

TENDER SPECIFICATION

BHEL:PSSR:SCT: 1317

FOR

Handling at Stores / Storage yard,
Transportation to Site, Erection, Testing,
Commissioning of Electrostatic Precipitators
and its auxiliaries, including Supply and
application of Final painting for Unit – 5 of
210 MW set, Stage III

at

Rayalaseema Thermal Power Project
(Muddanur) V.V.Reddy Nagar,
Kalamalla Post, Cuddapah District,
Andhra 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.

INDEX – SCT 1317-ESP – Rayalaseema 1 X 210 MW		
SNo	DESCRIPTION	PAGE
1	Covering Letter	1- 2
2	Special Instructions to Bidders	3-4
3	Procedure for Submission of Sealed Bids	5
4	Tender Notice	6-7
5	Certificate for No Deviation	8
6	Offer of the Contractor	9-10
7	Project Information	11-13
8	Section – III – Common Conditions of Contract	14-44
9	Section- VI – Scope of Work and Special conditions	45-70
10	Section –VII – APPENDIX	
	Appendix - I Weight Schedule	71
	Appendix - II Tools & Plants	72-73
	Appendix – III Declaration Sheet	74
	Appendix – IV Certificate of Declaration for confirming knowledge on site conditions	75
	Appendix – V E- Remittance format	76
	Appendix - VI Check list	77-79
	Appendix – VII – Price Bid	80-82
	General Conditions of Contract	Separate book

**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: 1317

Messrs

Date:

Dear Sir,

Sub: Handling at Stores / Storage yard, Transportation to Site, Erection, Testing, Commissioning of Electrostatic Precipitators and its auxiliaries including supply and application of final painting for Unit 5 of 210 MW Stage – III at Rayalaseema Thermal Power Project , VV Reddy Nagar, Kalamalla Post, Cuddapah District, AP

Please find enclosed one set of non-transferable tender documents containing **82** pages along with General Conditions of Contract and Rate schedule 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.2,00,000/- (Rupees Two lakhs only) in the form 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 08.)

The completed quotations shall reach the office of the under signed on or before **22.08.2008 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 WHAT SO EVER 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

Additional General Manager / Contracts

This Tender document is not transferable.

Place : Chennai -35

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)

1. Details of previous experience during the last seven years indicating contract value, duration, completion period and present engagement as per G.C.C.
2. Organization structure of the Company as per GCC.
3. 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.
4. Turnover of the Company in last 3 Financial years pertaining to this scope of work only.
5. Latest Income Tax clearance certificate.
6. 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.
7. Declaration sheets as per Appendix of Tender Specification.
8. Checklist and Schedule of General particulars as per Appendix in GCC.
9. T & P owned/deployment details as per G.C.C.
10. Technical Technical manpower deployment details as per G.C.C
11. Other relevant details as per GCC and checklist.
12. **THE BIDDERS ARE REQUESTED TO FURNISH THE DOCUMENTS LIKE COPIES OF LOI'S, WORK ORDER'S ETC PERTAINING TO THE EXPERIENCE INDICATED IN QUALIFYING REQUIREMENTS, AS GIVEN BELOW.**

13. QUALIFICATION REQUIREMENT

- a) The bidders should have **executed** erection and commissioning of Boiler /ESP and its associated auxiliaries and equipments of minimum capacity of 60 MW or above in a power plant during last seven years.

Or

The bidder should have successfully **executed** renovation and modernization works in Boiler /ESP and auxiliaries of 60 MW or above capacity in at least one unit in a thermal power plant in the last seven years.

Note : "**Executed** " means Boiler should have been lighted up .

- b) The bidders should have a minimum average financial turn over of Rs. **80 Lakhs** per year in the preceding three financial years ending 31st March 2007.

The Bidder must have earned profit in any one of the last three financial years ending 31.03.2007 and should have positive net worth as on 31.03.2007.

Bidder should submit audited balance sheet and profit & loss account of the company along with all annexures for last three years ending 31.03.2007 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.

14. TENDERES 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.

15. 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 Government of India undertaking)
Power Sector : Southern Region
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 superscribed 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 superscribed 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 and 2 Nos. of GCC booklet., 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.2,00,000/- (Rupees Two Lakhs only). This EMD amount shall be submitted in the form 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 WHAT SO EVER AFTER THE TIME AND DATE MENTIONED IN TENDER SPECIFICATION FOR SUBMISSION OF COMPLETED QUOTATIONS SHALL NOT BE ENTERTAINED UNLESS CALLED FOR SPECIFICALLY BY BHEL.

Additional General Manager/Contracts.

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

TENDER NOTICE

Tender Specification No. BHEL:PSSR:SCT:1317

Description	EMD
Handling at Stores / Storage yard, Transportation to Site, Erection, Testing, Commissioning of Electrostatic Precipitators and its Auxiliaries, including supply and application of final painting for Unit 5 of 210 MW Stage – III at Rayalaseema Thermal Power Project , VV Reddy Nagar, Kalamalla Post, Cuddapah District, AP	Rs. 2,00,000/- (Rupees Two Lakhs only)

Cost of Tender Documents (Including all Taxes)	:	Rs.1040 /-
Sale Starts on	:	08.08.2008
Sale closes on	:	21.08.2008
Due date and Time for Submission	:	22.08.2008 15.00 Hrs.
Date and time for opening Of Technical Bids	:	22.08.2008 15.30 Hrs

QUALIFICATION REQUIREMENT

a) The bidders should have **executed** erection and commissioning of Boiler/ESP and its associated auxiliaries and equipments of minimum capacity of 60 MW or above in power plant during the last seven years.

Or

The bidder should have successfully **executed** renovation and modernization works in Boiler /ESP and auxiliaries of 60 MW or above capacity in at least one unit in a thermal power plant in the last seven years.

Note : "**Executed** " means Boiler should have been lighted up.

b)The bidders should have a minimum average financial turn over of **Rs. 80 Lakhs** per year in the preceding three years ending 31st March 2007.

The Bidder must have earned profit in any one of the last three financial years ending 31.03.2007 and should have positive net worth as on 31.03.2007.

Bidder should submit audited balance sheet and profit & loss account of the company along with all annexures for last three years ending 31.03.2007 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.

Interested parties can get the Tender documents from the office of the Additional 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 therefore. TENDER NOT ACCOMPANIED BY THE PRESCRIBED EARNEST MONEY DEPOSIT ARE LIABLE TO BE SUMMARILY REJECTED.

ADDITIONAL GENERAL MANAGER/CONTRACTS

TENDER SPECIFICATION : BHEL:PSSR:SCT:1317

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

Additional 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:1317** 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.2,00,000/- (Rupees Two Lakhs 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.2,00,000/- (Rupees Two Lakhs 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	General	
1.1	Authority	APGENCO
1.2	Name of Project	Rayalaseema Thermal Power Project Stage – III, Muddanur
2.0	Site Location	V.V. Reddy Nagar Kalamalla Post, Cuddapah District Andhra Pradesh – 516 312 STD Code – 08563
2.1	Nearest Town	Prodattur (STD – 08564)
3.0	Site Conditions	
3.1	Climate	Tropical – Hot – Humid
3.2	Altitude	190 Metres above mean sea level
4.0	AMBIENT TEMPERATURES (DRY BULB)	
4.1	Daily Minimum (Mean)	19.1° C

4.2	Daily Maximum (Mean)	40.3 °C
4.3	Design ambient temperature for continuous rating of meter	50.0 °C
5.0	RELATIVE HUMIDITY	
5.1	Maximum during monsoon (June to October)	49 to 74 %
5.2	Humidity during summer (March to June)	35 to 60 %
5.3	Humidity during summer (November to March)	55 to 70 %
6.0	Rainfall	
6.1	Maximum per annum	1273.6 mm
6.2	Average per annum	742.8 mm
6.3	Tropical Monsoon	June to October

7.0	Wind Velocity & Pressure	
7.1	Maximum Wind Velocity	175 Km / Hour
7.2	Basic Design Wind Pressure	Upto 30 M, Height 200 Kg / N ²
8.0	Seismic Factors	
8.1	Horizontal seismic coefficient	As per latest IS 1893
8.2	Vertical seismic coefficient	As per latest IS 1893
9.0	Longitude	18 deg 28' East
9.1	Latitude	14 Deg 42' 3" North
10.0	Nearest Aerodrome	Hyderabad / Bangalore – 300 Kms
11.0	Nearest Railway Station	Muddanur on Madras- Bombay Railway line

SECTION III COMMON CONDITIONS

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(s) /check list / 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/ testing and commissioning till unit is handed over, as specified in detail in clause 3.10.5

3.2 FACILITIES TO BE PROVIDED BY BHEL:

3.2.1 OPEN SPACE :

Open space for building of temporary office shed, 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, and for contractor's office and stores shed, electricity will be provided at one single point free of charge. Further distribution shall be arranged by the contractor, at his cost.

3.2.3 WATER:

Water for construction purpose will be provided at a 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, testing and commissioning of components/equipments shall be arranged by the contractor at his cost, except the tools and plants provided by BHEL as indicated in Section VII-Appendix II.

