

TENDER SPECIFICATION

BHEL:PSSR:SCT: 1192

FOR

Handling at Site Stores / Storage yard,
Transportation to Site of Work, Erection,
Testing and Commissioning of Cooling Water
Piping including supply and application of
Protective Coating, Painting for Unit 5 of 210
MW set

at

Amarkantak Thermal Power Station

**Chachai Village,
Shahdol District,
Madhya Pradesh.**

PART – I TECHNICAL BID

BOOK NO :



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

Power Sector – Southern Region

690, Anna Salai, Nandanam, Chennai – 600 035.

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**BHARAT HEAVY ELECTRICALS LIMITED
(A Government of India Undertaking)
Power Sector, Southern Region
690, Anna Salai, Nandanam, Chennai – 35**

Tender Specification No. BHEL:PSSR:SCT: 1192

Messrs

Date :

Dear Sir,

Sub: Handling at Site stores / storage yard , Transportation to site of work, Erection , Testing and Commissioning of Cooling Water Piping including supply and application of protective coating, painting for unit 5 of 210 MW set at Amarkantak Thermal Power station, Chachai Village, Shahdol District, Madhya Pradesh.

Please find enclosed one set of non-transferable tender documents containing - **161** - pages of Tender Specification Booklet for the above work.

You are requested to go through the tender documents and offer your most competitive rate and submit the tender documents duly filled in as per procedure indicated in the tender specification along with requisite EMD of Rs.1,50,000/- (Rupees One Lakh fifty thousand only) in the form of Demand Draft drawn in favour of M/s.Bharat Heavy Electrical Limited Chennai - 35. Bids with Deviations from the tender conditions will be rejected.

**A SEPARATE LETTER SHALL BE FURNISHED INDICATING THAT
THERE ARE NO DEVIATIONS FROM THE TENDER CONDITIONS
(As in Page 8.)**

The completed quotations shall reach the office of the under signed on or before **29.09.2006** at **15.00** Hrs. The Technical bids, will be opened on the same day at **15.30** hrs. We shall separately intimate the date for opening the price bids only to those parties who are technically qualified. You are requested to depute your authorized representative at the time of opening.

**ANY REVISION OF RATES / PRICES WHATSOEVER AFTER THE
TIME AND DATE MENTIONED IN TENDER SPECIFICATION FOR
SUBMISSION OF COMPLETED QUOTATIONS SHALL NOT BE
ENTERTAINED UNLESS CALLED FOR SPECIFICALLY BY BHEL.**

Kindly acknowledge the receipt of the tender documents and confirm your participation.

Kindly note that BHEL reserves the right to reject any or all tenders without assigning any reason.

Thanking you,

Yours faithfully,
For and on behalf of
BHARAT HEAVY ELECTRICALS LIMITED

SENIOR DEPUTY GENERAL MANAGER / CONTRACTS

This Tender document is not transferable.

Place : Chennai -35

Encl: One set of Tender documents with drawings



Bharat Heavy Electricals Limited

(A Govt. of India Undertaking)

Power Sector – Southern Region

EVR Periyar Building

690 , Anna Salai, Nandanam, Chennai – 600 035.

SPECIAL INSTRUCTIONS TO BIDDERS

The Bidder must submit their bids as requested in a sealed cover prominently super scribing the Tender Specification number, due date and time of submission as mentioned in the **TENDER NOTICE**.

The following information shall be furnished by the Bidder along with their offer (Technical Bid cover)

01. Details of previous experience during the last five years indicating contract value, duration, completion period and present engagement as per G.C.C.
02. Organisation structure of the Company as per GCC.
03. Financial status of the firm enclosing balance sheet and profit and loss account for the past 3 years and certificate from the Company's Banker as per G.C.C
04. Turnover of the Company in last 3 financial years pertaining to this scope of work only.
05. Latest Income Tax clearance certificate.
06. **BIO DATA** of key personnel presently in the Rolls of the company and proposed site organization for carrying out the work including deployment of Engineers and Supervisors.
07. Declaration sheets as per Appendix of Tender Specification.
08. Checklist and Schedule of General particulars as per Appendix in GCC.
09. T & P owned/deployment details as per G.C.C.
10. Technical manpower deployment details as per G.C.C
11. Other relevant details as per GCC and checklist.

12. These terms and conditions will be read and construed along with General Conditions of contract and in case of any conflict or inconsistency between the General conditions and the Terms and conditions of the tender specification, the provisions contained in the Term and conditions (NIT, Rate Schedule, Common conditions, Special Conditions including Appendices) shall prevail.

13. THE BIDDERS ARE REQUESTED TO FURNISH THE DOCUMENTS LIKE COPIES OF LOI'S, WORK ORDER'S ETC PERTAINING TO THE EXPERIENCE INDICATED IN QUALIFYING REQUIREMENT, AS GIVEN BELOW.

14. QUALIFICATION REQUIREMENT

- a) The bidders should have executed LP piping / CW piping works in thermal power plant in minimum of one unit capacity 1 x 210 MW or above or LP piping / CW piping in large steel mills, Fertilizer plants and refineries in the last seven years.
- b) The bidders should have a minimum average financial turn over of **Rs. 75 Lakhs** per year in the preceding three years ending 31st March 2005.

The Bidder must have earned profit in any one of the last three financial years ending 31.03.2005 and should have positive net worth as on 31.03.2005.

Bidder should submit audited balance sheet and profit & loss account of the company for last three years ending 31.03.2005 in support of above requirement.

- c) Notwithstanding the above, BHEL reserves the right to reject any Tender or all the Tenders for reasons whatsoever beyond our control and the decision of BHEL is final.

LD / Penalty shall be leviable as per the applicable clauses of GCC.

15. TENDERERS HAVE TO FURNISH A DECLARATION SHEET INDICATING THAT THERE IS NO DEVIATION FROM THE TENDER DOCUMENTS (AS IN PAGE 8). TENDERERS MAY FURTHER NOTE THAT THIS DECLARATION IS A PREREQUISITE FOR BHEL TO CONSIDER THEIR BIDS. BIDS SUBMITTED WITHOUT "**NO DEVIATION DECLARATION**" WILL BE REJECTED BY BHEL.

16. SAFETY PLAN

Bidder may further note that the submission of safety plan is a prerequisite for BHEL to consider their bids.



Bharat Heavy Electricals Limited

(A Govt. of India Undertaking)

Power Sector – Southern Region

EVR Periyar Building

690 , Anna Salai, Nandanam, Chennai – 600 035.

PROCEDURE FOR SUBMISSION OF SEALED BIDS

The Tenderers must submit their bids as required in two parts in separate sealed covers prominently super scribed as Part I "Technical Bid" and Part II "Price Bid" and also indicating on each of the covers the tender specification number and due date and time as mentioned in the Tender Notice.

Part I (Technical Bid) Cover I

Excepting Rate Schedule, all other schedules, data sheets and details called for in the specification shall be enclosed, in part I Technical Bid only.

Part II (Price Bid) Cover II

All indications of price shall be given in this part II Price Bid.

Tenderers are requested to quote their rates, only in the price bid (part II) provided by BHEL. Quoting of rates in any other form / formats will not be entertained.

These two separate cover I & II (Part I and Part II) shall together be enclosed in a third envelope (Cover III) along with requisite EMD as indicated and this sealed cover shall be super scribed and submitted to Senior Deputy General Manager/Contracts at the above mentioned address before the due date as indicated. The Tenderers will be intimated separately in case any clarifications are required.

Note : Tenderers are issued with 2 Nos. of Technical Bids, 2 Nos. of Price Bids , out of which one set of each document shall be retained by them for their reference. Balance one set shall be submitted along with their offer as per procedure indicated above.

EMD amount for this Tender is Rs.1,50,000/- (Rupees one Lakh fifty thousand only). This EMD amount shall be submitted in the form of demand draft only drawn in favour of M/s. Bharat Heavy Electricals Limited, Chennai – 35.

EMD amount in the form of Bank Guarantee / fixed deposit receipt or in any other form will not be accepted.

ANY REVISION OF RATES / PRICES WHATSOEVER AFTER THE TIME AND DATE MENTIONED IN TENDER SPECIFICATION FOR SUBMISSION OF COMPLETED QUOTATIONS SHALL NOT BE ENTERTAINED UNLESS CALLED FOR SPECIFICALLY BY BHEL.

Sr. Deputy General Manager/Contracts.



Bharat Heavy Electricals Limited

(A Govt. of India Undertaking)

Power Sector – Southern Region

EVR Periyar Building

690 , Anna Salai, Nandanam, Chennai – 600 035.

TENDER NOTICE

Sealed Tenders are invited from reputed contractors with sufficient previous experience in the under mentioned similar nature of work:

Tender Specification No. BHEL:PSSR:SCT: 1192

Description	EMD
Handling at Site stores / storage yard , Transportation to site of work, Erection , Testing and Commissioning of Cooling Water Piping including supply and application of protective coating, painting for unit 5 of 210 MW set at Amarkantak Thermal Power station, Chachai Village, Shahdol District, Madhya Pradesh.	Rs.1,50,000/- (Rupees one Lakh fifty thousand only)

Cost of Tender Documents (Including all Taxes)	:	Rs.1105/-
Sale Starts on	:	16.09.2006
Sale closes on	:	28.09.2006
Due date and Time for Submission	:	29.09.2006 15.00 Hrs.
Date and time for opening Of Technical Bids	:	29.09.2006 15.30 Hrs.

QUALIFICATION REQUIREMENT

- a) The bidders should have executed LP piping / CW piping works in thermal power plant in minimum of one unit capacity 1 x 210 MW or above or LP piping / CW piping in large steel mills, Fertilizer plants and refineries in the last seven years.
- b) The bidders should have a minimum average financial turn over of **Rs. 75 Lakhs** per year in the preceding three years ending 31st March 2005.

The Bidder must have earned profit in any one of the last three financial years ending 31.03.2005 and should have positive net worth as on 31.03.2005.

The bidders should submit audited balance sheet and profit & loss account of the company for last three years ending 31.03.2005 in support of above requirement.

- c) Notwithstanding the above, BHEL reserves the right to reject any Tender or all the Tenders for reasons whatsoever beyond our control and the decision of BHEL is final.
- d) Approval of the agency by the Customer

LD / Penalty shall be leviable as per the applicable clauses of GCC.

Interested parties can get the Tender documents from the office of the Senior Deputy General Manager / Contracts on all working days by remitting the cost of tender documents either by Cash or A/c Payee Demand Draft drawn in favour of M/s. Bharat Heavy Electricals Limited, Chennai – 600 035. Money order, Cheques and Postal Orders will not be accepted.

The Bharat Heavy Electricals Limited takes no responsibility for any delay, loss or non-receipt of tender documents sent by post and also reserves the right to reject any or all the tender without assigning any reason therefor. **TENDER NOT ACCOMPANIED BY THE PRESCRIBED EARNEST MONEY DEPOSIT ARE LIABLE TO BE SUMMARILY REJECTED.**

SENIOR DEPUTY GENERAL MANAGER/CONTRACTS

TENDER SPECIFICATION : BHEL:PSSR:SCT:1192

CERTIFICATE FOR NO DEVIATION

I, _____ Of

M/s _____

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

SIGNATURE OF THE TENDERER

OFFER OF CONTRACTOR

Senior Deputy General Manager/Contracts
Bharat Heavy Electricals Limited,
Power Sector : Southern Region
690, Anna Salai,
Nandanam,
Chennai – 600 035.

Sir,

I/We hereby offer to carry out the work detailed in Tender Specification No.BHEL:PSSR:SCT:1192 issued by Bharat Heavy Electricals Limited, Power Sector : Southern Region, in accordance with the terms and conditions thereof.

I/We have carefully perused the following documents connected with the above work and agree to abide by the same.

1. Instructions to Tenderer
2. General Conditions of Contract
3. Special conditions of Contract
4. Other Section, Appendices and Schedules

I / We have deposited / forwarded herewith the Earnest Money Deposit / a sum of Rs.1,50,000/- (Rupees One Lakh and fifty thousand only) vide DD.No. _____ Dt. _____ which shall be refunded should our offer not be accepted. Should our offer be accepted, I/We further agree to deposit such additional sum which along with the sum of Rs.1,50,000/- (Rupees One Lakh and fifty thousand only) mentioned above, to make up the Security Deposit for the work as provided for in the Tender Specification within the stipulated time as may be indicated by BHEL, Power Sector : Southern Region, Chennai – 600 035.

I / We further agree to execute all the works referred to in the said documents upon the terms and conditions obtained or referred to therein and as detailed in the appendices annexed thereto.

DATE:

CONTRACTOR:

PLACE:

ADDRESS:

Witness with their address

Signature

Name

Address

PROJECT INFORMATION

- 1.0 OWNER :** MADHYA PRADESH STATE ELECTRICITY BOARD
- 2.0 PROJECT TITLE:** 1X210 MW AMARKANTAK THERMAL POWER STATION
EXTN. UNIT#5

3.0 INTRODUCTION

The Amarkantak Thermal Power Station has been set up at Chachai village, situated at a distance of 40 kms from , District Hd. Qr. Shahdol, Madhya Pradesh. The existing station is having 2 units each of 30 MW and 2 units each of 120MW .Now the plant is being extended by adding one unit of 210 MW capacity in the same premises.

4.0 APPROACH TO SITE

The power station site is connected to Distt. H.Q. Shadol (MP) by metalled road. Nearest railway station is Amlai, on the Katni-Bilaspur section of South Eastern Railway at a distance of 8 km. The power station is having its own broad gauge siding for bringing coal and support fuel and can be utilized for extension project. Nearest airport is Jabalpur, approximately 250 km away by road.

5.0 METEOROLOGICAL DATA

5.1 Ambient temperatures:

- a). Maximum temperature of the air in : 48.0⁰C
the sun
 - b). Maximum temperature of the air in : 45.6⁰C
the shade
 - c). Minimum temperature of the air in : 1.6⁰C
the shade
- 5.2 Maximum Relative Humidity : 95%
- 5.3 Minimum Relative Humidity : 20%
- 5.4 Average Annual rainfall : 1055 mm
- 5.5 Seismic Zone : Zone III as per IS 1893 - 2002 .
- 5.6 Height above MSL : 477 M (Average)
- 5.7 The basic wind speed Vb(as per : 39m/sec.
IS:875 Latest Revision) at 10 m
above the mean ground level

6.0 ELECTRICAL DATA

6.1	Ambient temperature for Design of electrical equipment	:	50°C
6.2	Ambient temperature for Design of electrical equipment in air-conditioned area if 2x100% air conditioning system is provided.	:	35°C
6.3	Relative humidity for design of electrical equipment	:	85%
6.4	Rated frequency	:	50Hz
6.5	Frequency variation	:	All equipment shall be suitable for rated frequency of 50 Hz with variation of (+) 5% to (-) 5% and 10% combined variation (sum of absolute values) of voltage and frequency.
6.6	The voltage level for motor shall be as follows:		
	– > 160 KW	:	6.6 KV ± 10 % ,3 ph , 50 Hz
	– < & = 160 KW	:	415 V ± 10 % ,3ph , 50 Hz
6.7	AC control voltage	:	240 V ,1ph, 50 HZ (To be derived through Control Transformer)
6.8	UPS Voltage	:	240 V ,1ph , 50 Hz
6.9	DC Voltage for motor, protection, control and emergency lighting	:	220 V
6.10	DC Voltage for control & instrumentation	:	24 V
6.11	AC Voltage for lighting, Space heating	:	240 V , 1ph , 50 Hz
6.12	AC emergency supply	:	415V; 3 Ph; 3 wire
6.13	DC Voltage variation	:	187 V - 242 V for 220 V DC 21.75 V - 28 V for 24 V DC
6.14	<u>Fault levels:</u>		
	220 KV System	:	40 kA
	6.6KV System	:	40 kA
	415V System	:	50 kA
	220V DC System	:	15 kA

6.15 **Grounding:**

- | | | | |
|-----|------------------|---|---|
| a). | 220KV System | : | Solidly grounded |
| b). | Generator | : | High resistance grounded
through distribution
Transformer with resistor
loaded secondary |
| c). | 6.6KV System | : | Low Resistance Grounded
with Earth-Fault Current
limited to 300A |
| d). | 415V System | : | Solidly grounded |
| e). | 220V DC System | : | Ungrounded |
| f). | Diesel Generator | : | Ungrounded |

**General Conditions of Contract for
Works in Power Sector of
Bharat Heavy Electricals Limited
For Mechanical, Electrical & Enabling works**

SECTION I

1. GENERAL INSTRUCTIONS TO TENDERERS :

1.1 DESPATCH INSTRUCTIONS :

- 1.1.1 This tender specification as a whole, duly furnishing all the details required and other documents as required in the following pages, shall be duly signed and sent in sealed cover duly super scribing the name of work as given in the tender notice.
- 1.1.2 The tender shall be addressed to : Officer inviting tender as indicated in the tender notice.
- 1.1.3 Tenders submitted by post shall be sent as “REGISTERED POST ACKNOWLEDGEMENT DUE” or by any mode and shall be posted with due allowance for any postal delay. The tenders received after the due date and time of opening are liable to be rejected. Telegraphic offers and offers received by telex, fax, electronic mail will not be considered.
- 1.1.4 Tenders shall be opened by authorized official of BHEL at his office at the time and date as specified in the tender notice in the presence of those tenderers or their authorized representatives who may be present.
- 1.1.5 The tenderers shall closely peruse all the clauses, specifications and drawings indicated in the Tender Documents before quoting. Should the tenderer have any doubt about the meaning of any portion of the Tender Specifications or find discrepancies or omission in the drawings or the tender documents issued are incomplete or shall require clarification on any of the technical aspect, scope of work etc., he shall at once contact the authority inviting the tender for clarification before the submission of the tender.
- 1.1.6 Before tendering, the tenderers are advised to inspect the site of work and the environments and be well acquainted with the actual working and other prevalent conditions, facilities available, position of material and labour. No claim will be entertained later on the ground of lack of knowledge. The tenderer should fill up and sign the form provided in the document without fail. The offer is liable for rejection by BHEL if the contractor is not fulfilling this requirement.

1.1.7 **TENDERER MUST FILL UP ALL THE SCHEDULES AND FURNISH ALL THE REQUIRED INFORMATION AS PER THE INSTRUCTIONS GIVEN IN VARIOUS SECTIONS OF THE TENDER SPECIFICATION. EACH AND EVERY PAGE OF THE TENDER SPECIFICATION MUST BE SIGNED, STAMPED AND SUBMITTED ALONG WITH THE OFFERS BY THE TENDERER IN TOKEN OF COMPLETE ACCEPTANCE THEREOF. THE INFORMATION FURNISHED SHALL BE COMPLETE BY ITSELF.**

1.1.8 The tenderer shall quote the rates in English Language and international numerals. These rates shall be entered in figures as well as in words. In case of difference in rates between words and figures, the least of the two will be treated as valid rate. For the purpose of the tender, the metric system of units shall be used.

1.1.9 All entries in the tender shall either be typed or to be written in ink, including ball point pens. Erasers and over writings are not permitted and may render such tenders be liable to summary rejection. All cancellations and insertions shall be duly attested by the tenderer, without fail.

1.2 **QUALIFICATION OF TENDERERS :**

Only tenderers who have previous experience in the work of this nature and description detailed in this tender specification are expected to quote for this work duly detailing their experience along with the offer. Offers from tenderers who do not have proven and established experience in the field are not likely to be considered. The tenderers are requested to refer to the Special Conditions of Contract for any specific requirement and the qualification requirement mentioned, if any.

1.3 **DATA TO BE ENCLOSED :**

Full information/documents shall be given by the tenderer in respect of the following. Non submission of these information may lead to rejection of the offer.

1.3.1 **FINANCIAL STATUS :**

A certificate from Scheduled Bank to prove his financial capacity to undertake the work duly indicating financial limits the tenderer enjoys or Solvency Certificate from the concerned Government authority. Information required in Section IV shall be furnished by the tenderer along with the offer.

1.3.2. **INCOME – TAX CERTIFICATES :**

A Certificate of Income –Tax clearance from the appropriate authority in the forms prescribed therefor duly indicating annual turnover. These certificates shall be valid for one year from the date of issue or for the period prescribed therein for all tenders submitted during that period.

1.3.3 PREVIOUS EXPERIENCE :

A statement giving particulars duly supported by documentary evidence of the various services rendered for each similar works by the tenderer indicating the particulars and value of each work, the site location, duration and date of completion. A list of site location, particulars and value of various services that are under progress. Information required in Section V shall be furnished by the tenderers along with the offer.

1.3.4 ORGANISATION CHART :

The organization pattern that is totally available with him and that will be employed by the tenderer for this work duly indicating the number of executives, the number of supervisors, the number of skilled and unskilled persons etc. as per the enclosed format to be furnished (Section IV & V)

1.3.5 An attested copy of the Power of Attorney, in case the tender is signed by an individual other than the sole proprietor, shall also be attached.

1.3.6 IN CASE OF AN INDIVIDUAL :

His full name, address and place and nature of business.

1.3.7 IN CASE OF PARTNERSHIP FIRMS:

The name of the partners and their addresses. A copy of the partnership deed/instrument of partnership certified by Notary Public shall be enclosed.

1.3.8 IN CASE OF COMPANIES:

Copy of Certificate of Registration giving date and place of registration including date of commencement. In case of public companies certified copies of Memorandum and Articles of Association are to be furnished.

1.3.9 Nature of business carried on by the Company and the provisions of the Memorandum relating thereof.

1.3.10 Names and particulars including addresses of all the Directors and their previous experience.

1.3.11 A list of tools and tackles that the tenderer is having and those that will be used on this job.

1.3.12 In addition to the above, the particulars required in various annexures /appendices.

1.4.0 EARNEST MONEY DEPOSIT :

Every tender must be accompanied by the prescribed amount of Earnest Money Deposit in the following forms .

- 1.4.1 Pay Order or Demand Draft duly drawn in favour of Bharat Heavy Electricals Limited.
- 1.4.2 Cash, to the extent permitted under Income-Tax Act.
Note:
1) Cheques, Currency Notes enclosed in covers, Money Orders or Postal Orders will not be accepted.
2) Bank Guarantee will not be accepted.
- 1.4.3 Tenders received without Earnest Money in full in the manner prescribed above are liable to be rejected.
- 1.4.4 The Earnest Money Deposit of the successful tenderer paid in the form of DD/pay order will be retained towards cash portion of Security Deposit.
- 1.4.5 In the case of unsuccessful tenderers, the Earnest Money will be refunded to them within a reasonable time after finalisation of the tender
- 1.4.6 Earnest Money pertaining to the successful tenderer will be forfeited if the tenderer.
1. Fails to start the work as indicated in the Letter of Intent. In case the LOI is silent in this regard, then within 15 days after award of contract.
2. After opening of Tender, revokes/ withdraws his tender within the validity period, revises/alters his earlier quoted rates/conditions.

1.5 **AUTHORISATION AND ATTESTATION:**

- 1.5.1 Tenders shall be signed by persons duly authorized /employed to do so. Certified copies of such authority and relevant documents are to be enclosed.

1.6 **VALIDITY OF OFFER:**

The rates in the Tender shall be kept open for acceptance for a minimum period of six months from the date of opening of tenders. In case Bharat Heavy Electricals Limited, calls for negotiation, such negotiation shall not amount to cancellation or withdrawal of the original offer which shall be binding on the tenderers.

1.7 **EXECUTION OF CONTRACT:**

The successful tenderer's responsibility under this contract commences from the date of issue of the Letter of Intent by Bharat Heavy Electricals Limited. The tenderer shall submit an unqualified acceptance to the letter of Intent within the period stipulated therein. The text of acceptance of Letter of Intent should read as follows:

“We hereby acknowledge receipt of your Letter of Intent No.....dated..... and we convey our unqualified acceptance for the same.

The successful tenderer shall be required to execute an agreement in the prescribed form (Annexure 'D') with BHEL within a reasonable time after the acceptance of his tender and in any case before submitting the first bill for payment. The expenses for completion and stamping and registration of the agreement with prescribed authority, if necessary shall be borne by the contractor.

1.8 SECURITY DEPOSIT:

1.8.1 Upon acceptance of tender, the successful tenderer within the time specified in the Letter of Intent must deposit the required amount of Security Deposit for satisfactory completion of work.

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

1.8.2.1 Upto Rs.10 lakhs 10 %

1.8.2.2 Above Rs.10 lakhs)
Upto Rs.50 lakhs) 1 lakh + 7.5% of the amount exceeding Rs.10 lakhs

1.8.2.3 Above Rs. 50 lakhs Rs 4. lakhs + 5% of the amount exceeding Rs.50 lakhs

1.8.3 The Security Deposit should be deposited before start of work. Security Deposit may be furnished in any one of the following forms :

- i) Cash (as permissible under the Income Tax Act)
- ii) Pay Order, Demand Draft in favour of BHEL.
- iii) Local Cheques of scheduled banks, subject to realisation.
- iv) 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).

1.8.3.1 50% of Security Deposit as indicated in the letter of Intent can either be remitted in cash to the cashier of Power Sector of BHEL or submitted in the form of Bank Guarantee in the prescribed Performa, the validity being up to completion of work as stipulated in Letter of Intent and the balance deposit can be remitted in cash or can be recovered by deduction from running bills at 10% of the value of each running bill till the full Security Deposit is made up. The bank Guarantee furnished towards Security Deposit should be kept valid by proper renewal till the said work is actually completed.

1.8.4 If the value of the work done at any time exceeds the accepted agreement value, the Security Deposit shall be correspondingly enhanced and the extra Security Deposit shall be immediately deposited by the Contractor or recovered from payments due to him.

- 1.8.5 Regarding adjustment of Earnest Money Deposit towards part of Security Deposit, refer clause 1.4.4 above.
- 1.8.6 Failure to deposit the Security Deposit within the stipulated time, may lead to forfeiture of Earnest Money and Cancellation of the award of work.
- 1.8.7 If any part of Security Deposit of the Contractor is held in the form of approved securities, it shall be kept transferred in the name of Bharat Heavy Electricals Limited, Power Sector, in such a manner that the same can be realised fully without referring to the Contractor. BHEL shall not be responsible for any depreciation in the value of the Security while in BHEL's custody or for any loss of interest thereon.
- 1.8.8 BHEL reserves the right of forfeiture of Security Deposit in addition to the other claims and penalties in the event of the Contractor's failure to fulfill any of the contractual obligations or in the event of termination of contract as per terms and conditions of contract. BHEL reserves the right to set off the Security Deposit against any claims of any other contracts with BHEL.

