIMITED DESEIN HOUSE, NEW DELHI		
EPC CONTRACTOR		BHARAT HEAVY ELECTRICALS LIMITED, NEW DELHI UNIT : BOILER AUXILIARIES PLANT ; RANIPET PACKAGE : RO-DM UF - 1600 M ³ / Hr. ; RO - I (SWRO) - 560 M ³ / Hr. ; RO - II (BWRO) - 114 M ³ / Hr. ; DM - 110 M ³ / Hr. (Net)		
TITLE		RO-DM PLANT LAYOUT		
DRAWN		B B SAHU	Sd/-	13.04.15
CHECKED		G RAJENDIRAN	Sd/-	13.04.15
APPROVED		M NATRAJAN	Sd/-	13.04.15
ALL DIMENSIONS ARE IN MILLIMETRES		BHEL DRAWING NO.		
PROJECTION		1-WT-220-00491		
SCALE		N.T.S.		
		REV		



VIEW - X (ELEVATION OF CONTROL ROOM BUILDING)

TENDER PURPOSE ONLY

ZONE	REV	DATE	ALTD:	CHD:	APPD:
	01A	01.06.15	BBS	GR	MN
1. ALL BUILDINGS, RCC TANKS, OTHER FACILITIES AND ROADS CO-ORDINATES SHOWN. 2. REVISED BASED ON MOM DTD. 26.05.15					
ZONE	REV	DATE	ALTD:	CHD:	APPD:
	01	18.05.15	BBS	GR	MN
1. LTMC BLDG. RELOCATED 2. APPROACH ROAD NEAR DM BUILDING RELOCATED. 3. REVISED BASED ON PEM COMMENTS VIDE e-MAIL DTD. 13.05.2015					

Size A1

12

1 - WT - 220 - 00612
DRAWING NO.

EQUIPMENT LIST:-

ALL DIMENSIONS ARE IN MILLIMETRES

EQPT. NO	DESCRIPTION	QUANTITY	EQPT. DIMENSION	EQUIPMENT TAG NO	ZONE
01	COAGULANT AID DOSING SKID	1 W			
02	NaOCl DOSING SKID	1 W			
03	HORIZONTAL DMF	10W+1S			
04	DMF BACKWASH TANK	1W			
05	DMF BACKWASH PUMP	2W+1S			
06	DMF AIR BLOWER	1W+1S			
07	SELF CLEANING STRAINER	2W+1S			
08	PRESSURISED UF BLOCK	6W+1S			
09	UF BACKWASH TANK	1W			
10	UF BACKWASH PUMPS	1W+1S			
11	UF AIR BLOWER	1W+1S			
12	UF CIP TANK	1W			
13	UF CIP PUMP	1W+1S			
14	CITRIC ACID DOSING SKID	1W			
15	NaOCl DOSING SKID	1W			
16	HCl DOSING SKID	1W			
17	UF PER. WATER STORAGE TANK	2W			
18	CARTRIDGE FILTER FEED PUMPS	2W+1S			
19	ACID DOSING SKID	1W			
20	ANTISCALANT DOSING SKID	1W			
21	DECHLORINATION DOSING SKID	1W			
22	RO-I (SWRO) CARTRIDGE FILTER	2W+1S			
23	RO-I (SWRO) HP PUMPS	1W/STREAM			
24	ERO	1W/STREAM			
25	RO-I (SWRO) MEMBRANE BLOCK	2W+1S			
26	RO-I (SWRO) FLUSHING PUMPS	2W+1S			
27	SWRO INTER PERM.TANK	1W			
28	RO-I CIP PREP. TANK	1W			
29	RO-I CIP TANK	1W			
30	RO-I CIP PUMP	1W+1S			
31	RO-I CIP CART. FILTER	1W			
32	RO-I PERM. SUPPLY PUMPS	2W+1S			
33	NaOH DOSING SKID	1W			
34	RO-II CART. FILTER	2W+1S			
35	RO-II HP PUMP	2W+1S			
36	RO-II MEMBRANE BLOCK	2W			
37	RO-II CIP TANK	1W			
38	RO-II CIP PUMP	1W+1S			
39	RO-II CIP CART. FILTER	1W			
40	DEGASSER TOWER	2W			
41	DEGASSER AIR BLOWER	2W+2S			
42	RO-II PERMEATE STORAGE TANK	1W			
43	RO-III PERM. SUPPLY PUMPS	2W+1S			
44	SAC	2W			
45	SBA	2W			
46	MIXED BED	2W+1S			
47	MB AIR BLOWER	1W+1S			
48	DM REGEN.PUMPS	1W+1S			
49	ACID MEAS.TANK FOR SAC	1W			
50	ALKALI MEAS.TANK FOR SBA	1W			
51	ACID MEAS.TANK FOR MB	1W			
52	ALKALI MEAS.TANK FOR MB	1W			
53	REMIN. FILTER FEED PUMP	2W+1S			
54	REMIN. FILTER	2W+1S			
55	REMIN. FILTER BACKWASH PUMP	1W+1S			
56	NaOH DOSING SKID	1W			
57	EOT CRANE	1W			
58	MONORAIL HOIST IN PUMP HOUSE	1W			
59	MONORAIL HOIST IN CHEM HOUSE	1W			
60	UTILITY WATER TANK				