3.2.5 CONSUMABLES:

All consumables and electrodes including special electrodes if any are to be arranged by the Contractor at his cost. These are governed by clause 3.4 and 3.5 of Tender Specification.

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

3.3.1 CRANES:

The following minimum number of cranes shall be arranged by the contractor with experienced operator, fuel, lubricants etc., for execution of this contract within the Quoted rate.

Sl.No	Description	Qty
1.	10 / 8 T Mobile Crane	1 No.

3.3.2 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.

3.3.3 WATER DISTRIBUTION:

Distribution of water for construction purposes and as well as drinking purposes to various work-fronts shall be contractor's responsibility and at his cost.

3.3.4 ELECTRICITY DISTRIBUTION:

Provision of distribution of electrical power from the given single central 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.

3.3.5 POSSESSION OF GENERATORS:

As there are bound to be interruptions in regular power supply, power cut/ load shedding in any construction sites, 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, and maintain the complete installation on the load side of the supply with due regard to safety requirements at site. It shall be responsibility of the contractor to have at least (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.

3.3.6 LIGHTING FACILITY:

Adequate lighting facilities such as flood lamps, hand lamps and area lighting shall be arranged by the contractor at the site of construction, pre assembly yard and contractors material storage area etc., at his cost.

3.3.7 POWER REQUIREMENT:

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.

3.3.8 CONTRACTOR'S OBLIGATION ON COMPLETION:

On completion of work, all the temporary buildings, structures, pipe lines, cables etc., shall be dismantled and leveled and debris shall be removed as per instructions 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 the 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 reason for not attaining the required progress.

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.,

3.5 ELECTRODES:

3.5.1 All the required electrodes including special electrodes if any like E 7018 required 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 Shortage of any of the above electrodes or the equivalent suggested by BHEL shall not be quoted as reason for deficiency in progress or for additional rate.
- 3.5.3 Storage of electrodes shall be done in an air conditioned / controlled humidity 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 (range 375⁰C - 425⁰C) 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 Incase 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 the 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 expiry, unapproved type of electrodes etc., It shall be responsibility of the contractor to replace at his cost with out 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-II only. It may be noted that distribution of these equipments will be done by BHEL Engineers and the decision of the Engineers 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 the equipments shall be the contractor's responsibility and shall be as per instruction/standard practice of BHEL Engineer. Any consumables / lubricants required for operation and application of the same shall be done by the contractor with his skilled labour at his cost.
- 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 account 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 the above equipments shall be to contractor's account.
- 3.6.5 Non -availability of any of the above equipment either due to break down/ routine maintenance or due to distribution pattern of BHEL shall not be quoted as reason for delay of work.
- 3.6.6 Monthly utilization 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 conditions 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, 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 All other T & P required for the satisfactory execution of work shall be arranged by contractor 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 certificate 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.
- 3.6.12 Contractor shall have at all times experienced operators and technicians, for routine and break down maintenance of the equipment. Any delay in rectification of defects will warrant BHEL rectifying the defect and chagrining the cost to the contractor.
- 3.6.13 If at any time , it is noticed that the contractor is not using any of T & P or equipments properly according to the instructions of BHEL, BHEL will have the right to withdraw any and all such equipments and any cost due to this shall be to contractor's account.

- 3.6.14 All the T & P indicated in Appendix II would be Issued only in 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 after use.
- 3.6.15 All the T & P , lifting tackles including wire ropes, slings, shackles and electrically operated equipments shall be got approved by BHEL Engineer before they are actually put on use. Test certificates should be submitted before their use.
- 3.6.16 The list of minimum T & P required to be deployed by the contractor is indicated in Section VII- Appendix -II. The list is minimum and not exhaustive but any thing required over and above these to suit the site conditions / rate of progress / nature of work shall be arranged by contractor at his cost.
- 3.6.17 Contractor shall take into consideration the above clause and quote the rates as called for in the rate schedule.
- 3.6.18 During the execution of the work, it becomes necessary for the contractor to deploy his manpower for reduction/increasing the boom length of the crane to suit the erection condition. It shall be the indenting contractor's responsibility to arrange for necessary manpower / hand tools/ illumination / supports/ consumables, etc., and the quoted rate shall include such services. Similarly all assistance required during preventive maintenance shall be provided by the contractor.
- 3.6.7 For movement of crane, etc. It may become necessary to lay sleeper bed for obtaining leveled safe approach for usage of equipment. It shall be the responsibility of the contractor to lay necessary sleepers. The required sleepers shall be arranged by the contractor at their cost. BHEL will not provide any sleepers for this work.
- 3.6.8 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 oil and air filters etc.,
- 3.6.9 BHEL will provide 75 T/Highercapacity crane – 1 No free of charge on sharing basis, for this scope of work.

For 75T/Higher capacity crane experienced operator shall be arranged by the contractor at his cost.

Fuel, lubricants etc., for the above cranes shall be arranged by the contractor within the Quoted rate.

If the contractor fails to provide experienced crane operators, helpers and mechanics, BHEL reserves the right to engage them at the cost of contractor. If the fuel, lubricants etc., are not provided by the contractor it will be provided by BHEL at the cost of the contractor.

- 3.6.10 As the cranes available with BHEL are likely to be deployed for various contractors, the decision of BHEL Engineers will be final with regard to allotment of cranes for day to day use.
- 3.6.11 The availability of cranes are likely to be hampered from time to time due to routine, preventive maintenance or break down maintenance. Contractor has to make alternative arrangements or plan / amend / alter his activities with the consent of BHEL Engineer to suit the above conditions and the contractor will not be liable for any compensation due to this.
- 3.6.12 The contractor has to keep and maintain a log book every day which will be provided by BHEL and this has to be countersigned by BHEL engineer every day.

3.7 SUPERVISORY STAFF AND WORKMEN:

- 3.7.1 The Contractor shall deploy experienced engineers, supervisors , all the skilled workmen like 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 stores/storage yard to erection site, transportation, erection, testing and commissioning contemplated under this specification. Only fully trained and competent men with previous experience on the job shall be employed. They shall hold valid certificates wherever necessary.
- 3.7.2 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.

- 3.7.3 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.
- 3.7.4 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 subsequent month as per the plan of activities as required by BHEL, to meet the overall contract requirement.
- 3.7.5 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.
- 3.7.6 The contractor has to furnish the details of maximum manpower likely to be deployed for the following categories (Refer Annexure I – Safety Plan of General Conditions of Contract – Clause 3.0 – Contractor's Personnel)
- a) Engineers
 - b) Supervisors
 - c) Fitter
 - d) Welder
 - e) Rigger
 - f) Electrician
 - g) Helpers
 - h) Others

- 3.7.7 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 instructions are taken as final.
- 3.7.8 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.
- 3.7.9 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.
- 3.7.10 During the course of erection,
- If the progress is found unsatisfactory,
 - If the target dates fixed from time to time for every mile stones are to be advanced / not being met,
 - If it is found that the engineers, supervisors and skilled workmen like fitters, operators, technicians etc deployed are not sufficient.
- BHEL after giving reasonable opportunity to the contractor will induct on the work the required engineers /supervisors and workmen in addition to contractor's workmen to improve the progress. The expenses so incurred will be recovered from the contractor's bills with overheads.
- 3.7.11 It shall be the responsibility of the contractor to ensure safe lifting of the equipment taking due precautions to avoid any accident and damage to other equipment and personnel. Contractor shall be liable for all accidents, damages etc., to personnel and equipment etc., during the execution of the work.

- 3.7.12 The work shall be executed under the usual conditions like rain, insufficient space, and improper approach roads etc. affecting major power plant construction and in conjunction with numerous other operations at site. The contractor and his personnel shall cooperate with other personnel. The contractor will coordinate his work with others and proceed in a manner that shall not delay or hinder the progress of work as a whole.
- 3.7.13 The month wise manpower deployment plan to be submitted as per format (given in the General Conditions Contract – Section- IV- Appendix – II- List of Qualified Man Power Available) is only to assess the capability as well as understanding of the contractor to execute the work. It shall be the contractor’s responsibility to deploy the required manpower, for timely and successful completion of the job, to any extent over and above those indicated in the above deployment plan(including those which are not covered in the plan submitted) without any compensation on this account. The contractor shall identify separate persons at site for quality control and safety and for welding electrodes baking and issue control.
- 3.7.14 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.

3.8.0 CIVIL WORKS

- 3.8.1 Foundations for all the equipments and Columns and necessary civil work shall be provided by the clients of BHEL. The contractor for their scope shall check the dimension of the foundations, locations of pockets, pitch of anchor bolt and other inserts as per drawings. Further, top elevation of foundations shall be checked with respect to bench mark etc., All minor adjustments of foundation level. Dressing and chipping of foundation surfaces up to 50 mm enlarging the pockets in foundations, grouting etc., as may be required for the erection of equipment / plants shall be carried out by the contractor. All the materials like cements, including special

cement like Conbextra, or its equivalent, sand, etc. shall also be arranged by the contractor at his cost wherever necessary.