1.8.9 **RETURN OF SECURITY DEPOSIT:**

If the contractor fully performs and completes the work in all respects to the entire satisfaction of BHEL and present an absolute " No Demand Certificate" in the prescribed form and returns properties belonging to BHEL handed over, lent or hired by him for carrying out the said works, Security Deposit will be released to the contractor after deducting all cost of expenses or other amounts that are to be paid to BHEL under this or other contracts entered into with the contractor. **It may be noted that in no case the Security Deposit shall be refunded / released prior to passing of final bill.**

1.9 **REJECTION OF TENDER AND OTHER CONDITIONS:**

- 1.9.1 The acceptance of tender will rest with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever.
- 1.9.1.1. To reject any or all of the tenders.
- 1.9.1.2 To split up the work (Please refer NIT and Special Conditions of Contract).
- 1.9.1.3 Either of the contingencies stated (1.9.1.1) and (1.9.1.2) above to modify the time for completion suitably.
- 1.9.2 Conditional tenders, tenders containing absurd or unworkable rates and amounts and tenders which are incomplete and otherwise considered defective and tenders not in accordance with the tender conditions, specifications etc, are liable to be rejected.

- 1.9.3 If a tenderer expires after the submission of his tender or after the acceptance of his tender, BHEL may at their discretion, cancel such tender. If a partner of a firm expires after the submission of the tender or after the acceptance of the tender, BHEL may cancel such tender at their discretion unless the firm retains its character.
- 1.9.4 BHEL will not be bound by any Power of Attorney granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the contract. They may, however, recognize such Power of Attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.
- 1.9.5 If tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract, if awarded and forfeit the Earnest Money/Security deposit, any other money due.
- 1.9.6 If the tenderers resort to canvassing in any form in connection with the tenders submitted by them, such tenders are liable to rejection.
- 1.9.7 Should a tenderer or Contractor or in the case of a firm of Company of contractors/ one or more of its partners/Shareholders/ Directors have a relation or relations employed in BHEL, the authority inviting tender shall be informed of the fact along with the offer, failing this BHEL, may, at its sole discretion reject the tender or cancel the contract and forfeit the Earnest Money/Security Deposit.
- 1.9.8 The successful tenderer should not sub-contract part or complete work detailed in the tender specification undertaken by him without prior written permission of BHEL. The tenderer is solely responsible to BHEL for the work awarded to him.
- 1.9.9 No interest shall be payable by BHEL on Earnest Money, Security Deposit/ or on any money due to the Contractor by BHEL.

General Conditions of Contract

SECTION II

2.1 DEFINITION:

The following terms shall have the meaning hereby assigned to them except where the context otherwise required.

- 2.1.1 BHEL (or B.H.E Ltd) shall mean Bharat Heavy Electricals Limited, a company registered under Indian companies Act 1956, with its Registered Office at BHEL House, Siri Fort, New Delhi –110 049, or its Authorised Officers or its Resident Engineer or other employees authorised to deal with any matters with which these persons are concerned on its behalf.
- 2.1.2 **“GENERAL MANAGER”** shall mean the Officer in Administrative charge of contracting unit of BHEL.
- 2.1.3 **“ENGINEER”** or **“ENGINEER IN CHARGE”** shall mean engineer deputed by BHEL. The term includes “DGM”, “PROJECT MANAGER”, “RESIDENT MANAGER”, “SITE ENGINEER”, “RESIDENT ENGINEER” and “ASSISTANT SITE ENGINEER” of BHEL at the site as well as the Officers in charge at Head Office.
- 2.1.4 **“SITE”** shall mean the place or places at which the plants/ equipment are to be erected and services are to be performed as per the specification of this contract.
- 2.1.5 **“ CLIENT OF BHEL”** or **“ CUSTOMER”** shall mean the project authorities to whom BHEL is supplying the equipments/services.
- 2.1.6. **“CONTRACTOR”** shall mean the individual, firm or company who enters into contract with BHEL and shall include their executors, administrators, successors and permitted assignees.
- 2.1.7 **“CONTRACT”** or **“CONTRACT DOCUMENT”** shall mean/and include the agreement or work order, the accepted appendices of rates, Schedule of Quantities, if any and General Conditions of Contract, the Special Conditions of Contract, instructions to the tenderers, the drawings, the technical specifications, the special specifications, if any, the tender documents and the letter of Intent/Accepting letter issued by BHEL. Any conditions or terms stipulated by the contractor in the tender documents or subsequent letters shall not form part of the contract unless, specially accepted in writing by BHEL, in the Letter of Intent and incorporated in the agreement.

- 2.1.8 **“GENERAL AND SPECIAL CONDITIONS OF CONTRACT”** shall mean the “Instructions to Tenderers and General and Special conditions of contract pertaining to the work, for which the tenders are called for”
- 2.1.9 **“TENDER SPECIFICATION”** shall mean the specific conditions, Technical specifications, appendices, site information and drawing” pertaining to the work in which the tenderers are required to submit their offer. Individual specification number will be assigned to each tender specification.
- 2.1.10. **“TENDER DOCUMENTS”** shall mean the General and Special Conditions of Contract (2.1.8) and tender specification (2.1.9)
- 2.1.11. **“LETTER OF INTENT”** shall mean the intimation by a letter to the tenderer that the tender has been accepted in accordance with provisions contained in that letter. The responsibility of the contractor commences from the date of this letter and all the terms and conditions of contract are applicable from this date.
- 2.1.12. **“COMPLETION TIME”** shall mean the period by date specified in the acceptance of tender or date mutually agreed upon for handing over of the erected equipment/plant which are found acceptable by the Engineer being of required standard and confirming to the specifications of the contract.
- 2.1.13 **“PLANT”** shall mean and connote the assembly of the plant and equipment covered by the contract.
- 2.1.14 **“EQUIPMENT”** shall mean all equipments, machineries, materials, structurals, electricals and other components of the plant covered by the contract
- 2.1.15 **“TESTS”** shall mean and include such test or tests to be carried out on the part of the contractor as are prescribed in the contract or considered necessary by BHEL, in order to ascertain the quality, workmanship, performance and efficiency of the contract work or part thereof.
- 2.1.16 **“APPROVED” “DIRECTED” or “ INSTRUCTED”** shall mean approved, directed or instructed by BHEL.
- 2.1.17 **“WORK OR CONTRACT WORK”** shall mean and include supply of all categories of labours, specified consumables, tools and tackles required for complete and satisfactory site transportation, handling, stacking, storing, erecting, testing and commissioning of the equipment to the entire satisfaction of BHEL.
- 2.1.18 **“SINGULAR AND PLURAL ETC”** Words carrying singular number shall also include plural and vice versa, where the context be required. Words imparting the masculine gender shall be taken to include the feminine

gender and words imparting persons shall include any company or association or body of individuals, whether incorporated or not.

2.1.19 **“HEADING”** The headings in these general conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.

2.1.20 **“MONTH:** shall mean calendar month, unless specified otherwise in the tender.

2.1.21 **“WRITING”** shall include any manuscript typewritten or printed statement under the signature of BHEL.

2.1.22. **‘TEMPORARY WORK’** shall mean all temporary works of every kind required in or for the execution, completion or maintenance of the works.

2.2 **LAW GOVERNING THE CONTRACT AND COURT JURISDICTION:**

The Contract shall be governed by the Law for the time being in force in the Republic of India. The Civil Court having ordinary original Civil Jurisdiction at Madras, Tamilnadu shall alone have exclusive jurisdiction in regard to all claims in respect of this contract. No other Civil Court have jurisdiction in case of any dispute, under this contract.

2.3 **ISSUE OF NOTICE:**

The contractor shall furnish to the BHEL Engineer, the name, designation and address of his authorised agent and all complaints, notices, communications and reference shall be deemed to have been duly given to the Contractor if delivered to the Contractor or his authorised agent or left at or posted to the address either of the contractor or of his representative and shall be deemed to have been so given in the case of posting on the day on which they would have reached such address in the ordinary course of post or on which they were so delivered of /or left.

2.4 **USE OF LAND**

No land belonging to BHEL or their customer under temporary possession of BHEL shall be occupied by the Contractor without the written permission of BHEL.

2.5 **COMMENCEMENT OF WORK**

2.5.1 The contractor shall commence the work within the time indicated in the Letter of Intent from BHEL and shall proceed with the same with due expedition without delay.

2.5.2 If the successful tenderer fails to start the work within the stipulated time, BHEL at its sole discretion will have the right to cancel the contract. His Earnest Money and/or security deposited with BHEL will stand forfeited without any further reference to him without prejudice to any and all of BHEL's other rights and remedies in this regard.

2.5.3 All the works shall be carried out under the direction and to the satisfaction of BHEL

2.5.4 The transported equipment erected/constructed plant or work performed under the Contract as the case may be shall be taken over when it has been completed in all respects and/or satisfactorily put into operation at site.

2.6 **MODE OF PAYMENT AND MEASUREMENT OF THE WORK COMPLETED**

2.6.1 All payment due to the contractor shall be paid by "Account Payee Cheques"

2.6.2 For progress running bill payment, the contractor shall present detailed measurement sheets, in triplicate, duly indicating all relevant details based on technical documents and connected drawings for work done during the month/period under various categories in line with terms of payment as per Letter of Intent. The basis of arriving at the quantities/ weights shall be relevant to documents and drawings released by BHEL. These measurement sheets shall be prepared jointly with BHEL Engineers and signed by both the parties.

2.6.3 These measurement sheets will be checked by BHEL Engineers and quantities and percentage eligible for payment under various groups shall be decided by BHEL Engineers. The abstract of quantities and percentage so arrived at based on the terms of payment shall be entered in measurement books and signed by both the parties.

2.6.4 Based on the above quantity, contractor shall prepare the bills in prescribed proforma and work out the financial value. These will be entered in M book and signed by both the parties and paid for after duly effecting recoveries due.

2.6.5 All recoveries due from the contractor for the month/period shall be effected in full from his corresponding running bills unless specific approval from the competent authorities is obtained otherwise.

2.6.6 Measurement shall be restricted to that for which it is required to ascertain the financial liability of BHEL under this contract.

2.6.7 The measurement shall be taken jointly by persons duly authorised on the part of BHEL and by the contractor.

- 2.6.8 The contractor shall bear the expenditure involved, if any, in making the measurement. The contractor shall without extra charges, provide all the assistance with appliances and other things necessary for measurement.
- 2.6.9 If at any time due to any reason whatsoever, it becomes necessary to remeasure the work done in full or in part, the expenses towards such measurements shall be borne by the contractors.
- 2.6.10 Passing of measurement as per bills does not amount to acceptance of the completion of the work mentioned. Any left out work has to be completed by the contractor if pointed out at a later date by BHEL.
- 2.6.11 Final measurement bill shall be prepared in the final bill proforma prescribed for the purpose based on the certificate issued by BHEL Engineer that entire work as stipulated in the tender specification has been completed in all respects to the entire satisfaction of BHEL. Contractor shall give unqualified "No Due" and "No Demand" certificates. All the tools and tackles loaned to him should be returned in good condition, satisfactory to BHEL. Quantities/Weight erected shall be prepared and paid, within a reasonable time after completion of work. After payment of final bill, only guarantee obligation percentage shall remain unpaid which shall be released in accordance with clause 2.13. The final bill quantities and financial value shall also be entered in Measurement Book and signed by both the parties to the contract.

2.7 **RIGHTS OF BHEL**

BHEL reserves the following rights in respect of this contract without entitling the contractor for any compensation

- 2.7.1 To get the work done through other agency at the risk and cost of the contractor in the event of Contractor's poor progress or inability to progress the work for completion as stipulated in the contract, poor quality of the work, persistent disregard to instruction of BHEL, assignment transfer, subletting of the contract without permission of BHEL, nonfulfillment of any contractual obligation etc, and to claim, recover compensation for such losses from the contractor including BHEL's supervision charges and overheads from Security Deposit/ other dues.
- 2.7.2 To withdraw any portion of work and or to restrict/alter quantum of work as indicated in the contract during the progress of erection and get it done through other agency and / or by departmental labour to suit BHEL's commitment to its customer or in case decided to advance the date of completion due to other emergency reasons / BHEL's obligation to its customer.

- 2.7.3 To terminate the Contract after due notice of 21 days from the date of issue of the letter, recover the loss sustained in getting the balance work done through other agencies in addition to liquidated damages in the event of.
- 2.7.3.1 Contractor's continued poor progress.
- 2.7.3.2 Withdrawal from or abandonment of the work before completion of the work.
- 2.7.3.3 Corrupt act of Contractor.
- 2.7.3.4 Insolvency of the Contractor.
- 2.7.3.5 Persistent disregard to the instructions of BHEL.
- 2.7.3.6 Assignment transfer, subletting of the contract without BHEL's permission.
- 2.7.3.7 Non-fulfilment of any contractual obligations.
- 2.7.4 To recover any money due from the contractor from any money due to the contractor under this contract or any other contract or from the Security Deposit.
- 2.7.5 To claim compensation for the total losses including BHEL's supervision charges, overheads, penalty/LD suffered by BHEL for completion of works, whenever the contract has to be terminated for the reasons attributable to the contractor.
- If the works are delayed beyond the stipulated time for the reasons attributable to the contractor, LD/Penalty will be levied at the rate of 0.5 percent per week of delay or part thereof, subject to a ceiling of 10 percent of the contract value.
- 2.7.6 To terminate the Contract or to restrict the quantum of work and pay for portion of work executed, in case BHEL's contract with their customers are terminated for any reason.
- 2.7.7 To effect recovery from any amounts due to the contractor under this or any other contract or in any other form the moneys BHEL is forced to pay to anybody, due to contractor's failure to fulfil any of his obligations.
- 2.7.8 To restrict or increase the quantity and nature of work to suit site requirement since the tender specification is based on preliminary documents and quantities furnished therein are indicative and approximate and the rates quoted shall not be subject to revision.

- 2.7.9 To deploy BHEL's fitters, welders, operators and technicians in case of emergency / poor progress/deficiency in skill on the part of employees of contractor and to recover the expenditure on account of the same from contractor's bills.
- 2.7.10 While every endeavour will be made by BHEL, they cannot guarantee uninterrupted work due to conditions beyond their control. Contractor will not be entitled for any compensation or extra payment on this account.
- 2.7.11 In the event of any dispute of any nature, the decision of BHEL shall be final and binding on the contractor.

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

The following are the responsibilities of the contractor in respect of observation of local laws, employment of personnel, payment of taxes etc.

- 2.8.1 As far as possible, unskilled worker shall be engaged from the local areas in which the work is being executed.
- 2.8.2 The contractor at all times during the continuance of this contract shall, in all his dealings with local labour for the time being employed on or in connection with the work, have due regard to all local festivals and religions and other customs.
- 2.8.3 The contractor shall comply with all State and Central Laws, Statutory Rules, Regulation etc., such as : The payment of Wages Act, Minimum Wages Act, Workmen Compensation Act, Employer's Liability Act, Industrial Disputes Act, Employees' Provident Fund Scheme, Employees' State Insurance Scheme, Contract Labour (Regulations and Abolition) Act, 1970 and other Acts, Rules & Regulations for labour as may be enacted by the Government during the tenure of the contract and having in force or jurisdiction at site. The Contractor shall give to the local governing body, Police and other relevant authorities all such notices as may be required by law. (Salient Provisions of the Contract Labour (Regulation & Abolition) Act 1970, Workmen Compensation Act 1923, Employees' State Insurance Act 1948, Minimum Wages Act 1948, Employees' Provident Fund and Miscellaneous Act 1952, which are reproduced in Section-III. However the contractor should take care of the latest amendments into consideration)
- 2.8.4 The Contractor shall pay all taxes , fees, licence, charges, deposits, duties, tools, royalty, commissions or other charges, which may be leviable on account of any of his operations in executing the contract. In case BHEL is forced to pay any of such taxes BHEL shall have the right to recover the same from the contractor either from his bills or otherwise as deemed fit.

- 2.8.5 While BHEL would pay the inspection fees of the Boiler Inspectorate, all other arrangements for the visits periodically by Boiler Inspector to site Inspection Certificates etc., will have to be made by the Contractor. However, BHEL will not make any payment to Boiler Inspector in connection with contractor's welders' qualification/requalification tests etc.
- 2.8.6 The contractor shall be responsible for provision of health and sanitary arrangements more particularly described in Contract Labour (Regulations & Abolition) Act, safety precautions etc., as may be required for safe and satisfactory execution of the contract. Please refer Clause 2.15.0 also.
- 2.8.7 The Contractor shall be responsible for proper accommodation including adequate medical facilities for the personnel employed by him.
- 2.8.8 The contractor shall be responsible for proper behavior and observance of all regulations by the staff employed by him.
- 2.8.9 The contractor shall ensure that no damage is caused to any person/property of other parties working at site. If any such damage is caused, it is the responsibility of the contractor to make good the losses or compensate for the same.
- 2.8.10 All the properties/equipment/components of BHEL/ their client loaned with or without deposit to the contractor in connection with the contract shall remain the properties of BHEL /their client.

The contractor shall use such properties for the purpose of execution of this contract. All such properties/equipment/components shall be deemed to be in good conditions when received by the Contractor unless he notifies within 48 hours to the contrary. The contractor shall return them in good condition as and when required by BHEL/ their client. In case of non-return, loss, damage, repairs etc., the cost thereof, as may be fixed by the Site Engineer will be recovered from the contractor.

- 2.8.11 It is not obligatory on the part of BHEL to supply any tools and tackles or other materials other than those specifically agreed to do so by BHEL. However depending upon the availability/possibility BHEL's / customer's handling equipment and other plants may be made available to the Contractor on payment of the hire charges/free of charges, as fixed subject to the conditions laid down by BHEL/Customer from time to time. Unless paid in advance such hire charges if applicable, shall be recovered from contractor's bills / Security Deposit in one installment.
- 2.8.12 The contractor shall fully indemnify BHEL against all claims of whatsoever nature arising during the course of erection/construction/performing work under the contract.

- 2.8.13 In case the Contractor is required to undertake any work outside the scope of this contract, the rates payable shall be those mutually agreed upon.
- 2.8.14 Any delay in completion of works/or non achievement of periodical targets, due to reasons attributable to the contractor, the same will have to be compensated by the contractor either by increasing manpower and resources or by working extra hours and/or by working more than a shift. All these are to be carried out by the contractor at no extra cost.
- 2.8.15 The contractor shall arrange and co-ordinate his work in such a manner as to cause no hindrance to other agencies working in the same premises.
- 2.8.16 All safety rules and codes applied by the client/BHEL at site shall be observed by the contractor without exception. The Contractor shall be responsible for the safety of the equipment/ material and works to be performed by him and shall maintain all lights, fencing guards, signs etc, or other protection necessary for the purpose. Contractor shall also take such additional precautions as may be indicated from time to time by the Engineer with a view to prevent pilferage, accidents fire hazards and due precautions shall be taken against fire hazards and Atmospheric conditions. Suitable number of clerical staff, watch and ward, store keepers to take care of equipment materials and construction tools and tackle shall be posted at site by the contractor till the completion of the work under this contract.

The Contractor shall arrange for such safety devices as are necessary for such type of work and carry out the requisite site tests of handling equipment, lifting tools, tackles, etc., as per prescribed standards and practices.

- 2.8.17 The contractor will be directly responsible for payment of wages to his workmen. A pay roll sheet giving all the payments given to the workers and duly signed by the contractor's representative should be furnished to BHEL site office for record purpose, if so called for.
- 2.8.18 In case of any class of work for which there is no such specification as laid down in the contract, such work shall be carried out in accordance with the instructions and requirements of the Engineer.
- 2.8.19 No levy or payment or charge made or imposed shall be impeached by reason of any clerical error or by reason of any mistake in the amount levied or demanded or charged.
- 2.8.20 Also no idle labour charges will be admissible in the event of any stoppage caused in the work resulting in contractor's labour being rendered idle due to any cause at any time.
- 2.8.21 The contractor shall take all reasonable care to protect the materials and work till such time the Plant/equipment has been taken over by BHEL / their client.

- 2.8.22 Contractor shall not stop the work or abandon the site for whatsoever reason or dispute, excepting for force majeure conditions. All such problems /dispute shall be separately discussed and settled without affecting the progress of work. Such stoppage or abandonment shall be treated as breach of contract and dealt with accordingly.
- 2.8.23 Contractor shall keep the area of work clean and shall remove the debris etc. while executing the work every day. Upon completion of work, the contractor shall remove from the vicinity of work, all scrap, packing materials, rubbish, unused and other materials and deposit them in places specified by the Engineer. The contractor will also demolish all the hutments, sheds, offices, etc. constructed and used by him and shall clean the debris. In the event of his failure to do so, the same will be arranged to be done by the Engineer and the expenses recovered from the contractor.
- 2.8.24 The contractor shall execute the work in the most substantial and workman-like manner in the stipulated time. Accuracy of work and timely execution shall be the essence of this contract. The contractor shall be responsible to ensure that the quality, assembly and workmanship conform to the dimensions and clearance given in the drawings and/or as per the instructions of the Engineer.
- 2.8.25 The contractor shall furnish daily labour deployment report indicating the classification and number of workmen engaged. Besides the contractor also shall furnish progress reports on work every day as required by the Engineer.

2.9 **CONSEQUENCES OF CANCELLATION:**

Whenever BHEL exercises its authority to terminate the contract/withdraw a portion of work under clause 2.7, they may complete the work by any means at the contractor's risk and cost provided that in the event of the cost of completion as certified by the Site Engineer which is final and conclusive being less than contract cost, the advantage shall accrue to 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 BHEL or the same shall be recovered from the contractor by any other means. This will be in addition to the forfeiture of Security Deposit and recovery of liquidated damages as per relevant clauses (2.7)

- 2.9.1 In case BHEL completes the work under the provision of this condition, the cost of such completion to be taken into account in determining the excess cost to be charged to the contract, shall consist of actual cost incurred in completion of work such as materials purchased and / or labour provided by BHEL, amounts paid to other agencies, etc. with an addition of such percentage to cover supervision and establishment charges as may be decided by BHEL.

2.10 **INSURANCE:**

2.10.1 BHEL/their customer shall arrange for insuring the materials/properties of BHEL/customer covering the risks during transit, storage, erection and commissioning.

2.10.2 It is the sole responsibility of the contractor to insure his workmen against accidents and injury while at work as required by relevant Rules and to pay compensation, if any, to workmen as per Workmen's compensation Act. The work will be carried out in a protected area and all the rules and regulations of the client /BHEL in the area of project which are in force from time to time will have to be followed by the contractor.

2.10.3 If due to negligence and or non-observation of safety and other precautions, any accident/injury occurs to any other persons/public, the contractor shall have to pay necessary compensation and other expense, if so decided by the appropriate authorities.

2.10.4 If due to contractor's carelessness, negligence or non-observance of safety precautions, damage to BHEL's /Customer's property and personnel should occur and if BHEL is unable to recover in full, cost from the insurance Company, the same will be recovered from the contractor.

2.10.5 It shall be the responsibility of the Contractor to provide security arrangement for the equipment/materials belonging to BHEL and handed over to the contractor for erection/transportation till the same are taken over by BHEL, after erection/returned to BHEL stores.

2.11 **STRIKES & LOCKOUTS:**

2.11.1 The contractor will be fully responsible for all the dispute and other issues connected with his labour. In the event of the contractor's labour resorting to strike or the contractor resorting to lockout and if the strike or the lockout declared is not settled within a period of one month, BHEL shall have the right to get the erection work executed employing its own labour or through any other agencies or both and the cost so incurred by BHEL shall be deducted from the Contractor's bills.

2.11.2 For all purposes whatsoever the employees of the Contractor shall not be deemed to be in the employment of BHEL.

2.12 **FORCE MAJEURE:**

2.12.1 The following shall amount to force majeure
Acts of God, Act of any Government, War, Sabotage, Riots, Civil commotion Police Action, Revolution, Flood, Fire , Cyclones, Earth quake and Epidemic and other similar causes over which the Contractor has no control.

2.12.2 If the Contractor suffers delay in the due execution of the contractual obligation due to delays caused by Force Majeure as defined above, the

agreed time of completion of the job covered by this contract or the obligation of the contractor shall be extended by a period of time equal to the period of delay provided that on the occurrence of any such contingency the Contractor immediately reports to BHEL in writing the causes of delay and the Contractor shall not be eligible for any compensation.

2.13 **GUARANTEE:**

Eventhough the work will be carried out under the supervision of BHEL Engineers the Contractor will be responsible for the quality of the workmanship and shall guarantee the work done for a period of twelve months from the date of completion of work as certified by the Engineer for good workmanship and shall rectify free of cost all defects due to faulty erection detected during the guarantee period starting from the date of the completion of rectification. In the event of the Contractor failing to repair the defective works within the time specified by the Engineer, BHEL may proceed to undertake the repairs of such defective works at the Contractor's risk and cost, without prejudice to any other rights and recover the same from security deposit/other dues or by other legal means.

2.14 **ARBITRATION:**

All disputes between the parties to the contract arising out of or in relation to the contract, other than those for which the decision of the engineer or of any other person is by the contract expressed to be final and conclusive shall, after written notice by either party to the contract to other party be referred to sole arbitration of General Manager or his nominee. The arbitration shall be conducted in accordance with provisions of the Arbitration and Conciliation Act, 1996.

The parties to the contract understand and agree that it will have no objection than the General Manager or the person nominated as arbitrator had earlier in his official capacity dealt directly or indirectly with the matters to which the contract relates or that in the course of his official duties had expressed views on all or any of the matters in dispute or difference. The award of the arbitrator shall be final and binding on the parties to this contract.

In the event of the arbitrator dying, neglecting or refusing to act or resigning or being unable to act for any reason of his award being set aside by the court for any reasons; it shall be lawful for the General Manager or his successor, as the case may be either to act himself as the Arbitrator or to appoint another arbitrator in the place of the outgoing arbitrator in the manner aforesaid.

The arbitrator may from time to time with the consent of both the parties to the contract enlarge the time for making the award.

Work under the contract shall be continued during the arbitration proceedings. The venue of the arbitration shall be a place from which the contract is issued or such other place as the arbitrator at his discretion may determine.

2.15.0 SPECIFICATION FOR HEALTH, SAFETY AND ENVIRONMENT (HSE)

The contractor has to necessarily submit the safety plan while submitting the offer. The safety plan should indicate in detail the measures that would be taken by the contractor to ensure safety of men, equipment, material and environment during execution of the work. During negotiations before placing the work order and during execution of the contract, BHEL shall have right to review and suggest modifications in the safety plan. The contractor shall abide by BHEL decision in this respect . Tenders not accompanied with safety plan are liable for rejection.