NOTES :

- FINISHED GRADED LEVEL (FGL) ELEVATION IS CONSIDERED AS -0.500 M
- RO-DM PLANT FINISHED FLOOR LEVEL (FLL) EL. IS (+)0.00M WHICH CORRESPONDS TO RL (+) w.r.t MSL.
- EQPT. NO.41 DEGASSER AIR BLOWER SHALL BE LOCATED BELOW DEGASSER PLATFORM.
- EQPT. NO.48 DM REGENERATION PUMPS SHALL BE LOCATED IN PEM'S DM WATER TRANSFER PUMP HOUSE.
- EQUIPMENT LOCATION DIMENSION & PIPE LINE ROUTING ARE FOR INFORMATION. FINAL DIMENSION WILL BE FURNISHED LATER.
- DRAIN CHANNEL, TRENCH AND PIPE LINE SHOWN ARE TENTATIVE AND THESE SHALL BE UPDATED AFTER DETAILED ENGINEERING.
- ALL THE PIPE TRENCHES AND DRAIN CHANNELS ARE COVERED WITH RCC SLABS.
- DCS ROOM IS AIR CONDITIONED.

REFERENCE DRGS :

- KEY PLAN : 1-WT-220-00490 REV.01
- PLANT LAYOUT : 1-WT-220-00491 REV.01

LEGEND :

- FGL - FINISHED GRADED LEVEL
FLL - FINISHED FLOOR LEVEL
RS - ROLLING SHUTTER
DD - DOUBLE DOOR
D - SINGLE DOOR
ES - EXHAUST FAN
SS - SAFETY SHOWER
PEM's scope
PIPE LINE
BOC - BOTTOM OF CONCRETE
- PLINTH PROTECTION OF 1.0M WIDTH ALL AROUND BUILDING
CHEMICAL RESISTANT TILED FLOOR
PAVEMENT
DWARF WALL

RO,DM PLANT - PLAN

TENDER PURPOSE ONLY

SECTION B-B

PROJECT		2 X 660MW ENNORE SEZ SUPERCRITICAL TPP AT ASH DYKE OF NCTPS, CHENNAI	
OWNER		TAMILNADU GENERATION & DISTRIBUTION CORPORATION LTD.	
OWNER'S CONSULTANT		DESEIN PRIVATE LIMITED DESEIN HOUSE, NEW DELHI	
EPC CONTRACTOR		BHARAT HEAVY ELECTRICALS LIMITED, NEW DELHI UNIT: BOILER AUXILIARIES PLANT; RANIPET PACKAGE: RO-DM UF - 1600 M ³ /Hr.; RO - I (SWRO) - 560 M ³ /Hr.; RO - II (BWRO) - 114 M ³ /Hr.; DM - 110 M ³ /Hr. (Net)	
TITLE		RO-DM EQUIPMENT LAYOUT	
ALL DIMENSIONS ARE IN MILLIMETRES		BHEL DRAWING NO.	
PROJECTION		SCALE	
N.T.S.		1-WT-220-00612	
REV		00	
NAME		Sd/-	
SIGN.		Sd/-	
DATE		20.05.15	
CHECKED		G RAJENDIRAN	
Sd/-		Sd/-	
DATE		20.05.15	
APPROVED		M NATRAJAN	
Sd/-		Sd/-	
DATE		20.05.15	