- 3.8.2 While on the job, care is essential to avoid too much chipping and resultant lowering of level. In case of excess chipping, contractor has to arrange additional packing plates as per requirements provided BHEL Engineer allows it. When required by manufacturers, the embedded sub-sole plates shall be scraped and checked with Prussian blue to get the required contact with frames.
- 3.8.3 The contractor shall ensure perfect matching of packer plates including machining, scraping and blue matching with foundation by dressing the foundation, as well as perfect matching between the packer plates and the base plate of equipment to the satisfaction of BHEL Engineer. If required the packer plates may have to be aligned and fixed on the foundations using approved quality special high strength, non-shrinking and quick setting grouts. The minimum thickness of the packer plate should be 20 mm. The material required for this has to be arranged for by the contractor at his cost.
- 3.8.4 The contractor at his cost shall arrange for grouting of foundation bolt holes of column 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. Special cement like conbextra, GP1/ GP2/shrinkomp or its equivalent as per BHEL's recommendations shall be arranged by the contractor at his cost.
- 3.8.5 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.

3.9.0 SCOPE OF MATERIAL HANDLING AND SITE STORAGE AND OTHER RESPONSIBILITIES :

- 3.9.1 All the equipment furnished under this contract shall be received from the project stores, sheds / storage yards and transported to pre assembly area / erection site and stored in the storage spaces in a manner so that they are easily retrievable till the contractor erects them. While drawing / lifting material from BHEL / customer stores, contractor shall ensure that the balance / other materials are stacked back immediately.
- 3.9.2 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.
- 3.9.3 All lifting and handling equipments like cranes, wire rope slings, D-shackles, chain- pulley blocks, pull-lifts, single sieve and multi sieve pulleys etc., are to be subjected to fitness test through licensed /certified agency before they are put into use. Subsequent periodic tests are to be conducted as per statutory stipulations / BHEL manuals / Certifying agency's recommendations / BHEL engineer's instructions. 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.
- 3.9.4 The contractor shall take delivery of components, equipment / consumables from storage area after getting the approval of BHEL Engineer on standard indent forms.
- 3.9.5 The contractor shall identify and deploy necessary supervisor/labour for the above work in sufficient quantity as may be needed by BHEL for areas covering their scope.

- 3.9.6 All the equipment shall be handled very carefully to prevent any damage or loss. No untested wire ropes / slings etc. shall be used for unloading /handling. The equipment shall be properly protected to prevent damage either to the equipment or to the floor where they are stored. The equipment from the stores shall be moved to the actual location at the appropriate time so as to avoid damage of such equipment at site.
- 3.9.7 Contractor shall ensure that while lifting slings shall be put over the points indicated on the equipment or as indicated in the manufacturer's drawings. Slings / shackles of proper size shall be used for all lifting and rigging purposes. All care shall be taken to safe guard the equipment against any damage. Dragging of piping / valves should be avoided. In case of any damage the cost shall be covered from the contractor.
- 3.9.8 Approach road conditions from the stores / yards to the erection site may not be equipped and ideal for smooth transportation of the equipment. Contractor may have to be adequately prepared to transport the materials under the above circumstances without any extra cost.
- 3.9.9 Contractor shall be responsible for examining all the plant and materials issued to him and notify the Engineer immediately of any damage, shortage, discrepancy etc., before they are moved out of the stores / storage area. The contractor shall be solely responsible for any shortages or damages in transit, handling, storage and erection of the equipment once received by him. As the erection work will be spread in different areas / locations of the project, contractor has to arrange sufficient number of watch / ward personal to avoid any pilferage of material. As per General Conditions of contract under provisions of clause No 2.8.9 BHEL will reserve the right to recover the cost of repair / replacement, if any, to bring back the equipment in original order, in case the equipment / material is lost / damaged while in the custody of the contractor. BHEL's decision in this regard shall be final and binding on the contractor.
- 3.9.10 The contractor shall maintain an accurate and exhaustive record-detailing out the list of all equipment received by him for the purpose of erection and keep such record open for the inspection of the engineer at any time.

- 3.9.11 All the material in the custody of contractor and stored in the open or dusty locations must be covered with suitable weather proof / fire retardant covering material wherever applicable and shall be blocked up on raised level above ground. All covering materials including blocks and sleeper shall be arranged by the contractor at his cost.
- 3.9.12 If the material belonging to the contractor are stored in area other than those earmarked for his operation the engineer will have the right to get it moved to the area earmarked for the contractor at the contractors risk and cost.
- 3.9.13 The contractor shall be responsible for making suitable indoor storage facilities to store all equipment (drawn by the contractor from BHEL / customer stores), which require indoor storage till the time of their installation. The Engineer will direct the contractor in this regard, which item in his opinion will require indoor storage, and the contractor shall comply with Engineer's decision.
- 3.9.14 It shall be contractor's responsibility to arrange necessary tractors, tailor or trucks/slings/tools and tackles/labour including operators Fuel lubricants etc., for loading from storage yard and on to transport equipment, 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.
- 3.9.15 All equipment so used by contractor shall be of proven quality and safe in operation as approved by BHEL site Engineers from time to time.
- 3.9.16 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.
- 3.9.17 All welding filler wires are issued to 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.

- 3.9.18 All pipe and tube ends shall be covered with plastic caps or will be closed with plastic / wooden plugs as the case may be.
- 3.9.19 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.
- 3.9.20 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.
- 3.9.21 The contractor shall follow 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.
- 3.9.22 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.
- 3.9.23 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.
- 3.9.24 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.
- 3.9.25 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.

- 3.9.26 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.
- 3.9.27 All the necessary certificates and licenses required to carry out this scope of work are to be arranged by the contractor then and there at no extra cost.
- 3.9.28 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.
- 3.9.29 The contractor shall be responsible for taking all safety precautions during the construction and keeping the site safe at all times and the end of each working day. 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.
- 3.9.30 The contractor shall take delivery of equipment from storage yard/stores/sheds. He shall also make arrangements for verification of equipment, scrupulously 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.
- 3.9.31 Sometimes it may become necessary for the contractor to handle certain un-required 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.

3.10.0 WELDING :

3.10.1 All structural welders shall be tested and approved by BHEL Engineer before they are actually engaged on work though they may possess the required certificate. BHEL reserves the right to reject any welders without assigning any reason. The welder Identification code as approved by the BHEL Engineer shall be stamped by the welder on each joint done by them. The contractor will be responsible for the periodic renewal, retesting of the welders as demanded by BHEL.

3.10.2 BHEL Engineer is entitled to stop any welder from the work if his work is unsatisfactory for any technical reasons or there is a high percentage of rejection of joints welded by him, which in opinion of the BHEL engineer will adversely affect the quality of the welding though the welders has earlier passed the tests prescribed by BHEL Engineers. The welders having passed qualification tests does not relieve the contractor of a contractual obligation to check the welders performance.

3.10.3 All charges towards testing of welders for destructive and non destructive test, testing and approval of welders for engaging in the erection work shall be borne by the contractor.

3.10.4 All welded joints shall be subjected to acceptance by BHEL Engineer.

3.11.0 PRESERVATION OF COMPONENTS :

3.11.1 After taking delivery from BHEL / customer's stores, plant materials storage Shall be subjected to the following protection besides other provision indicated in these specifications elsewhere.

- Items stored outdoors shall be blocked up at least six inches (6") off the ground.

- Motors, valves, electrical equipment, control equipment and instruments etc., shall be stored indoors in a warehouse provided by contractor. Motor windings shall be kept dry by use of external heat or space heaters.
- Bearings and other wearing surfaces of plant materials shall be protected against corrosion and kept clean.

- 3.11.2 It shall be the responsibility of the contractor to apply preservatives / touch up paints (primer) on equipment handled and erected by him till such time of final painting. It shall be contractor's responsibility to arrange for required paints (primer), thinners, labour, scaffolding materials, cleaning materials like wire brush, emery sheets, etc., cleaning of surface and provide one coat of preservatives / paints (primer) from time to time as decided by BHEL engineer. The accepted rate shall include this work also. It is to be noted that such painting may have to be done as and when required till such time the final painting is carried out.
- 3.11.3 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.
- 3.11.4 Any failure on the part of contractor to carry out works according to above clauses will entail BHEL to carry out the job from any other party and recover the cost from contractor.
- 3.11.5 Due to atmospheric conditions erected materials are likely to get rusted. 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 and thinner shall be supplied 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.

3.12.0 DRAWINGS AND DOCUMENTS :

- 3.12.1 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.

- 3.12.2 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. Contractor shall maintain complete records of drawings and documents given to them time to time and maintain the latest drawings / documents in their custody. Contractor shall refrain from defacing the drawing / documents available with them.

- 3.12.3 The data furnished in various appendices 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.

- 3.12.4 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.

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

3.13.0 SITE CLEANINESS AND SAFETY REQUIREMENTS:

- 3.13.1 Contractor shall strictly follow all safety regulations/conditions as per clause 2.15 and its sub clauses of general conditions of contract booklet enclosed with this tender.
- 3.13.2 Non 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	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 and not insulated properly	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/-

Contractor should exclusively deploy one Qualified safety Engineer (Diploma in Safety) along with a safety supervisor for effective implementation and co-ordination of safe working conditions.