2.15.1 SCOPE

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

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

2.15.2 REFERENCES

This document should be read in conjunction with following

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

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

2.15.3.1 MANAGEMENT RESPONSIBILITY

- a. The contractor to comply with HSE requirement at Construction sites as enclosed to cover commitment of their organization to ensure health, safety and environment aspects in their line of operations.
- b. The HSE management system shall cover the HSE requirements including but not limited to what is specified under Para 2.15.1 and para 2.15.2 above.
- c. Contractor shall be fully responsible for planning and implementing HSE requirements. Contractor as a minimum requirement shall designate/deploy the following to co-ordinate the above.

No of workers deployed upto 250 - Designate one safety Supervisor

Above 250 & upto 500 - Deploy one qualified and Experienced Safety Engineer/Officer

Above 500 (for every 500 or less) - One additional safety engineer/officer, as above.

- d. Contractor shall indemnify & hold harmless BHEL/Customer & their representatives free from any and all liabilities arising out of non-fulfillment of HSE requirements.
- e. The Contractor shall ensure that the Health, Safety and Environment (HSE) requirements are clearly understood & faithfully implemented at all levels at site.
- f. BHEL shall promote and develop consciousness for Health, Safety and Environment among all personnel working for the contractor. Regular awareness programmes and work site meetings shall be arranged on HSE activities to cover hazard involved in various operations during construction.
- g. The contractor shall arrange suitable first-aid measures such as First Aid Box, trained personnel to give First Aid and install fire protection measures such as adequate number of steel buckets with sand and water to the satisfaction of BHEL/customer.
- h. Non-Conformance on HSE by Contractor (including his Sub-contractors) as brought out during review/audit by BHEL/customer representatives shall be resolved forthwith by Contractor. Compliance report shall be provided to BHEL.
- i. The contractor shall ensure participation of his Resident Engineer/Site-in-Charge in the Safety Committee/HSE Committees meetings arranged by BHEL/customer. The compliance of any observations shall be arranged urgently. He shall assist BHEL/customer to achieve the targets set by them on HSE during the project implementation.
- j. The Contractor shall adhere consistently to all provisions of HSE requirement In case of non-compliance or continuous failure in implementation of any of HSE provisions, BHEL/customer may impose stoppage of work without any cost & time implication to BHEL/customer and /or impose a suitable penalty for non-compliance with a notice of suitable period, upto a cumulative limit of 1.0% (one percent) of contract value. This penalty shall be in addition to all other penalties specified elsewhere in the contract. The decision of imposing stoppage of work, its extent & minor penalty shall rest with BHEL/customer & binding on the contractor.

- k. All fatal accidents and other personnel accidents shall be investigated by a team of Contractor's senior personnel for root cause & recommended corrective and preventive actions. Findings shall be documented and suitable actions taken to avoid recurrences shall be communicated to BHEL/customer. BHEL/customer shall have the liberty to independently investigate such occurrences and Contractor shall extend all necessary help and co-operation in this regard.

2.15.3.2. **HOUSE KEEPING**

2.15.3.2.1 Contractor shall ensure that a high degree of house keeping is maintained and shall ensure interalia, the following

- a) All surplus earth and debris are removed/disposed off from the working areas to identified location(s)
- b) Unused/Surplus Cables, Steel items and steel scrap lying scattered at different places within the working areas are removed to identified location(s).
- c) All wooden scrap, empty wooden cable drums and other combustible packing materials, shall be removed from work place to identified locations.
- d) Roads shall be kept clear and materials like pipes, steel, sand boulders, concrete, chips and brick etc., shall not be allowed on the roads to obstruct free movement of men & machinery.
- e) Fabricated steel structural, pipes & piping materials shall be stacked properly for erection.
- f) Water logging on roads shall not be allowed.
- g) No parking of trucks/trolleys, cranes and trailers etc., shall be allowed on roads, which may obstruct the traffic movement.
- h) Utmost care shall be taken to ensure overall cleanliness and proper upkeep of the working areas.
- i) Trucks carrying sand, earth and pulverised materials etc, shall be covered while moving within the plant area.

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

2.15.3.3. **HEALTH SAETY AND ENVIRONMENT**

- ☞ The Contractor shall provide safe means of access to any working place including provisions of suitable and sufficient scaffolding at various stages during all operations of the work for the safety of his workmen, and BHEL/customer. Contractor shall ensure deployment of appropriate

equipment and appliances for adequate safety and health of the workmen and protection of surrounding areas.

☞ The contractor shall ensure that all their staff and workers wear Safety helmet and Safety shoes. Contractor shall ensure use of safety belt, protective goggles, gloves etc., by the personnel as per job requirements. All these gadgets shall conform to relevant IS specifications or equivalent.

☞ The Contractor shall assign to his workmen, tasks commensurate with their qualification, experience and state of health for driving of vehicles, handling and erection of materials and equipment. All lifting equipment shall be tested certified for its capacity before use. Adequate and suitable lighting at every work place and approach thereto, shall be provided by the Contractor before starting the actual operations at night. It is mandatory for contractor to get his workmen medically examined/checked for fitness of work assigned once a year and furnish the certificate to that effect from a RMP/Govt. Hospital.

☞ Hazardous and / or toxic materials such as solvent, coating or thinners shall be stored in appropriate containers.

☞ All hazardous materials shall be labeled with the name of the materials, the hazards associated with its use and necessary precautions to be taken.

☞ Contractor shall ensure that during the performance of the work, all hazard of the health of personnel have been identified, assessed and eliminated.

☞ Chemical spills shall be contained & cleaned up immediately to prevent further contamination.

☞ All personnel exposed to physical agents such as ionizing or non-ionizing radiation, or similar other physical agents shall be provided with adequate shielding or protection commensurate with the type of exposure involved.

☞ Where contact or exposure of hazardous materials could exceed limits or could otherwise have harmful effects, appropriate personnel protective equipment such as gloves, goggles, aprons, chemicals resistant clothing and respirator shall be used.

☞ All persons deployed at site shall be knowledgeable of and comply with environmental laws, rules & regulations relating to the hazardous materials substances and wastes. Contractor shall not dump, release or otherwise discharge or dispose off any such materials without the express authorisation of BHEL/customer.

2.15.4 **DURING JOB EXECUTION**

Implement Health, Safety and Environment requirements including but not limited to as brought out under para 2.15.3. Contractor shall ensure to:

- Arrange workmen compensation insurance, registration under ESI Act, third party liability insurance etc., as applicable.
- Arrange all HSE permits before start of activities (as applicable) like hot work, confined space, work at heights, storage of chemical/explosive materials and its use and implement all precautions mentioned thereon.
- Submit timely the completed checklist on HSE activities, monthly HSE report, accident reports, investigation reports etc., as per BHEL/customer requirements. Compliance of instructions on HSE shall be done by Contractor and informed urgently to BHEL/customer.
- Ensure the Resident Engineer/Site in charge of the contractor shall attend all the Safety Committee/HSE meetings arranged by BHEL/Owner. In case of his absence from site that a second senior most personnel shall be nominated by him in advance and communicated to BHEL/customer.
- Display at site office and work locations caution boards, list of hospitals, emergency services available.
- Display posters, banners made available by BHEL for safe working to promote safety consciousness.
- Assist in HSE audits by BHEL/Customer and submit compliance report.
- Generate & submit HSE records/report as per HSE plan.
- Appraise BHEL/Owner on HSE activities at site.

2.15.4.1 RELEVANT IS CODES FOR PERSONAL PROTECTION(suggested)

IS 2925 - 1984	Industrial Safety helmets
IS 4770 - 1968	Rubber gloves for electrical purposes
IS 6994 - 1973 (Part I) IS 8807 - 1978 IS 8519 - 1977	Industrial Safety Gloves (Leather & cotton Gloves) & Body protection devices
IS 1989 - 1986 (Part I & III)	Leather safety boots and shoes
IS 3738 - 1975	Rubber knee boots
IS 5557 - 1969	Industrial and knee boots
IS 6519 - 1971	Code of practice for selection, care and repair of safety Foot Wear
IS 11226 – 1985	Leather safety footwear having direct moulding sole
IS 5983 - 1978	Eye protectors
IS 9167 - 1979	Ear protectors
IS 3521 - 1983	Industrial safety belts and harness

2.15.5 MONTHLY CHECKLIST CUM COMPLIANCE REPORT

(for compliance during execution)

PROJECT :

CONTRACTOR :

DATE :

OWNER :

INSPECTION BY

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

ITEM	YES	NO	REMARKS	ACTION
HOUSE KEEPING				
Waste containers provided and Used				
Sanitary facilities adequate and clean				
Passageways and Walkways clear				
General neatness of working areas				
Other				
PERSONAL PROTECTIVE EQUIPT				
Goggles: Shields				
Face protection				
Hearing protection				
Safety shoes provided				
Hand protection				
Safety Belts				
Other				
EXCAVATIONS/ OPENINGS				
Openings properly covered or barricaded				
Excavations shored				
Excavations barricaded				
Overnight lighting provided				
Others				
WELDING, CUTTING				
Gas cylinders chained				

ITEM	YES	NO	REMARKS	ACTION
Upright				
Cables and hoses not obstructing				
Screens or shields used				
Flammable materials protected				
Fire extinguisher(s) Accessible				
Other				
SCAFFOLDING				
Fully decked platforms				
Guard and intermediate rails in place				
Toe boards in place				
Adequate shoring				
Adequate access				
Other				
LADDERS				
Extension side rails 1 m above				
Top of landing				
Properly secured				
Angle ± 70 from horizontal				
Other				
HOIST, CRANES AND DERRICKS				
Condition of slings, chains, hooks, & eyes O.K.				
Inspection and maintenance logs maintained				
Outriggers used				
Signs/barricades provided				
Signals observed and understood				
Qualified operators				
Other				
MACHINERY, TOOLS AND EQUIPMENT				
Proper instruction				
Safety devices				

ITEM	YES	NO	REMARKS	ACTION
Proper cords				
Inspection and maintenance				
Other				
VEHICLE AND TRAFFIC				
Rules and regulations observed				
Inspection and maintenance				
Licensed drivers				
Other				
TEMPORARY FACILITIES				
Emergency instructions posted				
Fire extinguishers provided				
Fire-aid equipment available				
Secured against storm damage				
General Neatness				
In accordance with electrical requirements				
Other				
FIRE PREVENTION				
Personnel instructed				
Fire extinguishers checked				
No smoking in prohibited areas				
Hydrants clear				
Other				
ELECTRICAL				
Proper wiring				
ELCB'S provided				
Ground fault circuit interrupters				
Protection against damage				
Prevention of tripping hazards				
Others				
HANDLING AND STORAGE OF MATERIALS				

ITEM	YES	NO	REMARKS	ACTION
Properly stored or stacked				
Passageways clear				
Other				
FLAMMABLE GASES AND LIQUIDS				
Containers clearly identified				
Proper storage				
Fire extinguisher nearby				
Other				
WORKING AT HEIGHT				
Erection plan				
Safety belts and lanyards; chute lines				
Other				
ENVIRONMENT				
Chemical and other Effluents properly disposed				
Cleaning liquid of pipes disposed off properly				
Water used for hydro testing as per agreed procedure				
Lubricant waste/engine oils properly disposed				
Waste from Canteen, offices, sanitation etc., disposed properly				
Disposal of surplus earth, stripping materials, Oily rags and combustible materials done properly				
Green belt protection Hygienic conditions at labour camps O.K.?				
Availability of First Aid facilities				
Proper sanitation at site, office and Labour camps				
Arrangement of medical facilities				
Measures for dealing with Illness				

ITEM	YES	NO	REMARKS	ACTION
Availability of Potable drinking water for Workmen & staff.				

Signature of Resident Engineer with seal

2.15.6 ACCIDENT CUM FIRE REPORT

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

Name of the site :..... Report No

Contractor :

Name of the injured &

Age :.....

Father's Name :

Sub Contractor M/s :

Date and Time of accident :

Location :

Brief Description of the accident :

Cause of the Accident :

Nature of Injury / Damage :

Medical aid provided / action taken :

Intimation to the local authorities :

Signature of the contractor with seal

Date :

To
Site Incharge / BHEL

2.15.7 SUPPLEMENTARY ACCIDENT & INVESTIGATION REPORT

Project : Supplementary to Report No:

Site : Date :

Contractor :

Name of the Injured :

Age :

Father's Name :

Subcontractor M/s :

Date and time of accident :

Location :

Brief Description and cause of accident :

Nature of injury / damage

Comments from the Medical Practitioner, who attended the victim/injured:

Suggested improvement in the working condition if any:

Loss of man hours and impact on site works:

Any other comment by the safety Officer:

Signature of the contractor
With seal

Date :

To :

2.15.8 MONTHLY HEALTH, SAFETY AND ENVIRONMENT (HSE) REPORT

(to be submitted by each contractor)

Actual work start date:

For the month of:

Project:

Report No.

Name of the contractor:

Status as on:

Name of the work

Name of the Safety Officer:

Item	This month	Cumulative
Total strength (staff + workmen)		
Number of HSE meetings organised at site		
Number of HSE awareness programmes attended at site		
Whether Workmen Compensation Policy taken	Yes / No	
Whether Workmen Compensation Policy is valid	Yes / No	
Whether workmen registered under ESI Act	Yes / No	
Number of fatal accidents		
Number of loss time accidents (other than fatal)		
Other accidents (non-loss time)		
Total number of accidents		
Total manhours worked		
Manhour loss due to fire and accidents		
Compensation cases raised with Insurance		
Compensation cases resolved and paid to workmen		
Remarks		

Date

Safety Officer / Resident Engineer
(Signature & Name)

To
Site Incharge, BHEL

SALIENT PROVISIONS OF CONTRACT LABOUR (REGULATION & ABOLITION) ACT 1970

- A. The Act applies to every establishment in which twenty or more workmen are employed or were employed any day in the preceeding twelve months, as contract labour.
- B. **CONTRACTOR**
1. In relation to an establishment, means a person who undertakes to produce a given result for the establishment, other than a mere supply of goods or articles of manufacture to such establishment, through contract labour (OR)
 2. Who supplies contract labour for any work of the establishment and includes a subcontractor.
- C. “Establishment” means:
- i. any office or department of the Government or a local authority, or
 - ii. any place where any industry, trade, business, manufacture or occupation is carried on
- D. “Principal Employer” means:
- In any other establishment, any person responsible for the supervision and control of the establishment.
- E. “Workmen” means:
- Any person employed in or in connection with the work of any establishment to do any skilled, semi-skilled or unskilled manual, supervisory, technical or clerical work for hire or reward, whether the terms of employment be expressed or implied.
- F. Notes – “Contractor” – The definition of the expression “Contractor” has two wings. One is in relation to the establishment in which he contracts to supply labour on contract and another in relation to the contractor himself. Any contractor whose work is to supply contract labour for any work in any establishment, including a sub-contractor will be governed by the Act, provided he is employing twenty or more persons.
- G. An establishment engaged in construction work or manufacturing process might either employ labour through a contractor or it might entrust the execution of the work itself to a contractor who will employ his own workmen.

- H. The usual test is whether the employer has control over the labour and actual execution of the work.
- I. In all other establishment the person in the control of the establishment will be the principal employer. The importance of the definition of the principal employer lies in the fact that it is he who engages the contract labour and who is made responsible for due observance and discharge by the contractor of the duties and obligations enjoyed on him by the Act.
- J. Liability of principal employer in certain cases (Section – 20)
- I. If any amenity required to be provided under Section 16, Section 17, Section 18, or Section 19 for the benefit of the contractor within the time prescribed therefor such amenity shall be provided by the principal employer within such time as may be prescribed.
- II. Responsibility for payment of wages.
- a) Contractor is responsible for payment of wages to each worker employed by him as contract labour and wages shall be paid before the expiry of such period as may be prescribed.
- b) Principal employer will nominate a representative to be present at the time of disbursement of wages by the contractor and certify the amount paid as wages.
- c) It is the duty of the contractor to ensure disbursement of wages in the presence of authorized representative of principle employer.
- d) In case the contractor fails to make payment of wages within the prescribed period or make short payment, then the Principal Employer shall be liable to make payment of wages in full or the unpaid balance due as the case may be to the contract labour employed by the contractor and recover the amount so paid from the contractor either by reduction from any amount payable or as a debt payable by the contractor.
- K. Registers and other records maintained by the contractor (Sec.29)
1. Form – 13 (Rule 75) – Register of workmen employed by the contractor
 2. Form – 14 (Rule 76) – Employment Card –
 3. Form – 15 (Rule 77) – Service Certificate
 4. Form – 16 (Rule 78) (1) (a) (I) – Muster Roll
 5. Form – 17 (Rule 78) (1) (a) (I) – Register of Wages
 6. Form – 18 (Rule (1) (a) (I) – Register of Wages cum Muster Roll
 7. Form – 19 (Rule 78 (1) (b) – Wage Slip
 8. Form – 20 (Rule 78) (1) (a) (ii) –Register of deductions for damage or loss
 9. Form – 21 (Rule 78) (1) (a) (ii) – Register of Fines

10. Form – 22 (Rule 78) (1) (a) (ii) – Register of Advances
11. Form – 23 (Rule 78) (1) (a) (iii) – Register of Overtime
12. Form – 24 (Rule 82) (1) – Half yearly return to be sent by the Contractor to the Licensing Officer.

13. Display of Notice Board with details of work, No. of workers engaged, Rate of wages paid, date of payment of wages, date of payment of unpaid wages, name of the Principle employer, Name and address of the Inspecting Officer in Hindi, English and local languages at a prominent place.

14. Display of Labour Licence obtained from the Licencing officer

15. Display of Extract of Contract Labour (Regulation and Abolition) Act 1970 in Hindi, English and local languages.

L. Compliance by the contractor on commencement of work and completion of work.

1. Application for licence in Form – IV (Rule 21 (1) to be submitted to the Licensing Authority along with Form – V – Form of Certificate by the Principle Employer for obtaining labour License.

2. On obtaining labour licence, Form VI – A rule 25 (2) (viii) to be submitted by the contractor regarding commencement / completion of contract work to the Licensing Officer /Inspecting Authority.

3. Form – VII Rule 29 (2) to be submitted by the contractor for application of renewal of license.

S.17 Rest Rooms

(1) In every place wherein contract labour is required to halt at night in connection with the work of an establishment.

a. to which this Act applies and

b. in which work requiring employment on contract labour is likely to continue for such period as may be prescribed.

These shall be provided and maintained by the contractor for the use of contract labour such number of rest rooms or such other suitable alternative accommodation within such time as may be prescribed.

(2) The rest rooms or the alternative accommodation to be provided under sub-section (1) shall be sufficiently lighted and ventilated and shall be maintained in a clean and comfortable condition.

S.18 Other facilities

It shall be the duty of every contractor employing contract labour in connection with the work of an establishment to which this Act applies, to provide and maintain:

- a. sufficient supply of wholesome drinking water for the contract labour at convenient places;
- b. sufficient number of latrines and urinals of the prescribed specification so situated as to be convenient and accessible to the contract labour in the establishment; and
- c. Washing facilities:

S.19 First aid facilities:

1. These shall be provided and maintained by the contractor so as to be readily accessible during all working hours and a first aid box equipped with the prescribed contents at every place where contract labour is employed by him.
 2. Every principal employer shall nominate a representative duly authorized by him to be present at the time of disbursement of wages by the contractor and it shall be the duty of such representative to certify the amounts paid as wages in such manner as may be prescribed.
 3. It shall be the duty of the contractor to ensure the disbursement of wages in the presence of the authorized representative of the principal employer.
3. In case the contractor fails to make payment of wages within the prescribed period or makes short payment then the principal employer shall be liable to make payment of wages in full or the unpaid balance due, as the case may be, to the contract labour employed by the contractor and recover the amounts so paid from the contractor either by deduction from any amount payable to the contractor under the contract or as a debt payable by the contractor.

II. SALIENT PROVISIONS AND COMPLIANCE OF WORKMEN'S COMPENSATION ACT 1923

- A. An Act which provides for payment by certain Classes of employers to the workmen compensation for the injury by accident.
- B. Employer's liability for compensation – Sec 3 – If personal injury is caused to a workmen by accident arising out of and in the course of employment, his employer shall be liable to pay compensation in accordance with the provisions of this Act.
- C. Compensation to be paid when due and for default, penalty will be levied from the contractor.
- D. For the purpose of calculation of compensation as per the Act,
 - 1) the monthly wages means average amount payable for a month of service to the workmen, during the twelve months preceding the accident.
 - 2) Employee who is drawing monthly wages of more than Rs.4000/- would be treated as four thousand.
 - 3) Employees who are drawing monthly wages of less than Rs.4000/- the monthly wages would be the actual wage drawn.
- E. Where temporary settlement – whether total or partial results from the injury, a half monthly payment of the sum equivalent to 25% of monthly wages of the workmen is to be paid by the employer to the workmen.
- F. No payment of compensation in respect of a workmen whose injury has resulted in death, and no payment of lump sum as compensation to a women or a person under legal disability shall be made otherwise by depositing to the Commissioner and no such payment made directly by an employer shall be deemed to be a payment of compensation.
- G. In case of fatal accident , the employer is to submit Form EE Rule – 11 – Report of Fatal Accident to the workmen's compensation Commissioner within 72 hours from the date of occurrence of accident.
- H. Employer should deposit the compensation for fatal accident in Form 'A' to the workmen Commissioner.
- I. In case of partial permanent disablement, memorandum of agreement in Form K,L,M are to be registered with Workmen Compensation Commissioner before disbursing the compensation amount to the Workmen.

III. SALIENT PROVISIONS AND COMPLIANCE OF EMPLOYEES’ STATE INSURANCE ACT 1948

- A. An Act to provide for certain benefits to employees in case of sickness, maternity and employment injury and to make provision for certain other matters in relation thereto.
- B. An employee means any person employed for wages in or in connection with the work of a factory or establishment to which this Act applies and
1. Who is directly employed by the Principal employer or on any work of, incidental or preliminary to or connected with the work of, the factory or establishment whether such work is done by the employee in the factory or establishment or elsewhere or
 2. Who is employed or through and immediate employer on the premises of the factory or establishment or under the supervision of the principle employer or his agent on work which is ordinarily part of the work of the factory or establishment or which is preliminary to the work carried on in or incidental to the purpose of the factory or establishment ; or
 3. Whose services are temporarily lent on hire to the principal employer by the person with whom the person whose services are so lent or let on hire has entered into a contract of service; and includes any person employed for wages on any work connected with the administration of the factory or establishment or any part, department or branch thereof or with the purchase of raw materials for, or the distribution or sale of the products of, the factory or establishment;
 1. (or any person engaged as an apprentice, not being an apprentice engaged under the Apprentices’ Act, 1961 (52 of 1961), or under the standing orders of the establishment: but does not include)
 2. (a) any member of the Indian naval, military or air forces; (or)
(b) any person so employed whose wages(excluding remuneration for overtime work) exceed (Such wages as may be prescribed by the Central Government) a month:

Provided that an employee whose wages (excluding remuneration for overtime work) exceed (such wages as may be prescribed by the Central Government) a month at any time after (and not before) the beginning of the contribution period, shall continue to be an employee until the end of that period;

- C. ‘Principal employer ‘mean’
- (i) in a factory, the owner or occupier of the factory and includes the managing agent of such owner or occupier, the legal representative of a deceased owner or occupier, and where a person has been named as the

manager of the factory under the Factories' Act 1948 (63 of 1948), the person so named;

- (ii) in any establishment under the control of any department of any Government in India, the authority appointed by such Government in this behalf or where no authority is so appointed, the head of the department;
- (iii) in any other establishment, any person responsible for the supervision and control of the establishment.

D. Compliance by the Contractors:

- (i) To open ESI Code No. for remitting the contribution both employer and employee every month for the workmen engaged by them.
- (ii) Remitting the contributions in the prescribed format in Form – 6 regularly every month.
- (iii) Submission of Form – 1, Form – 1 A, Form – 1B, Form –4, Form – 4A, Form –1 6 (Accident Report) and Form – 17.
- (iv) Monthly details of remittance along with salary should be submitted to BHEL.
- (v) Yearly return of details of Wages, details of ESI recovery, details of remittance to be submitted to BHEL.
- (vi) On completion of the work ESI clearance certificate obtained from local ESI authorities is to be submitted to BHEL for enabling to release the final bill.

E. Wherever ESI Act is not applicable, the contractors shall have to cover their employees under Workmen Compensation Act 1923 by availing an insurance policy under the scheme of WC Insurance.

F. All Government owned Insurance companies issue Workmen Compensation Insurance Policies as per term applicable. Insurance shall cover all Workmen employed by the contractor on any given date.

IV. MINIMUM WAGES ACT 1948

Salient features

- A. An Act to provide minimum statutory wages for scheduled employment and to provide maximum daily working hours, weekly rest and overtime.
- B. It applies to all establishments employing one or more persons in any scheduled employment
- C. Compliance by the contractor
 - (i) To pay the prescribed minimum wages or more to the Workmen engaged by them.
 - (ii) Displaying abstract of the Act in English and local language in Form 9-A
 - (iii) Submission of Annual Return in Form – 3 to the statutory authorities.

V. EMPLOYEES' PROVIDENT FUND AND MISCELLANEOUS PROVISION ACT 1952

(Salient features)

- A. An Act to provide for the institution of Provident Funds, Pension and Depositing in Linked Insurance Fund.
- B. It applies to all Contract Labour employed by the Contractor even for casual labour since the Principal Employer's establishment where the contractor is executing a job has already employed more than 20 workmen.
- C. The Act includes the contract labour as an employee who is employed for Wages in any kind of work and who gets his wages directly or indirectly from the employer and includes any person employed by or through a Contractor in or in connection with the work of the establishment.
- D. Compliance by the Contractor:-
 - (i) The contractor should apply for PF Code while submitting his Annual Balance Sheet and other documents required to the Regional provident Fund Commissioner.
 - (ii) If not, the contractor should get an additional code number from the Principal employer's code number and deposit the PF remittances regularly.
 - (iii) Copies of monthly remittances on the prescribed forms should be submitted to BHEL as a proof of compliance along with wage sheet.
 - (iv) Yearly submission of return indicating month wise salary, recoveries of PF and employers contribution and total reconciliation of the above in Form – 3A
 - (v) On joining the above scheme, Membership form, Nomination forms and other related forms are to be submitted to PF authorities by the contractor.