3.14.0 ASCERTAINING AND ESTABLISHING THE REASONS FOR SHORT FALL :

The onus proving that the reasons /causes leading to extension of the contract period is not due to any reasons attributable to the contractor is basically lying on the contractor. Review of the performance will be made considering the availability of components to be erected and other inputs/constraints over which the contractor has no control. The programme will be reviewed area- wise and the following facts will be recorded incase of shortfall at the end of every month.

- a) Erection / commissioning not achieved owing to non-availability of fronts.
- b) Erection/commissioning program not achieved owing to non-availability of materials.
- c) Erection / commissioning program not achieved owing to non-availability of tools and plants, man power and consumables by the contractor or any other reason attributable to the contractor.
- d) Erection/commissioning program not achieved due to any other reasons not attributable to the contractor.

3.15.0 CONTRACT EXTENSION :

- 3.15.1 If the completion of work as detailed in the specification gets delayed beyond the end of the contract period, then depending on the balance work left out, BHEL at its discretion may/may not extend the contract.
- 3.15.2 A joint program shall be drawn down for the work to be completed during the extended contract period. Review of the program and record of shortfall as described earlier shall be done during the extended period.
- 3.15.3 The part of extension attributable to the contractor, if any in total contract extension shall be exhausted first, i.e. immediately after end of contract period. This shall be followed by the extension on account of force maejure conditions if any and lastly on account of BHEL.

SPECIFIC REQUIREMENTS FOR ISO 9001 - 2000

3.16.0 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.

3.17.0 INSPECTION / QUALITY ASSURANCE / QUALITY CONTROL STATORY INSPECTION :

3.17.1 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.

3.17.2 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.

3.17.3 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.

- 3.17.4 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/Leveling Readings and Inspection details.
- 3.17.5 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.
- 3.17.6 Approval Given by Customer/BHEL for welding, results tests etc. shall also be recorded in the log book.
- 3.17.7 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. Welder's Performance Record shall be furnished every month. The performance Report of Welders shall indicate the percentage of Repair for each welder.
- 3.17.8 Single line diagrams of all piping schemes shall be drawn manually or through computer software to maintain fit-up, welding, Stress relieving and radiography details. On completion of all piping schemes, as-built drawings shall be prepared by the contractor and submitted to BHEL.
- 3.17.9 Heat Treatment details of 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. Welder's performance Record shall be furnished every month. The performance Report of Welders shall indicate the percentage of Repair for each welder.
- 3.17.10 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.

- 3.17.11 Total Quality is the watch- word 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.
- 3.17.12 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.
- 3.17.13 All the welders shall carry identity cards as per the Performa prescribed by BHEL. Only welders duly authorized by BHEL / Boiler Inspector / Consultant shall be engaged on the work.
- 3.17.14 Contractor shall ensure speedy alignment and welding of all Equipment erected by him after placement. Also all alignments, Welding, NDT Test 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 any other tests required to be conducted for completing erection and commissioning.

3.18.0 STAGE INSPECTION BY FES / QA ENGINEERS :

- 3.18.1 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 shall be carried out by teams of Engineers, from Field Engineering Services of BHEL's Manufacturing units / Quality Assurance teams/ commissioning Engineers. The Contractor has to arrange all labour, Tools and Tackles, etc., for such stage inspections free of cost.

- 3.18.2 Any modifications suggested by FES and QA Engineers Team shall be carried out. Claims of Contractor, if any shall be dealt as applicable.
- 3.18.3 Any minor rectifications of minor repairs of defective work found out during stage Inspection shall be rectified free of cost, by the contractor.
- 3.18.4 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 possible.

3.19.0 STATUTORY INSPECTION:

- 3.19.1 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.
- 3.19.2 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/client shall pay all other fees. (FEES FOR VISITS INSPECTION FEES, REGISTRATION FEES, ETC.,) In case these inspections 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.
- 3.19.3 Payment of statutory fees as per stipulations of Boiler inspectorate shall be paid by BHEL.

3.20.0 SUB CONTRACTOR TO ENSURE COMPLIANCE OF THE FOLLOWING SAFETY RELATED POINTS

01. Personnel protective equipment (PPES): Required number of following PPES (Confirming to Relevant is 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. ELCB'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 authorize 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 IMTE's 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 in charge, 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 months 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 remnant 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 HSE 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.

SECTION VI

SPECIAL CONDITIONS OF CONTRACT

6.1.0 SCOPE OF WORK

The work to be carried out at quoted / accepted rates by the contractor under the scope of these specifications covers the complete work of handling, loading and transporting of materials from project stores sheds / storage yards to site of erection or preassembly yard and unloading at pre-assembly area/erection site, checking, cleaning chipping and leveling of foundations, providing packers and shims/pre-assembling of equipments at the pre-assembly yard, inspection, minor rectification, touch up painting , erection, leveling, alignment, and other adjustments, cutting, edge / surface preparation, welding, grinding, UT / LPI / MPI testing wherever needed, heat treatment, carrying out air tightness test by soap solution / kerosene (with air blower arrangement) pre-commissioning, commissioning, testing and trial run of the ESP and connected auxiliaries, supply and application of final painting covered under the tender specifications and providing assistance during commissioning and unit trial operations at Rayalaseema Thermal Power Project, 210 MW, Stage – III, Unit 5

- 6.1.2 The work shall conform to dimensions and tolerances given in various drawings and quality manuals provided by BHEL. If any portion of work is found to be defective in workmanship not conforming to drawings or other stipulations, the contractor shall dismantle and redo the work duly replacing the defective materials at his cost, failing which the job will be carried out by BHEL by engaging other agencies / departmentally and recoveries will be effected from contractor's bill towards expenditure incurred including BHEL's overhead charges.

6.2.0 **FOUNDATION DRESSING AND GROUTING**

- 6.2.1 It shall be contractor's responsibility to check the various equipment foundations for their correctness with respect to level, orientation, dimensions etc., and ascertained dimensions shall be measured and submitted to BHEL for approval before erection. Also minor chipping, dressing of foundations up to 30mm for obtaining proper face for packer plates/shims, as may be required for the erection of the equipment/plants will have to be carried out by the contractor without extra cost.
- 6.2.2 The surface of foundations shall be dressed to bring the surface of the foundations to the required level and smoothness prior to placement of equipment/equipments based on the foundation.
- 6.2.3 All equipment bases and structural steel bases and foundations pockets shall be grouted and finished as per these specifications after surface preparation unless otherwise recommended by the equipment manufacturers. The surface preparation includes soda washing of the foundations to remove oil, grease etc. to ensure proper grouting. The required materials like sand, gravel, cement etc and cleaning consumables shall be arranged by the contractor at his cost.
- 6.2.4 The concrete foundation, surfaces shall be properly prepared by chipping, grinding, as required to bring the top of such foundation to the required level to provide the necessary roughness for bondage and to ensure enough bearing strength. All laitance and surface film shall be removed and cleaned and the packers placed with suitable mortar prior to erection of the equipment. The contractor shall ensure perfect matching of the packer plates with foundations by dressing the foundation and between the packer plates and the base plates of structural columns to the satisfaction of BHEL Engineer.

- 6.2.5 Total grouting of the columns / equipments including pocket grouting, grouting at the gap between foundation and base plates top surface of column / equipments is in the scope of the contractor.

All the grouting materials required for grouting like conbextra GPI, ACC – Shrinkkomp – N20 Sika Anckor, NSG/NSG – 1 and CICO Excem GP and other materials like Portland cement, sand etc., are to be arranged by the contractor at his cost.

- 6.2.6 Contractor has to carryout the grouting as per the work instructions for grouting available at site.

6.3.0 SCOPE OF ERECTION

The scope of the work will comprise of but not limited to the following:

- 6.3.1 Loading at storage yard after identification, transporting to site or pre-assembly yard / erection site, unloading at pre-assembly yard / erection site pre-assembling of equipments wherever required for inspection or checking, erecting the material, aligning, welding, fastening, supporting, grouting, carrying out the necessary non-destructive testing as may be required, carrying out statutory tests arranged, providing services for trial operation, pre-commissioning activities upto the time of completion of commissioning activities and supply and application of final painting. The contractor should erect and assemble the components as per the drawings issued and the no of components supplied to him will be on the basis of shipping list / completion schedules. Complete pre assembling of components are in the scope of the contractor.
- 6.3.2 Any fixtures, concrete block supports, steel structures required for temporary supporting for pre-assembly or checking and welding for lifting and handling during pre-assembly and erection shall be arranged by the contractor.
- 6.3.3 The scope of equipments to be erected under this contract are detailed in Tender Specification. The schedule of weights given wherein are approximate and are meant only to give a general idea to the tenderer about the magnitude of the work involved.

- 6.3.4 All the works such as cleaning, checking, leveling blue matching, aligning, assembling, temporary erection for alignment, opening, dismantling of certain equipments for checking and cleaning, surface preparation, edge preparation, fabrication of tubes and pipes as per general engineering practices at site, cutting, grinding, straightening, chamfering, filing, chipping, and rectification of foundation upto 30 mm, drilling, reaming, scrapping, shaping, fitting up etc. as may be applicable in such erection works are to be treated as incidental to erection and necessary to complete the work satisfactorily shall be carried out by the contractor as part of the work and at his quoted rates.
- 6.3.5 It shall be the responsibility of the contractor to provide ladders on column for initial works till such time stairways are completed. For this the ladder should not be welded on the column and should be pre-fabricated clamping type ladders. No temporary welding on any structural member is permitted except under special circumstances with the approval of BHEL.
- 6.3.6 No members of the structure / platform should be cut without specific approval of BHEL.
- 6.3.7 Fixing, welding of necessary instrumentation tapping points, to be provided on auxiliaries covered within the scope of this specification will also be the responsibility of the contractor and will be done as per the instructions of BHEL Engineer. The fixing / welding of all the above items will be contractor's responsibility even if the
- i) Product groups under which these items are not specifically indicated in the Tender Specification.
 - ii) Items are supplied by an agency other than BHEL
- 6.3.8 In case any class of work for which there is no such specification as laid down in the contract such as welding of stainless steel parts, etc., works shall be carried out in accordance with the instructions and requirements of the Engineer at the quoted rates only.

- 6.3.9 Contractor is strictly prohibited in using the erection components like angles, channels, handrails for any temporary supporting or scaffolding works. In case of such misuse, a sum as determined by BHEL Engineer will be recovered from contractor's bills.
- 6.3.10 All the rotating, lifting equipments, etc. shall be serviced and lubricated to the satisfaction of BHEL Engineer before erecting the same and also during pre-commissioning. The bearings shall be properly cleaned, serviced and lubricated before commissioning at no extra cost. Even after commissioning the equipments, if there are problems in the operation they have to be attended to by the contractor during the tenure of the contract. Welding or joining of extension spindle for valves to suit the site conditions and operational facility shall be part of erection work within the quoted rate.
- 6.3.11 In the case of structural members / ducts, in certain cases, the raw material will be supplied in random lengths and the contractor will have to make up the length/prepared the edges to suit the matching profile weld / bolt connect the joints at no extra cost.
- 6.3.12 Normally, the matching profile will be cut out for the structural members but the contractor will have to carry out suitable alterations / adjustments at site, without any extra payment, in case it becomes necessary.
- 6.3.13 Contractor shall carry out chipping and blue-matching of foundation concrete with the packer plates. The packer plates shall be supplied by BHEL. Necessary machining wherever required and blue-matching of packer plates shall be carried out by the contractor within the quoted rates.
- 6.3.14 The contractor shall take all reasonable care to protect the materials and equipment during erection. Preventive painting required to be done on any equipment or part during the course of erection will have to be done by the contractor at no extra cost to BHEL.
- 6.3.15 Paints for preservative painting & thinner required for preservation shall be supplied by BHEL free of cost. All other consumables like wire brush, emery sheets etc. shall be arranged by the contractor at his cost.

- 6.3.16 Attachment , welding of necessary instrumentation tapping points, both for regular measurements and performance testing to be provided on E.S.P / its auxiliaries or pipelines covered within the scope of this tender will also be the responsibility of the contractor and the same will be done as per the instruction of BHEL Engineer.
- 6.3.17 The contractor shall take all reasonable care to protect the materials and equipment during erection. Touch up painting required to be done on any equipment or part during the course of erection will have to be done by the contractor.
- 6.3.18 Contractor shall carryout necessary touch up painting PERIODIC application of preservation on all components and other equipment during erection / after erection until completion of work. Necessary preservations / paints thinner will be provided by BHEL free of cost.
- 6.3.19 Contractor has to arrange required fire proof tarpaulins to protect the machined components / assembled parts drawn from BHEL before and after erection at their cost.
- 6.3.20 Contractor shall provide necessary crew with all items like wire brushes, paint brushes, emery paper, cotton waste, scaffolding materials etc.,
- 6.3.21 It is the responsibility of the contractor to do the alignment, checking, etc., if necessary, repeatedly to satisfy BHEL Engineer / Customer Engineers with all the necessary tools and tackles, manpower etc., without any extra cost. The alignment will be completed only when jointly certified so, by the BHEL Engineer & Customer. Also the contractor should ensure that the alignment is not disturbed afterwards.
- 6.3.22 Works such as minor rectification of foundation bolts, reaming of holes, drilling of dowels, matching of bolts and nuts, making new dowel pin etc., are covered in the scope of work.

- 6.3.23 Contractor shall engage separate gangs throughout the contract period, exclusively for proper house keeping of the site. The contractor has to make necessary arrangements for collection and for bring down the scrap from various locations as indicated by BHEL Engineer. The housekeeping must be a routine and continuous activity in the various work fronts. If the contractor does not do this job satisfactory, BHEL will arrange for the same at the cost of the contractor. Periodical payments to the contractor for the work done will be considered only if the housekeeping is certified as satisfactory by the customer.
- 6.3.24 It is the responsibility of the contractor to engage his workmen in shifts or on overtime basis for achieving the desired progress and target set by BHEL. The contractor's quoted rate shall include all these contingencies.
- 6.3.25 The contractor is strictly prohibited in using any of the E.S.P components like angles, channels, handrails for any temporary supporting or scaffolding work. In case of such misuse, a sum as determined by BHEL shall be recovered from contractor's bills. Also the contractor will be responsible for the safe custody and proper accounting of all materials issued in connection with the work. If the contractor has drawn materials in excess of design requirements, recoveries will be effected for such excess drawals at the rate prescribed by manufacturing units.
- 6.3.26 EP collecting Electrodes may require straightening and repair due to minor transport damages before erection and spot heating in position to get correct alignment which shall be done by contractor free of cost.
- 6.3.27 Additional platforms of permanent nature for approaching different equipments, as per site requirement which may not be indicated in drawings shall be fabricated and installed by the contractor. However the contractor will be paid for this work on accepted tonnage rate for erection. The material required for platform will be supplied by BHEL free of cost.

6.3.28 ROOF INSULATION :

One layer of insulation mattress on roof top of ESP roof (inner) shall be applied before outer roof is placed. The scope shall also include the above work even though the materials are supplied under some other product group and the erected materials shall be paid at the accepted tonnage rate of ESP.

6.3.29 WELDING ,HEAT TREATMENT & NDT (RT ,MPI,LPI Etc.,)

All welders shall be tested and approved by BHEL Engineer before they are actually engaged on the work even though they may possess the requisite certificates. BHEL reserves the right to reject any welder without assigning any reasons. The welder identification code as approved by the BHEL Engineer shall be stamped by the welder on each joint done by them. The contractor will be responsible for the periodic renewal, re-testing of the welders as demanded by BHEL.

6.3.30 All weld joints shall be subjected to acceptance by BHEL Engineer.

6.3.31 All the welded joints shall be subjected to non destructive testing as per drawings / standards / procedures and as per the site requirement , contractor's quoted rate shall inclusive of the same.

6.4.0 TESTING , PRE – COMMISSIONING , COMMISSIONING & POST COMMISSIONING

(All the works mentioned hereunder shall be carried out within the quoted and accepted rate)

6.4.1 The contractor shall carry out all the required tests on the equipments erected such as gas tightness test for ducts by kerosene, clean air flow test, etc., using contractor's own consumables, labour and scaffoldings. Necessary smoke bombs will be provided by BHEL.

- 6.4.2 All the above tests should be repeated till all the equipments satisfy the requirement / obligation of BHEL to their customer. All the repairs (shop welded or site welded) arising out of the failures during testing shall be done by the contractor as part of the work.
- 6.4.3 For conducting gas tightness test, it may be required to erect the blowers and connecting ducts and commission the same for tightness test. It is the responsibility of the contractor to erect the blowers & dismantle once the test is over. Contractor shall carry out the work within the quoted rate and BHEL will provide only the required materials
- 6.4.4 Fixing dummy plates at required locations for conducting tightness test and normalising after the test is over, is also covered in the scope of contract and shall be carried out within the quoted rate. BHEL will provide raw materials for the dummy plates.
- 6.4.5 It shall be the responsibility of the contractor to preserve the cleaned surfaces as per BHEL's requirement.
- 6.4.6 Commissioning of the equipments will involve, trial runs of all the equipments erected, blowing through the lines, flushing of all the lines by air, oil or steam as the case may be, trial run of the equipment and any other works incidental to commissioning. Contractor shall supply skilled technicians / workmen round the clock and materials for all equipment erected by them which shall form part of the scope of work.
- 6.4.7 In case any defect is noticed during test, trial runs, such as loose components, undue noise or vibration, strain on connected equipment, etc., **THE CONTRACTOR SHALL IMMEDIATELY ATTEND TO THESE DEFECTS AND TAKE NECESSARY CORRECTIVE MEASURES.** If any readjustment and realignment are necessary the same shall be done as per BHEL Engineer's instructions. If any part of the equipment needs repair, rectification and replacement, the same shall be done by the contractor at his cost. The parts to be replaced shall be provided by BHEL.