(vi) On completion of the works, the contractor should obtain a clearance certificate from PF authorities with total reconciliation of wages paid, PF recovered and remitted as per extant rules of the above Act for further processing of final bills by BHEL.

(vii) The contractor shall also arrange to obtain yearly statements of PF remittances from PF authorities in respect of each employee for whom he has remitted PF Monthly and issue the same to concerned workmen periodically.

SECTION III COMMON CONDITIONS OF CONTRACT

3.1 SCOPE OF CONTRACT

- 3.1.1 The Intent of this specification is to provide erection and commissioning services for execution of projects according to most modern and proven techniques and codes. The omission of specific reference to any method and equipment or material necessary for the proper and efficient services towards installation of the Plant shall not relieve the contractor of the responsibility of providing such services, facilities to complete the project or portion of project awarded to him. The quoted rate shall deem to be inclusive of all such contingencies.
- 3.1.2 The contractor shall carry out the work in accordance with instructions/ drawings/ specification/ standard practices supplied by BHEL from time to time.
- 3.1.3 Provision of all types of labour, Supervisors, Engineers watch and ward as required, tools and tackles as required, consumables as required under various clauses of tender specification for handling transportation, erection, testing and commissioning.
- 3.1.4 Proper out-turn as per BHEL plan and commitment.
- 3.1.5 Completion of work in time.
- 3.1.6 Good quality and accurate workmanship for proper performance of equipment / systems.
- 3.1.7 Preservation of all components at all stages of pre-assembly/erection/ till unit is handed over, as specified in detail in clause 3.9.0(Preservation clause)

3.2 FACILITIES TO BE PROVIDED BY BHEL:

3.2.1 OPEN SPACE :

Open space for building of temporary office shed and contractor's stores shed(s) will be provided free of charges. Contractor has to make his own arrangements for labour colony.

3.2.2 ELECTRICITY:

For construction purpose, Electricity of 415 V- 3 Phase Supply will be provided free of charge at one single point nearer to the site as provided by the customer. Further distribution shall be arranged by the contractor for his office & Stores Shed and for construction at his cost.

BHEL is not responsible for any loss or damage to the contractor's equipment as a result of variations in voltage frequency or interruptions in power supply.

3.2.3 WATER:

Water for construction purposes will be provided at single point, free of charge, as provided by customer to BHEL nearer to the site. Further distribution shall be arranged by the contractor at his cost.

3.2.4 TOOLS & TACKLES:

All the tools and tackles required for the complete erection of components shall be arranged by the contractor except the items specified and agreed upon by BHEL and the quoted rate shall be inclusive of such requirements.

3.2.5 CONSUMABLES:

All welding electrodes, TIG welding wire for C.S, A.S., S.S. welding electrodes, gases and consumables are to be arranged by the contractor at his cost.

3.3 FACILITIES TO BE PROVIDED AND DEVELOPED BY THE CONTRACTOR AT HIS COST.

3.3.1 CIVIL CONSTRUCTION:

It shall be the responsibility of the contractor to construct his own office shed, stores shed, with all facilities like electricity, water supply, sanitary arrangements in the area allotted to him for the purpose.

3.3.2 WATER DISTRIBUTION:

Distribution of water for construction purpose and as well as drinking purpose from the single point provided by BHEL to various work-fronts shall be contractor's responsibility and at his cost.

3.3.3 ELECTRICITY DISTRIBUTION:

Provision of distribution of electrical power from the given single central common point to the required places with proper distribution boards, cables, etc. observing the safety rules laid down by electrical authority of the State / BHEL / their customer with appropriate statutory requirements shall be the responsibility of the tenderer / contractor.

3.3.4 POSSESSION OF GENERATORS :

As there are bound to be interruptions in regular power supply, power cut / load shedding in any construction sites, due to inherent power shortage in State on this account, suitable extension of time, if found necessary only be given and contractor is not entitled for any compensation. It shall be the responsibility of the tenderer / contractor to provide, maintain the complete installation on the load side of the supply with due regard to safety requirements at site. It shall be the responsibility of the contractor to have atleast (2 to 4) diesel operated welding generator sets to get urgent and important work to go on without interruptions. The consumables required to operate the generators are to be provided by tenderers. This may also be noted while quoting.

3.3.5 LIGHTING FACILITY:

Adequate lighting facilities such as flood lamps, low volt hand lamps and area lighting shall be arranged by the contractor at the site of construction, contractor's material storage area etc. at his cost.

3.3.6 POWER DISTRIBUTION:

For the purpose of planning, contractor shall furnish along with tender the estimated requirement of power (month wise) for execution of work in terms of maximum KW demand.

3.3.7 CONTRACTOR'S OBLIGATION ON COMPLETION :

On Completion of work, all the temporary buildings, structures, pipe lines, cable etc. shall be dismantled and leveled and debris shall be removed as per instruction of BHEL by the contractor at his cost. In the event of his failure to do so, the expenditure towards clearance of the same will be recovered from the contractor. The decision of BHEL Engineer in this regard is final.

3.4 GASES :

3.4.1 All required gases like Oxygen/ acetylene/ argon/ Nitrogen required for work shall be supplied by the Contractor at his cost. It shall be the responsibility of the contractor to plan the activities and store sufficient quantity of these gases. Non-availability of gases cannot be considered as reasons for not attaining the required progress. **However Nitrogen Gas required for chemical cleaning alone will be supplied by BHEL free of cost.**

3.4.2 BHEL reserves the right to reject the use of any gas in case required purity is not maintained.

3.4.3 The contractor shall submit weekly / fortnightly / monthly statement report regarding consumption of all consumables for cost analysis purposes.

3.4.4 The contractor shall ensure safe keeping of the inflammable cylinder at a separate place away from normal habit with proper security etc.

3.4.5 The contractor shall arrange air / gas manifold ensuring proper distribution and reduction of handling time.

3.5 ELECTRODES

3.5.1 All the required electrodes as approved by BHEL shall be arranged by contractor at his cost. It shall be the responsibility of the contractor to obtain prior approval of BHEL, before procurement regarding, suppliers, type of electrodes etc. On receipt of the electrodes at site, it shall be subject to inspection and approval by BHEL. The contractor shall inform BHEL details regarding type of electrodes, batch number and date of expiry etc.

- 3.5.2 All welding consumables for all works including electrodes, filler wires for welding, and TIG welding wires for welding, are to be arranged by the contractor at his cost.
- 3.5.3 Storage of electrodes shall be done in an air conditioned / humidity controlled room as per requirement, at his own cost by the contractor.
- 3.5.4 All low hydrogen electrodes shall be baked/dried in the electrode drying oven to the temperature and period specified by the BHEL Engineer before they are used in erection work and each welder should be provided with one portable electrode drying oven at the work spot. Electrode drying oven and portable drying ovens shall be provided by contractor at his cost.
- 3.5.5 In case of improper arrangement of procurement of above electrodes BHEL reserves the right to procure the same from any source and recover the cost from the contractor's first subsequent bills at market value plus departmental charges of BHEL communicated from time to time. Postponement of such recovery is not permitted.
- 3.5.6 BHEL reserves the right to reject the use of any electrodes at any stage if found defective because of bad quality, improper storage, date of expiry, unapproved type of electrodes etc. It shall be the responsibility of the contractor to replace at his cost without loss of time.

3.6 TOOLS & TACKLES

- 3.6.1 BHEL will provide free of hire charges on sharing basis the tools and plants indicated in Section VII Appendix IV only. It may be noted that distribution of these equipments will be done by BHEL Engineers and the decision of the Engineer shall be final in this regard.
- 3.6.2 The contractor shall be responsible for the safe and proper use of the above equipments issued to him. Day – to-day maintenance and operation of equipments shall be the contractor's responsibility and shall be as per instructions / standard practice of BHEL Engineer.
- 3.6.3 Any loss / damage to any or part of the above equipments shall be to contractor's account and the expenditure on these accounts will be recovered from contractor's bills in case contractor fails to make good the loss.

- 3.6.4 Necessary electrical / water / air connection required for operation of any of their equipment shall be to Contractor's account.
- 3.6.5 Non – availability of any of the above equipment either due to breakdown / routine maintenance or due to distribution pattern of BHEL shall not be quoted as reason for delay of work.
- 3.6.6 Monthly utilisation report of the above equipment shall be furnished by contractor for cost analysis purpose.
- 3.6.7 The contractor shall return the T & P issued to him by BHEL in good working condition as and when so desired by BHEL. (on completion or Reduction in work load) for diversion for other work. If such return is delayed by contractor due to his fault without written consent of BHEL, then hire charges as applicable according to BHEL policy will be levied from such time it was requisitioned by BHEL to the time of actual return, and the amount so decided and arrived at, will be recovered from the contractor's bill.
- 3.6.8 Contractor shall arrange all other T & Ps required for the satisfactory execution of work at his cost.
- 3.6.9 All the T & P arranged by contractor including electrical connections wherein required shall be reliable / proven / tested with necessary test certificate.
- 3.6.10 All instruments, measuring tools etc. are to be calibrated periodically as per the requirement of BHEL and necessary calibration certificates are to be submitted to BHEL before use.
- 3.6.11 The contractor has to return the T & P in good working condition and cost of any replacement required has to be borne by the contractor. Normal wear and tear will be taken into account.
- 3.6.12 Contractor shall have / employ at all times experienced operators and technicians for routine and breakdown maintenance of the equipment. Any delay in rectification of defects will warrant BHEL rectifying the defect and charging the cost to the contractor.

- 3.6.13 If at any time it is noticed that the contractor is not using any of the T & P or equipment properly according to the instructions of BHEL, BHEL will have the right to withdraw any and all such equipment and any cost due to this shall be contractor's account.
- 3.6.14 All the T & P would be issued only at BHEL stores and it shall be the responsibility of the contractor to take delivery from BHEL stores, transport the same to site and return the same to BHEL stores in good condition.
- 3.6.15 All the T & P, lifting tackles including wire ropes, slings, shackles and electrically operated equipment shall be got approved by BHEL Engineer before they are actually put on use. Test certificates should be submitted before their usage.
- 3.6.16 For movement of cranes, etc., it may become necessary to lay sleeper bed for obtaining leveled safe approach for use of equipment. It shall be the contractor's responsibility to lay necessary sleepers. The required sleepers are to be arranged by the contractor at his cost. BHEL will not supply any sleepers for this activity.
- 3.6.17 Contractor shall make good any loss or damage to the equipments supplied to him and day -to - day maintenance and operations of equipments shall be borne by the contractor including all consumables like petrol , oil and air filters etc.,
- 3.6.18 The list of major T & P required to be deployed by the contractor is indicated in APPENDIX – I The list is minimum and not exhaustive but anything required over and above these to suit the site condition / status of progress / nature of work shall be arranged by contractor at his own cost.
- 3.6.19 Contractor shall take into consideration the above clause and quote the rates as called for in the Rate Schedule.

3.7 SUPERVISORY STAFF AND WORKMEN

- 3.7.1 The Contractor shall deploy experienced Engineers, Supervisors all the skilled workmen like High Pressure Welders (gas, TIG and arc) Carbon, alloy steel welders, Gas cutters, electricians, Riggers, Serangs, Erectors, carpenters, fitters etc. in addition to other skilled, semi-skilled and unskilled workmen required for all the works of handling and transportation from site storage to erection site, transportation,

erection, testing and commissioning contemplated under this specification. Only fully trained and competent men with previous experience of the job shall be employed. They shall hold valid certificates wherever necessary. BHEL reserves the right to decide on the suitability of the workers and other personnel who will be employed by the contractor, BHEL reserves right to insist on removal of any employee of the contractor at any time, if they find him unsuitable and the contractor shall forthwith remove him.

- 3.7.2 The supervisory staff employed by the contractor shall be qualified (Engineers – Graduates in Engineering and Supervisors – Diploma Holders) and experienced in the area of work. They shall ensure proper out-turn of work and discipline on the part of labour put on the job by the contractor and in general see that the works are carried out in safe and proper manner and in coordination with other labour and staff employed directly by BHEL or BHEL's client.
- 3.7.3 The Contractor shall also furnish daily labour report showing by classification the number of employees engaged in various categories of work and a progress report of work as required by BHEL Engineer. The contractor shall also give a summary report at the end of the month and plan of deployment for the consequent month as per the plan of activities as required by BHEL, to meet the overall contract requirement.
- 3.7.4 The work shall be executed under the usual conditions existing in major power plant construction and in conjunction with numerous other operations at site. The bidder and his personnel shall co-operate with other personnel other contractor coordinating his work with others and proceed in a manner that shall not delay or hinder the progress of work as a whole.
- 3.7.5 The contractor's supervisory staff shall execute the work in the most substantial and workman like manner in the stipulated time. Accuracy of work, good workmanship and aesthetic finish are essential part of this contract. The contractor shall be responsible to ensure that assembly and workmanship conform to the dimensions and tolerances given in the drawings/instructions given by BHEL Engineers from time to time. Wherever finish or tolerances are not specified in drawings/documents, BHEL Engineers instruction are taken as final.
- 3.7.6 The contractor shall employ the necessary number of qualified and approved full time electricians at his cost to maintain his temporary electrical installation till the completion of work.

3.7.7 It is the responsibility of the bidder to engage his workmen in shifts or on overtime basis for achieving the target set by BHEL and also during erection, commissioning and testing period. The contractor's quoted rate shall include all these contingencies.

3.7.8 If the contractor or his workmen or employees shall break, deface, injure or destroy any part of a building, road, kerb, fence, enclosure, water pipes, cables, drains, electric or telephone posts or wires, trees or any other property or to any part of the erected components etc. The contractor shall make the same good at his own expense or in default, BHEL may cause the same to be made good by other workmen or by other means and deduct the expenses (of which BHEL's decision is final) from any money due to the contractor.

3.8 SCOPE OF MATERIAL HANDLING AND SITE STORAGE AND OTHER RESPONSIBILITIES

3.8.1 While BHEL will endeavor to store/stack/identify materials properly in their open/closed storage yard/shed it shall be contractor's responsibility to assist BHEL in identifying materials well in time for erection, taking delivery of the same in time following the procedure indicated by BHEL and transport the material safely to pre-assembly yard/erection site in time according to programme.

3.8.2 The contractor shall identify necessary supervisor/labour for the above work in sufficient quantity as may be needed by BHEL for areas covering their scope.

3.8.3 It shall be contractor's responsibility to arrange necessary cranes/tractors, trailer or trucks/slings/tools and tackles/labour including operators for loading the materials/Equipments from stores/storage yard, move it to erection site/pre-assembly yard and unload the same at pre-assembly yard/ erection site and the quoted rate shall include the same.

3.8.4 All equipment so used by contractor shall be of proven quality and safe in operation as approved by the statutory authorities as per the law in force.

3.8.5 Any loss/damage to materials issued to contractor shall be made good by him or BHEL will arrange for replacement at cost recovery basis and decision of BHEL shall be final.

- 3.8.6 All welding filler wires if issued to the contractor shall be preserved by him carefully to prevent deterioration of their properties. Special care shall be taken to preserve alloy steel and other special electrodes / filler wires. Contractors shall exercise maximum care in using these electrodes, filler wires to minimize wastage by maintaining a record of all usages.
- 3.8.7 All pipe and tube ends shall be covered with plastic caps or will be closed with wooden plugs as the case may be.
- 3.8.8 All the surplus damaged, unused materials, package materials/containers/special transporting frames, gunny bags etc. supplied by BHEL shall be returned to the BHEL Stores by the contractor and maintain records.
- 3.8.9 The contractor shall take delivery of the components and equipments and special consumables from the storage area after getting the approval of the BHEL Engineer on standard indent forms to be specified by BHEL. At periodic/intervals of work, complete and detailed account of the equipment so erected and electrodes used shall be submitted to the BHEL Engineer.
- 3.8.10 The contractor shall submit monthly plan for erection and the same will be mutually agreed upon after discussion. The contractor shall arrange for Engineers, Supervisors and labour force and tools and plants and consumables to suit the above plan and execute the work accordingly.
- 3.8.11 The Contractor shall have total responsibility for all equipment and materials in his custody, stores, loose, semi-assembled, assembled or erected by him at site.
- 3.8.12 The contractor shall make suitable security arrangement including employment of security personnel to ensure the protection of all materials/equipments and works from theft, fire, pilferage and any other damage and loss.
- 3.8.13 The contractor shall ensure that the packing materials and protection devices used for the various equipments during transit and storage are removed before these equipments are installed.
- 3.8.14 All equipments shall be handled very carefully to prevent any damage or loss. No bare wire ropes, slings etc. shall be used for unloading and / or handling of the equipments without the specific written permission of the Engineer. The equipments from the storage yard shall be moved to the actual site of erection / location at the appropriate time as per

the direction of BHEL Engineer so as to avoid damage for such equipments at site.

- 3.8.15 The work covered under this scope of work is of highly sophisticated nature requiring best quality / precision workmanship engineering and construction management. He should also ensure successful and timely commercial operation of equipment installed. The contractor must have adequate quantity of precision tools, construction aids in possession. Contractor must also have adequate trained qualified and experienced supervisory staff and skilled personnel.
- 3.8.16 All the necessary certificates and licenses required to carry out this scope of work are to arranged by the contractor then and there at no extra cost.
- 3.8.17 The contractor shall take all reasonable care to protect the materials and work till such time the erected equipment has been taken over by BHEL/their client. Wherever necessary suitable temporary fencing and lighting shall have to be provided by the contractor as a safety measure against accident and damage of property of BHEL. Suitable caution notices shall be displayed where access to any part may be deemed to be unsafe and hazardous.
- 3.8.18 The contractor shall be responsible for taking all safety precautions during the construction and keeping the site safe at all times. When the work is temporarily suspended he shall protect all construction materials, equipments and facilities from causing damage to existing property interfering with the operations of the station when it goes into services. The contractor shall comply with all applicable provisions of the safety regulations clean-up programme and other precautionary measures which the BHEL has in effect at the site.
- 3.8.19 All lifting tackles including wire ropes, slings, shackles etc. used by the contractor shall be got approved by BHEL Engineer at site before they are actually put on the work. It will be the responsibility of the contractor to ensure safe lifting of the equipment taking due precautions to avoid any accidents and damage to other equipments and personnel. All piping shall be adequately supported and protected to prevent damage during handling and erection. The history cards for major equipments to be maintained by the contractor.
- 3.8.20 The contractor shall take delivery of equipment from storage yard/stores/sheds. He shall also make arrangements for verification of equipment, maintain records and keep safe custody watch and ward of equipment after it has been handed over to him till these are fully

erected, tested and commissioned and taken over by BHEL's client. The stolen/lost/damaged goods shall have to be made good by the contractor at his own cost.

- 3.8.21 Sometimes it may become necessary for the contractor to handle certain unrequired components in order to take out the required materials. The contractor has to take this contingency also into account. No extra payment is payable for such contingencies.

3.9.0 PRESERVATION OF COMPONENTS

- 3.9.1 It shall be the responsibility of the contractor to apply touch up painting on all equipment before erection. It shall be contractor's responsibility to arrange for required labour, brush and other consumables like cotton waste, cloth etc. for carrying out preservative painting. The quoted rate shall inclusive of above work. The required paint (red oxide) and thinner shall be arranged by BHEL at free of cost.
- 3.9.2 The contractor shall effectively protect the finished work from action of weather and from damage or defacement and shall cover the finished parts, then and there for their protection.
- 3.9.3 Any failure on the part of contractor to carry out work according to above clauses will entail BHEL to carry out the job from any other party and recover the cost from contractor.
- 3.9.4 Due to atmospheric conditions erected materials are likely to get rusted more frequently. It is the responsibility of the contractor to preserve the erection materials drawn from stores for erection till these are commissioned and handed over to customer. The required paint (Red oxide) and thinner shall be arranged by BHEL free of cost. All other consumables like painting brush, emery paper, cotton waste, cloth etc. have to be procured by the contractor at his cost. The contractor should ensure that the materials are not rusted on any account till they are handed over to customer. The decision of the BHEL Engineer is final with regard to frequency of application of paint.

3.10.0 CIVIL WORKS

- 3.10.1 **The entire Civil works are excluded from the Contractor's scope.** Foundation of all equipments and plants with necessary civil works shall be provided by BHEL/Client. The dimension of the foundation and anchor bolt pits shall be checked by the contractor for their correctness as per drawings. Further, top elevation of foundations shall be checked with respect to bench mark etc. All adjustments up to 25mm of foundations surfaces, enlarging the pockets in foundations etc. as may be required for the erection of equipments plants shall be carried out by the contractor. All the materials like cements, including special grouting cement like Conbextra, or its equivalent, sand, etc. shall also be arranged by the contractor at his cost wherever necessary.
- 3.10.2 The contractor at his cost shall arrange for grouting of foundation bolt holes of supports and equipment as specified in the drawings / specification or as advised by the Engineer of BHEL after preparing the foundation top surface for grouting, All the materials for grouting (sand, gravel & cement including special Cement) shall be arranged by the contractor. The grouting has to be done up to basement level. The required consumables like Portland cement, gravel, sand etc., have to be provided by the contractor at his cost. The contractor at his cost shall arrange special cement like Conbextra, GP2/shrinkomp or its equivalent where required.
- 3.10.3 The Contractor at his cost shall arrange for grouting of anchor points of T & P issued to him and also grouting of winches or any other supports required for T & Ps. Necessary grout materials are to be arranged by the contractor at his cost.
- 3.10.4 The Civil excavation for buried piping will be under the scope of the BHEL . Pl. see the relevant clauses on buried piping details.

3.11.0 DRAWINGS AND DOCUMENTS .

- 3.11.1 The detailed drawing specification available with BHEL Engineers will form part of this tender specification. These documents will be made available to the contractor during execution of work at site.
- 3.11.2 One set of necessary drawings to carry out the erection work will be furnished to the contractor by BHEL on loan which shall be returned to BHEL Engineer at site after completion of work. Contractor's personnel shall take care of these documents given to them.

3.11.3 The data furnished in various appendices and the drawings enclosed with this Tender Specification, describes the equipment to be installed, tested and commissioned under this specification briefly. However, the changes in the design and in the quantity may be expected to occur as is usual in any such large scales of work.

3.11.4 Should any error or ambiguity be discovered in the specification, or information, the contractor shall forthwith bring the same to the notice of BHEL before commencement of work. BHEL's interpretation in such cases shall be final and binding on the contractor.

3.11.5 Deviation from design dimensions should not exceed permissible limit. The contractor shall not correct or alter any dimensions/details without specific approval of BHEL.

3.12.0 SAFETY AND CLEANLINESS

3.12.1 Contractor shall strictly follow all safety regulations/conditions as per clause 2.15 and its subclauses of general conditions of contract booklet enclosed with this tender.

3.12.2 Non -conformity of safety rules and safety appliances will be viewed seriously and the BHEL has right to impose fines on the contractor as under:

Sl.No	Safety measures	Fine (Rs.)
01	Not wearing safety helmet	50/-
02	Not wearing safety belt	100/-
03	Grinding without goggles	50/-
04	Not using 24V supply for internal work	500/-
05	Electrical plugs not used for hand machines	100/-
06	Not slinging properly	200/-
07	Using damaged sling	200/-
08	Lifting cylinders without cage	500/-

09	Not using proper welding cable with lot of joints	200/-
10	Not removing small scrap from platforms	200/-
11	Gas cutting without taking proper precaution or not using sheet below gas cutting	200/-
12	Not maintaining elec. Winches which are being operated dangerously	500/-
13	Improper earthing of electrical T & Ps	500/-

3.12.3 Contractor shall necessarily fill up the safety plan format available in general conditions of contract booklet enclosed with this tender and submit along with their offer.

3.12.4 CONTRACTOR SHALL DEPLOY A SAFETY OFFICER EXCLUSIVELY TO HANDLE SAFETY REQUIREMENT

SPECIFIC REQUIREMENTS FOR ISO 9001 - 2000

3.13.0 IMPORTANT NOTE

Contractors shall ensure that all their Staff/Employees are exposed to periodical training programme conducted by qualified agencies/ personnel on ISO 9001 – 2000 Standards.

Contractors shall ensure that the Quality is maintained in all the works connected with this contract at all stages of the requirement of BHEL.

Contractor shall ensure that all Inspection, Measuring and Testing equipment that are used, whether owned by the contractor or used on loan, are calibrated by the authorized agencies and the valid calibration certificate will be available with them for verification by BHEL. A list of such instruments possessed by contractor at site with its calibration status is to be submitted to BHEL Engineer for control.

Contractors shall arrange for the inspection of the works at various stages as required by BHEL. Immediate corrective action shall be taken by the contractor for the non-conformances if any, observed and pointed out by BHEL.

3.13.0 INSPECTION / QUALITY ASSURANCE / QUALITY CONTROL STATUTORY INSPECTION

3.13.1 Various Inspection / quality control / quality assurance procedures/methods at various stages of erection and commissioning will be as per BHEL / Customer quality control procedure/codes/IBR and other statutory provisions and as per BHEL Engineer's instructions.

3.13.2 Preparation of quality assurance log sheets and protocols with customer's Engineers, welding logs and other quality control and quality assurance documentation as per BHEL Engineer's Instructions, is within the scope of work / specification.

3.13.3 The protocols between contractor and customer/BHEL shall be made prior to installation for correctness of foundations, materials, procedures, at each stage of Installation, generally as per the requirement of Customer/BHEL. This is necessary to ensure elimination of errors or keeping them within tolerable limits and to avoid accumulation and multiplication of errors.

- 3.13.4 A Daily log Book should be maintained by every supervisor/Engineer of contractor on the job in Duplicate (One for BHEL and one for Contractor) for detailing and incorporating Alignment / clearance / centering / Levelling Readings and Inspection details.
- 3.13.5 All the Important Measurements shall be recorded in the Daily Log Book with sketches based on BHEL Drawings indicating Readings / Measurements actually Taken and Signed by BHEL/Customer / Contractor Representatives.
- 3.13.6 Approval Given by Customer/BHEL for welding, results tests etc. shall also be recorded in the log book.
- 3.13.7 Welding Details like number of joints, welder's Name, Date of welding, Details of Repair, Heat Treatment, Etc. will be documented in welding Logs as per BHEL Engineer's Instructions.
- 3.13.8 Heat Treatment details of HP Welds indicating minimum Temperature Recorded, Heating Rate, Cooling Rate, soaking Time, Etc., shall also be Recorded and documented by contractor as per BHEL Engineer's Instructions. High pressure Welder's performance Record shall be furnished every month. The performance Report of Welders shall indicate the percentage of Repair for each welder.
- 3.13.9 All the Electrical/Technical Measuring and Testing Instruments/Gauges, Feeler Gauges, Height Gauges, Dial Gauges, Micrometers, Levels, Spirit Levels, Surface plates, straight Edges, vernier calipers and all measuring instruments shall be provided by the contractor for checking, leveling, Alignment, Centering etc of Erected Equipments at various stages. The Instruments/gauges/Tools etc. provided should be of Brand, Quality and Accuracy, Specified by BHEL Engineer and should have necessary calibration and other certificates as per the Requirements of BHEL Engineer.
- 3.13.10 Total Quality is the Watch Ward of the work and standards, Procedures laid down by BHEL. We shall follow all the Instructions as per BHEL Drawings and Quality / Standards. Contractor shall provide for the services of quality Assurance Engineer.
- 3.13.11 The Welders performance will be reviewed from time to time as per the BHEL / IBR Standards and any welders not performing to the Standards set by BHEL / IBR Standards will be removed from working, contractor shall arrange for the alternate welders immediately.

- 3.13.12 All the welders including the HP welders shall carry identity cards as per the proforma prescribed by BHEL only Welders Duly authorized by BHEL / Boiler Inspector / Consultant shall be engaged on the work.
- 3.13.13 Contractor shall ensure speedy alignment and welding of all Equipment erected by him after placement. Also all alignments, Welding, NDT Tests required for stage Inspection shall be completed as per Quality Assurance Procedures. All the Quality Assurance procedures have to be complied with before effecting column erection, Ceiling Beams erection, drum lifting, further structural work, Hydraulic Test, Trial Run of Equipment, Pre-commissioning and Post commissioning and any other tests required to be conducted for completing erection and commissioning.

3.14.0 STAGE INSPECTION BY FES / QA ENGINEERS

- 3.14.1 Apart from Day-to-Day Inspection by BHEL Engineers Stationed at site and also by Customer's Engineers, Stage Inspection of Equipment under Erection and commissioning at various stages of Erection and commissioning by TEAMS of Engineers, from Field Engineering Services of BHEL's Manufacturing units and Quality Assurance Teams from Field Quality Assurance Unit/ Factory Quality Assurance and commissioning Engineers. Contractor shall arrange all labour, Tools and Tackles, etc. for such stage inspections free of cost.
- 3.14.2 Any modifications suggested by FES and QA Engineers Team shall be carried out. Claims of Contractor, if any shall be dealt as applicable.
- 3.14.3 Any minor rectifications of minor repairs of defective work found out during stage Inspection shall be rectified free of cost, by the contractor.
- 3.14.4 Any major Rectification or Major Repair / Major Rework of Defective work found out during stage Inspection verification / checking, But not attributable to contractor shall also be carried out. Claims of contractor if any, shall be dealt as applicable.

3.15.0 STATUTORY INSPECTION

- 3.15.1 The scope includes Getting the Approvals from the statutory authorities (Like Boiler Inspector and labour officers). This includes arranging for inspection visits of Boiler Inspector periodically as per BHEL Engineer's instructions, submitting documents, radiograph, etc. and following up the matter with them.

3.15.2 All fees connected with the contractors for testing his welders / men / workers and testing, inspection calibrating of his instruments and equipments, shall be paid by the contractor. It shall be the contractor's responsibility to obtain approval of statutory authorities, wherever applicable, for the conducting of any work which comes under the purview of these authorities. Any cost arising from this shall be the contractor's account. However, BHEL shall pay all other fees. (FEES FOR VISITS INSPECTION FEES, REGISTRATION FEES, ETC.) In case these inspection have to be repeated due to default / fault of the contractor and fees have to be paid again, the contractor shall have to bear the charges. These would be deducted from his bills.

HSE SPECIFIC REQUIREMENT

OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM

SUB CONTRACTOR TO ENSURE COMPLIANCE OF THE FOLLOWING HEALTH RELATED POINTS

01. Sub-contractor to identify nearest hospital for Health check up of his staff and workers and intimate BHEL site office & PSSR HQ.
02. To arrange for occupational health check up / screening of contractor's staff and workers engaged in sub contracting activities. In this, category of workmen such as welders, gas cutters, grinders, radiographers, crane operators are to be given exclusive attention in respect of health screening.
03. Sub-contractor to arrange an ambulance vehicle or emergency vehicle on a continuous basis to meet any emergency situation arising at site work in which his staff and workers are engaged.
04. To provide appropriate facilities for prompt first aid treatment of injuries and illness at work. One first Aider for each sub contractor to be provided. First Aider should undergo training on first aid.
05. To provide filtered drinking water at selected place in a clean container.

SUB CONTRACTOR TO ENSURE COMPLIANCE OF THE FOLLOWING SAFETY RELATED POINTS

01. Personnel protective equipment (PPES): Required number of following PPES (Confirming to Relevant Standards) to be made available to workmen at site and ensured that they are used .
 - ❑ Helmet
 - ❑ Safety goggles
 - ❑ Welding face shields
 - ❑ Safety belts for working at heights
 - ❑ Safety shoes
 - ❑ Ear plugs
 - ❑ Rubber gloves and mats for low tension (I.T) electrical works
 - ❑ Gum boots & aprons
 - ❑ Other items as required by BHEL site

02. Sub contractor to liaise with nearest fire station and inform contact telephone number and contact person to meet any emergency.
03. To provide appropriate fire fighting equipment at designated work place and to provide fire fighting training to selected persons in his group of workmen to meet emergencies.
04. To provide adequate number of 24 V power supply points to work in a constrained and enclosed space.
- 05 . All power tapping points / switch boards /power & control cabling should fulfill required electrical safety aspects as per relevant is standard.
06. ELCH's (Earth leak circuit breakers) at all electrical distribution points to be provided.
07. Red and white caution tape of proper width (1.5 to 2 inch) to be used for cordoning unsafe area such as open trench, excavated area, etc.
08. To provide sub-contractors company logo or clothing to all staff and workers for identification including identity cards with photographs approved by BHEL.
09. High pressure and structural welders to be identified with colour clothing and to display copy of welders certificate with photographs of welder at the work place. They also should be in possession of valid welding procedure.
10. To display safe handling procedure for all chemicals such as lube oil, grease, sealing compound, kerosene, diesel etc. At stores & respective work place.
11. Contractor should authorise a person at site to stop work if there is a unsafe work noticed as per his knowledge.
12. Fitness for use of erected scaffolding to be certified by the contractors approved scaffolder and the certificate should be displayed on the scaffolding itself. If the scaffolding is unsafe , the same will not be used. the certificate to be updated daily. The scaffolding to be made as per the relevant is standard.

13. For making platform on the scaffolding , proper thickness and size of the plank of required quality wood to be used. The safe working load of the platform to be displayed on the scaffolding itself. Proper use of platform to be explained to the user.
14. All plant equipment should have inspection report before put in to use.
15. All T&Ps should be of reputed brand and having quality certificates.
16. All IMTEs should have valid calibration certificate from recommended institution / testing lab and these should be in place.
17. All lifting tackle and plant equipment should have safe working load certificate.
18. The right worker should be deployed for right job and the resume of site incharge, supervisors, and key workers to be submitted before commencement of work..
19. Sub-contractor should submit inspection / testing matrix of all T&Ps and to be approved by BHEL.
20. Sub-contractor to display safety slogan, safety board, caution boards wherever required in consultation with BHEL.
21. Sub-contractor to provide gas detectors of reputed make at desired locations.
22. Sub-contractor to conduct emergency mock drills. one drill per 6 month and submit report to BHEL.
23. Safe handling and storing of all equipment with adequate space to be ensured.
24. Sub contractor to deploy safety supervisor till the completion of the project.

25. Sub contractor to comply the safety reporting procedure of BHEL as practiced at present and also additional requirements that may arise out of future improvements in the safety management system. This includes computation of safety indices such as frequency rate, severity rate & incident rate.
26. Sub contractor to identify probable emergency situations such as electric shocks to workmen , caving in of shored earth , fall from height, collapse of scaffolding fire etc., and should have clear action plan to overcome them. Sub contractor to take required guidance from BHEL in this regard.
27. Sub contractor to identify hazardous activities which he may carryout and should train his workmen in those activities with the relevant operation control procedures. Sub contractor to take required guidance from BHEL in this regard.
28. Safe work permit system to be followed while working in confined space / near electric systems.

SUB CONTRACTOR TO ENSURE COMPLIANCE OF THE FOLLOWING ENVIRONMENT RELATED POINTS

1. HOUSE KEEPING : Sub contractor to carry out daily house keeping of work areas / stores through a check list prepared in consultation with BHEL.
2. Sub contractor shall adopt pollution prevention / reduce /control approach in all his site activities. this shall include:
 - a. Transporting of oil / chemicals from stores to site safely without causing spillage. in case of any spillage, the area shall be cleaned and the remanant spilled oil disposed off to a safe place, identified for such disposal.
 - b. To use required containers / cans / safety gadgets /appliances for transporting and for usage of oil / chemicals at site.
3. Sub contractor shall arrange for segregation / collection of scraps and dispose off to the identified place meant for scrap collection.
4. Sub contractor to adopt good erection practices / procedures with the objective of reduction of waste generation / rework

OTHER HSE REQUIREMENTS TO BE COMPLIED BY SUB CONTRACTOR

1. Sub contractor to clearly understand and accept the HCE policy of PSSR with a commitment to comply the requirements of the policy.
2. Sub contractors to arrange for daily meeting of their supervisors and work force before they disperse for their daily planned activities where in the relevant health , safety and environment aspects of the job and use of PPES are explained
3. Sub contractor to conduct monthly HSE meeting (internal) and submit the report to BHEL.
4. HSE slogans to be displayed in a proper board – hoarding at designated places in consultation with BHEL.
5. Sub contractor to submit a structured programme for training & occupational Health Screening of their work force at site after the Award of LOI.

IMPORTANT NOTE

**Bidders are requested to furnish the
Informations as required in appendices of
Section IV & V of this booklet**

**Attach separate sheet if necessary
Bids with incomplete particulars
Will be summarily Rejected**

General Conditions of Contract

SECTION IV

APPENDIX –I

FINANCIAL VIABILITY

- | | | |
|----|--|---------|
| 1. | Owner's capital in the business (in case of Partnership please mention percentage shares and amounts) | Rs. |
| 2. | Quantum of business done during | 1. Rs. |
| | Last three financial years (only in | 2. Rs. |
| | Construction of Power Plants) | 3. Rs. |
| 3. | Value of fixed assets of the | 1. Rs. |
| | Business in last three years | 2. Rs. |
| | | 3. Rs. |
| 4. | Guarantee limits (if any enjoyed by the firm) | |
| 5. | Overdraft limits (if any enjoyed by the firm) | |
| 6. | Income Tax paid during the last | 1. Rs. |
| | Three years | 2. Rs. |
| | | 3. Rs. |
| . | Please state whether Audited profit & Loss Account and Balance Sheet for the last 3 Years are enclosed | YES/ No |

Signature of the Tenderer

Note: All the documents should be duly certified by auditor/Bank as may be applicable.

SECTION IV**LIST OF QUALIFIED MANPOWER AVAILABLE**

(A) List of Qualified Manpower available with the Tenderer:

Sl.No.	Name	Qualification	No. of years of Experience (ref.note 2)
--------	------	---------------	---

(B) List of Qualified Manpower to be deployed exclusively for this Contract:

Sl.No.	Name	Qualification	No.of years of Experience(ref.note 2)
--------	------	---------------	--

Signature of the Tenderer

Note:

1.The Manpower indicated against paragraph(B) above shall be further augmented with additional category/number of Tools and plants as and when required and as directed by the Engineer in charge to complete work as per the time of completion accepted.

2. The experience may be indicated fieldwise (Attach separate sheets if necessary)

SECTION IV

DETAILS REGARDING SIMILAR JOBS EXECUTED/IN PROGRESS

Sl.No	Details of jobs Executed/in Progress with Location of Project/site In the last 5 years	Financial value of the contract	No. of skilled/ unskilled Workers deployed at the project/ site for the job	No. of staff, deployed at the project site for execution of the job	Remarks
1	2	3	4	5	6

Signature of the Tenderer

APPENDIX –IV

SECTION IV

ANALYSIS OF UNIT RATE QUOTED

S.No.	Description	Percentage of the unit rate quoted	Remarks, if any. Ref. Note 2
1.	Site facilities Viz. Electricity, water , workshop and other infrastructure facilities.		
2.	Salary & Wages for staff and workers		
3.	Consumables		
	a) Gases		
	b) Electrodes		
	c) Steel materials		
	d) Others		
4.	Depreciation & Maintenance for T&P and other items		
5.	Establishment & Admn. Expenses of site		
6.	Retrenchment benefit		
7.	Overheads		
8.	Profit		
9.	Extra work incidental to Erection		

Note:

1. All tenderers are requested to note, the rates quoted by them are not disclosed in any way while furnishing the above details.
2. Bidders are requested to indicate the type of accommodation he is planning to provide for staff & workers and the details of medical, conveyance and other amenities he is planning to provide for staff & workers in a separate sheet.

Signature of the Tenderer

SECTION IV

DECLARATION SHEET

The Bidders are requested to furnish the following information while quoting, failing which their offer will be summarily rejected.

1. Whether any relative(s) is presently employed in BHEL? If so, his connection with the Firm : YES/ NO
(If yes, please give particulars)
2. Whether any ex-BHEL employee Is associated /working with the Firm? : YES/NO (If Yes, please give particulars)
3. Whether any BHEL employee is Holding any share in Firm? : YES/NO (If yes, please give particulars)

Signature of the Tenderer

Note:

1. Attach separate sheet, if necessary.
2. If the BHEL Management comes to know, at a later date, that the information furnished by the Bidder is false, suitable action will be taken according to law against the contractor.

General Conditions of Contract

SECTION V

CONTRACTOR'S SAFETY PLAN

The Bidder should submit a suitable safety plan along with their offer. The safety plan shall indicate in detail the measures that would be taken by the contractor to ensure the work safely. Submission of a written safety plan by the bidder along with their offer is expected to make them clearly understand their responsibility towards safety plan by the parties before they assist BHEL Engineers in enforcing safety measures.

The Safety Plan aims at the contract's.

- Engaging qualified full time safety personnel at site particularly when the total manpower deployed is more than 500.
- Organising suitable motivation/educational programme for all workers in their control.
- Deploying T&Ps of acceptable quality only
- Towards this specific details/confirmations in respect of the following must be obtained among other things.
- Contractor's Safety Organisation with Name, Designation and qualification of full time engineer.
- Max. No. workmen likely to be employed with breakup, trade level of experience and qualifications wise.
- Motivation/training programme proposed for the workers.
- Personal protective equipment to be provided for workmen and system for ensuring usage.
- Confirmation regarding acceptance of fines for non-compliance of safety norms
- List of T&Ps proposed to be deployed with full particulars
- Fire Safety Measures proposed
- Records and reporting system
- Deviations from BHEL Safety conditions/Code of Safety norms.

A proforma for the safety plan is placed vide Annexure I.

ANNEXURE I
SAFETY PLAN

Name of Project

Description of Work

Tender No.W.O.No.

1.0 DETAILS OF PROPOSED WORK

1.1 Scope

1.2 Total tonnage to be erected (appx.)

1.3 Period of completion (months)

1.4 Max.No.of personnel to be
Deployed (Nos.)

2.0 SAFETY ORGANISATION

2.1 Furnish details of atleast 3 major
Jobs executed in the past

2.2 How many sites you are operating
Presently

2.3 Furnish details of safety
Organisation at HQ and project Sites

2.4 Furnish Name, Qualification and
Designation of Safety Engineer

2.5 Is he a full time safety engineer

2.6 If not furnish details of additional
Work assigned to him

2.7 Details of Personnel
Qualified in administering First Aid

2.8 Details of Personnel trained
In Fire Fighting operation

3.0 CONTRACTOR'S PERSONNEL

3.1 Furnish details of Max.

Manpower likely to be deployed :

a. Executive :

b. Supervisors :

c. Workers :

d. Others :

TOTAL :

3.2 Please indicate details of workmen based on experience in identical work

a. With more than 5 years experience :

b. Upto 5 years experience :

c. No.previous experience :

TOTAL :

3.3 Please indicate details of Workmen qualification wise

a. Graduates :

b. I.T.I. :

c. Metric :

d. VIII Std :

e. Others :

TOTAL :

3.4 Please furnish trade-wise Breakup of workmen

a. Fitter :

b. Welder :

c. Rigger :

d. Electrician :

e. Helpers :

f. Others :

TOTAL

:

4.0 SAFETY AWARENESS/ TRAINING PROGRAMME

4.1 Furnish details of safety programmes :
Organised by you in the past

4.2 Safety organised programmer proposed :
During the course of execution of the job

5.0 PERSONAL PROTECTIVE EQUIPMENT:

5.1 List down the 'PPE' provided to workmen :

APPLIANCES

a. Safety Helmet :

b. Safety belt :

c. Eye and Face protection device :

d. Hand and Body protection device :

e. Safety shoes :

f. Other :

6.0 FIRE SAFETY MEASURES :

6.1 Furnish No. of Personnel :
Trained in fire fighting operation

6.2 Portable fire extinguishers to be provided :

a. Number :

b. Type/Make :

c. Location :

- 6.3 Fire resistant covers to be provided for :
 Coverage of materials
 a. Number :
 b. Type/Make :
 c. Size :

7.0 TOOLS AND PLANTS

7.1 Furnish details as per proforma

Sl.No.	Equipment with Capacity	Year of Mfg.	Date of last Major overhaul	Remarks
1				
2				
3				
4				

8.0 GENERAL

8.1 Furnish deviation/comments if any on :
 BHEL code of Safety management

8.2 Indicate Safety reporting system proposed

- a. Monthly Safety reports :
 b. Accident reports :
 c. Others :

8.3 Indicate Safety records to be maintained :

- a. Accidents Investigation records :
 b. Safety appliance issue register :
 c. T&P Repair & Maintenance Register :
 d. Others

Signature of Tenderer

APPENDIX –I

SECTION V

List of Equipments/ machinery / T& P Owned by the Contractor & Proposed to be Deployed by the Contractor for this work

Note: The Tenderers are required to furnish the details as desired below with regard to the Equipments, machinery, Tools & Tackles, Consumables and Workshop facilities owned by them along with documentary proof for the same.

Sl No.	Name of the Equipment	Total Quantity Available with the Company	Quantity Proposed to be deployed for this job	Type capacity, Specifications	Year of Make	Date of purchase	Registration No.	Present Location of the equipment	Utility Factor	Remarks If any
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.

Signature of the Tenderer

SECTION V

ANALYSIS OF SIMILAR JOBS EXECUTED /IN PROGRESS

Sl. No.	Details of jobs executed/in progress with location of projects	Fin.value of the contract	Extra claims received Nature Amount	No.of skilled/unskilled workers deployed at site for this job	No.of staff deployed at site for execution of job, Engr/Supervisor	No.of strikes, work stoppages with duration & mandays lost during execution of job	Brief description of negotiations held & settlement reached	No.of accidents (fatal/minor/major)	Amt.of compensations paid for accident	Details of insurance provided for the workers for accident/Death	Details of safety equipments provided for workers
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Signatutre of the Tenderer

APPENDIX –III

SECTION V

ORGANISATION STRUCTURE

1. Management Structure of the firm
Whether Public Limited/Private Limited / sole Proprietorship / Partnership.
2. Details of the Staff presently on permanent rolls of the Organisation.

A) ENGINEERING STAFF:

Sl. No.	Name and Designation	Qualification	Erection Experience and Specialisation	State if proposed to be deployed at site for this job	Remarks

Signature of the Tenderer

B) DETAILS OF TECHNICAL STAFF

Category	Total No on rolls	No. proposed to be deployed at site for this job
Supervisors / Foreman		
Storekeepers		
Crane Operators		
Compressor Operator		
Mill Wright Fitter		
Pipe Fitters		
Instrument Fitter		
General Fitter		
Electrician		
Sarang		
Rigger		
Carpenter		
Painter		
Tinsmith		
Sheet Metal Fabricator		
Pipe Fabricator		
Cable Jointer		
Heavy Vehicle Driver		
Light Vehicle Driver		
Mason		
Refractory Mason		
Semi-skilled Worker		
Unskilled Worker		
Helpers		

Signature of the Tenderer

C) WELDERS

Sl.No	Name	Specialisation (Tig/Alloy/ Arc/Carbon arc/structural	Period of Experience	Average No.of Joints per day	% age rejection	Whether holding IBR Certificate & Period of validity	State if proposed to be deployed at site for this job	Remarks if any
1.	Please indicate how you propose to ensure quality of work at site.							

Signature of the Tenderer

**APPENDIX - IV
SECTION V**

DETAILS OF MAJOR MILESTONES ACHIEVED

Sl.No.	Name of Project with capacity	Date of L.O.I (Telex/Fax/Telegram)	Date of start of Erection	Date of Boxing up	Date of Oil Flushing	Date of Barring gear	Date of Steam Rolling	Date of Synchronisation	Remarks if any
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(ATTACH SEPARATE SHEET)

Name of Project with Capacity	Date of L.O.I (Telex/Fax/Telegram)	Date of start of Erection	Date of Drum lifting	Date of Hydraulic test	Date of Light up	Date of steam blowing	Date of Safety valve Floating	Remarks If any
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(ATTACH SEPARATE SHEET)

Signature of the Tenderer

ANNEXURE ‘A’

BANK GUARANTEE FOR SECURITY DEPOSIT (PROFORMA)

In consideration of the Bharat Heavy Electricals Limited, having its registered office at BHEL House, Siri Fort, New Dehi – 110 049 the concerned division being Power Sector - Southern Region, located at 474, Anna Salai, Nandanam, Chennai – 600 035. Tamil Nadu (hereinafter called BHEL) having agreed to exempt
(hereinafter called “the said contractor(s)” from the demand, under terms and conditions of agreement datedmade between BHEL andfor(hereinafter called “ the said Agreement) of security deposit for the due fulfillment by said contactors of the terms and condition contained in the said agreement, or production of bank guarantee for Rs.....
(Rupeesonly).

We(hereinafter referred to as “the
(indicate the name of Bank)

Bank”) at the request of Contractor(s) do hereby undertake to pay to BHEL an amount not exceeding Rs..... against any loss or damage caused to or suffered or would be caused to or suffered by BHEL, by reasons of any breach by the said contractor(s) of any of the terms or conditions contained in the said Agreement.

2. We do hereby
(indicate the name of Bank)

undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from BHEL stating that the amount claimed is due by way of loss / damage caused to or would to or suffered by BHEL by reason of breach by the said contractor's of any of the terms and conditions contained in the said Agreement or by reason of the contractor's failure to perform the said Agreement. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.....

3. Weundertake to pay to BHEL any money so
(indicate the name of the bank)

demanded notwithstanding any dispute or disputes raised by contractor(s) / supplier(s) in any suit or proceeding pending before any Court or Tribunal relating thereto our liability under these presents being absolute and unequivocal. The payment so made by under this bond shall be valid discharge of our liability for payment thereunder and the contractor(s) shall have no claim against us for making such payment.

4. We.....further agree that the guarantee herein
(indicate of the name of Bank)

contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of BHEL under or by virtue of the said Agreement have been fully paid and its claim satisfied or discharged or till BHEL certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said

contractor(s) and accordingly discharge this guarantee, unless a demand or claim under this guarantee is made on us in writing on or before

We shall be discharged from all liability under this guarantee thereafter.

5. We.....further agree with BHEL, that BHEL shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder, to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said contractor(s) from time to time or to postpone any time, from time to time any of the powers exercisable by the BHEL against the said Contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reasons of any such variation, or extension being granted to the said Contractor(s) or for any forbearance, act, or commission on the part of BHEL or any indulgence BHEL to the said contractor or by any such matter or thing whatsoever which under the law relating to sureties would but for this provisions, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s) / Supplier(s).

7. Welastly undertake not to revoke

(indicate the name of bank)

this guarantee during its currency except with the previous consent of BHEL in writing.

8. The address of BHEL of services, correspondence in respect of matters relating to this guarantee shall be

BHARAT HEAVY ELECTRICAL LIMITED
POWER SECTOR, SOUTHERN REGION
474, ANNA SALAI, NANDANAM
CHENNAI – 600 035.

Address of the Bank in full

Dated theday of20.....

Pincode :

Telegraphic Code :

For
(indicate the name of bank)

Telex No :

Fax No :

Witness :

ANNEXURE – ‘B’

PROFORMA OF PERFORMANCE BANK GUARANTEE

1. This deed of guarantee made thisday of20
byBank Ltd.....
.....in favour of Bharat Heavy Electricals Limited, Power Sector
– Southern Region, 474, Anna Salai, Chennai – 600 035 having its Registered Office at
BHEL House, Siri Fort, New Delhi – 110 049 (hereinafter called the principal)

2. Whereas Messrs(with full contractor’s
address) (hereinafter called the contractor) have entered into a contract (contract
No.....dated.....) for (name of work
.....with the Principal (hereinafter called the said agreement).

3. AND WHEREAS the said contractor shall execute a performance bank guarantee for
indemnifying the principal to the extent to
.....and whereas the said Messrs.....
have approachedBank Ltd. and at the request and
in consideration of the arrangement arrived between the said Messrs.....
.....and the said Bank as hereinafter mentioned to
the aforesaid Principal.

4. Now, therefore these present witness that we
Bank Ltd. by the hand of Shriits, lawfully and duly
constituted attorney, do hereby undertake to pay without demur to the aforesaid company a
sum of Rs.....(Rupees.....
.....only) on demand being made by the said Principal and to
keep the said Principal indemnified by virtue of this guarantee against any loss or damage
caused to or suffered by the said Principal by reason of any parts that may develop defects,
fails or show signs of failure in the equipment arising from faulty workmanship thereby
impairing the serviceableness under the proper use as per instructions provided by the
contractor for a period of 12 months from the date of receipt of payment and also for breach
of the terms and conditions of contract. We therefore undertake to pay the said amount in a
lump sum on demand or such part thereof as the Principal may demand from time to time,
irrespective of the fact whether the said contractor admits or denies in any Court, Tribunal or
Arbitration proceedings or before any authority.