6.4.8 During this period, though the BHEL's / Client's staff will also be associated in the work, the contractor's responsibility will be to arrange for the complete requirement of men and required tools and plants till such time the commissioned units are taken over by the BHEL's Customer.

6.4.9 The commissioning activities will continue up to handing over of the units. It shall be the responsibility of the contractor to provide following category of workers in sufficient numbers along with supervisors including necessary equipment, consumables, hand tools, etc., during this period. The rate quoted shall include all these contingencies also.

- a. Fitters
- b. Structural Welders
- c. Riggers
- d. Unskilled workers
- e. Electricians
- f. Any other category of workers as may be required.
- g. Supervisor

Further in addition to the above contractor has to arrange the following manpower exclusively for assisting BHEL commissioning engineers during stabilization and trial operation period. These manpower will be directly controlled by BHEL commissioning engineers only.

1. One Electrician per shift for three shifts
2. One helper per shift for three shifts.

6.4.10 It shall be specifically noted that the above employees of the contractor may have to work round the clock along with BHEL commissioning Engineers and hence overtime payment may be involved. The contractor's quoted rate shall be inclusive of all these factors also.

- 6.4.11 During commissioning, opening of valves, removal of certain gaskets and re-erection, realigning of rotating and other equipment, attending to leakage, filling of oil to the meters / equipment may arise. The quoted rate shall include the same.
- 6.4.12 If, during commissioning, any improvement of rectification due to design requirement is involved and if the contractor is asked to carryout the job, the same shall be paid at man day rates or at the rates to be settled at that time. For this purpose, daily labour report indicating there in nature of work carried out, consumables used, etc., shall be maintained by contractor and get signed by BHEL Engineer, every day. It is not obligatory on the part of BHEL to get the work done by the contractor. They can employ any other agency, if they so desired at that time.
- 6.4.13 In case. Any rework is required because of contractors' faulty erection which is noticed during commissioning the same has to be rectified by the contractor at his cost. If any equipment / part is required to be inspected during commissioning the contractor will dismantle / open up the equipment / part and re - assemble / redo the work without any extra claim.
- 6.4.14 It is the responsibility of the contractor to provide electricians round the clock during pre-commissioning and post-commissioning activities. Further removal and reconnection of power for HT and LT motors are to be carried out as part of commissioning activities. Contractor's quoted rate shall include all these contingencies.
- 6.4.15 All the bearings, gear boxes etc., of the equipments and electrical motors to be erected are provided with protective greases only. Contractor shall arrange as and when required by the Engineer for cleaning the bearings, gears etc. with kerosene or some other agent, if necessary by dismantling some of the parts of the equipment during erection and shall arrange for re-greasing / lubricating them with the recommended lubricants and for assembling back the dismantled parts. Lubricants will however be supplied free of cost of BHEL.

- 6.4.16 The monthly programme of erection and targets shall be worked out prior to start of erection in consultation with BHEL site Management. It is the responsibility of the contractor to engage their workmen in shifts or on overtime for achieving the desired progress / targets set.
- 6.4.17 Loading of Emitting / electrodes should be done only just before commissioning of boiler. The contractor has to carry out this work after getting clearance from BHEL Engineer whose decision shall be final and binding in this regard.

6.5.0 PROGRESS OF WORK

During the course of erection, if the progress is found unsatisfactory or if the target dates fixed from time to time for every milestone are to be advanced, or in the opinion of BHEL, if it is found that the skilled workman like fitters, operators, technicians, etc., employed are not sufficient, BHEL will induct required additional workmen to improve the progress and recover from the contractors bills, all charges incurred on this account including all expenses together with BHEL overheads.

The progress reports shall indicate the progress achieved against planned with reasons indicating delays if any, shall also furnish in detail the reason for the same and shall give remedial action which the contractor intends to take to make good the slippage on lost time, so that further works can proceed as per the original programme and the slippage do not accumulate and affect the overall programme.

The contractor shall submit daily, weekly and monthly progress reports, manpower reports, material reports, consumables report and other reports considered necessary by the engineer.

The manpower reports shall clearly indicate the manpower deployed category-wise daily, specifying also the activities in which they are engaged. The periodicity of the reports will be decided by BHEL engineer at site.

The contractor shall arrange for weekly progress review meetings with engineer at site during which actual progress during the week vis-à-vis scheduled programme shall be discussed for action to be taken for achieving targets. The programme for subsequent week shall also be presented by contractor for discussions. The contractor shall constantly update/revise his work programme to meet the overall requirement and suit the material availability.

The contractor shall submit detailed monthly plan after discussion with BHEL Engineer and the same has to be forwarded by the first week of the month (working month or calendar month).

6.6.0 FIELD QUALITY ASSURANCE FORMATS :

It is the responsibility of the contractor to collect and fill up the relevant FQA Log Sheets of BHEL and present the same to BHEL after carrying out the necessary checks as per the log sheets and obtaining the signature of BHEL/Customer in token of their acceptance.

6.7.0 SCOPE OF WORK – FINAL PAINTING

- 6.7.1 The scope of work shall also including supply and application of final painting as required and specified for the components of ESP and its auxiliaries
- 6.7.2 The scope of work includes supply and application of paints as per the approved colour code for the components of ESP and its auxiliaries
- 6.7.3 All exposed metal parts of equipments including structures handling etc. Wherever applicable after installation unless otherwise surface protected, be first cleaned for dust, rust, scales, grease, oil and other foreign materials by wire brushing, scrapping and chemical cleaning the same being inspected and approved by BHEL / Customer engineers for painting. Afterwards the above parts shall be painted as per the instruction of BHEL /Customer official and as per painting specification enclosed. Before applying the subsequent coats, the thickness of each coat shall be measured and should be informed to BHEL. The instrument for checking the thickness

of coat is to be procured by contractor and should be calibrated after periodical intervals.

- 6.7.4 The quality of the finish paint shall be as per the standards of ISI or equivalent and the colour is as approved by BHEL / Customer.
- 6.7.5 The quoted rate shall include supply and application of final painting also. The scope of painting includes application of colour bands, lettering the names of the systems, equipment, tag Nos of valves, marketing the directions of flow and other datas required by Customer / BHEL within the quoted rates at the appropriate place as identified by BHEL / Customer.
- 6.7.6 The primer coat and final coat paints shall be as included below:

Primer Coat :One Coat of Red Oxide Zinc Chrome Primer as per IS 2074 Standard.

Final Coat : Two Coats of Final Painting, Synthetic Enamel paint as per IS 2932 Standard.

The colour shades should be to match with the shop paint.

- 6.7.7 The paints shall be procured from the BHEL approved agencies like BERGER, ASIAN, SHALIMAR, JENSON & NICHOLSON. Before procuring the paints contractor must obtain clearance from BHEL. Complete insulation with fixing components, cladding etc., is covered in this scope of contract and the same will be paid as per the terms of contract.

6.8.0 **TIME SCHEDULE.**

6.8.1 The contractor shall have to mobilize in all respects within two weeks from the date of issue Fax Letter of Intent to commence the work.

6.8.2 The entire work of erection testing and commissioning as detailed in the Tender Specification shall be completed within **Sixteen (16)** months from the date of commencement of work at site. Any advancement required completing the project in the course of execution, contractor shall carry out the work with out any extra cost.

6.8.3 During the total period of contract the contractor has to carryout the activities in a phased manner as required by BHEL Engineer and as per the programme of events / targets fixed by BHEL / Customer.

6.8.4 The work under this scope of contract is deemed to be completed in all respects only when all the testing and commissioning of all the equipments are completed. The decision of BHEL in this respect shall be final and binding with contractor.

6.8.5 During the tenure of contract, if BHEL is not satisfied with the progress of work, BHEL have the right to with draw any portion of work / balance work and get the same done either directly employing their own men or through other agency at your risk and cost. You shall not be entitled for any compensation whatsoever in this regard.

6.9.0 **PAYMENTS FOR WORK COMPLETED:**

6.9.1 The Tenderer shall quote separate rates as per the Rate schedule appended. The contractor shall submit his running bills once in a month at the end of each month.

6.9.2 BHEL Engineer shall take measurement and certify regarding the actual work executed in the measurement books and bills for erection work.

6.9.3 Subject to any deduction which BHEL may be authorised to make under the contract, the contractor shall on the

certificate of Engineer at site be entitled for payment as explained hereunder:

6.9.4 PAYMENT TERMS

6.9.4.1 For PG 39, 57

- i) **20%** of the contract rate on pro-rata basis on checking of wherever pre-assembly is involved
- ii) **15%** of the contract rate on pro-rata basis after erection and alignment.
Or
- iii) **35%** of the contract rate on pro-rata basis after erection and alignment.
- iv) **40%** of the contract rate on pro-rata basis on completion of welding, fastening, grouting supports if any.
- v) **5%** of the contract rate on prorata basis on completion of PGMA, Hand Rails and Toe Guard Plates as applicable.