5. The aforesaid Guarantee will remain in force and we shall be liable under the same irrespective of any concession of time granted by the said company to Messrsin or fulfilling the said contract between Messrs..... and the principal and the guarantee will remain in force irrespective of any change of terms, conditions or stipulations or any variation in the terms of the said agreement irrespective of whether notice of such change and /or variation, is given to us or not and claim to receive such notice of any change and / or variation if the terms and/or conditions to said agreement is hereby specifically waived by us. Further, we shall not be released from this guarantee by any forbearance, or the exercise or non-exercise of any of the power of rights under the said Agreement by the said Principal against the Messrs..... irrespective of whether notice of such forbearance or enforcement or non-enforcement of any powers or rights, modification or changes made in the said agreement or concession shown to Messrs.....by the Principal is given to us or not.

6. The guarantee herein contained shall not be determined or affected by the liquidation or winding up or insolvency or changes in the composition of firm/company of the said Messrs.....and shall in all respects and for all purposes be binding and operative until the payment of all moneys due or that may hereinafter become due to the said Principal is made to the Principal irrespective of any liability or obligations of the said Agreement.

7. We, the said Bank, further agree that the guarantee herein contained shall remain in force and effect during the period that would be taken for the performance of the aforesaid agreement and that it shall continue to be enforceable till all the dues of the Principal under or by virtue of the said agreement have been fully paid and its claim satisfied and discharged or till the Principal certified that the terms and conditions of the said agreement have been fully and properly carried out by the said Messrs.....and accordingly discharge the guarantee subject however that the Principal shall have the right under this guarantee after the expiry offrom the date of its execution. Any claim, or dispute arising under the terms of this documents shall only be enforced or settled in the Courts at Chennai only.

8. The Bank hereby declares that it has power to issue this Guarantee under the Bank's Memorandum and Articles of Association and the undersigned has full power to do so under the Power of Attorney dated granted by proper authorities of the Bank.

9. The guarantee is valid up to and unless a demand is made under this guarantee within six months fromall the rights of the Principal under the guarantee shall be forfeited and we the Bank shall be released and discharged from all liability thereunder.

DATED

THE

Bank by its constituted Attorney

(Signature of the person duly authorized to sign on behalf of the Bank)

Bank Address in full.

ANNEXURE – ‘C’

(To be stamped in accordance with Stamp Act)
(BANK GUARANTEE FOR SECURING ADVANCE)
(Delete the words not applicable)

This Deed of Guarantee made this
day ofbetween
.....(Bank) hereinafter called “ the Guarantor” (which
expression shall unless repugnant to the context or meaning thereof be deemed to
include its successors and assigns) of the ONE PART and M/s. Bharat Heavy
Electricals Limited (A Government of India Undertaking) a Company incorporated
under the Companies Act 1956, having its Registered Office at ‘BHEL HOUSE’ Siri
Fort, New Delhi – 110 049 through this Unit / Division at 474, Anna Salai,
Nandanam, P.O. Chennai - 600 035. hereinafter called “The Company” (which
expression shall unless repugnant to the context or meaning thereof be deemed to
include its successors) of the OTHER PART:

WHEREAS M/s.....
(herein after called the Supplier / Contractor) has entered into a contract No.....
.....dated.....
(hereinafter called “the Contract”) with the company for

AND WHEREAS the Contract inter alia provides that the Company will pay to the
contractor /Supplier advance of Rs.....(Rupees.....
.....only) on certain
terms and conditions specified therein subject to the contractor furnishing a bank
guarantee for Rs.....(Rupees
.....only) in favour of the company.

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

NOW THIS DEED WITNESSES AS FOLLOWS

1. In consideration of the Company having agreed to advance a sum of Rs.....(Rupees..... only) to the Contractor/Supplier, the Guarantor do hereby guarantee the due recovery by the Company of the said advance with interest thereon as provided according to the terms and conditions of the Contract. If the said contractor/Supplier fails to utilize the said advance for the purpose of the contract and/or the said advance together with interest thereon as aforesaid is not fully recovered by the Company, the Guarantor do hereby unconditionally and irrevocably undertake to pay to the Company without demur and merely on a demand to the extent of the said sum of Rs..... (Rupees.....only).
Any claim made by the company for the loss or damage caused to or suffered by the Company by reason of the Company not being able to recover in full the said sum of Rs.....with/without interest as aforesaid.

2. The decision of the Company whether the contractor/supplier has failed to utilize the said advance or any part thereof for the purpose of the contract and or as to the extent of loss or damage caused to suffered by the company by reason of the Company not being able to recover in full the sum of Rs.....with/without interest shall be final and binding on the Guarantor, irrespective of the fact whether the Contractor/Supplier admits or denies the default or questions the Correctness of any demand made by the Company in any court, Tribunal or Arbitration Proceedings or before any other Authority.

3. The Company shall have the fullest liberty without affecting in any way the liability of the Guarantor under this Guarantee, from time to time to vary any of the terms and conditions of the Contract or the advance or to extend time of performance by the Contractor/ Supplier or to postpone for any time and from time to time any of the powers exercisable by it against the said contractor/supplier and either to enforce or forbear from enforcing any of the terms and conditions governing the said contract the advance or securities available to the Company and the Guarantor shall not be released from its liability under these presents by any exercise by the Company of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor /Supplier or any other forbearance act or omission on the part of the Company or any indulgence by the company to the said contractor/ supplier or of the other matter or thing whatsoever which under the law relating to sureties, would but for this provision have the effect of so releasing the Guarantor from its liability under this Guarantee.

4. The guarantee further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the contract and till the said advance with/without interest has been fully recovered and its claims satisfied or discharged and till..... certifies that the said advance with interest has been fully recovered from the said contractor/supplier and accordingly discharges this Guarantee subject, however, that the company shall have no claim under the Guarantee afteryears from the date of completion of the contract, as the case may be unless a notice of the claim under this Guarantee has been served on the Guarantor before the expiry of the said period in which case the same shall be enforceable against the Guarantor notwithstanding the fact that the same is enforced after the expiry of the said period.

5. The Guarantor undertake not to revoke this Guarantee during the period it is in force except with the previous consent of the Company in writing and agree that any liquidation or winding up or insolvency or any change in the constitution of the Contractor /Supplier or the Guarantor shall not discharge the Guarantor's liability hereunder.

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

7. The Guarantor hereby declares that it has power to execute this guarantee under its Memorandum and Articles of Association and the executant has full powers to do so on its behalf under the power of Attorney dated granted to him by the proper authorities of the Guarantor.

8. "Weundertake to pay to BHEL any money
(indicate the name of Bank)

so demanded notwithstanding any dispute or disputes raised by contractor(s) supplier(s) in any suit or proceedings pending before any court or Tribunal relating thereto our liability under these presents being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment thereunder and the contractor(s)/Supplier(s) shall have no claim against us for making such payment".

IN WITNESS whereof the(Bank)
and M/s. Bharat Heavy Electricals Limited, have hereunto set and subscribed their
respective hands the day, month and year first above written.

WITNESSES :

1.

2.

Signed for and on behalf
of the (Bank)

WITNESSES :

1.

2.

Signed for and on behalf of
Bharat Heavy Electricals Limited

ANNEXURE –‘D’

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)
Power Sector – Southern Region, Chennai –600 035.

CONTRACT AGREEMENT

AGREEMENT NO: BHEL:PS:SR:SCT:

DATE:

Name of work

Name of the Contractor with full Address :

Amount of Tender Accepted :

Letter of Intent No :

Time allotted for completing the work :

(Date of completion) :

Contractor
(To be Signed by a Person holding
Valid Power of Attorney)

(Officer authorized to sign
the agreement)

CONTRACT AGREEMENT

AGREEMENT NO: BHEL:PS:SR:SCT

DATE :

This agreement made this day, thebetween the Bharat Heavy Electricals Limited, Power Sector, Chennai – 600 035 having its Registered Office at BHEL House, Siri Fort, New Delhi-110 049 (hereinafter called the FIRST PARTY) of one part and M/s. (hereinafter called the “CONTRACTOR) of the SECOND PART.

2. WHEREAS the first party is desirous of executing the work of more particularly described in the appendices including drawings and specifications attached herewith:

3. WHEREAS IN PURSUANCE of the said Contractor’s Tender having been accepted, the first party has decided to give the above said work to the Contractor.

4. WHEREAS the said Contractor has agreed to do the aforesaid work of the first party subject to the conditions herein contained in these presents, instructions to tenderers, general conditions and special conditions, schedules, appendices, Letter of intent and specifications (hereinafter referred as the said Contract schedule) at the approved rates (hereinafter referred as the said Contract rate)

5. AND WHEREAS the said Contractor has furnished a Bank Guarantee for a sum of Rs.....(Rupees.....) bearing nodt.....fromBankvalid uptotowards initial 50% Security Deposit and has further agreed for balance 50% Security Deposit being recovered at 10% of value each running bill till the full Security Deposit is made up for the satisfactory completion and performance of the work and whereas the validity of the said Guarantee has to be extended by the Contractor, if so required before for the balance of contract period and in the event of his failure to do so the contractor shall pay or accept recovery of this amount of Rs.....(Rupees.....only) from the bills forthwith in one instalment and it has further been agreed that the failure to extend the validity of Bank Guarantee or failure to pay the aforesaid amount in the manner specified above shall constitute the breach of contract, and first party reserves the right to take any legal action deemed fit for recovering the said sum of Rs.....(Rupees.....)

This amount of Rs..... (Rupees.....) will be refunded and the Bank Guarantee will be returned to the Contractor on satisfactory completion of the work as specified in the Contract documents.

6. NOW THESE PRESENTS WITNESS that in consideration of the said contract schedule and said Contract rate, as also of agreement of good and faithful service to be rendered and performed by the Contractor in the execution of the said work, subject to the stipulation hereinafter expressed.

7. That the said Contractor will perform the aforesaid work subject to the conditions contained in these presents, instructions to tenderers, general and special conditions of contract and contract documents attached herewith including the said schedules, specifications, Letter of Intent, drawings attached and also such other drawings and instructions as may from time to time be given by the first party. And that the said contractor shall be deemed to have carefully examined the specifications and conditions of contract, appendices, schedules, Letter of Intent, drawings, etc as aforesaid and also to have satisfied himself as to the nature and character of the work to be executed.

8. That the said Contractor shall carry out and complete the executions of the said work to the entire satisfaction of the engineer within the agreed time schedule.

9. That the first Party after proper scrutiny of the bills submitted by the said contractor will pay him during progress of the said work, at said contract and agreed terms of payment, a sum as determined by the first party in respect of the work executed by the Contractor.

10. That the contract shall come into force with retrospective effect from the date on which letter accepting the tender (Letter of Intent) has been issued to the said contractor.

11. That whenever under this contract or otherwise, any sum of money shall be recoverable from or payable by the contractor, the same may be deducted in the manner as set out in the conditions of contract as aforesaid.

12. That all charges on account of Octroi, terminal and Sales – Tax or other duties on material obtained for the works shall be borne by the said contractor.

13. That is agreed between the parties that the non-exercise of any powers conferred on the authorities of the first party will not in any manner constitute waiver of the conditions hereto contained in these presents and the liability of the said Contractor either of past or future compensation shall remain unaffected.

14. That the expression BHEL wherever occurring means the BHARAT HEAVY ELECTRICALS LIMITED, POWER SECTOR – SOUTHERN REGION, CHENNAI – 600 035.

15. The documents hereto attached viz.,
shall also form part of this agreement.

16. In witness hereof the parties have respectively set their signature in the presence of :

WITNESSES:
(With full address)

1.

2.

Date :

Signature of the Contractor
(To be signed by a person
holding valid power of Attorney
of the company)

WITNESSES:

For and on behalf of the
BHARAT HEVY ELECTRICALS LTD.

1.

2.

SECTION - VI

SPECIAL CONDITIONS OF THE CONTRACT

6.0.0. The scope of work under this specification covers, but not limited to the following:

6.1.0 Handling at store / yard, transportation to site, fabrication and welding of support, branch pipes, man holes, instrument tapping, flanges etc, (wherever applicable), laying pipe line for supply line & return line of main cooling water piping along with valves, alignment, welding and doing required, NDT, completion of permanent hangers & supports, wherever required conducting air test & hydro-test, assisting BHEL to carry out the required tests before the line is taken over by the customer of **CW PIPING at unit 5 of 210 MW at Amarkantak Thermal Power Project** is in the scope of this contract. **The entire civil work is excluded from the scope of contractor.**

6.1.1 **The terminal points decided by BHEL are final and binding on the contractor for deciding the scope of work and effecting the payment for the work done up to the terminals.**

The following drawings are provided for tendering purpose. Lay out may vary as per final approval / site conditions.

0-80-468-03564 - Cooling Water piping Rev -00

0-80-468-03565 - Cooling Water piping Rev -00

1-80 -468-09655 – Cooling Water Piping Rev -00

6.1.2 Contractor shall erect pipe line as per the sequence prescribed by BHEL at site. The sequence of erection and methodology will be decided by the BHEL Engineer depending upon the availability of materials, fronts and other in puts etc. No claim for extra payment from contractor will be entertained on the grounds of deviation from the methods of erection adopted in erection of similar piping in other places.

6.1.3 The work covered under this specification is of highly sophisticated nature, requiring the best quality workmanship, engineering and construction management. The contractor should ensure successful and timely operation of equipment installed. The contractor must have adequate quantity of tools, construction aids, equipments etc., in his possession. He must also have on his rolls adequate trained, qualified and experienced supervisory staff and skilled personnel.

6.2.0 TRANSPORTATION FROM STORES & FABRICATION YARD

6.2.1 Loading at storage yard and transporting to site, unloading at site / pre assembly area or at working area, is in the scope of work. Required cranes for loading & unloading of materials, trailer shall be in the scope of contractor. The contractor shall provide any fixtures, concrete blocks & wooden sleepers, sandbags which are required for temporary supporting of the components at site.

6.2.2 Contractor shall take delivery of the components from the storage area after getting the approval of BHEL Engineer on standard indent forms to be specified by BHEL. Complete and detailed account of the materials erected as well as the progress shall be submitted to the Engineer as directed.

6.2.3 The individual pipes of maximum diameter 2540 mm x 20 mm (approx) will be supplied with maximum length of 10 meters with bevel cut edge preparation. For bends pre fabricated mitre bends will be supplied.

6.2.4 All the pipes / components shall be handled very carefully to prevent any damage or loss. No bare wire ropes, slings etc., shall be used for unloading and / or handling of pipes. The bare pipes shall be lifted with Teflon coated hooks with cranes then loaded / unloaded on / from trailers to avoid bevel damages. It is always safer for the pipes to be lifted at two points.

6.2.5 Pipes shall not be dropped to avoid impact or bump.

6.2.6 Bare pipes shall be stacked on a sand row / concrete sleepers. Like wise, coated pipes of different diameter and wall thickness shall be stacked in different sand rows. Between two layers of coated pipes, care should be taken to avoid contact between two pipes by putting sand dust bags.

- 6.2.7 The equipment from the storage yard shall be moved to the actual site of erection / location at the appropriate time as per the direction of BHEL Engineer so as to avoid damage /loss of such equipment at site.
- 6.2.8 Contractor shall plan and transport equipments, components from storage yard to erection site and erect them in such a manner and sequence that material accumulation at site does not lead to congestion at site of work. Materials shall be stacked neatly, preserved and stored in the contractor's shed/work area in an orderly manner. In case it is necessary to shift and re-stack the materials kept at work area / site to enable other agencies to carry out their work, same shall be done by the contractor at no extra cost.

6.3.0 ERECTION

- 6.3.1 Brief list of equipments / sub-assemblies to be erected by the contractor & approximate weight is given Section – VII weight schedule and is meant for giving general idea to the contractor only about magnitude of the work involved. The components are sent in parts for convenient transportation. They are to be cleaned, assembled in stage by stage, welded, erected and aligned as per the drawing dimensions / tolerance and instructions of BHEL Engineers.
- 6.3.2 The entire consumables, equipments / T & Ps required for successful completion of the work is in the scope of contractor and the quoted rate shall be inclusive of all these, except specifically indicated as free supply by BHEL.
- 6.3.3 All the equipments / material to be taken inside the plant building, shall be cleaned thoroughly before taking them inside and erected. The contractor shall clean, wherever necessary as per instruction of BHEL Engineer during erection at the quoted rate.
- 6.3.4 The contractor shall take necessary measures to see that all the machined surfaces are preserved and covered.
- 6.3.5 Carrying out piping as per the specification between equipments constituting terminal points, whether the terminal equipments fall within the scope of work/specification, contractor shall carry out the terminal joints at either end. Also where the piping connection to the terminal points involve flanged joints, matching of flanges, fixing gaskets, bolting and tightening as per BHEL Engineers instructions is in the scope of work. In case piping connected to equipment, matching of flanges for achieving the parallelism and alignment at the

equipment end, by suitably resorting to heat correction or other method as instructed by BHEL Engineer, with in the quoted rate.

- 6.3.6 Contractor has to draw the material either from BHEL store yard or fabrication yard and transport to his working place.
- 6.3.7 Welders shall be qualified as per the welder qualification procedures of BHEL/ASME, applicable for this type of job. Only qualified welder shall be deployed for welding.
- 6.3.8 All dimensions / elevations refers to centerline of pipe unless otherwise specified and the pipe routing shall be carried out as per the drawing. Wherever the dimensions are not specified / shown as approximate the same may be routed as per site requirement / convenience as per site engineer's advice.
- 6.3.9 Normally weld neck valves will have prepared edges for welding. It may be occasionally necessary to prepare new edges, re-prepare the edges to suit site conditions, which shall be done by the contractor at no extra cost.
- 6.3.10 Wherever pre-fabricated pipes/bends are supplied, there may be necessity to make minor changes, including strengthening by additional welds. This shall be treated as part of the contractor's scope.
- 6.3.11 Certain adjustments in length may be necessary while erecting pipelines to suit site condition, for which an extra length of piping is provided on each line. Contractor should remove the extra lengths to suit the final layout and prepare edges afresh is in the scope of work. It may also required to add extra lengths of pipes to suit final layout for contractor to put spools after edge preparation. All these works are to be carried out by the contractor with in the quoted rate.
- 6.3.12 Box cutting and excavation of earth up to the required depth and width, concreting etc., shall be carried out by Customer on phased manner as per the site requirement and decided by BHEL site in-charge. As and when the clearance for erection of piping is given, contractor shall carry out erection work promptly with out any delay and release for further civil in a phased manner as instructed be site in-charge.

6.3.13 Once the clearance is given for erection contractor, he has to lay the pipes immediately with out any delay and complete erection, alignment, welding & NDT as per the drawing / welding schedule. Pipes are to be lifted and placed only by cranes and should strictly follow the lifting procedure / instruction of BHEL Engineers.

6.3.14 **SAFETY PRECAUTION DURING WELDING :**

In the larger diameter pipes, welding is to be done from inside and outside the pipe, as per drawing. While doing inside pipe welding , adequate precaution is to be taken by contractor to exhaust the weld gases form affecting the welders doing the work. Suitable exhaust fans are to be provided . Welders and helpers inside should have face mask and other safety equipments and safety ware. Suitable lighting and fan are to be made. Manhole escape arrangement is to be identified. Welding inside pipe should be taken up only after getting clearance from safety engineer and after ensuring that Safety relief measures are made available nearer to work area.

A supervisor should be continuously made available in the area of welding through out.

6.3.15 Minor adjustments like removal of ovalities in pipes and opening or closing of the fabricated bends by process of heat correction or any other method approved by BHEL Engineer to suit the layout, with specified procedure to be carried out with in the quoted rate.

6.3.16 Contractor shall arrange all the equipments, alignment bolts, tools, consumables like welding rods, etc. for welding of pipes and consumables like jute, cotton waste, hacksaw blades, petrol, Kerosene oil etc. are also in contractor's scope. All these shall be carried out with in the quoted rate.

6.3.17 Contractor shall use only bolted clamps for achieving alignment of piping, wherever "L" shaped stoppers and wedges are to be used for aligning piping and equipments, the same shall be subjected to the approval of BHEL Engineer. Contractor shall remove the bridge, stopper etc., and not by hammer. Any burrs left on the equipments / piping, after welding, shall be ground off or any scar or cavity made good by welding and grinding. NDT tests shall be carried out if necessary to detect surface and sub-surface cracks in these ground areas.

- 6.3.18 All the weld joints on equipments and piping shall be ground or filed on completion of welding as per instructions of BHEL Engineer so as to achieve smooth surface devoid of ripples, undulations etc.,
- 6.3.19 Pipelines shall be cleaned off welding slag and burrs by hand files, wire brushes and flexible grinders wherever required.
- 6.3.20 Temporary lugs / structures meant for transportation is to be removed by the contractor as and when instructed by BHEL Engineer.
- 6.3.21 Flame cutting of piping and other equipment shall be strictly done as per BHEL Engineer's instructions and in his presence only.
- 6.3.22 Contractor shall also weld small length of piping with root valve to the pressure, flow and level tapping points on piping or flow nozzles / orifices / metering elements fixed on piping as per the instructions of BHEL Engineer.
- 6.3.23 On completion of bottom layer of pipes, contractor has to conduct hydraulic test. For conducting hydro – test both ends of each lines are to be blanked suitably. Raw materials for blanking such as plate / structural items will be given BHEL on free of charges. Fabrication, welding of dummies and NDT and removal of dummies after successful completion of hydro – test and making edge preparation on the parent pipe after HT is in the scope of contract. For Hydro test to be conducted in stages or to be repeated , the same plates shall be used for blanking by suitably grinding.
- 6.3.24 Contractor at his cost shall lay all temporary piping, install the pumps, blanks valves required for the hydraulic test, pressure gauges etc. Required pipes, valves, plates etc., will be given by BHEL free of charges. Temporary piping, pumps, valves, flanges, blanks etc shall be removed by him once the work is over and return to BHEL.
- 6.3.25 The contractor has to arrange(low pressure) hydro-testing pump for conducting hydraulic test on his own with in the quoted rate. The servicing, installation, electrical connection, erection, testing and dismantling after completion of hydro-test shall be carried out by the contractor as part of this work without any extra charge.
- 6.3.26 Required water filling pump is to be arranged by the contractor.
- 6.3.27 All the above tests shall be repeated till all the equipment satisfy the requirement of BHEL to their customer. Any rectification required shall have to be redone by the contractor at his cost.

- 6.3.28 After completion of hydro test on bottom layer it is to be cleared for concrete to Civil agency, after de-watering and removing all temporary supports / scraps.
- 6.3.29 The BHEL supplied valves as part of CW system will have to be checked, lapped or overhauled in full or in parts before / after erection. Contractor shall arrange experienced valve technician at his own cost. Any special tools required for lapping only will be arranged by BHEL.
- 6.3.30 For other agencies, such Civil works, LP Piping, Cabling, instrumentation etc., to commence their work from/ on the equipments coming under this scope, Contractor has to clear the front, expeditiously and promptly as instructed by BHEL Engineer. Some time it may be required to re-schedule the activities to enable other agencies to commence / continue the work so as to keep the over all project schedule.
- 6.3.31 All drains / vents/ relief line etc. from the stubs on the piping to be erected by the contractor, is completely covered in the scope of work.
- 6.3.32 Fixing / fitting / welding of thermo well stubs, tapping points, root valves for instruments etc is within the scope of work.
- 6.3.33 The contractor shall conduct non destructive tests like radiography ultrasonic test for weld defects etc., dye penetrant tests, magnetic particle test etc. on weld joints, castings, valve bodies and other equipments etc. as per BHEL Engineer's instructions / welding schedule.
- 6.3.34 Contractor shall arrange the clearance from the statutory authorities (Labour commissioners etc.,) as required for installation of the plant and equipment and render all assistance, service required in this regard.
- 6.3.35 All Operating / Approach platforms, cross over, canopies, ladders etc., shall have to be fabricated from raw materials supplied by BHEL and erected with in the quoted rate. No separate rate is payable on weight basis for supports, other than those indicated in PGMA or supplied by Units, which will be covered in the overall weight.
- 6.3.36 The contractor shall effectively protect the finished work from action of weather and from damage or defacement and shall cover the finished parts, then and there for their protection till the upper endcasing is done.

- 6.3.37 Any failure on the part contractor to carry out work according to above clauses will entitle BHEL to carryout the job though any other party and recover the cost from contractor.
- 6.3.38 Contractor shall cut / open works if needed, as per BHEL Engineer's instructions during commissioning for inspection, checking and make good the works after inspection is over. This contingency shall be included within the quoted value. During commissioning opening of valves changing of gaskets attending to leakages minor modification rectification works may arise. The contractor has to carry out these works at his cost by providing required manpower with T & Ps in all the three shifts. In case any rework is required because of contractor's faulty erection and which is noticed during commissioning, the same has to be rectified by the contractor at his cost.

6.4.0 HYDRAULIC TEST AND OTHER TESTS

- 6.4.1 Hydraulic testing, as required shall be carried out by the contractor. The servicing, installation, electrical connection, erection, testing and dismantling of Hydraulic Test pump, temporary pipelines, fittings, etc shall be carried out by the contractor as part of this work.
- 6.4.2 All cooling water piping systems shall be subjected to Hydraulic test as per the statutory requirements. The contractor shall supply necessary labour and other services to carry out the required tests as per the instructions and directions of the BHEL Engineers.
- 6.4.3 All the above tests shall be repeated till all the pipelines to satisfy the requirements / obligation of BHEL to their customer. As far as the hydraulic pressure test is concerned, the same shall be conducted to the satisfaction of BHEL / Customer Engineers. Any rectifications required shall have to be done / redone by the contractor at his cost.
- 6.4.4 All temporary piping materials necessary for conducting hydraulic test, will be supplied by BHEL. However servicing, erection and dismantling of the same is the responsibility of the contractor. Those items that are issued along with main equipments / components specified under dispatch unit for temporary piping etc., supplied by BHEL or others or any other agency alone will be paid at the quoted rates for erection. Charges for dismantling of temporary lines etc., should be included in the quoted rates.