6.9.4.2 For PG 48 :DUCTS (48-482,484,485,492,494 & 495)

- i) **30%** of the contract rate on prorata basis on completion of pre-assembly
- ii) **25%** of the contract rate on prorata basis on erection, alignment and completion of welding.
- iii) **20%** of the contract rate on prorata basis will be paid on completion of supports in all respects in the respective zones.
- iv) **5%** of the contract rate on prorata basis on completion of manhole doors, instrumentation tapping points, performance test points.

6.9.4.3 PG 79

- i) **20%** of the contract rate on prorata basis on completion of Pre Assembly wherever applicable
- ii) **15%** of the contract rate on prorata basis on completion erection alignment for the items wherever pre-assembly is involved

OR

- iii) **35%** of the contract rate on prorata basis on completion of erection, alignment for the items wherever pre-assembly is not involved.
- iv) **30%** payment of contract on prorata basis on completion of fastening, welding, grouting along with supports etc.,
- v) **5%** of the contract on prorata basis (for the erected tonnage) will be paid after completion of Hopper Upper part middle and lower parts inspection doors, heating elements, poking doors etc.,
- vi) **5%** of the contract on prorata basis (for the erected tonnage) will be released after completion of inner roof , outer roof, insulator, housing, rectifier transformer, pent house and their connected works in the roof, like mono rails and hoist etc.,
- vii) **5%** of the contract prorata basis (for the erected tonnage) will be released after completion of Gas Distribution path and completion of rapping mechanism with the drives in all respects.

6.9.4.4 Further 20% applicable for PGs covered under the scope of contract shall be released as detailed below:

- i) **2%** of the contract value for the erected tonnage after completion of air and gas thickness test.

- ii) **2%** of contract value for the erected tonnage after cutting and removal of scraps, temporary supports and return to stores, clearing for insulation, wherever applicable and cleaning for final painting.
- iii) **4%** of the contract value for the erected tonnage will be paid after completion of final painting.
- iv) **3%** of the Contract value of contract value for the erected tonnage will be paid on charging of all the ESP fields.
- v) **1%** of the Contract value for the erected tonnage will be paid on completion of Gas Distribution test.
- vi) **1%** of the Contract value for the erected tonnage will be paid on reconciliation of T & P materials issued by BHEL
- vii) **2%** of the Contract value for the erected tonnage will be paid on submission and acceptance of final bill.

The balance amount of 5% will be paid after the guarantee period of 12 months is over. The guarantee period shall commence from the date of handing over of the set to customer or 6 months from the date of first synchronization of the set whichever is earlier. However the above 5% payment can be released against submission of a matching Bank guarantee from a Nationalized / scheduled Bank in the prescribed Performa of BHEL valid for one year.

BHEL at its discretion may further split up the above percentage and effect payment to suit the site conditions, cash flow requirements, according to the progress of work. Contractor has to submit a monthly progress report consisting of the following data /Information along with the monthly running bill, to be eligible to receive the monthly running bill

CONTRACTOR SHALL NOTE THAT THE FINAL BILL BE RELEASED ONLY ON PRODUCTION OF A CERTIFICATE ISSUED BY SITE IN CHARGE THAT THE CONTRACTOR HAS FULFILLED ALL THE CONTRACTUAL / STATUTORY REQUIREMENT.

6.10.0 EXTRA CHARGES FOR MODIFICATION AND RECTIFICATION WORK:

- a) BHEL may consider payment for extra works on man hour basis for such of those works which require major revamping / rework / rectification/ modification which is totally unusual to normal erection or commissioning works which are not due to contractor's faulty erection.
- b) The decision of BHEL in this regard shall be final and binding on the contractor. 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.

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 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.
- 6.11.2 **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.
- 6.11.3 The decision of BHEL in this regard shall be final and binding on the contractor.

6.12 OVER RUN CHARGES:

- 6.12.1 Incase due to reasons not attributable to the contractor, the work gets delayed and completion time gets extended beyond **Sixteen (16) months** from the date of commencement of the work, the contractor shall be entitled for any over run compensation (ORC) for a period after the expiry of **Sixteen (16) months**. Incase of ORC arise the same will apply at **Rs.40,000/- (Rupees Forty Thousand only)** per month for the extended period beyond **Sixteen (16) months**.
- 6.12.2 The period of overrun if any will have to be ascertained in consultation of erection Engineer before completion of 16 months contract period.
- 6.12.3 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.
- 6.12.4 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.

6.13 PRICE ESCALATION

6.13.1 PVC applicable from the calendar month of commencement of work.

$$P1 = 0.75 \times PO \frac{(F1-FO)}{FO}$$

Applicable even when F1 is lesser than FO. (Price reduction as applicable).

FO = New all India average consumer price index published by Labour Bureau, Simla, Government of India for Industrial workers (Base 2001 = 100) applicable from the month of commencement of work.

F1 = All India average consumer price Index published by labour Bureau, Simla, Government of India, for Industrial workers (Base 2001 = 100) applicable for the months under consideration.

P1 = Increase in the billing amount as per the escalation formulae for the particular month of billing.

PO = Billing amount calculated on the accepted contract rate.

6.13.2 Price escalation as per above formula will be calculated and paid (excluding payments towards extra works and overrun, if any) on month to month basis. BHEL however, reserves the right to freeze escalation for that such of duration of delays, from time to time which are entirely attributable to the contractor.

6.13.3 With the provision of price escalation as per the above no claim / compensation on account of any increase whatsoever, (irrespective of whether escalation are steep / unanticipated or not compensated by the above escalation provisions in full towards minimum wages, consumables, electrodes, gases or any other item / reasons) will be payable during the entire period of execution.

PVC is to be restricted to 10% of the contract value.

6.14.0 TAXES

6.14.1 Value Added Tax (VAT) for the works

Price quoted shall be inclusive of ALL TAXES except service tax.

Notwithstanding the fact that this is only an erection service contract not involving any transfer of materials whatsoever and not attracting VAT liability, being labour oriented job work, for the purpose of VAT 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 VAT Registration No. and VAT paid for the purchases etc.,

The bidder shall get registered with **Andhra Pradesh** VAT authorities and the registration certificate shall be forwarded to BHEL immediately after commencement of work. In case , the bidder had already registered under **Andhra Pradesh** VAT, they must quote their registration number and forward copy of Registration Certificate while submitting this tender. The bidder has to obtain VAT clearance certificate from the concerned authorities on completion of work and submit along with the final bill as one of the document for contract closure.

In case the Bidder decides to include any VAT element along with the quoted price, they shall specify in the price bid,(1) The value of VAT included in the quote, (2) The rate of VAT adopted and (3) On what value, etc. as additional information. If no VAT element is included in the price, the same shall be indicated in the quote.

The bidder shall quote very competitive price after taking into consideration of above points.

6.14.2 SERVICE TAX

Price quoted shall be exclusive of Service Tax. The service tax as statutorily leviable and payable by the bidder under the provisions of service tax Law / Act shall be paid by BHEL as per bidder claim through various running bills. **The bidder shall furnish proof of service tax registration with Central Excise Department specifying the name of services covered under this contract.** Registration Certificate should also bear the endorsement for the premises from where the billing shall be done by the bidder on BHEL for this project. The bidder shall obtain prior consent of BHEL before billing the service tax amount.

6.14.3 OTHER TAXES

Any other taxes and duties (except VAT & Service Tax) viz. Entry Tax, Octroi, Seigniorage, Licenses, Deposits, Royalty, Stamp Duty, other charges / levies, etc. prevailing / applicable on the date of opening of technical bids and any variation thereof during the tenure of the contract are in the scope of bidder. In case BHEL is forced to pay any such taxes, BHEL shall have the right to recover the same from the bidder either from running bills or otherwise as deemed fit.

6.14.4 NEW LEVIES & TAXES

In case Government imposes any new levy / tax after award of the work during the tenure of the contract, 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.

6.14.5 STATUTORY VARIATIONS

Statutory variations are applicable only in the cases of Value Added Tax and Service Tax. The changes implemented by the Central / State Government in the VAT Act / Service Tax during the tenure of the contract viz. increase / decrease in the rate of taxes, applicability, etc. and its impact on upward revision / downward revision shall be paid/ adjusted from the

date of respective variation. The bidder shall give the benefit of downward revision in favour of BHEL. No other variations shall be allowed during the tenure of the contract including extended period, if any.

6.14.6 DIRECT TAXES

BHEL shall not be liable towards Income Tax of whatever nature including variations thereof arising out of this contract as well as tax liability of the bidder and their personnel. Deduction of tax at source at the prevailing rates shall be effected by BHEL before release of payment as a statutory obligation, unless exemption certificate is produced by the bidder. TDS certificate will be issued by BHEL as per the provisions of Income Tax Act/Rules.

6.15.0 IMPORTANT CONDITIONS FOR PAYMENT

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

- i. PF Registration Number
- ii. Labour License Number
- iii. Workmen Insurance Policy Number
- iv. Un Qualified Acceptance for Detailed L.O.I.
- v. Initial 50% Security Deposit.
- vi. Rs 100 /- Stamp Paper for Preparation of Contract agreement.
- vii. Acceptance for e payment (format enclosed)

Mode of Payment :

All payments due to you will be made through e-remittance / account payee cheque. In case of e-remittance, you are required to fill in the e payment

format enclosed along with this tender on your letter head with banker's seal. The duly filled format may be sent along technical bid.

6.16.0 PROVIDEND FUND & MINIMUM WAGES

- 6.16.1 You are required to extent 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 therefore 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 payments 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 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 alongwith the first running bill.

2. 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.
3. The contractor shall submit monthly running bills along with the copies of monthly wages (of the preceding month) u/r 78 (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.
4. The Contractor shall submit copies of Final Settlement statement of disbursement of retrenchment benefits on retrenchment of each workmen 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.

SECTION – VII
APPENDIX –I

SCHEDULE OF WEIGHTS

SNo	PG	Description	Weight (Kgs) Approx./Unit
01	39	External Supporting Structures	558
02	48	Ducting	160
03	57	Gates & Dampers	62
04	79	ESP	3140
		Total	3910

Note to weight schedule

1. The weights mentioned above are approximate and are liable to vary as per design consideration. There will be change in PG, weight, description etc., however the payments will be made for the tonnage actually erected at the quoted rate.
2. Besides the PG /PGMA indicated above there is likely hood of addition of product groups integral to ESP and its auxiliaries. The quoted rate shall be applicable for such product group also
3. Insulation : With respect to insulation , it shall be limited to only to the application of inner roof of ESP , including fixing component.
4. The Erection and alignment of rectifier transformer is in the scope of contractor .However , dry out , testing and commissioning is not in scope of this contract.
5. Erection & dismantling of air blowers and connecting pipes & ducts, providing blanks/ dummies at the required locations and conducting gas-tightness test is in the scope contract and shall be carried out with in the quoted rate.

**SECTION – VII
APPENDIX - II**

TOOLS & PLANTS

- AA) The contractor shall arrange all tools and plants including cranes / tractors / trailers / trucks etc., at his own cost.
- BB) The contractor has to furnish a list of Tools and Plants including cranes / tractors / trailers / trucks etc., which he has proposed to deploy for this work.
- CC) The contractor shall arrange crane operator, diesel, petrol and other consumables required for the tools and plants, equipments etc., Preventive and routine maintenance of T & P are also to be arranged by the contractor at his cost without any delay.
- DD) The following minimum Tools & Plants shall be arranged by the contractor for execution of this contract with in the quoted rate.

Sl.No	Description	Qty
1	10/ 8 T Mobile crane	1 No

**EE) LIST OF TOOLS AND PLANTS TO BE PROVIDED BY
BHEL FREE OF HIRE CHARGES ON SHARING BASIS**

Sl.No	Description	Qty
1	75 T Crane /Higher capacity	1 No
2	Huck Bolting machine	2 Nos
3	Blower for Gas tightness test	1 No

NOTES :

1. All the above T & Ps shall be given to contractor on by BHEL / Site in Charge, on sharable / need basis.
2. Incase of non-availability of these equipments, due to any reason i.e. unavoidable breakdown, major overhaul or any other reason etc., the contractor shall make arrangement at his own cost to meet the erection targets. No extra claim will be admitted due to non-availability of any of the above equipments. No delay in execution of work shall be accepted on this account.
3. For 75 T/Higher capacity crane, contractor has to provide operator. Fuel required for operation of the crane is in the scope of contractor. Incase BHEL provides hired cranes, the following fuel charges will be deducted from the contractor's bill

For 75 T / Higher capacity = Rs 150 / Hour

4. The day to day and routine maintenance of BHEL cranes (only) will be carried out by BHEL. All the BHEL supplied cranes have to be handed over to maintenance through on completion of days work BHEL (I / C) on daily basis as indicated by site in charge, preferably after 7 PM. The crane will be re-allotted in the next day after due maintenance. However the modification of boom length to suit erection requirement shall be carried out by the erection contractor with in the quoted rate.
5. The fuel tank fitted in the crane should not be by – passed by the agency.
6. Any loss / damage of tools by the contractor shall have to be replaced or otherwise cost thereof shall be recovered from the contractor.

Apart from the above, any other tools and plants required for satisfactory completion of the work has to be arranged by the contractor.

SECTION VII
APPENDIX –III
DECLARATION SHEET

I, _____ hereby certify that, all the information and data furnished by me with regard to this Tender Specification No. **BHEL:PSSR:SCT:1317** 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 –IV

TENDER SPECIFICATION NO BHEL:PSSR:SCT:1317

**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

SECTION VII
APPENDIX -V
e- Remittance Form

**Form to be filled by vendors for registering for e-
payment**

**DETAILS OF CONTRACTOR/SUPPLIER FOR E-
REMITTANCE OF PAYMENTS
BY BHEL/PSSR**

**NAME & ADDRESS OF THE
CONTRACTOR/SUPPLIER**

BANK A/C NO

TYPE OF A/C (CC / CURRENT)

NAME OF THE BANK

NAME OF THE BRANCH

BRANCH CODE



Bharat Heavy Electricals Limited
(A Govt. of India Undertaking)
Power Sector – Southern Region
EVR Periyar Building
690 , Anna Salai, Nandanam, Chennai – 600 035.

SECTION VII
APPENDIX - VI
CHECK LIST

TENDER SPECTFICATION NO: BHEL: PSSR : SCT : 1317

Tenderers are required to fill in the following details:

1. a) Name of the Tenderer with address : YES/NO
b) Telegraphic/Telex address : YES/NO
c) Phone (Office/Residence) : YES/NO
d) Management Structure of firm (Pvt. Ltd./Public Ltd./Partnership/Sole Proprietorship) Documentary proof For the same enclosed) : YES/NO
2. Whether EMD submitted as per Tender specifications terms and Conditions : YES/NO
3. Validity of offer (offer shall be kept open for acceptance for minimum six months) : YES/NO
4. Whether tenderer visited the erection site and acquainted with the site conditions before quoting : YES/NO

SIGNATURE OF THE TENDERER

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 status : 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/laborers 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 : YES / NO
13. Whether PF exemption No. is allotted by RPFCL of your area if so, indicate number : YES/NO

SIGNATURE OF THE TENDERER

TENDER SPECIFICATION

BHEL:PSSR:SCT: 1317

FOR

Handling at Stores / Storage yard,
Transportation to Site, Erection, Testing,
Commissioning of Electrostatic
Precipitators and its auxiliaries, including
Supply and application of Final painting
for Unit – 5 of 210 MW set, Stage III

at

Rayalaseema Thermal Power Project
(Muddanur) V.V.Reddy Nagar,
Kalamalla Post, Cuddapah District,
Andhra Pradesh

PART – I 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:1317

NAME OF WORK

Handling at Stores / Storage yard,
Transportation to Site, Erection, Testing,
Commissioning of Electrostatic
Precipitators and its auxiliaries including
supply and application of final painting
for Unit 5 of 210 MW Stage – III at
Rayalaseema Thermal Power Project , VV
Reddy Nagar, Kalamalla Post, Cuddapah
District, Andhra Pradesh
(PRICE BID)

PART II

Issued to
M/s.

For and on behalf of
BHARAT HEAVY ELECTRICALS LIMITED

Additional General Manager/Contracts

(This tender document is not transferable)

Place: Chennai-600 035.
Date:

**RAYALASEEMA TPP 1 X 210 MW
SECTION - VI
RATE SCHEDULE FOR ESP SCT :1317**

Sl.No.	Description	Weight In MT	Unit Rate (Rs.)	Amount (Rs.)
--------	-------------	-----------------	-----------------------	---------------------

01. ESP : (Section - VI)

Erection, Testing and Commissioning and completion of trial operations of the complete **ESP** as per the detailed description and nature of work enumerated in the tender specification supply and application of final painting including supply of consumables, tools and tackles T & P required for erection excepting T&P supplied by BHEL. All handling and transportation from BHEL/Customer's storage and other incidental works during pre-assembly, erection, grouting, testing and commissioning work as detailed in the Tender Specification. This shall include all types of handling and transportation of materials from site store sheds/storage yard to pre-assembly yard to place of erection, any extra work of modification/rectification that may arise during erection, testing and commissioning of works which is incidental to normal erection works.

3910 MT

SIGNATURE OF THE TENDERER

NOTE :

- 1.** The quantities indicated in column 3 are approximate and are liable for variation and alteration at the discretion of BHEL. The quoted unit rate shall be applicable for any additional product groups of manufacturing unit, integral to the scope of work. The work executed shall be measured and priced at unit rate quoted by the contractor and accepted by BHEL.
- 2.** The description of work indicated in the Rate Schedule shall include all types of handling and transportation of materials from storage yard / pre-assembly yard to the place of erection, preservation of components at the erection site with contractor's own handling equipments including any extra work with modification / rectification that may arise during erection testing and commissioning works which are incidental to normal erection works.
- 3.** The Tenderer is expected to fill up the rate column after satisfying all terms and conditions of Tender Specification.
- 4.** Tenderers are required 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.

SIGNATURE OF THE TENDERER