6.5.0 PRESSURE TEST FOR PIPING

- 6.5.1 Soundness of the welds shall be tested hydraulically under the supervision of the BHEL Engineer and Customer, to the pressure indicated in the drawing for cooling water piping system. Prior to the test, the piping system shall be inspected by the BHEL Engineer to the extent necessary to ensure compliance with clearance for the test, which will be obtained by the contractor from the Engineer.
- 6.5.2 The test shall be repeated till the BHEL and Customer are satisfied as applicable.
- 6.5.3 As a rule, pressure tests shall be performed after all eventual pipe branches have been completed and valves installed. Should it be required to hasten erection work, pressure tests may be performed by sections. For this scope of work, the erected pipe lines shall be Hydraulically tested in as per site requirement segments. For conducting hydraulic test, both ends of pipe lines shall be blanked by welding of plates. Only one or two set of plates and structural materials for blanking required for one segment will be provided by BHEL free of charge. After completion of hydraulic test in one segment, the same plates are to be cut and removed and utilized / welded on the other segment of the pipe lines, to carry out the hydraulic test for the respective segments. No separate plates for blanking for each segments will be provided. After completion of Hydraulic test, the required edge preparations shall be carried out on the end of pipe lines and to be welded with the respective pipe lines. In such cases joint connection shall be checked during a final and additional test, if required. The contractor shall note this aspect and quote accordingly.
- 6.5.4 The following specifications shall be completed with during hydrostatic test.
- a. Vent nozzles with valves shall be provided at the highest point of the runs, to eliminate air pockets. At the lowest point drain nozzles, with valves shall be provided to drain water from pipes. The nozzles and valves shall be of the same materials as the pipe.
 - b. The lowest part of the pipe shall always be filled first with water.
 - c. Pressure shall be slowly increased (without shocks) to the stipulated value and maintained as long as required to visually check all joints.

- d. Following the control specified above the pressure shall be slowly decreased to the design pressure after which the pipe shall be subjected to the peening test, applying knocks every 150 mm approx. especially in the welded joint areas, with a 0.5 – 1.5 kg. Hammer (depending on the pipe wall thickness). The hammer used shall be a round headed one.
- e. Following the peening test, the pressure shall be increased to the stipulated value and all welded joints shall be visually inspected.
- f. Following these test, the pipe shall be drained or pumped out to the other section to be hydro test using the drain out pump to be provided by Contractor and wherever necessary shall be flushed with air for all pipes.
- g. The pressure test is considered satisfactory if no cracks, unjustified pressure reductions, leakages, Weeping etc., appear.
- h. Should defects be found, these shall be repaired in the same manner as these during radiographic examination. Hydraulic test shall be repeated after defects have been repaired.

6.5.5 During hydraulic test, the pipes being tested shall be isolated from the equipments to which they are connected.

6.5.6 Openings on piping for pressure / temperature impulse connections shall be fully closed during the test to prevent dust or foreign matter from being introduced into the instrument piping inadvertently.

6.5.7 Test records shall be made of pressure testing for above piping system. These records shall contain the following information:

- a. Date of test
- b. Identification of piping tested
- c. Test fluid
- d. Test pressure
- e. Approval of the Engineer

6.6.0 BURIED PIPING

6.6.1 The pipe in general shall be laid with the top of the pipe minimum 1 metre below the finished general ground level or as specified in the drawing . Anti corrosive treatment for all buried pipes suitable for Sea- water application and Supply and application of anti corrosive treatment , required consumables are in the scope of contractor and shall carry out as per drawing within the quoted rate.

6.6.2 The scope, quantity & sizes of buried piping are given below :

The approximate quantum of buried pipe works will be around 1200 MT. Size of pipes 2540 x 20 mm and 1626 x 14 / 16 mm. Erection welding schedule shall be furnished in Appendix .

6.6.3 The civil works for the buried pipings are excluded for this scope of work. However the contractor has to ensure that the width of the trench shall be sufficient to give free working space on each side of the pipe.

6.6.4 Free access shall be provided for the welding of the circumferential joints by increasing the width and depth of the trench at these points. There should be no obstruction to the welder from any side so that good welded joint is obtained. This type of incidental works are to be carried out by the contractor within quoted rates.

6.6.5 Prior to lowering and laying pipe in any trench, the contractor shall ensure for the backfill and compact the bottom of the trench or excavation in accordance with IS 5822 / as per drawing to provide an acceptable bed for placing the pipe.

6.7.0 COATING & WRAPPING

6.7.1 The pipe line shall be thoroughly cleaned of all rust, grease, dirt, weld scales and weld burrs etc., moisture or other foreign matters, Grease or heavy oil shall be removed by washing with a volatile solvent such as gasoline. Kerosene will not be permitted for cleaning. Primer shall be immediately follow this cleaning operation with mechanical priming machine. Alternately , with the concurrence of BHEL / Customer the pipe line shall be adequately scrubbed manually with wire brush and scrapped wherever necessary.

- 6.7.2 The entire length of pipe shall be cleaned and coated leaving the end about 100 mm for joints, which shall be coated manually at site after laying, welding and testing the pipe.
- 6.7.3 Coating & wrapping shall be done after completion of welded and or flanged connections and after completion and approval of hydro testing .Materials required for coating , wrapping and consumables required for cleaning operations as stated in Para (1) above are to be arranged by the contractor within the quoted rate.
- 6.7.4 The materials used for coating and wrapping are
- a) Coating Primer (Coal Tar Primer)
 - b) Coating Enamel (Coal Tar Enamel)
 - c) Wrapping Materials

All primer / coating / wrapping materials and method of application shall conform to IS 10221 except asphalt /Bitumen material. However the scope of work for buried pipe only is indicated below :

All the pipes for erection will be supplied with enamel coating. The application of primer / enamel coating at site for cooling water pipes for buried pipes is not covered in this scope of work. The contractor has to carry out one coat of coal tar enamel (Lloyd T3 or equal) / asphalt or suitable resin based primer , approximate DFT 25 microns, around welding area , 100 mm on each pipe internal as well as external surface at both ends, after completion of pipe to pipe welding joints, before coal tar wrapping. The approximate area for the above painting will be around 1000 sq m.

- 6.7.5 Number of coats and wraps, minimum thickness for each layer of application shall be as per IS 10221 and shall be decided based soil corrosivity / Resistivity. However the total thickness of completed coal tar coating shall not be less than 4 mm.
- 6.7.6 Alternately the anti corrosive protection can consist of anti corrosive protection tapes. These tapes shall be applied hot over the coal tar primer. The total thickness of the finished protective coating shall be 4 mm minimum. The required above mentioned tapes are to be provided by the contractor at his cost.

6.7.7 The tapes can be applied directly on to the primed pipe surface by means of mechanical coating / wrapping equipment manually or by machine. The minimum overlap shall not be not less than 25 mm when a new roll of tape is started and the ends shall be overlapped at least 150 mm measured circumferentially. The overlap shall be smooth and shall be located to ensure the continuity of the inner layer coating.

6.7.8 EXTERNAL SURFACE - OVER GROUND PIPING

6.7.8.1 All the external surface of pipe shall be cleaned properly. After completion of cleaning, application of paints are to be carried out for over ground piping. This application of paints involves two coats of red oxide (zinc chromate) primer, each coat will be around 25 microns and two coats of finish paint of synthetic enamel paint (smoke grey) of each coat will be of DFT 50 microns and the total dry film thickness of 150 microns.

6.7.8.2 The approximate quantum of work for above ground piping will be around 200 metre. The bidder to take note of this aspect and quote accordingly.

6.8.0 TIME SCHEDULE

6.8.1 The contractor has to mobilize in all respects with in two weeks from the date of issue of fax letter of intent.

6.8.2 The entire work of erection, testing and commissioning of CW piping as detailed under this tender specifications for Unit 5 of Amarkantak shall be carried out and completed with in **6 months** from the date of actual commencement of erection work at site. In case BHEL desires to advance the commissioning as per customer requirement, contractor has to complete all the works with in the quoted / accepted rate, to suit the advanced commissioning.

6.8.3 For the above purpose, the erection work shall be commenced as may be stipulated in the letter of intent and shall deemed to have been completed in all respect only when the system is successfully tested and accepted by BHEL/Customer. The decision of BHEL in this regard shall be final and binding of the contractor.

6.8.4 During the total period of contract, the contractor has to carry out the activities in a phased manner as required by BHEL so as to release the front for other works / other agencies.

NOTE : Total period is 6 Months, Burried pipe works will be completed in 3 months, and the balance piping in 3 months.

6.9.0 TERMS OF PAYMENT FOR COOLING WATER PIPE LINES ERECTION:

6.9.1 **15%** of the contract value on completion of preassy and placement in position wherever applicable.

and

20% of the contract value on completion of erection and alignment for the items wherever **preassy was involved**.

or

6.9.2 **35%** of contract value on completion of erection & alignment for the items where **preassy is not involved**.

6.9.3 **40%** of the contract value after completion of welding.

6.9.4 **10%** of the contract value after completion of NDE as applicable (Radiography or MPI or LPI or UT)

6.9.5 **5%** of contract value after completion of hydraulic testing and filling up and submission of FQA sheets.

6.9.6 **3%** of contract value after reconciliation of materials, T & P etc, including cutting & removal of scraps, temporary supports and return the same to stores etc.

6.9.7 **2%** on submission of final bill and acceptance.

6.9.8 The balance **5%** of contract value (actual quantity multiplied by accepted unit rate) shall be paid after guarantee period of 12 months. The guarantee period will commence from the date of handing over of unit to customer or six months after the unit reaches full load after commissioning of all equipments / system whichever is earlier. However, this 5% can be released against bank guarantee valid for 12 months from the date of commencement of guarantee period as aforesaid in the prescribed proforma of BHEL.

6.10.0 EXTRA CHARGES FOR MODIFICATION AND RECTIFICATION WORK

- a) BHEL may consider payment for extra works on man day basis for such of those works which require major revamping / rework/rectification/modification which is totally unusual to normal erection or commissioning work which are not due to contractor's faulty erection.
- b) The contractor may submit his work claim bills (Specifically agreed by BHEL Engineer) along with the labour sheet duly certified by BHEL Engineer at site. But BHEL also got the option to get these work done through other agencies if they so desire. The decision of BHEL in this regard shall be final and binding on the contractor.

6.10.1 All the extra work, if any, carried out should be done by a separate gang which should be identified prior to start of work for certification, of man hours. Daily labour sheets should be maintained and should be signed by contractor's representative and BHEL Engineer. Signing of the labour sheets does not necessarily mean the acceptance of extra works. Only those works which are identified as not usual to normal erection and certified so by the Project Manager, and accepted by designer/supplier or competent authority only will be considered for payment.

6.10.2 The decision of BHEL in this regard shall be final and binding on the contractor.

6.10.3 The following man hour rates will be applicable for modification/rectification work.

6.10.4 Average single man hour rate including overtime if any, supervision, use of tools and tackles and other site expenses and incidentals, including consumables for carrying out any rework, re-vamping as may arise during the course of erection **Rs.40/-** man hour.

6.10.5 Average single man hour rate including overtime if any, supervision, use of tools and tackles and other site expenses and incidentals excluding consumables for carrying out any rework/revamping as may arise during the course of erection **Rs.25/-** per man hour.

6.11.0 EXTRA WORK DOES NOT INCLUDE

6.11.1 Nominal dressing of foundations, holes, bases, nuts and bolts, in case of abnormal conditions, this can be mutually discussed before starting of such work.

6.12.0 Extra works are broadly defined as below:

Design changes which will be intimated to the contractor after the start of erection and same refers to dismantling of erected components rectification of components which have been received in damaged conditions during transit, rectification of components wrongly manufactured at work, any other works which do not fall in the scope of this contract.

6.12.1 The decision of BHEL in this regard shall be final and binding on the contractor.

6.13.0 OVER RUN CHARGES

6.13.1 In case due to reasons not attributable to the contractor, the work gets delayed and completion time gets extended beyond **Six (6) months** from the date of commencement of the work, the contractor shall not be entitled for any over run compensation (ORC) for a period of first **Two (2) months** after the expiry of **Six (6) months**. In case ORC arises the same will apply at **Rs.20,000/- (Rupees Twenty Thousand only) per month** for extension of the completion period beyond **8 (6+2) months** as stated above duly taking into account the balance work at the end of that period.

6.13.2 The period of overrun will have to be ascertained before the commencement of grace period.

6.13.3 During the period of over run targets will be fixed on month to month basis, which have to be adhered. In case of any shortfall due to the reasons attributable to the contractor, ORC amount will be proportionately reduced.

6.13.4 The payment of overrun charges for extended stay for reasons not attributable to contractor will be subject to achieving the monthly programme of work as mutually agreed upon during the extended stay.

6.14.0 PRICE ESCALATION

- 6.14.1 The quoted / accepted rate have to be kept firm for the entire contractual period including total extended period if any and no claim for revision of rates is allowed under any circumstances.
- 6.14.2 However the contractor shall maintain sufficient work force and other resources required for completion of the job expeditiously for the entire contractual period including total extended period.

6.15.0 TAXES

- 6.15.1 Notwithstanding the fact that this is only an erection service contract not involving any transfer of materials whatsoever and not attracting any sales tax liability, being labour oriented job work, for the purpose of Sales Tax the contractor has to maintain the complete data relating to the expenditure incurred towards wages etc. in respect of the staff/workers employed for this work as also details of purchase of materials like consumables, spares etc., interalia indicating the name of the supplier, address and ST Registration No. and ST paid and should furnish to BHEL at the year end.
- 6.15.2 The contractor has to register under local Sales Tax-Law and get assessed. The contractor has to give a certificate each year that the returns are submitted regularly and the turnover on this contract is included in his sales tax return. The sales tax registration number and certificate is to be furnished at site soon after the award of contract. However in case delay is anticipated in obtaining S.T. Regn.No. a copy of application for registration filed with ST authorities shall be submitted along with first running bill and the ST Regn.No. will have to be submitted within a reasonable time.
- 6.15.3 The final bill amount would be paid only after submission of proof of inclusion of the turnover of this contract in the ST Returns or ST Clearance certificate. The ST deduction at source will be made from running bills, unless necessary exemption is produced.

6.15.4 IMPORTANT CONDITIONS FOR PAYMENT

It may be noted that the first running bill will be released only on production of the following.

- i. PF Regn. No.
- ii. Labour Licence No.
- iii. Workmen Insurance Policy No.
- iv. Un Qualified Acceptance for Detailed L.O.I.
- v. Initial 50% Security Deposit.
- vi. Rs. 100/- Stamp Paper for Preparation of contract agreement

6.16.0 PROVIDENT FUND & MINIMUM WAGES

- 6.16.1 Your are required to extend the benefit of Provident Fund to the labour employed by you in connection with this contract as per the Employees Provident Fund and Miscellaneous Provisions Act 1952. For due implementation of the same, you are hereby required to get yourself registered with the Provident Fund authorities for the purpose of reconciliation of PF dues and furnish to us the code number allotted to you by the Provident Fund authorities within one month from the date of issue of this letter of intent. Incase you are exempted from such remittance, an attested copy of authority for such exemption is to be furnished. Please note that in the event of your failure to comply with the provisions of said Act, if recoveries therefor are enforced from payments due to us by the customer or paid to statutory authorities by us, such amount will be recovered from payments due to you.
- 6.16.2 The contractor shall ensure the payment of minimum labour wages to the workmen under him as per the rules applicable from time to time in the state.
- 6.16.3 The final bill amount would be released only on production of clearance certificate from PF/ESI and labour authorities as applicable.

6.17.0 SERVICE TAX

Service Tax as applicable for this Contract will be borne by BHEL.

The contractor may claim the Service Tax in their R.A.bill and the same will be paid by BHEL, on production of copy of registration certificate. Proof of remittance of service tax by the contractor to the service tax authorities, relating to previous RA bill, has to be produced from the second running bill onwards.

6.18.0 TAXES, DUTIES, LEVIES

Refer to clause 2.8.4 of general conditions of contract in this regard.

6.18.1 New Levies / Taxes

In case the government imposes any new levy / Tax after award of the work, BHEL shall reimburse the same at actuals on submission of documentary proof of payment subject to the satisfaction of BHEL that such new levy / Tax is applicable to this contract. No reimbursement on account of increase in the rate of existing levies shall be made.

6.19.0 OTHER STATUTORY REQUIREMENTS

- 1) The Contractor shall submit a copy of Labour License obtained from the Licensing Officer (Form VI) u/r25 read with u/s 12 of Contract Labour (R&A) Act 1970 & rules and Valid WC Insurance copy or ESI Code (if applicable) and PF code no along with the first running bill.
- 2) The contractor shall submit monthly running bills along with the copies of monthly wages (of the preceding month) u/r78(1)(a)(1) of Contract Labour Rules, copies of monthly return of PF contribution with remittance Challans under Employees Provident Fund Act 1952 and copy of renewed WC Insurance policy or copies of monthly return of ESI contribution with Challans under ESI Act 1948 (if applicable) in respect of the workmen engaged by them.

- 3) The Contractor should ensure compliance of Sec 21 of Contract Labour (R&A) Act 1970 regarding responsibility for payment of Wages. In case of "Non-compliance of Sec 21 or non-payment of wages" to the workmen before the expiry of wage period by the contractor, BHEL will reserve its right to pay the workmen under the orders of Appropriate authority at the risk and cost of the Contractor.
- 4) The Contractor shall submit copies of Final Settlement statement of disbursement of retrenchment benefits on retrenchment of each workman under I D Act 1948, copies of Form 6-A(Annual Return of PF Contribution) along with Copies of PF Contribution Card of each member under PF Act and copies of monthly return on ESI Contribution – Form 6 under ESI Act 1948 (If applicable) to BHEL along with the Final Bill.
- 5) In case of any dispute pending before the Appropriate authority under I D act 1948, WC Act 1923 or ESI Act 1948 and PF Act 1952, BHEL reserve the right to hold such amounts from the final bills of the Contractor which will be released on submission of proof of settlement of issues from the appropriate authority under the act.
- 6) In case of any dispute prolonged/pending before the authority for the reasons not attributable to the contractor, BHEL reserves the right to release the final bill of the contractor on submission of Indemnity bond by the contractor indemnifying BHEL against any claims that may arise at a later date without prejudice to the rights of BHEL.

**SCOPE AT A GLANCE
SECTION VII – APPENDIX I
SITE FACILITIES**

PROJECT : AMARKANTAK

RATING: 210 MW

Unit-5

Sl.No	Description PART I	Scope / to be taken care by		Remarks
		BHEL	Bidder	
1.1.0	ESTABLISHMENT			
1.1.1	FOR CONSTRUCTION PURPOSE:			
A	Open space for office	Yes		
B	Open space for storage	Yes		
C	Construction of bidder's office, canteen and storage building including supply of materials and other services		Yes	
D	Bidder's all office equipments, office / store / canteen consumables		Yes	
E	Canteen facilities for the bidder's staff, supervisors and engineers etc		Yes	
F	Fire fighting equipments like buckets, extinguishers etc		Yes	
G	Fencing of storage area, office, canteen etc of the bidder		Yes	
1.1.2	FOR LIVING PURPOSES OF THE BIDDER			
A	Open space	Yes		
B	Living accommodation		Yes	
1.2.0	ELECTRICITY			
1.2.1	<u>Electricity For construction purposes</u>			Free of charge
1.2.1.1	Single point source	Yes		
1.2.1.2	Further distribution for the work to be done which include supply of materials and execution		Yes	
1.2.2	Electricity for the office, stores, canteen etc of the bidder which include:		Yes	

Sl.No	Description PART I	Scope / to be taken care by		Remarks
		BHEL	Bidder	
1.2.2.1	Distribution from single point including supply of materials and service		Yes	
1.2.2.2	Supply, installation and connection of material of energy meter including operation and maintenance		Yes	
1.2.2.3	Duties and deposits including statutory clearances for the above		Yes	
1.2.2.4	Living facilities for office use including charges		Yes	
1.2.2.5	Demobilization of the facilities after completion of works		Yes	
1.2.3	Electricity for living accommodation of the bidder's staff, engineers, supervisors etc on the above lines.(in case BHEL provides this facility, the scope should be given without ambiguity)		Yes	
1.3.0	WATER SUPPLY			
1.3.1	For construction purposes:			
1.3.1.1	Making the water available at single point	Yes		
1.3.1.2	Further distribution as per the requirement of work including supply of materials and execution		Yes	
1.3.2	Water supply for bidder's office, stores, canteen etc		Yes	
1.3.2.1	Making the water available at single point	Yes		
1.3.2.2	Further distribution as per the requirement of work including supply of materials and execution		Yes	
1.4.0	TRANSPORTATION			
1.4.1	For construction purposes:		Yes	
1.4.1.1	For the site personnel of the bidder		Yes	
1.4.1.2	For the bidder's equipments and consumables (T&P, consumables etc)		Yes	

Sl.No	Description PART I	Scope / to be taken care by		Remarks
		BHEL	Bidder	
1.5.0	LIGHTING			
1.5.1	For construction work (supply of all the necessary materials) 1. At office storage area 2. At the preassembly area 3. At the construction site /area		Yes	
1.5.2	For construction work (execution of the lighting work/ arrangements) 1. At office storage area 2. At the preassembly area 3 At the construction site /area		Yes	
1.5.3	Providing the necessary consumables like bulbs, switches, etc during the course of construction		Yes	
1.5.4	Lighting for the living purposes of the bidder at the colony / quarters		Yes	
1.6.0	COMMUNICATION FACILITIES FOR SITE OPERATIONS OF THE BIDDER			
1.6.1	Telephone, fax, internet, intranet, e-mail etc		Yes	
1.7.0	COMPRESSED AIR SUPPLY			
1.7.1	Supply of Compressor and all other equipments required for compressor and compressed air system including pipes, valves, storage systems etc		Yes	
1.7.2	Installation of the above system and operation and maintenance of the same .		Yes	
1.7.3	Supply of the all the consumables for the above system during the contract period		Yes	

SCOPE AT A GLANCE

SITE FACILITIES

PROJECT : AMARKANTAK

RATING:210 MW

Unit- 5

Sl.No	Description PART II ERECTION FACILITIES	Scope / to be taken care by		Remarks
		BHEL	Bidder	
2.1.0	Engineering works for construction :	Yes		
2.1.1	Providing the erection drawings for all the equipments covered under this scope	Yes		
2.1.2	Drawings for construction methods		Yes	
2.1.3	As-built drawings – where ever deviations observed and executed and also based on the decisions taken at site- example – routing of small bore pipes		Yes	
2.1.4	Shipping lists etc for reference and planning the activities	Yes		
2.1.5	Preparation of site erection schedules and other input requirements		Yes	
2.1.6	Review of performance and revision of site erection schedules in order to achieve the end dates and other commitments	Yes	Yes	
2.1.7	Weekly erection schedules based on SI No 2.1.5		Yes	
2.1.8	Daily erection / work plan based on SI No 2.1.7		Yes	
2.1.9	Periodic visit of the senior official of the bidder to site to review the progress so that works are completed as per schedule. It is suggested this review by the senior official of the bidder should be done once in every two months.		Yes	
2.1.10	Preparation of preassembly bay		Yes	
2.1.11	Laying of racks for gantry crane if provided by BHEL or brought by the contractor/bidder himself		Yes	
2.1.12	Arranging the materials required for preassembly		Yes	

Sl.No	Description PART II ERECTION FACILITIES	Scope / to be taken care by		Remarks
		BHEL	Bidder	
2.2.0	SUGGESTED LIST OF TOOLS AND PLANTS (BHEL should indicate the proposed number of items considered as free issue)			
2.2.1	250 T crawler crane		As required for work to be arranged by bidder	
2.2.2	250 T tyre mounted crane			
2.2.3	150 T crawler crane			
2.2.4	150T tyre mounted crane			
2.2.5	100 T crawler crane			
2.2.6	100T tyre mounted crane			
2.2.7	75 T crawler crane			
2.2.8	75 T tyre mounted crane			
2.2.9	60T Kroll tower crane			
2.2.10	18 T crawler crane			
2.2.11	18/20 T tyre mounted crane one			
2.2.11 A	8T Escort crane			
2.2.12	30T gantry crane			
2.2.13	15 T gantry crane			
2.2.14	10T gantry crane			
2.2.15	30T tractor trailer			
2.2.16	20T trailer			
2.2.17	10 T trailer / truck			
2.2.18	Electrical winches 15 T with / wire ropes Drum lifting (2 Nos)			
2.2.19	Electrical winches 10T with / without wire ropes			
2.2.20	Electrical winches 5 T with / without wire ropes			
2.2.21	Electrical winch 3 T with or without wire rope			
2.2.22	Electrical winches with/without wire ropes			
2.2.23	Pneumatic winches 1 T with / without wire rope			
2.2.24	Welding generators			
2.2.25	Welding rectifiers			
2.2.26	Welding transformers air cooled			
2.2.27	Welding transformers oil cooled			

Sl.No	Description PART II ERECTION FACILITIES	Scope / to be taken care by		Remarks
		BHEL	Bidder	
2.2.28	Chain pulley block 10T		TO BE ARRANGED BY THE BIDDER AS PER SCOPE OF WORK	
2.2.29	Chain pulley block 5 T			
2.2.30	Chain pulley block 3T			
2.2.31	Chain pulley block 1T /2T			
2.2.32	Pulling & lifting machines 5T			
2.2.33	Pulling & lifting machine 3T			
2.2.34	Pulling and lifting machine 2T / 1T			
2.2.35	Multi sheave pulley block 200 T (4) Drum Lifting			
2.2.36	Multi sheave pulley block 100 T (As Required)			
2.2.37	Multi sheave pulley block 50T			
2.2.38	Multi sheave pulley block 30T			
2.2.39	Multi sheave pulley block 20T			
2.2.40	Multi sheave pulley block 5T			
2.2.41	Single sheave shackle pulley block 20T			
2.2.42	Single sheave shackle pulley block 10T			
2.2.43	Single sheave shackle pulley block 5 T			
2.2.44	25 V transformer with sufficient spare bulbs			
2.2.45	Gas cutting torches with regulators			
2.2.46	Torque wrench			
2.2.47	Pipe vice			
2.2.48	Bench vice			
2.2.49	Anvil			
2.2.50	Baking oven for welding electrodes			
2.2.51	Portable drying oven for baked welding electrodes			

Sl.No	Description PART II ERECTION FACILITIES	Scope / to be taken care by		Remarks
		BHEL	Bidder	
2.2.52	GQA grinding machine		TO BE ARRANGED BY THE BIDDER AS PER SCOPE OF WORK	
2.2.53	FF2 grinding machine			
2.2.54	Angle grinders AG7			
2.2.55	TIG welding sets			
2.2.56	Air conditioners 1.5 T			
2.2.57	Sheet bending machine			
2.2.58	Sheet rolling m/c			
2.2.59	Sheet grooving m/c			
2.2.60	Pedestal drilling m/c			
2.2.61	Drilling m/c 31 mm			
2.2.62	Drilling m/c 20mm			
2.2.63	Drilling m/c 10 mm			
2.2.64	Hand drilling m/c 6 mm			
2.2.65	D shackles 30 T			
2.2.66	D shackles 20T			
2.2.67	D shackles 15 T Drum lifting			
2.2.68	D shackles 10T			
2.2.69	D shackles 5T/3T			
2.2.70	Wire rope sling 6x36 12mmx6m			
2.2.71	Wire rope slings 12mmx10m			
2.2.72	Wire rope slings 16mmx4m			
2.2.73	Wire rope slings 16mmx6m			
2.2.74	Wire rope slings 16mmx10m			
2.2.75	Wire rope sling 19mmx15 m			
2.2.76	Loose wire rope 16mm			
2.2.77	Loose wire rope 19 mm			
2.2.78	Loose wire rope 25mm			

Sl.No	Description PART II ERECTION FACILITIES	Scope / to be taken care by		Remarks
		BHEL	Bidder	
2.2.79	Loose wire rope 32mm		TO BE ARRANGED BY THE BIDDER AS PER SCOPE OF WORK	
2.2.80	Wire rope clamps for the above sizes sufficient quantity			
2.2.81	Manila ropes of sufficient quantity in different sizes			
2.2.82	Hydraulic jacks 250/200T			
2.2.83	Hydraulic jacks 100T			
2.2.84	Hydraulic jacks 50T			
2.2.85	Hydraulic jacks 25 T			
2.2.86	Hydraulic jacks 10T			
2.2.87	Tower crane 50T			
2.2.88	Derricks 30T with 70 M high with all necessary accessories 2 nos			
2.2.89	EOT cranes in TG hall <ul style="list-style-type: none"> ◆ Main hook 125 T ◆ Aux hook 			
2.2.90	Sleepers both wooden and concrete for movement of cranes at site			
2.2.91	Concrete blocks for pre assembly works at site			
2.2.92	15 T snatch pulley blocks Drum lifting			
2.2.93	Hydro test pump 600 bar / 400 bar			
2.2.94	Hydro test pump 250 bar -			
2.2.95	Hand operated hydro test pump			
2.2.96	Boiler filling pump 100m head with ~ 15 LPsec			
2.2.97	Pressure gauges 400 bar			

Sl.No	Description PART II ERECTION FACILITIES	Scope / to be taken care by		Remarks
		BHEL	Bidder	
2.2.98	Pressure gauges 600 bar		TO BE ARRANGED BY THE BIDDER AS PER SCOPE OF WORK	
2.2.99	Pressure gauges 100 bar			
2.2.100	Acid cleaning pumps with all accessories including switch gears			
2.2.101	Stress relieving / preheating equipments including transformers, controllers, heating pads and insulating materials and consumables			
2.2.102	Hydraulic pipe bending machines to suit up to 80mm dia and 11 mm thick			
2.2.103	Electric driven pipe chamfering machines up to 100 mm dia tubes with necessary cutting tools and other consumables			
2.2.104	Electric driven pipe chamfering m/c to suit pipes from dia 100 mm to 500/600 mm			
2.2.105	Theodolite 1 min accuracy			
2.2.106	Dumpy level			
2.2.107	6 point temp. recorder			
2.2.108	Radiographic equipments with suitable isotopes/ x ray machines			
2.2.109	MPI test kit			
2.2.110	Ultrasonic flaw detector			
2.2.111	Dye penetrant test kits (as required)			
2.2.112	Moving platforms Sky Climber			
2.2.113	Passenger cum goods lift (1)			
2.2.114	Dip lorries			

Sl.No	Description PART II ERECTION FACILITIES	Scope / to be taken care by		Remarks
		BHEL	Bidder	
2.2.115	Rails and sleepers for dip lorries, both supply and installation		TO BE ARRANGED BY THE BIDDER AS PER SCOPE OF WORK	
2.2.116	Calibrated steel tapes of different sizes			
2.2.117	Plumb bobs			
2.2.118	Micro meters of different sizes both inside and out side			
2.2.119	Vernier calipers of different sizes			
2.2.120	Surface plate			
2.2.121	Straight edges of different lengths			
2.2.122	Feeler gauges of different lengths			
2.2.123	Inside and out side calipers			
2.2.124	Bolt heating equipments including thermo couples			
2.2.125	Dial gauges with magnetic base			
2.2.126	Magnifying glass			
2.2.127	Piano wires			
2.2.128	Precision water level micrometer			
2.2.129	Parallel blocks			
2.2.130	Taper wedges			
2.2.131	Micro jacks			
2.2.132	Lead wires			
2.2.133	Dial bore micro meter			
2.2.134	Thermo meters of different ranges			
2.2.135	Depth gauges			
2.2.136	"GO & "NO GO" gauges			
2.2.137	Drill sets			

Sl.No	Description PART II ERECTION FACILITIES	Scope / to be taken care by		Remarks
		BHEL	Bidder	
2.2.138	Taps and die sets		To be arranged by the bidder as required for work	
2.2.139	Spirit levels			
2.2.140	Master spirit level			
2.2.141	Spring balance			
2.2.142	Hg manometer			
2.2.143	Vibro meter			
2.2.144	Noise level meter			
2.2.145	Litmus paper			
2.2.146	Portable gas purity meter			
2.2.147	Dead weight tester			
2.2.148	Temp bath for calibration			
2.2.149	250V/500V megger			
2.2.150	1/2.5/5.0 KV motorised megger			
2.2.151	Ammeter and voltmeters			
2.2.152	HV test kit			
2.2.153	Double kelvin Bridge			
2.2.154	DC bridge			
2.2.155	Mano meters			
2.2.156	Auto transformers			
2.2.157	CT(100/5A)			
2.2.158	Purge test kits			
2.2.159	Multi meters			
2.2.160	Variac 3phase 10 A			
2.2.161	Phase sequence meter			
2.2.162	Dual beam oscilloscope continuity tester			
2.2.163	Rheostats			
2.2.164	Milli seconds syn timer			

Sl.No	Description PART II ERECTION FACILITIES	Scope / to be taken care by		Remarks
		BHEL	Bidder	
2.2.165	Ultra violet recorder		To be arranged by the bidder as required for the work	
2.2.166	Tong tester			
2.2.167	Hardness tester			
2.2.168	Bolt stretching device			
2.2.169	Reamers of various sizes			
2.2.170	Vacuum cleaner			
2.2.171	Sand blasting machine with accessories			
2.2.172	Spray painting equipments			
2.2.173	Oil filtration units			
2.2.174	Bearing pullers of different sizes			
2.2.175	Bearing scrappers			
2.2.176	Slip gauges			
2.2.177	Elko meter to measure paint thickness			
2.2.178	MIG welding machines			
2.2.179	Files of different sizes			
2.2.180	Socket wrenches			
2.2.181	Spanner and pipe wrenches sets			
2.2.182	Hammers of different sizes (soft &hard)			
2.2.183	Allen keys sets			
2.2.184	Fire proof tarpaulins			
2.2.185	Steel scaffolding materials			
2.2.186	Pipe cutters			
2.2.187	Magnetic base for drilling machines			
2.2.188	Vibrator for grouting			
2.2.189	Mixing m/c (grouting and concreting)			
2.2.190	Tube expanding machine ie drives – hydraulic or pneumatic ()			
2.2.191	Tube expanders(expansion and flaring)			

SI.No	Description PART II ERECTION FACILITIES	Scope / to be taken care by		Remarks
		BHEL	Bidder	
2.2.192	Mercury plumb bob		To be arranged by the bidder if required	
2.2.193	Band saw machines			
2.2.194	Copper rods			
2.2.195	Needle vibrators			
2.3.0	All consumables including :			
	Ordinary cement		--	
	Grouting cement		--	
	Any special cement		--	
	Sand, bricks etc		--	
	TIG wires		Yes	
	Electrodes		Yes	
	Brazing rod, flux etc		Yes	
	Soldering			
	DA, oxygen, argon		Yes	
	Nitrogen required for chemical cleaning		-	
	Nitrogen required for construction		-	
	Paints along with thinner, brushes, cleaning materials etc for preservation of components		-	
	Paints including thinner, brushes, cleaning materials etc for final painting , as per specifications		Yes	As per scope
2.4.0	WELDING			
2.4.1	All welding works		Yes	
2.4.2	All radiography and other testing works like DPI, MPI, UT,		Yes	
2.4.3	All connected works like preheating, post heating, stress relieving,			
2.4.4	Providing certified either IBR or as per other relevant welders for the works. BHEL will not provide materials, test certificates etc for the above purpose unless specifically stated .		Yes	
2.4.5	To submit the welders to BHEL/client's approval (preproduction test) before putting them on regular work. Required materials for preproduction test to be arranged by BHEL.		Yes	

SI.No	Description PART II ERECTION FACILITIES	Scope / to be taken care by		Remarks
		BHEL	Bidder	
2.4.6	The accessories required for the welders to be arranged by the bidder		Yes	
2.5.0	CHEMICAL CLEANING			
2.5.1	Supply of pumps, motor, starters, cables, piping and other materials required for the operation			
2.5.2	Servicing the required equipments and commissioning			
2.5.3	Chemicals required for the operation including Nitrogen gas			
2.5.4	Handling equipments / consumables for the chemical cleaning works			
2.5.5	Effluent disposal system			
2.5.6	Services for the effluent disposal			

Note : * All the tools and plants required for this scope of work, except the Tools & Plants provided by BHEL are to be arranged by the contractor within the quoted rates. The list is suggestive in nature. Any additional T & P required to be arranged by the contractor.

**SCOPE AT A GLANCE
SECTION VII – APPENDIX I
SITE FACILITIES**

PROJECT : AMARKANTAK

RATING:210 MW

Unit- 5

Sl.No	Description PART III ERECTION TESTING & COMMISSIONING	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.1.0	SCOPE OF WORK			
3.1.0.1	Handling at site stores/ storage yard		Yes	
3.1.0.2	Transportation within the site		Yes	
3.1.0.3	Erection testing & commissioning		Yes	
3.1.0.4	Final painting of erected materials including supply of paints, thinners etc		Yes	
3.1.0.5	Carrying out P.G.test			
3.1.1.0	HANDLING & TRANSPORTATION			
3.1.1.1	Stores/storage yard to preassy area/ erection site		Yes	
3.1.1.2	Pre assembly area to site of installation		Yes	
3.1.1.3	Erection site to pre assembly area / stores/ storage area if required		Yes	
3.1.1.4	Touch up painting wherever required till final painting.(please refer the relevant clause for supply of paints, thinners etc)		Yes	
3.1.1.5	Preparation storage at site for proper stacking of materials		Yes	
3.1.2	ERECTION TESTING & COMMISSIONING			
3.1.2.1	Erection drawings/documents/working instructions etc	Yes		
3.1.2.2	Welding schedules	Yes		
3.1.2.3	Engineering drawings for construction methods		Yes	
3.1.2.4	Organizing the resources required for erection, testing & commissioning of the materials covered under the scope and executing the work as per instruction of BHEL engineer		Yes	

Sl.No	Description PART III ERECTION TESTING & COMMISSIONING	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.1.2.5	Final painting of all the materials erected		Yes	
3.1.2.6	Demobilization of the erection site		Yes	
3.1.2.7	Cleaning of / upkeep of erection / preassembly /storage areas		Yes	
3.1.2.8	Return of excess materials drawn to BHEL stores/ customer		Yes	
3.1.2.9	Reconciliation of all the consumables, T&P drawn from BHEL / customer ` s store		Yes	
3.1.2.10	Filling up quality log sheets		Yes	
3.1.2.11	Providing all temporary arrangements like platforms, scaffoldings etc for execution		Yes	
3.1.2.12	Assistance for P.G test		Yes	
3.1.3	CIVIL WORKS			
3.1.3.1	Taking over of foundations		Yes	
3.1.3.2	Checking, chipping and correcting final dimensions of the foundations if required		Yes	
3.1.3.3	Placement, erection of embedded parts integral for the scope of work and coordination with customer's civil/other agencies for embedment		Yes	
3.1.3.4	Bolt grouting with grout as specified		Yes	
3.1.3.5	Final grouting of all the equipments covered under this scope		Yes	
3.1.4	STATUTORY CLEARANCES			
3.1.4.1	Labour license		Yes	
3.1.4.2	Provident fund		Yes	
3.1.4.3	Insurance what ever comes under bidder's scope		Yes	
3.1.4.4	Workmen compensation		Yes	
3.1.4.5	Minimum wages		Yes	
3.1.4.6	Sales tax		Yes	
3.1.4.7	Local laws governing the works like electrical inspectorate, factory inspectorate, etc		Yes	
3.1.4.8	Professional tax		Yes	

Sl.No	Description PART III ERECTION TESTING & COMMISSIONING	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.1.4.9	Safety rules and regulations		Yes	
3.1.4.10	Approval from competent authority for installation like IBR etc		Yes	
3.1.5	SUBMISSION OF REPORTS			
3.1.5.1	Man power deployment category wise and area wise		Yes	
3.1.5.2	Deployment of tools and plant , area wise		Yes	
3.1.5.3	Consumables used		Yes	
3.1.5.4	Erection log		Yes	
3.1.5.5	Erection data PGMADU wise		Yes	
3.1.5.6	Data on joints welded as per log sheet/ welding schedule		Yes	
3.1.5.7	Materials management reports as per instruction of BHEL		Yes	
3.1.5.8	Meeting between BHEL and bidder at BHEL office every day for monitoring the progress	Yes	Yes	

SECTION VII – APPENDIX II

**WEIGHT SCHEDULE FOR COOLING WATER PIPING –AMARKANTAK –
UNIT-5**

PGMA	DU NO	DU DESCRIPTION	QTY	WEIGHT (Kgs)
80-468	001	Pipe OD 2435 x 18	860	922694.000
	002	Pipe OD 1626 x 14 EP	60	33390.000
	003	Pipe OD 1626 x 14 EP	30	16695.000
	004	Pipe OD 1422 x 12EP	90	37530.000
	005	Mitre Bend (90 Degree)Dia 2435 x 18	4	12549.516
	006	Mitre Bend (65 Degree)Dia 2435 x 18	2	4547.858
	007	Mitre Bend (60 Degree)Dia 1626 x 14	2	1453.664
	008	Fabricated unequal Tee 2435 x 18 / OD 1626 x 14	1	3609.699
	009	Fabricated Equal Tee OD 1626 x 14	1	2864.749
	010	Plate Formed reducer OD 2435 x 18 / OD 1626 x 14	1	1371.279
	011	Pipe OD 610 x 8 L= 16000	16	1900.800
	012	Man Hole NB 600 with NB 150 vent pipe	1	1448.835
	013	Torispherical Dished End OD 1626 x 16	1	435.028
	014	Mitre Bend (90 Degree) Dia 1422 x 12	1	717.250
	015	Mitre Bend (90 Degree) Dia 1422 x 12	1	727.870
	016	Mitre Bend (90 Degree) Dia 1422 x 12	3	2151.075
	017	Mitre Bend (90 Degree) Dia 1626 x 14	3	3270.747
	018	Mitre Bend (60 Degree) Dia 1626 x 14	2	1453.664

PGMA	DU NO	DU DESCRIPTION	QTY	WEIGHT (Kgs)
80-468	019	Mitre Bend (90 Degree) Dia 2435 x 18	4	12549.516
	020	Fabricated unequal Tee 2435 x 18 / OD 1626 x 14	1	4358.673
	021	Fabricated unequal Tee 2435 x 18 / OD 1626 x 14	1	5212.469
	022	Fabricated unequal Tee 2435 x 18 / OD 1626 x 14	1	4358.673
	023	Fabricated unequal Tee 2435 x 18 / OD 1626 x 14	1	4331.865
	024	Fabricated unequal Tee 2435 x 18 / OD 1626 x 14	1	4808.103
	025	Plate Formed reducer OD 1626 x 14 / OD 1422 x 12	2	460.700
	026	Plate Formed reducer OD 2435 x 18 / OD 1422 x 12	1	1644.425
	027	Pipe OD 610 x 8 L = 16000	16	1900.800
	028	Man Hole NB 600 with NB 150 vent pipe	1	1448.835
	029	SW Stub NB 15 CL 300	19	3.420
	030	Temp Stub M33 x 2	1	0.500
	031	Packing Ring M33 x 2	1	0.010
	032	Screw Plug M33 x 2	1	0.800
	033	Torispherical Dished End OD 2435 x 16	1	880.000
	034	Puddle Flange for pipe Nb 1600	3	6285.000
	035	Pipe NB 150 x 5.4 L =298	3	18.951
	036	SOW Flange	3	21.000
	037	Hex Bolt M20 x 2.5	30	8.370
038	Hex Bolt M20 x 2.5	30	2.100	

PGMA	DU NO	DU DESCRIPTION	QTY	WEIGHT (Kgs)
80-468	039	Gasket 1000 x 1000 x 1.5	1	2.850
	040	Counter Flange NB 150	3	21.000
	041	Mitre Bend (90 Degree) R= 1200 OD 1626 x 14	4	6423.508
	042	Mitre Bend (90 Degree) R= 1200 OD 1626 x 14	2	3551.796
	043	Mitre Bend (90 Degree) R= 1200 OD 1626 x 14	2	2393.650
	044	SW Stub NB 15 CL 3000	18	3.240
	045	Temp Stub M33 x 2	32	16.000
	046	Packing Ring M33 x 2	32	0.320
	047	Screw plug M33 x 2	32	25.600
	048	Man Hole NB 600 with NB 150 vent pipe	1	1159.068
	049	Saddle Support NB 600	4	1857.856
	050	Plate 25 THK 1600 x 600	4	753.600
	051	Pipe NB 100 x 5.4 L=600	1	8.640
	052	Pipe NB 150 x 5.4 L=235	2	9.964
	053	SOW Flange NB 150	2	14.000
	054	Hex Bolt M20 x 2.5	20	5.580
	055	Hex Bolt M20 x 2.5	20	1.400
	056	Gasket 600 x 600 x 1.5	0.600	0.816
	057	Counter Flange NB 150	2	14.000
	TOTAL			1113368.000

Note : Buried pipes in underground approximately , for further details refer drawings.

The erection & dismantling of temporary piping , pumps, tanks, dummy plates & other misc equipments etc., for pre commissioning & commissioning activities like hydraulic test, chemical cleaning are covered in this contract and shall be carried out with in the quoted tonnage rate

The following information is furnished only for information to give the idea of the size and length of pipes estimated for this work. Actual quantity during erection may vary as per drawings and materials to be supplied. Work will be done and regulated on agreed Tonnage Unit rates only

TOTAL WEIGHT APPROXIMATE FOR UNIT 5 = 1200 MT

NOTE FOR WEIGHT SCHEDULE :

1. The weights and dimension mentioned here are approximate and are to vary as per design consideration of the manufacturing unit. Tenderer may note that payments will be made to them at the quoted / accepted tonnage rates for the items / equipments actually erected.
2. Besides product groups indicated above, there is likelihood of addition of any product groups by manufacturing units. Contractor's quoted rates shall be applicable for such product groups.

**Section VII - Appendix – III
ERECTION WELDING SCHEDULE**

Project : Amarkantak						PGMA : 80-468								
Assy drg No : 0-80-468-03565 , 0-80-468-03564,PE-DG-219-165-m003 / Rev 00						PGMA Desc: Cooling water supply & Return piping								
SL No	Material specn 1	Pipe Size		Total no of joints	Weld specn	Recommended Electrode / Wire				Pre heat	PWHT soaking		Min recommended NDE	WPS
	Material specn 1	OD (in mm)	Thk (in mm)			specn	Arc / Gas/ TIG	Size (mm)	Qty(nos)		Temp Degree	Time		
01	IS 3589	2540	20	320	6V 14V	E7018	ARC	Dia 2.5	75640	--	--	--	RT 10%	--
	E7018					ARC	Dia 3.15	124730						
	E7018					ARC	Dia 4	16362						
02	IS 3589	2540	16	75	16V	E7018	ARC	Dia 2.5	8976	--	--	--	RT 10%	--
						E7018	ARC	Dia 3.15	14880					
						E7018	ARC	Dia 4	5670					
03	IS 3589	2540	14	95	14V	E7018	ARC	Dia 2.5	10750	--	--	--	RT 10%	--
						E7018	ARC	Dia 3.15	17936					
						E7018	ARC	Dia 4	2330					

Note :

1. RT - Radiography Test
2. All the required consumables for welding, RT, LPI etc., is in the scope of contractor
3. There may be variation in sizes, materials, no of joints etc.,. The above schedule is given to facilitate the tenderer to asses the magnitude of work and there will not be any additional payment on account of any additional joints. Please refer weight schedule for scope weight to be erected.

SECTION VII
APPENDIX -IV

**List of Tools & Plants to be made available by BHEL to contractor on
free of hire charges on sharable basis**

S.No	Description	Qty
01	75 T Crane	01
02	18 T Crane	01

Note –

1. All the above T&Ps shall be issued on free of hire charges on need basis for erection/pr-commissioning activities only and to be shared with other contractors. Allotment will be made by BHEL Site I/c depending on the requirement
2. For handling at store and transportation, contractor shall make his own arrangement
3. The required operator and fuel is to be arranged by the contractor at his cost.
4. Fill pump shall be arranged by the contractor, wherever required. For testing LP lines necessary HT pumps/Hand pumps are to be arranged by the contractor
5. Any Loss/Damage of tools by the contractor shall have to replace or other wise cost thereof shall be recovered from the contractor.
6. Apart from the above mentioned tools, any other tools and plants required for satisfactory completion of the work has to be arranged by the contractor.

SECTION VII

APPENDIX – IV

DECLARATION SHEET

I, _____ hereby certify that, all the information and data furnished by me with regard to this Tender Specification No.BHEL:PSSR:SCT:1192 are true and complete to the best of my knowledge. I have gone through the specifications, conditions, stipulations in detail and agree to comply which the requirements and intent specifications.

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

TENDERER'S NAME & ADDRESS

**AUTHORISED REPRESENTATIVE'S
SIGNATURE WITH NAME & ADDRESS**

SECTION VII

APPENDIX – V

TENDER SPECIFICATION NO BHEL:PSSR:SCT:1192

**CERTIFICATE OF DECLARATION FOR CONFIRMING
KNOWLEDGE ON SITE CONDITIONS**

We,

hereby declare and confirm that we have visited the project site under subject,
namely and acquired full knowledge and information about the site conditions.

We further confirm that the above information is true and correct and we will
not raise any claim of any nature due to lack of knowledge of site conditions.

TENDERER'S NAME AND ADDRESS

Place:

Date :

**SIGNATURE OF AUTHORISED
REPRESENTATIVE WITH NAME & ADDRESS:**

OFFICE SEAL

5. Whether the following details are furnished : YES/NO
- a) Previous Experience : YES/NO
 - b) Present assignments : YES/NO
 - c) organization chart of the company : YES/NO
 - d) Company financial statue : YES/NO
 - e) Incase of company, proof of Registration of the company : YES/NO
 - f) Memorandum & Articles of Association of company/copy of Partnership deed : YES/NO
 - g) Profit & Loss account for the Last 3 years : YES/NO
 - h) Audited Balance sheet for the Last 3 years : YES/NO
 - i) Income Tax clearance certificate (latest) : YES/NO
 - j) Solvency Certificate from a Nationalised Bank : YES/NO
 - k) Power of Attorney of the person Signing the tender duly attested By a Notary Public : YES/NO
 - l) Manpower organization chart With deployment plan at site For posting of Engineers/super Visitors and workers/labourers For satisfactory completion of Work under this specification : YES/NO

SIGNATURE OF THE TENDERER

6. Whether the Tenderer is conversant with local labour laws & conditions : YES/NO
7. Whether the tenderer is aware of all safety rules and codes : YES/NO
8. Whether the Declaration sheet (as per appendix enclosed) : YES/NO
9. Time required for mobilization of site organization and start of work : YES/NO
10. Whether list of tools and Plants available with the contractor and proposed to be deployed for this work enclosed : YES/NO
11. Whether all the Pages are read understood and signed. : YES/NO
12. Deviations, if any Pointed out :
13. Whether PF exemption No. is allotted by RPFC of your area if so, indicate number : YES/NO

SIGNATURE OF THE TENDERER

TENDER SPECIFICATION

BHEL:PSSR:SCT: 1192

FOR

Handling at Site Stores / Storage yard,
Transportation to Site of Work, Erection,
Testing and Commissioning of Cooling Water
Piping including supply and application of
Protective Coating, Painting for Unit 5 of 210
MW set

at

Amarkantak Thermal Power Station

**Chachai Village,
Shahdol District,
Madhya Pradesh.**

PART – II PRICE BID

BOOK NO :



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

Power Sector – Southern Region

690, Anna Salai, Nandanam, Chennai – 600 035.

BHARAT HEAVY ELECTRICALS LIMITED
(A Government of India Undertaking)
Power Sector, Southern Region
690, Anna Salai, Nandanam, Chennai – 35

TENDER SPECIFICATION NO:BHEL:PSSR:SCT:1192

NAME OF WORK

Sub:Handling at Site stores / storage yard ,
Transportation to site of work, Erection ,
Testing and Commissioning of Cooling Water
Piping including supply and application of
protective coating, painting for unit 5 of 210 MW
set at Amarkantak Thermal Power station,
Chachai Village, Shahdol District, Madhya Pradesh

(PRICE BID)

PART II

Issued to
M/s.

For and on behalf of
BHARAT HEAVY ELECTRICALS LIMITED

Senior Deputy General Manager/Contracts

(This tender document is not transferable)

Place: Chennai-600 035.

Date:

SECTION VII – APPENDIX – VII

RATE SCHEDULE

BHEL :PS:SCT:1192

Sl No	Description of Work	Approx Weight to be handled	Unit rate Rs. Per MT	Total Amount Rs.
01	Erection, Testing and commissioning and completion of trial operations of the complete cooling water piping, together with valves, fittings hangers and supports etc. as per the detailed description and nature of work enumerated in the Tender specification, including supply of consumables, tools and tackles, all handling and transportation from BHEL/Customer's stores and other incidental works during the pre-assy, Erection, Testing and Commissioning works as detailed in the Tender specification. This shall include all types of handling and transportation of materials from the site stores sheds / storage yard, to place of erection and any extra work of modification / rectification that may arise during the erection, testing and commissioning works which is incidental to normal erection works.			
	Total Erection Tonnage	1200 MT		

SIGNATURE OF THE TENDERER

NOTE TO RATE SCHEDULE:

1. The quantity indicated in Rate schedule are approximate and are liable for variation and alteration at the discretion of BHEL. The quoted unit rates shall be applicable for any additional product groups of manufacturing unit, if included at a later date. The work executed shall be measured and priced at unit rate quoted by the contractor and accepted by BHEL.
2. Tenderers are required to quoted their rates, only in the price bid (part II) provided by BHEL. Quoting of rates in any other form / formats will not be entertained.

SIGNATURE OF THE TENDERER